From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: Methane Challenge Pre-Brief
Start Date/Time: Tue 12/8/2015 3:00:00 PM
End Date/Time: Tue 12/8/2015 4:00:00 PM

From: Weitz, Melissa
Location: DCRoomWJCS4228AOAP/DC-OAR-OAP
Importance: Normal
Subject: adding webinar link-- EDF technical briefing on gathering and processing study
Start Date/Time: Mon 8/17/2015 8:00:00 PM
End Date/Time: Mon 8/17/2015 9:00:00 PM

Call in **Ex. 6 - Personal Privacy**

Webinar link:
Ex. 6 - Personal Privacy

From: Weitz, Melissa
Location: Conference Call: Dial-in Number: **Ex. 6 - Personal Privacy**
Importance: Normal
Subject: call with Institute of Clean Air Companies
Start Date/Time: Tue 8/11/2015 8:00:00 PM
End Date/Time: Tue 8/11/2015 9:00:00 PM

Hello,

Paul forwarded the request below on to me. I spoke with Betsy and her group is interested in knowing more about monitoring for GHGRP, what we're thinking in terms of monitoring for Methane Challenge, and the GHG Inventory.

So, it'd be great if you could join and provide a brief overview that covers monitoring in your programs.

Does this work?

Thanks!
Melissa

From: Betsy Natz [mailto:bnatz@icac.com]
Sent: Tuesday, July 28, 2015 7:25 PM
To: Gunning, Paul
Subject: FW: FoI

From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: Subpart W & Methane Challenge Preamble / Call-in: Ex. 6 - Personal Privacy Code: Ex. 6 - Personal Privacy
Start Date/Time: Mon 11/23/2015 8:30:00 PM
End Date/Time: Mon 11/23/2015 9:30:00 PM

From: Gunning, Paul
Location: DCRoomWJCE5140OAPTB/DC-OAR-OAP
Importance: Normal
Subject: Pre-brief by NREL/DOE on Methane from Natural Gas Systems in GHG Inventory / Call-in: 1-
Ex. 6 - Personal Privacy
Start Date/Time: Thur 7/30/2015 8:00:00 PM
End Date/Time: Thur 7/30/2015 9:00:00 PM

NREL/DOE also discuss their roll-out plan and messaging for this report.

From: Weitz, Melissa
Location: DCRoomWJCS4228AOAP/DC-OAR-OAP
Importance: Normal
Subject: updated call in # technical discussion with EDF transmission and storage study team-GHGRP and GHG Inventory focus
Start Date/Time: Tue 7/21/2015 8:00:00 PM
End Date/Time: Tue 7/21/2015 9:00:00 PM

Call In: Ex. 6 - Personal Privacy
Passcode

From: Thoma, Eben
Location: RTP-Line-8662993188-ECPB/Phone-Line/RTP-Conf-Bridge
Importance: Normal
Subject: Presentation by LGR/ABB on mobile methane detection (call-in and web link)
Start Date/Time: Wed 1/13/2016 8:00:00 PM
End Date/Time: Wed 1/13/2016 9:00:00 PM

Hi Everyone,

As Melissa mentioned in her meeting note, today we will replace our monthly methane research data discussion with a presentation from Bill Conlon (ABB), and Doug Baer, and Manish Gupta of Los Gatos Research (now part of ABB) on new developments in mobile methane sensing for leak detection applications (an application of EPA method OTM33). Please see details below and hope you can make it.

Thanks,

Eben

The call in number is **Ex. 6 - Personal Privacy**

Here is the Adobe Connect Web link (please enter as a guest)

https://epawebconferencing.acms.com/r29vwhjgntw/

From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: Enhanced Natural Gas STAR / Toll-free dial-in number (U.S. and Canada): Ex. 6 - Personal Privacy Ex. 6 - Personal Privacy International dial-in number: Ex. 6 - Personal Privacy Conference code: Ex. 6 - Personal Privacy
Start Date/Time: Fri 5/29/2015 6:30:00 PM
End Date/Time: Fri 5/29/2015 7:30:00 PM

Adding David C.

Meeting with Chevron, ExxonMobil, Shell, BP, ConocoPhillips and Hess on EPA voluntary and regulatory oil and gas methane actions.

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: prep for NRC call
Start Date/Time: Tue 7/14/2015 2:00:00 PM
End Date/Time: Tue 7/14/2015 2:30:00 PM
Methane emissions prospectus DRAFT 06-23-2015 (3).docx

Background:
The National Academy of Sciences/National Research is considering developing a research project on methane emissions (all sources, anthropogenic and natural).
They drafted the attached prospectus based on previous meetings and have set up a call with EPA next week (7/22) to discuss our comments/concerns on the draft prospectus.

7/14 EPA prep call (this call):
On the 7/14 call, I'll give some brief background on our interactions with NRC on this topic to date, and then we can d

From: Gunning, Paul
Location: Conference Call
Importance: Normal
Subject: Methane Challenge Technical Guidelines & Review / Call-in: Ex. 6 - Personal Privacy Code: Ex. 6 - Personal Privacy
Start Date/Time: Thur 9/24/2015 7:00:00 PM
End Date/Time: Thur 9/24/2015 8:00:00 PM

From: "Bylin, Carey" <Bylin.Carey@epa.gov>
Date: September 23, 2015 at 5:05:07 PM EDT
To: "Gunning, Paul" <Gunning.Paul@epa.gov>, "Franklin, Pamela" <Franklin.Pamela@epa.gov>
Cc: "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov>, "Kocchi, Suzanne" <Kocchi.Suzanne@epa.gov>
Subject: RE: Methane Challenge

Thanks, Paul and Suzie, for your review and comments. Pamela is compressed Friday so I suggest we meet tomorrow at 3p, which looks open for all on this e-mail chain. The GHGRP team is not available Thursday but I think we have a lot to discuss even if GHGRP folks can't make it. Does that work? Note this will be a phone call with all the teleworking - I assume that's okay?

Ms. Carey Bylin
International Programs Leader, Oil and Gas
Natural Gas STAR Program
Global Methane Initiative
U.S. Environmental Protection Agency
Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)
1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:
Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

<image001.gif>

From: Gunning, Paul
Sent: Wednesday, September 23, 2015 4:47 PM
To: Franklin, Pamela
Cc: Bylin, Carey; Waltzer, Suzanne; Kocchi, Suzanne
Subject: Re: Methane Challenge

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Let me me know.

Paul

From: Franklin, Pamela
Sent: Wednesday, September 23, 2015 11:18 AM
To: Gunning, Paul
Cc: Bylin, Carey; Waltzer, Suzanne
Subject: Methane Challenge

Hi Paul,

Ex. 5 - Deliberative Process

Thanks,
Pamela

Pamela M. Franklin, PhD
Branch Chief, Non-CO2 Programs
Climate Change Division
US Environmental Protection Agency

(202) 343-9476
franklin.pamela@epa.gov

From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: NRC Methane Monitoring and Inventory / Call-in: Ex. 6 - Personal Privacy
Start Date/Time: Wed 7/22/2015 1:30:00 PM
End Date/Time: Wed 7/22/2015 2:30:00 PM
Methane emissions prospectus from NRC_DRAFT_7-20-2015.docx
Methane emissions inventory.png

Adding call-in line

Adding NRC's Methane Emissions Prospectus

Adding Tom Wirth

Meeting will be Wed. July 22 at 9:30 am

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Thursday, June 25, 2015 5:08 PM
To: Hargrove, Anne; Gunning, Paul
Cc: Thomas, Katherine C; Kocchi, Suzanne
Subject: RE: NRC Methane emissions study prospectus

HI Anne,

Either option works for us, so shall we go with the earlier one?

Thanks!
Amanda

From: Hargrove, Anne [mailto:Hargrove.Anne@epa.gov]
Sent: Thursday, June 25, 2015 3:09 PM
To: Staudt, Amanda; Gunning, Paul
Cc: Thomas, Katherine C; Kocchi, Suzanne
Subject: RE: NRC Methane emissions study prospectus

Hi Amanda,

So far it looks like there are two times that would work for folks here that are within what might be possible for you: Tuesday July 7, from 1 pm to 2, and Wed. July 22, from 9:30 am to 10:30. Would either of those times work for you?

Best,
Anne Hargrove
Climate Change Division
U.S. Environmental Protection Agency
(202) 343-9926

f - (202) 343-1204

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Thursday, June 25, 2015 1:26 PM
To: Gunning, Paul
Cc: Thomas, Katherine C; Hargrove, Anne
Subject: RE: NRC Methane emissions study prospectus

Hi Paul – sounds good!

Anne – Looking at Katie's schedule and mine, the best options on our end would be July 7 or else the week of July 20.

Thanks!
Amanda

From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]
Sent: Wednesday, June 24, 2015 2:29 PM
To: Staudt, Amanda
Cc: Thomas, Katherine C; Hargrove, Anne
Subject: RE: NRC Methane emissions study prospectus

Amanda – great to hear from you and I hope all is well. I think getting together to discuss this would be great. I am out on vacation next week, but I am around after that. I am looping in Anne who can follow up with more specifics on our availability (I would want to a few other EPA folks). Looking forward to the discussion.

Paul

Paul M. Gunning
Director, Climate Change Division
U.S. EPA (6207J)
1200 Pennsylvania Avenue
Washington, DC 20460

Direct (202) 343-9736
Fax (202) 343-2202
Cell (202) 251-1436

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Wednesday, June 24, 2015 1:26 PM
To: Gunning, Paul
Cc: Thomas, Katherine C
Subject: NRC Methane emissions study prospectus

Dear Paul,

I'm writing to follow up on our discussions regarding a potential NRC study on methane emissions monitoring and inventories. Thanks again for meeting with us a couple months back and apologies that it has taken much longer than I anticipated to get back in touch. We were a bit shorthanded this spring, and are finally getting caught up.

We have drafted the attached prospectus based on the discussions that we had with you, other potential sponsors, and our board members. Our hope is that the project described addresses your needs and will be useful in moving forward research, policy, and practice regarding methane emissions monitoring and inventory development. We welcome your feedback and would be happy to discuss any concerns or suggested adjustments.

Also, we would like to continue to explore whether EPA might have an interest in co-sponsoring the study. At this point we are envisioning an activity with multiple sponsors, which will allow us to ensure that the study addresses broader national needs, and also makes it possible to share the costs among the several agencies engaged on the topic.

Perhaps a good next step would be to arrange a time for us to meet in a few weeks' time to discuss any input you have on the draft and next steps? If you agree, please go ahead and send some windows that look promising on your end, and we'll figure out a time that works for all of us.

Many thanks,
Amanda

Amanda Staudt, Ph.D., Director
Board on Atmospheric Sciences and Climate
Polar Research Board
(202) 334-1245
http://dels.nas.edu/basc
http://dels.nas.edu/prb

From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: Further Discussion w/DOE on Oil & Gas Sector (methane quantification) / CALL-IN: 1-
Ex. 6 - Personal Privacy
Start Date/Time: Wed 2/24/2016 3:00:00 PM
End Date/Time: Wed 2/24/2016 4:00:00 PM

This meeting now is scheduled for Wednesday Feb. 24 at 10 am, and is a follow-up to Feb. 11 "Discussion w/DOE on Oil & Gas Sector (methane quantification)"

From: Gunning, Paul
Location: DCRoomWJCE5140OAPTB/DC-OAR-OAP
Importance: Normal
Subject: EDF Pre-brief / Participants, click here to join the meeting: Ex. 6 - Personal Privacy ; Audio Conference Information: Dial-In Number(s): U.S. & Canada Toll-Free: Ex. 6 - Personal Privacy
Start Date/Time: Mon 7/6/2015 6:00:00 PM
End Date/Time: Mon 7/6/2015 7:00:00 PM

Sorry, adding access code;

Time & date – Monday July 6, @ 2 pm

Location – WJC-E, RM 5140

From: Gunning, Paul
Location: DCRoomWJCE5140OAPTB/DC-OAR-OAP
Importance: Normal
Subject: ICAC Follow-up Meeting on Methane / International Call-in: Ex. 6 - Personal Privacy International Code: Ex. 6 - Personal Privacy / Domestic Call-in: Ex. 6 - Personal Privacy; Domestic Code: Ex. 6 - Personal Privacy
Start Date/Time: Mon 5/18/2015 7:00:00 PM
End Date/Time: Mon 5/18/2015 8:30:00 PM
Draft Agenda_ICAC-EPA Methane Meeting May 18-2015_050515.docx

Sent: Tuesday, May 05, 2015 11:00 AM
To: Gunning, Paul
Cc: Betsy Natz; Sam Kumar; Karl Walby; Davis, Robert; Peter_Zemek@mksinst.com
Subject: Draft Agenda for 5/18 ICAC-EPA Methane Meeting

Paul,

Attached please find a draft agenda for our meeting on Monday May 18th from 3:00--4:30PM. We thought you / EPA could start out with an overview of what EPA is doing on the methane front (some of our questions on the agenda) followed by a sampling of various methane control technologies and measurement capabilities from 3 ICAC member companies.

If possible, please let us know if this is acceptable by COB this Friday May 8th. Please feel free to call me at (410) 670-8244 if you have any questions.

Best regards,

Doug Austin

Director of Government Affairs

Institute of Clean Air Companies

(410) 670-8244 (direct)

(571) 858-3707 (main)

Adding conference line numbers for international & domestic parties who will be calling in. Please note: international and domestic callers each have a different call-in number, however, their passcode is the same for each.

From: Gunning, Paul
Sent: Monday, March 30, 2015 3:00 PM
To: Betsy Natz
Cc: Hargrove, Anne

Subject: RE: ICAC Follow-up Meeting on Methane

No problem Betsy. We will set up a call in line and aim for the afternoon.

Paul

From: Betsy Natz [mailto:bnatz@icac.com]
Sent: Monday, March 30, 2015 1:50 PM
To: Gunning, Paul
Cc: Hargrove, Anne
Subject: RE: ICAC Follow-up Meeting on Methane

Paul,

Thanks for the quick response and for working around our schedules on the meeting. I wonder since so many people will be coming in from the mid-west and northeast if we couldn't perhaps have the meeting in the afternoon of the 18th? I think most could get in by 1pm or thereabout.

We will begin working on the slide presentation sometime over the next couple weeks and plan to get that to you along with some agenda topics.

Finally, one of our members from Johnson Matthey would like to phone in since they are located in Europe. Would it be possible to have a speaker phone in the room?

Sorry for all these requests.

Many thanks again,
Betsy

From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]
Sent: Monday, March 30, 2015 12:49 PM
To: Betsy Natz
Cc: Hargrove, Anne
Subject: RE: ICAC Follow-up Meeting on Methane

Betsy,

Great to hear from you. We should be able to make May 18th work. I am copying Anne Hargrove who will be able to get this meeting scheduled.

Best Regards,

Paul

Paul M. Gunning

Director, Climate Change Division

U.S. EPA (6207J)

1200 Pennsylvania Avenue

Washington, DC 20460

Direct (202) 343-9736

Fax (202) 343-2202

Cell (202) 251-1436

From: Betsy Natz [mailto:bnatz@icac.com]
Sent: Monday, March 30, 2015 11:03 AM
To: Gunning, Paul
Subject: ICAC Follow-up Meeting on Methane

Paul,

I have polled our companies that have an interest in attending the meeting with EPA on methane for their availability. The dates that work best for all is either May 18th or May 27th. The 27th is a bit more challenging but doable.

If this doesn't give you enough dates to choose from let me know and we can look to early June perhaps. Early to mid- May was not good due

to meetings we have scheduled at the state level.

Thanks again for your willingness to meet with us.

Betsy

Please note our new contact information:
Betsy Natz

Executive Director
Institute of Clean Air Companies
3033 Wilson Blvd., Suite 700

Arlington, VA 22201

571-858-3708 (office)

703-243-8696 (fax)

From: Gunning, Paul
Location: DCRoomWJCECW4355XXOAP/DC-OAR-OAP
Importance: Normal
Subject: ONE Future - Methane Challenge Decision / Call-in: Ex. 6 - Personal Privacy Code: Ex. 6 - Personal Privacy
Start Date/Time: Thur 12/17/2015 3:00:00 PM
End Date/Time: Thur 12/17/2015 3:50:00 PM

Changing date & time again, & also location – meeting will be Thursday Dec. 17 at 10 am in Room 4355XX, WJC-E, CW

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: monthly methane research and data call
Start Date/Time: Wed 9/30/2015 5:00:00 PM
End Date/Time: Wed 9/30/2015 6:00:00 PM

A few of us in OAR and ORD been having monthly general coordination check in calls on methane work.

We've decided to expand the invitation list for the call to include to others interested in methane research and data and to focus on specific topics or research papers each month, and also allow time for updates on activities.

For the 9/29 call, our plan is to discuss new research on Hi Flow samplers. I will send around some papers in advance of the call. Let me know if you have any questions. Thanks!

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: EDF comments on GHG Inventory call with David Lyon
Start Date/Time: Tue 5/5/2015 8:00:00 PM
End Date/Time: Tue 5/5/2015 9:00:00 PM
Environmental Defense Fund Comments - Draft 2015 GHG Inventory.pdf

From: Weitz, Melissa
Location: DCRoomWJCS4228AOAP/DC-OAR-OAP; Ex. 6 - Personal Privacy
Importance: Normal
Subject: call with EDF on new paper comparing oil and gas in national Inventories submitted to UNFCCC
Start Date/Time: Tue 4/21/2015 7:00:00 PM
End Date/Time: Tue 4/21/2015 8:00:00 PM

From: McKittrick, Alexis
Location: Mark's office
Importance: Normal
Subject: Pre call
Start Date/Time: Thur 3/19/2015 8:00:00 PM
End Date/Time: Thur 3/19/2015 8:30:00 PM

This is the pre-call on the meeting with Garvin re: methane reconciliation project

From: McKittrick, Alexis
Location: Mark's office; Ex. 6 - Personal Privacy
Importance: Normal
Subject: Methane reconciliation project & GHG Reporting Program requirements
Start Date/Time: Thur 3/19/2015 8:30:00 PM
End Date/Time: Thur 3/19/2015 9:30:00 PM

Call-in number: Ex. 6 - Personal Privacy

From: Weitz, Melissa
Location: DCRoomWJCS4228AOAP/DC-OAR-OAP
Importance: Normal
Subject: room for EDF call
Start Date/Time: Wed 4/8/2015 5:00:00 PM
End Date/Time: Wed 4/8/2015 6:00:00 PM

From: Thoma, Eben
Location: RTP-Line-Ex. 6 - Personal Privacy ECPB/Phone-Line/RTP-Conf-Bridge
Importance: Normal
Subject: EDF NG methane synthesis call time change Ex. 6 - Personal Privacy
Start Date/Time: Wed 4/8/2015 5:00:00 PM
End Date/Time: Wed 4/8/2015 6:00:00 PM

All,

Apologies for needing rescheduling the EDF call. We will lose some but this time works for many. This is a conference call only (no slides) with call-in # Ex. 6 - Personal Privacy

Thanks,

Eben

Thanks to Drew Nelson (copied) with EDF for the offer of a status call on their methane synthesis work.

This is our first attempt schedule this call and it may move a bit. We are not yet sure if this will be a call or a webinar (details sent later).

Melissa, this time is acceptable for your folks in OAP but I ask you to please forward to those on your list.

Background:
As we all know, EDF has been working to catalyze research on methane emissions from all parts of the natural gas supply chain. Some papers from these studies have already been published and a large number will be available in the May time frame. EDF is currently working with the DOE NETL LCA folks under a CRADA to perform a couple of different synthesis activities for this great effort. In this call EDF will provide information on elements of the synthesis design, projected timing, envisioned review/comment process, and the status of journal paper progress.

Thanks,

Eben

To: Franklin, Pamela[Franklin.Pamela@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Gunning, Paul
Sent: Mon 1/4/2016 4:40:50 PM
Subject: FW: methane

Ex. 5 - Deliberative Process

From: McCabe, Janet
Sent: Wednesday, December 30, 2015 2:36 PM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>; Stewart, Lori <Stewart.Lori@epa.gov>
Subject: methane

Hey everyone…..

Ex. 5 - Deliberative Process

Janet

To: Branning, Amy[Branning.Amy@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 3/11/2016 2:55:53 PM
Subject: RE: need help

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Friday, March 11, 2016 9:30 AM
To: Branning, Amy <Branning.Amy@epa.gov>
Cc: Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: need help

Hi Amy,

Ex. 5 - Deliberative Process

Melissa

From: Branning, Amy
Sent: Thursday, March 10, 2016 1:47 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>
Cc: Hambrick, Amy <Hambrick.Amy@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>
Subject: need help

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thank you in advance.

Amy Huang Branning

EPA Office of General Counsel

phone: (202) 564-1744

fax: (202) 564-5603 or (202) 564-0070

This message may contain sensitive, privileged information covered by the deliberative process, attorney-client and/or attorney work product privileges. If you believe you have received this e-mail in error, please notify me and delete the e-mail immediately.

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Clint Burklin[Clint.Burklin@erg.com]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Colin Hayes[Colin.Hayes@erg.com]; Marty Wolf[Marty.Wolf@erg.com]; Casey MacQueen[Casey.MacQueen@erg.com]
From: Weitz, Melissa
Sent: Tue 3/11/2014 9:30:46 PM
Subject: RE: TD - Analysis of ICF EDF report
PetroleumSystems1990-2012_28Jan14 Updated.xlsm
NaturalGasSystems_1990-2012_013114 (2) MW.xlsx

Ex. 5 - Deliberative Process

Thanks! Melissa

From: DeFigueiredo, Mark
Sent: Tuesday, March 11, 2014 5:26 PM
To: Clint Burklin
Cc: Weitz, Melissa; McKittrick, Alexis; Colin Hayes; Marty Wolf; Casey MacQueen
Subject: RE: TD - Analysis of ICF EDF report

Thanks everyone.

From: Clint Burklin [mailto:Clint.Burklin@erg.com]
Sent: Tuesday, March 11, 2014 3:08 PM
To: DeFigueiredo, Mark
Cc: Weitz, Melissa; McKittrick, Alexis; Colin Hayes; Marty Wolf; Casey MacQueen; Clint Burklin
Subject: RE: TD - Analysis of ICF EDF report

Mark,

Marty Wolf and Casey MacQueen will address the EDF report based on their experience assembling the 2011 inventory. However, they would greatly benefit from a copy of the 2012 inventory spreadsheet that was used to compare with the EDF study.

Marty and Casey will integrate this task into their current commitments, but will need until next Friday to complete the assessment (March 21st). Is that schedule acceptable? They also requested until tomorrow to assess the LOE they need to do this task. I'll try to have that to you by mid-day tomorrow.

Thanks,

Clint

From: DeFigueiredo, Mark [mailto:DeFigueiredo.Mark@epa.gov]
Sent: Monday, March 10, 2014 2:30 PM
To: Clint Burklin; Colin Hayes
Cc: Weitz, Melissa; McKittrick, Alexis
Subject: TD - Analysis of ICF EDF report

Deliberative

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks and let me know if you have any questions.

Mark

To: Sarofim, Marcus[Sarofim.Marcus@epa.gov]; DeAngelo, Ben[DeAngelo.Ben@epa.gov]; Froman, Sarah[Froman.Sarah@epa.gov]; Hyland, Dana[Hyland.Dana@epa.gov]; Landolfi, Robert[Landolfi.Robert@epa.gov]; Morales, Lourdes[Morales.Lourdes@epa.gov]; Schmeltz, David[Schmeltz.David@epa.gov]; Singer, Sarany[Singer.Sarany@epa.gov]; Zinsmeister, Emma[Zinsmeister.Emma@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Angel, Stacy[Angel.Stacy@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; Godwin, Dave[Godwin.Dave@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; LeFranc, Maurice[LeFranc.Maurice@epa.gov]; Newberg, Cindy[Newberg.Cindy@epa.gov]; Ohrel, Sara[Ohrel.Sara@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bartos, Scott[Bartos.Scott@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Costa, Allison[Costa.Allison@epa.gov]; Ferland, Henry[Ferland.Henry@epa.gov]; Fernandez, Roger[Fernandez.Roger@epa.gov]; Frankiewicz, Thomas[Frankiewicz.Thomas@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Ganguli, Swarupa[Ganguli.Swarupa@epa.gov]; Godlove, Chris[Godlove.Chris@epa.gov]; Ruiz, Felicia[Ruiz.Felicia@epa.gov]; Shimamura, Monica[Shimamura.Monica@epa.gov]; Somers, Jayne[Somers.Jayne@epa.gov]; Roos, Kurt[Roos.Kurt@epa.gov]; Grogan-McCulloch, Lisa[Grogan-McCulloch.Lisa@epa.gov]; Crimmins, Allison[Crimmins.Allison@epa.gov]; DeAngelo, Ben[DeAngelo.Ben@epa.gov]; Jantarasami, Lesley[Jantarasami.Lesley@epa.gov]; Martinich, Jeremy[Martinich.Jeremy@epa.gov]; McFarland, James[McFarland.James@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Sarofim, Marcus[Sarofim.Marcus@epa.gov]; Wirth, Tom[Wirth.Tom@epa.gov]; Hyland, Dana[Hyland.Dana@epa.gov]; Hargrove, Anne[Hargrove.Anne@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Schmeltz, Rachel[Schmeltz.Rachel@epa.gov]; Gordon, Jessica M[Gordon.Jessica@epa.gov]; Arling, Jeremy[Arling.Jeremy@epa.gov]; Bacanskas, Lisa[Bacanskas.Lisa@epa.gov]; Cook, BrianB[Cook.BrianB@epa.gov]; Cook, Carole[Cook.Carole@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Desai, Mausami[Desai.Mausami@epa.gov]; Godwin, Dave[Godwin.Dave@epa.gov]; Hannan, Michael[Hannan.Michael@epa.gov]; Hight, Cate[Hight.Cate@epa.gov]; Imegwu, Akachi[Imegwu.Akachi@epa.gov]; Jacobson, David[Jacobson.David@epa.gov]; Kolian, Michael[Kolian.Michael@epa.gov]; Litwack, Michael[Litwack.Michael@epa.gov]; Master, Barbora[Master.Barbora@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Ottinger, Deborah[Ottinger.Deborah@epa.gov]; Sherry, Christopher[Sherry.Chris@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Ganguli, Swarupa[Ganguli.Swarupa@epa.gov]; Frankiewicz, Thomas[Frankiewicz.Thomas@epa.gov]; Godlove, Chris[Godlove.Chris@epa.gov]; Akerman, Nancy[Akerman.Nancy@epa.gov]; Maranion, Bella[Maranion.Bella@epa.gov]; Rim, Elisa[Rim.Elisa@epa.gov]; Clayton, Margie[Clayton.Margie@epa.gov]; Palmer, Jamie[Palmer.Jamie@epa.gov]; Harris, Jarrod[Harris.Jarrod@epa.gov]
Cc: Callahan, Ed[Callahan.Ed@epa.gov]; DeBolt, Gloria[DeBolt.Gloria@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Karimjee, Anhar[Karimjee.Anhar@epa.gov]; Birnbaum, Rona[Birnbaum.Rona@epa.gov]
From: Gunning, Paul
Sent: Fri 12/6/2013 3:31:17 PM
Subject: Office of Atmospheric Program's Award Ceremony

I hope everyone is doing well and is excited for the upcoming end of the year celebrations. As we look ahead to the OAP awards ceremony, I wanted to be the first to congratulate you and receiving an EPA award!!!

Below you will find the list of award recipients associated with the work of the Climate Change Division. Your presence would be greatly appreciated at the Office of Atmospheric Program's Award Ceremony scheduled for Thursday, December 19 beginning at 1:00 pm at the Hamilton

Crowne Plaza Hotel ballroom located at the corner of 14th and K Streets N.W. Award recipients will receive their award and a certificate at the ceremony. If you are unable to attend the ceremony, please tell me and we will send you your award and certificate.

Thank you for your work with the Climate Change Division, and I hope to see you at the ceremony!!!!!

Paul

2012 Honor Awards

2017-2025 Light-Duty Vehicle Greenhouse Gas Standards Team-- Marcus Sarofim

Greenhouse Gas Litigation Team -- Ben De Angelo, Marcus

Sarofim

2013 Bronze Medal Recipients

The following staff will receive a Bronze Medal.

OAR Climate Change Adaptation Workgroup -- Sarah Froman, Dana Hyland, Robert Landolfi, Lourdes Morales, David Schmeltz, Sarany Singer, Emma Zinsmeister

Biennial Report and Climate Action Report Team -- Jameel Alsalam, Stacy Angel, Allen Fawcett, David Godwin, Leif Hockstad, William Irving, Maurice LeFranc, Cindy Newberg, Sara

Ohrel, Shaun Ragnauth, Suzanne Waltzer

Global Methane Initiative Team-- Scott Bartos, Carey Bylin, Allison Costa, Henry Ferland, Roger Fernandez, Tom Frankiewicz, Pamela Franklin, Swarupa Ganguli, Chris Godlove, Felicia Ruiz, Monica Shimamura, Jayne Somers, Kurt Roos

2013 Office Director Award Recipients

-

The following staff will receive an Office Director award.

-

➢· *Leadership Award Recipients*: Lisa Grogan-McCulloch, Allison Crimmins, Ben DeAngelo, Lesley Jantarasami, Jeremy Martinich, Jim McFarland, Kate Shouse, Marcus Sarofim, Tom Wirth, Dana Hyland, Anne Hargrove

-

➢· *Collaborator Award Recipients:* Isabel DeLuca, Rachel Schmeltz, Jessica Gordon, Jeremy Arling, Lisa Bacanskas, Brian Cook, Carole Cook, Mark DeFigueiredo, Mausami Desai, Dave Godwin, Lisa Grogan-McCulloch, Mike Hannan, Cate Hight, Akachi Imegwu, David Jacobson, Mike Kolian, Moshe Litwack, Barbora Master, Alexis McKittrick, Debbie Ottinger, Marcus Sarofim, Christopher Sherry, Carey Bylin, Swarupa Ganguli, Tom Frankiewicz, Chris Godlove, Nancy Akerman, Bella Maranion and Elisa Rim

-

➢· *Public Service Award Recipients:* Margie Clayton, Jamie Palmer and Jarrod Harris

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 10/9/2014 5:55:42 PM
Subject: energy in depth on the CAP report

http://energyindepth.org/national/four-facts-to-know-about-caps-flawed-methane-report/

In case you haven't seen this yet…

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 11/17/2014 4:03:52 PM
Subject: draft memo on hf factors for GHG inventory
NG Inv Improvement - HF Comp WO - EXPERT REV 2014 11 15.docx

I'm planning to speak generally about the planned update on the call today. See memo for background info.

I'm on the line now but it hasn't started, let me know if I called the wrong number.

To: Banks, Julius[Banks.Julius@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]
From: Gunning, Paul
Sent: Wed 3/2/2016 9:20:01 PM
Subject: FW: OG Methane Announcement Rough Concept

FYI.....looking like next Thursday.

Ex. 5 - Deliberative Process

Thanks

Paul

From: Goffman, Joseph
Sent: Wednesday, March 02, 2016 4:09 PM
To: Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Millett, John <Millett.John@epa.gov>; McCabe, Janet <McCabe.Janet@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: Fwd: OG Methane Announcement Rough Concept

FYI.

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: "Utech, Dan G. EOP/WHO" **Ex. 6 - Personal Privacy**
Date: March 2, 2016 at 4:06:45 PM EST
To: "Goffman, Joseph" <Goffman.Joseph@epa.gov>

Subject: RE: OG Methane Announcement Rough Concept

Ex. 5 - Deliberative Process

-----Original Message-----
From: Goffman, Joseph [mailto:Goffman.Joseph@epa.gov]
Sent: Wednesday, March 2, 2016 4:05 PM
To: Utech, Dan G. EOP/WHO <Dan_G. **Ex. 6 - Personal Privacy**
Cc: McCabe, Janet <McCabe.Janet@epa.gov>
Subject: Re: OG Methane Announcement Rough Concept

Ex. 5 - Deliberative Process

- Joseph Goffman
Sent from my iPhone

On Feb 25, 2016, at 8:12 PM, Goffman, Joseph <Goffman.Joseph@epa.gov <mailto:Goffman.Joseph@epa.gov> > wrote:

Ex. 5 - Deliberative Process

<OG Methane Announcement Rough Concept.docx>

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 9/25/2015 2:20:06 PM
Subject: RE: Subpart W rule TSD - for your review
2015_Prom_TSD_09-14-compare to proposal mw.docx

Hi Alexis,

Ex. 5 - Deliberative Process

Thanks!

Melissa

From: McKittrick, Alexis
Sent: Friday, September 18, 2015 3:04 PM
To: Weitz, Melissa
Subject: Subpart W rule TSD - for your review

Hi Melissa,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Take care,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Fri 2/26/2016 6:44:45 PM
Subject: RE: RTP visit

Okay-we can sort this out over the next few weeks. It's up to you guys whether you both want to go, and we can also think about whether it makes sense for others (e.g., methane challenge) to join. I'm out of the office next Monday-Thursday (but available over email Mon-Weds, and calling into the Tuesday fugitive update call), so I can't do next week.

From: McKittrick, Alexis
Sent: Friday, February 26, 2016 1:29 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: RE: RTP visit

Sorry – I meant Monday, March 21st. I'll add "calendar reading" to my list of professional development competencies…

From: McKittrick, Alexis
Sent: Friday, February 26, 2016 1:26 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: RE: RTP visit

I think Mark is out the week of the 7th and the 14th. I'm not sure if we could punt it beyond that because of timing though. Maybe Monday the 17th? If we can't wait that long, we could either scramble for a day trip next Wed/Thurs (ugh) or just go without Mark. ☹

Alexis

From: Weitz, Melissa
Sent: Friday, February 26, 2016 1:23 PM

To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: RTP visit

Talked to Brenda and she's open to us doing an RTP visit to talk through ICR stuff.

Maybe a day or afternoon week of 7th or 14th?

We can sort out the details when I'm back or over email while I'm out of the office.

To: Bylin, Carey[Bylin.Carey@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]
From: Weitz, Melissa
Sent: Fri 1/22/2016 3:14:31 PM
Subject: RE: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

Thanks!

It looks like the week of March 21st would work best for us so I am checking with Pam Lacey to see if we can set something up for one day that week.

Melissa

From: Bylin, Carey
Sent: Thursday, January 21, 2016 9:45 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>
Subject: RE: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

Hi Melissa,

I would like to attend and at this point would prefer earlier in March, but I don't have any hard conflicts except the Global Methane Forum.

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: Weitz, Melissa
Sent: Friday, January 15, 2016 4:15 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>
Subject: FW: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

The local tour of distribution facilities organized by AGA and WGA will be at some point in March, for one day, from around 9AM to 2PM.

Let me know if you are interested in attending, and if there are dates in March that will not work for you. I'll talk to Pam to learn more about the training center in Springfield she mentions in her email below.

Thanks!

Melissa

From: Gunning, Paul
Sent: Wednesday, January 13, 2016 9:22 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Blackman, Jerome <Blackman.Jerome@epa.gov>
Subject: FW: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

FYI

From: Lacey, Pam [mailto:PLacey@aga.org]
Sent: Tuesday, January 12, 2016 11:47 AM
To: Moore, Bruce <Moore.Bruce@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Figuereda.Mark@epa.gov; McKitrick.Alexis@epa.gov; Tang, Natalie <Tang.Natalie@epa.gov>
Subject: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

Bruce & all – At the EPA Gas STAR Annual Workshop this past November in Pittsburgh, I offered to arrange a field trip in the Washington DC area so that EPA folks could see natural gas distribution facilities to better understand ambiguities in the term "city gate" and the configuration of different types of metering and regulating (M&R) stations. I know several folks in the climate office have been on a similar tour last year, but I heard there is interest in taking some new climate team members along on a similar tour of natural gas distribution facilities focusing on methane issues. We also have some new folks at AGA that I would like to bring along on the tour.

Washington Gas is willing to lead a group tour in March 2016 of their facilities in the DC and Virginia suburban area.

➢· **Scheduling EPA-AGA-Washington Gas Field Trip in March 2016**: **Please let me know what days in March would work for EPA.** Bruce – I hear that you are up in DC pretty often – I want to make sure we pick a day that works for you and your team.

EPA folks can carpool to follow the Washington Gas van in their own cars, and of course, you would pay for your own lunches. The tour can include large custody transfer stations where Washington Gas (the local gas distribution utility) takes custody of the gas from upstream interstate pipelines – some of which step down pressure to distribution pressure (T-Ds), but many just reduce from a higher to a lower transmission pressure (T-Ts). The tour would also include some above ground and below ground vault M&Rs, and could include a demonstration of leak detection. Let me know if there is anything else you want to see.

In the past, a similar tour started at 9 am and concluded around 1-2 pm. We can meet you here at AGA or at a location out in the field.

Washington Gas also has a control room in and a training center with a wide variety of learning tools out in Springfield, Virginia. If we include that, we would add about 2 more hours and make it a full day.

Looking forward to the field trip! – Pam

Pamela A. Lacey | Chief Regulatory Counsel

Office of General Counsel

American Gas Association

400 N. Capitol St., NW | Washington, DC | 20001

P: 202-824-7340 | M: 202-809-6565 | placey@aga.org

The American Gas Association represents more than 200 local energy companies committed to the safe delivery of clean natural gas to over 68 million customers throughout the nation.

To: Thompson, Lisa[Thompson.Lisa@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 3/10/2016 2:24:35 PM
Subject: RE: OAP input needed on NSPS preamble
RTC compressor and controllers 3 10.docx

RTCs. Please let us know if you'd like to discuss any of these. Thanks!

From: Thompson, Lisa
Sent: Wednesday, March 09, 2016 9:13 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: OAP input needed on NSPS preamble

Ex. 5 - Deliberative Process

From: Thompson, Lisa
Sent: Monday, March 07, 2016 11:08 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: OAP input needed on NSPS preamble

Thanks Melissa! Hope Germany was awesome!

From: Weitz, Melissa
Sent: Monday, March 07, 2016 11:01 AM
To: Thompson, Lisa <Thompson.Lisa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: OAP input needed on NSPS preamble

Thanks Lisa!

Ex. 5 - Deliberative Process

Melissa

From: Thompson, Lisa
Sent: Monday, March 07, 2016 10:52 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: OAP input needed on NSPS preamble

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Thanks again!

Lisa

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]
From: Weitz, Melissa
Sent: Wed 9/23/2015 12:22:14 PM
Subject: Re: Downstream Initiative Meeting - October 22

Hi all,

Ex. 5 - Deliberative Process

Thanks,
Melissa

From: DeFigueiredo, Mark
Sent: Tuesday, September 22, 2015 3:59 PM
To: Bylin, Carey; Weitz, Melissa; Waltzer, Suzanne
Cc: McKittrick, Alexis; Alsalam, Jameel; Ragnauth, Shaun
Subject: RE: Downstream Initiative Meeting - October 22

Ex. 5 - Deliberative Process

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Bylin, Carey
Sent: Tuesday, September 22, 2015 3:55 PM
To: DeFigueiredo, Mark; Weitz, Melissa; Waltzer, Suzanne
Cc: McKittrick, Alexis; Alsalam, Jameel; Ragnauth, Shaun
Subject: RE: Downstream Initiative Meeting - October 22

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: DeFigueiredo, Mark
Sent: Tuesday, September 22, 2015 3:42 PM
To: Bylin, Carey; Weitz, Melissa; Waltzer, Suzanne
Cc: McKittrick, Alexis; Alsalam, Jameel; Ragnauth, Shaun
Subject: RE: Downstream Initiative Meeting - October 22

Minus Pamela and Suzie K. Adding other oil and gas team members.

Ex. 5 - Deliberative Process

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Bylin, Carey
Sent: Tuesday, September 22, 2015 3:33 PM
To: Franklin, Pamela; Weitz, Melissa; Waltzer, Suzanne; DeFigueiredo, Mark
Cc: Kocchi, Suzanne
Subject: RE: Downstream Initiative Meeting - October 22

Hi Pamela,

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: Franklin, Pamela
Sent: Tuesday, September 22, 2015 3:27 PM
To: Weitz, Melissa; Waltzer, Suzanne; DeFigueiredo, Mark; Bylin, Carey
Cc: Kocchi, Suzanne
Subject: FW: Downstream Initiative Meeting - October 22

Ex. 5 - Deliberative Process

I know folks are still out or on travel, but he would like a response soon so he can get back to Brian Jones.

Thanks

Pamela

From: Gunning, Paul
Sent: Tuesday, September 22, 2015 12:38 PM
To: Franklin, Pamela; Waltzer, Suzanne; DeFigueiredo, Mark; Bylin, Carey; Weitz, Melissa
Cc: Kocchi, Suzanne
Subject: FW: Downstream Initiative Meeting - October 22

Just following up on this, I would like to get back to Brian in the next day or so. Thanks!

From: Brian Jones [mailto:bjones@mjbradley.com]
Sent: Thursday, September 17, 2015 5:17 PM
To: Gunning, Paul
Cc: Franklin, Pamela; Bylin, Carey; Waltzer, Suzanne
Subject: Downstream Initiative Meeting - October 22

Hi Paul,

I hope you are doing well.

The fall meeting of the Downstream Natural Gas Initiative is scheduled for October 22 in Washington DC. I am pulling together the agenda now and hope EPA will be able to join us.

Topics areas of interest to DSI include the following:

- Methane strategy update
- Methane Challenge Program
- National GHG Inventory

Please let me know any thoughts you may have on the topic areas, attendees and timing.

Thanks,

Brian

****

Brian M. Jones

Senior Vice President, Strategy and Policy

M.J. Bradley & Associates, LLC.

47 Junction Square Drive

Concord, MA 01742

Direct: (978) 405-1269

Mobile: (508) 496-7807

Fax: (978) 369-7712

Email: bjones@mjbradley.com

Web: www.mjbradley.com

****

This transmission may contain information that is confidential or legally privileged and is intended solely for the addressee. If you are not the intended recipient, please do not use the information in this e-mail, including any attachment(s) in any way, delete this e-mail, and immediately contact the sender. Thank you for your cooperation.

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 10/8/2014 12:32:47 AM
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 8:29 PM, "Weitz, Melissa" <Weitz.Melissa@epa.gov> wrote:

Hi.

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 4:33 PM, "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov> wrote:

Looping in Melissa.

From: McKittrick, Alexis
Sent: Tuesday, October 07, 2014 12:50 PM
To: DeFigueiredo, Mark; Karimjee, Anhar
Cc: Waltzer, Suzanne
Subject: RE: CAP report: Methane releases from federal lands jumped after '08

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Alexis

To: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]
Cc: DeLuca, Isabel[DeLuca.Isabel@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/7/2015 1:36:31 PM
Subject: RE: INGAA invitation to AA McCabe for July 9th
INGAA CCD interaction background CCD 7 7 5 mw.docx

I added info to the inventory section.

From: Kocchi, Suzanne
Sent: Tuesday, July 07, 2015 8:38 AM
To: Weitz, Melissa; McKittrick, Alexis; Bylin, Carey
Cc: DeLuca, Isabel
Subject: FW: INGAA invitation to AA McCabe for July 9th
Importance: High

+Carey – didn't realize she wasn't on yesterday.

From: DeLuca, Isabel
Sent: Tuesday, July 07, 2015 8:36 AM
To: Weitz, Melissa; Kocchi, Suzanne
Cc: McKittrick, Alexis
Subject: RE: INGAA invitation to AA McCabe for July 9th

Melissa, thanks for the added bullet yesterday.

Ex. 5 - Deliberative Process

Thanks,

Isabel

From: Weitz, Melissa
Sent: Monday, July 06, 2015 5:09 PM
To: Kocchi, Suzanne
Cc: DeLuca, Isabel; McKittrick, Alexis
Subject: RE: INGAA invitation to AA McCabe for July 9th

Ex. 5 - Deliberative Process

From: Kocchi, Suzanne
Sent: Monday, July 06, 2015 5:02 PM
To: Weitz, Melissa
Cc: DeLuca, Isabel; McKittrick, Alexis
Subject: FW: INGAA invitation to AA McCabe for July 9th
Importance: High

Ex. 5 - Deliberative Process

Thanks!

From: DeLuca, Isabel
Sent: Monday, July 06, 2015 4:55 PM
To: Gunning, Paul; Kocchi, Suzanne
Subject: FW: INGAA invitation to AA McCabe for July 9th

Hi Paul,

Ex. 5 - Deliberative Process

Thanks!
Isabel

From: DeLuca, Isabel
Sent: Monday, July 06, 2015 4:32 PM
To: Dennis, Allison; Noonan, Jenny; Davis, Alison; Cortelyou-Lee, Jan
Cc: Krieger, Jackie; Lemon, Mollie; Friedman, Kristina; Millett, John
Subject: RE: INGAA invitation to AA McCabe for July 9th

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Let me know if you have questions or comments.

Best,

Isabel

From: DeLuca, Isabel
Sent: Monday, July 06, 2015 3:00 PM
To: Dennis, Allison; Noonan, Jenny; Davis, Alison; Cortelyou-Lee, Jan
Cc: Krieger, Jackie; Lemon, Mollie; Friedman, Kristina; Millett, John
Subject: RE: INGAA invitation to AA McCabe for July 9th

Hi Allison,

Ex. 5 - Deliberative Process

Please let me know if you have any questions.

Isabel

From: Dennis, Allison
Sent: Monday, July 06, 2015 10:27 AM

To: Noonan, Jenny; DeLuca, Isabel; Davis, Alison; Cortelyou-Lee, Jan
Cc: Krieger, Jackie; Lemon, Mollie; Friedman, Kristina; Millett, John
Subject: RE: INGAA invitation to AA McCabe for July 9th

+ Jan for awareness

From: Dennis, Allison
Sent: Wednesday, July 01, 2015 1:28 PM
To: Noonan, Jenny; DeLuca, Isabel; Davis, Alison
Cc: Krieger, Jackie; Lemon, Mollie; Friedman, Kristina; Millett, John
Subject: RE: INGAA invitation to AA McCabe for July 9th

Ex. 5 - Deliberative Process

Happy to answer any questions and provide more information. /Allison

From: Dennis, Allison
Sent: Monday, June 29, 2015 6:59 PM
To: Noonan, Jenny; DeLuca, Isabel; Davis, Alison
Cc: Krieger, Jackie; Lemon, Mollie; Friedman, Kristina; Millett, John
Subject: RE: INGAA invitation to AA McCabe for July 9th

Ex. 5 - Deliberative Process

From: Dennis, Allison
Sent: Monday, June 29, 2015 5:44 PM
To: Noonan, Jenny; DeLuca, Isabel; Davis, Alison
Cc: Krieger, Jackie; Lemon, Mollie; Friedman, Kristina; Millett, John
Subject: FW: INGAA invitation to AA McCabe for July 9th

Hi all,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Theresa Pugh [mailto:tpugh@ingaa.org]
Sent: Monday, June 29, 2015 11:54 AM
To: Drinkard, Andrea; Dennis, Allison
Cc: Nichole Willison; Dewey, Amy; Browne, Cynthia; Atkinson, Emily
Subject: INGAA invitation to AA McCabe for July 9th

Good morning, Andrea and Allison:

We have confirmed Ms. McCabe's talk on July 9th. It is located at the Westin Georgetown at 2350 M Street. (The details will be on the form that you asked us to fill out).

Might I inquire if

(a) Ms. McCabe will have any other staff people with her at the July 9th meeting and, if so, may I get their names/titles?

(b) Would she be comfortable with a lavalier microphone to ensure that everyone can hear her clearly? It is not always easy to predict the acoustics of meeting rooms in advance. I tend to lean toward mics, especially for women, since sometimes women's voices don't carry as well in elongated rooms or if there are pillars.

Thank you.

Theresa

Theresa Pugh

Vice President

Environment, Health & Construction Policy

Interstate Natural Gas Association of America (INGAA)

20 F Street, NW

Suite 450

Washington, D. C. 20001

tpugh@ingaa.org

202-216-5955

From: Drinkard, Andrea [mailto:Drinkard.Andrea@epa.gov]
Sent: Friday, June 19, 2015 3:08 PM
To: Theresa Pugh; Dennis, Allison
Cc: Nichole Willison; Dewey, Amy; Browne, Cynthia; Atkinson, Emily

Subject: RE: INGAA invitation to AA McCabe

Hi Theresa,

Thank you so much for the invitation and it's good to hear from you. Your email is very timely as we just had our scheduling meeting today. I spoke with Janet and she would be delighted to accept your invitation to come to your board meeting. After looking at the calendar, we think we can make 9:30-10:30AM work on July 9th. Would that work for your agenda?

I'm also attaching our event form to this email. If you could fill it out and get it back to us at your earliest convenience that will help us prep for the event.

Ex. 6 - Personal Privacy

Thanks again for the invite and looking forward to it!

-Andrea-

Andrea Drinkard

Deputy Communications Director

EPA Office of Air and Radiation

202.564.1601

From: Theresa Pugh [mailto:tpugh@ingaa.org]
Sent: Friday, June 19, 2015 1:20 PM
To: Drinkard, Andrea; Dennis, Allison

Cc: Nichole Willison; Dewey, Amy
Subject: INGAA invitation to AA McCabe

Dear Ms. Drinkard and Ms. Dennis:

Good afternoon. INGAA is writing to invite Janet to speak at the INGAA July 9 Board of Directors meeting as described in the letter. As described in the letter, INGAA represents 200,000 miles of U. S. interstate natural gas pipelines.

Please note that if you respond you should make sure you are using the INGAA domain address not my prior e mail address that was used often on behalf of another industry. I am copying Ms. Dewey of the Administrator's office as she is familiar with our organization.

Thank you very much.

Theresa

Theresa Pugh

Vice President

Environment, Health & Construction Policy

Interstate Natural Gas Association of America (INGAA)

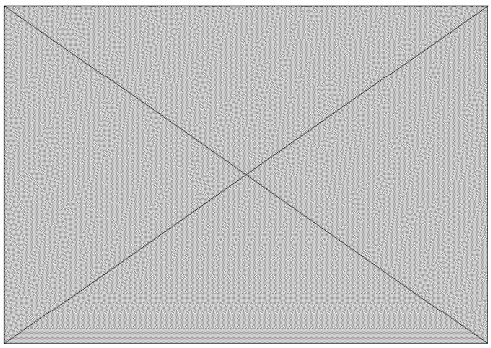
20 F Street, NW

Suite 450

Washington, DC 20001

202-216-5955

tpugh@ingaa.org



To: Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/28/2015 5:24:21 PM
Subject: RE: Oil and gas interagency comments tasked to OAP

Draft below.

Ex. 5 - Deliberative Process

Additional information for the commenter:

Ex. 5 - Deliberative Process

From: Alsalam, Jameel
Sent: Tuesday, July 28, 2015 11:06 AM
To: Waltzer, Suzanne; Weitz, Melissa; DeFigueiredo, Mark; McKittrick, Alexis
Subject: Oil and gas interagency comments tasked to OAP

Hey y'all,

I just looked through the two documents that Amy Hambrick posted to the share drive with interagency comments that we are trying to respond to by Friday. I was looking for ones that had been specifically tasked to OAP.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Jameel

Jameel Alsalam

Economist, Climate Change Division

U.S. Environmental Protection Agency

voice: (202) 343-9807

fax: (202) 343-2202

alsalam.jameel@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 10/28/2015 8:13:16 PM
Subject: latest draft agenda
DRAFT agenda--2015 Stakeholder Workshop on Oil and Gas in GHGI and GHGRP 10.28.docx

Can you take a look and let me know if anything seems off? My typo rate is very high this week and I'm sure I'm not catching all of them…

To: Hodson, Elke[Elke.Hodson@Hq.Doe.Gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Heath, Garvin (NREL)[garvin.heath@nrel.gov]; Bradbury, James[James.Bradbury@Hq.Doe.Gov]
Cc: Steinberg, Daniel (NREL)[daniel.steinberg@nrel.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/28/2015 2:22:49 PM
Subject: RE: external peer review draft of JISEA inventory report

Thanks Elke,

We have this on our calendars. Let me know if this time does not end up working out for your group.

We can use my call in number-- **Ex. 6 - Personal Privacy**

Best,

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Hodson, Elke [mailto:Elke.Hodson@Hq.Doe.Gov]
Sent: Monday, July 27, 2015 6:35 PM
To: McKittrick, Alexis; Heath, Garvin (NREL); Weitz, Melissa; Bradbury, James
Cc: Steinberg, Daniel (NREL); DeFigueiredo, Mark

Subject: RE: external peer review draft of JISEA inventory report

Hi Alexis, DOE can do 4-5pm on Thursday. I think that is the same availability that NREL has, but they should confirm.

Best, Elke

From: McKittrick, Alexis [mailto:McKittrick.Alexis@epa.gov]
Sent: Monday, July 27, 2015 10:01 AM
To: Heath, Garvin (NREL); Weitz, Melissa; Bradbury, James
Cc: Hodson, Elke; Steinberg, Daniel (NREL); DeFigueiredo, Mark
Subject: RE: external peer review draft of JISEA inventory report

Hello Garvin,

Looking at schedules quickly, Thursday afternoon (1PM-5PM) appears best for folks on our end to squeeze in a pre-brief this week. Let us know if there are times that afternoon that work for you all. Melissa and Mark will be back in the office tomorrow, so we can firm everything up then.

Thanks,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

From: Heath, Garvin [mailto:Garvin.Heath@nrel.gov]
Sent: Friday, July 24, 2015 5:11 PM
To: Weitz, Melissa; Bradbury, James (HQ)
Cc: Hodson, Elke (HQ); Steinberg, Daniel; DeFigueiredo, Mark; McKittrick, Alexis
Subject: RE: external peer review draft of JISEA inventory report

Dear Melissa, Mark and Alexis

I realize Melissa is away from the office now, but wanted to get back to you all with regard to EPA's request for a pre-briefing next week. EPSA will be looking at their availability to offer such a pre-briefing focusing on the technical content but including discussion of roll-out as EPA has questions. If you all would please also look for availability of those whom you would like to attend this briefing, please let us know as many time slots as possible. It will be tough to coordinate on short notice I am sure, but we will all do our best. We look forward to hearing back from you all soon.

Cheers to a nice weekend

Garvin

Garvin Heath, PhD
National Renewable Energy Laboratory
(o) 303-384-7460
garvin.heath@nrel.gov

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Monday, July 20, 2015 8:31 AM
To: Bradbury, James (HQ); Heath, Garvin

Cc: Hodson, Elke (HQ); Steinberg, Daniel; DeFigueiredo, Mark; McKittrick, Alexis
Subject: RE: external peer review draft of JISEA inventory report

Hello,

Thanks for the opportunity to review the draft JISEA report, and for your review and incorporation of our previous comments.

We reviewed the document and have a number of what should be pretty straightforward comments.

We're happy to discuss these. There are some questions/comments on the development of the appendix figures that are probably worth talking through.

Best,

Melissa

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Monday, July 06, 2015 10:55 AM
To: Weitz, Melissa; Heath, Garvin (NREL)
Cc: Hodson, Elke; Steinberg, Daniel (NREL); DeFigueiredo, Mark
Subject: RE: external peer review draft of JISEA inventory report

Hey Melissa,

I think Garvin may be out of the country. Attached are the files in MSWord format.

Best,

James

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Monday, July 06, 2015 10:32 AM
To: Heath, Garvin (NREL)
Cc: Hodson, Elke; Steinberg, Daniel (NREL); DeFigueiredo, Mark; Bradbury, James
Subject: RE: external peer review draft of JISEA inventory report

Hello Garvin,

Thank you for sending a copy of the JISEA report. It looks like the file was sent as a zip file--- we are unable to receive zip files at EPA, but there is a workaround. Can you change the extension of the file from zip to something else (".epa" usually works)? We can then save it and convert it back to a zip file and open it.

Thanks,

Melissa

From: Heath, Garvin [mailto:Garvin.Heath@nrel.gov]
Sent: Wednesday, July 01, 2015 4:18 PM
To: Weitz, Melissa
Cc: Hodson, Elke (HQ); Steinberg, Daniel; DeFigueiredo, Mark; Bradbury, James (HQ)
Subject: RE: external peer review draft of JISEA inventory report

Dear Melissa and Mark

As requested, we are providing you an advance look at the final draft of the JISEA NG methane inventory report. I'm happy to report that we had robust engagement from reviewers from several perspectives and we feel we have been able to navigate revisions to satisfy the comments of all. We hope that you will find that your previous comments were satisfactorily addressed, but please let us know if you have any remaining concerns. We will be completing final management reviews at NREL on the 20th of July and anticipate moving quickly to publication thereafter. If

you have any further feedback, as much as possible please provide them prior to the 20th. Note that simultaneously EPSA is conducting a final review and we will be conducting a final editorial review.

Happy 4th of July weekend!

Cheers

Garvin

PS—I will be out of the office July 2-19. I'll be checking email somewhat during the week of July 13. Fingers crossed that I don't boil away in Madrid!

Garvin Heath, PhD
National Renewable Energy Laboratory
(o) 303-384-7460
garvin.heath@nrel.gov

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Wednesday, February 04, 2015 8:52 AM
To: Heath, Garvin
Cc: Hodson, Elke (FELLOW) (HQ); Steinberg, Daniel; DeFigueiredo, Mark
Subject: RE: external peer review draft of JISEA report

Hello Garvin,

Thank you for the opportunity to review the draft JISEA report. EPA has a number of comments on the report's description and characterization of the GHG Inventory data and development process--please see below and in the attached.

I'm happy to walk through these with you. Let me know if you'd like me to set up a call.

Best,

Melissa

EPA general comments on JISEA report

-

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-

-

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

-

From: Heath, Garvin [mailto:Garvin.Heath@nrel.gov]
Sent: Tuesday, January 20, 2015 5:50 PM
To: Weitz, Melissa; DeFigueiredo, Mark
Cc: Hodson, Elke (FELLOW) (HQ); Steinberg, Daniel
Subject: external peer review draft of JISEA report
Importance: High

Dear Melissa and Mark

It was a pleasure to speak with you both last week. Thank you for keeping me on your list of folks to update with all that you two and your programs are doing! I'm glad that some of the things I'm working on continue to be of interest to you. Speaking of which, attached is an external peer review draft of a JISEA report tentatively entitled: "Estimating U.S. Greenhouse Gas Emissions from the Natural Gas Supply Chain: Inventory Approaches, Current Estimates, Challenges and Opportunities." This report has been sponsored by DOE's Office of Energy Policy and Systems Analysis (EPSA); Elke Hodson from that office is copied here.

With the focus of this report on the US GHG Inventory, we welcome your review and comment. You may share the draft internally from those you feel should review it; if you are able to consolidate comments, that's great, but don't worry if not. EPSA would like to get this report out as soon as possible, so **please return comments by Friday Jan 30** (earlier the better ☺). As it is a draft, please do not cite, quote or distribute beyond those immediately needing to review it.

You are welcome to redline your comments (track changes) or develop a separate sheet of them.

If the latter, please refer to line numbers. Please note that issues of formatting, including developing a consistent reference/citation style, will be addressed in final copy editing, so no need to direct attention to those kinds of issues.

Thank you for your interest and time!

Cheers

Garvin

Garvin Heath, PhD

Technology Systems and Sustainability Analysis Group | Strategic Energy Analysis Center

National Renewable Energy Laboratory

Research Associate

University of Colorado at Boulder

NREL mailing: 15013 Denver West Parkway, Mail Stop RSF300, Golden, CO 80401
NREL physical: RSF/B340
garvin.heath@nrel.gov
(o) 303-384-7460 | (m) 303-653-3164 | (f) 303-630-2085

To: Bylin, Carey[Bylin.Carey@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Branning, Amy[Branning.Amy@epa.gov]
Cc: Franklin, Pamela[Franklin.Pamela@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]
From: Weitz, Melissa
Sent: Tue 3/8/2016 9:57:00 PM
Subject: RE: ONE Future Status Document

Looks good to me.

From: Bylin, Carey
Sent: Tuesday, March 08, 2016 4:22 PM
To: Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>
Cc: Franklin, Pamela <Franklin.Pamela@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>
Subject: ONE Future Status Document

HI all,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

To: Gunning, Paul[Gunning.Paul@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Blackman, Jerome[Blackman.Jerome@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/14/2016 7:00:22 PM
Subject: RE: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

Yes-there's a lot of interest from the oil and gas team and I'll follow up with Pam Lacey to start coordinating on possible dates for the tour.

From: Gunning, Paul
Sent: Wednesday, January 13, 2016 10:04 AM
To: Franklin, Pamela <Franklin.Pamela@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Blackman, Jerome <Blackman.Jerome@epa.gov>
Subject: RE: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

Yes, it is a great opportunity.

Melissa – can you please work with Pam and the oil and gas team to coordinate our participation (I will not be going). Thanks!

Paul

From: Franklin, Pamela
Sent: Wednesday, January 13, 2016 9:35 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Blackman, Jerome <Blackman.Jerome@epa.gov>

Subject: RE: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

Exciting opportunity!

Would love the opportunity for our folks to go. One immovable conflict for us is Global Methane Forum, the entire week of March 28.

From: Gunning, Paul
Sent: Wednesday, January 13, 2016 9:22 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Blackman, Jerome <Blackman.Jerome@epa.gov>
Subject: FW: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

FYI

From: Lacey, Pam [mailto:PLacey@aga.org]
Sent: Tuesday, January 12, 2016 11:47 AM
To: Moore, Bruce <Moore.Bruce@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Figuereda.Mark@epa.gov; McKitrick.Alexis@epa.gov; Tang, Natalie <Tang.Natalie@epa.gov>
Subject: Invitation for a Field Trip in March - Nat Gas Distribution - Custody Transfer Station, Transmission to Distribution Pressure Reduction Stations, etc.

Bruce & all – At the EPA Gas STAR Annual Workshop this past November in Pittsburgh, I offered to arrange a field trip in the Washington DC area so that EPA folks could see natural gas distribution facilities to better understand ambiguities in the term "city gate" and the configuration of different types of metering and regulating (M&R) stations. I know several folks

in the climate office have been on a similar tour last year, but I heard there is interest in taking some new climate team members along on a similar tour of natural gas distribution facilities focusing on methane issues. We also have some new folks at AGA that I would like to bring along on the tour.

Washington Gas is willing to lead a group tour in March 2016 of their facilities in the DC and Virginia suburban area.

➢· **Scheduling EPA-AGA-Washington Gas Field Trip in March 2016**: **Please let me know what days in March would work for EPA.** Bruce – I hear that you are up in DC pretty often – I want to make sure we pick a day that works for you and your team.

EPA folks can carpool to follow the Washington Gas van in their own cars, and of course, you would pay for your own lunches. The tour can include large custody transfer stations where Washington Gas (the local gas distribution utility) takes custody of the gas from upstream interstate pipelines – some of which step down pressure to distribution pressure (T-Ds), but many just reduce from a higher to a lower transmission pressure (T-Ts). The tour would also include some above ground and below ground vault M&Rs, and could include a demonstration of leak detection. Let me know if there is anything else you want to see.

In the past, a similar tour started at 9 am and concluded around 1-2 pm. We can meet you here at AGA or at a location out in the field.

Washington Gas also has a control room in and a training center with a wide variety of learning tools out in Springfield, Virginia. If we include that, we would add about 2 more hours and make it a full day.

Looking forward to the field trip! – Pam

Pamela A. Lacey | Chief Regulatory Counsel

Office of General Counsel

American Gas Association

400 N. Capitol St., NW | Washington, DC | 20001

P: 202-824-7340 | M: 202-809-6565 | placey@aga.org

The American Gas Association represents more than 200 local energy companies committed to the safe delivery of clean natural gas to over 68 million customers throughout the nation.

To: Thompson, Lisa[Thompson.Lisa@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]
From: Weitz, Melissa
Sent: Thur 12/10/2015 8:23:04 PM
Subject: RE: Oil and Gas NSPS -- Small Teams
DRAFT NSPS Small Teams_v2 OAP updates.docx

Hi Lisa,

The CCD oil and gas team discussed the small teams and we have a few requested additions to some of the teams (in purple in the attached). Let me know if you have any questions.

Thank you!

Melissa

From: Thompson, Lisa
Sent: Tuesday, December 08, 2015 12:01 PM
To: Spells, Charlene <Spells.Charlene@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Sarofim, Marcus <Sarofim.Marcus@epa.gov>; Garwood, Gerri <Garwood.Gerri@epa.gov>; Snyder, Jennifer <Snyder.Jennifer@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Mia, Marcia <Mia.Marcia@epa.gov>; Roder, Aileen <Roder.Aileen@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>
Subject: RE: Oil and Gas NSPS -- Small Teams

Thanks everyone for your helpful comments on the small teams, and bearing with me in this attempt to streamline the NSPS finalization ☺

Ex. 5 - Deliberative Process

Thanks!

Lisa

From: Thompson, Lisa
Sent: Thursday, December 03, 2015 3:18 PM
To: Spells, Charlene <Spells.Charlene@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Sarofim, Marcus <Sarofim.Marcus@epa.gov>; Garwood, Gerri <Garwood.Gerri@epa.gov>; Snyder, Jennifer <Snyder.Jennifer@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Mia, Marcia <Mia.Marcia@epa.gov>
Subject: Oil and Gas NSPS -- Small Teams

Oil and Gas NSPS Team --

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks!

Lisa

Lisa Thompson

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919-541-9775

To: Moore, Bruce[Moore.Bruce@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Blackman, Jerome[Blackman.Jerome@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]
Cc: Cozzie, David[Cozzie.David@epa.gov]; Davis, Alison[Davis.Alison@epa.gov]
From: Weitz, Melissa
Sent: Tue 9/8/2015 3:10:57 PM
Subject: RE: Inventory O&G pie charts

Ex. 5 - Deliberative Process

From: Moore, Bruce
Sent: Tuesday, September 08, 2015 10:15 AM
To: Hambrick, Amy; Waltzer, Suzanne; Bylin, Carey; Franklin, Pamela; Blackman, Jerome; DeFigueiredo, Mark; McKittrick, Alexis; Ragnauth, Shaun; Alsalam, Jameel; Macpherson, Alex
Cc: Weitz, Melissa; Cozzie, David; Davis, Alison
Subject: RE: Inventory O&G pie charts

Ex. 5 - Deliberative Process

B

Bruce Moore

Senior Technical Advisor - Oil & Natural Gas Sector

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

(919) 541-5460

moore.bruce@epa.gov

For information, visit: *www.epa.gov/airquality/oilandgas*

From: Hambrick, Amy
Sent: Tuesday, September 08, 2015 10:06 AM
To: Waltzer, Suzanne; Bylin, Carey; Franklin, Pamela; Blackman, Jerome; DeFigueiredo, Mark; McKittrick, Alexis; Ragnauth, Shaun; Alsalam, Jameel; Moore, Bruce; Macpherson, Alex
Cc: Weitz, Melissa; Cozzie, David; Davis, Alison
Subject: RE: Inventory O&G pie charts

Thanks Suzie,

I have one comment in the attached.

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

From: Waltzer, Suzanne
Sent: Friday, September 04, 2015 12:24 PM
To: Bylin, Carey; Franklin, Pamela; Blackman, Jerome; DeFigueiredo, Mark; McKittrick, Alexis; Ragnauth, Shaun; Alsalam, Jameel; Moore, Bruce; Hambrick, Amy; Macpherson, Alex
Cc: Weitz, Melissa; Cozzie, David; Davis, Alison

Subject: Inventory O&G pie charts

All,

Attached are 2013 inventory pie charts that show the breakdown of methane emissions by sector based on publically available data from the inventory. Thanks so much to Melissa for developing these! This is something we post annually on the Gas STAR web site and use in presentations, etc. We made a few small changes this year to better more with the white paper source categories (e.g., separating fugitive and vented sources).

We wanted to get your input on whether this breakdown is helpful. Any questions or suggestions for different categorization or breakdown of emission sources?

Once we finish the technical review, we will go through the appropriate communications/web review as well before posting. If you can provide any comments or feedback by Thursday of next week, that would be great.

Thanks!

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Frantz, Chris[Frantz.Chris@epa.gov]; Joanne Oloughlin[oloughlin.joanne@ecrweb.com]; Spells, Charlene[Spells.Charlene@epa.gov]
Cc: hendricks.david@ecrweb.com[hendricks.david@ecrweb.com]; hanzel.veronica@ecrweb.com[hanzel.veronica@ecrweb.com]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 2/23/2015 6:07:50 PM
Subject: RE: Number of Natural Gas Processing Plants/Locations Question

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Monday, February 23, 2015 12:32 PM
To: Frantz, Chris; Joanne Oloughlin; Spells, Charlene
Cc: hendricks.david@ecrweb.com; hanzel.veronica@ecrweb.com; Weitz, Melissa; McKittrick, Alexis
Subject: RE: Number of Natural Gas Processing Plants/Locations Question

Hi Joanne –

Ex. 5 - Deliberative Process

I've copied my colleague Alexis McKittrick who is the subject matter expert for Subpart W.

Best - Mark

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Frantz, Chris
Sent: Saturday, February 21, 2015 9:16 AM
To: Joanne Oloughlin; Spells, Charlene
Cc: hendricks.david@ecrweb.com; hanzel.veronica@ecrweb.com; Weitz, Melissa; DeFigueiredo, Mark
Subject: RE: Number of Natural Gas Processing Plants/Locations Question

Joanne,

Ex. 5 - Deliberative Process

Charlene, I CCed Melissa and Mark on this email. I'd recommend connecting with them.

Chris Frantz

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919 541-4312

From: Joanne Oloughlin [mailto:oloughlin.joanne@ecrweb.com]
Sent: Friday, February 20, 2015 12:44 PM
To: Spells, Charlene
Cc: Frantz, Chris; hendricks.david@ecrweb.com; hanzel.veronica@ecrweb.com
Subject: Number of Natural Gas Processing Plants/Locations Question

Charlene,

Ex. 5 - Deliberative Process

Thanks ahead of time.

Regards,

Joanne O'Loughlin

EC/R Incorporated

Phone: 919-433-8329

E-mail: oloughlin.joanne@ecrweb.com

From: Joanne Oloughlin [mailto:oloughlin.joanne@ecrweb.com]
Sent: Wednesday, February 18, 2015 3:34 PM
To: spells.charlene@epa.gov
Cc: frantz.chris@epa.gov
Subject: FYI - RE: OTR Impacts.

Charlene,

Ex. 5 - Deliberative Process

Hopefully, we will all be working tomorrow! Stay warm.

Regards,

Joanne O'Loughlin

EC/R Incorporated

Environmental Scientist

Phone: 919-433-8329

E-mail: oloughlin.joanne@ecrweb.com

From: Joanne Oloughlin [mailto:oloughlin.joanne@ecrweb.com]
Sent: Friday, February 13, 2015 11:52 AM
To: 'Frantz, Chris'
Cc: spells.charlene@epa.gov
Subject: RE: Equipment Leaks LDAR Provisions (Oil and Natural Gas Sector Meeting - CTG Draft Chapter/Model Rule Status and Next Steps)

Great. Thanks. Joanne

From: Frantz, Chris [mailto:Frantz.Chris@epa.gov]
Sent: Friday, February 13, 2015 11:45 AM
To: Joanne Oloughlin
Cc: Spells, Charlene
Subject: RE: Equipment Leaks LDAR Provisions (Oil and Natural Gas Sector Meeting - CTG Draft Chapter/Model Rule Status and Next Steps)

Ex. 5 - Deliberative Process

Chris Frantz

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919 541-4312

From: Joanne Oloughlin [mailto:oloughlin.joanne@ecrweb.com]
Sent: Friday, February 13, 2015 11:10 AM
To: Frantz, Chris
Cc: Spells, Charlene
Subject: FW: Equipment Leaks LDAR Provisions (Oil and Natural Gas Sector Meeting - CTG Draft Chapter/Model Rule Status and Next Steps)

Oops…sorry Chris. I certainly don't want you to feel left out.

From: Joanne Oloughlin [mailto:oloughlin.joanne@ecrweb.com]
Sent: Friday, February 13, 2015 11:09 AM
To: spells.charlene@epa.gov
Subject: RE: Equipment Leaks LDAR Provisions (Oil and Natural Gas Sector Meeting - CTG Draft Chapter/Model Rule Status and Next Steps)

Charlene,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Regards,

Joanne.

From: Joanne Oloughlin [mailto:oloughlin.joanne@ecrweb.com]
Sent: Thursday, February 12, 2015 4:22 PM
To: 'spells.charlene@epa.gov'
Cc: frantz.chris@epa.gov; hendricks.david@ecrweb.com; hanzel.veronica@ecrweb.com
Subject: Oil and Natural Gas Sector Meeting - CTG Draft Chapter/Model Rule Status and Next Steps

Good Afternoon Charlene,

Ex. 5 - Deliberative Process

Regards,

Joanne O'Loughlin

EC/R Incorporated

Environmental Scientist

Phone: 919-433-8329

E-mail: oloughlin.joanne@ecrweb.com

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 5/7/2015 3:43:31 PM
Subject: RE: pneumatics--Preamble comments -

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Wednesday, May 06, 2015 7:31 PM
To: Weitz, Melissa
Cc: McKittrick, Alexis
Subject: Re: pneumatics--Preamble comments -

Ex. 5 - Deliberative Process

Sent from my iPhone

On May 6, 2015, at 4:57 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Ex. 5 - Deliberative Process

From: Waltzer, Suzanne
Sent: Tuesday, May 05, 2015 10:31 AM
To: DeFigueiredo, Mark; McKittrick, Alexis; Weitz, Melissa
Cc: Ragnauth, Shaun; Alsalam, Jameel
Subject: Preamble comments - your input needed
Importance: High

Ex. 5 - Deliberative Process

discussion -

Ex. 5 - Deliberative Process

[1] Subpart W Continuous Bleed Controller Emission Factors (Table W-1A of 40 CFR Part 98, Subpart W). Available at http://www.ecfr.gov/cgi-bin/text-idx?SID=dda4d1715e9926ee3517ac08e6258817&node=40:21.0.1.1.3.23&rgn=div6#ap40.21.98_1238

To: Moore, Bruce[Moore.Bruce@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Holmes, Carol[Holmes.Carol@epa.gov]; Mathias, Scott[Mathias.Scott@epa.gov]
Cc: Davis, Alison[Davis.Alison@epa.gov]
From: Weitz, Melissa
Sent: Tue 10/27/2015 7:15:28 PM
Subject: RE: Help on Vetting some R8 points for panel on 10/28
R8 DRA CSU_NGsymposium_TalkingPoints102315 CB to AD BM 10-26 mw.docx

Minor edit to GHG Inventory part and some edits to GHGRP bullet (please take a look Alexis and Mark).

From: Moore, Bruce
Sent: Tuesday, October 27, 2015 2:59 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Snyder, Jennifer <Snyder.Jennifer@epa.gov>; Holmes, Carol <Holmes.Carol@epa.gov>; Mathias, Scott <Mathias.Scott@epa.gov>
Cc: Davis, Alison <Davis.Alison@epa.gov>
Subject: Help on Vetting some R8 points for panel on 10/28
Importance: High

Alison and I (OAR) have been asked by R8 (Cindy Beeler) to vet some bullets that their Deputy RA will be using in a panel setting TOMORROW. This came in over the weekend. We realized that some of the points need to be looked at by others within and beyond OAR.

Alison started the markup and I continued. We flagged areas for specific offices to check. Look for your office/name in the comment bubbles. Not much for any single office/person.

Thanks so much,

Bruce

Bruce Moore

Senior Technical Advisor - Oil & Natural Gas Sector

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

(919) 541-5460

moore.bruce@epa.gov

For information, visit: *www.epa.gov/airquality/oilandgas*

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/14/2016 2:22:17 PM
Subject: Re: Reporter Q on GHG "leaks"

Ex. 5 - Deliberative Process

Sent from my iPhone

On Jan 14, 2016, at 8:43 AM, DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov> wrote:

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Wednesday, January 13, 2016 5:56 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Cc: Weitz, Melissa <Weitz.Melissa@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: Re: Reporter Q on GHG "leaks"

Ex. 5 - Deliberative Process

On Jan 13, 2016, at 5:15 PM, DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov> wrote:

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Wednesday, January 13, 2016 5:04 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: RE: Reporter Q on GHG "leaks"

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Wednesday, January 13, 2016 8:23 AM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Cook, BrianB <Cook.BrianB@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>
Subject: RE: Reporter Q on GHG "leaks"

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Wednesday, January 13, 2016 8:12 AM
To: Banks, Julius <Banks.Julius@epa.gov>; Cook, BrianB <Cook.BrianB@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>
Subject: Reporter Q on GHG "leaks"

Hi all,

We have a reporter question about "corporate caused accidents that have led directly to climate change" (e.g. past examples of Aliso type leaks). Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

Isabel

On Jan 11, 2016, at 4:13 PM, Leah Messinger Smithers <Ex. 6 - Personal Privacy wrote:

Hello Enesta,

Brady Phillips at NOAA suggested I get in touch with you for a story I'm working on on corporate-caused accidents that have led directly to climate change. This is in light of the ongoing Aliso Canyon methane leak in Southern California. I'm trying to put this current leak in the context of other GHG leaks in the past.

Thanks in advance,

Leah

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 3/8/2016 8:02:16 PM
Subject: RE: Current versions of the press script and blog
OG Draft Administrator Blog on ICR_v19 mw.docx

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Tuesday, March 08, 2016 2:51 PM
To: Bylin, Carey <Bylin.Carey@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: Current versions of the press script and blog
Importance: High

Ex. 5 - Deliberative Process

From: Drinkard, Andrea
Sent: Tuesday, March 08, 2016 2:30 PM
To: Mills, Derek <Mills.Derek@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Subject: Current versions of the press script and blog
Importance: High

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-Andrea-

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 2/19/2015 3:38:11 PM
Subject: FW: GHG Inventory info
JDM_EPA_0128_General_MedRes.pdf

Ex. 5 - Deliberative Process

From: Maasakkers, Joannes [mailto:maasakkers@fas.harvard.edu]
Sent: Thursday, February 19, 2015 9:40 AM
To: Weitz, Melissa
Subject: Re: GHG Inventory info

Hi Melissa,

Ex. 6 - Personal Privacy

I have attached the slides I presented during the general discussion. I showed some additional slides for petroleum during our chat, please let me know if you would like those as well.

Ex. 5 - Deliberative Process

Thanks in advance!

Best,

Bram

On 18 feb. 2015, at 17:48, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Hi Bram,

Ex. 6 - Personal Privacy

Would you be able to send me a copy of the slides you walked through when you visited us at EPA?

Thanks,

Melissa

From: Maasakkers, Joannes [mailto:maasakkers@fas.harvard.edu]
Sent: Friday, January 30, 2015 4:52 PM
To: Weitz, Melissa
Subject: Re: GHG Inventory info

Hi Melissa,

Ex. 6 - Personal Privacy

Thank you for setting up the meetings (and lunch!), it was really useful for me to meet with everybody to talk about the inventory and I think the general meeting was very constructive as well. I think we are on the right track to produce an inventory that will be useful for all of us.

I think the spreadsheets and memo will be very useful, I will go over those next week.

Have a great weekend!

Bram

On 30 jan. 2015, at 16:25, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Hello Bram,

Ex. 6 - Personal Privacy

Thank you again for taking so much time this week to meet with us. We're very excited about this project!

Some additional info on the GHG Inventory:

--Natural gas and petroleum systems calculation spreadsheets for the 2014 Inventory are attached.

--Link to well counts memo: http://www.epa.gov/climatechange/pdfs/Proposed%20Revision%20to%20Data%20Source%20for

When you are back to work, let me know if you have questions or would like an overview of any of these files.

Have a great weekend!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

<NaturalGasSystems_1990-2012_040214.xlsx><PetroleumSystems1990-2012_032814.xlsm>

To: Beeler, Cindy[Beeler.Cindy@epa.gov]; Allison Lami Sawyer (allison@rebellionphotonics.com)[allison@rebellionphotonics.com]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Wed 8/26/2015 8:33:15 PM
Subject: RE: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Thanks Cindy and hello Allison!

I believe we met Allison a few months ago in DC and learned a bit about the Rebellion Photonics technology then. Really interesting stuff!

Allison-Alexis and I are happy to answers any questions you have on EPA's oil and gas methane data. Let us know if you'd like to talk.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Beeler, Cindy
Sent: Wednesday, August 26, 2015 12:31 PM
To: Allison Lami Sawyer (allison@rebellionphotonics.com); McKittrick, Alexis; Weitz, Melissa
Cc: DeFigueiredo, Mark
Subject: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Alexis and Melissa –

I wanted to introduce you two Queens of oil and gas methane emissions to Allison Swayer, CEO of Rebellion Photonics who designed, manufacture, and sell (or provide a service contract) their Gas Cloud Imager (GCI). Not only can the GCI quantify methane emissions that the operator can "see" real-time, it can speciate as well. I'll let Allison get into all the capabilities and testing that has been done on their device. The GCI was approved by Colorado Dept of Public Health & Environment as an acceptable alternative to the thermal IR camera for use in complying with their LDAR requirements at wellsites and compressor stations. They have also established data housing and reporting via secure cloud-based platform to ease in burden of recordkeeping and reporting for compliance purposes and Company tracking.

Rebellion was the recent recipient of DOE ARPA-E funds through the MONITOR program which has awarded ~10 companies a total of ~$30M to jump-start promising methane detection/quantification technologies for use in O&G to make commercially viable. Rebellion's award was about making the GCI smaller and more compact. Mark DeFigueiredo attended the recent DOE ARPA-E MONITOR conference in Denver.

Allison –

Alexis and Melissa know their oil & gas methane emission inventory and estimating, measurement requirements of such. They've taken EPA on a steep learning curve on methane emissions from this sector and their resultant accounting of emissions are used to compare against in a myriad of air emission research going on in the oil patch. I'm a big fan of them both ☺

Kind regards to all,

Cindy Beeler
US EPA Region 8, Energy Advisor
Office of the Regional Administrator
Tel: 303-312-6204
Beeler.Cindy@epa.gov

CONFIDENTIALITY NOTICE: This e-mail, including all attachments, is for the sole use of the intended recipients and may contain Confidential and privileged information. Any unauthorized use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender and destroy all copies of this message.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Chiu, Kong[Chiu.Kong@epa.gov]
From: Weitz, Melissa
Sent: Mon 5/4/2015 6:07:36 PM
Subject: RE: Your plenary presentation

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, May 04, 2015 12:45 PM
To: Chiu, Kong; Weitz, Melissa
Subject: RE: Your plenary presentation

Kong,

Ex. 5 - Deliberative Process

Alexis

From: Chiu, Kong
Sent: Wednesday, April 29, 2015 9:17 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: FW: Your plenary presentation

Ex. 5 - Deliberative Process

Thanks!

From: Rao, Venkatesh
Sent: Wednesday, April 29, 2015 8:07 AM
To: Chiu, Kong
Subject: Your plenary presentation

Kong,

I know you sent me a note saying some parts of your plenary may not be ready for prime time.

Could you excise those slides from your presentation and send me a file you feel comfortable posting as your plenary talk?

Thanks very much.

--Tesh

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
Cc: Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Sarofim, Marcus[Sarofim.Marcus@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]
From: Weitz, Melissa
Sent: Fri 4/17/2015 4:54:04 AM
Subject: RE: Oil and gas NSPS workgroup preamble and reg text
Oil_Gas 2nd DRAFT for WG NSPS-2 Preamble 04-06-15 mdf AM mw.docx

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, April 13, 2015 2:28 PM
To: DeFigueiredo, Mark; Waltzer, Suzanne
Cc: Weitz, Melissa; Ragnauth, Shaun; Shouse, Kate; Sarofim, Marcus; Alsalam, Jameel
Subject: RE: Oil and gas NSPS workgroup preamble and reg text

All,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

From: DeFigueiredo, Mark
Sent: Monday, April 13, 2015 1:03 PM
To: Waltzer, Suzanne
Cc: Weitz, Melissa; Ragnauth, Shaun; Shouse, Kate; Sarofim, Marcus; Alsalam, Jameel; McKittrick, Alexis
Subject: RE: Oil and gas NSPS workgroup preamble and reg text

Ex. 5 - Deliberative Process

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: DeFigueiredo, Mark
Sent: Sunday, April 12, 2015 6:55 PM
To: Waltzer, Suzanne
Cc: Weitz, Melissa; Ragnauth, Shaun; Shouse, Kate; Sarofim, Marcus; Alsalam, Jameel; McKittrick, Alexis
Subject: RE: Oil and gas NSPS workgroup preamble and reg text

Ex. 5 - Deliberative Process

Thanks!

Mark

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Waltzer, Suzanne
Sent: Tuesday, April 07, 2015 10:08 AM
To: Gunning, Paul; Franklin, Pamela; Weitz, Melissa; Ragnauth, Shaun; Shouse, Kate; Sarofim, Marcus; Fawcett, Allen; Irving, Bill; DeFigueiredo, Mark
Cc: Kocchi, Suzanne
Subject: FW: Oil and gas NSPS workgroup preamble and reg text

FYI - The FAR package is attached.

The FAR will be 10 business days. The meeting is scheduled for 21st of April. Please let me know if you have any questions.

Suzie

From: Frantz, Chris
Sent: Monday, April 06, 2015 5:42 PM
To: Eck, Janet
Cc: Moore, Bruce; Cozzie, David; Macpherson, Alex; Waltzer, Suzanne; Witosky, Matthew; Spells, Charlene
Subject: Oil and gas NSPS workgroup preamble and reg text

Ex. 5 - Deliberative Process

Thanks so much for your help today.

Chris Frantz

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919 541-4312

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Bacanskas, Lisa[Bacanskas.Lisa@epa.gov]; Schmeltz, Rachel[Schmeltz.Rachel@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]; Wirth, Tom[Wirth.Tom@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 5/20/2015 2:10:13 PM
Subject: RE: Rona's draft slides on Inventory/GHGRP for the Jamboree
Birnbaum_EM_5-28-15 mdf mw.pptx

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Tuesday, May 19, 2015 3:57 PM
To: Bacanskas, Lisa; Weitz, Melissa; Schmeltz, Rachel; Waltzer, Suzanne; Hockstad, Leif; Wirth, Tom; McKittrick, Alexis
Subject: RE: Rona's draft slides on Inventory/GHGRP for the Jamboree

Ex. 5 - Deliberative Process

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Bacanskas, Lisa
Sent: Monday, May 18, 2015 4:22 PM
To: Weitz, Melissa; DeFigueiredo, Mark; Schmeltz, Rachel; Waltzer, Suzanne; Hockstad, Leif; Wirth, Tom
Subject: Rona's draft slides on Inventory/GHGRP for the Jamboree

Hi all,

Ex. 5 - Deliberative Process

Thanks!

Lisa

Lisa Bacanskas

Climate Change Division

U.S. Environmental Protection Agency

202-343-9758

To: Hambrick, Amy[Hambrick.Amy@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]
From: Weitz, Melissa
Sent: Tue 1/12/2016 6:53:14 PM
Subject: RE: OG Strategy Briefing Next Version
Methane ICR_McCabe_Jan 2016_OAP.pptx

Hi Amy,

Some edits (in blue) from OAP and some comments.

Thanks! Let me know if you have any questions.

Melissa

From: Hambrick, Amy
Sent: Tuesday, January 12, 2016 12:20 PM
To: Cozzie, David <Cozzie.David@epa.gov>
Cc: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Miller, Elizabeth <miller.elizabeth@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Roder, Aileen <Roder.Aileen@epa.gov>; Lassiter, Penny <Lassiter.Penny@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>
Subject: OG Strategy Briefing Next Version

David and All,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

Amy

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
Cc: Gunning, Paul[Gunning.Paul@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Fawcett, Allen
Sent: Tue 3/8/2016 4:49:15 PM
Subject: RE: Quick turn, quick question

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Tuesday, March 08, 2016 11:43 AM
To: Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: Quick turn, quick question

Ex. 5 - Deliberative Process

From: Alsalam, Jameel
Sent: Tuesday, March 08, 2016 11:34 AM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: Quick turn, quick question

Ex. 5 - Deliberative Process

Jameel

From: DeLuca, Isabel
Sent: Tuesday, March 08, 2016 11:24 AM
To: Fawcett, Allen <Fawcett.Allen@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: Quick turn, quick question

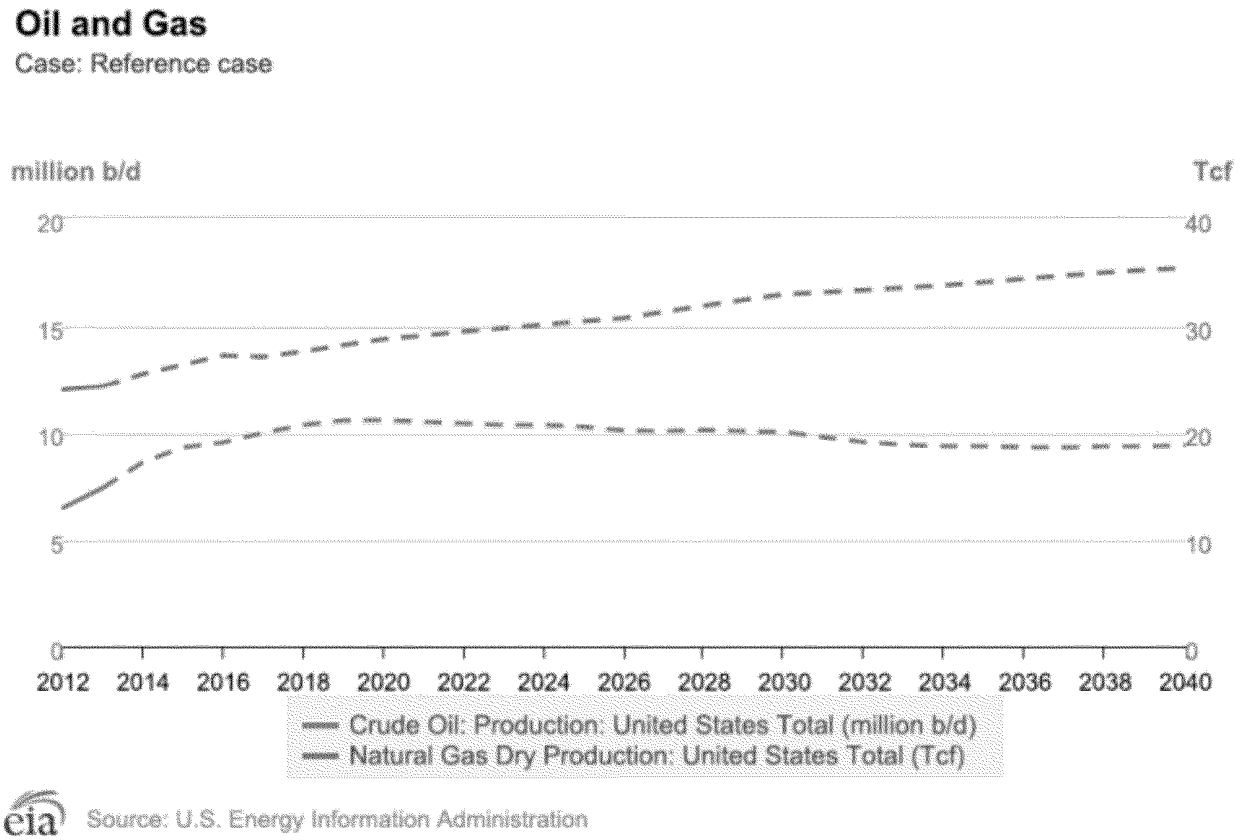
Thanks. It sounds like the following statement is ok, then—but if anyone has edits or concerns, please let me know:

Ex. 5 - Deliberative Process

From: Fawcett, Allen
Sent: Tuesday, March 08, 2016 11:21 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>

Subject: RE: Quick turn, quick question

AEO 2015 projects that crude oil production will increase through 2020 and then gradually decline, and natural gas production will increase through 2040.



http://www.eia.gov/forecasts/aeo/data/browser/#/?id=14-AEO2015&region=0-0&cases=ref2015&start=2012&end=2040&f=Q&linechart=~ref2015-d021915a.8-14-AEO2015~~~~~~~~~~~~~~~~~ref2015-d021915a.37-14-AEO2015&ctype=linechart&sourcekey=0

From: Weitz, Melissa
Sent: Tuesday, March 08, 2016 11:08 AM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; McKittrick, Alexis

<McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: Quick turn, quick question

Works for me.

From: DeLuca, Isabel
Sent: Tuesday, March 08, 2016 11:06 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: Quick turn, quick question

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Tuesday, March 08, 2016 11:05 AM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: Quick turn, quick question

Ex. 5 - Deliberative Process

From: DeLuca, Isabel

Sent: Tuesday, March 08, 2016 11:02 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: Quick turn, quick question
Importance: High

Hi all,

More back-and-forth with Candace on ICR comms. She wants to include some statement about projected future trends in methane emissions from the oil and gas sector.

Ex. 5 - Deliberative Process

Thanks,
Isabel

From: Vahlsing, Candace M. EOP/WHO [mailto: Ex. 6 - Personal Privacy
Sent: Tuesday, March 08, 2016 10:39 AM
To: Allen, Laura <Allen.Laura@epa.gov>
Cc: Benenati, Frank J. EOP/WHO Ex. 6 - Personal Privacy Reynolds, Thomas H. EOP/WHO Ex. 6 - Personal Privacy Purchia, Liz <Purchia.Liz@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: RE: Methane docs

Thank you! Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Allen, Laura [mailto:Allen.Laura@epa.gov]
Sent: Tuesday, March 8, 2016 10:30 AM
To: Vahlsing, Candace M. EOP/WHO < Ex. 6 - Personal Privacy
Cc: Benenati, Frank J. EOP/WHO Ex. 6 - Personal Privacy Reynolds, Thomas H. EOP/WHO < Ex. 6 - Personal Privacy Purchia, Liz <Purchia.Liz@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>
Subject: RE: Methane docs

Here are our recommended edits.

Additional info from the program:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-----Original Message-----
From: Vahlsing, Candace M. EOP/WHO [mailto: Ex. 6 - Personal Privacy
Sent: Monday, March 07, 2016 11:46 PM
To: Allen, Laura <Allen.Laura@epa.gov>
Cc: Benenati, Frank J. EOP/WHO < Ex. 6 - Personal Privacy ; Reynolds, Thomas H. EOP/WHO < Ex. 6 - Personal Privacy Purchia, Liz <Purchia.Liz@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>
Subject: RE: Methane docs

Thank you.

-----Original Message-----

From: Allen, Laura [mailto:Allen.Laura@epa.gov]

Sent: Monday, March 7, 2016 10:40 PM

To: Vahlsing, Candace M. EOP/WHO < Ex. 6 - Personal Privacy

Cc: Benenati, Frank J. EOP/WHO < Ex. 6 - Personal Privacy >; Reynolds, Thomas H. EOP/WHO < Ex. 6 - Personal Privacy Purchia, Liz <Purchia.Liz@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>

Subject: Re: Methane docs

Yes, I'll run them by the program tomorrow morning

> On Mar 7, 2016, at 8:15 PM, Vahlsing, Candace M. EOP/WHO
< Ex. 6 - Personal Privacy wrote:

>

> You guys are amazing!

>

> I was just about to press send on an email to you asking if you could fill in the blanks on these statements/fact check them the following talking points for Dan's points for Amy. Possible to do in the morning?

>

>

Ex. 5 - Deliberative Process

>

> -----Original Message-----

> From: Allen, Laura [mailto:Allen.Laura@epa.gov]

> Sent: Monday, March 7, 2016 8:10 PM

> To: Vahlsing, Candace M. EOP/WHO <Ex. 6 - Personal Privacy> Benenati, Frank J. EOP/WHO <Ex. 6 - Personal Privacy>

> Cc: Reynolds, Thomas H. EOP/WHO <Ex. 6 - Personal Privacy> Purchia, Liz <Purchia.Liz@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>

> Subject: Methane docs

>

> Candace and Frank- attached is the EPA fact sheet, Administrator blog, and press call script. These are all drafts, so they could change. Please send any edits before 2pm tomorrow. Can you also send the WH fact sheet and any additional documents for the rollout so we can make sure they are consistent? Thanks!

>

>

>

> TICK TOCK

>

> Wednesday

>

> Evening - Stakeholder calls (TBD on timing, list)

>

> Ex. 5 - Deliberative Process

>

>

>

> Thursday

>

> 6AM - WH releases joint statement

>

> 6AM- WH advises press call

>

> 6AM- EPA flags WH press call for top tiers

>

> 7:30AM - Possible check-in with the Administrator, Janet and Joe prior to press call (tentative)

>

> 7:50AM- Admin calls into press call

>

> 8AM - Press call the Administrator (3-5 mins), Secretary Jewell, Dan Utech, John Morton.

>

> 8AM - EPA to post Administrator blog and fact sheet

>

> 8:15AM- EPA to post social media

>

> 9AM- Opening session with U.S./Canada

>

>

>

>

>

>

>

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]
From: Weitz, Melissa
Sent: Tue 2/16/2016 4:27:57 PM
Subject: RE: ACTION - Deliberative. Draft ICR Qs &As for review by 3 p.m. Tuesday 2/16
Draft Qs As for ICR announcement 2 15 16 FOR REVIEW mw.docx

Hello,

Ex. 5 - Deliberative Process

Melissa

From: DeLuca, Isabel
Sent: Tuesday, February 16, 2016 11:02 AM
To: Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>
Subject: FW: ACTION - Deliberative. Draft ICR Qs &As for review by 3 p.m. Tuesday 2/16

Hi all,

Ex. 5 - Deliberative Process

If you send me your edits I can make sure they are worked into Alison's draft. If you could have them done by 2 pm, that would be ideal.

Thanks,

Isabel

From: Davis, Alison
Sent: Monday, February 15, 2016 5:16 PM
To: Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Lassiter, Penny <Lassiter.Penny@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Cc: Davis, Alison <Davis.Alison@epa.gov>
Subject: ACTION - Deliberative. Draft ICR Qs &As for review by 3 p.m. Tuesday 2/16

Ex. 5 - Deliberative Process

I'm still working on the draft blog post and will send it around tomorrow.

Thanks everyone for your help!

- AD

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 12/9/2015 4:49:16 PM
Subject: FW: Canadian oil and gas study
R91404-1 -- CEPEI 2013 GHG roll-up FINAL Report.pdf
Air Emissions Methodology Manual 2014 v2 2 March 2 2015.pdf

Let me know if this includes the file you need.

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Monday, September 28, 2015 1:50 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Canadian oil and gas study

Hey Melissa,

Here are the latest two reports, which are basically just updates of the ones you requested. Let me know if you have any questions.

Steve

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: September 25, 2015 12:33 PM
To: Smyth,Steve [NCR]
Subject: RE: Canadian oil and gas study

Hi Steve,

One of my contractors was reviewing the Canadian GHG inventory for potential updates to our GHG inventory and found this reference:

"To assist its members in preparing GHG emission inventories, the Canadian Energy Partnership for Environmental Innovation (CEPEI) (formerly GRI Canada) regularily enhances a methodology manual (***Estimation of Air Emissions from the Canadian Natural Gas Transmission, Storage and Distribution System***) and software package that implements many of the methodologies described in the manual (CEPEI, 2012)."

I'm not sure where in the GHG inventory it was found. Would you like me to get additional info from my contractor?

Thank you!

Melissa

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Friday, September 25, 2015 9:15 AM
To: Weitz, Melissa
Subject: RE: Canadian oil and gas study

Hey Melissa,

I'm working on tracking down the first reference. Where did you get the citation for the second reference? I can't seem to find that one.

Steve

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: September 24, 2015 2:00 PM
To: Smyth,Steve [NCR]
Subject: Re: Canadian oil and gas study

Hi Steve,

Thanks again for sharing the methodology report.

Now we are looking into updates for Transmission and Storage and I have a request for two more documents, below.

- **ORTECH Consulting Inc. 2013. *Canadian Natural Gas Companies 2005 and 2011 Greenhouse Gas and Criteria Air Contaminant Inventory Report and Validation by Audit*. Prep. for CEPEI. Guelph, ON.**

Estimation of Air Emissions from the Canadian Natural Gas Transmission, Storage and Distribution System) (CEPEI, 2012)

Do you have access to these and would you be willing to share them? Thank you!

I will let you know when we have draft proposed updates to our GHG inventory ready for review--I'd really like to get your thoughts on them.

Melissa

From: Smyth,Steve [NCR] <Steve.Smyth@ec.gc.ca>
Sent: Thursday, August 13, 2015 1:28 PM
To: Weitz, Melissa
Subject: RE: Canadian oil and gas study

Hey Melissa,

Surprisingly (to me) I found the paper. Have fun!

Steve

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: August 13, 2015 12:03 PM
To: Smyth,Steve [NCR]
Subject: Canadian oil and gas study

Hi Steve!

I'm trying to track down a copy of a Canadian study and am having no luck.

Do you happen to have a copy of this paper: *Handbook for Estimating Methane Emissions from Canadian Natural Gas Systems* (1998)?

I hope all is well!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Tuesday, May 26, 2015 10:36 AM
To: Weitz, Melissa
Subject: Meter Measurement Study

Hi Melissa,

I finally found the report about the residential gas meters. My memory of the results wasn't entirely accurate. The study resulted in an increase to the EF for residential meters. However, the overall leak frequency was very low (0.012%). If you have any questions, let me know.

Steve Smyth
Ingénieur de programme

Inventaires et rapports sur les polluants

Direction des sciences et de l'évaluation des risques
Environnement Canada
200, boul. Sacré-Coeur, Gatineau QC K1A 0H3
steve.smyth@ec.gc.ca
Téléphone 819-938-3234
Télécopieur 819-953-3006
Gouvernement du Canada

Site Web http://www.ec.gc.ca

Steve Smyth
Program Engineer

Pollutant Inventories and Reporting

Science and Risk Assessment Directorate
Environment Canada
200 Sacré-Coeur Blvd., Gatineau QC K1A 0H3
steve.smyth@ec.gc.ca
Telephone 819-938-3234
Facsimile 819-953-3006

Government of Canada

Website http://www.ec.gc.ca

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Tue 2/10/2015 10:02:36 PM
Subject: RE: ACTION: Coloradoan Media Group RE: Greenhouse gases (GHG)

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Tuesday, February 10, 2015 4:27 PM
To: DeLuca, Isabel; Bylin, Carey; Waltzer, Suzanne; Weitz, Melissa; DeFigueiredo, Mark
Subject: RE: ACTION: Coloradoan Media Group RE: Greenhouse gases (GHG)

Isabel,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Let me know if there is anything else from Subpart W that you think would be helpful.

Take care,

Alexis

From: DeLuca, Isabel
Sent: Tuesday, February 10, 2015 4:03 PM
To: Bylin, Carey; Waltzer, Suzanne; Weitz, Melissa; DeFigueiredo, Mark; McKittrick, Alexis
Subject: FW: ACTION: Coloradoan Media Group RE: Greenhouse gases (GHG)

Hi guys,

We have a press question about "what is considered normal [methane emissions] at a natural gas gathering and/or processing site"? Can you help with a response? I'm not sure if this should be Gas STAR, or if we can make some general statement referring to the Inventory or GHGRP.

The deadline was originally 8 pm today, but I've asked for an extension (don't have new deadline yet). Any chance someone could help with this in the morning?

Thanks,
Isabel

From: Jones, Enesta
Sent: Tuesday, February 10, 2015 3:05 PM
To: Dennis, Allison; DeLuca, Isabel
Cc: Jones, Enesta

Subject: ACTION: Coloradoan Media Group RE: Greenhouse gases (GHG)

DDL: 8 pm today

Enesta Jones

U.S. EPA, Office of Media Relations

Desk: 202.564.7873

Cell: 202.236.2426

Begin forwarded message:

From: "Kyle, Sarah" <SarahKyle@coloradoan.com>
Date: February 10, 2015 at 2:55:59 PM EST
To: "jones.enesta@epa.gov" <jones.enesta@epa.gov>
Subject: Press Inquiry about Greenhouse gases (GHG)

Hello Ms. Jones,

I am working on a story on a study related to methane emissions. My question is what is considered normal at a natural gas gathering and/or processing site? I'd like to put the numbers from the study into perspective for my readers (particularly the kilograms per hour as noted below).

Can you help?

For your reference, here are the lines in my story referencing these numbers:

No processing plants in the study had loss rates higher than 0.6 percent, compared to a maximum ratio of more than 10 percent at gathering facilities in the study. The loss rate is the ratio of methane emitted to the total amount of methane at each site.

Methane emissions at the facilities were as low as less than 1 kilogram per hour and as high as 698 kilograms per hour. There wasn't a strong correlation due to either location or age of facilities, according to researchers.

Sarah J. Kyle

Environment Reporter

Coloradoan Media Group

(970) 227-7276 | @sarahjanekyle | www.facebook.com/reportersarahjane

Want to keep up with my work? Click here to start your free, 14-day trial of our digital-only subscription.

To: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Tue 2/16/2016 1:53:26 PM
Subject: Fwd: Oil and Gas ICR -- Update

Paul M Gunning
202-251-1436

Begin forwarded message:

From: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Date: February 15, 2016 at 3:50:47 PM EST
To: "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>, "Page, Steve" <Page.Steve@epa.gov>, "Koerber, Mike" <Koerber.Mike@epa.gov>, "Cozzie, David" <Cozzie.David@epa.gov>, "Lassiter, Penny" <Lassiter.Penny@epa.gov>, "Davis, Alison" <Davis.Alison@epa.gov>, "Dunham, Sarah" <Dunham.Sarah@epa.gov>, "Gunning, Paul" <Gunning.Paul@epa.gov>, "Millett, John" <Millett.John@epa.gov>, "Drinkard, Andrea" <Drinkard.Andrea@epa.gov>
Cc: "McCabe, Janet" <McCabe.Janet@epa.gov>
Subject: Fwd: Oil and Gas ICR -- Update

- Joseph Goffman
Sent from my iPhone

Begin forwarded message:

From: Joseph Goffman <joegoffman@gmail.com>
Date: February 15, 2016 at 3:49:32 PM EST
To: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Subject: Oil and Gas ICR -- Update

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Many thanks.

To: Banks, Julius[Banks.Julius@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Mon 1/11/2016 2:07:53 PM
Subject: FW: EDF Report
EDF Methane Risk.pdf
ATT00001.htm

Ex. 5 - Deliberative Process

Thanks

Paul

From: Tom Michels [mailto:tmichels@bwstrategies.com]
Sent: Monday, January 11, 2016 8:33 AM
To: Bylin, Carey <Bylin.Carey@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: EDF Report

FYI in case you haven't seen.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Gunning, Paul
Sent: Mon 1/11/2016 1:49:31 PM
Subject: FW: EDF Report
EDF Methane Risk.pdf
ATT00001.htm

I meant to include you too!!!!

Hope you had a good weekend.

From: Gunning, Paul
Sent: Monday, January 11, 2016 8:43 AM
To: DeFigueiredo, Mark <defigueiredo.mark@epa.gov>; Melissa Weitz <Weitz.Melissa@epa.gov>; Bill Irving <Irving.Bill@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Suzanne Waltzer <Waltzer.Suzanne@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Suzanne Kocchi <Kocchi.Suzanne@epa.gov>; Allen Fawcett <Fawcett.Allen@epa.gov>
Subject: FW: EDF Report

FYI……

From: Tom Michels [mailto:tmichels@bwstrategies.com]
Sent: Monday, January 11, 2016 8:33 AM
To: Bylin, Carey <Bylin.Carey@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: EDF Report

FYI in case you haven't seen.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/18/2014 9:32:03 PM
Subject: edf comments
Oil Wells_EDF.pdf

To: Hambrick, Amy[Hambrick.Amy@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Thompson, Lisa[Thompson.Lisa@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Spells, Charlene[Spells.Charlene@epa.gov]; Srivastava, Ravi[Srivastava.Ravi@epa.gov]; Witosky, Matthew[Witosky.Matthew@epa.gov]; Howard, Jodi[Howard.Jodi@epa.gov]; Dewees, Jason[Dewees.Jason@epa.gov]; Miller, Elizabeth[miller.elizabeth@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Branning, Amy[Branning.Amy@epa.gov]; Roder, Aileen[Roder.Aileen@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
From: Weitz, Melissa
Sent: Fri 1/8/2016 8:49:45 PM
Subject: RE: Oil Gas Strategy next steps
OG strategy 1 8 2016 OAP.pptx

Hi Amy,

Some edits and comments from OAP are in the attached.

Please let me know if you'd like to discuss.

Thanks,

Melissa

From: Hambrick, Amy
Sent: Friday, January 08, 2016 1:20 PM
To: Cozzie, David <Cozzie.David@epa.gov>
Cc: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Miller, Elizabeth <miller.elizabeth@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Roder, Aileen <Roder.Aileen@epa.gov>
Subject: RE: Oil Gas Strategy next steps

Hi All-

Ex. 5 - Deliberative Process

Thanks for your input and patience,

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

From: Hambrick, Amy
Sent: Thursday, January 07, 2016 1:27 PM
To: Cozzie, David <Cozzie.David@epa.gov>
Cc: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Miller, Elizabeth <Miller.Elizabeth@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Roder, Aileen <Roder.Aileen@epa.gov>
Subject: Oil Gas Strategy next steps

David & all,

Ex. 5 - Deliberative Process

FYI for an example of a recent ICR OAQPS did, please check out the Refineries ICR:

-

https://refineryicr.rti.org/

-

http://www3.epa.gov/ttn/atw/petref/petrefpg.html

Ex. 5 - Deliberative Process

Our docket number is epa-hq-oar-2010-0682—the ICR materials are the first entries in this docket so it is easy to see what was done when.

Our docket has all the comments we received and the supporting information that was loading in at each juncture.

Here is the first notice:

http://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2010-0682-0001&disposition=attachment&contentType=pdf

Here is the second notice:

http://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2010-0682-0015&disposition=attachment&contentType=pdf

Thank you,

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 12/10/2014 5:16:22 PM
Subject: RE: Reporter request | Comment on methane emissions papers

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Wednesday, December 10, 2014 11:48 AM
To: Waltzer, Suzanne; DeFigueiredo, Mark
Cc: Weitz, Melissa; McKittrick, Alexis
Subject: RE: Reporter request | Comment on methane emissions papers

Thanks, Mark!

Ex. 5 - Deliberative Process

From: Waltzer, Suzanne
Sent: Wednesday, December 10, 2014 11:36 AM
To: DeFigueiredo, Mark; DeLuca, Isabel
Cc: Weitz, Melissa; McKittrick, Alexis
Subject: RE: Reporter request | Comment on methane emissions papers

Melissa provided a helpful write-up/summary of the study earlier this week. Mark, do you have it?

Thanks,

From: DeFigueiredo, Mark

Sent: Wednesday, December 10, 2014 11:34 AM
To: DeLuca, Isabel
Cc: Weitz, Melissa; Waltzer, Suzanne; McKittrick, Alexis
Subject: Re: Reporter request | Comment on methane emissions papers

+ Alexis

Ex. 5 - Deliberative Process

Sent from my iPhone

On Dec 10, 2014, at 11:28 AM, "DeLuca, Isabel" <DeLuca.Isabel@epa.gov> wrote:

Hi guys,

We've got some questions from Chemical & Engineering news about the EDF study and the Princeton study on abandoned wells in Pennsylvania. This guy wants an interview on background, but I'm thinking perhaps a written response might be easier. I'd love your initial thoughts on how we might respond to this, and who we need to loop in. For #1, we might mention the GHGRP, and #2 touches on Inventory data quality. Let me know what you think about #3.

It would be ideal if we could send back written responses today, but he hasn't given a deadline.

Thanks,

Isabel

From: Matthew Davenport (Contractor) [mailto:M_Davenport@acs.org]
Sent: Wednesday, December 10, 2014 9:57 AM
To: Gunning, Paul

Subject: Reporter request | Comment on methane emissions papers

Good morning Mr. Gunning,

I'm a writer with Chemical & Engineering News and I'm working on an article about two scientific papers published this week about methane emissions from natural gas production sites. The author, Dave Allen, recommended getting in touch with you for some perspective on how the EPA can or may use the findings.

Would you have 10-15 minutes for an interview to talk about this before Friday afternoon? I understand that your schedule may not permit this, so I've attached a list of my questions if you might be able to share an e-mail response.

Thank you so much for your time and I look forward to hearing from you.

Best regards,

Matt Davenport

Matt Davenport, Ph.D.

Science & Technology Writer

Chemical & Engineering News

Desk: (202)872-4567

Mobile: (248)660-3808

http://cen.acs.org

<Methane Emissions Questions for EPA.docx>

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/18/2014 9:31:45 PM
Subject: FW: API's analysis of GHGRP data on HF oil well completions
2014 06 13 API Comments on HF Oil Wells and Associated Gas FINAL.pdf

From: Frantz, Chris
Sent: Tuesday, June 17, 2014 12:58 PM
To: DeFigueiredo, Mark
Cc: Waltzer, Suzanne; Weitz, Melissa
Subject: API's analysis of GHGRP data on HF oil well completions

Mark,

API's comments on the oil wells white paper are attached. **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

Chris Frantz

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919 541-4312

To: Bradbury, James[James.Bradbury@Hq.Doe.Gov]; Heath, Garvin (NREL)[garvin.heath@nrel.gov]
Cc: Hodson, Elke[Elke.Hodson@Hq.Doe.Gov]; Steinberg, Daniel (NREL)[daniel.steinberg@nrel.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 7/20/2015 2:31:02 PM
Subject: RE: external peer review draft of JISEA inventory report
Estimating Methane Emissions_JISEA report_2015-6-30_DRAFT_CLEAN EPA OAR.docx

Hello,

Thanks for the opportunity to review the draft JISEA report, and for your review and incorporation of our previous comments.

We reviewed the document and have a number of what should be pretty straightforward comments.

We're happy to discuss these. There are some questions/comments on the development of the appendix figures that are probably worth talking through.

Best,

Melissa

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Monday, July 06, 2015 10:55 AM
To: Weitz, Melissa; Heath, Garvin (NREL)
Cc: Hodson, Elke; Steinberg, Daniel (NREL); DeFigueiredo, Mark
Subject: RE: external peer review draft of JISEA inventory report

Hey Melissa,

I think Garvin may be out of the country. Attached are the files in MSWord format.

Best,

James

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Monday, July 06, 2015 10:32 AM
To: Heath, Garvin (NREL)
Cc: Hodson, Elke; Steinberg, Daniel (NREL); DeFigueiredo, Mark; Bradbury, James
Subject: RE: external peer review draft of JISEA inventory report

Hello Garvin,

Thank you for sending a copy of the JISEA report. It looks like the file was sent as a zip file--- we are unable to receive zip files at EPA, but there is a workaround. Can you change the extension of the file from zip to something else (".epa" usually works)? We can then save it and convert it back to a zip file and open it.

Thanks,

Melissa

From: Heath, Garvin [mailto:Garvin.Heath@nrel.gov]
Sent: Wednesday, July 01, 2015 4:18 PM
To: Weitz, Melissa
Cc: Hodson, Elke (HQ); Steinberg, Daniel; DeFigueiredo, Mark; Bradbury, James (HQ)
Subject: RE: external peer review draft of JISEA inventory report

Dear Melissa and Mark

As requested, we are providing you an advance look at the final draft of the JISEA NG methane inventory report. I'm happy to report that we had robust engagement from reviewers from

several perspectives and we feel we have been able to navigate revisions to satisfy the comments of all. We hope that you will find that your previous comments were satisfactorily addressed, but please let us know if you have any remaining concerns. We will be completing final management reviews at NREL on the 20th of July and anticipate moving quickly to publication thereafter. If you have any further feedback, as much as possible please provide them prior to the 20th. Note that simultaneously EPSA is conducting a final review and we will be conducting a final editorial review.

Happy 4th of July weekend!

Cheers

Garvin

PS—I will be out of the office July 2-19. I'll be checking email somewhat during the week of July 13. Fingers crossed that I don't boil away in Madrid!

Garvin Heath, PhD
National Renewable Energy Laboratory
(o) 303-384-7460
garvin.heath@nrel.gov

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Wednesday, February 04, 2015 8:52 AM
To: Heath, Garvin
Cc: Hodson, Elke (FELLOW) (HQ); Steinberg, Daniel; DeFigueiredo, Mark
Subject: RE: external peer review draft of JISEA report

Hello Garvin,

Thank you for the opportunity to review the draft JISEA report. EPA has a number of comments on the report's description and characterization of the GHG Inventory data and development process--please see below and in the attached.

I'm happy to walk through these with you. Let me know if you'd like me to set up a call.

Best,

Melissa

EPA general comments on JISEA report

-

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

-

From: Heath, Garvin [mailto:Garvin.Heath@nrel.gov]
Sent: Tuesday, January 20, 2015 5:50 PM
To: Weitz, Melissa; DeFigueiredo, Mark
Cc: Hodson, Elke (FELLOW) (HQ); Steinberg, Daniel
Subject: external peer review draft of JISEA report
Importance: High

Dear Melissa and Mark

It was a pleasure to speak with you both last week. Thank you for keeping me on your list of folks to update with all that you two and your programs are doing! I'm glad that some of the things I'm working on continue to be of interest to you. Speaking of which, attached is an external peer review draft of a JISEA report tentatively entitled: "Estimating U.S. Greenhouse Gas Emissions from the Natural Gas Supply Chain: Inventory Approaches, Current Estimates, Challenges and Opportunities." This report has been sponsored by DOE's Office of Energy Policy and Systems Analysis (EPSA); Elke Hodson from that office is copied here.

With the focus of this report on the US GHG Inventory, we welcome your review and comment. You may share the draft internally from those you feel should review it; if you are able to consolidate comments, that's great, but don't worry if not. EPSA would like to get this report out as soon as possible, so **please return comments by Friday Jan 30** (earlier the better ☺). As it is a draft, please do not cite, quote or distribute beyond those immediately needing to review it.

You are welcome to redline your comments (track changes) or develop a separate sheet of them. If the latter, please refer to line numbers. Please note that issues of formatting, including developing a consistent reference/citation style, will be addressed in final copy editing, so no need to direct attention to those kinds of issues.

Thank you for your interest and time!

Cheers

Garvin

Garvin Heath, PhD

Technology Systems and Sustainability Analysis Group | Strategic Energy Analysis Center

National Renewable Energy Laboratory

Research Associate

University of Colorado at Boulder

NREL mailing: 15013 Denver West Parkway, Mail Stop RSF300, Golden, CO 80401
NREL physical: RSF/B340
garvin.heath@nrel.gov
(o) 303-384-7460 | (m) 303-653-3164 | (f) 303-630-2085

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/17/2015 5:53:51 PM
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

Thanks! I ended up making your updates before sending over to them.

Melissa

From: DeFigueiredo, Mark
Sent: Wednesday, June 17, 2015 12:05 PM
To: Weitz, Melissa; McKittrick, Alexis
Cc: Waltzer, Suzanne
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

Sorry for not getting back to you. Your content is fine.

Ex. 5 - Deliberative Process

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Weitz, Melissa
Sent: Wednesday, June 17, 2015 11:57 AM
To: McKittrick, Alexis; DeFigueiredo, Mark
Cc: Waltzer, Suzanne
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

Hi—

Ex. 5 - Deliberative Process

Melissa

From: Weitz, Melissa
Sent: Tuesday, June 16, 2015 5:50 PM
To: McKittrick, Alexis; DeFigueiredo, Mark
Cc: Waltzer, Suzanne
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

I've attached the draft slides for this request.

Ex. 5 - Deliberative Process

If you have a chance to review, let me know if this looks okay. I need to send to Alison tomorrow a.m.

Thank you!

Melissa

From: Davis, Alison
Sent: Tuesday, June 16, 2015 10:11 AM
To: Weitz, Melissa; Franklin, Pamela
Cc: Waltzer, Suzanne; DeLuca, Isabel; DeFigueiredo, Mark; Karimjee, Anhar
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

Thanks!

From: Weitz, Melissa
Sent: Tuesday, June 16, 2015 10:05 AM
To: Davis, Alison; Franklin, Pamela
Cc: Waltzer, Suzanne; DeLuca, Isabel; DeFigueiredo, Mark; Karimjee, Anhar
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

Yes-that shouldn't be a problem.

From: Davis, Alison
Sent: Tuesday, June 16, 2015 9:57 AM
To: Weitz, Melissa; Franklin, Pamela
Cc: Waltzer, Suzanne; DeLuca, Isabel; DeFigueiredo, Mark; Karimjee, Anhar
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

Thank you very much. Is by tomorrow a.m. doable?

From: Weitz, Melissa
Sent: Tuesday, June 16, 2015 9:56 AM
To: Franklin, Pamela; Davis, Alison
Cc: Waltzer, Suzanne; DeLuca, Isabel; DeFigueiredo, Mark; Karimjee, Anhar
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

I'll pull together a few data slides covering EPA data (GHGRP and GHG Inventory) and the new studies and he can either include these in the presentation or use them for background.

From: Franklin, Pamela
Sent: Tuesday, June 16, 2015 9:52 AM
To: Davis, Alison; Weitz, Melissa
Cc: Waltzer, Suzanne; DeLuca, Isabel; DeFigueiredo, Mark; Karimjee, Anhar
Subject: RE: Looking for a couple of GHGRP slides for an AWMA presentation

+ Anhar and Mark D

From: Davis, Alison
Sent: Tuesday, June 16, 2015 9:37 AM
To: Weitz, Melissa
Cc: Franklin, Pamela; Waltzer, Suzanne; DeLuca, Isabel
Subject: Looking for a couple of GHGRP slides for an AWMA presentation

Hi Melissa,

Joe G. has asked David Cozzie to fill in to give an O&G presentation at next week's AWMA meeting in Raleigh. As you'll see from the session description below – data is part of the focus. As I understand it, EDF is on the panel, along with someone from Colorado and industry (don't know who).

Are there an GHGRP slides you think would be good for us to include?

Also, any data issue QS&As we should give David for his back pocket?

Thanks!

Here's the session description

Methane Regulatory and Policy Perspectives

Track: AIRS Room: 303

Thursday, June 25, 2015 8:00 AM

Panel – TCC: AAE3

Chair: Len Nelms, Tetra Tech, Inc.

Vice-Chair: Howard Feldman, API

Interest in methane emissions, particularly from the oil and gas industry, has grown rapidly over the last few years. Both interim and final data from recent studies involving field measurements of methane emissions have been reported, while some studies are still ongoing**. As these data are released, the EPA and several state environmental agencies have begun reviewing the new information and comparing the results to emission inventories and other existing data**. Policy is being developed to guide future regulatory actions based on both currently available information and these new studies. New regulations have been promulgated is some states and are being considered by other states and the EPA to address concerns about the methane emissions identified.

This panel will provide an opportunity for discussing the policies and regulations being developed in response to current research studies and will offer insights from industry, non-governmental

rding their concerns in setting

policy for future methane emission reductions.

Alison Davis

Senior Advisor for Public Affairs

US EPA, Office of Air Quality Planning & Standards

Research Triangle Park, NC 27711

Desk: 919-541-7587

Mobile: 919-624-0872

To: Davis, Alison[Davis.Alison@epa.gov]
Cc: Moore, Bruce[Moore.Bruce@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 8/11/2015 4:45:43 PM
Subject: RE: Question about GHGRP and the2012 rules -

Yes-it's on our website and can be found at http://www.epa.gov/ghgreporting/ghgdata/reported/petroleum.html.

From: Davis, Alison
Sent: Tuesday, August 11, 2015 12:41 PM
To: Weitz, Melissa
Cc: Moore, Bruce; Waltzer, Suzanne; DeFigueiredo, Mark; McKittrick, Alexis
Subject: RE: Question about GHGRP and the2012 rules -

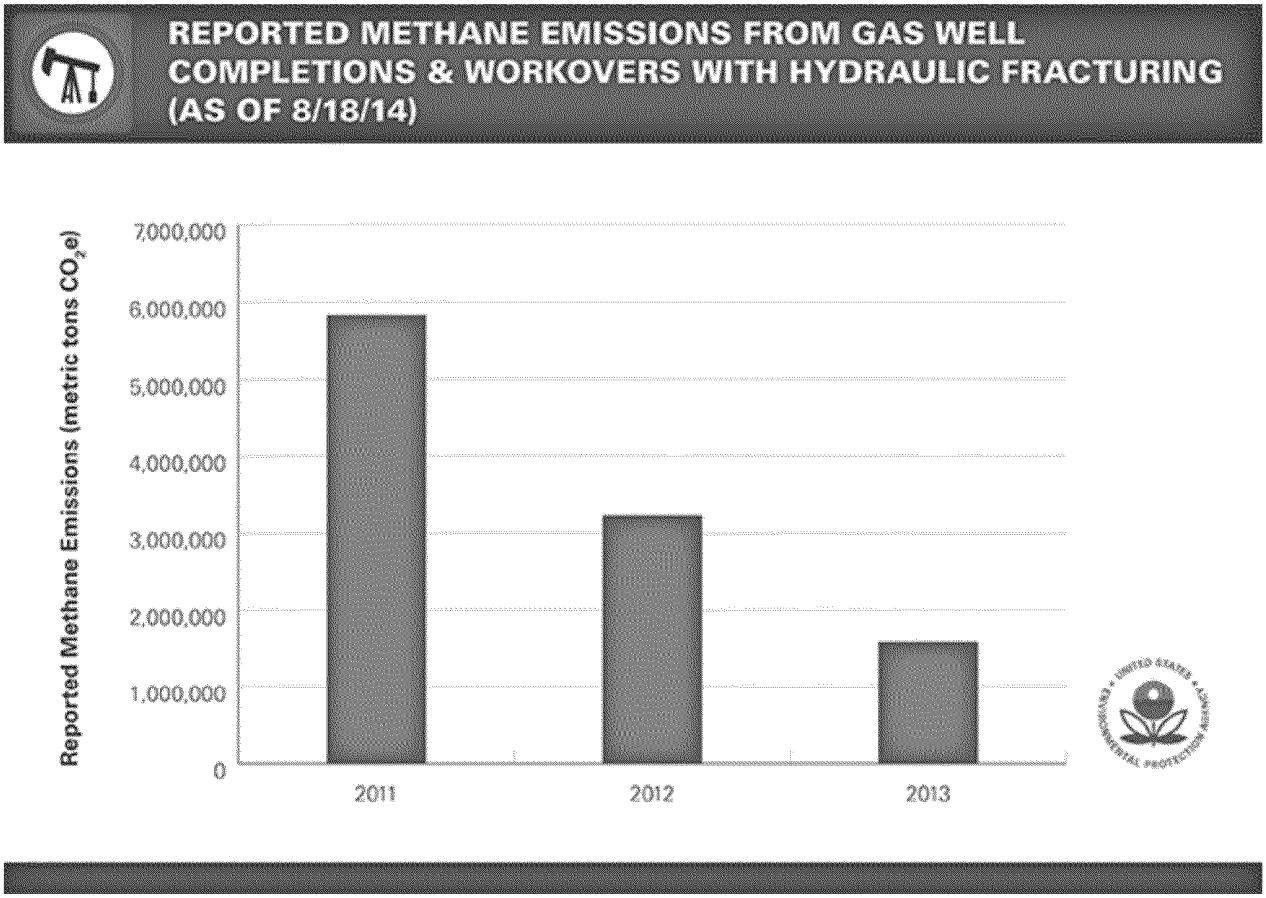
Excellent – thanks!. OK if I share this with OAR comms for press scripts?

From: Weitz, Melissa
Sent: Tuesday, August 11, 2015 12:38 PM
To: Davis, Alison <Davis.Alison@epa.gov>
Cc: Moore, Bruce <Moore.Bruce@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: Question about GHGRP and the2012 rules -

Yes—

A decreasing trend in emissions from HF gas well completions and workovers can be seen in the GHGRP data:

- **Reported methane emissions (CO_2e) for gas well completions and workovers with hydraulic fracturing.**



From: Davis, Alison
Sent: Tuesday, August 11, 2015 11:54 AM
To: Weitz, Melissa
Cc: Moore, Bruce; Waltzer, Suzanne
Subject: Question about GHGRP and the2012 rules -

Hi Melissa,

OAR comms is asking whether there are any trends in the GHGRP that we could attribute to the reductions required in the 2012 rules?

Alison Davis

Senior Advisor for Public Affairs

US EPA, Office of Air Quality Planning & Standards

Research Triangle Park, NC 27711

Desk: 919-541-7587

Mobile: 919-624-0872

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Gunning, Paul
Sent: Mon 2/8/2016 4:28:37 PM
Subject: FW: CA moves on rules

From: McCabe, Janet
Sent: Sunday, February 07, 2016 10:52 PM
To: Jordan, Deborah <Jordan.Deborah@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: CA moves on rules

California Proposes Rules to Limit Methane from Oil and Gas

The California Air Resources Board on February 1 proposed new rules to limit greenhouse gas emissions from crude oil and natural gas facilities. The proposal, which represents a response to the massive methane leak at the Southern California Gas Company Aliso Canyon storage facility, would limit venting of methane and require regular inspections of facilities to find leaks. It also coincides with U.S. EPA's proposal to set methane rules for existing facilities. [Parisien]

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/7/2016 3:43:54 PM
Subject: FW: January 7 -- EnergyWire is ready

Would you mind responding to David?

Ex. 5 - Deliberative Process

From: Cozzie, David
Sent: Thursday, January 07, 2016 10:29 AM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>
Subject: FW: January 7 -- EnergyWire is ready

All,

Ex. 5 - Deliberative Process

David

From: Tsirigotis, Peter
Sent: Thursday, January 07, 2016 9:48 AM
To: Cozzie, David <Cozzie.David@epa.gov>
Subject: Fwd: January 7 -- EnergyWire is ready

Ex. 5 - Deliberative Process

Begin forwarded message:

From: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Date: January 7, 2016 at 8:54:12 AM EST
To: "Gunning, Paul" <Gunning.Paul@epa.gov>, "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>, "Dunham, Sarah" <Dunham.Sarah@epa.gov>
Subject: Fwd: January 7 -- EnergyWire is ready

How did ConocoPhillips Phillips do it?

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: E&E Publishing <ealerts@eenews.net>
Date: January 7, 2016 at 8:33:31 AM EST
To: <goffman.joseph@epa.gov>
Subject: January 7 -- EnergyWire is ready

Read today's EnergyWire on the web

AN E&E PUBLISHING SERVICE

ENERGYWIRE — Thu., January 7, 2016

READ FULL EDITION

1.METHANE:

ConocoPhillips slashed emissions 23% in 2014

One of the most methane-dirty oil companies is cleaning up its act. ConocoPhillips Co.'s efforts to curb methane leaks in New Mexico's San Juan Basin resulted in major reductions to its greenhouse gas contributions in 2014 -- even as production continued to climb, according to an *EnergyWire* analysis.

ELECTRICITY

2.CLEAN POWER PLAN:

Defiant Ala. pledges to wait out court ruling

3.CLEAN POWER PLAN:

Ex-Ky. energy chief wants state to craft its own strategy

OIL AND GAS

4.KEYSTONE XL:

Enviros wield TransCanada challenge against trade deal

5.LAW:

Pa. royalties settlement on hold while AG fights Chesapeake

6.REGULATION:

Pa. prepares to finalize surface-impact rules for Marcellus Shale

7.ENFORCEMENT:

Pa. fines Kinder Morgan for storage-tank violations

8. CARBON CAPTURE:

Statoil to try storing CO2 in North Sea

9. FINANCE:

Deadline looms for oil sands hostile takeover bid

10. FINANCE:

Oil field budget cuts worse than in '80s oil bust -- report

11. POLITICS:

Oil industry's long give-and-take with Obama administration

Get all of the stories in today's EnergyWire, plus an in-depth archive with thousands of articles on your issues, detailed Special Reports and much more at http://www.energywire.com.
Forgot your passcodes? Call us at 202-628-6500 now and we'll set you up instantly.
To send a press release, fax 202-737-5299 or email editorial@eenews.net.

ABOUT ENERGYWIRE – The transformation of the energy sector

EnergyWire is written and produced by the staff of E&E Publishing, LLC. EnergyWire is designed to bring readers deep, broad and insightful coverage of the transformation of the energy sector. EnergyWire focuses on the business, environmental and political issues surrounding the rapidly expanding unconventional energy industry and the numerous factors -- from expanding natural gas use to renewables and more -- that are altering the traditional electric utility industry. EnergyWire publishes daily at 9:00 a.m.

Unsubscribe | Our Privacy Policy
E&E Publishing, LLC
122 C St. NW, Ste. 722, Wash., D.C. 20001
Phone: 202-628-6500 Fax: 202-737-5299
www.eenews.net

All content is copyrighted and may not be reproduced or retransmitted without the express consent of E&E Publishing, LLC. Prefer plain text? Click here.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 6/16/2015 1:58:15 PM
Subject: RE:

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Tuesday, June 16, 2015 9:28 AM
To: Waltzer, Suzanne; Weitz, Melissa
Subject: RE:

Ex. 5 - Deliberative Process

From: Waltzer, Suzanne
Sent: Tuesday, June 16, 2015 9:10 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: FW:

Ex. 5 - Deliberative Process

From: Waltzer, Suzanne
Sent: Tuesday, June 16, 2015 9:07 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE:

Thanks! Quick ? What are the sub-bullets –

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Tuesday, June 16, 2015 9:04 AM
To: Waltzer, Suzanne; Weitz, Melissa
Subject: RE:

Here you go, Suzie.

Alexis

From: Waltzer, Suzanne
Sent: Tuesday, June 16, 2015 7:40 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE:

Thank you!!

From: McKittrick, Alexis
Sent: Monday, June 15, 2015 4:52 PM
To: Weitz, Melissa; Waltzer, Suzanne
Subject: RE:

Ex. 5 - Deliberative Process

Alexis

From: Weitz, Melissa
Sent: Monday, June 15, 2015 3:51 PM
To: McKittrick, Alexis
Subject:

Hi Alexis,

Ex. 5 - Deliberative Process

Thanks!

I'll stop by to finally sign the card.

Melissa

To: Hargrove, Anne[Hargrove.Anne@epa.gov]
Cc: Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Wed 12/2/2015 1:42:10 PM
Subject: FW: Study from NAS on methane

FYI.....

Anne when I get more info. from EDF I will need your help in setting this up. We will need to include all OAP and OAQPS oil and gas folks. Teresa Marks would like to attend as well.

Paul

-----Original Message-----
From: McCabe, Janet
Sent: Wednesday, December 02, 2015 7:57 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Cc: Marks, Teresa <Marks.Teresa@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: Study from NAS on methane

Just heard from Vickie P. That NAS is putting out a study on dec 7 on the Barnet shake that apparently will show substantially higher emissions than current estimates. You may already know about this.

Paul--I suggested she contact you--they'd like to give us an advance briefing--probably tomorrow. So you should expect a call...

Sent from my iPhone

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/7/2016 11:16:51 PM
Subject: RE: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API
oil and gas backgrounder_API 3_8_16 mw.docx

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, March 07, 2016 5:46 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Bylin, Carey <Bylin.Carey@epa.gov>
Subject: Re: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

Ex. 5 - Deliberative Process

Alexis

Sent from my iPhone

On Mar 7, 2016, at 5:27 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Ex. 5 - Deliberative Process

A few bullets on each would be great.

From: Gunning, Paul
Sent: Monday, March 07, 2016 5:25 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: Re: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

Thanks

Paul Gunning

202-251-1436

Sent from my iPhone

On Mar 7, 2016, at 5:23 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

I'm around and can pull something together.

From: Gunning, Paul
Sent: Monday, March 07, 2016 5:23 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: Fwd: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

Ex. 5 - Deliberative Process

Paul Gunning

202-251-1436

Sent from my iPhone

Begin forwarded message:

From: "South, Peter" <South.Peter@epa.gov>
Date: March 7, 2016 at 4:37:27 PM EST
To: "Alston, Lala" <Alston.Lala@epa.gov>, "Koerber, Mike" <Koerber.Mike@epa.gov>, OAQPS WOPS <OAQPS_WOPS@epa.gov>, OAR Briefings <OAR_Briefings@epa.gov>, "Sanders, Maria" <Sanders.Maria@epa.gov>, "Walker, Jean" <Walker.Jean@epa.gov>
Cc: "Friedman, Kristina" <Friedman.Kristina@epa.gov>, "Krieger, Jackie" <Krieger.Jackie@epa.gov>, "Gunning, Paul" <Gunning.Paul@epa.gov>, "Wood, Anna" <Wood.Anna@epa.gov>, "Cozzie, David" <Cozzie.David@epa.gov>, "Lassiter, Penny" <Lassiter.Penny@epa.gov>, "Shine, Brenda" <Shine.Brenda@epa.gov>, "Banister, Beverly" <Banister.Beverly@epa.gov>, "Rao, Raj" <Rao.Raj@epa.gov>, "Vetter, Cheryl" <Vetter.Cheryl@epa.gov>, "Mathias, Scott" <Mathias.Scott@epa.gov>, "Conner, Lisa" <Conner.Lisa@epa.gov>, "Culligan, Kevin" <Culligan.Kevin@epa.gov>, "Eck, Janet" <Eck.Janet@epa.gov>, "Johnson, Tanya" <Johnson.Tanya@epa.gov>, "McLamb, Marguerite" <McLamb.Marguerite@epa.gov>, "Pemberton, Wanda" <Pemberton.Wanda@epa.gov>, "Srivastava, Ravi" <Srivastava.Ravi@epa.gov>, "Thompson, Fred" <Thompson.Fred@epa.gov>, "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>, "Vasu, Amy" <Vasu.Amy@epa.gov>
Subject: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

I have attached a backgrounder in prep for Janet's meeting with API on the oil and gas rules. Please do not share this document outside of OAR and do not distribute in the meeting room.

Feel free to call me or Mike Koerber with any questions relating to this information.

Thank you.

Pete South

OAR/OAQPS/IO

U.S. EPA

office: 919 541-5359

cell: 919 599-7213

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/4/2014 10:22:14 PM
Subject: RE: Gas STAR Gold Technical Background Document for Your Review
Gas STAR Gold Tech Background Document Final Draft 052014 mw.docx

Sorry--did not attach my comments. They are here.

From: Weitz, Melissa
Sent: Wednesday, June 04, 2014 6:18 PM
To: McKittrick, Alexis
Subject: FW: Gas STAR Gold Technical Background Document for Your Review

Hi Alexis,

Ex. 5 - Deliberative Process

Melissa

From: Fernandez, Roger
Sent: Tuesday, May 20, 2014 9:23 AM
To: Macpherson, Alex; Moore, Bruce; Waltzer, Suzanne; Franklin, Pamela; Frantz, Chris; Weitz, Melissa; DeFigueiredo, Mark
Cc: Cozzie, David
Subject: Gas STAR Gold Technical Background Document for Your Review

Good Morning Everyone,

Ex. 5 - Deliberative Process

I look forward to your thoughts and comments and thanks again for your support.

Sincerely,
Roger

<< File: Gas STAR Gold Tech Background Document Final Draft 052014.docx >>

Natural Gas STAR Program / Global Methane Initiative
Climate Change Division

+1-202-343-9386
epa.gov/gasstar

Visiting and Private Mail Carrier (DHL/FedEx etc) Address
1310 L St., NW (846)
Washington, DC 20005
USA

Postal Address
1200 Pennsylvania Ave., NW (6207J)
Washington DC 20460
USA

-----Original Appointment-----
From: Fernandez, Roger
Sent: Friday, May 16, 2014 11:21 AM
To: Fernandez, Roger; Macpherson, Alex; Moore, Bruce; Waltzer, Suzanne; Franklin, Pamela; Frantz, Chris; Weitz, Melissa; DeFigueiredo, Mark
Cc: Cozzie, David
Subject: Gas STAR Gold Technical Background Documents Discussion
When: Monday, June 02, 2014 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Call in number forthcoming

Call in number is: 1-866-299-3188

1044

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/7/2016 10:48:17 PM
Subject: RE: please review
OG -EDF talking points 3-6-2016 V2 EDITING mw.docx

My edits

From: DeLuca, Isabel
Sent: Monday, March 07, 2016 5:29 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: please review
Importance: High

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

From: Davis, Alison
Sent: Monday, March 07, 2016 4:33 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Subject: RE: please review
Importance: High

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Joe will be looking at these any minute

From: DeLuca, Isabel
Sent: Monday, March 07, 2016 3:57 PM
To: Davis, Alison <Davis.Alison@epa.gov>
Subject: FW: please review

Hey Alison,

Ex. 5 - Deliberative Process

Thanks,

Isabel

From: Weitz, Melissa
Sent: Monday, March 07, 2016 3:46 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Cc: McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: please review

Thanks Isabel,

Ex. 5 - Deliberative Process

Thanks,

Melissa

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/7/2016 8:46:23 PM
Subject: RE: please review
OG -EDF talking points 3-6-2016 mw AM.docx

Thanks Isabel,

Ex. 5 - Deliberative Process

Thanks,

Melissa

From: DeLuca, Isabel
Sent: Monday, March 07, 2016 3:31 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: please review

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Monday, March 07, 2016 3:25 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Subject: RE: please review

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Monday, March 07, 2016 2:05 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: please review

Ex. 5 - Deliberative Process

From: Davis, Alison
Sent: Monday, March 07, 2016 1:59 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Subject: please review

Alison Davis

Senior Advisor for Public Affairs

US EPA, Office of Air Quality Planning & Standards

Research Triangle Park, NC 27711

Desk: 919-541-7587

Mobile: 919-624-0872

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Wed 3/18/2015 2:36:50 PM
Subject: RE: Methane workshop in Austin, TX in April?

I wonder if it's actually an EDF workshop? I don't know of anything they have scheduled—we wouldn't be invited anyway—but their oil and gas group is based in Austin, and does have periodic workshops/meetings related to their ongoing CH4 studies.

From: DeLuca, Isabel
Sent: Wednesday, March 18, 2015 10:28 AM
To: Weitz, Melissa; DeFigueiredo, Mark; McKittrick, Alexis; Waltzer, Suzanne
Subject: FW: Methane workshop in Austin, TX in April?

Hi o&G team,

Do any of you know about a methane workshop in Austin, TX in April? OAQPS got wind of something and was wondering if we knew anything about it.

Thanks,
Isabel

From: Bremer, Kristen
Sent: Wednesday, March 18, 2015 9:45 AM
To: DeLuca, Isabel
Cc: Johnson, Terry
Subject: RE: Methane workshop in Austin, TX in April?

Adding Terry Johnson and removing Yvonne Johnson (darn autofill!)

Kristen Bremer

Policy Analysis & Communications

U.S. EPA, Office of Air Quality Planning & Standards

Email: bremer.kristen@epa.gov

Phone: 919.541.9424

Cell: 919.321.7652

From: Bremer, Kristen
Sent: Wednesday, March 18, 2015 9:43 AM
To: DeLuca, Isabel
Cc: Johnson, Yvonne W
Subject: FW: Methane workshop in Austin, TX in April?

Hi Isabel-

Do you have any information about the methane workshop scheduled for April 7-8 in Austin? If not you, do you know who would? I checked with some folks here and they hadn't heard about it.

Thanks!

Kristen Bremer

Policy Analysis & Communications

U.S. EPA, Office of Air Quality Planning & Standards

Email: bremer.kristen@epa.gov

Phone: 919.541.9424

Cell: 919.321.7652

From: Johnson, Terry
Sent: Tuesday, March 17, 2015 12:58 PM
To: Bremer, Kristen
Subject: Methane workshop in Austin, TX in April?

Kristen,

Do you know anything about a methane workshop being conducted by EPA in Austin on April 7 – 8?

Thanks,

Terry

Terry Johnson, Environmental Engineer

U.S. EPA Region 6

Air Planning Section (6PD-L)

1445 Ross Ave.

Dallas, TX 75202

(214) 665-2154

johnson.terry@epa.gov

POSITIONS OR VIEWS EXPRESSED DO NOT REPRESENT OFFICIAL EPA POLICY

To: Hambrick, Amy[Hambrick.Amy@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 8/4/2015 7:20:19 PM
Subject: RE: latest TSD?
clean EO12866_OG NSPS 2060 AS30 TSD 20150709 (4) mw and AM 8.4.docx

Resending.

Ex. 5 - Deliberative Process

-----Original Message-----
From: Hambrick, Amy
Sent: Tuesday, August 04, 2015 3:19 PM
To: Weitz, Melissa; McKittrick, Alexis
Subject: RE: latest TSD?

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Thanks,

amy

Amy Hambrick
U.S. Environmental Protection Agency
(919)541-0964

-----Original Message-----
From: Weitz, Melissa
Sent: Tuesday, August 04, 2015 11:33 AM
To: McKittrick, Alexis; Hambrick, Amy
Subject: RE: latest TSD?

Ex. 5 - Deliberative Process

-----Original Message-----
From: McKittrick, Alexis
Sent: Tuesday, August 04, 2015 11:28 AM
To: Hambrick, Amy; Weitz, Melissa
Subject: RE: latest TSD?

Amy,

Ex. 5 - Deliberative Process

Let me know if you have any questions.

Thanks,
Alexis

From: Hambrick, Amy
Sent: Monday, August 3, 2015 5:36 PM
To: Weitz, Melissa
Cc: McKittrick, Alexis
Subject: RE: latest TSD?

Ex. 5 - Deliberative Process

Amy Hambrick
U.S. Environmental Protection Agency
(919)541-0964

From: Weitz, Melissa
Sent: Monday, August 03, 2015 5:01 PM
To: Hambrick, Amy
Cc: McKittrick, Alexis
Subject: RE: latest TSD?

Hi Amy,

Ex. 5 - Deliberative Process

Thank you!!

Melissa

From: Hambrick, Amy
Sent: Monday, August 03, 2015 3:31 PM
To: Weitz, Melissa
Subject: RE: latest TSD?

Ex. 5 - Deliberative Process

Amy Hambrick
U.S. Environmental Protection Agency
(919)541-0964

From: Weitz, Melissa
Sent: Monday, August 03, 2015 2:58 PM
To: Hambrick, Amy
Subject: latest TSD?

Ex. 5 - Deliberative Process

To: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]
From: Gunning, Paul
Sent: Mon 2/1/2016 4:20:08 PM
Subject: FW: politico clip on methane just fyi

FYI

From: Krieger, Jackie
Sent: Monday, February 01, 2016 8:45 AM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Friedman, Kristina <Friedman.Kristina@epa.gov>; Lemon, Mollie <Lemon.Mollie@epa.gov>
Subject: politico clip on methane just fyi

THE CLEAN POWER PLAN IS NOT ENOUGH: Greens and their allies in Congress are leaning on President Obama to add one more climate rule to the bevy his administration has already produced: Regulate methane emissions from existing oil and gas wells. As Pro's Elana Schor and Andrew Restuccia report this morning, the administration is racing to finalize a pair of methane rules, one from Interior and another from the EPA, but a recent report indicated the U.S. would have to reduce methane emissions further in order to meet the commitment it made in Paris last year. And the pressure is coming from all sides, as 21 Senate Democrats sent the administration a letter last week calling for a methane rule on existing wells, and Sen. Brian Schatz of Hawaii is hoping to get a methane provision into the Senate energy bill. Greens are providing pressure from outside the Capitol: "This is the single most important thing that this administration or frankly any administration can do to make a real step forward in reducing the rate of warming right now," said Mark Brownstein, the vice president of the climate and energy program at the Environmental Defense Fund.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: Melissa Weitz
Sent: Sun 3/6/2016 12:26:23 PM
Subject: NSPS RTC on pneumatic and compressor emissions
RTC compressor and controllers 3.6.docx

Can you take a look at my draft responses for 3 of RTCs on pneumatics and compressors?

No need to look at this today, obviously! I'm jet lagged and woke up at 5:30, and I've already run out of things to do this morning, so why not RTCs? :)

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 3/4/2016 9:05:45 PM
Subject: RE: quick fact check

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Friday, March 04, 2016 4:03 PM
To: Hockstad, Leif <Hockstad.Leif@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Cc: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: quick fact check

Ex. 5 - Deliberative Process

From: Hockstad, Leif
Sent: Friday, March 04, 2016 4:01 PM
To: Irving, Bill <Irving.Bill@epa.gov>
Cc: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: Re: quick fact check

Ex. 5 - Deliberative Process

- Leif

On Mar 4, 2016, at 3:55 PM, Irving, Bill <Irving.Bill@epa.gov> wrote:

Plus Leif

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Friday, March 04, 2016 3:45 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: RE: quick fact check

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Friday, March 04, 2016 3:42 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: quick fact check

Hi

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks!

Isabel

Isabel DeLuca

Climate Change Division, US EPA

(202) 343-9247

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/14/2016 4:55:35 PM
Subject: RE: Washington Free Beacon: Methane; DDL: 3 pm

The response looks great. Thanks!

Here's an article on the study, with some thoughts from Daniel Jacob, who we're working with on the gridding project. He questions the new study's finding that most of the increase is from agriculture.

http://insideclimatenews.org/news/10032016/mysterious-global-methane-rise-asian-agriculture-or-us-fracking

From: DeLuca, Isabel
Sent: Monday, March 14, 2016 12:34 PM
To: Hockstad, Leif <Hockstad.Leif@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: Washington Free Beacon: Methane; DDL: 3 pm
Importance: High

FYI—see the reporter question at bottom. Are you aware of this study? Here's the draft response the press office is considering so far—let me know if you have concerns.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Jones, Enesta
Sent: Monday, March 14, 2016 10:21 AM
To: Davis, Alison <Davis.Alison@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Dennis, Allison <Dennis.Allison@epa.gov>
Cc: Allen, Laura <Allen.Laura@epa.gov>; Jones, Enesta <Jones.Enesta@epa.gov>
Subject: RE: Washington Free Beacon: Methane; DDL: 3 pm

+ study

From: Jones, Enesta
Sent: Monday, March 14, 2016 9:44 AM
To: Davis, Alison <Davis.Alison@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Dennis, Allison <Dennis.Allison@epa.gov>
Cc: Jones, Enesta <Jones.Enesta@epa.gov>
Subject: Washington Free Beacon: Methane; DDL: 3 pm

DDL: 3 pm today

I'm working on a story on a recent study (attached) by scientists at NOAA and other leading climate research institutions. It examines recent increases in methane emissions, so I'm looking at it in light of EPA's proposed rules on such emissions from oil and gas extraction activities.

The study concludes that fossil fuel-related emissions "are a minor contributor to the renewed [CH4]-rise" and that "either food production or climate-sensitive natural emissions are the most probable causes of the current [CH4]-increase."

Some industry folks are sayingthat this vindicates their opposition to EPA's proposed rules, so I'm just wondering if EPA would like to comment on the study.

Lachlan Markay

Enesta Jones

U.S. EPA, Office of Media Relations

Desk: 202.564.7873

Cell: 202.236.2426

To: Karimjee, Anhar[Karimjee.Anhar@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Sat 1/10/2015 2:29:34 PM
Subject: Re: WH FACT SHEET Methane Oil and Gas_TRACKED

Thanks. How is this?? I pulled some language from the preamble.....

Ex. 5 - Deliberative Process

From: Karimjee, Anhar
Sent: Saturday, January 10, 2015 9:21 AM
To: Gunning, Paul
Cc: McKittrick, Alexis; Kocchi, Suzanne
Subject: Re: WH FACT SHEET Methane Oil and Gas_TRACKED

Alexis is probably not on BB and I don't want to disturb her over the weekend so I'm working on this. Will get something to everyone in the next hour.

Anhar Karimjee, Branch Chief
Greenhouse Gas Reporting Program
(202) 343-9260

On Jan 9, 2015, at 10:09 PM, "Gunning, Paul" <Gunning.Paul@epa.gov> wrote:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Standing by as is Sarah.

From: Vahlsing, Candace [mailto: Ex. 6 - Personal Privacy
Sent: Friday, January 09, 2015 7:54 PM
To: Goffman, Joseph
Subject: RE: WH FACT SHEET Methane Oil and Gas_TRACKED

Going to call you in a minute.

Ex. 5 - Deliberative Process

From: Goffman, Joseph [mailto:Goffman.Joseph@epa.gov]
Sent: Friday, January 09, 2015 7:49 PM
To: Vahlsing, Candace
Cc: Gunning, Paul; Dunham, Sarah
Subject: RE: WH FACT SHEET Methane Oil and Gas_TRACKED

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Vahlsing, Candace [mailto: Ex. 6 - Personal Privacy
Sent: Friday, January 09, 2015 7:14 PM
To: Goffman, Joseph
Subject: RE: WH FACT SHEET Methane Oil and Gas_TRACKED

Ex. 5 - Deliberative Process

From: Goffman, Joseph [mailto:Goffman.Joseph@epa.gov]
Sent: Friday, January 09, 2015 6:03 PM
To: Vahlsing, Candace
Subject: FW: WH FACT SHEET Methane Oil and Gas_TRACKED

Please see below. Thanks.

From: Gunning, Paul
Sent: Friday, January 09, 2015 6:00 PM
To: Drinkard, Andrea; Dunham, Sarah; Goffman, Joseph
Cc: Karimjee, Anhar
Subject: Re: WH FACT SHEET Methane Oil and Gas_TRACKED

Joe/Andrea

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Drinkard, Andrea
Sent: Friday, January 9, 2015 4:58 PM
To: Dunham, Sarah; Tsirigotis, Peter; Davis, Alison; Gunning, Paul; DeLuca, Isabel
Subject: Fw: WH FACT SHEET Methane Oil and Gas_TRACKED

fyi...

From: Goffman, Joseph <Goffman.Joseph@epa.gov>

Sent: Friday, January 9, 2015 4:57 PM

To: Utech, Dan G.; Vahlsing, Candace

Cc: Reynolds, Thomas; Drinkard, Andrea; McCabe, Janet; Adm13McCarthy, Gina

Subject: WH FACT SHEET Methane Oil and Gas_TRACKED

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 10/9/2014 8:07:46 PM
Subject: RE: Quick Q on GHGRP GWP updates from 2013 Rule

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Thursday, October 09, 2014 1:33 PM
To: Waltzer, Suzanne; Weitz, Melissa; McKittrick, Alexis
Subject: Fwd: Quick Q on GHGRP GWP updates from 2013 Rule

More on what ostp is looking at.

Sent from my iPhone

Begin forwarded message:

From: "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>
Date: October 9, 2014 at 12:31:53 PM CDT
To: "Clavin, Christopher T" <cclavin@ida.org>
Subject: Re: Quick Q on GHGRP GWP updates from 2013 Rule

Thanks Chris. It might be easier for us to talk next week - maybe Tuesday given the federal holiday - I'm out of town and all I have is my iPhone (no access to envirofacts tables) and so I am working from memory.

It sounds like you're interested in sources at the sub-basin level (county level). Since some subpart w sources are reported at the basin level (eg pneumatics) and some sources are reported at the sub-basin level (eg liquids unloading), sub-basin analyses would need to be done on an emission source basis (eg analysis using the liquids unloading tables rather than analysis using the W Source Summary Tables). There should be a sub basin identifier in tables such as liquids unloading that are reported on a sub basin basis. There should also be a table in envirofacts with sub basin information itself.

Also remember the usual subpart w caveats - there's a reporting threshold and subpart w does not currently cover certain sources such as gathering and boosting - so it's not unsurprising that subpart w reported data would be lower than total emissions in a given region.

Hope that's helpful (or enough to get you going) and perhaps we can connect next week?

Best wishes,

Mark

Sent from my iPhone

On Oct 9, 2014, at 12:07 PM, "Clavin, Christopher T" <cclavin@ida.org> wrote:

> I'll ask 1 more at the risk of being a pest. If I am disturbing your vacation, please ignore this email and I'll touch base with you next week. I've asked OSTP to wait for us to weigh in on their questions until next week, so I have some time.
>
> We are exploring the GHGRP data in the context of a recent paper that uses remote sensing data to highlight emissions discrepancies from EDGAR and other ground observations in the 4 corners region – I am not surprised by this result due to the lack of observations in the 4 corners region. One element of the paper that I'm trying to explore is whether the authors have accounted for interannual variability in the emissions and their respective sources, and particularly whether they are accounting for shifts in production in the region.
>
> The San Juan Basin methane emissions are dominated by coal mines (~30%) and petroleum and natural gas sources (~60%). Due to SubptW being highly heterogeneous, I'm trying to explore where the Subpt W contributions are coming from by examining reported CH4 emissions in subpart W, by each subbasin identifier triplet. (not as interested in this case about the type of component that is venting) Is this possible? For example, I would like to say X% of 580 - San Juan County's SubptW emissions come from High Permeability Gas? In perusing the envirofacts tables, skimming the XML reporting instructions, I can't find a single table that links reported emissions to a unique subbasin identifier.

Again, if you are on vacation, let's just chat next week. Thanks Mark.

CC

From: Clavin, Christopher T
Sent: Thursday, October 09, 2014 10:56 AM
To: 'DeFigueiredo, Mark'
Subject: RE: Quick Q on GHGRP GWP updates from 2013 Rule

Thanks Mark for the quick reply. That answers my question – but I'll keep the option to ask more next week. (And I did mean AR4, not FAR. I can never quite keep straight the naming convention change at AR4.)

CC

From: DeFigueiredo, Mark [mailto:DeFigueiredo.Mark@epa.gov]
Sent: Thursday, October 09, 2014 10:56 AM
To: Clavin, Christopher T
Subject: Re: Quick Q on GHGRP GWP updates from 2013 Rule

Hi Chris -

I'm out of the office this week but would be happy to chat next week if you have questions or would like me to walk you through the data.

But in answer to your question, the subpart w data in envirofacts is directly from the facility annual reports and so the subpart w envirofacts data is reported with a methane gwp of 21 for 2011-12 (SAR) and a gwp of 25 for 2013 (AR4). You may find the

following document helpful, which is a summary of all the subpart w data on a common gwp basis of 25:

http://epa.gov/ghgreporting/documents/pdf/2014/documents/Subpart-W-2013-Data-Summary.pdf

Best wishes,

Mark

Sent from my iPhone

On Oct 9, 2014, at 9:46 AM, "Clavin, Christopher T" <cclavin@ida.org> wrote:

Hi Mark,

Hope all is well. OSTP is beginning to pick up the pace again with some questions on Subpart W methane emissions, and I wanted to make sure I understood the GWP revisions that were implemented last year. My understanding is that, all reporting year 2013 data uses FAR GWP-100 factors, 25 for methane. Does reporting year 2011 and 2012 data still use the SAR GWP-100, 21 for methane? Or has the GWP-100 of 25 been applied retroactively in the data available on envirofacts?

Thanks.

Chris

Christopher Clavin
Institute for Defense Analyses
Science & Technology Policy Institute
1899 Pennsylvania Avenue NW, Suite 520
Washington, DC 20006
202-419-5416, cclavin@ida.org

To: Lauren Lariviere[Lauren.Lariviere@erg.com]; Casey MacQueen Pickering[Casey.Pickering@erg.com]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 11/17/2015 10:39:17 PM
Subject: Slides for workshop--overview and production
Overview.McKittrick.GHGRP.pptx
Overview.Weitz.GHGI.pptx
Production.McKittrick.GHGDataWorkshop_GHGRP Onshore Production 11_16_15.pptx
Production.Omara et al EPA GHGRP Meeting__draft presentation2.pptx
Production.Shires.API_EPA_Stakeholders Meeting_Production_17NOV15.pptx
Production.Weitz.pptx

Sending these over in batches in case the attachments are too large. I'll also bring them on a thumb drive.

Alexis-the GHGRP slides are the ones you sent yesterday. Let me know if you need to make additional changes.

Note that some of the presenters are still making minor changes to their presentations and will bring the latest with them.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Fri 11/13/2015 9:33:37 PM
Subject: FW: GHG Data Workshop slides - for your review
GHGI overview.pptx
2016 GHGI Proposed Updates to NG Distribution_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to NG TS_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to GB-Proc Segment_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to Production Segment AD_Workshop_2015-11.12.pptx

Sorry I didn't get a chance to run these by you guys before sending them over to Bruce and Alison. If you have a chance to review, please let me know if you have comments.

From: Weitz, Melissa
Sent: Friday, November 13, 2015 4:31 PM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Tang, Natalie <Tang.Natalie@epa.gov>
Subject: RE: GHG Data Workshop slides - for your review

Hello,

I've attached here five presentations from GHGI for the GHG Data Workshop in Pittsburgh. These will be presented along with the 5 presentations that Alexis sent on GHGRP data.

The presentations are about the same length as Alexis'.

A few notes:

In the first presentation (GHGI overview), all slides but the last slide (slide #13) have already been vetted.

In the GHGI Proposed Updates to Production Segment slides, some of the numbers are in red because I am rechecking them and will have updated numbers on Monday.

Please let me know if you'd like me to walk through any of this with you next week.

Thank you!

Melissa

From: McKittrick, Alexis
Sent: Friday, November 13, 2015 1:43 PM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Tang, Natalie <Tang.Natalie@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: GHG Data Workshop slides - for your review

Bruce & Alison,

Attached are the five mini-presentations from GHGRP for the GHG Data Workshop in Pittsburgh next Thursday. (This is separate from the Gas Star workshop on Tuesday and Wednesday.) While five presentations may look daunting, none of them are longer than about a dozen slides. Also, the structure is repeated for each of the segment-specific presentations – just the actual data / numbers change.

Please let me know by lunchtime next Wednesday if you have any concerns or edits. As always, thank you so much for your review!

Best,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/7/2016 6:33:37 PM
Subject: RE: draft O&G business plan slides
Draft CCD OG team briefing_1.7.2016.pptx

Hello,

I've updated the slides based on our discussion on Tuesday. They're attached and on the g:drive.

I condensed some of the earlier slides into one slide as it seemed a bit repetitive, but otherwise, it's the same structure as before.

Please take a look and send me any edits/feedback you have by 1/13. The briefing with Paul was moved to 1/25, and I'll see if I can schedule something with the branch chiefs for early in the week of 1/18.

Thanks!

From: Weitz, Melissa
Sent: Wednesday, December 23, 2015 2:51 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>
Subject: draft O&G business plan slides

Draft FY2016 business plan slides for the O&G team are attached, and saved on the g drive (Business Planning folder).

Ex. 5 - Deliberative Process

Thanks!

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 12/10/2015 3:34:44 PM
Subject: (GHGRP slides from workshop) FW: Speaker presentations
2.Overview.McKittrick.GHGRP.pptx
4.Distribution.Tang.GHGDataWorkshop_GHGRP Distribution_segment_11_16_15.pptx
9.Transmission.McKittrick.GHGDataWorkshop_GHGRP Transmission_storage 11_16_15.pptx
14.Processing deFigueiredo GHGDataWorkshop_GHGRP Processing 11_18_15.pptx
19.Production.McKittrick.GHGDataWorkshop_GHGRP Onshore Production 11_16_15.pptx

From: Lauren Lariviere [mailto:Lauren.Lariviere@erg.com]
Sent: Thursday, December 10, 2015 10:33 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Re: Speaker presentations

Attached.

Do you need yours as well?

From: Weitz, Melissa <Weitz.Melissa@epa.gov>
Sent: Thursday, December 10, 2015 9:57 AM
To: Lauren Lariviere
Subject: RE: Speaker presentations

Would it be possible for you to send me the GHGRP presentations from the workshop? They will be labeled with "McKittrick" "Tang" and "de Figueiredo." The GHGRP team may have some minor edits to their slides and they want to be sure they are editing the final versions.

Thank you!

From: Lauren Lariviere [mailto:Lauren.Lariviere@erg.com]
Sent: Friday, December 04, 2015 2:52 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Monika Chandra <Monika.Chandra@erg.com>

Subject: Speaker presentations

Hi Melissa,

Monika said you were asking about the waiver forms. I got waiver forms from everyone except Jennifer Snyder at EPA. Garvin Heath of NREL did not want us to post his presentation, but he provided a link to where it is posted on their website and he asked us to include that instead, which we will.

The plan is to have all presentations ready for your review the end of next week, once approved we can push it live.

Lauren

****

Lauren Lariviere

Vice President, Conference Services

ERG

110 Hartwell Avenue

Lexington, MA 02421 USA

P: 781-674-7250

Office Hours: Tuesday - Friday, 10:00 AM - 6:00 PM

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Gunning, Paul
Sent: Fri 2/12/2016 5:38:49 PM
Subject: FW: Draft_-DOE-FE FY16 Methane Emissions Quantification Research Areas
DOE-FE-FY16-Methane Quantification Actions-11FEB16(v2) .docx

Follow up from our call

From: Freitas, Christopher [mailto:Christopher.Freitas@hq.doe.gov]
Sent: Friday, February 12, 2016 10:04 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Smistad, Eric (NETL) <eric.smistad@netl.doe.gov>; Skone, Timothy (NETL) <timothy.skone@netl.doe.gov>; Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Brown, Bruce (NETL) <bruce.brown@netl.doe.gov>; DeHoratiis, Guido <Guido.DeHoratiis@hq.doe.gov>; Vargas, Maria (NETL) <maria.vargas@netl.doe.gov>
Subject: Draft_-DOE-FE FY16 Methane Emissions Quantification Research Areas

Paul,

Thank you and the EPA Team for the discussion yesterday on oil and gas sector emission quantification research opportunities to support the EPA GHGI. I'm excited that Congress appropriated FY 2016 funds for a "Back To The Future" natural gas midstream infrastructure research program and the methane emissions quantification subprogram. The $5 million in FY 2016 for the methane emission quantification are provided to DOE Fossil Energy in support of assisting EPA to better quantify and analyze methane emissions across the natural gas value (supply) chain. **Attached is additional background information on the proposed methane emissions quantification areas discussed yesterday**. I'm looking forward to EPA's input and assessment of the proposed research areas along with EPA's research priorities to enhance and improve the GHGI. Please send the information to me by COB February 19, 2016 and I look forward to the 1:00 pm conference call on Tuesday, February 23.

Best,

Christopher

Christopher J. Freitas

Senior Program Manager Natural Gas Infrastructure

United States Department of Energy

Office of Oil and Natural Gas, FE-30,

1000 Independence Ave. S.W., Forrestal Building, Room 3G-048

Washington, D.C. 20585

Desk: (202) 586-1657/ Mobile: (301) 820-2004

Email: Christopher.Freitas@HQ.DOE.GOV

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Davis, Alison[Davis.Alison@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Tang, Natalie[Tang.Natalie@epa.gov]
From: Weitz, Melissa
Sent: Fri 11/13/2015 9:31:30 PM
Subject: RE: GHG Data Workshop slides - for your review
GHGI overview.pptx
2016 GHGI Proposed Updates to NG Distribution_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to NG TS_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to GB-Proc Segment_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to Production Segment AD_Workshop_2015-11.12.pptx

Hello,

I've attached here five presentations from GHGI for the GHG Data Workshop in Pittsburgh. These will be presented along with the 5 presentations that Alexis sent on GHGRP data.

The presentations are about the same length as Alexis'.

A few notes:

In the first presentation (GHGI overview), all slides but the last slide (slide #13) have already been vetted.

In the GHGI Proposed Updates to Production Segment slides, some of the numbers are in red because I am rechecking them and will have updated numbers on Monday.

Please let me know if you'd like me to walk through any of this with you next week.

Thank you!

Melissa

From: McKittrick, Alexis
Sent: Friday, November 13, 2015 1:43 PM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Tang, Natalie <Tang.Natalie@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: GHG Data Workshop slides - for your review

Bruce & Alison,

Attached are the five mini-presentations from GHGRP for the GHG Data Workshop in Pittsburgh next Thursday. (This is separate from the Gas Star workshop on Tuesday and Wednesday.) While five presentations may look daunting, none of them are longer than about a dozen slides. Also, the structure is repeated for each of the segment-specific presentations – just the actual data / numbers change.

Please let me know by lunchtime next Wednesday if you have any concerns or edits. As always, thank you so much for your review!

Best,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: Casey MacQueen Pickering[Casey.Pickering@erg.com]
From: Weitz, Melissa
Sent: Tue 11/17/2015 10:02:07 PM
Subject: FW: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19
API_EPA_Stakeholders Meeting_Production_17NOV15.pptx
API_EPA_Stakeholders Meeting_Processing_17NOV15.pptx

API analysis of GHGRP data for liquids unloading and pneumatics in production and leaks in processing

From: Karin C. Ritter [mailto:Ritterk@api.org]
Sent: Tuesday, November 17, 2015 4:54 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; GHGInventory <ghginventory@epa.gov>
Cc: TERRI SHIRES <Terri.Shires@URS.com>
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Melissa,

Attached are the slides for the API presentations.

Thank you,

Karin

From: Karin C. Ritter
Sent: Tuesday, November 17, 2015 3:50 PM
To: 'Weitz, Melissa'; GHGInventory
Cc: TERRI SHIRES
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Melissa,

Thank you for the link.

As I indicated in my previous voicemail Terri will be presenting remotely. I will join also when

I'm able.

I'll send the slides EOB today.

Regarding the DI desktop can we plan on a meeting (here at API) on either December 3rd or 4th?

Sorry to miss you in Pittsburg,

Karin

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Tuesday, November 17, 2015 11:53 AM
To: Karin C. Ritter; GHGInventory
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Hi Karin,

I'm about to give you a call, but wanted to send the agenda information so you have it when we talk.

http://www3.epa.gov/climatechange/ghgemissions/Nov2015Workshop.html

Thanks!

Melissa

From: Weitz, Melissa
Sent: Friday, October 30, 2015 4:00 PM
To: 'Karin C. Ritter' <Ritterk@api.org>; GHGInventory <ghginventory@epa.gov>
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Hello Karin,

Thank you for the update Karin. That approach makes sense to me.

I wanted to let you know that I am going to be out of the office November 2-9. If you have questions during that time related to the workshop agenda, logistics, etc., please contact Lauren Lariviere with ERG (Lauren.Lariviere@erg.com). An updated agenda has been developed and will be posted today or early next week.

Looking forward to seeing you at the workshop. Have a great weekend!

Melissa

From: Karin C. Ritter [mailto:Ritterk@api.org]
Sent: Wednesday, October 28, 2015 3:44 PM
To: GHGInventory <ghginventory@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Hello Melissa,

I note that today the draft slides are due.

However we're unable to provide slides since EPA has not yet posted the full GHGRP data set on Envirofacts and we're unable to conduct our analyses.

We'll provide slides either prior to or on November 16th.

Hope this works,

Karin

From: GHGInventory [mailto:ghginventory@epa.gov]
Sent: Friday, October 16, 2015 3:45 PM
To: Karin C. Ritter; GHGInventory
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Hello Karin,

Thank you again for your request to present at the Stakeholder Workshop on EPA GHG Data for Petroleum and Natural Gas Systems.

I'm happy to inform you that we've accepted your request for three presentations (production-pneumatics, production-liquids unloading, and processing-equipment leaks) as described in your email below.

We have a full agenda, so please plan for each presentation to not exceed 10 minutes.

We are requesting drafts of all presentations by October 28, 2015, and final presentations by November 16, 2015.

Thank you, and please let me know if you have any questions.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Karin C. Ritter [mailto:Ritterk@api.org]
Sent: Friday, September 25, 2015 3:10 PM
To: GHGInventory
Subject: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

The following are proposed descriptions of potential presentations by API for the EPA November 19th workshop in Pittsburg.

Onshore Oil and Gas Production – Pneumatic Controllers

The 2013 GHGRP emissions data reported for pneumatic controllers are considerably larger than emissions attributed to pneumatic controllers in the 2013 national GHG inventory (974,200 tonnes CH4 compared to 316,251 tonnes CH4, respectively). API will review the deferred data associated with the 2014 GHGRP emissions to assess the counts of the types of pneumatic controllers reported for onshore production in 2013 and 2014 and attempt to develop recommendations for reconciling the differences between the GHGRP and GHGI data.

Onshore Oil and Gas Production – Liquids Unloading

For liquids unloading, emissions reported in the 2013 GHGRP are comparable to emissions reported for the 2013 GHG national inventory (177,409 tonnes CH4 compared to 208,963 tonnes CH4, respectively). GHGRP data that is expected to be available in the fall of 2015 will provide additional information for analyzing emissions from liquids unloading. API plans to review this information and attempt to develop recommendations for more accurate reporting of liquids unloading emissions in the national GHG inventory.

Processing – Equipment Leaks

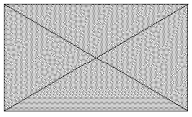
Fugitive methane (CH4) emissions from gas processing operations are six times larger in the 2013 national GHG inventory than emissions reported in the 2013 GHGRP. Natural gas plant equipment leak estimates for the GHGRP rely on facility surveys, while the national GHG inventory applies emission factors. API plans to review the data associated with the GHGRP emissions to attempt to develop recommendations for reconciling these differences.

Karin Ritter

Regulatory and Scientific Affairs

+1 (202) 682- 8472

www.api.org



To: Pryor, Justin[Pryor.Justin@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 11/25/2015 9:17:11 PM
Subject: RE: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"
BOEM Air Quality PR 1010-AD82 to OIRA 11-16-2015.docx
BOEM Air Quality PR 1010-AD82 RIA to OIRA 11-16-2015.docx

Thanks Justin!

Ex. 5 - Deliberative Process

Thanks,

Melissa

From: Pryor, Justin
Sent: Tuesday, November 24, 2015 3:21 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

Hi Melissa,

Ex. 5 - Deliberative Process

Justin

From: Weitz, Melissa
Sent: Tuesday, November 24, 2015 3:04 PM
To: Pryor, Justin <Pryor.Justin@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

I'll be sending along an update soon on the plan for comments on the DOI/BOEM offshore NPRM. It's likely that we'll need to have any comments ready by 12/4, Friday next week.

Justin--how was the webinar yesterday?

From: Moore, Bruce
Sent: Tuesday, November 24, 2015 11:40 AM
To: Hambrick, Amy <Hambrick.Amy@epa.gov>
Cc: Cozzie, David <Cozzie.David@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

Ex. 5 - Deliberative Process

B

Bruce Moore

Senior Technical Advisor - Oil & Natural Gas Sector

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

(919) 541-5460

moore.bruce@epa.gov

For information, visit: *www.epa.gov/airquality/oilandgas*

From: Hambrick, Amy
Sent: Monday, November 23, 2015 10:48 AM
To: Moore, Bruce <Moore.Bruce@epa.gov>
Cc: Cozzie, David <Cozzie.David@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

Hi Bruce and all,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

From: Weitz, Melissa
Sent: Friday, November 20, 2015 2:14 PM
To: Hambrick, Amy <Hambrick.Amy@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>
Subject: FW: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

Hello,

At this point, I have no background other than what is in the emails below, but I wanted to make sure your group was aware of an upcoming DOI/BOEM NPRM for offshore oil and gas. There is a briefing on the rule and its economic analysis on Monday from 2-4PM.

Melissa

From: Schmeltz, Rachel
Sent: Thursday, November 19, 2015 4:32 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

Hi all,

I am grasping a little bit here on sending this to you all. I just spoke with Paula in OP and she

thinks we should pay attention to it and someone familiar with it all should call into the briefing on Monday.

Please take a look.

Thanks!

Rachel

From: VanLare, Paula
Sent: Thursday, November 19, 2015 3:06 PM
To: Schmeltz, Rachel <Schmeltz.Rachel@epa.gov>
Subject: FW: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

Well, well, well. Here it is. I'm guessing this doesn't really change our answer to the comment on our final rule, but I did want to make sure you knew about this.

Paula Van Lare

US EPA Office of Policy

(202) 566-2951

From: Kime, Robin
Sent: Thursday, November 19, 2015 2:51 PM
To: McGartland, Al <McGartland.Al@epa.gov>; Simon, Nathalie <Simon.Nathalie@epa.gov>; Bowen, Jennifer <Bowen.Jennifer@epa.gov>; Snyder, Brett <Snyder.Brett@epa.gov>; Wolverton, Ann <Wolverton.Ann@epa.gov>; Kopits, Elizabeth <Kopits.Elizabeth@epa.gov>; Gilbreath, Jan <Gilbreath.Jan@epa.gov>; VanLare, Paula <VanLare.Paula@epa.gov>
Subject: Comments due 4:00 12/3 pls- DOI/BOEM NPRM for EPA Review: "Air Quality Control, Reporting, and Compliance"

Hi

Attached for EO 12866 / 13563 interagency review and comment is a proposed rule and associated RIA from DOI's Bureau of Ocean Energy Management entitled "Air Quality Control, Reporting, and Compliance." Please send Stuart and me any comments by 4:00 p.m. Friday, 12/03. Please note below **Monday's (11/23 call**). Thank you.

Summary: This proposed rule would amend existing BOEM regulations related to air quality measurement, evaluation, and control with respect to oil, gas, and sulphur operations on the Outer Continental Shelf (OCS) of the United States, in the Central and Western Gulf of Mexico and the area offshore the North Slope Borough of the State of Alaska, as part of the BOEM approval process for offshore oil and gas exploration and development plans, right-of-use and easement (RUE), pipeline rights-of-way (ROW) and lease term pipeline applications. The proposed rule would 1) fulfill BOEM's statutory responsibility under OCSLA by addressing all relevant criteria and major precursor air pollutants and cross-reference BOEM standards for those pollutants to those of the United States Environmental Protection Agency (USEPA); 2) change the manner in which lessees would evaluate and model vessel emissions attributed to OCS facilities; 3) change the methods for measuring and evaluating air emissions including measuring their impacts over State submerged lands; 4) provide a process by which exemption thresholds are established and updated; 5) change the circumstances when emissions reduction measures (ERM), including Best Available Control Technology (BACT), are required, and establishes new criteria for the application of ERM; 6) formalize requirements for the consolidation of emissions from multiple facilities; 7) consistent with BOEM's existing regulatory authority, articulate a schedule and requirements for ensuring that all plans, including those previously approved, will remain compliant on an ongoing basis with these updated regulations; and 8) include an air quality component in the submission of Right-of-Use and Easement (RUE), pipeline Rights-of-Way (ROW), and lease term pipeline applications.

Ex. 5 - Deliberative Process

Notes:

1) DOI/BOEM is scheduled to provide a briefing on the rule. The first hour will focus on the rule and the second hour will focus on the economic analysis. Briefing materials will be provided when we receive them from OMB.

When: Monday, November 23, 2015 2:00 PM-4:00 PM, eastern time

Where: 1800 G St. (Conference Room 1),

Call-in information:

Bridge: 202-395-6392

Passcode: 2230422

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Fri 10/23/2015 9:25:03 PM
Subject: FW: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

FYI on API presentations…

When you're back in the office, can you let me know what your estimate is for release of subpart w in envirofacts? Thanks!

From: Karin C. Ritter [mailto:Ritterk@api.org]
Sent: Friday, October 23, 2015 5:23 PM
To: GHGInventory <ghginventory@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Hi Melissa,

Titles of each presentation are:

- Onshore Oil and Gas Production – Pneumatic Controllers
- Onshore Oil and Gas Production – Liquids Unloading
- Processing – Equipment Leaks

Just indicate API as the speaker for now, until this gets firmed up on our end.

Just a reminder that our analysis is dependent on EPA releasing the 2014 Envirofacts data for Subpart W in advance of the workshop. Without it, we can't update our analysis to include the activity data.

Thank you,

Karin

From: GHGInventory [mailto:ghginventory@epa.gov]
Sent: Thursday, October 22, 2015 5:37 PM
To: GHGInventory; Karin C. Ritter
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Hello Karin,

I'd like post an updated draft agenda soon and include the title of each presentation and speaker names or organizations.

Could you please send me for each presentation, a title and a speaker name? If you haven't confirmed the speaker yet, that is fine, I can just use the presentation titles, and then list the speaker as TBA or API (whatever works for you) for now.

Also, I'd like to have a short bio for each speaker by the week before the workshop.

Thank you and please let me know if you have any questions!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: GHGInventory
Sent: Friday, October 16, 2015 3:45 PM
To: Karin C. Ritter <Ritterk@api.org>; GHGInventory <ghginventory@epa.gov>
Subject: RE: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

Hello Karin,

Thank you again for your request to present at the Stakeholder Workshop on EPA GHG Data for Petroleum and Natural Gas Systems.

I'm happy to inform you that we've accepted your request for three presentations (production-pneumatics, production-liquids unloading, and processing-equipment leaks) as described in your email below.

We have a full agenda, so please plan for each presentation to not exceed 10 minutes.

We are requesting drafts of all presentations by October 28, 2015, and final presentations by November 16, 2015.

Thank you, and please let me know if you have any questions.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Karin C. Ritter [mailto:Ritterk@api.org]
Sent: Friday, September 25, 2015 3:10 PM
To: GHGInventory
Subject: Submitting: API Descriptions for Presentations @ EPA Workshop 11/19

The following are proposed descriptions of potential presentations by API for the EPA November 19th workshop in Pittsburg.

Onshore Oil and Gas Production – Pneumatic Controllers

The 2013 GHGRP emissions data reported for pneumatic controllers are considerably larger than emissions attributed to pneumatic controllers in the 2013 national GHG inventory (974,200 tonnes CH4 compared to 316,251 tonnes CH4, respectively). API will review the deferred data associated with the 2014 GHGRP emissions to assess the counts of the types of pneumatic controllers reported for onshore production in 2013 and 2014 and attempt to develop recommendations for reconciling the differences between the GHGRP and GHGI data.

Onshore Oil and Gas Production – Liquids Unloading

For liquids unloading, emissions reported in the 2013 GHGRP are comparable to emissions reported for the 2013 GHG national inventory (177,409 tonnes CH4 compared to 208,963 tonnes CH4, respectively). GHGRP data that is expected to be available in the fall of 2015 will provide

additional information for analyzing emissions from liquids unloading. API plans to review this information and attempt to develop recommendations for more accurate reporting of liquids unloading emissions in the national GHG inventory.

Processing – Equipment Leaks

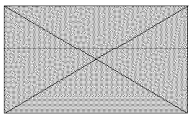
Fugitive methane (CH4) emissions from gas processing operations are six times larger in the 2013 national GHG inventory than emissions reported in the 2013 GHGRP. Natural gas plant equipment leak estimates for the GHGRP rely on facility surveys, while the national GHG inventory applies emission factors. API plans to review the data associated with the GHGRP emissions to attempt to develop recommendations for reconciling these differences.

Karin Ritter

Regulatory and Scientific Affairs

+1 (202) 682- 8472

www.api.org



To: Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Thur 2/11/2016 6:39:56 PM
Subject: FW: DRAFT DOE-FE-FY16-Methane Quantification Actions-11FEB16 (002).docx
DOE-FE-FY16-Methane Quantification Actions-11FEB16 (002).docx

-----Original Message-----
From: Freitas, Christopher [mailto:Christopher.Freitas@hq.doe.gov]
Sent: Thursday, February 11, 2016 1:22 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Smistad, Eric (NETL) <eric.smistad@netl.doe.gov>; Skone, Timothy (NETL) <timothy.skone@netl.doe.gov>; Lenahan, Marni <Marni.Lenahan@hq.doe.gov>; Frye, Evan <Evan.Frye@hq.doe.gov>; Ciferno, Jared (NETL) <jared.ciferno@netl.doe.gov>; Pekney, Natalie (NETL) <natalie.pekney@netl.doe.gov>; Vargas, Maria (NETL) <maria.vargas@netl.doe.gov>; hargove.anne@epa.gov; Weitz, Melissa <Weitz.Melissa@epa.gov>; Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>
Subject: DRAFT DOE-FE-FY16-Methane Quantification Actions-11FEB16 (002).docx

Paul,

FE-30 and NETL are I'm in the process of developing the Natural Gas Midstream Annual Operating Plan (AOP). Attached is the draft DOE Fossil Energy FY 2016 Methane Emission Quantification research areas. I look to EPA's input and today's discussion on the research areas and EPA's priorities to enhance and improve the GHGI. Joining in on the conference call from DOE NETL will be Tim Skone, Eric Smistad, Maria Vargas and Natalie Pekney. Dr. James Bradbury, DOE EPSA-20, will also participate in the discussion.

CALL-IN: **Ex. 6 - Personal Privacy**

Regards,
Christopher

Christopher J. Freitas
Senior Program Manager Natural Gas Infrastructure United States Department of Energy Office of Oil and Natural Gas, FE-30,
1000 Independence Ave. S.W., Forrestal Building, Room 3G-048 Washington, D.C. 20585
Desk: (202) 586-1657/ Mobile: (301) 820-2004
Email: Christopher.Freitas@HQ.DOE.GOV

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Tang, Natalie[Tang.Natalie@epa.gov]
From: Weitz, Melissa
Sent: Wed 12/16/2015 4:02:41 PM
Subject: FW: Distrib and T-S Memos: Subpart W Data Documentation
Transmission & Storage_Revision Calculations_112015.xlsx
Distribution Segment - Potential Revision Supporting Calculations_2015-11-05.xlsx

Can you share with RTI? Thank you!

From: Casey Pickering [mailto:Casey.Pickering@erg.com]
Sent: Wednesday, December 16, 2015 10:51 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Brandon Long <Brandon.Long@erg.com>
Subject: Distrib and T-S Memos: Subpart W Data Documentation

Melissa,

Below is documentation of the W data pulls underlying the two memos that the W team is reviewing. I've also attached our working Excel spreadsheets where we pasted the raw data and performed all calculations. Each workbook has a worksheet called "MEMO TABLES" where numbers in the memo can be traced back to raw data.

Can you share these with the W team?

Thanks,

Casey

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Casey Pickering

Chemical Engineer

Eastern Research Group, Inc. (ERG)

2300 Wilson Blvd. Ste. 350

Arlington, VA 22201

(703) 841-0554

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Tue 10/27/2015 9:25:38 PM
Subject: RE: List of talks for workshop?
DRAFT agenda--2015 Stakeholder Workshop on Oil and Gas in GHGI and GHGRP 10.27.docx

Latest draft agenda attached.

There is no registration deadline.

From: McKittrick, Alexis
Sent: Tuesday, October 27, 2015 4:27 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: List of talks for workshop?

Do you all have a list going of the confirmed talks for the GHG data workshop? RTI was looking for a draft list to help inform who they will send. Also, they were wondering what the registration deadline is (if there is one).

Thanks!

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 12/9/2015 7:55:27 PM
Subject: FW: Canadian oil and gas study
MethaneEmissionsHandbookMay1998.pdf

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Thursday, August 13, 2015 1:28 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Canadian oil and gas study

Hey Melissa,

Surprisingly (to me) I found the paper. Have fun!

Steve

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: August 13, 2015 12:03 PM
To: Smyth,Steve [NCR]
Subject: Canadian oil and gas study

Hi Steve!

I'm trying to track down a copy of a Canadian study and am having no luck.

Do you happen to have a copy of this paper: *Handbook for Estimating Methane Emissions from Canadian Natural Gas Systems* (1998)?

I hope all is well!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Tuesday, May 26, 2015 10:36 AM
To: Weitz, Melissa
Subject: Meter Measurement Study

Hi Melissa,

I finally found the report about the residential gas meters. My memory of the results wasn't entirely accurate. The study resulted in an increase to the EF for residential meters. However, the overall leak frequency was very low (0.012%). If you have any questions, let me know.

Steve Smyth
Ingénieur de programme

Inventaires et rapports sur les polluants

Direction des sciences et de l'évaluation des risques
Environnement Canada
200, boul. Sacré-Coeur, Gatineau QC K1A 0H3
steve.smyth@ec.gc.ca
Téléphone 819-938-3234
Télécopieur 819-953-3006
Gouvernement du Canada

Site Web http://www.ec.gc.ca

Steve Smyth
Program Engineer

Pollutant Inventories and Reporting

Science and Risk Assessment Directorate
Environment Canada
200 Sacré-Coeur Blvd., Gatineau QC K1A 0H3
steve.smyth@ec.gc.ca
Telephone 819-938-3234
Facsimile 819-953-3006
Government of Canada

Website http://www.ec.gc.ca

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 1/19/2016 7:18:00 PM
Subject: FW: Moore edits RE: Oil and Gas Comment Recap Slides -- for a quick review before 3:30
Oil and Gas Comments Recap BM edits mw.pptx

For a 3:30 meeting to discuss upcoming Janet briefing on O&G comments. About to add you to the meeting. If you aren't free, don't worry about it. I'll check in with you later.

From: Weitz, Melissa
Sent: Tuesday, January 19, 2016 2:15 PM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>
Subject: RE: Moore edits RE: Oil and Gas Comment Recap Slides -- for a quick review before 3:30

Added my edits on top of Bruce's version

From: Moore, Bruce
Sent: Tuesday, January 19, 2016 2:14 PM
To: Thompson, Lisa <Thompson.Lisa@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>
Subject: Moore edits RE: Oil and Gas Comment Recap Slides -- for a quick review before 3:30

My edits and one question.

Bruce Moore

Senior Technical Advisor - Oil & Natural Gas Sector

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

(919) 541-5460

moore.bruce@epa.gov

For information, visit: www.epa.gov/airquality/oilandgas

From: Thompson, Lisa
Sent: Tuesday, January 19, 2016 1:52 PM
To: Cozzie, David <Cozzie.David@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>
Subject: Oil and Gas Comment Recap Slides -- for a quick review before 3:30

Hi all,

Please provide any comments you have on this slide deck asap, so we can get them to Peter for the 3:30 call today. Reminder, this a pre-brief for the Janet meeting on Thursday.

Sorry for the quick turn on these!

Lisa

Lisa Thompson

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919-541-9775

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Tue 11/24/2015 4:23:41 PM
Subject: RE: OOOOa super emitter TPs?
EPA-HQ-OAR-2010-0505-5120.pdf

Page 68 of the TSD (attached) has a write up on super emitters.

There is also text on pages 253 and 280 of the preamble, but the TSD is more detailed.

From: McKittrick, Alexis
Sent: Tuesday, November 24, 2015 11:15 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: OOOOa super emitter TPs?

In the meeting yesterday on the Subpart W leak detection preamble, folks mentioned that there was language on super emitters in either the OOOOa preamble or another supporting document. Could you all point me to where that language is (if you know), so I don't just dig around randomly in the docket? Thanks!

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 10/27/2015 2:42:05 PM
Subject: FW: NG Inv - Transmission & Storage memo and slides
Proposed Revision to Transmission Storage Segment Emissions_2015-10-26.docx

Ex. 5 - Deliberative Process

Thanks!

From: Casey MacQueen Pickering [mailto:Casey.Pickering@erg.com]
Sent: Monday, October 26, 2015 5:17 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Brandon Long <Brandon.Long@erg.com>
Subject: NG Inv - Transmission & Storage memo and slides

Melissa,

Ex. 5 - Deliberative Process

Thanks,

Casey

Casey Pickering

Chemical Engineer

Eastern Research Group, Inc. (ERG)

2300 Wilson Blvd. Ste. 350

Arlington, VA 22201

(703) 841-0554

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Tue 1/19/2016 5:59:48 PM
Subject: FW: give me a call? 2 things
Methane ICR WH 1_13_16.pptx

FYI on ICR.

From: Hambrick, Amy
Sent: Tuesday, January 19, 2016 11:59 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Shine, Brenda <Shine.Brenda@epa.gov>; Goehl, Eric <Goehl.Eric@epa.gov>
Subject: RE: give me a call? 2 things

Hi Melissa,

Ex. 5 - Deliberative Process

Brenda and Eric,

Melissa works in OAP on the GHGRP. Hope we can all meet over a phone meeting soon…

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

From: Weitz, Melissa
Sent: Friday, January 15, 2016 3:00 PM
To: Hambrick, Amy <Hambrick.Amy@epa.gov>
Subject: give me a call? 2 things

1-We have some thoughts on data gaps for the ICR and we'd like to discuss them. I want to check in with you on approaches for this, who to include etc.

2-Is there any updated version of the briefing slides? Or did the briefing already happen? I can't keep these things straight anymore at all! ☺

To: Master, Barbora[Master.Barbora@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Cook, BrianB[Cook.BrianB@epa.gov]
From: Weitz, Melissa
Sent: Wed 10/7/2015 2:31:13 PM
Subject: RE: GHGRP paragraph on the Inventory in ICR renewal

Hi Barbora—

Ex. 5 - Deliberative Process

Let me know if this works and/or if you'd like to discuss.

Thank you!

Melissa

Ex. 5 - Deliberative Process

From: Master, Barbora
Sent: Tuesday, October 06, 2015 1:30 PM
To: Hockstad, Leif
Cc: Weitz, Melissa; DeFigueiredo, Mark; McKittrick, Alexis; Cook, BrianB
Subject: GHGRP paragraph on the Inventory in ICR renewal

Hi All –

I have updated the paragraph in the ICR about how we use GHGRP for Inventory. I started with Leif's paragraph below and added details that I got from a ppt presentation from July for Paul on GHGRP/Inventory integration.

Please let me know if you have any edits by COB tomorrow (Wednesday). Thanks, Barbora

Ex. 5 - Deliberative Process

Barbora Master

U.S. Environmental Protection Agency

Greenhouse Gas Reporting Program

202-343-9899

From: Hockstad, Leif
Sent: Wednesday, September 09, 2015 10:54 AM
To: Master, Barbora
Subject: RE: update a GHGRP paragraph on the Inventory

Ex. 5 - Deliberative Process

- Leif

From: Master, Barbora
Sent: Wednesday, September 09, 2015 10:49 AM
To: Hockstad, Leif
Subject: RE: update a GHGRP paragraph on the Inventory

Thanks, Leif.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Barbora Master

U.S. Environmental Protection Agency

Greenhouse Gas Reporting Program

202-343-9899

From: Hockstad, Leif
Sent: Wednesday, September 09, 2015 10:34 AM
To: Master, Barbora
Subject: RE: update a GHGRP paragraph on the Inventory

Barbora –

Ex. 5 - Deliberative Process

Thanks,

Leif

Ex. 5 - Deliberative Process

From: Master, Barbora
Sent: Monday, August 24, 2015 3:34 PM
To: Hockstad, Leif
Subject: RE: update a GHGRP paragraph on the Inventory

Yes, by the end of the week would be great. We have some time to work with, fortunately.
Thanks.

Barbora Master

U.S. Environmental Protection Agency

Greenhouse Gas Reporting Program

202-343-9899

From: Hockstad, Leif
Sent: Monday, August 24, 2015 3:16 PM
To: Master, Barbora
Subject: RE: update a GHGRP paragraph on the Inventory

Barbora –

Ex. 5 - Deliberative Process

Thanks,

Leif

From: Master, Barbora
Sent: Monday, August 24, 2015 2:34 PM
To: Hockstad, Leif
Subject: RE: update a GHGRP paragraph on the Inventory

Hi Leif –

Ex. 5 - Deliberative Process

Thanks, Barbora

Barbora Master

U.S. Environmental Protection Agency

Greenhouse Gas Reporting Program

202-343-9899

From: Hockstad, Leif
Sent: Monday, May 11, 2015 11:01 AM
To: Master, Barbora
Subject: RE: update a GHGRP paragraph on the Inventory

Barbora –

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Let me know if that works for you.

Thanks,

Leif

From: Master, Barbora
Sent: Friday, May 08, 2015 2:11 PM
To: Hockstad, Leif
Subject: update a GHGRP paragraph on the Inventory

Hi Leif -

I am putting together the Supporting Statement for the new GHGRP ICR renewal. The following was included in the last renewal from 2013 in the section that covers how GHGRP data are used.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 9/29/2015 7:53:07 PM
Subject: RE: updated draft agenda for GHG data stakeholder meeting
Stakeholder requests.docx

Info on the requests we received. Also in our new 2015 GHG Data Stakeholder Workshop folder on the g: drive.

From: Weitz, Melissa
Sent: Tuesday, September 29, 2015 3:39 PM
To: DeFigueiredo, Mark; McKittrick, Alexis
Subject: updated draft agenda for GHG data stakeholder meeting

Hello,

We received a good number of presentation requests and I've fleshed out a draft agenda for our planning purposes to include the requests we received, and then listed some other potential presentations (under the other studies section).

For the inventory presentations, my plan for now is to alternate between myself and ERG.

Let's discuss tomorrow.

Also-ERG (under Jerome's TO) will be developing a registration page that I'll post tomorrow and I'll send the link around to stakeholders.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 11/16/2015 5:42:57 PM
Subject: RE: Subpart W leak detection proposal - for your review
Subpart W leak detection proposal Draft TSD 10-30-15 workgroup mw.docx

Hi Alexis,

My comments on the TSD/emission factor memo are attached. I'm happy to discuss these.

Melissa

From: McKittrick, Alexis
Sent: Friday, October 30, 2015 3:05 PM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Tate, Ragan <Tate.Ragan@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Margolis, Alan <Margolis.Alan@epa.gov>; Schmeltz, Rachel <Schmeltz.Rachel@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Hogan, Sean <Hogan.Sean@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Sroka, Kristin <ksroka@rti.org>; Randall, David <ddrandall@rti.org>
Subject: Subpart W leak detection proposal - for your review

All,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks, everyone,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 10/7/2015 2:13:25 PM
Subject: RE: Commments--RE: proposed updates to distribution segment emissions in the GHG inventory
Draft Proposed Revision to NG Distribution Segment Emissions_2015-08-31 for EPA discussion.docx

Hi Alexis-

Ex. 5 - Deliberative Process

Melissa

From: McKittrick, Alexis
Sent: Wednesday, October 07, 2015 9:16 AM
To: Weitz, Melissa
Subject: RE: Commments--RE: proposed updates to distribution segment emissions in the GHG inventory

Hi Melissa,

I am hoping to review this document today while I am sans computer, but I'm guessing I don't have the most recent version. Would you mind sending it over?

Thanks,
Alexis

From: Weitz, Melissa
Sent: Friday, September 25, 2015 12:54 PM
To: DeFigueiredo, Mark; McKittrick, Alexis; Bylin, Carey; Waltzer, Suzanne; Macpherson, Alex; Moore, Bruce; Thompson, Lisa; Hambrick, Amy; Thoma, Eben; Snyder, Jennifer; Kaplan, Ozge; Lenox, Carol; Alsalam, Jameel
Cc: Cozzie, David; Witosky, Matthew; Howard, Jodi; Spells, Charlene; Irving, Bill
Subject: Commments--RE: proposed updates to distribution segment emissions in the GHG inventory

Hello,

Thank you for the input I've received so far on the distribution memo.

Ex. 5 - Deliberative Process

Thank you!

Melissa

From: Weitz, Melissa
Sent: Thursday, September 03, 2015 1:49 PM
To: DeFigueiredo, Mark; McKittrick, Alexis; Bylin, Carey; Waltzer, Suzanne; Macpherson, Alex; Moore, Bruce; Thompson, Lisa; Hambrick, Amy; Thoma, Eben; Snyder, Jennifer; Kaplan, Ozge; Lenox, Carol; Alsalam, Jameel
Cc: Cozzie, David; Witosky, Matthew; Howard, Jodi; Spells, Charlene; Irving, Bill
Subject: RE: proposed updates to distribution segment emissions in the GHG inventory

Ex. 5 - Deliberative Process

Melissa

<< File: 2016 GHGI Proposed Updates to NG Distribution_2015-09-02.pptx >> << File: Draft Proposed Revision to NG Distribution Segment Emissions_2015-08-31 for EPA discussion.docx >>

Melissa Weitz
Climate Change Division
U.S. Environmental Protection Agency
(202) 343-9897
Weitz.Melissa@epa.gov

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 11/23/2015 2:50:55 PM
Subject: Article on large leak at gas storage facility in California

In case you haven't heard, there is a large leak at gas storage facility in California that CARB estimates has emitted almost 1 million metric tons CO2e of methane in the past month or so. Info below--

LA times article:

http://www.latimes.com/local/california/la-me-1121-gas-leak-20151121-story.html

Draft report:

http://documents.latimes.com/report-greenhouse-gas-emissions-aliso-canyon-leak/

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 9/29/2015 6:51:11 PM
Subject: FW: GTI slides
EPA OG Activities 9-27-15 GTI.pptx

Hello—

Paul discussed his edits with me and I've made updates in the attached.

I added

Ex. 5 - Deliberative Process

I'll leave Paul's edited hard copy on Mark's desk.

Melissa

From: Gunning, Paul
Sent: Tuesday, September 29, 2015 11:34 AM
To: Weitz, Melissa
Subject: FW: GTI slides

Melissa here are the slides…..

Thanks!

From: DeFigueiredo, Mark
Sent: Monday, September 28, 2015 4:31 PM
To: Gunning, Paul
Cc: Kocchi, Suzanne; Waltzer, Suzanne
Subject: GTI slides

Hi Paul,

Attached is a draft slide deck for your GTI talk. The slides are based on previously approved materials, so they should look pretty familiar to you.

We'll need to run the slides by the AO (via Alison Davis). Let me know if you'd like me to run these slides by them or if you would like us to add additional content.

Thanks!

Mark

Sent from my iPhone

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 11/13/2015 11:45:33 PM
Subject: RE: Subpart W leak detection proposal - update
Subpart W leak detection revisions proposal preamble_11-12-2015 mw.docx

Thanks Alexis-

Ex. 5 - Deliberative Process

Thank you!

Melissa

From: McKittrick, Alexis
Sent: Friday, November 13, 2015 10:15 AM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Tate, Ragan <Tate.Ragan@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Margolis, Alan <Margolis.Alan@epa.gov>; Schmeltz, Rachel <Schmeltz.Rachel@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Hogan, Sean <Hogan.Sean@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Sroka, Kristin <ksroka@rti.org>; Randall, David <ddrandall@rti.org>
Subject: RE: Subpart W leak detection proposal - update

Thank you to everyone for your thorough review of the Subpart W leak detection proposal. I really appreciate everyone reviewing the documents under such a tight deadline last week!

Ex. 5 - Deliberative Process

Best,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

From: McKittrick, Alexis

Sent: Friday, October 30, 2015 3:05 PM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Tate, Ragan <Tate.Ragan@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Margolis, Alan <Margolis.Alan@epa.gov>; Schmeltz, Rachel <schmeltz.rachel@epa.gov>
Cc: DeFigueiredo, Mark <defigueiredo.mark@epa.gov>; Hogan, Sean <hogan.sean@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; 'Sroka, Kristin' <ksroka@rti.org>; Randall, David <ddrandall@rti.org>
Subject: Subpart W leak detection proposal - for your review

All,

Thank you all for working with the GHGRP team on the upcoming Subpart W leak detection proposal, which would align the leak survey methods of Subpart W and NSPS OOOOa for reporters that will ultimately comply with both programs, as well as provide the same leak survey option for reporters in Subpart W who have to use equipment counts to estimate leaks now.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks, everyone,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 12/15/2015 6:33:07 PM
Subject: FW: Follow up to this morning
OG strategy 12 15 2015.pptx
ICR slide oil and gas 12.15.docx

OAQPS has a new version of the slides.

Ex. 5 - Deliberative Process

From: Hambrick, Amy
Sent: Tuesday, December 15, 2015 1:09 PM
To: Cozzie, David <Cozzie.David@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>
Cc: Franklin, Pamela <Franklin.Pamela@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Subject: RE: Follow up to this morning

David and all,

Ex. 5 - Deliberative Process

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

From: Cozzie, David
Sent: Tuesday, December 15, 2015 12:34 PM
To: Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>
Cc: Franklin, Pamela <Franklin.Pamela@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Subject: Follow up to this morning

All,

Ex. 5 - Deliberative Process

David

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Davis, Alison[Davis.Alison@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Tang, Natalie[Tang.Natalie@epa.gov]
From: Weitz, Melissa
Sent: Fri 11/13/2015 10:04:57 PM
Subject: RE: GHG Data Workshop slides - for your review
2016 GHGI Proposed Updates to Production Segment AD_Workshop_2015-11.13.pptx
GHGI overview.pptx
2016 GHGI Proposed Updates to NG Distribution_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to NG TS_Workshop_2015-11.12.pptx
2016 GHGI Proposed Updates to GB-Proc Segment_Workshop_2015-11.12.pptx

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Friday, November 13, 2015 4:31 PM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Tang, Natalie <Tang.Natalie@epa.gov>
Subject: RE: GHG Data Workshop slides - for your review

Hello,

I've attached here five presentations from GHGI for the GHG Data Workshop in Pittsburgh. These will be presented along with the 5 presentations that Alexis sent on GHGRP data.

Ex. 5 - Deliberative Process

Please let me know if you'd like me to walk through any of this with you next week.

Thank you!

Melissa

From: McKittrick, Alexis
Sent: Friday, November 13, 2015 1:43 PM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Tang, Natalie <Tang.Natalie@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: GHG Data Workshop slides - for your review

Bruce & Alison,

Attached are the five mini-presentations from GHGRP for the GHG Data Workshop in Pittsburgh next Thursday. (This is separate from the Gas Star workshop on Tuesday and Wednesday.)

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Please let me know by lunchtime next Wednesday if you have any concerns or edits. As always, thank you so much for your review!

Best,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: Pryor, Justin[Pryor.Justin@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Fri 2/19/2016 10:15:37 PM
Subject: FW: Expedited Additional Action Item – DOT/PHMSA Pass-back on Comments re "Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines
NPRM__Safety of Gas Transmission and Gathering Pipelines__DOT revised dr....docx
ATT00001.htm
RIA__Safety of Gas Transmission and Gathering Pipelines__DOT revised dra....docx
ATT00002.htm

From: Friedman, Kristina
Sent: Friday, February 19, 2016 4:02 PM
To: Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Lemon, Mollie <Lemon.Mollie@epa.gov>
Subject: Fwd: Expedited Additional Action Item – DOT/PHMSA Pass-back on Comments re "Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines

Let us know if you all have any comments on the pass back by 12pm on Wednesday, 2/24. Please share with other people go would be interested in reviewing.

Thanks,

Kristina

Kristina Friedman

Office of Atmospheric Programs

U.S. Environmental Protection Agency

202.343.9281

Begin forwarded message:

From: InteragencyReviews <InteragencyReviews@epa.gov>
Date: February 19, 2016 at 11:28:04 AM EST
To: "Farrar, Wanda" <farrar.wanda@epa.gov>, "Eagles, Tom" <Eagles.Tom@epa.gov>, "Jenkins, Robin" <Jenkins.Robin@epa.gov>
Cc: "Friedman, Kristina" <Friedman.Kristina@epa.gov>, "Lemon, Mollie" <Lemon.Mollie@epa.gov>, "Weitz, Melissa" <Weitz.Melissa@epa.gov>, "Shouse, Kate" <Shouse.Kate@epa.gov>, "McGartland, Al" <McGartland.Al@epa.gov>, "Marten, Alex" <Marten.Alex@epa.gov>, "Snyder, Brett" <Snyder.Brett@epa.gov>, "Bowen, Jennifer" <Bowen.Jennifer@epa.gov>, "Moore, Bruce" <Moore.Bruce@epa.gov>, "Hanley, Mary" <Hanley.Mary@epa.gov>, "Gilbreath, Jan" <Gilbreath.Jan@epa.gov>, "Kime, Robin" <Kime.Robin@epa.gov>, "Rush, Alan" <Rush.Alan@epa.gov>, "Henigin, Mary" <Henigin.Mary@epa.gov>, "Macpherson, Alex" <Macpherson.Alex@epa.gov>, InteragencyReviews <InteragencyReviews@epa.gov>
Subject: Expedited Additional Action Item – DOT/PHMSA Pass-back on Comments re "Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines

EPA Reviewers,

In May, 2015, OAR/OAP and OP/NCEE submitted comments on the RIA for DOT/PHMSA's draft NPRM entitled ***"Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines***" (EPA offered no comments on the rule itself).

We have now received from OMB, DOT's pass-back documents addressing the interagency review comments it received (attached), as well as the following note from OMB:

In May of last year your agency submitted comments on DOT-PHMSA's draft NPRM regarding the safety of natural gas pipeline. DOT's responses to all interagency comments are in the attached revised NPRM and RIA. The RIA is not redlined because PHMSA made so many changes.

On behalf of DOT, we are requesting your agency's expedited review of these revised drafts so that DOT may publish the NPRM as soon as possible. As such, any additional comments along with specific proposed edits to address them are due by no later than Wednesday Feb 24. We do not anticipate being able to extend this deadline.

Accordingly, EPA reviewers please work collaboratively to review the pass-back documents and by 3:00 pm EST Wednesday, 02/24, respond to our proxy mailbox, InteragencyReviews@epa.gov, with **one set of composite Agency comments**, or to confirm that we have no further feedback at this time. Silence will be interpreted as "no comment."

Thank you,

--Stuart

~~~~~~~~~

Note: cc's on this message are based on those involved in the comment process last May.

Stuart Miles-McLean | Office of Regulatory Policy & Management | Office of Policy | Office of the Administrator

202.564.6581 | 3512J WJC North | Mail Code 1803 | 1200 Pennsylvania Avenue NW | Washington, DC 20460
~~~~~~~~~

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Tue 10/6/2015 7:04:59 PM
Subject: FW: Draft of Partner Update Newsletter
draft_Fall Newsletter_100615.pdf

Jerome is developing a Gas STAR Partner Update Newsletter.

Below, I've pasted the first few paragraphs from the GHGRP 2014 Oil and Gas industrial profile for Jerome to copy include in the newsletter (there is only a placeholder in the attachment).

I've made no edits other than adding a line with a link at the bottom. Is this all okay with you? Thanks!

Release of 2014 GHGRP Data

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

For more information, please see http://www2.epa.gov/ghgreporting/ghgrp-2014-reported-data.

From: Blackman, Jerome
Sent: Tuesday, October 06, 2015 2:49 PM
To: Pryor, Justin; Waltzer, Suzanne; Weitz, Melissa; Bartos, Scott; Franklin, Pamela; Bylin, Carey
Cc: Michener, Steve
Subject: Draft of Partner Update Newsletter
Importance: High

Ex. 5 - Deliberative Process

Otherwise, I think we are in pretty good shape. Please respond to me with edits/comments by Thursday if possible.

Thanks,

J

Articles for Fall 2015 Partner Update Newsletter

- Technology/Partner Profile: Ecopetrol case study – Reducing Casinghead Gas Emissions in La Cira Infantas Production Wells

- Upcoming Events:

o Annual Implementation Workshop – Pittsburgh, PA Nov. 16-18, 2015

o Stakeholder Workshop on EPA GHG Data on Petroleum and Natural Gas Systems – Pittsburgh, PA Nov. 19, 2015

o GMI International Global Methane Forum – Washington, DC in March 2016

- Methane Challenge Program Update

- In the News

o Proposed Rule to cut methane and VOCs from the oil and natural gas industry

o DOE's ARPA-E MONITOR Program

o Release of 2014 GHGRP Data

- International News

o Release of CCAC Oil and Gas Initiative fact sheet

- New NG STAR Partners

o Dominion Hope (domestic- distribution sector)

From: Michener, Steve [mailto:Steve.Michener@tetratech.com]
Sent: Tuesday, October 06, 2015 1:35 PM

To: Blackman, Jerome
Subject: RE: Table of contents for the Gas STAR Partner Update newsletter

Hi Jerome,

Ex. 5 - Deliberative Process

-Steve

From: Blackman, Jerome [mailto:Blackman.Jerome@epa.gov]
Sent: Tuesday, October 06, 2015 1:12 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>
Cc: Michener, Steve <Steve.Michener@tetratech.com>
Subject: RE: Table of contents for the Gas STAR Partner Update newsletter

Great, thanks!

From: Weitz, Melissa
Sent: Tuesday, October 06, 2015 11:53 AM
To: Blackman, Jerome; Waltzer, Suzanne; Franklin, Pamela
Cc: Bartos, Scott; Bylin, Carey
Subject: RE: Table of contents for the Gas STAR Partner Update newsletter which will be coming later this week

Hey Jerome,

Ex. 5 - Deliberative Process

Thanks! Give me a call if you have questions.

Ex. 5 - Deliberative Process

Melissa

From: Blackman, Jerome
Sent: Monday, October 05, 2015 10:12 AM
To: Waltzer, Suzanne; Franklin, Pamela
Cc: Bartos, Scott; Bylin, Carey; Weitz, Melissa
Subject: FYI: Table of contents for the Gas STAR Partner Update newsletter which will be coming later this week

Hey Pamela and Suzie,

Below is the outline for the Fall Partner Update newsletter. We should get the draft from Tetra Tech for everyone's review by Thursday or sooner. I wanted to share the table of contents with you beforehand. Let me know if you have questions.

Thanks,

Jerome

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Blackman, Jerome [mailto:Blackman.Jerome@epa.gov]
Sent: Monday, October 05, 2015 8:48 AM
To: Michener, Steve <Steve.Michener@tetratech.com>
Subject: Outline/Table of contents for the newsletter

Hi Steve,

Can you forward the table of contents and/or outline of the Partner Update newsletter that I can share with folks here? It might be helpful for everyone to see what we've got lined out in anticipation of their review.

Thanks!

Jerome

From: Waltzer, Suzanne
Sent: Monday, October 05, 2015 7:41 AM
To: Blackman, Jerome
Subject: RE: FYI: Fall Partner Update Newsletter - Draft coming soon

Thanks Jerome!

From: Blackman, Jerome
Sent: Friday, October 02, 2015 5:13 PM
To: Waltzer, Suzanne; Pryor, Justin; Bartos, Scott; Bylin, Carey
Cc: Franklin, Pamela; Weitz, Melissa; Michener, Steve
Subject: FYI: Fall Partner Update Newsletter - Draft coming soon

Just a heads up that I hope to have a draft of the Gas STAR Partner Update Newsletter to share next week.

Tetra Tech has been pulling things together nicely and we hope to have the newsletter ready to go out by the middle of October.

Jerome

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Fri 10/16/2015 9:11:22 PM
Subject: FW: R8 Flyover Proposal - OAR Approval
R8 Flyover Proposal - OAR Approval

I'm acting for Bill on Monday and I can mention this to Paul at the management meeting—the person who is requesting HQ approval to introduce the helicopter proposal is the R8 administrator.

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]
From: Weitz, Melissa
Sent: Fri 10/16/2015 5:16:50 PM
Subject: new Howarth paper

A new Howarth paper was published last week, in the journal of Energy and Emission Control Technologies.

Link to article: https://www.dovepress.com/articles.php?article_id=24085

Quick summary: Howarth reviewed satellite data and estimates that the CH4 leak rate from unconventional natural gas is 12%. He also discusses his concerns with the 2012 NSPS (delay in routing gas to RECs) (see page 51 of the journal). He concludes that we need a tax on methane.

Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development: implications for policy

Abstract: Over the past decade, shale gas production has increased from negligible to providing >40% of national gas and 14% of all fossil fuel energy in the USA in 2013. This shale gas is often promoted as a bridge fuel that allows society to continue to use fossil fuels while reducing carbon emissions since less carbon dioxide is emitted from natural gas (including shale gas) than from coal and oil per unit of heat energy. Indeed, carbon dioxide emissions from fossil fuel use in the USA declined to some extent between 2009 and 2013, mostly due to economic recession but in part due to replacement of coal by natural gas. However, significant quantities of methane are emitted into the atmosphere from shale gas development: an estimated 12% of total production considered over the full life cycle from well to delivery to consumers, based on recent satellite data. Methane is an incredibly powerful greenhouse gas that is >100-fold greater in absorbing heat than carbon dioxide, while both gases are in the atmosphere and 86-fold greater when averaged over a 20-year period following emission. When methane emissions are included, the greenhouse gas footprint of shale gas is significantly larger than that of conventional natural gas, coal, and oil. Because of the increase in shale gas development over recent years, the total greenhouse gas emissions from fossil fuel use in the USA rose between 2009 and 2013, despite the decrease in carbon dioxide emissions. Given the projections for continued expansion of shale gas production, this trend of increasing greenhouse gas emissions from fossil fuels is predicted to continue through 2040.

Others, in the top-down measurement community disagree with the 12% finding:
http://www.climatecentral.org/news/shale-methane-may-exceed-estimates-19538

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]
From: Weitz, Melissa
Sent: Wed 12/23/2015 7:51:13 PM
Subject: draft O&G business plan slides
Draft CCD OG team briefing_12-23.pptx

Draft FY2016 business plan slides for the O&G team are attached, and saved on the g drive (Business Planning folder).

Ex. 5 - Deliberative Process

Thanks!

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/14/2016 8:38:28 PM
Subject: FW: Good news on methane emission quantification - FY-16 appropriations

FYI

From: Freitas, Christopher [mailto:Christopher.Freitas@hq.doe.gov]
Sent: Thursday, January 14, 2016 11:21 AM
To: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Hargrove, Anne <Hargrove.Anne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Skone, Timothy (NETL) <timothy.skone@netl.doe.gov>; DeHoratiis, Guido <Guido.DeHoratiis@hq.doe.gov>; Elliott, Rick <Rick.Elliott@Hq.Doe.Gov>; Ciferno, Jared (NETL) <jared.ciferno@netl.doe.gov>; Smistad, Eric (NETL) <eric.smistad@netl.doe.gov>
Subject: RE: Good news on methane emission quantification - FY-16 appropriations

All,

I am hopeful that DOE HQ/NETL will have a draft Annual Operating Plan for Fossil Energy Methane Emission Quantification subprogram available for the EPA conference call. If so, I am available on the following dates and times.

- Jan, 27, Wednesday, 3:30 – 5:30 pm
- Jan, 28, Thursday, 10:30 am – 12pm.
- Jan 29, Friday, 2:00 -4:00 pm.

Christopher J. Freitas

Senior Program Manager Natural Gas Infrastructure

United States Department of Energy

Office of Oil and Natural Gas, FE-30,

1000 Independence Ave. S.W., Forrestal Building, Room 3G-048

Washington, D.C. 20585

Desk: (202) 586-1657/ Mobile: (301) 820-2004

Email: Christopher.Freitas@HQ.DOE.GOV

From: Bradbury, James
Sent: Wednesday, January 13, 2016 5:34 PM
To: Hargrove, Anne <Hargrove.Anne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

Hi Anne (again),

Sorry, I was looking at the wrong week… Here are better times for us during the week of January 25:

- Wednesday, 1-2 pm
- Thursday, 10:30 am – 12pm.
- Friday, 1-2 pm or 3-5 pm.

Thanks,

james

From: Bradbury, James
Sent: Wednesday, January 13, 2016 5:26 PM
To: 'Hargrove, Anne' <Hargrove.Anne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

Hi Anne,

Thanks for following-up.

During the week of January 25, good meeting times for me are as follows:

- Wednesday, 3-5 pm
- Thursday, 10am – 12pm.
- Friday afternoon.

I look forward to hearing back from you with suggested meeting times.

Best regards,

James

From: Hargrove, Anne [mailto:Hargrove.Anne@epa.gov]
Sent: Wednesday, January 13, 2016 12:08 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Bradbury, James <James.Bradbury@Hq.Doe.Gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

Hi James,

I work with Paul on scheduling matters. If there are times during the week Jan. 25 – Jan.29 that might work for you for a conference call, please let me know. In the meantime, I'll see what would be good on our end. Paul's calendar is busy next week, but if the call needs to be next week, we'll try to work something out. Thanks so much.

Best wishes,

Anne Hargrove

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9926

f - (202) 343-1204

From: Gunning, Paul
Sent: Tuesday, January 12, 2016 8:55 AM
To: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Hargrove, Anne <Hargrove.Anne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

James, this is great news and we look forward to working with you on this. Next week is pretty busy for me, but might be workable. The week of the 25th would work better and is pretty open at the moment. Let us know what might work for you.

Thanks!

Paul

Paul M. Gunning

Director, Climate Change Division

U.S. EPA (6207J)

1200 Pennsylvania Avenue

Washington, DC 20460

Direct (202) 343-9736

Fax (202) 343-2202

Cell (202) 251-1436

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Monday, January 11, 2016 4:00 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>
Subject: Good news on methane quantification - FY-16 appropriations

Dear Paul and Melissa,

Happy New Year to both of you!

The good news that I wanted to share with you is that the FY16 omnibus appropriations bill included $5 million for emissions quantification from natural gas infrastructure. The bill also includes $7 million for R&D on emissions mitigation from midstream infrastructure and both of these new programs will managed by DOE's Office of Fossil Energy.

As you may recall, the President's FY16 budget requested $10 million for methane emissions quantification (and here is the relevant guidance):

Emissions Quantification from Natural Gas Infrastructure

The Emissions Quantification from Natural Gas Infrastructure research subprogram will focus on better quantifying methane emissions from the natural gas value chain. The program will work with the Environmental Protection Agency to ensure that data produced is compatible with the national Greenhouse Gas Inventory. Efforts will focus on understanding regional variation and reducing uncertainty in emissions estimates.

Christopher Freitas (cc'd) is the Program Manager for both of the above-mentioned programs. He is working with NETL and in cooperation with EPSA to develop an annual operating plan and, ultimately, FOA, to help move this forward.

We would love to schedule a conference call with you to hear your thoughts on how this new program could be targeted to help improve the GHG Inventory. Please let us know when you might be available for a call on this subject.

We look forward to being in touch.

Thanks very much,

James

--

James Bradbury

Senior Policy Adviser for Climate, Environment and Efficiency

Office of Energy Policy and Systems Analysis

U.S. Department of Energy

Phone: 202-586-0683

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Mon 2/29/2016 2:02:22 PM
Subject: FW: Methane/OG -- USE THIS VERSION (Deese @ 11:00)
OG new info 2 28 16_v2 corrected.docx
ATT00001.htm

FYI

From: Goffman, Joseph
Sent: Sunday, February 28, 2016 10:51 PM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: Fwd: Methane/OG -- USE THIS VERSION (Deese @ 11:00)

Ex. 5 - Deliberative Process

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Date: February 28, 2016 at 10:38:03 PM EST
To: "Adm13McCarthy, Gina" <Adm13McCarthy.Gina@epa.gov>
Cc: "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>, "Knapp, Kristien" <Knapp.Kristien@epa.gov>, "Emerson, Michael" <Emerson.Michael@epa.gov>
Subject: Fwd: Methane/OG -- USE THIS VERSION (Deese @ 11:00)

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: Joseph Goffman <joegoffman@gmail.com>

Date: February 28, 2016 at 10:36:58 PM EST
To: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Subject: Methane/OG -- USE THIS VERSION (Deese @ 11:00)

Prep for call, now with two typos corrected. Sorry and thanks.

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Hogan, Sean[Hogan.Sean@epa.gov]
From: Gunning, Paul
Sent: Fri 10/16/2015 12:14:21 PM
Subject: FW: FRL-9935-50-OAR; Greenhouse Gas Reporting Rule: 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems -- EDITS FOR REVIEW
2015-25840_334560 (1).docx

FYI.....

From: Brooks, Patricia **On Behalf Of** EPA-FederalRegisterLiaison
Sent: Thursday, October 15, 2015 9:45 AM
To: Cook, Carole; Gunning, Paul; Grogan-McCulloch, Lisa; Dunham, Sarah
Cc: Brooks, Patricia
Subject: FW: FRL-9935-50-OAR; Greenhouse Gas Reporting Rule: 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems -- EDITS FOR REVIEW

Hello,

Please review and approve OFR edits to the rule. Please make additional edits in Track Changes.

Thanks

Patricia Brooks

EPA, Office of Policy

Federal Register Team

Mail Code 1806A

1200 Pennsylvania Ave., NW

Washington, DC 20460

202-564-3717

From: Mulligan, Stacey A.

Sent: Thursday, October 15, 2015 7:25 AM
To: EPA-FederalRegisterLiaison <EPA-FederalRegisterLiaison@epa.gov>
Subject: FRL-9935-50-OAR; Greenhouse Gas Reporting Rule: 2015 Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems -- EDITS FOR REVIEW

Hello,

Attached is a copy of the above document with edits for review and approval.

I apologize for the my delay in getting this document to you for review.

If you have questions or concerns, please contact me.

Regards,

Stacey

Stacey A. Mulligan

Writer-Editor

Scheduling Unit

Office of the Federal Register

National Archives and Records Administration

800 N. Capitol St. NW

Suite 700

Office (General): 202.741.6060

To: Allison Lami[allison@rebellionphotonics.com]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Sarah Ward[sarah@rebellionphotonics.com]
From: Weitz, Melissa
Sent: Thur 8/27/2015 8:08:02 PM
Subject: RE: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Hi Allison,

Are you available next Thursday? 11AM or 3PM (EST) would work for us.

Thanks,

Melissa

From: Allison Lami [mailto:allison@rebellionphotonics.com]
Sent: Thursday, August 27, 2015 2:15 PM
To: Weitz, Melissa
Cc: Beeler, Cindy; McKittrick, Alexis; DeFigueiredo, Mark; Sarah Ward
Subject: Re: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Thank you Cindy for the intro!

Melissa (and Alexis), Can we have a call to chat? I am curious about a few things around EPA's oil and gas methane data. What would be some good times for you next week?

Thank you,

Allison

On Wed, Aug 26, 2015 at 3:33 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Thanks Cindy and hello Allison!

I believe we met Allison a few months ago in DC and learned a bit about the Rebellion Photonics technology then. Really interesting stuff!

Allison-Alexis and I are happy to answers any questions you have on EPA's oil and gas methane data. Let us know if you'd like to talk.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Beeler, Cindy
Sent: Wednesday, August 26, 2015 12:31 PM
To: Allison Lami Sawyer (allison@rebellionphotonics.com); McKittrick, Alexis; Weitz, Melissa
Cc: DeFigueiredo, Mark
Subject: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Alexis and Melissa –

I wanted to introduce you two Queens of oil and gas methane emissions to Allison

Swayer, CEO of Rebellion Photonics who designed, manufacture, and sell (or provide a service contract) their Gas Cloud Imager (GCI). Not only can the GCI quantify methane emissions that the operator can "see" real-time, it can speciate as well. I'll let Allison get into all the capabilities and testing that has been done on their device. The GCI was approved by Colorado Dept of Public Health & Environment as an acceptable alternative to the thermal IR camera for use in complying with their LDAR requirements at wellsites and compressor stations. They have also established data housing and reporting via secure cloud-based platform to ease in burden of recordkeeping and reporting for compliance purposes and Company tracking.

Rebellion was the recent recipient of DOE ARPA-E funds through the MONITOR program which has awarded ~10 companies a total of ~$30M to jump-start promising methane detection/quantification technologies for use in O&G to make commercially viable. Rebellion's award was about making the GCI smaller and more compact. Mark DeFigueiredo attended the recent DOE ARPA-E MONITOR conference in Denver.

Allison –

Alexis and Melissa know their oil & gas methane emission inventory and estimating, measurement requirements of such. They've taken EPA on a steep learning curve on methane emissions from this sector and their resultant accounting of emissions are used to compare against in a myriad of air emission research going on in the oil patch. I'm a big fan of them both ☺

Kind regards to all,

Cindy Beeler
US EPA Region 8, Energy Advisor
Office of the Regional Administrator
Tel: 303-312-6204
Beeler.Cindy@epa.gov

CONFIDENTIALITY NOTICE: This e-mail, including all attachments, is for the sole use of the intended recipients and may contain Confidential and privileged information. Any unauthorized use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender and destroy all copies of this message.

--

Allison Lami Sawyer

CEO, Rebellion Photonics

p: 713.218.0101 m: 832.274.6950

w: www.rebellionphotonics.com

CONFIDENTIALITY NOTICE
This message and any included attachments are from Rebellion Photonics and are intended only for the addressee. The information contained in this message is confidential and may constitute inside or non-public information under international, federal, or state laws and is intended only for the use of the addressee.

To: Irving, Bill[Irving.Bill@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Thur 1/28/2016 3:38:48 PM
Subject: FW: Request for Meeting re EPA's Methane Emissions Inventory

FYI

From: Goffman, Joseph
Sent: Thursday, January 28, 2016 8:53 AM
To: Vickie Patton <vpatton@edf.org>
Cc: Browne, Cynthia <Browne.Cynthia@epa.gov>; Atkinson, Emily <Atkinson.Emily@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: Re: Request for Meeting re EPA's Methane Emissions Inventory

Certainly. Thanks

- Joseph Goffman

Sent from my iPhone

On Jan 28, 2016, at 8:50 AM, Vickie Patton <vpatton@edf.org> wrote:

Dear Mr. Goffman,

We respectfully request a meeting to discuss EPA's methane emissions inventory in light of rigorous field studies showing that super emitters are not reflected in EPA's emissions factors. We would include Dr. Steve Hamburg in the discussion.

As Dr. Hamburg will be traveling to DC on February 4th, would it be viable to meet on the 4th at any time after 11am ET?

Sincerely yours,

Vickie Patton

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 1/27/2016 10:14:54 PM
Subject: FW: CCD Oil and Gas Team business planning briefing slides
Draft CCD OG team briefing_1.22.2016.pptx
CCD Oil and Gas - Monthly - 1-26-16.docx

A reminder to take a look at the agenda for tomorrow's monthly (attached and on g:drive) and make edits. Also, at the monthly, plan to give a very brief update on key issues from the small groups you're participating in.

Also, below is my proposal on who will cover each slide for the business planning presentation portion of the meeting tomorrow. Let me know if this doesn't work for anyone.

Thanks!

From: Weitz, Melissa
Sent: Friday, January 22, 2016 11:45 AM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: CCD Oil and Gas Team business planning briefing slides

For the business planning presentation at Tuesday's O&G monthly, how about

Ex. 5 - Deliberative Process

Does that work?

Also, I started a draft agenda for the monthly, attached and on the g:drive. Please take a look and add items when you have a chance.

Thanks! Good luck with the storm!

Melissa

From: Weitz, Melissa
Sent: Friday, January 22, 2016 11:36 AM
To: Irving, Bill <Irving.Bill@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>
Subject: RE: CCD Oil and Gas Team business planning briefing slides

Thank you for the input. I've made edits to the slides taking into account this feedback. I'll incorporate any additional edits/comments before the O&G monthly. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks!

Melissa

From: Irving, Bill
Sent: Thursday, January 21, 2016 2:22 PM
To: Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>;

Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>
Subject: RE: CCD Oil and Gas Team business planning briefing slides

Agree that it is well on its way.

Ex. 5 - Deliberative Process

Bill

From: Kocchi, Suzanne
Sent: Thursday, January 21, 2016 1:39 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>
Subject: RE: CCD Oil and Gas Team business planning briefing slides

I think this looks pretty good. 2 quick things:

Ex. 5 - Deliberative Process

Thanks!

From: Weitz, Melissa

Sent: Wednesday, January 20, 2016 5:32 PM
To: Irving, Bill <Irving.Bill@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Fawcett, Allen <Fawcett.Allen@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: CCD Oil and Gas Team business planning briefing slides

Hello,

The CCD oil and gas team will present team business plan slides at our next CCD oil and gas monthly with Paul (currently scheduled for 1/25, may be rescheduled to 1/26).

I've attached the slides we're planning to present.

If you have any questions, comments, or edits, please let me know by this Friday (1/22).

Thanks!

Melissa

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 12/22/2015 8:15:27 PM
Subject: RE: Expert review for Natural Gas and Petroleum Systems in Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014

Thank you!

From: DeFigueiredo, Mark
Sent: Tuesday, December 22, 2015 2:55 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: Expert review for Natural Gas and Petroleum Systems in Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Tuesday, December 22, 2015 2:51 PM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: Expert review for Natural Gas and Petroleum Systems in Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014

Would one of you mind taking a quick look at this for typos, etc. before our send it out to our ~200 oil and gas friends? Thank you!!

Dear Natural Gas and Petroleum Systems Colleagues,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Best regards and happy holidays,

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Hockstad, Leif
Sent: Tuesday, December 22, 2015 2:05 PM
To: Hockstad, Leif <Hockstad.Leif@epa.gov>
Cc: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Update on Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014

Dear Colleagues,

Ex. 5 - Deliberative Process

Best regards,

Leif Hockstad & Melissa Weitz

****

Leif Hockstad

Climate Change Division

OAR - Office of Atmospheric Programs

U.S. Environmental Protection Agency

Phone: 202 343 9432

hockstad.leif@epa.gov

****

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 7/17/2015 5:30:26 PM
Subject: FW: Follow-up to yesterday's webex session
Overview - Canada's GHG Inventory and Facility GHG Reporting Program July 16 2015.pdf

I can send her the attendee list and the links.

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Friday, July 17, 2015 12:14 PM
To: Weitz, Melissa; McKittrick, Alexis; Hockstad, Leif; Desai, Mausami
Cc: Neitzert,Frank [NCR]; Matin,Afshin [NCR]
Subject: Follow-up to yesterday's webex session

Good morning,

Here is a PDF of the presentation that we delivered yesterday and a list of the EC folks who participated. When you have a moment, please send back your list and Melissa, you mentioned sharing links to some additional information when you spoke about the refinery data.

Thank-you again for participating in this session. We really appreciate the information you shared on your integration efforts and may connect with you again as we continue our assessment of this.

Kind regards,

Loretta

Loretta MacDonald

Head, Greenhouse Gas Reporting Section

Pollutant Inventories and Reporting

Environment Canada / Government of Canada

loretta.macdonald@ec.gc.ca / NEW Telephone: 819-938-5256

Environment Canada participants:

Pollutant Inventories and Reporting Division

(GHG Reporting Program)

Loretta MacDonald

Stephanie Davis

Victor Wong

Adam Rowlands

(National GHG Inventory)

Frank Neitzert (Energy)

Chia Ha (Energy)

Steve Smyth (Energy)

Kristine Tracey (Energy)

Afshin Matin (Industrial Processes and Waste)

Dinora Cabrera (Industrial Processes and Waste)

Oil, Gas and Alternative Energy Division

Mohamed Abdul

Nasima Mohamed

Joseph Tortorelli

Ian Boelens

Sara Ednie

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: July 16, 2015 10:59 AM
To: MacDonald,Loretta [NCR]; McKittrick, Alexis
Cc: Hockstad, Leif; Desai, Mausami
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Slides for today are attached. Looking forward to speaking with you this afternoon!

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Thursday, July 16, 2015 10:17 AM
To: Weitz, Melissa; McKittrick, Alexis
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Great…thanks.

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: July 16, 2015 10:15 AM
To: MacDonald,Loretta [NCR]; McKittrick, Alexis
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Hi Loretta,

We have slides and I'll be sending them over soon.

Thank you,

Melissa

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Thursday, July 16, 2015 9:21 AM
To: Weitz, Melissa; McKittrick, Alexis
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Good morning Melissa and Alexis,

For the information you plan to provide about integrating your GHGRP data in the US national inventory, do you have a presentation that you'd like us to show through the webex? I know we will have some people connecting remotely, so just curious if you have something that you can share by email ahead of time and we can put it on our computer in order to display it. It's fine too if you are just speaking to it.

I just wanted to check on this so that we are ready for this aft.

Thanks,

Loretta

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: July 9, 2015 1:33 PM
To: MacDonald,Loretta [NCR]; McKittrick, Alexis
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Hi Loretta,

Yes, everything is still good on our side.

We are looking forward to the overview from Canada, and we plan to present information on our GHGRP data integration for petroleum refineries, and industrial process sources in the U.S. GHG inventory.

Thank you for setting up the webinar and the call in information. Looking forward to speaking with you next week!

Melissa

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Thursday, July 09, 2015 12:44 PM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Hi Alexis and Melissa,

Just checking in with you today since I haven't heard back from you about next week's information session. Below are the details from the meeting invite I had sent and how to connect.

Can you let me know today that everything is still good on your side?

Thanks,

Loretta

(From meeting invite):

Below are the details to connect for the July 16th information session where we will provide you with an overview of Canada's national GHG inventory and facility-level GHG reporting program.

We would also like to better understand your approach to integrating the facility-reported data from your GHGRP into the US national inventory and your efforts to date or upcoming plans. It would be great if you (or other colleagues) could speak to this during this session. Details about how you integrated the petroleum refining data would be of interest and whether you have pursued other sectors/emission sources such as cement, lime, aluminum, iron/steel production, electricity generation.

If you have other people who will be participating, please let me know. I can add them to the invite list or if you wish, feel free to forward to them.

Topic: Information session with US EPA on Canada's facility GHG reporting and National GHG Inventory
Date: Thursday, July 16, 2015
Time: 1:30 pm, Eastern Daylight Time (New York, GMT-04:00)
Meeting Number: Ex. 6 - Personal Privacy
Meeting Password: Ex. 6 - Personal Privacy

To join the online meeting
---
1. Go to: **Ex. 6 - Personal Privacy**
2. Enter your name and email address.
3. Enter the meeting password: Ex. 6 - Personal Privacy
4. Click "Join Now".

To join the teleconference only

Call-in toll-free number: Ex. 6 - Personal Privacy (US)
Call-in number: Ex. 6 - Personal Privacy (US)
Conference ID: Ex. 6 - Personal Privacy

For assistance
---
1. Go to https://pwgsc-nh.webex.com
2. On the left navigation bar, click "Support".
3. Call 1-800-226-6338 or 613-941-9554

From: MacDonald,Loretta [NCR]
Sent: July 7, 2015 10:52 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Good morning,

I just sent you both a meeting invite for the July 16th information session (1:30-3:00) with the details to connect to the webinar and teleconference lines.

Please let me know if you didn't receive it and I can re-send by email.

Also, please let me know if you have other people you'd like me to include on the invite.

Thanks,

Loretta

From: McKittrick, Alexis [mailto:McKittrick.Alexis@epa.gov]
Sent: June 29, 2015 11:56 AM
To: MacDonald,Loretta [NCR]
Cc: Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Sounds great. Thank you, Loretta!

Best,

Alexis

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Friday, June 26, 2015 2:32 PM
To: McKittrick, Alexis
Cc: Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Hi Alexis,

I checked on our end and July 16th will work for us as well. We'll get things organized and send you the details on how to connect for the session.

Thanks,

Loretta

From: McKittrick, Alexis [mailto:McKittrick.Alexis@epa.gov]
Sent: June 25, 2015 10:40 AM
To: MacDonald,Loretta [NCR]; Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Hi Loretta,

After looking at schedules on this end, it looks like Thursday, July 16th, form 1:30-3PM eastern time would work best for us. If that is still open for you all, then let's go ahead and put it on our calendars.

Just for your information – Melissa is also planning to touch base with Steve Smyth on some GHG Inventory items next week while they are both at the IPCC meeting.

Thanks again for coordinating this meeting. I am really looking forward to hearing more about your programs.

Regards,

Alexis

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Monday, June 22, 2015 10:06 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Good morning,

Due to some folks' unavailability, we will need to look for dates in July. Do any of the following timeslots work for you?

Tuesday, July 7th – 1:30-3:00

Thursday, July 9th – 1:30-3:00

Tuesday, July 14th – 1:30-3:00

Thursday, July 16th, 1:30-3:00

Tuesday, July 21st, 1:30-3:00

Thursday, July 23rd, 1:30-3:00

In talking with some of my colleagues who develop the national GHG inventory, they would like to know what you want to learn about the national inventory. Your national inventory team is obviously very knowledgeable in the required reporting process to the UNFCCC, the required implementation of the 2006 guidelines, etc. Is there a specific sector of the Canadian Inventory that you would like to have an overview of (i.e. Energy, Industrial Processes, Agriculture….)? Or perhaps we could cover key changes in the latest inventory?

For the GHG Reporting Program, we will give a brief overview, similar to what you covered in your presentation.

Kind regards,

Loretta

From: McKittrick, Alexis [mailto:McKittrick.Alexis@epa.gov]
Sent: June 16, 2015 2:34 PM
To: MacDonald,Loretta [NCR]; Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Sounds great, Loretta. Thank you!

Best,

Alexis

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Tuesday, June 16, 2015 2:34 PM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Hi Alexis,

Thanks for your reply and unfortunately, this Thursday is not do-able on our end. I am checking with colleagues on the other dates you suggested below and I'll get back you on this.

- Loretta

From: McKittrick, Alexis [mailto:McKittrick.Alexis@epa.gov]
Sent: June 15, 2015 9:40 AM
To: MacDonald,Loretta [NCR]; Weitz, Melissa
Subject: RE: Follow-up to the US EPA webinar presentation held on May 7th

Hi Loretta,

My apologies for taking so long to get back to you. We really appreciate you being open to providing an overview of your GHG reporting program and National Inventory efforts. After checking through some fluctuating schedules on our end, it looks like we could make a webinar this Thursday, June 18th, from 10AM-11:30AM eastern time. I know that is slightly outside of the windows you give below (which may not still be open given how long it has taken us to get back), so it may not be an ideal fit.

If that time does not work, then let's look at other dates in the coming weeks. Looking at EPA calendars, a few other day/times that appear to be open are:

Monday, June 22, 3:30-5PM eastern time

Wednesday, June 24, 3:30-5PM eastern time

Thursday, June 25, 1-2:30PM eastern time

Monday, June 29, 2-3:30PM eastern time

Tuesday, June 30, 1-2:30PM eastern time

Regarding your request about how we integrate other, non-oil and gas sectors into the inventory, we can either work that into this upcoming call or schedule a separate one. Let's see what time ends up working out and whether or not all the key folks for that discussion are able to make it.

Thanks again for reaching out,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

From: MacDonald,Loretta [NCR] [mailto:Loretta.MacDonald@ec.gc.ca]
Sent: Monday, May 25, 2015 4:55 PM
To: McKittrick, Alexis; Weitz, Melissa
Subject: Follow-up to the US EPA webinar presentation held on May 7th

Hi Alexis and Melissa,

I attended the webinar session on May 7th where you provided an overview of the US's facility-level GHG reporting program and the US national GHG inventory. The colleague here at Environment Canada who had organized that session on our end (Alisa Ronchi) indicated that you had some interest in a similar session on the Canadian facility-level GHG emissions reporting program and national GHG inventory.

I'm the lead for the GHG reporting program and work in the same division as the National Inventory experts. So, I'm following up with you both today to work out a date/time and also to ask you what particular aspects of the reporting program or the national inventory you may be interested in. This will help us to share information that you will find useful rather than us assuming you have a certain level of knowledge of both programs. For a date, would the morning of June 18th work for you (say, 9:30-11:00)? If not, what about the day before, the afternoon of June 17th?

As I mentioned during the call on the 7th, we'd like to hear more about your efforts in integrating the facility-reported data into the US national inventory. You included some information in your presentation about petroleum refining and we were wondering about other sectors (e.g. cement, lime, aluminum….). Perhaps we could have a further exchange on this during this June call.

Please get back to me on dates and I'll get something set up.

Thanks,

Loretta

Loretta MacDonald

Chief, Greenhouse Gas Reporting Section

Pollutant Inventories and Reporting

Environment Canada / Government of Canada

loretta.macdonald@ec.gc.ca / NEW Telephone: 819-938-3259

Chef, Section de la déclaration des gaz à effet de serre
Inventaires et rapports sur les polluants
Environnement Canada / Gouvernement du Canada
loretta.macdonald@ec.gc.ca / NOUVEAU Téléphone : 819-938-3259

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]
From: Weitz, Melissa
Sent: Mon 10/5/2015 8:59:35 PM
Subject: FW: Notes from NASA CMS methane talk
NASA CMS 9-22 Methane Notes.docx

John Steller's stellar notes from EDF's NASA talk are attached.

The talk focused on the methane detector challenge.

From: Steller, John
Sent: Friday, October 02, 2015 2:09 PM
To: Weitz, Melissa
Subject: Notes from NASA CMS methane talk

Hi Melissa,

I have attached my notes from the NASA CMS talk on methane policy and technology. Please let me know if there is anything that needs deciphering from my notes.

Thanks,

John

From: Sepulveda Carlo, Edil A. (GSFC-618.0)[SCIENCE SYSTEMS AND APPLICATIONS INC] [mailto:edil.sepulvedacarlo@nasa.gov]
Sent: Tuesday, September 22, 2015 9:26 AM
Subject: REMINDER: TODAY 12-1PM Bldg. 33 Room A128: September NASA CMS Policy Speaker Series Talk - Live Stream via Adobe Connect
Importance: High

Please join us at our next **Carbon Monitoring System (CMS) Applications Policy Speaker Series** talk:

New and Future Developments in Methane Policy and Technology

Tuesday, September 22, 2015

12-1 PM Eastern Time

NASA Goddard Space Flight Center, Building 33, Room **A128**

Coffee and refreshments will be available

The CMS Applications Policy Speaker Series is an effort funded through the NASA CMS Initiative and co-sponsored by the Joint Global Carbon Cycle Center (JGCCC).

You may **access the seminar remotely**:

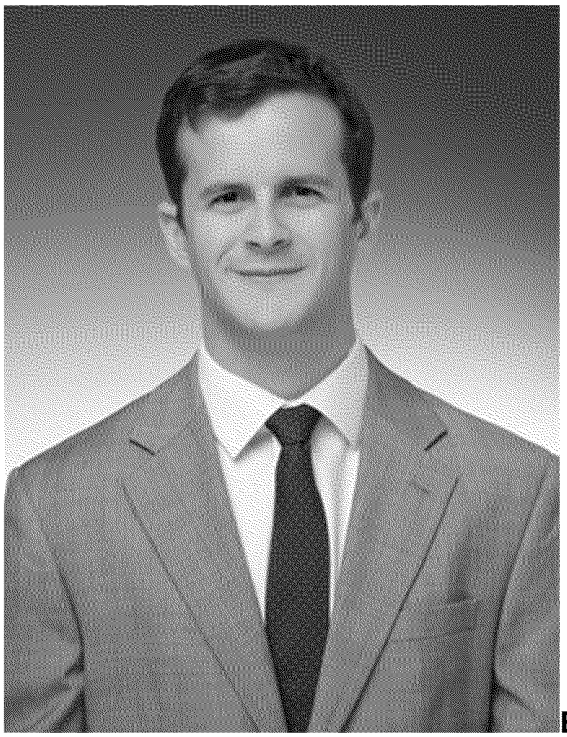
To **register** for **live stream**: https://gsfc610.adobeconnect.com/cmssept2015/event/registration.html

For **audio only**, please call**:** Toll free: 844-467-6272, Access code: 955964

About the Talk

Methane emissions rapidly have become recognized as a core contributor to the rate of climate change in the near term. This talk will provide a perspective on ongoing and potential future regulations of methane and associated pollutants in the oil and gas industry, and a view of the methane detection technologies and approaches of today and tomorrow. Potential information needs of key stakeholder groups such as non-profits, operating companies, and policy makers, will be discussed.

About Our Speaker



Ben Ratner leads corporate engagement initiatives to minimize methane emissions from the oil and natural gas industry at the Environmental Defense Fund. His focus is developing innovative collaborations across diverse stakeholder groups to build the leadership, technology and information necessary to reduce emissions aggressively and cost effectively.

Prior to joining EDF, Ben advised large corporate clients in a range of industries, as Senior Associate at the management consulting firm McKinsey & Co. Ben also practiced law at international law firm Latham & Watkins, LLP, with a focus on environmental law and regulation. He is a graduate of Stanford Law School, where he led the Mock Trial Program. Ben also is a graduate of Rice University, and former participant in Stanford Graduate School of Business's Ignite program on entrepreneurship.

Ben's work has been featured in the Houston Chronicle, Dallas Morning News, National Geographic, and Fast Company.

If you would like to **meet with the speaker** before the talk, please contact cms_policy@cce.nasa.gov

Past Seminars: Check out recordings of previous CMS Applications Policy Speaker Series talks on the CMS website: http://carbon.nasa.gov/policy_series.html?

To unsubscribe from the NASA CMS Applications mailing list, please email edil.sepulvedacarlo@nasa.gov

On behalf of Vanessa M. Escobar,

NASA's CMS Applications Team Lead

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: Hogan, Sean[Hogan.Sean@epa.gov]
From: Weitz, Melissa
Sent: Thur 8/27/2015 5:36:34 PM
Subject: RE: revised prospectus
Methane emissions prospectus DRAFT 8-17-2015 (EPA bi) mw mdf.docx

Thanks Mark!

Ex. 5 - Deliberative Process

Thanks,

Melissa

From: DeFigueiredo, Mark
Sent: Thursday, August 27, 2015 8:00 AM
To: Weitz, Melissa; McKittrick, Alexis
Cc: Hogan, Sean
Subject: RE: revised prospectus

Ex. 5 - Deliberative Process

Thanks!

Mark

From: Weitz, Melissa
Sent: Tuesday, August 25, 2015 2:29 PM
To: DeFigueiredo, Mark; McKittrick, Alexis
Subject: FW: revised prospectus

Ex. 5 - Deliberative Process

Thanks!

Melissa

From: Irving, Bill
Sent: Monday, August 24, 2015 3:47 PM
To: Weitz, Melissa; DeFigueiredo, Mark; Hockstad, Leif
Cc: Kocchi, Suzanne
Subject: Fw: revised prospectus

Ex. 5 - Deliberative Process

Please fwd to anyone else who should comment.

Bill

From: Staudt, Amanda <AStaudt@nas.edu>
Sent: Monday, August 24, 2015 3:35 PM
To: Irving, Bill
Subject: revised prospectus

Hi Bill,

Nice chatting with you! Here's the revised prospectus. Happy to incorporate additional tweaks that you might have.

Thanks,

Amanda

Amanda Staudt, Ph.D., Director

Board on Atmospheric Sciences and Climate

Polar Research Board

The National Academies of Sciences, Engineering, and Medicine

(202) 334-1245

http://dels.nas.edu/basc

http://dels.nas.edu/prb

To: Bylin, Carey[Bylin.Carey@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 8/7/2015 7:55:44 PM
Subject: liquids unloading CCAC document
CCAC OGMP Tech Guidance 7 Liquids Unloading PROVISIONAL 02Jun14 DMJcb mw.docx

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 10/5/2015 3:15:10 PM
Subject: RE: Registration: Stakeholder Workshop on GHG Data on Petroleum and Natural Gas Systems
Subpart W 2014 Data Summary 9-30-2015 DRAFT CLEAN MdF mw.docx

Hi Alexis,

Ex. 5 - Deliberative Process

Melissa

From: McKittrick, Alexis
Sent: Thursday, October 01, 2015 11:38 AM
To: Weitz, Melissa
Subject: RE: Registration: Stakeholder Workshop on GHG Data on Petroleum and Natural Gas Systems

Thanks for the update. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Thursday, October 01, 2015 10:46 AM
To: McKittrick, Alexis
Subject: Re: Registration: Stakeholder Workshop on GHG Data on Petroleum and Natural Gas Systems

Also, I completely overestimated myself yesterday- I did not review the ghgrp doc yesterday, I was crashing on other things and then fell asleep immediately after I got home. I am going to review on the plane this afternoon. Skimmed already and not expecting any showstoppers.

Sent from my iPhone

On Oct 1, 2015, at 10:33 AM, McKittrick, Alexis <McKittrick.Alexis@epa.gov> wrote:

Registered! ☺

From: GHGInventory
Sent: Wednesday, September 30, 2015 5:45 PM
Subject: Registration: Stakeholder Workshop on GHG Data on Petroleum and Natural Gas Systems

Registration is now open for EPA's Stakeholder Workshop on GHG Data on Petroleum and Natural Gas Systems.

If you plan to attend the workshop in Pittsburgh, or via webinar, please register at http://www3.epa.gov/climatechange/ghgemissions/Nov2015WorkshopReg.html.

An updated agenda will be available soon.

Please contact us at GHGInventory@epa.gov with any questions.

From: GHGInventory
Sent: Tuesday, September 01, 2015 5:02 PM
Subject: EPA Stakeholder Workshop on GHG Data on Petroleum and Natural Gas Systems

On November 19, 2015, EPA will be holding a stakeholder workshop on greenhouse gas (GHG) data on petroleum and natural gas systems from the Greenhouse Gas Reporting Program (GHGRP) and U.S. Greenhouse Gas Inventory of Emissions and Sinks (GHG Inventory). The stakeholder workshop will be held in Pittsburgh, PA, following the Natural Gas STAR Annual Implementation Workshop, and via webinar.

At the workshop, EPA will present information on 2014 Greenhouse Gas Reporting Program (GHGRP) data (including newly available activity data). EPA will also present on existing GHG Inventory methods and planned improvements under consideration based on previous stakeholder comments and data from the GHGRP and external studies.

In addition, EPA invites presentations from stakeholders with new data and information relevant to estimating GHG emissions from petroleum and natural gas systems in the GHG Inventory.

For additional information on the workshop and instructions for stakeholder requests to present new information, please see http://www.epa.gov/climatechange/ghgemissions/Nov2015Workshop.html.

Information on registration and webinar access will be available soon.

Thank you for your interest in EPA's GHG data.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/7/2015 3:13:40 PM
Subject: FW: Barnett presentation
Barnett Shale Coordinated Campaign papers published in ES&T.docx

From: David Lyon [mailto:dlyon@edf.org]
Sent: Tuesday, July 07, 2015 11:12 AM
To: Weitz, Melissa
Subject: RE: Barnett presentation

Here is a list Melissa.

David

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Tuesday, July 07, 2015 10:08 AM
To: David Lyon
Subject: RE: Barnett presentation

Thanks again for the overview yesterday.

Do you have a list of the EDF series studies on Barnett, and maybe links to each article? I'm looking through today's ES&T--the articles seem to be spread throughout the journal and I want to be sure I don't miss anything.

Thank you!

Melissa

From: Weitz, Melissa
Sent: Monday, July 06, 2015 3:35 PM
To: 'David Lyon'
Subject: RE: Barnett presentation

Thanks David! I forwarded your email to the distribution list below, with a reminder not to cite, distribute etc.

Thanks again for the very helpful pre-brief on the work, and congratulations on getting it out!

Gunning, Paul <Gunning.Paul@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Snyder, Jennifer <Snyder.Jennifer@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Eben.thoma@epa.gov

From: David Lyon [mailto:dlyon@edf.org]
Sent: Monday, July 06, 2015 3:16 PM
To: Weitz, Melissa
Subject: Barnett presentation

Melissa,

Can you distribute this presentation to the other EPA participants on the call? Please do not cite or distribute the slides without our permission.

Thanks,

David

David Lyon

Scientist

Environmental Defense Fund
301 Congress Avenue, Suite 1300

Austin, TX 78701
(512) 691-3414
dlyon@edf.org

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Karimjee, Anhar[Karimjee.Anhar@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Gunning, Paul
Sent: Mon 6/1/2015 12:24:04 PM
Subject: FW: Leak Detection and Repair Cost-Effectiveness
LDAR Revised TSD Final.pdf

FYI

From: Peter Zalzal [mailto:pzalzal@edf.org]
Sent: Sunday, May 31, 2015 10:30 PM
To: Moore, Bruce; Cozzie, David; Gunning, Paul
Subject: Leak Detection and Repair Cost-Effectiveness

Dear EPA Officials:

We have attached a short memo from ICF International, including an updated analysis of the cost-effectiveness of leak detection and repair. The analysis includes updated, baseline emissions associated with equipment leaks taken from EPA's revised technical support document for NSPS OOOO. Otherwise, the memo uses the same assumptions found in the original ICF Methane Cost Curve Report. Using these updated numbers, the memo finds that quarterly LDAR for all segments—production, gathering, processing, and transmission—is highly cost-effective, associated with net negative costs ranging from $1.65 of savings per mcf of gas reduced to $4.36 of savings per mcf reduced.

Best wishes,

Peter

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Thompson, Lisa[Thompson.Lisa@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 2/26/2016 2:27:43 PM
Subject: RE: Compressors Controllers Small Team
RTC compressor and controllers.docx

Sending along what I have on the compressors and controllers RTC so far. Not totally ready yet, but in case we want to discuss these today, here they are.

-----Original Appointment-----
From: Thompson, Lisa
Sent: Thursday, February 25, 2016 5:37 PM
To: Waltzer, Suzanne; McKittrick, Alexis; RTP-Line-541-1958/Phone-Line/RTP-Conf-Bridge; Roder, Aileen; Moore, Bruce; Spells, Charlene; Weitz, Melissa; 'Veronica Hanzel' (hanzel.veronica@ecrweb.com); oloughlin.joanne@ecrweb.com
Subject: Compressors Controllers Small Team
When: Friday, February 26, 2016 9:30 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Ex. 6 - Personal Privacy

Agendas attached << File: Controllers Agenda 2-26.docx >> << File: Compressors Agenda 2-26.docx >>

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 9/1/2015 6:43:39 PM
Subject: distribution segment questions on GHGRP
Draft Proposed Revision to NG Distribution Segment Emissions_2015-08-31 for EPA discussion.docx

Hi,

Ex. 5 - Deliberative Process

Thank you!

Melissa

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Bylin, Carey[Bylin.Carey@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Thur 9/17/2015 4:15:38 PM
Subject: RE: Methane Challenge Technical Document for Paul's Review

Got it. Thanks everyone!!!

From: Bylin, Carey
Sent: Thursday, September 17, 2015 11:59 AM
To: Franklin, Pamela; Gunning, Paul
Cc: DeFigueiredo, Mark; McKittrick, Alexis; Weitz, Melissa; Waltzer, Suzanne; Kocchi, Suzanne
Subject: RE: Methane Challenge Technical Document for Paul's Review

Paul,

As mentioned in the meeting, we made a few last minute updates to this document. Please review this version.

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: Franklin, Pamela
Sent: Thursday, September 17, 2015 10:47 AM
To: Gunning, Paul
Cc: Bylin, Carey; DeFigueiredo, Mark; McKittrick, Alexis; Weitz, Melissa; Waltzer, Suzanne
Subject: FW: Methane Challenge Technical Document for Paul's Review
Importance: High

Paul,

On behalf of Carey and the entire oil & gas team, who have put a lot of sweat equity into this document, please find attached the draft technical document for the Methane Challenge Program. As you recall, this document is supplemental to the program proposal released in July

Ex. 5 - Deliberative Process

As we had discussed previously, please let us know how you would like us to proceed in terms of any further management review prior to release.

Ex. 5 - Deliberative Process

In terms of timing, we are hoping to release this next week (currently the scheduled end date for stakeholder feedback is October 13). We would appreciate your review by early next week, if possible.

Thanks in advance, let us know if you have any questions.

Pamela

To: Bylin, Carey[Bylin.Carey@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Tsirigotis, Peter[Tsirigotis.Peter@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Fri 5/29/2015 8:32:51 PM
Subject: FW: White Paper
Credit for Voluntary Emission Reductions - Draft 5 - clean version (2).DOCX

FYI…….electronic version of the paper that was shared with us this afternoon.

From: Marnie.Funk@shell.com [mailto:Marnie.Funk@shell.com]
Sent: Friday, May 29, 2015 4:26 PM
To: Gunning, Paul
Cc: pverma@chevron.com; scf@vnf.com; David.vanHoog@bp.com; Kevin.J.Avery@conocophillips.com; lschaaff@hess.com; robert.m.nolan@exxonmobil.com; dick.francis@shell.com
Subject: FW: White Paper

Paul,

Thank you for meeting with us today. It was a very good conversation from our perspective. As requested, attached please find the document we gave you. I hope you have a great weekend (to include a little play time.)

Regards,

Marnie

To: Franklin, Pamela[Franklin.Pamela@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]
From: Gunning, Paul
Sent: Mon 2/8/2016 1:26:40 PM
Subject: FW: Deliberative -- ICR document - clean version attached
OG Information Request INTERNAL 2 8 16.docx

FYI

From: Davis, Alison
Sent: Monday, February 08, 2016 7:33 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; McCabe, Janet <McCabe.Janet@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Lassiter, Penny <Lassiter.Penny@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: Deliberative -- ICR document - clean version attached

---

From: Goffman, Joseph
Sent: Sunday, February 7, 2016 5:38 PM
To: McCabe, Janet; Tsirigotis, Peter; Page, Steve; Koerber, Mike; Dunham, Sarah; Gunning, Paul; Cozzie, David; Banks, Julius; Davis, Alison; Lassiter, Penny; Drinkard, Andrea; Millett, John
Subject: Fwd: ICR - with a tweak on Janet's edit

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: Joseph Goffman <joegoffman@gmail.com>
Date: February 7, 2016 at 5:36:59 PM EST
To: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Subject: ICR - with a tweak on Janet's edit

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Mon 8/31/2015 9:33:36 PM
Subject: FW: summary of interagency call on Methane S&T Needs Activities
Methane S&T interagency Aug 2015 meeting agency activities 20150826.docx
Methane emissions prospectus DRAFT 8-17-2015 (EPA).docx
Interagency Methane Strategy Call - 27 Aug_Gant.pdf
Methane (NOAA) 20150827_jhb.pptx

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Friday, August 28, 2015 4:52 PM
To: Gunning, Paul
Cc: Kocchi, Suzanne; Irving, Bill; DeFigueiredo, Mark; Hogan, Sean
Subject: summary of interagency call on Methane S&T Needs Activities

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Best,
Melissa

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Mon 12/14/2015 7:17:02 PM
Subject: draft summary report on stakeholder workshop
Nov 2015 OG Inventory Stakeholder Workshop Summary Report_2015-12-14 mw.docx

Hello,

I've attached the draft summary report on the GHG data stakeholder workshop, which I'm hoping to post to the GHGI website this week.

Can you take a look at the GHGRP presentation write ups to make sure everything is captured correctly? Can you get me any edits by Thursday a.m.? Let me know if that works.

Thanks!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: Gunning, Paul[Gunning.Paul@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Eben.thoma@epa.gov[Eben.thoma@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Mon 7/6/2015 7:34:01 PM
Subject: Slides from today's call-- FW: Barnett presentation
removed.txt
Barnett Campaign briefing.pptx

See attached, and please do not cite, distribute, etc.

Melissa

From: David Lyon [mailto:dlyon@edf.org]
Sent: Monday, July 06, 2015 3:16 PM
To: Weitz, Melissa
Subject: Barnett presentation

Melissa,

Can you distribute this presentation to the other EPA participants on the call? Please do not cite or distribute the slides without our permission.

Thanks,

David

David Lyon

Scientist

Environmental Defense Fund
301 Congress Avenue, Suite 1300

Austin, TX 78701
(512) 691-3414
dlyon@edf.org

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Thompson, Lisa[Thompson.Lisa@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 2/25/2016 3:45:03 PM
Subject: RE: Pumps in the GHGRP?

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Thursday, February 25, 2016 10:20 AM
To: Thompson, Lisa <Thompson.Lisa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: Pumps in the GHGRP?

I can look up both of these and send over in a few mins.

From: Thompson, Lisa
Sent: Wednesday, February 24, 2016 9:06 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: Pumps in the GHGRP?

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Thanks!

Lisa

Lisa Thompson

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919-541-9775

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 1/12/2016 10:42:13 PM
Subject: FW: Updated Prod Segment Memo & XLSX Files
Major Equip Compiled Data from Subpart W_2016-01-12.xlsx
Major Equipment & Pneu Subpart W Calcs_2016-01-12.xlsx
DRAFT Proposed Revision to Production Segment_Emissions_2015-01-12 mw.docx

Memo and files for production segment memo on potential updates to GHGI using GHGRP AD, for our discussion on Tuesday. Feel free to share with RTI.

From: Casey Pickering [mailto:Casey.Pickering@erg.com]
Sent: Tuesday, January 12, 2016 4:45 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Clint Burklin <Clint.Burklin@erg.com>; Brandon Long <Brandon.Long@erg.com>
Subject: Updated Prod Segment Memo & XLSX Files

Melissa,

Ex. 5 - Deliberative Process

Thanks,

Casey

Casey Pickering

Chemical Engineer

Eastern Research Group, Inc. (ERG)

2300 Wilson Blvd. Ste. 350

Arlington, VA 22201

(703) 841-0554

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Blackman, Jerome[Blackman.Jerome@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 5/7/2015 5:15:11 PM
Subject: RE: ORD interview request: Bacharach Hi-Flow Samplers

This is the article—it mentions that we couldn't provide comment before the deadline, and then includes a section called **EPA Asks for More Proof which includes this:** "Howard said he participated in a conference call with EPA representatives to discuss his team's findings. The call took place before the paper was published, Howard said, and while the EPA seemed receptive to his concerns, Howard was told the agency couldn't take action without more proof."

http://insideclimatenews.org/news/05052015/flawed-methane-monitor-underestimates-leaks-oil-and-gas-sites

From: Waltzer, Suzanne
Sent: Wednesday, May 06, 2015 9:52 PM
To: DeFigueiredo, Mark; DeLuca, Isabel; Bylin, Carey; Blackman, Jerome
Cc: Weitz, Melissa; McKittrick, Alexis
Subject: RE: ORD interview request: Bacharach Hi-Flow Samplers

All,

Sorry, it's been a busy week on the regulatory front and I lost track of where this is at. Do you need any further input from Gas STAR/me or are we all set?

Thanks,

From: DeFigueiredo, Mark
Sent: Tuesday, May 05, 2015 5:42 PM
To: DeLuca, Isabel; Bylin, Carey; Waltzer, Suzanne; Blackman, Jerome
Cc: Weitz, Melissa; McKittrick, Alexis
Subject: RE: ORD interview request: Bacharach Hi-Flow Samplers

Ex. 5 - Deliberative Process

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: DeLuca, Isabel
Sent: Tuesday, May 05, 2015 5:28 PM
To: DeFigueiredo, Mark; Bylin, Carey; Waltzer, Suzanne; Blackman, Jerome
Cc: Weitz, Melissa; McKittrick, Alexis
Subject: RE: ORD interview request: Bacharach Hi-Flow Samplers

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Tuesday, May 05, 2015 2:50 PM
To: Bylin, Carey; Waltzer, Suzanne; Blackman, Jerome; DeLuca, Isabel
Cc: Weitz, Melissa; McKittrick, Alexis
Subject: RE: ORD interview request: Bacharach Hi-Flow Samplers

Ex. 5 - Deliberative Process

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Bylin, Carey
Sent: Tuesday, May 05, 2015 2:41 PM
To: Waltzer, Suzanne; Blackman, Jerome; DeLuca, Isabel
Cc: Weitz, Melissa; DeFigueiredo, Mark
Subject: FW: ORD interview request: Bacharach Hi-Flow Samplers

Hi Isabel,

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: DeLuca, Isabel
Sent: Tuesday, May 05, 2015 1:44 PM
To: Weitz, Melissa; DeFigueiredo, Mark; Bylin, Carey
Subject: RE: ORD interview request: Bacharach Hi-Flow Samplers

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Tuesday, May 05, 2015 11:38 AM
To: DeLuca, Isabel; DeFigueiredo, Mark
Subject: FW: ORD interview request: Bacharach Hi-Flow Samplers

Ex. 5 - Deliberative Process

From: Thoma, Eben
Sent: Tuesday, May 05, 2015 10:27 AM
To: Hubbard, Carolyn; Dewees, Jason; Weitz, Melissa
Cc: Maguire, Megan
Subject: RE: ORD interview request: Bacharach Hi-Flow Samplers

Carolyn,

I am not the right person for most of the questions that will come up in this interview. The lead on this should be OAR (OAP). I am happy to help support OAR if needed. I am not sure of the proper communication contacts for this but I am copying my primary technical contacts Jason (OAQPS MTG) and Mellissa (OAP) and hopefully they point in the right direction. Both Jason and Mellissa are familiar with this topic.

Thanks,

Eben

Eben Thoma, Ph.D.

U.S. Environmental Protection Agency

Office of Research and Development

National Risk Management Research Laboratory

109 TW Alexander Drive (M/S E343-02)

Research Triangle Park, NC 27711

Phone: 919-541-7969

Fax: 919-541-0359

Email: thoma.eben@epa.gov

From: Hubbard, Carolyn
Sent: Tuesday, May 05, 2015 10:18 AM
To: Thoma, Eben
Cc: Maguire, Megan
Subject: Fwd: ORD interview request: Bacharach Hi-Flow Samplers

Hi Eben,

See below. Are you the right person to answer some of these questions? The last one seems like an OAR question. Please let us know what you think and we will follow up with the press office. Thanks!

Carolyn Hubbard

Science Communications

US EPA Office of Research and Development (ORD)

Hubbard.carolyn@epa.gov

202-564-2189

202-379-6744

Begin forwarded message:

From: "Milbourn, Cathy" <Milbourn.Cathy@epa.gov>
Date: May 4, 2015 at 5:13:34 PM EDT
To: "Hubbard, Carolyn" <Hubbard.Carolyn@epa.gov>
Cc: "Milbourn, Cathy" <Milbourn.Cathy@epa.gov>
Subject: ORD interview request: Bacharach Hi-Flow Samplers

Hi Carolyn- can we chat about this request? It's not due tomorrow—but I need some help/guidance

From: Lisa Song [mailto:lisa.song@insideclimatenews.org]
Sent: Friday, May 01, 2015 6:24 PM
To: Colaizzi, Jennifer C.
Subject: interview request: Bacharach Hi-Flow Samplers

Dear Ms. Colaizzi,

I'm writing to ask about a recent paper (attached) that examines flaws in a widely-used methane detector used for EPA emissions factors and GHG inventory reporting. The paper looks at conditions under which the instrument appears to fail, providing underestimated methane emission rates. This could have potentially important consequences for EPA's GHG inventory.

I'm writing to request a phone interview for next Monday (my story will be published next Tuesday). I should be free all day except 10:30-11:30am EDT. The EPA expert I'd like to talk to is Eben Thoma, who co-authored a paper on a similar issue in 2012. If Mr. Thoma is not available, please provide another knowledgeable expert.

My questions are related to these topics:

1. Is the EPA aware of the paper, and is it looking into taking the Bacharach off the list of EPA-approved tools?

2. Does the EPA plan to take action (e.g. conduct more extensive testing) based on the study's results?

3. What are the implications for EPA policies, data and pending regulations (e.g. the pending national methane regulations, which are being developed based on

existing methane studies, some of which have used the Bacharach).

Thanks,

Lisa

--

Lisa Song
Reporter, InsideClimate News
http://insideclimatenews.org

617-500-8266 (o)

617-413-8052 (c)

@lisalsong

Catherine C. Milbourn

U.S. EPA HQ

Office of the Administrator

Office of Media Relations

202-564-7849 (office)

202-420-8648 (mobile)

Milbourn.cathy@epa.gov

Catherine C. Milbourn

U.S. EPA HQ

Office of the Administrator

Office of Media Relations

202-564-7849 (office)

202-420-8648 (mobile)

Milbourn.cathy@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 12/14/2015 4:58:40 PM
Subject: RE: superemitters
Superemitters.docx

Hi Alexis,

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, December 14, 2015 11:34 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: superemitters

Can you just e-mail me whatever superemitter language you have when you are ready? I will try

to have a cohesive one pager by 1PM. (!)

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 12/18/2015 9:27:58 PM
Subject: FW: Feinstein - Methane proposal question

Mind if I add you to this chain and ask for you to send the info you pulled on this site from GHGRP? I saw that it reports compressor emissions so it would count as a compressor station.

From: Moore, Bruce
Sent: Friday, December 18, 2015 4:23 PM
To: Cozzie, David <Cozzie.David@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Ashley, Jackie <Ashley.Jackie@epa.gov>
Subject: RE: Feinstein - Methane proposal question

David and I just discussed this. If the equipment at the site includes one or more compressors used to move the gas into storage, then such a site would be considered a "compressor station" and could then be subject to the proposed fugitive emission standards. Of course this would be for sources that were new, modified or reconstructed after 9/28/15.

Bruce

Bruce Moore

Senior Technical Advisor - Oil & Natural Gas Sector

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

(919) 541-5460

moore.bruce@epa.gov

For information, visit: *www.epa.gov/airquality/oilandgas*

From: Cozzie, David
Sent: Friday, December 18, 2015 1:51 PM
To: Davis, Alison <Davis.Alison@epa.gov>
Cc: Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Ashley, Jackie <Ashley.Jackie@epa.gov>
Subject: Re: Feinstein - Methane proposal question

Ex. 5 - Deliberative Process

On Dec 18, 2015, at 1:32 PM, Davis, Alison <Davis.Alison@epa.gov> wrote:

Thanks Suzie. Adding Jackie, who does congressional for us, as an FYI

From: Waltzer, Suzanne
Sent: Friday, December 18, 2015 1:21 PM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: Cozzie, David <Cozzie.David@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: Feinstein - Methane proposal question

Hi,

I wanted to pass along this inquiry from Region 9. I haven't yet responded but I did speak briefly to David earlier in the week regarding our O&G activities and methane challenge/GHGRP. I suggested he loop in Bruce and Amy with specific questions on the NSPS. As noted below, he has some follow-up questions on the response provided to Senator Feinstein's office.

Thanks,

From: Basinger, David
Sent: Friday, December 18, 2015 12:05 PM
To: Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>
Cc: Chew, Andrew <Chew.Andrew@epa.gov>; Johnstone, Jeremy <Johnstone.Jeremy@epa.gov>; Meer, Daniel <Meer.Daniel@epa.gov>; Salazar, Matt <Salazar.Matt@epa.gov>; Miller, Amy <Miller.Amy@epa.gov>
Subject: FW: Feinstein - Methane proposal question

You or one of the other HQ contacts you mentioned to me the other day (Bruce, Melissa) may have been involved in OAQPs' answer below, but if not, it sounds like this (see following email chain) is something you should be aware of, regarding answering Senator Feinstein's office question relating to the proposed methane LDAR rule.

From what I understand the answer given may still hold generally, but one of you might help with clarification; the region (Jeremy, Dan, and others) can explain more about what's going on, but an interpretation of how the proposed methane rule might apply would better come from one of you, probably.

I'm working today, but will be on leave beginning Monday, returning January 4th. I've cc'd Andrew Chew in my section, who I believe will be more available during the holidays.

Dave Basinger
Environmental Engineer, Air & TRI Enforcement
Enforcement Division, Mail Code ENF-2-1

U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901
office 415.972.3506
fax 415.947.3519 (include name and mail code)
please consider the environment before printing this

From: Lawrence, Kathryn
Sent: Thursday, December 17, 2015 2:21 PM
To: Miller, Amy; Basinger, David; Chew, Andrew; Allen, HarryL
Subject: Fwd: Feinstein - Methane proposal question

Fyi

Kathryn Lawrence

Emergency Prevention and Preparedness Programs

EPA Region 9

4159723039

Sent from my iPhone

Begin forwarded message:

From: "Maier, Brent" <Maier.Brent@epa.gov>
Date: December 17, 2015 at 1:42:53 PM PST
To: "Bailey, KevinJ" <Bailey.KevinJ@epa.gov>, "Terry, Sara" <Terry.Sara@epa.gov>, "Ashley, Jackie" <Ashley.Jackie@epa.gov>, "Niebling, William" <Niebling.William@epa.gov>
Cc: "Lubetsky, Jonathan" <Lubetsky.Jonathan@epa.gov>, "Friedman, Kristina" <Friedman.Kristina@epa.gov>, "Meer, Daniel" <Meer.Daniel@epa.gov>, "Johnstone, Jeremy" <Johnstone.Jeremy@epa.gov>, "Higuchi, Dean" <Higuchi.Dean@epa.gov>, "Zito, Kelly" <ZITO.KELLY@EPA.GOV>, "Harris-Bishop, Rusty" <Harris-Bishop.Rusty@epa.gov>, "Lawrence, Kathryn" <Lawrence.Kathryn@epa.gov>
Subject: RE: Feinstein - Methane proposal question

Kevin –

Our office has been contacted on this natural gas leak in Aliso Canyon, CA by Congressman Brad Sherman (and are responding to an incoming letter from his office) and Sen. Boxer's office in recent days. If folks in HQ wish to reach

out to some R9 colleagues regarding our offices tracking of the State agencies efforts to address this ongoing problem, they can reach out to Dan Meer who is an Assistant Director in our Superfund Division who I have copied here. I am going to be out of the office on leave after today until December 29th, so copying my Congressional colleague here in R9 who will be my back up while I am out of the office. Jeremy Johnstone is the staff level colleague who has also been tracking this issue

Dan Meer in our Superfund Division can be reached at 415.972.3132 and Jeremy Johnstone can be reached at 415.972.3499.

Brent Maier

Congressional Liaison

U.S. Environmental Protection Agency, Region IX

75 Hawthorne St. (OPA-3)

San Francisco, CA 94105

Ph: 415.947.4256

From: Bailey, KevinJ
Sent: Thursday, December 17, 2015 1:15 PM
To: Terry, Sara <Terry.Sara@epa.gov>; Ashley, Jackie <Ashley.Jackie@epa.gov>; Niebling, William <Niebling.William@epa.gov>; Maier, Brent <Maier.Brent@epa.gov>
Cc: Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>
Subject: RE: Methane proposal question - Feinstein

+ Brent Maier for some context.

I believe what's happened at this site has prompted the more general question of how leak detection and repair requirements would apply to a similar leak.

Kevin J. Bailey

Congressional Liaison/Air Team

Office of Congressional Affairs

U.S. Environmental Protection Agency

(o) 202.564.2998

(f) 202.501.0144

From: Terry, Sara
Sent: Thursday, December 17, 2015 4:08 PM
To: Bailey, KevinJ <Bailey.KevinJ@epa.gov>; Ashley, Jackie <Ashley.Jackie@epa.gov>; Niebling, William <Niebling.William@epa.gov>
Cc: Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>
Subject: RE: Methane proposal question - Feinstein

Has region 9 been involved in this facility specific issue? Probably need to circle with them and figure out what transpired there.

Sara

From: Bailey, KevinJ
Sent: Thursday, December 17, 2015 3:56 PM
To: Ashley, Jackie <Ashley.Jackie@epa.gov>; Niebling, William <Niebling.William@epa.gov>; Terry, Sara <Terry.Sara@epa.gov>
Cc: Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>
Subject: RE: Methane proposal question - Feinstein

Follow up from Feinstein's office…could we look at some times for a call on Monday afternoon?

That is a helpful start, but I would like to learn a few more details. Would it be possible to set up a short briefing? I am available tomorrow afternoon and Monday afternoon.

To give you some more context, our office has been following the large, ongoing natural gas leak from a storage field in Aliso Canyon, California. The leak occurred in a pipe casing a few hundred feet underground. It would be helpful to know how the leak detection and repair requirements would apply to a similar leak, or other types of possible problems, with new underground storage fields.

Kevin J. Bailey

Congressional Liaison/Air Team

Office of Congressional Affairs

U.S. Environmental Protection Agency

(o) 202.564.2998

(f) 202.501.0144

From: Ashley, Jackie
Sent: Thursday, December 17, 2015 8:26 AM
To: Bailey, KevinJ <Bailey.KevinJ@epa.gov>; Niebling, William <Niebling.William@epa.gov>; Terry, Sara <Terry.Sara@epa.gov>
Cc: Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>
Subject: RE: Methane proposal question - Feinstein

Kevin – Here's an answer to this O&G question from Feinstein. Let us know if you need anything more.

How would the proposed rule impact underground natural gas storage facilities that consist of depleted oil or gas fields (i.e., natural geologic formations, not manufactured vessels)?

The storage facility made of earthen material would not be subject, however equipment associated with the facility (such as compressors, pneumatic controllers, etc.) would likely be covered.

Jackie Ashley - US EPA - Office of Air Quality Planning and Standards - 919-541-7664 – ashley.jackie@epa.gov

From: Ashley, Jackie
Sent: Tuesday, December 15, 2015 2:31 PM
To: Bailey, KevinJ <Bailey.KevinJ@epa.gov>; Niebling, William <Niebling.William@epa.gov>; Terry, Sara <Terry.Sara@epa.gov>
Cc: Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>
Subject: RE: Methane proposal question - Feinstein

We are working on this. Aiming to have something for you Wednesday. Thanks!

Jackie Ashley - US EPA - Office of Air Quality Planning and Standards - 919-541-7664 –

ashley.jackie@epa.gov

From: Bailey, KevinJ
Sent: Tuesday, December 15, 2015 10:12 AM
To: Niebling, William <Niebling.William@epa.gov>; Ashley, Jackie <Ashley.Jackie@epa.gov>; Terry, Sara <Terry.Sara@epa.gov>
Cc: Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>
Subject: Methane proposal question - Feinstein

All,

We received the following question on the methane proposal from Senator Feinstein's office. Can you assist?

_____

How would the proposed rule impact underground natural gas storage facilities that consist of depleted oil or gas fields (i.e., natural geologic formations, not manufactured vessels)?

Kevin J. Bailey

Congressional Liaison/Air Team

Office of Congressional Affairs

U.S. Environmental Protection Agency

(o) 202.564.2998

(f) 202.501.0144

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/7/2016 8:02:36 PM
Subject: FW: please review
OG -EDF talking points 3-6-2016 mw.docx

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Monday, March 07, 2016 2:05 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: please review

Ex. 5 - Deliberative Process

From: Davis, Alison
Sent: Monday, March 07, 2016 1:59 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Subject: please review

Alison Davis

Senior Advisor for Public Affairs

US EPA, Office of Air Quality Planning & Standards

Research Triangle Park, NC 27711

Desk: 919-541-7587

Mobile: 919-624-0872

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Thur 6/25/2015 3:41:05 PM
Subject: RE: Reminder: GHGRP oil and gas workgroup - draft final rule for your review
GHGRP Subpart W 2015 final rule preamble_workgroup review mw.docx
GHGRP Subpart W 2015 final rule reg text_workgroup review mw.docx

Hi Alexis,

Ex. 5 - Deliberative Process

Melissa

From: McKittrick, Alexis
Sent: Wednesday, June 24, 2015 10:59 AM
To: DeFigueiredo, Mark; Karimjee, Anhar; Grogan-McCulloch, Lisa; Waltzer, Suzanne; Weitz, Melissa; Moore, Bruce; Thoma, Eben; Benner, Tim; Jollie, Jeff; Lischinsky, Robert; Griffo, Shannon; Mia, Marcia; VanLare, Paula; Tate, Ragan; Forde, Raymond; Vyas, Himanshu; Lawrence, Rob; Beeler, Cindy; Komp, Mark; Macpherson, Alex; Tang, Natalie; Margolis, Alan; Dresser, Chris; Alsalam, Jameel
Subject: Reminder: GHGRP oil and gas workgroup - draft final rule for your review

All,

Ex. 5 - Deliberative Process

Best regards,

Alexis

From: McKittrick, Alexis
Sent: Thursday, June 11, 2015 3:42 PM
To: DeFigueiredo, Mark; Karimjee, Anhar; Grogan-McCulloch, Lisa; Waltzer, Suzanne; Weitz, Melissa; Moore, Bruce; Thoma, Eben; Benner, Tim; Jollie, Jeff; Lischinsky, Robert; Griffo, Shannon; Mia, Marcia; VanLare, Paula; Tate, Ragan; Forde, Raymond; Vyas, Himanshu; Lawrence, Rob; Beeler, Cindy; Komp, Mark; Macpherson, Alex; Tang, Natalie; Margolis, Alan
Subject: GHGRP oil and gas workgroup - draft final rule for your review

GHGRP oil & gas workgroup,

Ex. 5 - Deliberative Process

I look forward to receiving everyone's comments and talking to you all next Wednesday.

Regards,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

From: McKittrick, Alexis
Sent: Friday, June 05, 2015 4:46 PM
To: DeFigueiredo, Mark; Karimjee, Anhar; Lisa Grogan-McCulloch; Waltzer, Suzanne; Weitz, Melissa; Moore, Bruce; Thoma, Eben; Benner, Tim; Jollie, Jeff; Lischinsky, Robert; Griffo, Shannon; Mia, Marcia; VanLare, Paula; Tate, Ragan; Forde, Raymond; Vyas, Himanshu; Lawrence, Rob; Beeler, Cindy; Komp, Mark; Macpherson, Alex; Tang, Natalie; Margolis, Alan
Subject: GHGRP oil and gas workgroup update

Dear GHGRP oil & gas workgroup,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Everyone have a great weekend,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 1/12/2016 8:48:15 PM
Subject: FW: API Comments on EPA's Proposed Oil and Gas Rules
API Comments on NSPS OOOOa 12042015.pdf

Their comment seemed to be only on the rounding issue (p. 123)

From: Thompson, Lisa
Sent: Monday, December 07, 2015 4:35 PM
To: Macpherson, Alex <Macpherson.Alex@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: FW: API Comments on EPA's Proposed Oil and Gas Rules
Importance: High

From: Moore, Bruce
Sent: Monday, December 07, 2015 9:45 AM
To: Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>
Cc: Cozzie, David <Cozzie.David@epa.gov>
Subject: FW: API Comments on EPA's Proposed Oil and Gas Rules
Importance: High

Bruce Moore

Senior Technical Advisor - Oil & Natural Gas Sector

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

(919) 541-5460

moore.bruce@epa.gov

For information, visit: www.epa.gov/airquality/oilandgas

From: Matthew Todd [mailto:ToddM@api.org]
Sent: Friday, December 04, 2015 8:19 PM
To: Mccarthy, Gina <McCarthy.Gina@epa.gov>
Cc: McCabe, Janet <McCabe.Janet@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Vetter, Cheryl <Vetter.Cheryl@epa.gov>; Stoneman, Chris <Stoneman.Chris@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Howard Feldman <Feldman@api.org>
Subject: API Comments on EPA's Proposed Oil and Gas Rules
Importance: High

Dear Administrator McCarthy:

API respectfully submits the attached comments on the following proposed rulemakings and draft guidelines:

•□□□□□□□□ *Oil and Natural Gas Sector: Emission Standards for New and Modified Sources* at 80 FR 56593 (September 18, 2015)

•□□□□□□□□ *Release of Draft Control Techniques Guidelines for the Oil and Natural Gas Industry* at 80 FR 56577 (September 18, 2015)

•□□□□□□□□ *Source Determination for Certain Emission Units in the Oil and Natural Gas Sector* at 80 FR 56579 (September 18, 2015)

•□□□□□□□□ *Review of New Sources and Modifications in Indian Country: Federal Implementation Plan for Managing Air Emissions from True Minor Sources Engaged in Oil and*

Natural Gas Production at 80 FR 56554 (September 18, 2015)

We look forward to working with you and your staff as these rules are developed.

Sincerely,

Matthew Todd, on behalf of Howard J. Feldman

Matthew Todd

API

202.682.8319

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/14/2015 2:54:31 PM
Subject: RE: G&B compressor EF?

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Tuesday, July 14, 2015 10:47 AM
To: Waltzer, Suzanne; Weitz, Melissa
Subject: G&B compressor EF?

Hi Suzie & Melissa,

Ex. 5 - Deliberative Process

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 8/3/2015 6:38:33 PM
Subject: emissions info in NSPS TSD (and small part in preamble)
emissions info from TSD and preamble.docx

Hi Alexis,

Ex. 5 - Deliberative Process

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 7/31/2015 9:58:07 PM
Subject: Clearstone 1998 report

Do you have a copy of the reference below? It's the source of some of the GHGRP factors for M&R stations.

Clearstone. *Handbook for Estimating Methane Emissions from Canadian Natural Gas Systems*. Clearstone Engineering Ltd., Enerco Engineering Ltd, and Radian International. May 25, 1998.

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 2/12/2016 10:23:26 PM
Subject: DOE list
DOE research and analysis areas.docx

Hey,

Ex. 5 - Deliberative Process

I'll try to catch you guys at some point on Tuesday.

Have a great weekend!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 12/2/2015 12:22:29 AM
Subject: comparison with new data
Comparison with new data 12.1.docx

I am now realizing that I never sent you the NSPS2 comparison with new data document to check the GHGRP numbers. Awesome!

Ex. 5 - Deliberative Process

Thanks! Let me know if this makes sense and when you/Natalie may be able to take a look.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/9/2015 8:48:11 PM
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Alexis,

Ex. 5 - Deliberative Process

Thanks!

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, March 09, 2015 2:35 PM
To: Weitz, Melissa
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa,

Ex. 5 - Deliberative Process

Thanks,

Alexis

From: Weitz, Melissa
Sent: Monday, March 09, 2015 1:51 PM
To: McKittrick, Alexis
Subject: FW: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Alexis,

Ex. 5 - Deliberative Process

Thanks!

Melissa

From: Bylin, Carey
Sent: Monday, March 09, 2015 9:29 AM
To: Weitz, Melissa; McKittrick, Alexis
Cc: Waltzer, Suzanne
Subject: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/9/2015 5:50:49 PM
Subject: FW: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Alexis,

Ex. 5 - Deliberative Process

Thanks!

Melissa

From: Bylin, Carey
Sent: Monday, March 09, 2015 9:29 AM
To: Weitz, Melissa; McKittrick, Alexis
Cc: Waltzer, Suzanne
Subject: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

To: Bylin, Carey[Bylin.Carey@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
Cc: Franklin, Pamela[Franklin.Pamela@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Tue 8/11/2015 9:31:04 PM
Subject: RE: Friday EDF call is on gathering/boosting and processing study

I'll be attending in person for Friday's call and the Monday meeting.

From: Bylin, Carey
Sent: Tuesday, August 11, 2015 5:30 PM
To: Kocchi, Suzanne
Cc: Franklin, Pamela; Weitz, Melissa; McKittrick, Alexis; Waltzer, Suzanne; Alsalam, Jameel; Ragnauth, Shaun; DeFigueiredo, Mark
Subject: Re: Friday EDF call is on gathering/boosting and processing study

I'm in on Friday and it's on my calendar so I can plan to attend. I have an ADD call Monday so I'll miss at least part of that one.

Carey Bylin

On Aug 11, 2015, at 10:26 AM, Kocchi, Suzanne <Kocchi.Suzanne@epa.gov> wrote:

> It is a call which is good but presumably Paul will want a few people in the room with him (and Joe).
>
> **From:** Franklin, Pamela
> **Sent:** Tuesday, August 11, 2015 10:19 AM
> **To:** Weitz, Melissa; McKittrick, Alexis; Waltzer, Suzanne; Bylin, Carey; Alsalam, Jameel; Ragnauth, Shaun; DeFigueiredo, Mark
> **Cc:** Kocchi, Suzanne
> **Subject:** RE: Friday EDF call is on gathering/boosting and processing study
>
> Thanks Melissa.

Just wanted to flag for the CCD oil & gas folks, I am out starting Friday and all next week. Wanted to make sure there is appropriate coverage / attendance in person for the upcoming briefings.

Thanks

Pamela

From: Weitz, Melissa
Sent: Tuesday, August 11, 2015 10:08 AM
To: McKittrick, Alexis; Waltzer, Suzanne; Bylin, Carey; Alsalam, Jameel; Ragnauth, Shaun; DeFigueiredo, Mark; Franklin, Pamela; Snyder, Jennifer; Thoma, Eben; Macpherson, Alex; Moore, Bruce; Cozzie, David
Subject: Friday EDF call is on gathering/boosting and processing study

Some background on the Friday EDF meeting—

The 2PM Friday EDF meeting is EDF and Colorado State's pre-brief on the gathering and boosting and processing segments methane study, which will be coming out next Tuesday.

On Monday at 4PM, the EDF/Colorado State team will be in DC and will provide us with a more detailed technical briefing on the study.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 4/22/2015 9:46:33 PM
Subject: RE: gathering pipeline blowdowns

We include the following—

Ex. 5 - Deliberative Process

Let me know if you'd like additional detail on any of these.

From: McKittrick, Alexis
Sent: Wednesday, April 22, 2015 5:35 PM
To: Weitz, Melissa
Subject: Re: gathering pipeline blowdowns

Ex. 5 - Deliberative Process

Sent from my iPhone

On Apr 22, 2015, at 5:13 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Sorry I missed your call earlier.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Frantz, Chris[Frantz.Chris@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Blackman, Jerome[Blackman.Jerome@epa.gov]
From: Weitz, Melissa
Sent: Wed 12/3/2014 8:16:36 PM
Subject: SLIDES RE: info on EDF today
Pneumatics Study Summary final.pptx
Unloadings Study Summary wo animations_to SC_11_17.pptx

From: Weitz, Melissa
Sent: Wednesday, December 03, 2014 1:06 PM
To: DeFigueiredo, Mark; Waltzer, Suzanne; Ragnauth, Shaun; Frantz, Chris; Macpherson, Alex; Moore, Bruce; Snyder, Jennifer
Cc: McKittrick, Alexis; Alsalam, Jameel; Bylin, Carey; Blackman, Jerome
Subject: RE: info on EDF today

Update--the follow on technical discussion at 3PM will be in room 5415 WJC North. Call-in is 1-
Ex. 6 - Personal Privacy

From: Weitz, Melissa
Sent: Wednesday, December 03, 2014 10:14 AM
To: DeFigueiredo, Mark; Waltzer, Suzanne; Ragnauth, Shaun; Frantz, Chris; Macpherson, Alex; Moore, Bruce; Snyder, Jennifer
Cc: McKittrick, Alexis; Alsalam, Jameel; Bylin, Carey; Blackman, Jerome
Subject: info on EDF today

Thanks for accepting the meeting invite for the briefing by EDF this afternoon. There are a few things going on and some confusion and I can't quite tell who has what information, so here are the details.

EDF is briefing us on their study from 2 to 4PM today. The study collected data on pneumatic devices and liquids unloading.

A policy-level overview is scheduled from 2-3PM. I'm not sure how much space is in the meeting room, so please call in if you are not on the scheduler from Joe Goffman.
Conference: Ex. 6 - Personal Privacy

The follow-on technical discussion is from 3-4PM. I'm trying to get this to be in the same room (and same call in) as the 2-3 briefing, but if not, as currently scheduled it will be in room WJCE

WJCE5140, with a call in of Ex. 6 - Personal Privacy

If you can make both, that'd be great, because EDF will get directly into the details for the 3PM technical discussion and will not be providing the general background overview again.

Thanks!
Melissa

-----Original Appointment-----
From: Weitz, Melissa
Sent: Tuesday, November 25, 2014 5:01 PM
To: Weitz, Melissa; DeFigueiredo, Mark; Waltzer, Suzanne; Ragnauth, Shaun; Frantz, Chris; Macpherson, Alex; Moore, Bruce; Snyder, Jennifer
Cc: McKittrick, Alexis; Alsalam, Jameel; Bylin, Carey; Fernandez, Roger; Blackman, Jerome
Subject: technical-level briefing by EDF on Phase II production study
When: Wednesday, December 03, 2014 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomWJCE5140OAPTB/DC-OAR-OAP

Call in: Ex. 6 - Personal Privacy

Study will be published in early-mid December and EDF has offered to give us a pre-brief. Focus is on pneumatic devices and liquids unloading.

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Jacobson, David[Jacobson.David@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Wed 4/16/2014 7:38:02 PM
Subject: FW: new PNAS study (and EDF Sensor RFP, And DOE NETL request...forgot to mention)

Info from Eben on EDF sensor RFP on leak detection.

I can set up a call with Mumbi to discuss the DOE NETL work, and how it might relate to the inventory. Is there interest in discussing how it might relate to GHGRP as well? Gas STAR?

Thanks!

From: Thoma, Eben
Sent: Wednesday, April 16, 2014 7:52 AM
To: Weitz, Melissa
Cc: Brantley, Halley
Subject: RE: new PNAS study (and EDF Sensor RFP, And DOE NETL request...forgot to mention)

Melissa,

Ex. 5 - Deliberative Process

Thanks,

Eben

Interview:

http://link.brightcove.com/services/player/bcpid3027951242001?bckey=AQ~~,AAACuVs92Ck~,WlbNXpJ0Ne2g0D8QzRG1bP_ZI4l

The main page is live, at www.edf.org/methanedetectors

Press release: http://www.edf.org/media/technology-innovators-challenged-design-next-generation-air-emission-monitors

Tom Murray's blog: http://www.edf.org/blog/2014/04/03/design-challenge-tech-industry-low-cost-methane-detectors

From: Weitz, Melissa
Sent: Tuesday, April 15, 2014 4:46 PM
To: Thoma, Eben
Subject: FW: new PNAS study

Hi Eben,

Great talking with you and Halley today. Below is a link to the new PNAS study. I still haven't read the supporting info yet.

Melissa

From: Weitz, Melissa

Sent: Monday, April 14, 2014 3:49 PM
To: DeLuca, Isabel; Irving, Bill; Hockstad, Leif
Cc: Franklin, Pamela; Waltzer, Suzanne; DeFigueiredo, Mark
Subject: new PNAS study

The new CH4 study is out. It's a study that was published in PNAS, not an NAS study.

Some basic info--

Title: Toward a better understanding and quantification of methane emissions from shale gas development

Authors: Purdue led the data collection (small aircraft measurements) and Cornell led the analysis (Howarth). NOAA was also involved.

Summary: Aircraft measurements were taken in PA at the regional and component (well pad) level. The study observed similar regional emissions as bottom up inventories, but identified large pre-production (drilling stage, pre-completion) emissions at several well pads. Pre-production emissions are generally thought to be insignificant, and this is the first paper that raises this issue, as far as I'm aware.

Link: http://www.pnas.org/content/early/2014/04/10/1316546111.full.pdf+html

I can send a more information once I have a chance to review in detail.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Fri 9/12/2014 5:52:50 PM
Subject: FW: Subpart W 2015 revisions - question on citations
ATMENV D 14 00577_revised.pdf

Hey Alexis,

Ex. 5 - Deliberative Process

Melissa

From: Thoma, Eben
Sent: Friday, September 12, 2014 1:27 PM
To: Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Melissa,

Ex. 5 - Deliberative Process

Have a nice weekend!

Eben

From: Weitz, Melissa
Sent: Friday, September 12, 2014 1:05 PM
To: Thoma, Eben
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Eben,

Sorry I missed your call yesterday. I just tried to call you back and got your out of office response. I'm out of the office all of next week. Could you touch base with Alexis on this next week at some point? She is at Ex. 6 - Personal Privacy

Thanks!

Melissa

From: Thoma, Eben
Sent: Thursday, September 11, 2014 8:10 AM
To: Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Melissa,

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Weitz, Melissa
Sent: Wednesday, September 10, 2014 5:05 PM
To: Thoma, Eben
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Eben,

Ex. 5 - Deliberative Process

Thanks!

Melissa

Caulton, D.R. et al. "Toward a better understanding and quantification of methane emissions from shale gas development." Proceedings of the National Academy of Sciences of the United States of America, 2014

From: Thoma, Eben
Sent: Tuesday, September 09, 2014 1:31 PM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Ex. 5 - Deliberative Process

-Eben

From: McKittrick, Alexis
Sent: Tuesday, September 09, 2014 12:38 PM
To: Thoma, Eben; Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Thanks, Eben. Ex. 5 - Deliberative Process

Alexis

From: Thoma, Eben
Sent: Tuesday, September 09, 2014 12:09 PM
To: Weitz, Melissa
Cc: McKittrick, Alexis
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Weitz, Melissa
Sent: Tuesday, September 09, 2014 11:47 AM
To: Thoma, Eben
Cc: McKittrick, Alexis
Subject: FW: Subpart W 2015 revisions - question on citations

Hi Eben,

Ex. 5 - Deliberative Process

Feel free to contact me or Alexis with questions.

Thank you!!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: McKittrick, Alexis
Sent: Monday, September 08, 2014 1:46 PM
To: Weitz, Melissa
Subject: Subpart W 2015 revisions - question on citations

Hi Melissa,

Ex. 5 - Deliberative Process

Thanks!

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Work phone (Mon - Thurs): 202-343-9153

Telework phone (Fri): 202-680-3589

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Karimjee, Anhar[Karimjee.Anhar@epa.gov]
From: Gunning, Paul
Sent: Wed 10/8/2014 2:22:16 PM
Subject: RE: CAP report: Methane releases from federal lands jumped after '08

Thanks Alexis

From: McKittrick, Alexis
Sent: Wednesday, October 08, 2014 10:13 AM
To: Gunning, Paul
Cc: DeFigueiredo, Mark; Waltzer, Suzanne; Weitz, Melissa; Karimjee, Anhar
Subject: RE: CAP report: Methane releases from federal lands jumped after '08

Hi Paul,

Ex. 5 - Deliberative Process

Please let us know if you have questions.

Thanks,

Alexis

From: "Gunning, Paul" <Gunning.Paul@epa.gov>
Date: October 7, 2014 at 10:32:00 AM CDT
To: "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov>, "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>, "Weitz, Melissa" <Weitz.Melissa@epa.gov>
Subject: FW: CAP report: Methane releases from federal lands jumped after '08

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Tuesday, October 07, 2014 9:44 AM
To: Gunning, Paul
Subject: FW: CAP report: Methane releases from federal lands jumped after '08

Hi Paul,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Monday, October 06, 2014 9:54 AM
To: Gunning, Paul
Cc: DeLuca, Isabel; Karimjee, Anhar; Irving, Bill; Weitz, Melissa; Cook, BrianB; Waltzer, Suzanne; Kocchi, Suzanne; McKittrick, Alexis
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

Thanks Isabel. We're taking a look now and will send bullets. Also copying Alexis who's helping out given Anhar and I being out of town this week.

Sent from my iPhone

On Oct 6, 2014, at 8:49 AM, "Gunning, Paul" <Gunning.Paul@epa.gov> wrote:

Looping in Suzie

Sent from my BlackBerry 10 smartphone.

From: DeLuca, Isabel

Sent: Monday, October 6, 2014 9:46 AM

To: Gunning, Paul; Karimjee, Anhar; Irving, Bill; Weitz, Melissa; DeFigueiredo, Mark; Cook, BrianB

Cc: Kocchi, Suzanne

Subject: FW: CAP report: Methane releases from federal lands jumped after '08

FYI—see the Politico article at bottom. We might need prep. a talking point or two about whether or not there is a discrepancy with our numbers or they're just comparing apples to oranges.

From: Millett, John
Sent: Monday, October 06, 2014 9:41 AM
To: Dennis, Allison
Subject: FW: CAP report: Methane releases from federal lands jumped after '08

Fyi --

~~~~~~~~~~~~~~~~

John Millett
~~~~~~~~~~~~~~~~

Director, OAR Communications

Desk: 202-564-2903

Cell: 202-510-1822

From: Dunham, Sarah
Sent: Monday, October 06, 2014 7:38 AM
To: Goffman, Joseph
Cc: Millett, John; McCabe, Janet
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

We'll look at it. I was not aware of it.

Sent from my BlackBerry 10 smartphone.

From: Goffman, Joseph

Sent: Monday, October 6, 2014 1:10 AM

To: Dunham, Sarah

Cc: Millett, John; McCabe, Janet

Subject: Fwd: CAP report: Methane releases from federal lands jumped after '08

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: "Adm13McCarthy, Gina" <Adm13McCarthy.Gina@epa.gov>
Date: October 6, 2014 at 12:39:03 AM EDT
To: "Reynolds, Thomas" <Reynolds.Thomas@epa.gov>
Cc: "McCabe, Janet" <McCabe.Janet@epa.gov>, "Goffman, Joseph"

<Goffman.Joseph@epa.gov>
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

Let's see what the numbers say. Good to know why the discrepancy. Also would be good to know if we has been given a heads up.

Gina McCarthy

On Oct 5, 2014, at 9:23 PM, "Reynolds, Thomas" <Reynolds.Thomas@epa.gov> wrote:

Could raise some questions.

Begin forwarded message:

From: POLITICO Pro Energy <politicoemail@politicopro.com>
Date: October 5, 2014 at 9:03:57 PM PDT
To: <reynolds.thomas@epa.gov>
Subject: CAP report: Methane releases from federal lands jumped after '08
Reply-To: <proservices@politicopro.com>

CAP report: Methane releases from federal lands jumped after '08

By Elana Schor

10/6/14 12:01 AM EDT

Methane emitted as waste by oil and gas drillers on federal lands spiked by about 135 percent between 2008 and 2013, according to a report released Monday by the Center for American Progress that diverges from a recent EPA conclusion that the potent greenhouse gas is on the decline.

Using Interior Department revenue data compiled for CAP and The Wilderness Society, the new report found higher venting and flaring of methane just days after EPA estimated last week that total oil and gas-related methane emissions fell by 12 percent between 2011 and 2013. Methane is shorter-lived than carbon dioxide but carries more than 20 times CO2's global warming potential.

CAP's focus on federal lands comes as the Bureau of Land Management gears up to propose new rules for controlling the loss

of methane during fracking and other production activities there.

Beyond the deliberate release of methane through venting and flaring, CAP also found notably high accidental releases of the gas. Fugitive methane releases totaled as much as 8.1 million metric tons in 2012, according to the new report, making them a far more significant emissions threat than venting and flaring.

For BLM's rulemaking to succeed, CAP public lands project deputy director Nidhi Thakar said in a statement, "more emphasis needs to be placed on fugitive emissions from energy production on America's public lands."

Capturing and using the methane released during drilling on public lands would open up a new market for industry and result in added royalty payments to taxpayers. The Government Accountability Office projected in 2010 that "currently available control technologies" could harness around 40 percent of gases that are otherwise vented or flared, generating $23 million in royalties each year.

"Industry should be required to use readily-available technology to reduce methane pollution and to pay royalties on any taxpayer-owned gas that is wasted," the public lands project's director, Matt Lee-Ashley, said in a statement.

The BLM draft proposal for methane emissions is set for release later this year, as is a final version of a separate rule tackling well construction, wastewater management and the disclosure of chemicals used in fracking on federal land. EPA is also weighing its own approach to reining in methane, though chief Gina McCarthy recently said the agency would see some "co-benefits" of lower methane generation from its pending "green completions" rule for oil and gas wells.

EPA's latest annual greenhouse gas inventory, released last week, found that total methane emissions from the oil and gas sector fell from 84 million metric tons of CO2 equivalent in 2011 to 74 million metric tons in 2013. Looking solely at industry-reported methane emissions from fracking well completions and workovers, EPA found a drop of more than 70 percent between 2011 and 2013, from nearly 6 million metric tons of CO2 equivalent to less than 2 million metric tons.

To view online:
https://www.politicopro.com/go/?id=39149

You've received this POLITICO Pro content because your customized settings include: Energy: Receive All Energy Articles. To change your alert settings, please go to https://www.politicopro.com/member/?webaction=viewAlerts.

This email alert has been sent for the exclusive use of POLITICO Pro subscriber Thomas Reynolds. Forwarding or reproducing the alert without the express, written permission of POLITICO Pro is a violation of federal law and the POLITICO Pro subscription agreement. Copyright © 2014 by POLITICO LLC. To subscribe to Pro, please go to www.politicopro.com.

.

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Wed 12/9/2015 7:54:10 PM
Subject: RE: Canadian oil and gas study

Soooo…I believe we are actually looking for the attachment that Steve supplied on August 13, 2015 (based on the e-mail chain below). Do you happen to still have that attachment?

Thank you!

Alexis

From: Weitz, Melissa
Sent: Wednesday, December 09, 2015 11:49 AM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: Canadian oil and gas study

Let me know if this includes the file you need.

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Monday, September 28, 2015 1:50 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Canadian oil and gas study

Hey Melissa,

Here are the latest two reports, which are basically just updates of the ones you requested. Let me know if you have any questions.

Steve

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: September 25, 2015 12:33 PM
To: Smyth,Steve [NCR]
Subject: RE: Canadian oil and gas study

Hi Steve,

One of my contractors was reviewing the Canadian GHG inventory for potential updates to our GHG inventory and found this reference:

"To assist its members in preparing GHG emission inventories, the Canadian Energy Partnership for Environmental Innovation (CEPEI) (formerly GRI Canada) regularily enhances a methodology manual (***Estimation of Air Emissions from the Canadian Natural Gas Transmission, Storage and Distribution System***) and software package that implements many of the methodologies described in the manual (CEPEI, 2012)."

I'm not sure where in the GHG inventory it was found. Would you like me to get additional info from my contractor?

Thank you!

Melissa

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Friday, September 25, 2015 9:15 AM
To: Weitz, Melissa
Subject: RE: Canadian oil and gas study

Hey Melissa,

I'm working on tracking down the first reference. Where did you get the citation for the second reference? I can't seem to find that one.

Steve

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: September 24, 2015 2:00 PM
To: Smyth,Steve [NCR]
Subject: Re: Canadian oil and gas study

Hi Steve,

Thanks again for sharing the methodology report.

Now we are looking into updates for Transmission and Storage and I have a request for two more documents, below.

- **ORTECH Consulting Inc. 2013. *Canadian Natural Gas Companies 2005 and 2011 Greenhouse Gas and Criteria Air Contaminant Inventory Report and Validation by Audit*. Prep. for CEPEI. Guelph, ON.**

Estimation of Air Emissions from the Canadian Natural Gas Transmission, Storage and Distribution System) (CEPEI, 2012)

Do you have access to these and would you be willing to share them? Thank you!

I will let you know when we have draft proposed updates to our GHG inventory ready for review--I'd really like to get your thoughts on them.

Melissa

From: Smyth,Steve [NCR] <Steve.Smyth@ec.gc.ca>
Sent: Thursday, August 13, 2015 1:28 PM
To: Weitz, Melissa
Subject: RE: Canadian oil and gas study

Hey Melissa,

Surprisingly (to me) I found the paper. Have fun!

Steve

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: August 13, 2015 12:03 PM
To: Smyth,Steve [NCR]
Subject: Canadian oil and gas study

Hi Steve!

I'm trying to track down a copy of a Canadian study and am having no luck.

Do you happen to have a copy of this paper: *Handbook for Estimating Methane Emissions from Canadian Natural Gas Systems* (1998)?

I hope all is well!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Smyth,Steve [NCR] [mailto:Steve.Smyth@ec.gc.ca]
Sent: Tuesday, May 26, 2015 10:36 AM
To: Weitz, Melissa
Subject: Meter Measurement Study

Hi Melissa,

I finally found the report about the residential gas meters. My memory of the results wasn't entirely accurate. The study resulted in an increase to the EF for residential meters. However, the overall leak frequency was very low (0.012%). If you have any questions, let me know.

Steve Smyth
Ingénieur de programme

Inventaires et rapports sur les polluants

Direction des sciences et de l'évaluation des risques
Environnement Canada
200, boul. Sacré-Coeur, Gatineau QC K1A 0H3
steve.smyth@ec.gc.ca
Téléphone 819-938-3234
Télécopieur 819-953-3006

Gouvernement du Canada

Site Web http://www.ec.gc.ca

Steve Smyth
Program Engineer

Pollutant Inventories and Reporting

Science and Risk Assessment Directorate
Environment Canada
200 Sacré-Coeur Blvd., Gatineau QC K1A 0H3
steve.smyth@ec.gc.ca
Telephone 819-938-3234
Facsimile 819-953-3006
Government of Canada

Website http://www.ec.gc.ca

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Mon 12/21/2015 4:27:49 PM
Subject: RE: draft summary report on stakeholder workshop

That all sounds perfect. Thanks, Melissa!

From: Weitz, Melissa
Sent: Monday, December 21, 2015 11:25 AM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: RE: draft summary report on stakeholder workshop

Thank you!

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, December 21, 2015 11:08 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: RE: draft summary report on stakeholder workshop

Here you go, Melissa. Let me know if you have questions about any of my edits / comments.

Thanks,

Alexis

From: Weitz, Melissa
Sent: Friday, December 18, 2015 2:22 PM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: RE: draft summary report on stakeholder workshop

Hey--I've excerpted the GHGRP presentations sections from the stakeholder workshop and pasted them below. Can you take a quick look and let me know if you have any edits? Planning to post on Monday now. The attached is the same version I sent earlier this week, with one small edit. If you've already marked up the earlier draft, I can use that. Thanks!

Melissa

Summary of the Stakeholder Workshop on EPA GHG Data on Petroleum and Natural Gas Systems- Held November 19, 2015 in Pittsburgh, PA

1.0 Background on the GHG Inventory and GHGRP

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Hello,

I've attached the draft summary report on the GHG data stakeholder workshop, which I'm hoping to post to the GHGI website this week.

Can you take a look at the GHGRP presentation write ups to make sure everything is captured correctly? Can you get me any edits by Thursday a.m.? Let me know if that works.

Thanks!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Thur 4/16/2015 6:01:19 PM
Subject: Re: Difference between GHGRP/Inventory on M-R Stations/City Gates

Ex. 5 - Deliberative Process

Alexis

Sent from my iPhone

On Apr 16, 2015, at 9:57 AM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Ex. 5 - Deliberative Process

Sent from my iPhone

Begin forwarded message:

From: "Bylin, Carey" <Bylin.Carey@epa.gov>
Date: April 15, 2015 at 11:47:42 AM PDT
To: "Weitz, Melissa" <Weitz.Melissa@epa.gov>, "McKittrick, Alexis" <McKittrick.Alexis@epa.gov>
Cc: "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov>, "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks!

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: Weitz, Melissa
Sent: Tuesday, March 10, 2015 11:33 AM
To: Bylin, Carey; McKittrick, Alexis
Cc: Waltzer, Suzanne
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Carey,

Ex. 5 - Deliberative Process

Thanks,

Melissa

From: Bylin, Carey
Sent: Monday, March 09, 2015 9:29 AM
To: Weitz, Melissa; McKittrick, Alexis
Cc: Waltzer, Suzanne
Subject: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

•□□□□□□□□ Inventory and GHGRP show different distribution of top sources

Source	Inventory (2010)	GHGRP
Metering-Regulating Stations/City Gates	12.5	1
Mains	9.3	9
Services	4.3	4
Other (customer meters, PRV releases, pipe blowdown, excavation damages)	2.4	?

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

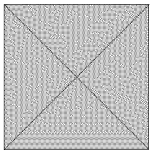
Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460



<image001.gif>

<image001.gif>

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Mon 7/21/2014 12:51:39 PM
Subject: FW: Fwd: NOAA/EPA call on Oil & Gas GHG Emissions Reporting today at 2PM

FYI - see below. You may be getting a few questions from Stefan at NOAA about oil and gas in the GHG Inventory soon. :-)

-----Original Message-----
From: McKittrick, Alexis
Sent: Monday, July 21, 2014 8:50 AM
To: 'Stefan Schwietzke'
Subject: RE: Fwd: NOAA/EPA call on Oil & Gas GHG Emissions Reporting today at 2PM

Stefan,

Ex. 5 - Deliberative Process

The contact for oil and gas coverage in the GHG Inventory is Melissa Weitz (weitz.melissa@epa.gov). Feel free to reach out to her on questions 2 and 3 below. She will have more updated and detailed answers to those questions than I do.

Thanks,
Alexis

-----Original Message-----
From: Stefan Schwietzke [mailto:stefan.schwietzke@noaa.gov]
Sent: Thursday, July 17, 2014 4:48 PM
To: McKittrick, Alexis
Subject: Re: Fwd: NOAA/EPA call on Oil & Gas GHG Emissions Reporting today at 2PM

Alexis,

Ex. 5 - Deliberative Process

1) Are you planning to do this (oil vs. gas allocation) in the future?
2) Will GHGRP data be used in future GHG inventories?
3) The GHG inventory makes the oil vs. gas distinction. Do you have a contact person to address my earlier question to?

Thanks,
Stefan

On Thu Jul 17 11:56:06 2014, McKittrick, Alexis wrote:
> Stefan,
>

Ex. 5 - Deliberative Process

>
> Thanks,
> Alexis
>
> -----Original Message-----
> From: Stefan Schwietzke [mailto:stefan.schwietzke@noaa.gov]
> Sent: Thursday, July 17, 2014 12:48 PM
> To: McKittrick, Alexis
> Subject: Re: Fwd: NOAA/EPA call on Oil & Gas GHG Emissions Reporting
> today at 2PM
>
> Alexis,
>
> Thanks for your response!
>

re of other

Ex. 5 - Deliberative Process

> I hope this is not too much work on your part!
>
> Thank you,
> Stefan

>
> On Wed Jul 16 12:37:06 2014, McKittrick, Alexis wrote:
>> Dear Stefan,
>>
>> Thanks for your patience – I was out of the office most of the last week.
>>
>> Ex. 5 - Deliberative Process
>>
>> http://epa.gov/ghgreporting/documents/pdf/2010/Subpart-W_TSD.pdf
>>
>> I suggest you start there and let me know if you find what you are
>> looking for or if you have additional questions.
>>
>> I hope this helps!
>>
>> Best,
>>
>> Alexis
>>
>> Alexis McKittrick, Ph.D.
>>
>> Climate Change Division
>>
>> U.S. Environmental Protection Agency
>>
>> Work phone (Mon - Thurs): 202-343-9153
>>
>> Telework phone (Fri): 202-680-3589
>>
>> *From:*Stefan Schwietzke [mailto:stefan.schwietzke@noaa.gov]
>> *Sent:* Wednesday, July 09, 2014 7:43 PM
>> *To:* McKittrick, Alexis
>> *Subject:* Re: Fwd: NOAA/EPA call on Oil & Gas GHG Emissions
>> Reporting today at 2PM
>>
>> Dear Alexis,
>>
>> I participated in the NOAA/EPA GHGRP conference call on Monday. Thank
>> you for sharing the information during the call.
>>
>> I have two follow-up questions.
>>
> Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

>>
>> Best,
>> Stefan
>>
>> ----------
>>
>> Stefan Schwietzke, Ph.D.
>> Postdoctoral Research Associate
>> NOAA Earth Systems Research Laboratory
>> 325 Broadway R/GMD 1
>> Boulder, CO 80305-3337
>>
>> +1.303.497.5073
>> stefan.schwietzke@noaa.gov <mailto:stefan.schwietzke@noaa.gov>
>>
>> On 7/7/14, 7:03 AM, Gabrielle Petron - NOAA Affiliate wrote:
>>
>> Dear All and Alexis,
>>
>> Please note the information below for a telecon today at noon
>> Denver time with EPA GHGRP team.
>>
>> If you can join, please do so and let Alexis know.
>>
>> The slides attached and the discussion should remain internal,
>> i.e. do not share them.
>>
>> Thank you very much,
>>
>> Gaby
>>
>> ---------- Forwarded message ----------
>> From: *McKittrick, Alexis* <McKittrick.Alexis@epa.gov
>> <mailto:McKittrick.Alexis@epa.gov>>
>> Date: Mon, Jul 7, 2014 at 6:53 AM
>> Subject: NOAA/EPA call on Oil & Gas GHG Emissions Reporting today
>> at 2PM
>> To: "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov
>> <mailto:DeFigueiredo.Mark@epa.gov>>, Gabrielle Petron - NOAA
>> Affiliate <gabrielle.petron@noaa.gov
>> <mailto:gabrielle.petron@noaa.gov>>, Anna Karion - NOAA Affiliate
>> <anna.karion@noaa.gov <mailto:anna.karion@noaa.gov>>
>> Cc: "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov
>> <mailto:Waltzer.Suzanne@epa.gov>>, "Franklin, Pamela"
>> <Franklin.Pamela@epa.gov <mailto:Franklin.Pamela@epa.gov>>,
>> "Irving, Bill" <Irving.Bill@epa.gov <mailto:Irving.Bill@epa.gov>>,
>> "Karimjee, Anhar" <Karimjee.Anhar@epa.gov
>> <mailto:Karimjee.Anhar@epa.gov>>, "Weitz, Melissa"
>> <Weitz.Melissa@epa.gov <mailto:Weitz.Melissa@epa.gov>>, "McKain,

>> Kathryn" <McKain.Kathryn@epa.gov
>> <mailto:McKain.Kathryn@epa.gov>>
>>
>> All,
>>
>> We are looking forward to our NOAA/EPA call today at 2PM eastern,
>> which will cover an overview and discussion of greenhouse gas
>> (GHG) emissions reported to EPA's Greenhouse Gas Reporting Program
>> for companies in the oil and gas sector. Attached are the slides
>> EPA will review on the call. Please do not share these slides
>> externally.
>>
>> The call-in information is as follows Ex. 6 - Personal Privacy
>> Ex. 6 - Personal Privacy
>>
>> Regards,
>>
>> Alexis
>>
>> Alexis McKittrick, Ph.D.
>>
>> Climate Change Division
>>
>> U.S. Environmental Protection Agency
>>
>> Work phone (Mon - Thurs): 202-343-9153 <tel:202-343-9153>
>>
>> Telework phone (Fri): 202-680-3589 <tel:202-680-3589>
>>
>
>
>
> ----------
>
> Stefan Schwietzke, Ph.D.
> Postdoctoral Research Associate
> NOAA Earth Systems Research Laboratory
> 325 Broadway R/GMD 1
> Boulder, CO 80305-3337
>
> +1.303.497.5073
> stefan.schwietzke@noaa.gov

Stefan Schwietzke, Ph.D.
Postdoctoral Research Associate
NOAA Earth Systems Research Laboratory
325 Broadway R/GMD 1
Boulder, CO 80305-3337

+1.303.497.5073
stefan.schwietzke@noaa.gov

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 7/31/2015 7:07:45 PM
Subject: RE: Materials for discussion on CTG RACT Impacts

Ex. 5 - Deliberative Process

Alexis

-----Original Message-----
From: Waltzer, Suzanne
Sent: Thursday, July 30, 2015 3:28 PM
To: Weitz, Melissa; McKittrick, Alexis
Subject: RE: Materials for discussion on CTG RACT Impacts
Importance: High

Thanks to both of you for looking at this!

To recap :-)

Ex. 5 - Deliberative Process

-----Original Message-----
From: Weitz, Melissa
Sent: Tuesday, July 28, 2015 11:13 AM
To: McKittrick, Alexis; Waltzer, Suzanne
Subject: RE: Materials for discussion on CTG RACT Impacts

Ex. 5 - Deliberative Process

-----Original Message-----
From: McKittrick, Alexis
Sent: Tuesday, July 28, 2015 9:31 AM

To: Waltzer, Suzanne; Weitz, Melissa
Subject: RE: Materials for discussion on CTG RACT Impacts

Ex. 5 - Deliberative Process

Thanks,
Alexis

From: Waltzer, Suzanne
Sent: Tuesday, July 28, 2015 8:13 AM
To: Weitz, Melissa; McKittrick, Alexis
Subject: FW: Materials for discussion on CTG RACT Impacts

Ex. 5 - Deliberative Process

From: Spells, Charlene
Sent: Monday, July 27, 2015 9:26 AM
To: Macpherson, Alex; Waltzer, Suzanne; Alsalam, Jameel; Weitz, Melissa
Cc: Moore, Bruce; Cozzie, David; Joanne Oloughlin
Subject: Materials for discussion on CTG RACT Impacts

All,

Here is an overview presentation to for our call today and a revised RACT Impacts discussion. To my knowledge, the document was uploaded to ROCIS late Friday.

P.S. Please ignore the typo on the title, I'm sure we will have an opportunity to correct it.

Charlene E. Spells
U.S. EPA
OAQPS/SPPD
RTP, NC 27711
Phone: (919) 541-5255 Fax: (919) 541-3470
spells.charlene@epa.gov<mailto:spells.charlene@epa.gov>

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Wed 3/9/2016 7:40:52 PM
Subject: RE: NSPS RTC on pneumatic and compressor emissions
RTC compressor and controllers 3 6 AM.docx

Melissa,

Attached are my suggested edits and comments on the NSPS pneumatics / compressor responses. Feel free to give me a call to discuss.

Let me know if you need anything else from me to get these into the preamble / RTC.

Regards,

Alexis

From: Melissa Weitz [mailto:mweitzud@yahoo.com]
Sent: Sunday, March 06, 2016 7:26 AM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: NSPS RTC on pneumatic and compressor emissions

Can you take a look at my draft responses for 3 of RTCs on pneumatics and compressors?

No need to look at this today, obviously! I'm jet lagged and woke up at 5:30, and I've already run out of things to do this morning, so why not RTCs? :)

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Branning, Amy[Branning.Amy@epa.gov]
Cc: Franklin, Pamela[Franklin.Pamela@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]
From: McKittrick, Alexis
Sent: Wed 3/9/2016 5:33:30 PM
Subject: RE: ONE Future Status Document

Looks good to me too.

Alexis

From: Weitz, Melissa
Sent: Tuesday, March 08, 2016 4:57 PM
To: Bylin, Carey <Bylin.Carey@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>
Cc: Franklin, Pamela <Franklin.Pamela@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>
Subject: RE: ONE Future Status Document

Looks good to me.

From: Bylin, Carey
Sent: Tuesday, March 08, 2016 4:22 PM
To: Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>
Cc: Franklin, Pamela <Franklin.Pamela@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>
Subject: ONE Future Status Document

HI all,

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 7/31/2015 1:13:25 AM
Subject: Re: pre-briefing of JISEA report for EPA

Seems like a clear gap. *>-I martini maybe?

Sent from my iPhone

> On Jul 30, 2015, at 8:15 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:
>
> Thanks! I've just discovered there is no margarita emoticon... Hopefully they'll fix that soon!
>
> Sent from my iPhone
>
>> On Jul 30, 2015, at 7:45 PM, McKittrick, Alexis <McKittrick.Alexis@epa.gov> wrote:
>>
>> Great job getting this done this evening, Melissa. Go have a margarita!
>>
>> Sent from my iPhone
>>
>>> On Jul 30, 2015, at 7:22 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:
>>>
>>> Thank you for the pre-brief today. I did a scan of the most recent draft of the report that I have and highlighted in comment bubbles areas of concern that were discussed on our call today.
>>>
>>> I will follow up with additional comments/edits tomorrow.
>>>

Ex. 5 - Deliberative Process

>>> Melissa
>>>
>>> From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
>>> Sent: Thursday, July 30, 2015 4:11 PM
>>> To: Warner, Ethan (NREL); Hodson, Elke; Weitz, Melissa; McKittrick, Alexis; DeFigueiredo, Mark; Heath, Garvin (NREL); Steinberg, Daniel (NREL); Greenwald, Judith; Down, Adrian (FELLOW)
>>> Subject: RE: pre-briefing of JISEA report for EPA
>>>
>>> Controlling Methane Emissions in the Natural Gas Sector: A Review of Federal & State Regulatory Frameworks Governing Production, Processing, Transmission, and Distribution
>>> http://www.energy.gov/epsa/downloads/controlling-methane-emissions-natural-gas-sector-review-federal-state-regulatory
>>>
>>> _____
>>> From: Warner, Ethan (NREL)
>>> Sent: Thursday, July 30, 2015 3:42 PM
>>> To: Hodson, Elke <Elke.Hodson@Hq.Doe.Gov<mailto:Elke.Hodson@Hq.Doe.Gov>>; Melissa Weitz (Weitz.Melissa@epa.gov<mailto:Weitz.Melissa@epa.gov>) <Weitz.Melissa@epa.gov<mailto:Weitz.Melissa@epa.gov>>; 'McKittrick, Alexis' <McKittrick.Alexis@epa.gov<mailto:McKittrick.Alexis@epa.gov>>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov<mailto:DeFigueiredo.Mark@epa.gov>>; Heath, Garvin (NREL) <garvin.heath@nrel.gov<mailto:garvin.heath@nrel.gov>>; Steinberg, Daniel (NREL)

<daniel.steinberg@nrel.gov<mailto:daniel.steinberg@nrel.gov>>; Greenwald, Judith
<Judi.Greenwald@Hq.Doe.Gov<mailto:Judi.Greenwald@Hq.Doe.Gov>>; Bradbury, James
<James.Bradbury@Hq.Doe.Gov<mailto:James.Bradbury@Hq.Doe.Gov>>; Down, Adrian (FELLOW)
<Adrian.Down@Hq.Doe.Gov<mailto:Adrian.Down@Hq.Doe.Gov>>
>>> Subject: RE: pre-briefing of JISEA report for EPA
>>>
>>>
>>> Here is a pdf of the technical brief slides for the meeting in about 20 minutes.
>>>
>>> Best regards,
>>> Ethan
>>> << File: JISEA NG methane emissions inventory Presentation_7_30_2015_final_no
supplemental.pdf >>
>>>
>>> -----Original Appointment-----
>>> From: Hodson, Elke [mailto:Elke.Hodson@Hq.Doe.Gov]
>>> Sent: Tuesday, July 28, 2015 8:37 AM
>>> To: Hodson, Elke; Melissa Weitz (Weitz.Melissa@epa.gov<mailto:Weitz.Melissa@epa.gov>);
'McKittrick, Alexis'; DeFigueiredo, Mark; Heath, Garvin; Warner, Ethan; Steinberg, Daniel; Greenwald,
Judith (HQ); Bradbury, James (HQ); Down, Adrian (FELLOW) (HQ)
>>> Subject: pre-briefing of JISEA report for EPA
>>> When: Thursday, July 30, 2015 4:00 PM-5:00 PM (UTC-05:00) Eastern Time (US & Canada).
>>> Where: 866-299-3188, code 2023439897
>>>
>>>
>>>
>>>
>>>
>>> <Estimating Methane Emissions_JISEA report_2015-6-30_DRAFT_CLEAN EPA OAR 7.30.docx>

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Tue 7/28/2015 5:56:05 PM
Subject: RE: Oil and gas interagency comments tasked to OAP

Ex. 5 - Deliberative Process

Alexis

From: Weitz, Melissa
Sent: Tuesday, July 28, 2015 1:24 PM
To: Alsalam, Jameel; Waltzer, Suzanne; DeFigueiredo, Mark; McKittrick, Alexis
Subject: RE: Oil and gas interagency comments tasked to OAP

Draft below.

Ex. 5 - Deliberative Process

Additional information for the commenter:
TSD information on data sources (including alternative data)
Oil well completions and workovers- pages 16-42, and 49.
Fugitive emissions-pages 52-76.
Pneumatic controllers-pages 151-156
Pneumatic pumps-pages 167-172
Compressors-pages 207-211.

From: Alsalam, Jameel
Sent: Tuesday, July 28, 2015 11:06 AM
To: Waltzer, Suzanne; Weitz, Melissa; DeFigueiredo, Mark; McKittrick, Alexis
Subject: Oil and gas interagency comments tasked to OAP

Hey y'all,

Ex. 5 - Deliberative Process

Jameel

Jameel Alsalam
Economist, Climate Change Division
U.S. Environmental Protection Agency
voice: (202) 343-9807
fax: (202) 343-2202
alsalam.jameel@epa.gov<mailto:alsalam.jameel@epa.gov>

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 9/12/2014 7:07:23 PM
Subject: RE: Subpart W 2015 revisions - question on citations

Great. Thanks!!!

From: Weitz, Melissa
Sent: Friday, September 12, 2014 1:52 PM
To: McKittrick, Alexis
Subject: FW: Subpart W 2015 revisions - question on citations

Hey Alexis,

Ex. 5 - Deliberative Process

Melissa

From: Thoma, Eben
Sent: Friday, September 12, 2014 1:27 PM
To: Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Melissa,

Ex. 5 - Deliberative Process

Have a nice weekend!

Eben

From: Weitz, Melissa
Sent: Friday, September 12, 2014 1:05 PM
To: Thoma, Eben
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Eben,

Sorry I missed your call yesterday. I just tried to call you back and got your out of office response. I'm out of the office all of next week. Could you touch base with Alexis on this next week at some point? She is at 202-343-9153.

Thanks!

Melissa

From: Thoma, Eben
Sent: Thursday, September 11, 2014 8:10 AM
To: Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Melissa,

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Weitz, Melissa
Sent: Wednesday, September 10, 2014 5:05 PM
To: Thoma, Eben
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Eben,

Ex. 5 - Deliberative Process

Thanks!
Melissa

Caulton, D.R. et al. "Toward a better understanding and quantification of methane emissions from shale gas development." Proceedings of the National Academy of Sciences of the United States of America, 2014

From: Thoma, Eben
Sent: Tuesday, September 09, 2014 1:31 PM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Ex. 5 - Deliberative Process

-Eben

From: McKittrick, Alexis
Sent: Tuesday, September 09, 2014 12:38 PM

To: Thoma, Eben; Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Ex. 5 - Deliberative Process

Alexis

From: Thoma, Eben
Sent: Tuesday, September 09, 2014 12:09 PM
To: Weitz, Melissa
Cc: McKittrick, Alexis
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Weitz, Melissa
Sent: Tuesday, September 09, 2014 11:47 AM
To: Thoma, Eben
Cc: McKittrick, Alexis
Subject: FW: Subpart W 2015 revisions - question on citations

Hi Eben,

Ex. 5 - Deliberative Process

Feel free to contact me or Alexis with questions.

Thank you!!

Melissa

Melissa Weitz
Climate Change Division
U.S. Environmental Protection Agency
(202) 343-9897
Weitz.Melissa@epa.gov<mailto:defigueiredo.mark@epa.gov>

From: McKittrick, Alexis
Sent: Monday, September 08, 2014 1:46 PM

To: Weitz, Melissa
Subject: Subpart W 2015 revisions - question on citations

Hi Melissa,

Ex. 5 - Deliberative Process

Thanks!
Alexis

Alexis McKittrick, Ph.D.
Climate Change Division
U.S. Environmental Protection Agency
Work phone (Mon - Thurs): 202-343-9153
Telework phone (Fri): 202-680-3589

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Mon 7/7/2014 7:04:22 PM
Subject: RE: Question from West Virginia Chamber of Commerce

Ex. 5 - Deliberative Process

Thanks!

Alexis

From: DeLuca, Isabel
Sent: Monday, July 07, 2014 2:30 PM
To: Waltzer, Suzanne; DeFigueiredo, Mark; McKittrick, Alexis; Weitz, Melissa
Subject: RE: Question from West Virginia Chamber of Commerce

Hi Alexis, thanks for your call. I think what the WVA Chamber of Commerce is looking for is an update on progress on oil and gas under the methane strategy, no?

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

More information on the white papers:
http://www.epa.gov/airquality/oilandgas/whitepapers.html

[blurb on Gas STAR Gold:]

Also following the Methane Strategy, EPA is proposing a new, voluntary program—Gas STAR Gold—for leaders in the natural gas industry to track and earn recognition for their methane reductions facility-wide. More information for that program is available at http://www.epa.gov/outreach/gasstar/gold/index.html.

From: Waltzer, Suzanne
Sent: Monday, July 07, 2014 1:57 PM
To: DeLuca, Isabel; DeFigueiredo, Mark; McKittrick, Alexis; Weitz, Melissa
Subject: RE: Question from West Virginia Chamber of Commerce

Ex. 5 - Deliberative Process

Thanks,

From: DeLuca, Isabel
Sent: Monday, July 07, 2014 12:21 PM
To: DeFigueiredo, Mark; McKittrick, Alexis; Weitz, Melissa; Waltzer, Suzanne
Subject: RE: Question from West Virginia Chamber of Commerce

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Monday, July 07, 2014 12:12 PM
To: DeLuca, Isabel; McKittrick, Alexis; Weitz, Melissa; Waltzer, Suzanne
Subject: RE: Question from West Virginia Chamber of Commerce

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Monday, July 07, 2014 12:06 PM
To: DeFigueiredo, Mark; McKittrick, Alexis; Weitz, Melissa; Waltzer, Suzanne
Subject: RE: Question from West Virginia Chamber of Commerce

Hi all,

Ex. 5 - Deliberative Process

--Isabel

From: DeFigueiredo, Mark
Sent: Monday, July 07, 2014 11:59 AM
To: McKittrick, Alexis; Weitz, Melissa; Waltzer, Suzanne
Cc: DeLuca, Isabel
Subject: RE: Question from West Virginia Chamber of Commerce

+ Isabel

From: McKittrick, Alexis
Sent: Monday, July 07, 2014 11:52 AM
To: Weitz, Melissa; Waltzer, Suzanne; DeFigueiredo, Mark
Subject: FW: Question from West Virginia Chamber of Commerce

Hello everyone,

Please see the message below from one of our Subpart W rule workgroup members. I am planning to send him a link to the GHG inventory page and the NSPS 1.5 proposal.

Ex. 5 - Deliberative Process

Thanks,

Alexis

From: Vyas, Himanshu
Sent: Monday, July 07, 2014 10:52 AM
To: McKittrick, Alexis
Subject: Question from West Virginia Chamber of Commerce

Hi Alexis,

I'm wondering if you can help be answer this question from West Virginia Chamber of Commerce:

1. In the March 2014 Climate Action Plan Strategy to Reduce Methane Emissions, a specific discussion is offered concerning development strategies to manage and regulate methane emissions from oil and gas operations. What is the status of data development and analysis of the oil and gas relevant emission inventory and proposed emission reduction strategies? Can you provide a written summary?

Ex. 5 - Deliberative Process

Let me know if you can help me get the answer today.

Thanks,

Himanshu Vyas
Environmental Engineer
U.S. EPA, Region III
Office of Permits and Air Toxics (3AP10)
1650 Arch Street

Philadelphia, PA 19103-2029

Phone: 215-814-2112

FAX: 215-814-2134

"This email may contain material that is confidential, privileged and/or attorney work product and is for the sole use of the intended recipient. Any review, reliance or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies."

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Mon 4/6/2015 1:49:28 PM
Subject: RE: model facilities for gathering and boosting?
EPA-HQ-OAR-2014-0831-0018 TSD.pdf

Melissa,

Ex. 5 - Deliberative Process

Take care,
Alexis

From: Weitz, Melissa
Sent: Friday, March 20, 2015 10:39 AM
To: McKittrick, Alexis; DeFigueiredo, Mark
Subject: model facilities for gathering and boosting?

Ex. 5 - Deliberative Process

If so, would you mind sending me information on it?

Ex. 5 - Deliberative Process

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Tue 2/16/2016 9:43:47 PM
Subject: RE: DOE list
DOE research and analysis areas AM.docx

Ex. 5 - Deliberative Process

Alexis

From: Weitz, Melissa
Sent: Friday, February 12, 2016 5:23 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: DOE list

Hey,

Ex. 5 - Deliberative Process

I'll try to catch you guys at some point on Tuesday.

Have a great weekend!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 9/18/2015 7:04:00 PM
Subject: Subpart W rule TSD - for your review
2015_Prom_TSD_09-14-compare to proposal.docx

Hi Melissa,

Ex. 5 - Deliberative Process

Take care,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 1/9/2015 8:20:17 PM
Subject: RE: Need your help in putting together a briefing for Janet

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Friday, January 09, 2015 3:10 PM
To: McKittrick, Alexis
Subject: RE: Need your help in putting together a briefing for Janet

Ex. 5 - Deliberative Process

Thanks!

From: McKittrick, Alexis
Sent: Friday, January 09, 2015 3:09 PM
To: Weitz, Melissa
Subject: RE: Need your help in putting together a briefing for Janet

Melissa,

Ex. 5 - Deliberative Process

Thanks,

Alexis

From: Weitz, Melissa
Sent: Thursday, January 08, 2015 5:31 PM
To: McKittrick, Alexis; DeFigueiredo, Mark; Waltzer, Suzanne
Subject: RE: Need your help in putting together a briefing for Janet

Hi-

Ex. 5 - Deliberative Process

Melissa

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Thursday, January 08, 2015 1:47 PM
To: Weitz, Melissa; DeFigueiredo, Mark; Waltzer, Suzanne
Subject: RE: Need your help in putting together a briefing for Janet

Sounds good. I'll put something together by tomorrow morning.

Alexis

From: Weitz, Melissa
Sent: Thursday, January 08, 2015 11:48 AM
To: DeFigueiredo, Mark; McKittrick, Alexis; Waltzer, Suzanne
Subject: RE: Need your help in putting together a briefing for Janet

Let's say GHG Data and I can draft up a bullet on the planned updates for the 2015 GHG Inventory. Thanks!

From: DeFigueiredo, Mark
Sent: Thursday, January 08, 2015 11:40 AM
To: McKittrick, Alexis; Waltzer, Suzanne; Weitz, Melissa
Subject: Fwd: Need your help in putting together a briefing for Janet

Ex. 5 - Deliberative Process

Thanks!!

Mark

Sent from my iPhone

Begin forwarded message:

From: "Gunning, Paul" <Gunning.Paul@epa.gov>
Date: January 8, 2015 at 10:16:05 AM CST
To: "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov>, "Karimjee, Anhar" <Karimjee.Anhar@epa.gov>, "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>
Subject: FW: Need your help in putting together a briefing for Janet

Ex. 5 - Deliberative Process

From: Frantz, Chris
Sent: Thursday, January 08, 2015 11:10 AM
To: Cozzie, David; Vetter, Cheryl; Waltzer, Suzanne; Stoneman, Chris; Spells, Charlene
Cc: Green, Gregory; Kornylak, Vera S.; Gunning, Paul; Wood, Anna; Tsirigotis, Peter; Moore, Bruce
Subject: RE: Need your help in putting together a briefing for Janet

Folks,

Ex. 5 - Deliberative Process

Thanks for your help everyone. If you have any questions please give me a call.

Chris Frantz

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919 541-4312

From: Cozzie, David
Sent: Wednesday, January 07, 2015 2:05 PM
To: Vetter, Cheryl; Waltzer, Suzanne; Stoneman, Chris; Spells, Charlene
Cc: Green, Gregory; Kornylak, Vera S.; Gunning, Paul; Wood, Anna; Frantz, Chris; Tsirigotis, Peter; Moore, Bruce
Subject: Need your help in putting together a briefing for Janet

All,

Ex. 5 - Deliberative Process

Thanks,

David

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Wed 12/2/2015 8:58:00 PM
Subject: Subpart W leak detection rule outreach strategy
Communications_strategy_W leak detection rule 12_2_15 final.docx

Paul,

Per your request in the oil & gas monthly today, attached is the Subpart W leak detection proposal outreach plan. Let me know if you or Sarah have questions or concerns.

Regarding timing, I left a message with Kristina to get a better sense of when we might get comments from Janet on her preview of the proposal. I'll let you know once I hear back.

Regards,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
From: McKittrick, Alexis
Sent: Fri 1/9/2015 7:17:14 PM
Subject: RE: Quick review needed--list of tough Qs to start methane Q&A doc

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Friday, January 09, 2015 1:58 PM
To: McKittrick, Alexis; Waltzer, Suzanne; Weitz, Melissa; Franklin, Pamela
Subject: RE: Quick review needed--list of tough Qs to start methane Q&A doc

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Friday, January 09, 2015 12:42 PM
To: Waltzer, Suzanne; Weitz, Melissa
Cc: DeLuca, Isabel
Subject: RE: Quick review needed--list of tough Qs to start methane Q&A doc

I am okay with these. Thanks!

Alexis

From: Waltzer, Suzanne
Sent: Friday, January 09, 2015 11:36 AM
To: Weitz, Melissa; McKittrick, Alexis
Cc: DeLuca, Isabel
Subject: RE: Quick review needed--list of tough Qs to start methane Q&A doc

If you are ok with these responses, Isabel and I can use these. Just let us know. Thanks!

From: Weitz, Melissa
Sent: Thursday, January 08, 2015 5:21 PM
To: McKittrick, Alexis; Waltzer, Suzanne
Subject: RE: Quick review needed--list of tough Qs to start methane Q&A doc

Hi,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Thursday, January 08, 2015 4:02 PM
To: Waltzer, Suzanne
Cc: Weitz, Melissa
Subject: FW: Quick review needed--list of tough Qs to start methane Q&A doc
Importance: High

Suzie,

Ex. 5 - Deliberative Process

(Copying Melissa, in case she knows where this is.) Thanks!

Regards,

Alexis

From: DeLuca, Isabel
Sent: Thursday, January 08, 2015 11:28 AM
To: Waltzer, Suzanne; Weitz, Melissa; McKittrick, Alexis; Fernandez, Roger
Cc: Karimjee, Anhar; Franklin, Pamela; Kocchi, Suzanne; Irving, Bill
Subject: Quick review needed--list of tough Qs to start methane Q&A doc

Importance: High

Hi all,

Ex. 5 - Deliberative Process

Thanks,

Isabel

From: Waltzer, Suzanne
Sent: Wednesday, January 07, 2015 3:11 PM
To: Weitz, Melissa; McKittrick, Alexis; Fernandez, Roger
Cc: Karimjee, Anhar; Franklin, Pamela; DeLuca, Isabel; Kocchi, Suzanne; Irving, Bill
Subject: Heads up - Methane Tough FAQs
Importance: High

Hi,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks!

Suzie

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]
From: McKittrick, Alexis
Sent: Fri 1/9/2015 2:18:21 PM
Subject: Article on yesterday's hearing

FYI - Below is the Inside EPA article on the Subpart W proposal hearing yesterday. Inside EPA was the only press that showed up.

Alexis

http://insideepa.com/daily-news/api-cites-burdens-call-epa-scale-back-new-ghg-reporting-rule

API Cites Burdens In Call For EPA To Scale Back New GHG Reporting Rule

Posted: January 08, 2015

The American Petroleum Institute (API) is citing concerns about major new regulatory burdens in its call for EPA to scale back its proposed new greenhouse gas (GHG) reporting mandates for the sector, warning the agency is "grossly" underestimating the costs and technological problems associated with its planned requirements.

Speaking to a Jan. 8 public hearing on EPA's proposal to extend the portion of the reporting rules known as "Subpart W" to several new energy sector sources, Karin Ritter, regulatory and scientific affairs manager for API, said the agency's estimates of 73,000 hours and $7.2 million in burdens are "arbitrarily low by orders of magnitude."

Ritter urged EPA to consider "streamlining" the proposal to ease burdens on industry and ensure workability, such as considering changes to its proposed requirement that operators would have to report well identification numbers associated with individual wells and pare back some of its measures for reporting venting and flaring.

API is also urging the agency to extend the existing Feb. 9 public comment deadline on the rule in order to assess what it calls a highly complex regulation. The sector has numerous concerns over the rule, and is also arguing that the agency's plan to collect new GHG data highlights that EPA lacks the necessary

information it would need to justify potential regulation of the GHG methane from the sector in its pending methane reduction plan.

EPA held the hearing in Washington, D.C., on the proposal, where officials did not directly address the concerns about the scope of the reporting rule or the claims that it will impose massive burdens.

But Paul Gunning, director of EPA's climate change division, told *Inside EPA* after the hearing that the agency staff developing the reporting rule are in "lockstep" with the staff working on potential methane and other emissions controls.

EPA issued the proposed Subpart W rule Nov. 14, taking comment through Feb. 9 on its plan to amend reporting requirements for the onshore petroleum and natural gas sector to include oil wells used in hydraulic fracturing. The proposed rule would also establish two new sectors to cover gathering and boosting facilities and transmission pipeline blowdowns between compressor stations.

EPA is also taking comment on several new definitions that would affect reporting for the sector, such as a definition of "facility" that would encompass entire pipeline systems for the purposes of entities subject to the program.

The proposal would define a "gathering and boosting" facility as a "single network of pipelines, compressors and process equipment, including equipment to perform natural gas compression, dehydration, and acid gas removal, that has one or more connection points to gas and oil production and a downstream endpoint, typically a gas processing plant, transmission pipeline, [local distribution company (LDC)] pipeline, or other gathering and boosting system."

Industry's Concerns

During the hearing, API's Ritter flagged concerns over several aspects of the proposed rule, though she emphasized the need for a 30-day extension on the public comment deadline -- from Feb. 9 to March 9 -- for the organization to fully consult with its members and prepare detailed comments on the proposal.

For example, Ritter highlighted the proposed rule's requirement that operators "report volume of oil produced for well(s) with associated gas venting and flaring and the well ID number(s) for the well(s) included in the measurement," saying requesting such information is an overreach of the agency's authority under the GHG reporting program. "EPA seems to be attempting to construct a comprehensive network of wells and ownership" to secure data that is readily available from other resources, which would create undue burdens for industry, Ritter said.

On requirements that operators report the total number of wells for which gas was vented directly to the atmosphere and total number of wells for which gas was flared, Ritter said, “EPA assumes operators know in advance whether a well will require venting or flaring,” which she said is not the case.

Ritter also echoed API's earlier comments that called for extending the comment deadline. In written comments submitted Dec. 29, API says that the extension is necessary given the complexity of the proposed rule, and that there are “numerous issues to consider” to ensure the rule “best promotes our shared interests in obtaining the highest quality information in a manner that is not unduly burdensome, infeasible, or dangerous.”

At the hearing, Thomas Bach of Kinder Morgan Energy Partners, speaking on behalf of the Interstate Natural Gas Association of America, said that in order to inform its cost benefit analysis, EPA should consider potential future regulations for pipeline integrity, which could affect cost effectiveness of some of the proposed requirements.

Moreover, Bach said, EPA should set a *de minimis* threshold for emissions from blowdowns below which some operators would not be required to report, which could ease some of the burden on the sector.

Drilling Emissions

The proposal responds to a March 2013 petition from environmentalists asking EPA to begin collecting GHG data from sources included in subpart W, including well completion emissions from oil and co-producing wells, facilities and pipelines in the gathering and boosting segment and transmission pipeline blowdown events. Advocates said the data is necessary because the units could be significant sources of GHGs.

EPA also says in the proposal that President Obama's March 28 methane strategy document -- which included various agency white papers on options for cutting methane -- called on EPA to continue to "review regulatory requirements to address potential gaps in coverage, improve methods, and help ensure high quality data reporting." EPA says that the proposed rule "would address data gaps, specify methods for measuring methane emissions, and provide data that could be used to further analyze methane emissions in this industry."

But industry officials previously told *Inside EPA* that by highlighting data gaps with respect to GHG emissions, the rulemaking may actually boost industry's effort to thwart direct methane regulation from EPA in its pending strategy for

curbing GHG releases from the sector, expected in January. For example, one source said, "The fact that EPA is gathering more data makes it more difficult to regulate." -- *Bridget DiCosmo* (bdicosmo@iwpnews.com)

To: Bylin, Carey[Bylin.Carey@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
From: McKittrick, Alexis
Sent: Fri 7/24/2015 3:12:56 PM
Subject: RE: EPA Releases Natural Gas STAR Methane Challenge Proposal

Fantastic! Congratulations, Carey!!!

Alexis

From: Bylin, Carey
Sent: Friday, July 24, 2015 10:42 AM
To: Weitz, Melissa; Alsalam, Jameel; Ragnauth, Shaun; DeFigueiredo, Mark; McKittrick, Alexis
Cc: Waltzer, Suzanne; Franklin, Pamela
Subject: FW: EPA Releases Natural Gas STAR Methane Challenge Proposal

HI everyone,

Suzie's note reminded me to make sure you knew the Methane Challenge proposal was released on our website yesterday! Thanks so much for all of your help with this!!

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

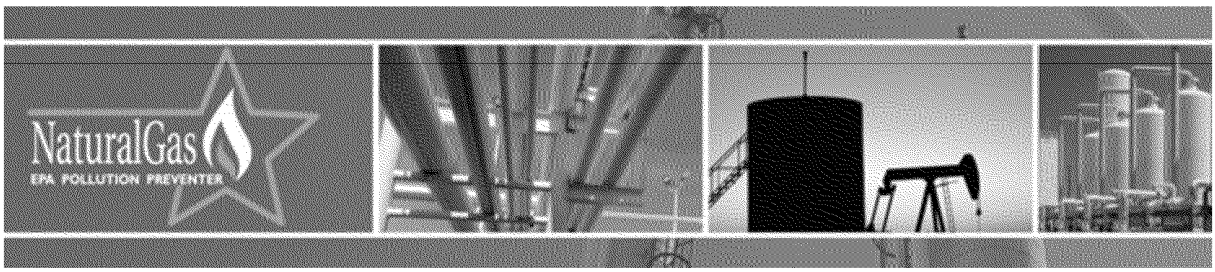
Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: EPA Natural Gas STAR Program [mailto:gasstar@tetratech.com]
Sent: Thursday, July 23, 2015 4:14 PM
To: Bylin, Carey
Subject: EPA Releases Natural Gas STAR Methane Challenge Proposal



EPA is proposing the voluntary Natural Gas STAR Methane Challenge Program ("Methane Challenge") (PDF), which would provide a new mechanism through which oil and gas companies could make and track ambitious commitments to reduce methane emissions. The Program is based on extensive stakeholder outreach and is a significant revision of EPA's previously proposed Gas STAR Gold framework.

While tremendous progress has been made during the last 20 years through the successful Natural Gas STAR Program, significant opportunities remain to reduce methane emissions, improve air quality, and capture and monetize this valuable energy resource. This new program has the capability to comprehensively and transparently reduce emissions and realize significant voluntary reductions in a quick, flexible, cost-effective way.

Register to attend an upcoming webinar

EPA is hosting a series of webinars from July 28-30, 2015 to provide details about the proposed Methane Challenge Program. Each webinar will address specific oil and gas sectors. You can learn more and register to attend the webinars at Methane Challenge Webinars.

EPA seeks your feedback

EPA encourages stakeholders to closely review and provide feedback on any and all elements of the proposed Methane Challenge Program. EPA will carefully consider and evaluate all feedback received through September 1, 2015. EPA intends to launch the Methane Challenge Program later in 2015. To learn more about the Methane Challenge Program, see the Natural Gas STAR Methane Challenge Program homepage.

Learn more about Natural Gas STAR

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Mon 9/8/2014 5:45:44 PM
Subject: Subpart W 2015 revisions - question on citations
Subpart W 2015 revisions - AIMM preamble section.docx

Hi Melissa,

Ex. 5 - Deliberative Process

Thanks!

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Work phone (Mon - Thurs): 202-343-9153

Telework phone (Fri): 202-680-3589

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Schmeltz, Rachel[schmeltz.rachel@epa.gov]
From: McKittrick, Alexis
Sent: Tue 12/1/2015 5:37:51 PM
Subject: Subpart W leak detection - revised preamble
Subpart W 2015 leaker EmF revisions preamble_12_1_15 clean.docx
Subpart W 2015 leaker EmF revisions preamble_12_1_15 edits tracked.docx

Paul,

Attached for your review is a revised version of the Subpart W leak detection preamble with your comments and the recent round of edits tracked. I have also attached a clean version for easy reference. Please let me know if you have any questions or additional edits/concerns regarding the preamble.

Ex. 5 - Deliberative Process

Thanks,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: Bylin, Carey[Bylin.Carey@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Tue 3/8/2016 2:20:53 PM
Subject: RE: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API
oil and gas backgrounder_API 3_8_16 mwcbAM.docx

Ex. 5 - Deliberative Process

Alexis

From: Bylin, Carey
Sent: Tuesday, March 08, 2016 9:00 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: RE: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

I've added an overview of API's comments.

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: Weitz, Melissa
Sent: Monday, March 07, 2016 6:17 PM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>
Subject: RE: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, March 07, 2016 5:46 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Bylin, Carey <Bylin.Carey@epa.gov>
Subject: Re: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

Ex. 5 - Deliberative Process

Alexis

Sent from my iPhone

On Mar 7, 2016, at 5:27 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Sorry-I volunteered to do this and then realized I have no info on API comments on GHGRP or Methane Challenge. Could you send me something?

A few bullets on each would be great.

From: Gunning, Paul
Sent: Monday, March 07, 2016 5:25 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: Re: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

Thanks

Paul Gunning

202-251-1436

Sent from my iPhone

On Mar 7, 2016, at 5:23 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

I'm around and can pull something together.

From: Gunning, Paul
Sent: Monday, March 07, 2016 5:23 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: Fwd: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

Ex. 5 - Deliberative Process

Paul Gunning

202-251-1436

Sent from my iPhone

Begin forwarded message:

From: "South, Peter" <South.Peter@epa.gov>
Date: March 7, 2016 at 4:37:27 PM EST
To: "Alston, Lala" <Alston.Lala@epa.gov>, "Koerber, Mike" <Koerber.Mike@epa.gov>, OAQPS WOPS <OAQPS_WOPS@epa.gov>, OAR Briefings <OAR_Briefings@epa.gov>, "Sanders, Maria" <Sanders.Maria@epa.gov>, "Walker, Jean" <Walker.Jean@epa.gov>
Cc: "Friedman, Kristina" <Friedman.Kristina@epa.gov>, "Krieger, Jackie" <Krieger.Jackie@epa.gov>, "Gunning, Paul" <Gunning.Paul@epa.gov>, "Wood, Anna" <Wood.Anna@epa.gov>, "Cozzie, David" <Cozzie.David@epa.gov>, "Lassiter, Penny" <Lassiter.Penny@epa.gov>, "Shine, Brenda" <Shine.Brenda@epa.gov>, "Banister, Beverly" <Banister.Beverly@epa.gov>,

"Rao, Raj" <Rao.Raj@epa.gov>, "Vetter, Cheryl" <Vetter.Cheryl@epa.gov>, "Mathias, Scott" <Mathias.Scott@epa.gov>, "Conner, Lisa" <Conner.Lisa@epa.gov>, "Culligan, Kevin" <Culligan.Kevin@epa.gov>, "Eck, Janet" <Eck.Janet@epa.gov>, "Johnson, Tanya" <Johnson.Tanya@epa.gov>, "McLamb, Marguerite" <McLamb.Marguerite@epa.gov>, "Pemberton, Wanda" <Pemberton.Wanda@epa.gov>, "Srivastava, Ravi" <Srivastava.Ravi@epa.gov>, "Thompson, Fred" <Thompson.Fred@epa.gov>, "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>, "Vasu, Amy" <Vasu.Amy@epa.gov>
Subject: Methane Rule Discussion with API: Background materials in prep for Janet's meeting with API

I have attached a backgrounder in prep for Janet's meeting with API on the oil and gas rules. Please do not share this document outside of OAR and do not distribute in the meeting room.

Feel free to call me or Mike Koerber with any questions relating to this information.

Thank you.

Pete South

OAR/OAQPS/IO

U.S. EPA

office: 919 541-5359

cell: 919 599-7213

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Tang, Natalie[Tang.Natalie@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]
From: McKittrick, Alexis
Sent: Wed 12/16/2015 2:56:20 PM
Subject: FW: Subpart W: Transmission & Storage Memo QA
DRAFT Proposed Revisions to NG Transmission Storage Segment Emissions__RTI.docx

And here is transmission & storage.

Alexis

From: Bradley, Kevin [mailto:kbradley@rti.org]
Sent: Tuesday, December 15, 2015 4:06 PM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Tang, Natalie <Tang.Natalie@epa.gov>
Cc: Randall, David <ddrandall@rti.org>; Pearce, Leslie <lpearce@rti.org>
Subject: Subpart W: Transmission & Storage Memo QA

Attached you'll find my notes of values that my calculations disagree with. Please note that I've not quite completed a full review—Table 22 and on will be reviewed tomorrow morning, and I'll send an updated file with more detailed notes upon completion.

Kevin

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Tue 6/17/2014 5:16:35 PM
Subject: Steal your slide?
Gas STAR 2014 presentation 5.6.pptx

Melissa,

Ex. 5 - Deliberative Process

Let me know. Thanks!

Alexis

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Mon 6/22/2015 2:15:30 PM
Subject: For your review - Gathering pipelines in final W rule
API-GHGRP 2015_Final Comments_24Feb2015_Clean.pdf
EPA-HQ-OAR-2014-0831-0018 TSD.pdf

Hi Melissa,

Ex. 5 - Deliberative Process

Let me know if you have any questions, want to have a quick call to discuss, or just have no time for this nonsense.

Thanks,

Alexis

From: Sroka, Kristin [mailto:ksroka@rti.org]
Sent: Tuesday, June 16, 2015 5:36 PM
To: McKittrick, Alexis
Subject: Gathering pipelines

Alexis,

Ex. 5 - Deliberative Process

Any comments Melissa may have that will help us respond to the comment would be greatly appreciated!

Ex. 5 - Deliberative Process

Thanks!

Kristin

Kristin P. Sroka

RTI International

3040 Cornwallis Road

P.O. Box 12194

Research Triangle Park, NC 27709

Phone: (919) 316-3838

Fax: (919) 541-7155

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Mon 3/7/2016 8:23:24 PM
Subject: RE: please review
OG -EDF talking points 3-6-2016 mw AM.docx

Here are my quick comments. I am going into a 3:30 with Julius now but would be happy to discuss any additional questions/thoughts at the 4PM.

From: Weitz, Melissa
Sent: Monday, March 07, 2016 3:03 PM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: please review

Can you take a look at the comment bubbles I've added, esp those relating to ghgrp and make edits to the text, add comments, etc.?

SORRY!!

The yellow highlighted areas are things I'm checking.

From: DeLuca, Isabel
Sent: Monday, March 07, 2016 2:05 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: please review

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Davis, Alison
Sent: Monday, March 07, 2016 1:59 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Subject: please review

Alison Davis

Senior Advisor for Public Affairs

US EPA, Office of Air Quality Planning & Standards

Research Triangle Park, NC 27711

Desk: 919-541-7587

Mobile: 919-624-0872

To: Gunning, Paul[Gunning.Paul@epa.gov]
From: McKittrick, Alexis
Sent: Thur 10/9/2014 4:08:36 PM
Subject: RE: Follow-up on CAP report

Paul – Not a huge deal, but I noticed I somehow typed "Status" instead of "Stratus" several types below. My guess is that the e-mail auto-corrected it, and I didn't notice. I just wanted to point that out in case you are passing this up. -Alexis

From: McKittrick, Alexis
Sent: Thursday, October 09, 2014 11:25 AM
To: Gunning, Paul
Cc: DeFigueiredo, Mark; Waltzer, Suzanne; Weitz, Melissa
Subject: Follow-up on CAP report

Paul,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Please let me know if you have any additional questions. Others, please feel free to weigh in with additional points.

Thanks,

Alexis

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Tang, Natalie[Tang.Natalie@epa.gov]
From: McKittrick, Alexis
Sent: Tue 12/15/2015 7:53:24 PM
Subject: RE: (GHGRP slides from workshop) FW: Speaker presentations
9 Transmission McKittrick GHGDataWorkshop_GHGRP Transmission_storage 11_16_15 rev.pptx

Melissa,

The only GHGRP presentation that requires a revision is to the transmission one (attached). All others are good to post as presented. Please ask ERG to PDF everything before posting. Thanks!

Take care,

Alexis

From: Weitz, Melissa
Sent: Thursday, December 10, 2015 10:35 AM
To: McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: (GHGRP slides from workshop) FW: Speaker presentations

From: Lauren Lariviere [mailto:Lauren.Lariviere@erg.com]
Sent: Thursday, December 10, 2015 10:33 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Re: Speaker presentations

Attached.

Do you need yours as well?

From: Weitz, Melissa <Weitz.Melissa@epa.gov>
Sent: Thursday, December 10, 2015 9:57 AM
To: Lauren Lariviere
Subject: RE: Speaker presentations

Would it be possible for you to send me the GHGRP presentations from the workshop? They will be labeled with "McKittrick" "Tang" and "de Figueiredo." The GHGRP team may have some minor edits to their slides and they want to be sure they are editing the final versions.

Thank you!

From: Lauren Lariviere [mailto:Lauren.Lariviere@erg.com]
Sent: Friday, December 04, 2015 2:52 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Monika Chandra <Monika.Chandra@erg.com>
Subject: Speaker presentations

Hi Melissa,

Monika said you were asking about the waiver forms. I got waiver forms from everyone except Jennifer Snyder at EPA. Garvin Heath of NREL did not want us to post his presentation, but he provided a link to where it is posted on their website and he asked us to include that instead, which we will.

The plan is to have all presentations ready for your review the end of next week, once approved we can push it live.

Lauren

****

Lauren Lariviere

Vice President, Conference Services

ERG

110 Hartwell Avenue

Lexington, MA 02421 USA

P: 781-674-7250

Office Hours: Tuesday - Friday, 10:00 AM - 6:00 PM

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Karimjee, Anhar[karimjee.anhar@epa.gov]
From: McKittrick, Alexis
Sent: Wed 10/8/2014 2:12:48 PM
Subject: RE: CAP report: Methane releases from federal lands jumped after '08

Hi Paul,

Ex. 5 - Deliberative Process

Please let us know if you have questions.

Thanks,

Alexis

From: "Gunning, Paul" <Gunning.Paul@epa.gov>
Date: October 7, 2014 at 10:32:00 AM CDT
To: "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov>, "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>, "Weitz, Melissa" <Weitz.Melissa@epa.gov>
Subject: FW: CAP report: Methane releases from federal lands jumped after '08

Ex. 5 - Deliberative Process

From: DeLuca, Isabel
Sent: Tuesday, October 07, 2014 9:44 AM
To: Gunning, Paul
Subject: FW: CAP report: Methane releases from federal lands jumped after '08

Hi Paul,

Ex. 5 - Deliberative Process

•□□□□□□□□ The Oct 6th CAP report suggests that 8.1 million metric tons of CH4 is emitted annually from the production, processing, storage, transmission and distribution of natural gas on federal lands. Reported emissions to the GHGRP in 2013 for this industry were about 3 million metric tons of CH4.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: DeFigueiredo, Mark
Sent: Monday, October 06, 2014 9:54 AM
To: Gunning, Paul
Cc: DeLuca, Isabel; Karimjee, Anhar; Irving, Bill; Weitz, Melissa; Cook, BrianB; Waltzer, Suzanne; Kocchi, Suzanne; McKittrick, Alexis
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

Thanks Isabel. We're taking a look now and will send bullets. Also copying Alexis who's helping out given Anhar and I being out of town this week.

Sent from my iPhone

On Oct 6, 2014, at 8:49 AM, "Gunning, Paul" <Gunning.Paul@epa.gov> wrote:

Looping in Suzie

Sent from my BlackBerry 10 smartphone.

From: DeLuca, Isabel

Sent: Monday, October 6, 2014 9:46 AM

To: Gunning, Paul; Karimjee, Anhar; Irving, Bill; Weitz, Melissa; DeFigueiredo, Mark; Cook, BrianB

Cc: Kocchi, Suzanne

Subject: FW: CAP report: Methane releases from federal lands jumped after '08

FYI—see the Politico article at bottom. We might need prep. a talking point or two about whether or not there is a discrepancy with our numbers or they're just comparing apples to oranges.

From: Millett, John
Sent: Monday, October 06, 2014 9:41 AM
To: Dennis, Allison
Subject: FW: CAP report: Methane releases from federal lands jumped after '08

Fyi --

~~~~~~~~~~~~~~~

John Millett

Director, OAR Communications

Desk: 202-564-2903

Cell: 202-510-1822

From: Dunham, Sarah
Sent: Monday, October 06, 2014 7:38 AM
~~~~~~~~~~~~~~~

To: Goffman, Joseph
Cc: Millett, John; McCabe, Janet
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

We'll look at it. I was not aware of it.

Sent from my BlackBerry 10 smartphone.

From: Goffman, Joseph

Sent: Monday, October 6, 2014 1:10 AM

To: Dunham, Sarah

Cc: Millett, John; McCabe, Janet

Subject: Fwd: CAP report: Methane releases from federal lands jumped after '08

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: "Adm13McCarthy, Gina" <Adm13McCarthy.Gina@epa.gov>
Date: October 6, 2014 at 12:39:03 AM EDT
To: "Reynolds, Thomas" <Reynolds.Thomas@epa.gov>
Cc: "McCabe, Janet" <McCabe.Janet@epa.gov>, "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

Let's see what the numbers say. Good to know why the discrepancy. Also would be good to know if we has been given a heads up.

Gina McCarthy

On Oct 5, 2014, at 9:23 PM, "Reynolds, Thomas"

<Reynolds.Thomas@epa.gov> wrote:

Could raise some questions.

Begin forwarded message:

From: POLITICO Pro Energy <politicoemail@politicopro.com>
Date: October 5, 2014 at 9:03:57 PM PDT
To: <reynolds.thomas@epa.gov>
Subject: CAP report: Methane releases from federal lands jumped after '08
Reply-To: <proservices@politicopro.com>

CAP report: Methane releases from federal lands jumped after '08

By Elana Schor

10/6/14 12:01 AM EDT

Methane emitted as waste by oil and gas drillers on federal lands spiked by about 135 percent between 2008 and 2013, according to a report released Monday by the Center for American Progress that diverges from a recent EPA conclusion that the potent greenhouse gas is on the decline.

Using Interior Department revenue data compiled for CAP and The Wilderness Society, the new report found higher venting and flaring of methane just days after EPA estimated last week that total oil and gas-related methane emissions fell by 12 percent between 2011 and 2013. Methane is shorter-lived than carbon dioxide but carries more than 20 times CO2's global warming potential.

CAP's focus on federal lands comes as the Bureau of Land Management gears up to propose new rules for controlling the loss of methane during fracking and other production activities there.

Beyond the deliberate release of methane through venting and flaring, CAP also found notably high accidental releases of the gas. Fugitive methane releases totaled as much as 8.1 million metric tons in 2012, according to the new report, making them a far more significant emissions threat than venting and flaring.

For BLM's rulemaking to succeed, CAP public lands project deputy director Nidhi Thakar said in a statement, "more emphasis

needs to be placed on fugitive emissions from energy production on America's public lands."

Capturing and using the methane released during drilling on public lands would open up a new market for industry and result in added royalty payments to taxpayers. The Government Accountability Office projected in 2010 that "currently available control technologies" could harness around 40 percent of gases that are otherwise vented or flared, generating $23 million in royalties each year.

"Industry should be required to use readily-available technology to reduce methane pollution and to pay royalties on any taxpayer-owned gas that is wasted," the public lands project's director, Matt Lee-Ashley, said in a statement.

The BLM draft proposal for methane emissions is set for release later this year, as is a final version of a separate rule tackling well construction, wastewater management and the disclosure of chemicals used in fracking on federal land. EPA is also weighing its own approach to reining in methane, though chief Gina McCarthy recently said the agency would see some "co-benefits" of lower methane generation from its pending "green completions" rule for oil and gas wells.

EPA's latest annual greenhouse gas inventory, released last week, found that total methane emissions from the oil and gas sector fell from 84 million metric tons of CO2 equivalent in 2011 to 74 million metric tons in 2013. Looking solely at industry-reported methane emissions from fracking well completions and workovers, EPA found a drop of more than 70 percent between 2011 and 2013, from nearly 6 million metric tons of CO2 equivalent to less than 2 million metric tons.

To view online:
https://www.politicopro.com/go/?id=39149

You've received this POLITICO Pro content because your customized settings include: Energy: Receive All Energy Articles. To change your alert settings, please go to https://www.politicopro.com/member/?webaction=viewAlerts.

This email alert has been sent for the exclusive use of POLITICO Pro subscriber Thomas Reynolds. Forwarding or reproducing the alert without the express, written permission

of POLITICO Pro is a violation of federal law and the POLITICO Pro subscription agreement. Copyright © 2014 by POLITICO LLC. To subscribe to Pro, please go to www.politicopro.com.

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Tue 12/9/2014 9:45:38 PM
Subject: RE: monthly with ORD tomorrow
EPA-HQ-OAR-2014-0831-0017 Alt Monitoring.pdf

Sure, Melissa. The Subpart W proposal came out today in the FR, so the GHGRP Alternative Monitoring discussion paper has been posted to the docket (attached). I think we should just walk through this document with ORD and talk about the next steps in this process.

We also could round-robin some of the recent studies that came out. (Not sure if ORD was on the phone for the EDF/UT briefing?) Does that work for you?

Alexis

From: Weitz, Melissa
Sent: Tuesday, December 09, 2014 3:49 PM
To: DeFigueiredo, Mark; McKittrick, Alexis
Subject: monthly with ORD tomorrow

Hi,

Just checking to see if tomorrow still works for you guys for the ORD call. This one is covering advanced monitoring methods.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Tue 12/15/2015 4:14:32 PM
Subject: RE: Leak detection
Leak Measurement Strategy 12-15-15 clean.docx

All,

Attached is a new version of the leak measurement strategy with Paul's edits incorporated.

Pamela – This is ready to share with OAQPS.

Thanks,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

From: DeFigueiredo, Mark
Sent: Tuesday, December 15, 2015 9:40 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>

Cc: Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Leak detection

Paul – Here's the revised document on the leak measurement strategy. Alexis will be bringing you a hard copy. After you do a quick scan, let us know if it's ok for Pamela to pass along to OAQPS. Also, let us know if you have any comments.

Thanks,

Mark

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Wed 10/8/2014 12:41:02 PM
Subject: RE: CAP report: Methane releases from federal lands jumped after '08

Ex. 5 - Deliberative Process

From: Waltzer, Suzanne
Sent: Tuesday, October 07, 2014 8:54 PM
To: Weitz, Melissa
Cc: McKittrick, Alexis
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

Hmmm. Not sure. Alexis may know. To be honest, I haven't had a chance to read it yet either.

Sent from my iPhone

On Oct 7, 2014, at 8:48 PM, "Weitz, Melissa" <Weitz.Melissa@epa.gov> wrote:

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 8:40 PM, "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov> wrote:

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 8:29 PM, "Weitz, Melissa" <Weitz.Melissa@epa.gov> wrote:

Hi.

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 4:33 PM, "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov> wrote:

Looping in Melissa.

From: McKittrick, Alexis
Sent: Tuesday, October 07, 2014 12:50 PM
To: DeFigueiredo, Mark; Karimjee, Anhar
Cc: Waltzer, Suzanne
Subject: RE: CAP report: Methane releases from federal lands jumped after '08

Revision: Suzie sent me the EIA 2013 data that shows oil and gas onshore and offshore production on federal lands are about 20% of total US oil and gas production. The 2013 Subpart W total for onshore and offshore production is 101 million metric tons CO2e, so the federal land total for onshore and offshore production would be about 20 million metric tons.

Ex. 5 - Deliberative Process

Alexis

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Wed 8/26/2015 8:47:03 PM
Subject: RE: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Thanks for replying. ☺

From: Weitz, Melissa
Sent: Wednesday, August 26, 2015 4:33 PM
To: Beeler, Cindy; Allison Lami Sawyer (allison@rebellionphotonics.com); McKittrick, Alexis
Cc: DeFigueiredo, Mark
Subject: RE: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Thanks Cindy and hello Allison!

I believe we met Allison a few months ago in DC and learned a bit about the Rebellion Photonics technology then. Really interesting stuff!

Allison-Alexis and I are happy to answers any questions you have on EPA's oil and gas methane data. Let us know if you'd like to talk.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Beeler, Cindy
Sent: Wednesday, August 26, 2015 12:31 PM
To: Allison Lami Sawyer (allison@rebellionphotonics.com); McKittrick, Alexis; Weitz, Melissa
Cc: DeFigueiredo, Mark
Subject: Introductions - Rebellion Photonics to EPA's GHGRP-W and GHG EI - Petroleum

Alexis and Melissa –

I wanted to introduce you two Queens of oil and gas methane emissions to Allison Swayer, CEO of Rebellion Photonics who designed, manufacture, and sell (or provide a service contract) their Gas Cloud Imager (GCI). Not only can the GCI quantify methane emissions that the operator can "see" real-time, it can speciate as well. I'll let Allison get into all the capabilities and testing that has been done on their device. The GCI was approved by Colorado Dept of Public Health & Environment as an acceptable alternative to the thermal IR camera for use in complying with their LDAR requirements at wellsites and compressor stations. They have also established data housing and reporting via secure cloud-based platform to ease in burden of recordkeeping and reporting for compliance purposes and Company tracking.

Rebellion was the recent recipient of DOE ARPA-E funds through the MONITOR program which has awarded ~10 companies a total of ~$30M to jump-start promising methane detection/quantification technologies for use in O&G to make commercially viable. Rebellion's award was about making the GCI smaller and more compact. Mark DeFigueiredo attended the recent DOE ARPA-E MONITOR conference in Denver.

Allison –

Alexis and Melissa know their oil & gas methane emission inventory and estimating, measurement requirements of such. They've taken EPA on a steep learning curve on

methane emissions from this sector and their resultant accounting of emissions are used to compare against in a myriad of air emission research going on in the oil patch. I'm a big fan of them both ☺

Kind regards to all,

Cindy Beeler
US EPA Region 8, Energy Advisor
Office of the Regional Administrator
Tel: 303-312-6204
Beeler.Cindy@epa.gov

CONFIDENTIALITY NOTICE: This e-mail, including all attachments, is for the sole use of the intended recipients and may contain Confidential and privileged information. Any unauthorized use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender and destroy all copies of this message.

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Tue 3/10/2015 12:50:43 PM
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Ex. 5 - Deliberative Process

Thanks for doing the comparison below. This is helpful.

Alexis

From: Weitz, Melissa
Sent: Monday, March 09, 2015 4:48 PM
To: McKittrick, Alexis
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Alexis,

I was looking through the Envirofacts data for 2013 and comparing it with the 2013 estimate in the public review draft of the GHG Inventory.

Ex. 5 - Deliberative Process

Thanks!

Below is my comparison:

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Monday, March 09, 2015 2:35 PM
To: Weitz, Melissa
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa,

Ex. 5 - Deliberative Process

Thanks,

Alexis

From: Weitz, Melissa
Sent: Monday, March 09, 2015 1:51 PM
To: McKittrick, Alexis
Subject: FW: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Alexis,

My understanding is that the difference is due to different emission numbers for compressors, which are lower in GHGRP for all segments.

Ex. 5 - Deliberative Process

Thanks!

Melissa

From: Bylin, Carey
Sent: Monday, March 09, 2015 9:29 AM
To: Weitz, Melissa; McKittrick, Alexis
Cc: Waltzer, Suzanne

Subject: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa and Alexis,

I've noted the following difference between GHGRP and Inventory for M&R stations. Inventory year is 2010 so it's older than GHGRP data but I imagine there is still a difference even with updated inventory data. Can you let me know why that is (assuming we know)? Thanks.

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Wed 10/8/2014 12:00:39 PM
Subject: Re: CAP report: Methane releases from federal lands jumped after '08

Man...turned my BlackBerry off at 8:30 and look at what I miss! ;-) I looked up the stratus report and have it on my office computer. I'll send it over shortly once I'm at my desk.

[redacted]

Hmmm. Not sure. Alexis may know. To be honest, I haven't had a chance to read it yet either.

Sent from my iPhone

On Oct 7, 2014, at 8:48 PM, "Weitz, Melissa" <Weitz.Melissa@epa.gov> wrote:

My number also includes offshore.

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 8:40 PM, "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov> wrote:

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 8:29 PM, "Weitz, Melissa" <Weitz.Melissa@epa.gov> wrote:

Hi.

Ex. 5 - Deliberative Process

Sent from my iPhone

On Oct 7, 2014, at 4:33 PM, "Waltzer, Suzanne" <Waltzer.Suzanne@epa.gov> wrote:

Looping in Melissa.

From: McKittrick, Alexis
Sent: Tuesday, October 07, 2014 12:50 PM
To: DeFigueiredo, Mark; Karimjee, Anhar
Cc: Waltzer, Suzanne
Subject: RE: CAP report: Methane releases from federal lands jumped after '08

Revision: Suzie sent me the EIA 2013 data that shows oil and gas onshore and offshore production on federal lands are about 20% of total US oil and gas production. The 2013 Subpart W total for onshore and offshore production is 101 million metric tons CO2e, so the federal land total for onshore and offshore production would be about 20 million metric tons.

Ex. 5 - Deliberative Process

Alexis

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Thur 6/18/2015 2:15:12 PM
Subject: RE: encouraging Operators to use 2014 "Deferred Data" reports to complete WRAP O&G Emission Inventory surveys in selected Western Basins

Thanks. I got a VM from Tom that he'd like to meet at 2PM or later today our time. I'll look at your schedule and see what works.

Alexis

From: Weitz, Melissa
Sent: Thursday, June 18, 2015 9:46 AM
To: McKittrick, Alexis
Subject: RE: encouraging Operators to use 2014 "Deferred Data" reports to complete WRAP O&G Emission Inventory surveys in selected Western Basins

Thanks Alexis—11 or 12 works for me.

From: McKittrick, Alexis
Sent: Thursday, June 18, 2015 7:55 AM
To: Weitz, Melissa
Subject: Re: encouraging Operators to use 2014 "Deferred Data" reports to complete WRAP O&G Emission Inventory surveys in selected Western Basins

I was crashing on an NSPS request from Suzie before I left yesterday and didn't even see this email. Are you open at 11 or 12 today? If so, I can send him a note back and set up an invite.

Daniel is on vacation this week and I don't think we need to pull in Mark, so it would probably just be us.

Alexis

Sent from my iPhone

On Jun 17, 2015, at 6:08 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

I only skimmed through this earlier and didn't catch that he wanted to talk this afternoon. I'm happy to join a call with you on this if it hasn't already happened.

From: Tom Moore [mailto:tmoore@westar.org]
Sent: Wednesday, June 17, 2015 3:58 PM
To: McKittrick, Alexis
Cc: Weitz, Melissa
Subject: encouraging Operators to use 2014 "Deferred Data" reports to complete WRAP O&G Emission Inventory surveys in selected Western Basins
Importance: High

Hello, Alexis and Melissa – I wondered if I could talk with you both, or at least Alexis on the Subpart W "Deferred Data" reporting by Operators for 2014. We have a couple or 3 survey-based O&G EIs in process for 2014 data, including all GHGs, and expect we will hear from the Operators that they had to report the Deferred Data by April 1, 2015. We'd like to modify our spreadsheet survey (example attached) so Operators can give us Subpart W data referenced to the "Sub-basins" we define.

Like to chat with you both if possible about this idea and help me prepare for the onslaught of "too much duplicate reporting" comments we expect and if this would be helpful to Subpart W data analysis and GHG EI efforts by EPA.

It would be great to talk this afternoon so you can think about my questions before answering. Thanks in advance.

Tom Moore, WRAP Air Quality Program Manager

Western States Air Resources Council (WESTAR) | e: tmoore@westar.org | o: 970.491.8837

Western Regional Air Partnership | www.wrapair2.org

From: Tom Moore
Sent: Tuesday, June 16, 2015 4:17 PM
To: Tom Moore
Subject: FW: Slides for tomorrow's National Oil and Gas Emissions Committee call

Tom Moore, WRAP Air Quality Program Manager

Western States Air Resources Council (WESTAR) | e: tmoore@westar.org | o: 970.491.8837

Western Regional Air Partnership | www.wrapair2.org

From: Gibbs, Mark [mailto:Mark.Gibbs@deq.ok.gov]
Sent: Wednesday, February 11, 2015 3:26 PM
To: 'airstar0077@gmail.com'; 'akcarter@adem.state.al.us'; 'amanda.l.davis@tn.gov'; 'ASadar@achd.net'; 'avickers@marama.org'; 'Beeler.Cindy@epa.gov'; 'brett.davis@wyo.gov'; 'brian.bohlmann@wyo.gov'; 'buzz.asselmeier@illinois.gov'; 'Byeong.Kim@dnr.state.ga.us'; Schroeder, Carrie; Garbe, William (Cooper); 'Cozzie.David@epa.gov'; 'curtis.taipale@state.co.us'; 'cwoods@csg.org'; 'dale.wells@state.co.us'; 'DALEBOUTR@michigan.gov'; 'darla.potter@wyo.gov'; 'Dewees.Jason@epa.gov'; Dan Johnson; 'ektrythall@nd.gov'; 'Erica.Fetty@epa.state.oh.us'; 'fcook@blm.gov'; 'Frantz.Chris@epa.gov'; 'gabrielle.petron@noaa.gov'; 'gary.reinbold@deq.idaho.gov'; 'Glover.Ed@epa.gov'; 'greg.lauderdale@tceq.texas.gov'; 'heather.sands@ncdenr.gov'; 'Holly.Ferguson@tceq.texas.gov'; 'hosford.chip@epa.gov'; 'Houyoux.Marc@epa.gov'; 'janssen@ladco.org'; 'Jim.Price@tceq.texas.gov'; 'JMCDILL@marama.org'; Kalfas, Joshua L.; 'jsemerad@nd.gov'; 'kaleri.cynthia@epa.gov'; 'karin.landsberg@alaska.gov'; 'Kathy.Pendleton@tceq.texas.gov'; 'kgee@pa.gov'; 'Koerber.Mike@epa.gov'; 'LDeahl@kdheks.gov'; 'lisa.ehrhart@deq.virginia.gov'; 'Lundelius.Diana@epa.gov'; 'Macpherson.Alex@epa.gov'; 'mark.jones@state.nm.us'; 'Mark.McMillan@dphe.state.co.us'; 'Mason.Rich@epa.gov'; 'masond1@michigan.gov'; 'McKittrick.Alexis@epa.gov'; 'michael.abraczinskas@ncdenr.gov'; 'Michael.Ege@tceq.texas.gov'; 'michael.trahiotis@ct.gov'; 'mike.pring@erg.com'; 'mike.schneider@state.nm.us'; 'Mindy.Hendrickson@wv.gov'; 'Moore.Bruce@epa.gov'; 'muhl@blm.gov'; 'nam.ed@epa.gov'; 'Nicholle.Worland@dep.state.nj.us'; 'oppapage@gw.dec.state.ny.us'; 'Page.Steve@epa.gov'; 'patricia_f_brewer@nps.gov'; 'pbarickman@utah.gov'; 'Rachel.Melton@tceq.texas.gov'; 'Ray.Papalski@dep.state.nj.us'; 'Regi.Oommen@erg.com'; 'riddick.lee@epa.gov'; 'Robert.J.Betterton@wv.gov'; 'rsmartin@nd.gov'; 'sarah.clouse@ecy.wa.gov'; 'sbogart@pa.gov'; 'Schell.Bob@epa.gov'; 'Shores.Richard@epa.gov'; 'Snyder.Jennifer@epa.gov'; 'sushma.masemore@ncdenr.gov'; 'szelinka@arb.ca.gov'; 'tcfoster@deq.virginia.gov'; 'Terry.Sara@epa.gov'; 'Thoma.Eben@epa.gov'; Tom Moore; 'tnguyen@arb.ca.gov'; Richardson,

Thomas M.; 'tom.velalis@epa.state.oh.us'; 'Tonnesen.Gail@epa.gov'; Theresa Pella; 'Tsirigotis.Peter@epa.gov'; 'tune@adeq.state.ar.us'; 'twallace@mde.state.md.us'; 'Waltzer.Suzanne@epa.gov'; 'Wayland.Richard@epa.gov'; 'Weitz.Melissa@epa.gov'; 'wilbanmc@dhec.sc.gov'; 'Witosky.Matthew@epa.gov'; 'Wortman.Eric@epa.gov'; 'woswald@utah.gov'; 'young.carl@epa.gov'; 'Zubrow.Alexis@epa.gov'; 'Fry, Jessica'; 'Smith, James-D'; 'Wong.Richard@epa.gov'; 'stackhouse.debbie@epa.gov'; 'tammy.manning@ncdenr.gov'; 'james.r.smith@tn.gov'; 'paige.sprague@tceq.texas.gov'
Subject: Slides for tomorrow's National Oil and Gas Emissions Committee call

Slides for tomorrow's GHGRP presentation plus responses to the questions from the committee about the GHGRP and Flight are attached.

Will look forward to talking with you tomorrow at 2 pm Eastern.

Mark

From: Gibbs, Mark
Sent: Tuesday, February 10, 2015 9:38 AM
Subject: National Oil and Gas Emissions Committee - Thursday, February 12, 2015 Meeting Reminder

Hi All:

Attachments to this email:

•□□□□□□□□ Minutes of January 2015 Meeting

•□□□□□□□□ Compilation of Questions about GHGRP, e-GGRT, Flight, etc. (to be discussed in Agenda Item 2)

Meeting Time: **2:00 – 3:30 pm** Eastern, Thursday, February 12, 2015

Call-in number: (866) 299-3188

Confirmation Number: 919 541 5455

1. Approve minutes of January meeting

2. GHGRP O&G data: Current Subpart W data elements – Alexis McKittrick (slides to follow)

3. Comment Period for Subpart W 2015 Revisions Proposals – now extended to Tuesday, February 24, 2015

Submit comments at http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OAR-2014-0831

4. Public training webinar on using Facility Level Information on Greenhouse Gases Tool (FLIGHT), 3-4 pm, March 3, 2015

Register at https://attendee.gotowebinar.com/register/226726258870718465

5. Update on Public Review Draft of GHG National Inventory – Melissa Weitz

6. Colorado School of Mines Workshop on reconciliation of top-down and bottom-up methane emissions estimates, Denver Airport Marriott, February 24-25, 2015

7. Ways to improve speciation of O&G VOC emissions for AQ modeling – Alexis Zubrow

8. Recap of OAQPS call from January 28 on EPA's strategy on reducing methane and VOC's from the oil and natural gas industry

9. Reminder about O&G events at the 2015 International Emission Inventory Conference

10. Next meeting Thursday, March 12 at 2:00 pm – 3:30 pm Eastern, same call in number and confirmation number

Talk to you on Thursday,

Mark

Mark Gibbs

Emission Inventory Manager

Oklahoma DEQ

(405) 702-4179

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 6/6/2014 8:05:15 PM
Subject: RE: Gas STAR Gold Technical Background Document for Your Review
Gas STAR Gold Tech Background Document Final Draft 052014 mw AM.docx

Melissa,

Attached are my comments. Sorry I took a little longer than I thought. I concentrated on high-level comments and didn't review the "reporting requirements", since it sounds like that will be part of another process. (Plus, I just don't have the bandwidth today.)

I'll give you a call shortly to discuss.

Take care,

Alexis

From: Weitz, Melissa
Sent: Wednesday, June 4, 2014 6:22 PM
To: McKittrick, Alexis
Subject: RE: Gas STAR Gold Technical Background Document for Your Review

Sorry—did not attach my comments. They are here.

From: Weitz, Melissa
Sent: Wednesday, June 04, 2014 6:18 PM
To: McKittrick, Alexis
Subject: FW: Gas STAR Gold Technical Background Document for Your Review

Hi Alexis,

I'm sending you my version of the tech background document (attached). It may be good to coordinate on comments—I have a few that I'd like to talk through. If you've already added yours to another version, I'm happy to consolidate them. Are you in on Friday? Maybe we can check in on this then?

Melissa

From: Fernandez, Roger

Sent: Tuesday, May 20, 2014 9:23 AM
To: Macpherson, Alex; Moore, Bruce; Waltzer, Suzanne; Franklin, Pamela; Frantz, Chris; Weitz, Melissa; DeFigueiredo, Mark
Cc: Cozzie, David
Subject: Gas STAR Gold Technical Background Document for Your Review

Good Morning Everyone,

Attached is the final draft Gas STAR Gold Technical "Background" Document (never to be confused with a Technical Support Document) for your review.

Ex. 5 - Deliberative Process

I look forward to your thoughts and comments and thanks again for your support.

Sincerely,
Roger

<< File: Gas STAR Gold Tech Background Document Final Draft 052014.docx >>

Natural Gas STAR Program / Global Methane Initiative
Climate Change Division

Ex. 6 - Personal Privacy
epa.gov/gasstar
Visiting and Private Mail Carrier (DHL/FedEx etc) Address
1310 L St., NW (846)
Washington, DC 20005
USA
Postal Address
1200 Pennsylvania Ave., NW (6207J)
Washington DC 20460
USA

-----Original Appointment-----
From: Fernandez, Roger
Sent: Friday, May 16, 2014 11:21 AM
To: Fernandez, Roger; Macpherson, Alex; Moore, Bruce; Waltzer, Suzanne; Franklin, Pamela; Frantz,

Chris; Weitz, Melissa; DeFigueiredo, Mark
Cc: Cozzie, David
Subject: Gas STAR Gold Technical Background Documents Discussion
When: Monday, June 02, 2014 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Call in number forthcoming

Call in number is: Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Tue 10/6/2015 7:52:44 PM
Subject: Fwd: National Oil and Gas Emissions Committee - Thursday, October 8, 2015 Meeting Reminder

Ahhh! I did not tell him I'd cover the workshop info. Will you be on the call? If so, I'll just turn it over to you at that point.

Sent from my iPhone

Begin forwarded message:

From: "Gibbs, Mark" <Mark.Gibbs@deq.ok.gov>
Date: October 6, 2015 at 3:04:04 PM EDT
To: "'airstar0077@gmail.com'" <airstar0077@gmail.com>, "'amanda.l.davis@tn.gov'" <amanda.l.davis@tn.gov>, "'ASadar@achd.net'" <ASadar@achd.net>, "'avickers@marama.org'" <avickers@marama.org>, "'Beeler.Cindy@epa.gov'" <Beeler.Cindy@epa.gov>, "'brett.davis@wyo.gov'" <brett.davis@wyo.gov>, "'brian.bohlmann@wyo.gov'" <brian.bohlmann@wyo.gov>, "'buzz.asselmeier@illinois.gov'" <buzz.asselmeier@illinois.gov>, "'Byeong.Kim@dnr.state.ga.us'" <Byeong.Kim@dnr.state.ga.us>, "Schroeder, Carrie" <carrie.schroeder@deq.ok.gov>, "Garbe, William (Cooper)" <Cooper.Garbe@deq.ok.gov>, "'Cozzie.David@epa.gov'" <Cozzie.David@epa.gov>, "'curtis.taipale@state.co.us'" <curtis.taipale@state.co.us>, "'cwoods@csg.org'" <cwoods@csg.org>, "'dale.wells@state.co.us'" <dale.wells@state.co.us>, "'DALEBOUTR@michigan.gov'" <DALEBOUTR@michigan.gov>, "'darla.potter@wyo.gov'" <darla.potter@wyo.gov>, "'Dewees.Jason@epa.gov'" <Dewees.Jason@epa.gov>, "'djohnson@westar.org'" <djohnson@westar.org>, "'ektrythall@nd.gov'" <ektrythall@nd.gov>, "'Erica.Fetty@epa.state.oh.us'" <Erica.Fetty@epa.state.oh.us>, "'fcook@blm.gov'" <fcook@blm.gov>, "'gabrielle.petron@noaa.gov'" <gabrielle.petron@noaa.gov>, "'gary.reinbold@deq.idaho.gov'" <gary.reinbold@deq.idaho.gov>, "'Glover.Ed@epa.gov'" <Glover.Ed@epa.gov>, "'greg.lauderdale@tceq.texas.gov'" <greg.lauderdale@tceq.texas.gov>, "'heather.sands@ncdenr.gov'" <heather.sands@ncdenr.gov>, "'Holly.Ferguson@tceq.texas.gov'" <Holly.Ferguson@tceq.texas.gov>, "'hosford.chip@epa.gov'" <hosford.chip@epa.gov>, "'Houyoux.Marc@epa.gov'" <Houyoux.Marc@epa.gov>, "'janssen@ladco.org'" <janssen@ladco.org>, "'Jim.Price@tceq.texas.gov'" <Jim.Price@tceq.texas.gov>, "'JMCDILL@marama.org'" <JMCDILL@marama.org>, "Kalfas, Joshua L." <Joshua.Kalfas@deq.ok.gov>, "'jsemerad@nd.gov'" <jsemerad@nd.gov>, "'kaleri.cynthia@epa.gov'" <kaleri.cynthia@epa.gov>, "'Kathy.Pendleton@tceq.texas.gov'" <Kathy.Pendleton@tceq.texas.gov>, "'kgee@pa.gov'" <kgee@pa.gov>, "'Koerber.Mike@epa.gov'" <Koerber.Mike@epa.gov>, "'LDeahl@kdheks.gov'" <LDeahl@kdheks.gov>, "'lisa.ehrhart@deq.virginia.gov'" <lisa.ehrhart@deq.virginia.gov>, "'Lundelius.Diana@epa.gov'" <Lundelius.Diana@epa.gov>, "'Macpherson.Alex@epa.gov'" <Macpherson.Alex@epa.gov>, "'mark.jones@state.nm.us'" <mark.jones@state.nm.us>,

'"Mark.McMillan@dphe.state.co.us" <Mark.McMillan@dphe.state.co.us>, '"Mason.Rich@epa.gov" <Mason.Rich@epa.gov>, '"masond1@michigan.gov" <masond1@michigan.gov>, '"McKittrick.Alexis@epa.gov" <McKittrick.Alexis@epa.gov>, '"michael.abraczinskas@ncdenr.gov" <michael.abraczinskas@ncdenr.gov>, '"Michael.Ege@tceq.texas.gov" <Michael.Ege@tceq.texas.gov>, '"michael.trahiotis@ct.gov" <michael.trahiotis@ct.gov>, '"mike.pring@erg.com" <mike.pring@erg.com>, '"mike.schneider@state.nm.us" <mike.schneider@state.nm.us>, '"Moore.Bruce@epa.gov" <Moore.Bruce@epa.gov>, '"muhl@blm.gov" <muhl@blm.gov>, '"nam.ed@epa.gov" <nam.ed@epa.gov>, '"Nicholle.Worland@dep.state.nj.us" <Nicholle.Worland@dep.state.nj.us>, '"oppapage@gw.dec.state.ny.us" <oppapage@gw.dec.state.ny.us>, '"Page.Steve@epa.gov" <Page.Steve@epa.gov>, '"patricia_f_brewer@nps.gov" <patricia_f_brewer@nps.gov>, '"pbarickman@utah.gov" <pbarickman@utah.gov>, '"Rachel.Melton@tceq.texas.gov" <Rachel.Melton@tceq.texas.gov>, '"Ray.Papalski@dep.state.nj.us" <Ray.Papalski@dep.state.nj.us>, '"Regi.Oommen@erg.com" <Regi.Oommen@erg.com>, '"riddick.lee@epa.gov" <riddick.lee@epa.gov>, '"Robert.J.Betterton@wv.gov" <Robert.J.Betterton@wv.gov>, '"rsmartin@nd.gov" <rsmartin@nd.gov>, '"sbogart@pa.gov" <sbogart@pa.gov>, '"Schell.Bob@epa.gov" <Schell.Bob@epa.gov>, '"Shores.Richard@epa.gov" <Shores.Richard@epa.gov>, '"Snyder.Jennifer@epa.gov" <Snyder.Jennifer@epa.gov>, '"sushma.masemore@ncdenr.gov" <sushma.masemore@ncdenr.gov>, '"szelinka@arb.ca.gov" <szelinka@arb.ca.gov>, '"tcfoster@deq.virginia.gov" <tcfoster@deq.virginia.gov>, '"Terry.Sara@epa.gov" <Terry.Sara@epa.gov>, '"Thoma.Eben@epa.gov" <Thoma.Eben@epa.gov>, '"tmoore@westar.org" <tmoore@westar.org>, '"tnguyen@arb.ca.gov" <tnguyen@arb.ca.gov>, "Richardson, Thomas M." <Tom.Richardson@deq.ok.gov>, '"tom.velalis@epa.state.oh.us" <tom.velalis@epa.state.oh.us>, '"Tonnesen.Gail@epa.gov" <Tonnesen.Gail@epa.gov>, Theresa Pella <tpella@censara.org>, '"Tsirigotis.Peter@epa.gov" <Tsirigotis.Peter@epa.gov>, '"tune@adeq.state.ar.us" <tune@adeq.state.ar.us>, '"twallace@mde.state.md.us" <twallace@mde.state.md.us>, '"Waltzer.Suzanne@epa.gov" <Waltzer.Suzanne@epa.gov>, '"Wayland.Richard@epa.gov" <Wayland.Richard@epa.gov>, '"Weitz.Melissa@epa.gov" <Weitz.Melissa@epa.gov>, '"wilbanmc@dhec.sc.gov" <wilbanmc@dhec.sc.gov>, '"Witosky.Matthew@epa.gov" <Witosky.Matthew@epa.gov>, '"Wortman.Eric@epa.gov" <Wortman.Eric@epa.gov>, '"woswald@utah.gov" <woswald@utah.gov>, '"young.carl@epa.gov" <young.carl@epa.gov>, '"Fry, Jessica" <fry.jessica@epa.gov>, '"Smith, James-D" <Smith.James-D@epa.gov>, '"Wong.Richard@epa.gov" <Wong.Richard@epa.gov>, '"stackhouse.debbie@epa.gov" <stackhouse.debbie@epa.gov>, '"tammy.manning@ncdenr.gov" <tammy.manning@ncdenr.gov>, '"james.r.smith@tn.gov" <james.r.smith@tn.gov>, '"paige.sprague@tceq.texas.gov" <paige.sprague@tceq.texas.gov>, '"sblakely@adem.state.al.us" <sblakely@adem.state.al.us>, '"Milford, Jana (milford@colorado.edu)" <milford@colorado.edu>, '"Shannon Leigh Capps (shannon.capps@colorado.edu)" <shannon.capps@colorado.edu>, '"Baker.Kirk@epa.gov" <Baker.Kirk@epa.gov>, "Kleman, Cecelia M." <Cecelia.Kleman@deq.ok.gov>, '"Matt.A.Kemper@wv.gov" <Matt.A.Kemper@wv.gov>, '"Andrew.bollman@ncdenr.gov" <Andrew.bollman@ncdenr.gov>, '"cindy.heil@alaska.gov" <cindy.heil@alaska.gov>,

"'Dresser.Chris@epa.gov'" <Dresser.Chris@epa.gov>, "'svance@utah.gov'" <svance@utah.gov>, "Ross, Lindsay A." <Lindsay.Ross@deq.ok.gov>, "Laley, Christopher E." <Chris.Laley@deq.ok.gov>, "'Ames,Rodger (Rodger.Ames@ColoState.EDU)'" <Rodger.Ames@ColoState.EDU>, "'abrimmer@raqc.org'" <abrimmer@raqc.org>, "'gmortensen@utah.gov'" <gmortensen@utah.gov>, "'alexis.zubrow@dot.gov'" <alexis.zubrow@dot.gov>, "'daniel.bon@state.co.us'" <daniel.bon@state.co.us>, "Gibbs, Mark" <Mark.Gibbs@deq.ok.gov>, "'zgraves@kdheks.gov'" <zgraves@kdheks.gov>
Cc: "David Lyon (dlyon@edf.org)" <dlyon@edf.org>
Subject: National Oil and Gas Emissions Committee - Thursday, October 8, 2015 Meeting Reminder

Hi All:

There's a lot going on at the moment!

Minutes of our September 2015 call are attached. Please also see below the notification about webinars on the release of GHGRP data. Note that there will be a separate webinar about the Subpart W (Petroleum and Natural Gas Systems) data at 4 pm Eastern, i.e., following our call on Thursday afternoon.

Please be ready to use the webinar link below during our call.

Meeting Time: **2:00 – 3:30 pm** Eastern, Thursday, October 8, 2015

Call-in number: Ex. 6 - Personal Privacy

Confirmation Number: Ex. 6 - Personal Privacy

1. Approve minutes of September meeting

2. EDF Studies of Methane Emissions from the Natural Gas Supply Chain – David Lyon, EDF

Webinar link: https://cc.readytalk.com/cc/s/registrations/new?cid=chqc5nrg1bn4

3. GHGRP Updates – Alexis McKittrick, OAP, EPA

Webinar on Subpart W emissions and activity data follows this call at 4 pm Eastern on Thursday, October 8, 2015:

http://www2.epa.gov/ghgreporting/training-and-testing-opportunities-ghg-reporting

Subpart W 2015 revisions final rule has been signed:

http://www2.epa.gov/ghgreporting/rulemaking-notices-ghg-reporting

Upcoming Stakeholder Workshop on EPA GHG Data on Petroleum and Natural Gas Systems (November 19, 2015)

http://www3.epa.gov/climatechange/ghgemissions/Nov2015Workshop.html

4. New EPA Oil & Gas Rules – note that comment period closes on November 17, 2015

http://www3.epa.gov/airquality/oilandgas/actions.html

5. EPA Compliance Alert Regarding Oil & Gas Storage Vessels – Cindy Beeler, Region 8, EPA

http://www2.epa.gov/sites/production/files/2015-09/documents/oilgascompliancealert.pdf

6. Recent court decision on BLM authority to regulate fracking – Mary Uhl, BLM

7. Update on 2014 NEI timeline – Jennifer Snyder, OAQPS, EPA

8. Informal survey of states' plans for 2014 NEI O&G submissions

9. Call for content for the Oil & Gas Emissions Information Repository (http://vibe.cira.colostate.edu/ogec/home.htm)

10. Next meeting: Thursday, November 12, 2015 at 2:00 pm – 3:30 pm Eastern, same call in number and confirmation number

Talk to you on Thursday,

Mark

Mark Gibbs

Emission Inventory Manager

Oklahoma DEQ

(405) 702-4179

From: U.S. EPA's Greenhouse Gas Reporting Program [mailto:ghgreporting@epa.gov]
Sent: Thursday, October 01, 2015 3:00 PM
To: Cook, BrianB
Subject: Coming Soon! New EPA Greenhouse Gas Emissions Data for 2014

Coming Soon!
EPA Plans to Publish 2014 Greenhouse Gas Emissions Data from Top Emitting Facilities

On October 6th, the Greenhouse Gas Reporting Program (GHGRP) will publish reported greenhouse gas emissions data for 2014. The Greenhouse Gas Reporting Program is the only program collecting facility-level greenhouse gas data from major industrial sources across the United States, including power plants, oil and gas production and refining, iron and steel mills, and landfills.

With the 2014 dataset, the Greenhouse Gas Reporting Program now has five years of high-quality data at the facility, state, and regional level. This data can be used to track the largest sources of greenhouse gas pollution and view changes in emissions over time.

Data will be available through the Facility Level Information on Greenhouse Gases Tool, FLIGHT, EPA's environmental database Envirofacts, and the GHGRP's Data Highlights website.

Important Dates

<image001.png>

EPA's Online Greenhouse Gas Data Publication Tool, FLIGHT

EPA's Greenhouse Gas Reporting Program is the only program collecting *facility-level* greenhouse gas emissions data from *major industrial sources* across the United States.

EPA publishes this data annually through the online tool FLIGHT, as well as EPA's environmental database Envirofacts.

FLIGHT allows users to view EPA's greenhouse gas data by industry, by geographic

- **October 6:** Publication of 2014 GHG Data
- **October 6 and October 8:** Informational Webinars
  For more information, or to register, see:
  http://www2.epa.gov/ghgreporting/training-and-testing-opportunities-ghg-reporting

<09-10-2015 National O&G Minutes.docx>

More Information

- Greenhouse Gas Reporting Program home:
  http://www2.epa.gov/ghgreporting/
- FLIGHT—the GHGRP online data publication tool:
  http://ghgdata.epa.gov/
- Envirofacts—EPA's one-stop source for environmental Information, including downloadable versions of GHGRP data:
  http://www.epa.gov/enviro/index.html

<image001.png>

EPA's Online Greenhouse Gas Data Publication Tool, FLIGHT

EPA's Greenhouse Gas Reporting Program is the only program collecting *facility-level* greenhouse gas emissions data from *major industrial sources* across the United States.

EPA publishes this data annually through the online tool FLIGHT, as well as EPA's environmental database Envirofacts.

FLIGHT allows users to view EPA's greenhouse gas data by industry, by geographic location, and by greenhouse gas. For example, users can:

- Locate and list top emitters nearby
- View emissions data from a specific industry
- See the breakdown of emissions by city, state, or region
- View emissions trends in an industry, a selected geographic area, or from a specific facility
- Download images of search results, such as maps, lists, and charts for printing and sharing.

Learn about all the features of FLIGHT in our online trainings.

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Tue 6/16/2015 1:28:29 PM
Subject: RE:

Ex. 5 - Deliberative Process

From: Waltzer, Suzanne
Sent: Tuesday, June 16, 2015 9:10 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: FW:

Ex. 5 - Deliberative Process

From: Waltzer, Suzanne
Sent: Tuesday, June 16, 2015 9:07 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE:

Thanks! Quick ? What are the sub-bullets –

Ex. 5 - Deliberative Process

From: McKittrick, Alexis
Sent: Tuesday, June 16, 2015 9:04 AM
To: Waltzer, Suzanne; Weitz, Melissa
Subject: RE:

Here you go, Suzie.

Alexis

From: Waltzer, Suzanne
Sent: Tuesday, June 16, 2015 7:40 AM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE:

Thank you!!

From: McKittrick, Alexis
Sent: Monday, June 15, 2015 4:52 PM
To: Weitz, Melissa; Waltzer, Suzanne
Subject: RE:

Thank you! **Ex. 5 - Deliberative Process**

Ex. 5 - Deliberative Process

Alexis

From: Weitz, Melissa
Sent: Monday, June 15, 2015 3:51 PM
To: McKittrick, Alexis
Subject:

Hi Alexis,

Ex. 5 - Deliberative Process

Thanks!

I'll stop by to finally sign the card.

Melissa

To: Hockstad, Leif[Hockstad.Leif@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Mon 7/13/2015 2:54:14 PM
Subject: RE: external peer review draft of JISEA report
Estimating Methane Emissions_JISEA report_2015-6-30_DRAFT_CLEAN mw-LH AM.docx

GHGRP edits attached. I kept the inputs sentences general, but let me know if you think we should go into more detail.

Thanks for the chance to review, Melissa.

Take care,

Alexis

From: Hockstad, Leif
Sent: Friday, July 10, 2015 11:35 AM
To: Weitz, Melissa; Irving, Bill; DeFigueiredo, Mark; McKittrick, Alexis
Subject: RE: external peer review draft of JISEA report

Melissa –

Ex. 5 - Deliberative Process

- Leif

From: Weitz, Melissa
Sent: Thursday, July 09, 2015 4:41 PM

To: Irving, Bill; Hockstad, Leif; DeFigueiredo, Mark; McKittrick, Alexis
Subject: FW: external peer review draft of JISEA report

I reviewed the latest JISEA report on natural gas in the GHG Inventory, attached with my comments and edits in tracked changes.

Ex. 5 - Deliberative Process

They'd like our edits by July 20th, so send me edits if you have them next week or the morning of the 20th.

Thank you,

Melissa

From: Weitz, Melissa
Sent: Wednesday, February 04, 2015 10:52 AM
To: Heath, Garvin
Cc: Hodson, Elke (FELLOW) (HQ); Steinberg, Daniel; DeFigueiredo, Mark

Subject: RE: external peer review draft of JISEA report

Hello Garvin,

Thank you for the opportunity to review the draft JISEA report. EPA has a number of comments on the report's description and characterization of the GHG Inventory data and development process--please see below and in the attached.

I'm happy to walk through these with you. Let me know if you'd like me to set up a call.

Best,

Melissa

EPA general comments on JISEA report

-

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

-

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

-

From: Heath, Garvin [mailto:Garvin.Heath@nrel.gov]
Sent: Tuesday, January 20, 2015 5:50 PM
To: Weitz, Melissa; DeFigueiredo, Mark
Cc: Hodson, Elke (FELLOW) (HQ); Steinberg, Daniel
Subject: external peer review draft of JISEA report
Importance: High

Dear Melissa and Mark

It was a pleasure to speak with you both last week. Thank you for keeping me on your list of folks to update with all that you two and your programs are doing! I'm glad that some of the

things I'm working on continue to be of interest to you. Speaking of which, attached is an external peer review draft of a JISEA report tentatively entitled: "Estimating U.S. Greenhouse Gas Emissions from the Natural Gas Supply Chain: Inventory Approaches, Current Estimates, Challenges and Opportunities." This report has been sponsored by DOE's Office of Energy Policy and Systems Analysis (EPSA); Elke Hodson from that office is copied here.

With the focus of this report on the US GHG Inventory, we welcome your review and comment. You may share the draft internally from those you feel should review it; if you are able to consolidate comments, that's great, but don't worry if not. EPSA would like to get this report out as soon as possible, so **please return comments by Friday Jan 30** (earlier the better ☺). As it is a draft, please do not cite, quote or distribute beyond those immediately needing to review it.

You are welcome to redline your comments (track changes) or develop a separate sheet of them. If the latter, please refer to line numbers. Please note that issues of formatting, including developing a consistent reference/citation style, will be addressed in final copy editing, so no need to direct attention to those kinds of issues.

Thank you for your interest and time!

Cheers

Garvin

Garvin Heath, PhD

Technology Systems and Sustainability Analysis Group | Strategic Energy Analysis Center

National Renewable Energy Laboratory

Research Associate

University of Colorado at Boulder

NREL mailing: 15013 Denver West Parkway, Mail Stop RSF300, Golden, CO 80401
NREL physical: RSF/B340
garvin.heath@nrel.gov
(o) 303-384-7460 | (m) 303-653-3164 | (f) 303-630-2085

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Hogan, Sean[hogan.sean@epa.gov]; Schmeltz, Rachel[schmeltz.rachel@epa.gov]
From: McKittrick, Alexis
Sent: Thur 11/12/2015 9:53:30 PM
Subject: GHGRP Subpart W leak detection proposal - for your review
SAN 5847_action memo 11_12_15.docx
Subpart W leak detection revisions proposal preamble_11-12-2015.docx
Subpart W leak detection amendments 11-12-15 redline.docx

Paul,

Attached for your review are the preamble and regulatory text for the GHGRP Subpart W leak detection methods proposal. The attached proposed reg text is a redline comparison to the current reg text. I have also attached the draft Action Memo for your review.

I will be teleworking tomorrow and available to address any questions. Just call my office and it will automatically forward to my home phone. Thanks in advance for your review.

Regards,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Phone: 202-343-9153

E-mail: mckittrick.alexis@epa.gov

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 11/21/2014 9:30:05 PM
Subject: FW: Subpart W proposal - TSD for review
Subpart W_2nd rule DRAFT TSD-2014-11-20 CF AM.docx

Melissa,

If you haven't started your review, OAQPS provided some comments/edits on the TSD. Attached is the new verision. (I should have just put everyone on the same e-mail...sorry.)

Ex. 5 - Deliberative Process

Have a great weekend!
Alexis

From: McKittrick, Alexis
Sent: Friday, November 21, 2014 4:27 PM
To: Frantz, Chris
Cc: Moore, Bruce; Waltzer, Suzanne; DeFigueiredo, Mark
Subject: RE: Subpart W proposal - TSD for review

Thanks, Chris. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Have a great weekend,
Alexis

From: Frantz, Chris
Sent: Friday, November 21, 2014 10:18 AM
To: McKittrick, Alexis
Cc: Moore, Bruce; Waltzer, Suzanne; DeFigueiredo, Mark
Subject: RE: Subpart W proposal - TSD for review

Alexis, my comments are attached. Ex. 5 - Deliberative Process

Chris Frantz
Fuels and Incineration Group
Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency
919 541-4312

From: McKittrick, Alexis
Sent: Thursday, November 20, 2014 4:42 PM
To: Frantz, Chris
Cc: Moore, Bruce; Waltzer, Suzanne; DeFigueiredo, Mark
Subject: Subpart W proposal - TSD for review

Chris,

As promised (though a few days later than promised), attached is the draft Technical Support Document for the Subpart W 2015 revisions proposal (gathering & boosting, HF oil wells, etc.). It would be great if you could do a quick review to make certain we aren't saying anything that is inconsistent with OAQPS / NSPS messaging on these or similar topics. In particular, the emissions estimates provided for oil wells with hydraulic fracturing (pages 3-4) and gathering and boosting (pages 6-9) would be key to review, since those sections reference either the white papers or their supporting documents.

This proposal is targeted for 12/4 publication in the Federal Register, so I'd like to have all the comments and reviews done by the end of next week. However, understanding that it is a holiday week and folks might be off, I can probably accept comments as late as 12/2.

Bruce & Suzie – Please feel free to weigh in with comments/edits as well.

Thanks!
Alexis

Alexis McKittrick, Ph.D.
Climate Change Division
U.S. Environmental Protection Agency
Work phone (Mon - Thurs): 202-343-9153
Telework phone (Fri): 202-680-3589

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Thur 8/6/2015 7:34:49 PM
Subject: RE: Clearstone reference

Melissa,

I forgot to tell you I did look for this last week in our files and online and couldn't find it. (Mark may have more luck.)

Alexis

From: Weitz, Melissa
Sent: Thursday, August 06, 2015 3:29 PM
To: McKittrick, Alexis; DeFigueiredo, Mark
Subject: Clearstone reference

Do either of you have a copy of this report:

1998/Gas Technology Canada reference: *Handbook for Estimating Methane Emissions from Canadian Natural Gas Systems*.

I think I asked before, and I think you said no, but I wanted to recheck. It is the source of the M&R emission factors in Subpart W and we are looking at it as part of our evaluation of data sources for distribution.

Thanks!

Melissa

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Wed 4/22/2015 9:34:44 PM
Subject: Re: gathering pipeline blowdowns

Thanks, Melissa! Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Sent from my iPhone

On Apr 22, 2015, at 5:13 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Sorry I missed your call earlier.

Ex. 5 - Deliberative Process

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: DeFigueiredo, Mark[defigueiredo.mark@epa.gov]
From: McKittrick, Alexis
Sent: Thur 11/20/2014 9:47:18 PM
Subject: Subpart W proposal - TSD for review
Subpart W_2nd rule DRAFT TSD-2014-11-20_clean AM.docx

Melissa,

Attached is the draft Technical Support Document for the Subpart W 2015 revisions proposal (gathering & boosting, HF oil wells, etc.). We ended up using the GHG Inventory as a reference in several places, and I want to make sure you are okay with the Inventory references and numbers. It would be great if you could review the whole document, but the key parts that relate to the Inventory are on pages 6-9, 25, 28-31.

This proposal is targeted for 12/4 publication in the Federal Register, so I'd like to have all the comments and reviews done by the end of next week. However, understanding that it is a holiday week and folks might be off, I can probably accept comments as late as 12/2.

Let me know if you have any questions.

Thanks!

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Work phone (Mon - Thurs): 202-343-9153

Telework phone (Fri): 202-680-3589

To: Bylin, Carey[Bylin.Carey@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Mon 4/20/2015 6:00:43 PM
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Carey,

Ex. 5 - Deliberative Process

Regards,

Alexis

From: Bylin, Carey
Sent: Wednesday, April 15, 2015 2:48 PM
To: Weitz, Melissa; McKittrick, Alexis
Cc: Waltzer, Suzanne; DeFigueiredo, Mark
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa and Alexis,

Just wanted to check on this question (see below).

Ex. 5 - Deliberative Process

Thanks!

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: Weitz, Melissa
Sent: Tuesday, March 10, 2015 11:33 AM
To: Bylin, Carey; McKittrick, Alexis
Cc: Waltzer, Suzanne
Subject: RE: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Carey,

We're looking into this and should be able to get back to you soon.

Thanks,

Melissa

From: Bylin, Carey
Sent: Monday, March 09, 2015 9:29 AM
To: Weitz, Melissa; McKittrick, Alexis

Cc: Waltzer, Suzanne
Subject: Difference between GHGRP/Inventory on M-R Stations/City Gates

Hi Melissa and Alexis,

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 11/22/2013 2:52:47 PM
Subject: RE: GHGRP Subpart W Updates & Rule Draft

Thanks, Melissa. **Ex. 6 - Personal Privacy**

Ex. 6 - Personal Privacy

Ex. 5 - Deliberative Process

I have set aside some time next week to go through all the comments from the workgroup. If I have questions about yours, I'll be sure to reach out.

Thanks again,

Alexis

From: Weitz, Melissa
Sent: Wednesday, November 20, 2013 4:26 PM
To: McKittrick, Alexis
Cc: DeFigueiredo, Mark
Subject: RE: GHGRP Subpart W Updates & Rule Draft

Hi Alexis,

I read the preamble and reg text and have a number of questions/comments, in the attached. Some are just questions where I'd like to understand the rule better, and others are areas where some of the language seemed inconsistent.

Hope these are useful!

Melissa

From: McKittrick, Alexis
Sent: Tuesday, November 12, 2013 4:18 PM
To: Waltzer, Suzanne; Weitz, Melissa; Thoma, Eben; Lawrence, Rob; Forde, Raymond; Beeler, Cindy; Komp, Mark; Grogan-McCulloch, Lisa; Tate, Ragan; Vyas, Himanshu; VanLare, Paula; McFadden, Angela; Lischinsky, Robert; Moore, Bruce; Jollie, Jeff; Kenney, James; Noel, John; Macpherson, Alex; Frantz, Chris
Cc: DeFigueiredo, Mark; Jacobson, David; Karimjee, Anhar
Subject: GHGRP Subpart W Updates & Rule Draft

Dear Subpart W rule workgroup,

After revising the schedule for various Greenhouse Gas Reporting Program (GHGRP) Subpart W (Petroleum & Natural Gas Systems) activities following the government shutdown in October, we have several updates to share with you all.

First, the 2012 GHGRP data was published on October 23. A sampling of news articles about the 2012 data release is provided at the bottom of this e-mail. For Subpart W specifically, we have developed a data summary document for the year, which can be found at this link - http://www.epa.gov/ghgreporting/documents/pdf/2013/documents/SubpartW-2012-Data-Summary.pdf. This summary breaks out the 2012 data by segment and emission source, as well as discusses other relevant topics (such as BAMM use for 2012).

Second, we are still proceeding with our approach of developing two technical revisions packages for Subpart W. The first package focuses on clarifying requirements and addressing certain issues that have been brought up in petitions, and would be proposed early next year. The second package would focus on changes that may impact burden or potential new segments, and would be proposed next fall.

We are attaching a working first draft of the first proposed package in two files - preamble and regulatory text. Please note that these materials have not been reviewed

by our management. If you have comments, questions, or edits on this first package, we would appreciate them by Monday, November 25th (or whenever you leave for the Thanksgiving holiday).

Please let me know if you have any questions.

Regards,

Alexis

National Coverage

US power plant emissions tumble on shift to natural gas (Thomson Reuters)

http://www.reuters.com/article/2013/10/23/usa-environment-emissions-idUSL1N0ID1FQ20131023

Use of natural gas in power plants reduces carbon pollution, EPA reports (Akron Beacon Journal)

http://www.ohio.com/blogs/drilling/ohio-utica-shale-1.291290/use-of-natural-gas-in-power-plants-reduces-carbon-pollution-epa-reports-1.439263

US power plant emissions tumble on shift to natural gas (Chicago Tribune)

http://www.chicagotribune.com/sns-rt-usa-environmentemissions-20131023,0,3068878.story

EPA data indicate carbon emissions from power plants down (Politico)

http://www.politico.com/morningenergy/1013/morningenergy11996.html?hp=rh_b6

EPA touts climate policies as GHG emissions decline (Inside EPA)

http://insideepa.com/201310232450582/EPA-Blog/The-Inside-Story/epa-touts-climate-policies-as-ghg-emissions-decline/menu-id-97.html

EPA: Texas still No.1 in greenhouse gas emissions (Seattle PI)

http://www.seattlepi.com/news/texas/article/EPA-Texas-still-No-1-in-greenhouse-gas-emissions-4920035.php

Power plant carbon emissions fall 10% (The Hill)

http://thehill.com/blogs/e2-wire/e2-wire/330169-power-plant-carbon-emissions-fall-10-percent

Methane complicates US greenhouse gas emission outlook (Climate Central)

http://www.climatecentral.org/news/u.s.-greenhouse-emissions-fall-but-methane-complicates-picture-16642

Greenhouse gas emissions from power plants declined from 2011 to 2012, EPA says (Washington Post)

http://www.washingtonpost.com/national/health-science/greenhouse-gas-emissions-from-power-plants-declined-from-2011-to-2012-epa-says/2013/10/23/4d8715a0-3c18-11e3-a94f-b58017bfee6c_story.html

Greenhouse gases on the decline, EPA study says (LA Times)

http://www.latimes.com/nation/nationnow/la-na-nn-greenhouse-gas-emissions-decline-20131023,0,2597118.story#axzz2idA3mfxk

Climate: Methane Emissions from oil and gas dipped slightly in 2012 (Energy Wire)

http://www.eenews.net/climatewire/2013/10/24/stories/1059989326

Some good news about US carbon emissions (Bloomberg)

http://www.businessweek.com/articles/2013-10-24/some-good-news-about-u-dot-s-dot-carbon-emissions

EPA publishes updated GHG data (Biomass Magazine)

http://www.biomassmagazine.com/articles/9606/epa-publishes-updated-ghg-data

EPA credits switches to gas for US power plants' GHG reductions (Oil&Gas Journal)
http://www.ogj.com/articles/2013/10/epa-credits-switches-to-gas-for-us-power-plants-ghg-reductions.html

EPA chief Gina McCarthy on maintaining a 'diverse energy mix' for America (PBS Newshour)
http://www.pbs.org/newshour/bb/government_programs/july-dec13/epa_10-24.html

Reported greenhouse gas emissions fell 4.5 percent in 2012, EPA data show (BNA)

http://news.bna.com/deln/display/story_list.adp?mode=ep&frag_id=37523043&item=topic2&prod=deln

US power plant pollution declines 10 percent from 2010 (Al Jazeera America)

http://america.aljazeera.com/articles/2013/10/31/us-power-plant-pollutiondeclines10percentfrom2010.html

Regional Coverage

Use of natural gas in power plants reduces carbon pollution, EPA reports (Akron Beacon Journal)

http://www.ohio.com/blogs/drilling/ohio-utica-shale-1.291290/use-of-natural-gas-in-power-plants-reduces-carbon-pollution-epa-reports-1.439263

EPA: Texas still No.1 in greenhouse gas emissions (AP, picked up by Seattle PI, CBS, and San Francisco Chronicle)

http://www.seattlepi.com/news/texas/article/EPA-Texas-still-No-1-in-greenhouse-gas-emissions-4920035.php

Facilities in Milford, Hudston, Bellingham, Blackstone listed as greenhouse gas emitters (Milford Daily News)

http://www.milforddailynews.com/news/x825424854/Facilities-in-Milford-Hudson-Bellingham-Blackstone-listed-as-greenhouse-gas-emitters

Plant Scherer remains single biggest U.S. source of greenhouse gases, EPA says (Georgia Telegraph)

http://www.macon.com/2013/10/24/2736474/plant-scherer-remains-single-biggest.html

NJ power plants reduce greenhouse gas emissions (NorthJersey.com)

http://www.northjersey.com/news/NJ_power_plants_reduce_greenhouse_gas_emissions.html

Belews Creek station notable for greenhouse gas emissions (Winston-Salem Journal)

http://www.news-record.com/news/article_73ce9953-637d-5c7c-bfdd-49fee0a35773.html

Greenhouse gas levels rose 11% over 1 year in Calif (ClimateWire)

http://www.eenews.net/climatewire/2013/10/28/stories/1059989488

Central Ohio businesses emit fewer greenhouse gases (Columbus Dispatch)

http://www.dispatch.com/content/stories/local/2013/11/04/central-ohio-businesses-emit-fewer-greenhouse-gases.html

Other coverage

EDF press release: http://www.edf.org/media/edf-applauds-release-new-data-america%E2%80%99s-biggest-climate-polluters?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+EnvironmentalDefens+Press+Releases

Sierra Club: https://content.sierraclub.org/press-releases/2013/10/epa-report-us-saw-record-decline-dangerous-greenhouse-gas-emissions-2012

C2ES: http://www.c2es.org/newsroom/statements/claussen-epa-ghg-reporting

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Work phone (Mon - Thurs): 202-343-9153

Telework phone (Fri): 202-680-3589

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: prep for NRC call
Start Date/Time: Tue 7/14/2015 2:00:00 PM
End Date/Time: Tue 7/14/2015 2:30:00 PM
Methane emissions prospectus DRAFT 06-23-2015 (3).docx

Background:
The National Academy of Sciences/National Research is considering developing a research project on methane emissions (all sources, anthropogenic and natural).
They drafted the attached prospectus based on previous meetings and have set up a call with EPA next week (7/22) to discuss our comments/concerns on the draft prospectus.

7/14 EPA prep call (this call):
On the 7/14 call, I'll give some brief background on our interactions with NRC on this topic to date, and then we can discuss initial comments and concerns with NRC's prospectus, with a goal of having coordinated input from this group to inform next week's (7/22) discussion with NRC.

7/22 call with NRC:
Paul Gunning meeting with NRC to provide NRC with EPA feedback on prospectus.

Thanks!

From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: NRC Methane Monitoring and Inventory / Call-in: Ex. 6 - Personal Privacy Code: Ex. 6 - Personal Privacy
Start Date/Time: Wed 7/22/2015 1:30:00 PM
End Date/Time: Wed 7/22/2015 2:30:00 PM
Methane emissions prospectus from NRC_DRAFT_7-20-2015.docx
Methane emissions inventory.png

Adding call-in line

Adding NRC's Methane Emissions Prospectus

Adding Tom Wirth

Meeting will be Wed. July 22 at 9:30 am

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Thursday, June 25, 2015 5:08 PM
To: Hargrove, Anne; Gunning, Paul
Cc: Thomas, Katherine C; Kocchi, Suzanne
Subject: RE: NRC Methane emissions study prospectus

HI Anne,

Either option works for us, so shall we go with the earlier one?

Thanks!
Amanda

From: Hargrove, Anne [mailto:Hargrove.Anne@epa.gov]
Sent: Thursday, June 25, 2015 3:09 PM
To: Staudt, Amanda; Gunning, Paul
Cc: Thomas, Katherine C; Kocchi, Suzanne
Subject: RE: NRC Methane emissions study prospectus

Hi Amanda,

So far it looks like there are two times that would work for folks here that are within what might be possible for you: Tuesday July 7, from 1 pm to 2, and Wed. July 22, from 9:30 am to 10:30.

Would either of those times work for you?

Best,
Anne Hargrove
Climate Change Division
U.S. Environmental Protection Agency
(202) 343-9926

f - (202) 343-1204

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Thursday, June 25, 2015 1:26 PM
To: Gunning, Paul
Cc: Thomas, Katherine C; Hargrove, Anne
Subject: RE: NRC Methane emissions study prospectus

Hi Paul - sounds good!

Anne - Looking at Katie's schedule and mine, the best options on our end would be July 7 or else the week of July 20.

Thanks!
Amanda

From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]
Sent: Wednesday, June 24, 2015 2:29 PM
To: Staudt, Amanda
Cc: Thomas, Katherine C; Hargrove, Anne
Subject: RE: NRC Methane emissions study prospectus

Amanda - great to hear from you and I hope all is well. I think getting together to discuss this would be great. I am out on vacation next week, but I am around after that. I am looping in Anne who can follow up with more specifics on our availability (I would want to a few other EPA folks). Looking forward to the discussion.

Paul

Paul M. Gunning
Director, Climate Change Division
U.S. EPA (6207J)
1200 Pennsylvania Avenue
Washington, DC 20460

Direct (202) 343-9736
Fax (202) 343-2202
Cell (202) 251-1436

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Wednesday, June 24, 2015 1:26 PM
To: Gunning, Paul
Cc: Thomas, Katherine C
Subject: NRC Methane emissions study prospectus

Dear Paul,

I'm writing to follow up on our discussions regarding a potential NRC study on methane emissions monitoring and inventories. Thanks again for meeting with us a couple months back and apologies that it has taken much longer than I anticipated to get back in touch. We were a bit shorthanded this spring, and are finally getting caught up.

We have drafted the attached prospectus based on the discussions that we had with you, other potential sponsors, and our board members. Our hope is that the project described addresses your needs and will be useful in moving forward research, policy, and practice regarding methane emissions monitoring and inventory development. We welcome your feedback and would be happy to discuss any concerns or suggested adjustments.

Also, we would like to continue to explore whether EPA might have an interest in co-sponsoring the study. At this point we are envisioning an activity with multiple sponsors, which will allow us to ensure that the study addresses broader national needs, and also makes it possible to share the costs among the several agencies engaged on the topic.

Perhaps a good next step would be to arrange a time for us to meet in a few weeks' time to discuss any input you have on the draft and next steps? If you agree, please go ahead and send some windows that look promising on your end, and we'll figure out a time that works for all of us.

Many thanks,
Amanda

Amanda Staudt, Ph.D., Director
Board on Atmospheric Sciences and Climate
Polar Research Board
(202) 334-1245
http://dels.nas.edu/basc
http://dels.nas.edu/prb

From: Weitz, Melissa
Location: DCRoomWJCE5140OAPTB/DC-OAR-OAP
Importance: Normal
Subject: NAS methane study briefing
Start Date/Time: Mon 3/26/2018 5:00:00 PM
End Date/Time: Mon 3/26/2018 6:00:00 PM
2 - EPA - Final Methane Briefing Slides 3-23-2018.pptx

Webinar link: **Ex. 6 - Personal Privacy**

Call in information:

Ex. 6 - Personal Privacy

Additional information on the methane study:

http://nas-sites.org/dels/studies/methane-study/

From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: Briefing on Research by NREL/DOE/Call-in: Ex. 6 - Personal Privacy Code: Ex. 6 - Personal Privacy
Start Date/Time: Wed 5/18/2016 4:00:00 PM
End Date/Time: Wed 5/18/2016 5:00:00 PM

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Friday, May 06, 2016 2:53 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Heath, Garvin (NREL) <garvin.heath@nrel.gov>; Skone, Timothy (NETL) <timothy.skone@netl.doe.gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>
Subject: Briefing on research by NREL/ DOE

Dear Paul,

I'm writing to request a phone meeting to brief you and your colleagues on some analysis that Garvin Heath and colleagues have been doing for DOE's Office of Energy Policy and Systems Analysis. This work came up during our recent Interagency meeting/ call at the White House and I think it may prove very informative as EPA considers updating uncertainty analysis for the GHG Inventory.

Availability for me and Garvin:

- Thursday March 12 is from 11:00 to 1:00 pm,
- Friday, March 13, 11:00 am to 1:30; also, from 2:30 to 3:30
- Monday, March 16th, 2:30 to 5:00 pm

If these times don't work for you or your team (or for Tim and Christopher), perhaps we could find another time that works for everyone.

Here is a very brief description of the research project:
NREL is conducting extreme value statistical analysis of published methane emissions data for natural gas systems to re-examine datasets to better characterize their sample distributions. This research also aims to better quantify the uncertainty associated with current inventory estimation methods and understand if datasets can be combined via meta-analysis to improve sample size and therefore robustness of results. Preliminary results have implications for policy, sampling design and detection strategies. Research findings are under consideration for publication in a peer-reviewed journal.

Best regards,

James

--
James Bradbury
Senior Policy Adviser for Climate, Environment and Efficiency

Office of Energy Policy and Systems Analysis
U.S. Department of Energy
Phone: 202-586-0683

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: Overview of updates in public review draft of 1990-2016 GHG Inventory
Start Date/Time: Wed 1/3/2018 6:00:00 PM
End Date/Time: Wed 1/3/2018 7:00:00 PM
3.5 Abandoned Oil and Gas_Wells for EPA review 12.21.2017.docx
3.6 Petroleum Systems_for EPA review 12.21.17.docx
3.7 Natural Gas Systems_for EPA review 12.21.17.docx

Updated to include draft GHG text for review

On this call, we will give an overview of the changes that have been made in the public review draft, compared to last year's GHG Inventory.

I'll send around draft text for the 1990-2016 GHG Inventory public review draft for your review when it is ready (today (12/20) or tomorrow) for comment/edits by January 8th.

Thanks so much for your review of updates to the GHG Inventory!

From: Thoma, Eben
Location: RTP-Line-Ex. 6 - Personal Privacy ECPB/Phone-Line/RTP-Conf-Bridge
Importance: Normal
Subject: Uinta Basin Pneumatic Controller Research Study Group Meeting 3 (Agenda added)
Start Date/Time: Mon 7/11/2016 4:00:00 PM
End Date/Time: Mon 7/11/2016 5:00:00 PM
QAPP_Uinta Pneumatic Controller Study_Discussion Draft_ 062229.docx
Uinta PC Research Study Meeting 3_071116.pptx

Hi Everyone,

We look forward to our group call on Monday with rough agenda attached. The call-in number is **Ex. 6 - Personal Privacy**. The Adobe connect webinar link is below and please enter as a "guest" (but please provide your name and organization).

Ex. 6 - Personal Privacy

Thanks,

Eben

All,

As promised, please find attached the "partial-draft" qualtiy assurance project plan (QAPP)/discussion document as described below. I will emphasize that this is rough "do not cite" document but I believe it is useful to assist our collaborative discussion. We look forward to further conversations and our next group call on July 11 (details below).

Thanks,

Eben

Hi Everyone,

This is an invite to our next group meeting (based on the most popular Doodle Poll result). The call-in number is **Ex. 6 - Personal Privacy**. The Adobe connect webinar link is below and please enter as a "guest" (but please provide your name and organization).

Ex. 6 - Personal Privacy

Sorry we could not accommodate everyone's schedule. We will reach out to many next week, especially those who cannot make this time.

As an update, please be on the lookout for a draft qualtiy assurance project plan (QAPP)/discussion document on Wednesday of next week (6/29). This draft document will

illuminate study design decisions (to be made), collaborative discussion points, and measurement techniques we plan to use. We will dig-in on some technical details in the July 11 meeting but will also have ample time for discussion. As always, please feel free to call with any questions and many thanks to those taking a look at the CEI PC actuation counters (more are available for any interested).

Thanks,

Eben

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: natural gas CH4 quantification list for DOE
Start Date/Time: Wed 2/17/2016 3:30:00 PM
End Date/Time: Wed 2/17/2016 4:00:00 PM
DOE-FE-FY16-Methane Quantification Actions-11FEB16(v2) .docx

(Attaching additional information sent over today from DOE)

DOE was recently given $5 million to conduct research that can be used to update the GHGI for natural gas systems (language from congressional budget request is below).

DOE has given us a list of their thoughts for proDOE-FE-FY16-Methane Quantification Actions-11FEB16(v2) .docx jects (I'll send around soon). We need to get back to DOE with our priority list of emissions sources/research projects, on a tight time frame (by February 19). I'll take a first stab at a list (based on information we already shared with DOE and this group several months ago) and send that around before the call, and then I'd like to use this call to discuss whether any of the priorities may be duplicative with other research or data efforts, and whether there are any additional priority areas we should consider.

Congressional Budget Request FY 2016-- Emissions Quantification form Natural Gas Infrastructure
The Emissions Quantification from Natural Gas Infrastructure research subprogram will focus on better quantifying methane emissions from the natural gas value chain. The program will work with the Environmental Protection Agency to ensure that data produced is compatible with the national Greenhouse Gas Inventory. Efforts will focus on understanding regional variation and reducing uncertainty in emission estimates.

From: Thoma, Eben
Location: RTP-Line-Ex. 6 - Personal Privacy ECPB/Phone-Line/RTP-Conf-Bridge
Importance: Normal
Subject: EDF NG methane synthesis call time change Ex. 6 - Personal Privacy
Start Date/Time: Wed 4/8/2015 5:00:00 PM
End Date/Time: Wed 4/8/2015 6:00:00 PM

All,

Apologies for needing rescheduling the EDF call. We will lose some but this time works for many. This is a conference call only (no slides) with call-in # Ex. 6 - Personal Privacy

Thanks,

Eben

Thanks to Drew Nelson (copied) with EDF for the offer of a status call on their methane synthesis work.

This is our first attempt schedule this call and it may move a bit. We are not yet sure if this will be a call or a webinar (details sent later).

Melissa, this time is acceptable for your folks in OAP but I ask you to please forward to those on your list.

Background:
As we all know, EDF has been working to catalyze research on methane emissions from all parts of the natural gas supply chain. Some papers from these studies have already been published and a large number will be available in the May time frame. EDF is currently working with the DOE NETL LCA folks under a CRADA to perform a couple of different synthesis activities for this great effort. In this call EDF will provide information on elements of the synthesis design, projected timing, envisioned review/comment process, and the status of journal paper progress.

Thanks,

Eben

From: Weitz, Melissa
Location: DCRoom1310L757p4Phone/DC-1310L-OAR
Importance: Normal
Subject: ORD methane work call in Ex. 6 - Personal Privacy
Start Date/Time: Thur 6/19/2014 7:30:00 PM
End Date/Time: Thur 6/19/2014 8:00:00 PM

Hi Eben,

Kathryn McKain is joining OAP for the summer. She is a PhD student, working on atmospheric methane measurements (including some work with EDF). I'd like to introduce you to her and was hoping you could give her an overview of the work that ORD is doing in this area. Let me know if this time slot works.

Thanks!
Melissa

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: Overview of "Improved mechanistic understanding of natural gas methane emissions from spatially-resolved aircraft measurements"
Start Date/Time: Wed 6/7/2017 6:30:00 PM
End Date/Time: Wed 6/7/2017 7:30:00 PM

Stefan Schwietzke has offered to give us an overview of his recently published work on aircraft measurements of methane from oil and gas.

http://pubs.acs.org/doi/pdf/10.1021/acs.est.7b01810

Abstract

Divergence in recent oil and gas related methane emission estimates between aircraft studies (basin total for a midday window) and emissions inventories (annualized regional and national statistics) indicate the need for better understanding the experimental design, including temporal and spatial alignment and interpretation of results. Our aircraft based methane emission estimates in a major US shale gas basin resolved from West to East show (i) similar spatial distributions for two days, (ii) strong spatial correlations with reported NG production (R2 =0.75) and active gas well pad count (R2 =0.81), and (iii) 2x higher emissions in the Western half (normalized by gas production) despite relatively homogeneous dry gas and well characteristics. Operator reported hourly activity data show that midday episodic emissions from manual liquid unloadings (a routine operation in this basin and elsewhere) could explain ~1/3 of the total emissions detected midday by the aircraft and ~2/3 of the West-East difference in emissions. The 22% emission difference between both days further emphasizes that episodic sources can substantially impact midday methane emissions and that aircraft may detect daily peak emissions rather than daily averages that are generally employed in emissions inventories. While the aircraft approach is valid, quantitative and independent, our study sheds new light on the interpretation of previous basin scale aircraft studies, and provides an improved mechanistic understanding of oil and gas related methane emissions.

From: Gunning, Paul
Location: DCRoomWJCS4232DOAPCCDDir/DC-OAR-OAP
Importance: Normal
Subject: Discussion w/DOE on Oil & Gas Sector (methane quantification) / CALL-IN: Ex. 6 - Personal Privacy
Ex. 6 - Personal Privacy
Start Date/Time: Thur 2/11/2016 8:30:00 PM
End Date/Time: Thur 2/11/2016 9:30:00 PM

Please note change in date & time to Thursday Feb. 11 at 3:30 in 4232D WJC-S, USEPA Headquarters.

From: Freitas, Christopher [mailto:Christopher.Freitas@hq.doe.gov]
Sent: Thursday, January 14, 2016 11:21 AM
To: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Hargrove, Anne <Hargrove.Anne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Skone, Timothy (NETL) <timothy.skone@netl.doe.gov>; DeHoratiis, Guido <Guido.DeHoratiis@hq.doe.gov>; Elliott, Rick <Rick.Elliott@Hq.Doe.Gov>; Ciferno, Jared (NETL) <jared.ciferno@netl.doe.gov>; Smistad, Eric (NETL) <eric.smistad@netl.doe.gov>
Subject: RE: Good news on methane emission quantification - FY-16 appropriations

All,
I am hopeful that DOE HQ/NETL will have a draft Annual Operating Plan for Fossil Energy Methane Emission Quantification subprogram available for the EPA conference call. If so, I am available on the following dates and times.

- Jan, 27, Wednesday, 3:30 - 5:30 pm
- Jan, 28, Thursday, 10:30 am - 12pm.
- Jan 29, Friday, 2:00 -4:00 pm.

Christopher J. Freitas
Senior Program Manager Natural Gas Infrastructure
United States Department of Energy
Office of Oil and Natural Gas, FE-30,
1000 Independence Ave. S.W., Forrestal Building, Room 3G-048
Washington, D.C. 20585
Desk: (202) 586-1657/ Mobile: (301) 820-2004
Email: Christopher.Freitas@HQ.DOE.GOV

From: Bradbury, James
Sent: Wednesday, January 13, 2016 5:34 PM
To: Hargrove, Anne <Hargrove.Anne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

Hi Anne (again),

Sorry, I was looking at the wrong week... Here are better times for us during the week of January 25:

- Wednesday, 1-2 pm
- Thursday, 10:30 am - 12pm.
- Friday, 1-2 pm or 3-5 pm.

Thanks,
james

From: Bradbury, James
Sent: Wednesday, January 13, 2016 5:26 PM
To: 'Hargrove, Anne' <Hargrove.Anne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

Hi Anne,
Thanks for following-up.

During the week of January 25, good meeting times for me are as follows:

- Wednesday, 3-5 pm
- Thursday, 10am - 12pm.
- Friday afternoon.

I look forward to hearing back from you with suggested meeting times.

Best regards,
James

From: Hargrove, Anne [mailto:Hargrove.Anne@epa.gov]
Sent: Wednesday, January 13, 2016 12:08 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Bradbury, James <James.Bradbury@Hq.Doe.Gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

Hi James,

I work with Paul on scheduling matters. If there are times during the week Jan. 25 - Jan.29 that might work for you for a conference call, please let me know. In the meantime, I'll see what would be good on our end. Paul's calendar is busy next week, but if the call needs to be next week, we'll try to work something out. Thanks so much.

Best wishes,
Anne Hargrove
Climate Change Division
U.S. Environmental Protection Agency
(202) 343-9926

f - (202) 343-1204

From: Gunning, Paul
Sent: Tuesday, January 12, 2016 8:55 AM
To: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Hargrove, Anne <Hargrove.Anne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

James, this is great news and we look forward to working with you on this. Next week is pretty busy for me, but might be workable. The week of the 25th would work better and is pretty open at the moment. Let us know what might work for you.

Thanks!

Paul

Paul M. Gunning
Director, Climate Change Division
U.S. EPA (6207J)
1200 Pennsylvania Avenue
Washington, DC 20460

Direct (202) 343-9736
Fax (202) 343-2202
Cell (202) 251-1436

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Monday, January 11, 2016 4:00 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>
Subject: Good news on methane quantification - FY-16 appropriations

Dear Paul and Melissa,
Happy New Year to both of you!

The good news that I wanted to share with you is that the FY16 omnibus appropriations bill included $5

million for emissions quantification from natural gas infrastructure. The bill also includes $7 million for R&D on emissions mitigation from midstream infrastructure and both of these new programs will managed by DOE's Office of Fossil Energy.

As you may recall, the President's FY16 budget requested $10 million for methane emissions quantification (and here is the relevant guidance):

> *Emissions Quantification from Natural Gas Infrastructure*
> *The Emissions Quantification from Natural Gas Infrastructure research subprogram will focus on better quantifying methane emissions from the natural gas value chain. The program will work with the Environmental Protection Agency to ensure that data produced is compatible with the national Greenhouse Gas Inventory. Efforts will focus on understanding regional variation and reducing uncertainty in emissions estimates.*

Christopher Freitas (cc'd) is the Program Manager for both of the above-mentioned programs. He is working with NETL and in cooperation with EPSA to develop an annual operating plan and, ultimately, FOA, to help move this forward.

We would love to schedule a conference call with you to hear your thoughts on how this new program could be targeted to help improve the GHG Inventory. Please let us know when you might be available for a call on this subject.

We look forward to being in touch.

Thanks very much,
James

--
James Bradbury
Senior Policy Adviser for Climate, Environment and Efficiency
Office of Energy Policy and Systems Analysis
U.S. Department of Energy
Phone: 202-586-0683

From: Weitz, Melissa
Importance: Normal
Subject: Hold for follow-on technical pre-brief on EDF distribution segment results with WSU and AGA
Start Date/Time: Fri 3/27/2015 7:45:00 PM
End Date/Time: Fri 3/27/2015 8:30:00 PM

From: "Clay, Kathryn" <KClay@aga.org>
Date: March 6, 2015 at 10:40:51 AM EST
To: "mccabe.janet@epa.gov" <mccabe.janet@epa.gov>
Cc: "Dunning.Sarah@epa.gov" <Dunning.Sarah@epa.gov>, "Gunning.Paul@epa.gov" <Gunning.Paul@epa.gov>, "Franklin.Pamela@epa.gov" <Franklin.Pamela@epa.gov>, "Bylin.carey@epa.gov" <Bylin.carey@epa.gov>, "Lacey, Pam" <PLacey@aga.org>
Subject: Briefing opportunity: WSU study of natural gas distribution system methane emissions

Dear Janet:

As you know, over the past two years the Environmental Defense Fund (EDF), AGA, and thirteen of our member companies have participated in a multi-city assessment of methane emissions from natural gas distribution systems. The research was conducted by a team of scientists led by Dr. Brian Lamb of Washington State University, and the results will be published later this month in the peer-reviewed journal, Issues in Environmental Science and Technology.

Dr. Lamb will be in Washington on March 26-27 and will be available to brief key policy makers on the study and its conclusions. AGA is assisting in coordinating Dr. Lamb's schedule while he is in town.

Would you and/or any members of your team be interested and available to meet with Dr. Lamb to discuss these new results? If yes, please let me know the times on the 26th or 27th that would work best for you.

Thanks for your consideration.

Best regards,
Kathryn

Kathryn Clay | Vice President, Policy Strategy
American Gas Association
400 N. Capitol St., NW | Washington, DC | 20001
P: 202-824-7122 | kclay@aga.org

The American Gas Association represents more than 200 local energy companies committed to the safe delivery of clean natural gas to over 68 million customers throughout the nation.

From: Weitz, Melissa
Location: DCRoomWJCS4228AOAP/DC-OAR-OAP
Importance: Normal
Subject: GHG Inventory updates under consideration for Production and Gathering and Boosting
Start Date/Time: Wed 1/27/2016 4:00:00 PM
End Date/Time: Wed 1/27/2016 5:00:00 PM
DRAFT Proposed Revision to NG Gathering-Boosting Segment Emissions_2015-01-22 for EPA review.docx
DRAFT Proposed Revision to Production Segment_Emissions_2015-01-22 for EPA review.docx

Attaching draft memos.

To keep the GHGI on schedule, we are trying to get these memos posted for review as soon as possible. We'll walk through the contents of the memos on the webinar and you can provide feedback during the webinar. We'd also appreciate any edits/comments you have on the memos by February 1 so that we can post the memos for review shortly after.

Thank you for your continued input to the GHGI!

This webinar will walk through the updates we are considering for the production and gathering and boosting segments in the GHG inventory.

Call in **Ex. 6 - Personal Privacy**

From: Gunning, Paul
Location: DCRoomWJCE5140OAPTB/DC-OAR-OAP
Importance: Normal
Subject: NAS Study on Methane / Call-in: Ex. 6 - Personal Privacy
Start Date/Time: Thur 12/3/2015 7:00:00 PM
End Date/Time: Thur 12/3/2015 8:00:00 PM

From: Thoma, Eben
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: Abandoned Well discussion (and slide review)
Start Date/Time: Wed 10/21/2015 7:00:00 PM
End Date/Time: Wed 10/21/2015 8:00:00 PM
Draft Abandoned Well Presentation 10-19-15.ppt

Great!. This time is good for all. Adding draft slides (EPA version) and call-in Ex. 6 - Personal Privacy
Ex. 6 - Personal Privacy

Melissa, as discussed earlier, these slides are for EPA and the version for the gas star meeting will differ a bit but will use a lot of this. We need to get the meeting version finished soon as it needs to go through EPA clearance. We can discuss next steps and strategy in the call as we are now a month out.

Thanks,

Eben

Clint, Tracey, and Melissa,

Looking for a time to discuss abandoned wells and specifically the slides for the upcoming meeting. I am proposing Wed 10/21 3:00 pm to 4:00 pm eastern, available for Melissa and I (not sure about Clint and Tracey). Clint and Tracey proposed Tuesday between 12:00 and 3:00 pm eastern. 2:30 pm is a possibility but only for 30 min for all. Hopefully the Wed time works for all.

I will send out slides and call-in # tomorrow.

Thanks,

Eben

From: Thoma, Eben
Location: Conference call line TBD
Importance: Normal
Subject: Discussion with Eben Thoma (ORD/NRMRL) on remote measurements and EDF collboration
Start Date/Time: Tue 2/4/2014 3:00:00 PM
End Date/Time: Tue 2/4/2014 4:00:00 PM
FINAL SIGNED EPA EDF MOU.pdf
Thoma EDF Workshop 101112_finalx.pdf
Control # 2012-A-21-AWMA_033012.pdf

Bill,

Thanks for the voicemail and I look forward to connecting with your group and others in OAP on oil and gas topics and also on our landfill emission measurement project I mentioned. As requested, this invite is a first attempt to find a time to get together early in the new year. Please feel free to shift the date as needed. My calendar should be pretty much up to date.

With regard to our collaboration with EDF, I am attaching here a copy of our MOU, an invited presentation from an EDF workshop, and a conference paper. We have communicated some of this information to Melissa (copied) in the past.

In general, we are trying to keep up with what EDF is doing research-wise in this space. One of our primary mutual interests is in techniques for finding and mitigating emissions from fugitive sources. I am particularly interested in maintenance and equipment issues (things like open thief hatches, ground pipeline leaks, stuck separator dump values etc). The mobile measurement techniques we are working on can help find these issues. These near-field mobile approaches operate in the space between the more accurate on-site measurements and the "top-down" airborne techniques that are emerging.

EDF is also interested mobile and remote data as you know and it is part of their current research in this area. We are currently working with them to look at our data and compare with production levels to see what kinds of correlations could be made. We plan to co-author a journal article on this topic and you can be involved in that process. I think we can share some of the draft analysis in January. These topics will plug-in with EDFs current field efforts (i.e. October 2013 Barnett study) which you may be aware of. We are trying to keep our finger on the pulse of these studies and will weigh our results with emerging data.

In addition to the mobile work we are discussing with EDF, we have some interesting data on production pad methane and VOC measurements (mostly condensate tanks) in the Greeley CO area. The study was essentially a limited scope (1 week) version of the "City of Forth Worth Natural Gas Study" but conducted in a wet gas area. We learned some interesting things about high flow samplers and look forward to sharing.

Thanks,

Eben

From: Gunning, Paul
Location: DCRoomWJCECW4355XXOAP/DC-OAR-OAP
Importance: High
Subject: Canceled: TENTATIVE PLACEHOLDER - Methane Study Pre-brief by EDF & Colorado State U. / Call-in: Ex. 6 - Personal Privacy
Start Date/Time: Fri 8/14/2015 6:30:00 PM
End Date/Time: Fri 8/14/2015 7:30:00 PM

Cc'ing Suzie K.

From: Weitz, Melissa
Sent: Monday, July 27, 2015 5:29 PM
To: Hargrove, Anne
Subject: hold for briefing by EDF

EDF (with Colorado State University) is about to release a study on methane emissions from the natural gas gathering and processing segment (to be published 8/4) and has offered to pre-brief EPA on the results. Right now, we are aiming for Monday 8/3 at 2:30, in room 4228A (we can't use Paul's conference room because we need to use a computer/projector).

If Paul is interested/able to attend, could you send out a meeting invitation?

Thank you!
Melissa

Meeting attendees
EDF team: EDF, (CSU, lead author), 1 or 2 industry reps
EPA:
Paul Gunning
Melissa Weitz
Bill Irving
Alexis McKittrick
Suzanne Waltzer
Carey Bylin
Jameel Alsalam
Shaun Ragnauth
Mark DeFiguereido
Pamela Franklin

(on phone)
Jennifer Snyder
Eben Thoma
Alex MacPherson
Bruce Moore
David Cozzie
Amy Hambrick
Lisa Thompson

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: discussion of Barnett Series papers
Start Date/Time: Mon 7/27/2015 8:00:00 PM
End Date/Time: Mon 7/27/2015 9:00:00 PM

Setting up a time for an EPA discussion of questions we have, ideas on use of the data, etc. for the recently published Barnett Shale papers. We can also discuss whether we'd like to arrange calls with any of the authors to discuss some of the studies in more detail.

Barnett Shale Coordinated Campaign papers published in *Environmental Science & Technology*
ES&T Volume 49, Issue 13 cover:
http://pubs.acs.org/action/showLargeCover?jcode=esthag&vol=49&issue=13

Authors	Lead Institution	Title	
Harriss et al.	EDF	Using Multi-Scale Measurements to Improve Methane Emissions Estimates from Oil and Gas Operations in the Barnett Shale, Texas: Campaign Summary	http://pubs.acs.org/
Karion et al.	NOAA / CIRES	Aircraft-based Estimate of Total Methane Emissions from the Barnett Shale Region	http://pubs.acs.org/
Smith et al.	U. Michigan	Airborne ethane observations in the Barnett shale: Quantification of ethane flux and attribution of methane emissions	http://pubs.acs.org/
Johnson et al.	WVU	Methane Emissions from Leak and Loss Audits of Natural Gas Compressor Stations and Storage Facilities	http://pubs.acs.org/
Nathan et al.	UT-Dallas / Princeton	Near field characterization of methane emissions from a compressor station using a model aircraft	http://pubs.acs.org/
Lavoie et al.	Purdue	Aircraft-Based Measurements of Point Source Methane Emissions in the Barnett Shale Basin	http://pubs.acs.org/
Yacovitch et al.	Aerodyne	Mobile Laboratory Observations of Methane Emissions in the Barnett Shale Region	http://pubs.acs.org/
Lan et al.	U. Houston	Characterizing fugitive methane emissions in the Barnett Shale area using a mobile laboratory	http://pubs.acs.org/
Rella et al.*	Picarro	Measuring Emissions from Oil and Natural Gas Well Pads Using the Mobile Flux Plane Technique	http://pubs.acs.org/ *published in earlier
Townsend-Small et al.	U. Cincinnati / UC-Irvine	Integrating source apportionment tracers into a bottom-up inventory of methane emissions in an urban natural gas producing region	http://pubs.acs.org/
Zavala-Araiza et al.	EDF	Towards a Functional Definition of Methane Super-Emitters: Application to Natural Gas Production Sites	http://pubs.acs.org/
Lyon et al.	EDF	Constructing a Spatially Resolved Methane Emission Inventory for the Barnett Shale Region	http://pubs.acs.org/

To: Karimjee, Anhar[Karimjee.Anhar@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Jacobson, David[Jacobson.David@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Lawrence, Rob[Lawrence.Rob@epa.gov]; Forde, Raymond[Forde.Raymond@epa.gov]; Beeler, Cindy[Beeler.Cindy@epa.gov]; Komp, Mark[Komp.Mark@epa.gov]; Grogan-McCulloch, Lisa[Grogan-McCulloch.Lisa@epa.gov]; Tate, Ragan[Tate.Ragan@epa.gov]; Donna Lazzari[Donna.Lazzari@erg.com]; Clint Burklin[Clint.Burklin@erg.com]; Vyas, Himanshu[vyas.himanshu@epa.gov]; VanLare, Paula[VanLare.Paula@epa.gov]; McFadden, Angela[McFadden.Angela@epa.gov]; Lischinsky, Robert[Lischinsky.Robert@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Jollie, Jeff[Jollie.Jeff@epa.gov]; Kenney, James[Kenney.James@epa.gov]; Noel, John[Noel.John@epa.gov]; Cook, BrianB[Cook.BrianB@epa.gov]; Colin Hayes[Colin.Hayes@erg.com]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Frantz, Chris[Frantz.Chris@epa.gov]
Cc: Ritz, Phillip[Ritz.Phillip@epa.gov]; Mangels, Karl[Mangels.Karl@epa.gov]; Siegel, Joseph[Siegel.Joseph@epa.gov]; Casso, Ruben[Casso.Ruben@epa.gov]; Sullivan, Tim[Sullivan.Tim@epa.gov]
From: McKittrick, Alexis
Sent: Thur 9/26/2013 4:55:54 PM
Subject: GHGRP Subpart W Data Preview & Rule Update - Supporting Documents
Subpart W Rule Plan Summary 09_26_13.pdf
Subpart W 2012 Data Summary - 09-26-13.pdf

All,

Attached are the Greenhouse Gas Reporting Program Subpart W (Petroleum and Natural Gas Systems) slides that summarize the 2012 data and an updated planning document for the rule workgroup. We look forward to talking these through with everyone on the webinar at 3PM. Please let me know if you have any questions between now and then.

For your easy reference, here is the call-in and webinar information for our meeting:

Webinar - **Ex. 6 - Personal Privacy**

For audio, please use the following call-in information: **Ex. 6 - Personal Privacy**

Regards,

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Work phone (Mon - Thurs): 202-343-9153

Telework phone (Fri): 202-680-3589

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Tue 4/15/2014 8:46:22 PM
Subject: FW: new PNAS study

Hi Eben,

Great talking with you and Halley today. Below is a link to the new PNAS study. I still haven't read the supporting info yet.

Melissa

From: Weitz, Melissa
Sent: Monday, April 14, 2014 3:49 PM
To: DeLuca, Isabel; Irving, Bill; Hockstad, Leif
Cc: Franklin, Pamela; Waltzer, Suzanne; DeFigueiredo, Mark
Subject: new PNAS study

The new CH4 study is out. It's a study that was published in PNAS, not an NAS study.

Some basic info--

Title: Toward a better understanding and quantification of methane emissions from shale gas development

Authors: Purdue led the data collection (small aircraft measurements) and Cornell led the analysis (Howarth). NOAA was also involved.

Summary: Aircraft measurements were taken in PA at the regional and component (well pad) level. The study observed similar regional emissions as bottom up inventories, but identified

large pre-production (drilling stage, pre-completion) emissions at several well pads. Pre-production emissions are generally thought to be insignificant, and this is the first paper that raises this issue, as far as I'm aware.

Link: http://www.pnas.org/content/early/2014/04/10/1316546111.full.pdf+html

I can send a more information once I have a chance to review in detail.

To: Thoma, Eben[Thoma.Eben@epa.gov]; Brantley, Halley[Brantley.Halley@epa.gov]
From: Weitz, Melissa
Sent: Tue 4/15/2014 4:05:05 PM
Subject: slides for today's call
OAP CH4 Data Summary - ORD call 4-15-14.pptx

Hello,

Please see attached on GHG Inventory and GHGRP.

Melissa

To: Thoma, Eben[Thoma.Eben@epa.gov]; McKain, Kathryn[McKain.Kathryn@epa.gov]
Cc: Brantley, Halley[Brantley.Halley@epa.gov]
From: Weitz, Melissa
Sent: Thur 6/19/2014 3:16:02 PM
Subject: RE: ORD methane work

Sure--

Ex. 6 - Personal Privacy

From: Thoma, Eben
Sent: Thursday, June 19, 2014 9:50 AM
To: Weitz, Melissa; McKain, Kathryn
Cc: Brantley, Halley
Subject: RE: ORD methane work

Melissa,

It turns out I need to call in from an alternate location. Would you be so kind to set up a line?

Many thanks,

Eben
-----Original Appointment-----
From: Weitz, Melissa
Sent: Thursday, June 12, 2014 5:49 PM
To: Weitz, Melissa; Thoma, Eben; McKain, Kathryn
Subject: ORD methane work
When: Thursday, June 19, 2014 3:30 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where:

Hi Eben,

Kathryn McKain is joining OAP for the summer. She is a PhD student, working on atmospheric methane measurements (including some work with EDF). I'd like to introduce you to her and was hoping you could give her an overview of the work that ORD is doing in this area. Let me know if this time slot works.

Thanks!
Melissa

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Fri 5/30/2014 4:22:59 PM
Subject: RE: OTM 33A paper draft (CH4 from oil and gas well pads)
OTM 33A OG CH4_QT10002_1_2014528 mw.docx

Hi Eben,

Ex. 5 - Deliberative Process

Thanks! I'm around all afternoon and happy to talk if you have a chance.

Melissa

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Thoma, Eben
Sent: Wednesday, May 28, 2014 1:44 PM
To: Dewees, Jason; Segall, Robin; Frantz, Chris; Weitz, Melissa
Cc: Brantley, Halley
Subject: OTM 33A paper draft (CH4 from oil and gas well pads)

All,

As mentioned, here is a draft of Halley's OTM 33A oil and gas methane paper. This is provided mostly fro your information but we appreciate comments if you have time. Please don't distribute this widely as it is still in our Admin review process.

Thanks,

Eben

Eben Thoma, Ph.D.

U.S. Environmental Protection Agency

Office of Research and Development

National Risk Management Research Laboratory

109 TW Alexander Drive (M/S E343-02)

Research Triangle Park, NC 27711

Phone: 919-541-7969

Fax: 919-541-0359

Email: thoma.eben@epa.gov

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: Overview of "Improved mechanistic understanding of natural gas methane emissions from spatially-resolved aircraft measurements"
Start Date/Time: Wed 6/7/2017 6:30:00 PM
End Date/Time: Wed 6/7/2017 7:30:00 PM

Stefan Schwietzke has offered to give us an overview of his recently published work on aircraft measurements of methane from oil and gas.

http://pubs.acs.org/doi/pdf/10.1021/acs.est.7b01810

Abstract

Divergence in recent oil and gas related methane emission estimates between aircraft studies (basin total for a midday window) and emissions inventories (annualized regional and national statistics) indicate the need for better understanding the experimental design, including temporal and spatial alignment and interpretation of results. Our aircraft based methane emission estimates in a major US shale gas basin resolved from West to East show (i) similar spatial distributions for two days, (ii) strong spatial correlations with reported NG production (R2 =0.75) and active gas well pad count (R2 =0.81), and (iii) 2x higher emissions in the Western half (normalized by gas production) despite relatively homogeneous dry gas and well characteristics. Operator reported hourly activity data show that midday episodic emissions from manual liquid unloadings (a routine operation in this basin and elsewhere) could explain ~1/3 of the total emissions detected midday by the aircraft and ~2/3 of the West-East difference in emissions. The 22% emission difference between both days further emphasizes that episodic sources can substantially impact midday methane emissions and that aircraft may detect daily peak emissions rather than daily averages that are generally employed in emissions inventories. While the aircraft approach is valid, quantitative and independent, our study sheds new light on the interpretation of previous basin scale aircraft studies, and provides an improved mechanistic understanding of oil and gas related methane emissions.

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: Overview of updates in public review draft of 1990-2016 GHG Inventory
Start Date/Time: Wed 1/3/2018 6:00:00 PM
End Date/Time: Wed 1/3/2018 7:00:00 PM
3.5 Abandoned Oil and Gas_Wells for EPA review 12.21.2017.docx
3.6 Petroleum Systems_for EPA review 12.21.17.docx
3.7 Natural Gas Systems_for EPA review 12.21.17.docx

Updated to include draft GHG text for review

On this call, we will give an overview of the changes that have been made in the public review draft, compared to last year's GHG Inventory.

I'll send around draft text for the 1990-2016 GHG Inventory public review draft for your review when it is ready (today (12/20) or tomorrow) for comment/edits by January 8th.

Thanks so much for your review of updates to the GHG Inventory!

To: Macpherson, Alex[Macpherson.Alex@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Thompson, Lisa[Thompson.Lisa@epa.gov]; Witt, Jon[Witt.Jon@epa.gov]; Witosky, Matthew[Witosky.Matthew@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Eisele, Adam[Eisele.Adam@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Shine, Brenda[Shine.Brenda@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Gamas, Julia[Gamas.Julia@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
From: Weitz, Melissa
Sent: Tue 5/30/2017 3:04:47 PM
Subject: Abandoned Wells in the GHG Inventory
2018 GHGI DRAFT Revision - Abandoned Wells_2017-05-30 for EPA review.docx

Hello,

Thank you for your feedback on updates in the 2017 GHG Inventory. We're starting on updates for next year's GHG Inventory and would like to get your feedback.

Ex. 5 - Deliberative Process

If you are interested in reviewing, please send me any comments on the memo by COB Monday. I will also set up a call this week to walk through the update.

Thank you!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Tue 8/16/2016 8:03:12 PM
Subject: FW: EPA feedback from July 11 GHG Monitoring Meeting
request to agencies on GHG monitoring (EPA v2).docx

Hi Eben,

This is what was sent over in response to OSTP's request. I've cut and pasted the GHG Source Research part below. I believe Andy sent it over to Bill last week.

Is this consistent with what you were planning to send over? Do you have any questions or edits? I'm not totally clear on how this was all pulled together in the end, but I think it came from Andy and probably had your input?

Thanks!

Melissa

Ex. 5 - Deliberative Process

From: Irving, Bill
Sent: Monday, August 08, 2016 5:08 PM
To: Wuebbles, Donald J. EOP/OSTP Ex. 6 - Personal Privacy
Cc: Gunning, Paul <Gunning.Paul@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; Miller, Andy <Miller.Andy@epa.gov>; Birnbaum, Rona <Birnbaum.Rona@epa.gov>; Rakestraw, Andrew R <RakestrawAR@state.gov>; Kuperberg, Michael <Michael.Kuperberg@science.doe.gov>; Dickinson, Tammy
Ex. 6 - Personal Privacy Benjamin DeAngelo <bdeangelo@usgcrp.gov>;

Ex. 6 - Personal Privacy

Subject: EPA feedback from July 11 GHG Monitoring Meeting

Don

Attached is a document outlining EPA's responses to the four questions raised in the background paper. The content reflects input from our Office of Air and Radiation (Office of Atmospheric Programs), and the Office of Research and Development. We available to discuss if you have any questions or feedback. Many thanks for convening the process.

Regards,

Bill Irving

To: Cozzie, David[Cozzie.David@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Thompson, Lisa[Thompson.Lisa@epa.gov]; Witt, Jon[Witt.Jon@epa.gov]; Witosky, Matthew[Witosky.Matthew@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Eisele, Adam[Eisele.Adam@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Shine, Brenda[Shine.Brenda@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Gamas, Julia[Gamas.Julia@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]
From: Weitz, Melissa
Sent: Tue 1/31/2017 4:01:11 PM
Subject: GHG Inventory public review text for oil and gas
3.6 Petroleum Systems_2017-01-31 for EPA review.docx
3.7 Natural Gas Systems 1.31 for EPA review.docx

Hello-

We have a public review draft of the updated 2017 GHG Inventory almost ready to go. I've attached the natural gas and petroleum text. Thank you for your feedback as we developed the memos on updates under consideration.

If anyone is interested in reviewing the text before the draft is released, please send me your edits/comments by this Thursday COB.

I'm happy to discuss any of the updates or any questions you have, just let me know.

Thank you!

Melissa

202-343-9897

To: Aileen Nowlan[anowlan@edf.org]; David Lyon[dlyon@edf.org]; ralvarez@edf.org[ralvarez@edf.org]; Thoma, Eben[Thoma.Eben@epa.gov]; Joe King[joseph.king@hq.doe.gov]
Cc: Allen Waxman[awaxman@multisensorscientific.com]
From: Allen Waxman
Sent: Sun 11/13/2016 6:34:14 PM
Subject: Fwd: Your Comment Submitted on Regulations.gov (ID: EPA-HQ-OAR-2016-0346-0001)
[WARNING: DKIM validation failed]

Dear EDF, EPA, and ARPA-E contacts,

FYI, I have submitted a response to the EPA RFI regarding emerging technologies for gas leak detection. Copy of the comment is shown below in the receipt. I uploaded 2 public documents that I've shared with you previously. I also snail-mailed a CD-ROM with confidential test results from our recent SwRI testing, sponsored by the EDF. That includes side-by-side comparisons with a FLIR GR320 gas camera (emailed to some of you separately).

We continue to seek funding opportunities to develop our cost effective fixed site monitoring solution. Recently submitted a proposal to Natural Resources Canada together with our Canadian strategic partner. We will also submit a proposal to the Alberta provincial government under their new Emissions Reduction Alberta (ERA) solicitation. And we are negotiating an investment from our German strategic partner. We have recently received a small offer from a Boston area angel group. But would very much appreciate any assistance from US agencies, both governmental and NGOs. Your help would be much appreciated.

Note: There is a typo in the comment submitted below. The typo appears in the statement "performance requirements for OGI equipment listed in 40 CFR Part 60 subpart OOOOa section 60.5397a9[c](7)(i)(B)", where the long section number should not include the "9". The website did not allow for editing after reviewing comments before submission.

Thanks for your interest ... allen

Allen Waxman, Ph.D.
MultiSensor Scientific, Inc.
Greentown Labs
28 Dane Street
Somerville, MA 02143
Mobile: 617-797-3636
Email: awaxman@multisensorscientific.com
Website: www.multisensorscientific.com

---------- Forwarded message ----------
From: **Regulations.gov** <no-reply@regulations.gov>
Date: Sun, Nov 13, 2016 at 1:07 PM
Subject: Your Comment Submitted on Regulations.gov (ID: EPA-HQ-OAR-2016-0346-0001)
To: awaxman@multisensorscientific.com

Please do not reply to this message. This email is from a notification only address that cannot accept incoming email.

Your comment was submitted successfully!

Comment Tracking Number: 1k0-8t0i-z9za

Your comment may be viewable on Regulations.gov once the agency has reviewed it. This process is dependent on agency public submission policies/procedures and processing times. Use your tracking number to find out the status of your comment.

Agency: Environmental Protection Agency (EPA)
Document Type: Nonrulemaking
Title: Requests for Information: Oil and Natural Gas Sector; Emerging Technologies
Document ID: EPA-HQ-OAR-2016-0346-0001

Comment:
MultiSensor Scientific (MSS), Inc., submits comments regarding (a) its new multispectral infrared technology for natural gas leak imaging & quantification, and (b) the performance requirements for OGI equipment listed in 40 CFR Part 60 subpart OOOOa section 60.5397a9[c](7)(i)(B).

(a) MSS is a startup that in the past 18 months developed and tested a new approach to gas leak imaging & quantification that has significant advantages over existing commercial OGI products. These advantages include: detection of gas leaks without any temperature difference required (this is a non-thermal imager, using sunlight or artificial illumination but not lasers), ability to image gas leaking through the ground from underground pipes, ability to image through high humidity, mist, and fog (tested in a fog chamber), quantifies gas column density and overlays these automated detections on a visible color image for ease of use, quantifies leak rate (methane mass flow in grams/minute) and estimates hole size (by analyzing the gas jet image, requires knowing the approximate line pressure), does not require cryogenic cooling (uses more reliable thermo-electric cooling), and integrates weather & range information with the simple user interface that runs on a tablet. We have conducted extensive lab and field testing of our prototype under a wide variety of conditions (hole sizes and shapes, pressures, illumination conditions, wind speeds, distances, background materials), and recently conducted side-by-side comparison tests with a FLIR GF320 OGI camera under field conditions - the imagery is very revealing. Attached are 2 documents that describe and illustrate our technology, and provide answers to anticipated questions (released publicly through the Oil & Gas Innovation Center). We have submitted separately by CD-ROM a confidential & proprietary document that summarizes testing conducted recently at the Southwest Research Institute, sponsored by the EDF, which includes side-by-side comparisons between our MSS vs. FLIR OGI imagery. Our current prototype is specific to methane, rejecting other hydrocarbons and water vapor. Our approach will be extended to include key VOCs, being able to detect and quantify each hydrocarbon in a mixture of methane, ethane, propane, and butane. Our current prototype is in the format of a portable video camera, but we will develop a much lower-cost

version suitable for installed monitoring of fixed sites like well pads, compressors and storage tanks, enabling daily/nightly scans for fugitive emissions in a fully automated fashion, linking back to a control facility an alert with quantified imagery when a leak is detected. This fixed site monitoring capability can achieve all the goals set out by the ARPA-E MONITOR program, although we are not a funded program participant. In the attached technical briefing, on slide 13, we show examples of lab tests in which our prototype detects & quantifies leaks from round hole orifices (as small as 0.1mm), slot orifices (as small as 20microns x 1cm long), and a loose flange. Using 99% methane or municipal natural gas feed, we detect methane mass flows down to 1gram/min (i.e., 60 gr/hour). We have also demonstrated imaging of municipal gas leaks from underground pipes in the Boston area.

(b) The OGI equipment requirements specified in 40 CFR Part 60 subpart OOOOa section 60.5397a9[c](7)(i)(B) are not representative of the actual performance needs of the oil & gas industry in field operations. The requirement is derived from lab tests conducted for the EPA designed to determine the minimum detectable leak rates of FLIR and Opgal OGI cameras, taken under conditions favorable to those thermal imagers. The requirement specifies a mixture of half propane and half methane, at a concentration of only 1% (10,000ppm) but at a mass flow rate of hydrocarbon of 60 g/hr (1 gram/min) which implies a very high volume flow rate of the order 50 liters/min (3000 liter/hr). The posted tech support documents for Optical Gas Imaging Protocol (40 CFR Part 60, Appendix K) describe the tests, which did not use methane but instead a mix of propane & butane, suggestive of VOCs but not methane. The parameters of the testing did not document the line pressure, but instead used Reynolds number which is an indicator of output flow velocity and hole size (but not pressure or density). The 10,000ppm test requirement may stem from the legacy Method 21 requirement on gas "sniffers" (e.g., PID, FID, TVA devices). This is indicative of diluted concentrations, but not column densities of gas as sensed by an imaging device. The requirement should specify detection of a leak at 80% concentration at the source, and hole sizes and pressures relevant to field conditions. The affect of this requirement is to shut out OGI solutions that address the need, but are not as sensitive as cryo-cooled MWIR under irrelevant conditions. This has become an unfair advertising advantage to the incumbent.

Uploaded File(s):

- MSS_LIQS-Q&A.pdf
- MSS_LIQS-Tech.pdf

For further information about the Regulations.gov commenting process, please visit https://www.regulations.gov/faqs.

To: Thoma, Eben[Thoma.Eben@epa.gov]; Thompson, Lisa[Thompson.Lisa@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Miller, Elizabeth[Miller.Elizabeth@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Shine, Brenda[Shine.Brenda@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Gamas, Julia[Gamas.Julia@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Goehl, Eric[Goehl.Eric@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]
From: Weitz, Melissa
Sent: Sun 4/10/2016 8:50:04 PM
Subject: GHG Inventory files for EPA review
ANNEX 3 5 Petroleum Systems_04092016 for EPA review.docx
ATT00001.htm
ANNEX 3 6 Natural Gas Systems_04102016 for EPA_review.docx
ATT00002.htm
3 6 Petroleum Systems_0410 for EPA review.docx
ATT00003.htm
3 7 Natural Gas Systems_04010 for EPA review.docx
ATT00004.htm

My apologies for the long documents and quick turn request.

The final GHG inventory is due to be submitted to the UN on Friday.
The main body text and annexes for natural gas and petroleum systems are attached. These include no revisions that we haven't previously discussed, but you may be interested in reviewing the write up.

Ex. 5 - Deliberative Process

If anyone has any questions or would like to discuss anything, just let me know.

Thank you!

Melissa

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Tue 11/29/2016 5:36:07 PM
Subject: publication of paper on gridded CH4 inventory

Hi Eben,

I hope you had a nice Thanksgiving!

I wanted to let you know that our work with Harvard on gridding the CH4 emissions in the GHG Inventory has been published.

Sorry-I meant to give you a heads up on this earlier and the paper ended up being published about a month sooner than we expected!

More information, and a link to the paper itself can be found on our website below.

https://www.epa.gov/ghgemissions/gridded-2012-methane-emissions

Please let me know if you have any questions or would like to discuss.

Best,

Melissa

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Thompson, Lisa[Thompson.Lisa@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]
From: Weitz, Melissa
Sent: Mon 8/24/2015 4:08:46 PM
Subject: Slides from EDF technical briefing on gathering and processing study
GP-Pre-Brief-081715-epa-tech2.pptx

-----Original Appointment-----
From: Weitz, Melissa
Sent: Thursday, July 30, 2015 2:29 PM
To: Weitz, Melissa; DeFigueiredo, Mark; McKittrick, Alexis; Waltzer, Suzanne; Bylin, Carey; Thoma, Eben; Thompson, Lisa; Hambrick, Amy; Moore, Bruce; Macpherson, Alex; Snyder, Jennifer
Cc: Irving, Bill
Subject: adding webinar link-- EDF technical briefing on gathering and processing study
When: Monday, August 17, 2015 4:00 PM-5:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomWJCS4228AOAP/DC-OAR-OAP

Call in Ex. 6 - Personal Privacy

Webinar link:
Ex. 6 - Personal Privacy

To: Behrens, Jonathan R "Jonny"[jbehrens@ida.org]; Irving, Bill[Irving.Bill@epa.gov]
Cc: Clavin, Christopher T[cclavin@ida.org]; Dacus, Laurie A[ldacus@ida.org]; Thoma, Eben[Thoma.Eben@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; James.Bradbury@Hq.Doe.Gov[James.Bradbury@Hq.Doe.Gov]
From: Gunning, Paul
Sent: Thur 9/29/2016 5:45:49 PM
Subject: RE: Invitation to DOE Workshop on Research Strategies to Address Oil and Gas Sector Methane Emissions

Thanks for following up Jonny. I believe that Bill Irving has been in touch with James on this. While unfortunately I will not be able to attend, EPA will be happy to participate and will provide two speakers for the topics that have been identified.

Best Regards,

Paul

From: Behrens, Jonathan R "Jonny" [mailto:jbehrens@ida.org]
Sent: Wednesday, September 28, 2016 4:12 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Cc: Clavin, Christopher T <cclavin@ida.org>; Dacus, Laurie A <ldacus@ida.org>; Thoma, Eben <Thoma.Eben@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Invitation to DOE Workshop on Research Strategies to Address Oil and Gas Sector Methane Emissions

Dear Mr. Gunning and Mr. Irving,

I work with the Science and Technology Policy Institute, a Federal research center, who is supporting James Bradbury in organizing the upcoming Department of Energy's Office of Energy Policy and Systems Analysis (DOE EPSA) workshop on October 13 and 14.

We are working to finalize our list of speakers in the upcoming week and would appreciate if you could **reply with a confirmation if you are able to attend and present at the workshop or if**

you are unavailable. We respectfully request your RSVP by Monday October 3.

If you have additional questions, please feel free to contact me at jbehrens@ida.org or 202-419-5408.

Sincerely,

Jonny Behrens

--

Jonathan Behrens

Science Policy Fellow

IDA Science and Technology Policy Institute

(202) 419-5408

jbehrens@ida.org

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Monday, September 26, 2016 4:36 PM
To: Bradbury, James <James.Bradbury@Hq.Doe.Gov>
Cc: Clavin, Christopher T <cclavin@ida.org>; Behrens, Jonathan R "Jonny" <jbehrens@ida.org>; Dacus, Laurie A <ldacus@ida.org>; Cunliff, Colin (FELLOW) <Colin.Cunliff@hq.doe.gov>
Subject: RE: Invitation to DOE Workshop on Research Strategies to Address Oil and Gas Sector Methane Emissions

Dear Colleague,

Greetings! This email is a friendly reminder that we hope you can join us for the upcoming DOE workshop on research strategies to address oil and gas sector methane emissions. If you have already responded to confirm or decline, thank you very much for doing so! If not, please take a moment to RSVP through the provided link (below).

We hope to see you in Alexandria, VA, in just a few short weeks (October 13-14, 2016)!

If you have any questions, please don't hesitate to contact Laurie Dacus (ldacus@ida.org).

Best regards,

James

--

James Bradbury

Senior Policy Adviser for Climate, Environment and Efficiency

Office of Energy Policy and Systems Analysis

U.S. Department of Energy

Phone: 202-586-0683

From: Bradbury, James
Sent: Monday, September 19, 2016 4:19 PM
To: James Bradbury (James.Bradbury@Hq.Doe.Gov) <James.Bradbury@Hq.Doe.Gov>
Cc: 'cclavin@ida.org' <cclavin@ida.org>; 'jbehrens@ida.org' <jbehrens@ida.org>; 'ldacus@ida.org' <ldacus@ida.org>; Colin Cunliff (FELLOW) (Colin.Cunliff@hq.doe.gov) <Colin.Cunliff@hq.doe.gov>
Subject: Invitation to DOE Workshop on Research Strategies to Address Oil and Gas Sector Methane Emissions

Dear Colleague,

The Department of Energy's Office of Energy Policy and Systems Analysis (DOE EPSA) is

convening a workshop that will focus on identifying key research opportunities for the development, demonstration and deployment of methane sensing technologies and applications in the oil and natural gas sectors. Key stakeholders, including federal and state government officials, industry, researchers, and technology vendors, will be brought together to discuss recent innovations in measurement and monitoring technology, modeling techniques, data management, data needs and systems integration critical to mitigating methane emissions to levels consistent with meeting national climate goals. The goal of this workshop is to identify priority areas for Federal research to help improve methane emission inventories, enable operational reductions in fugitive emissions, and further inform atmospheric methane measurement capabilities.

This workshop will be held from 8:30 am on October 13th, 2016 to 12:30 pm on October 14th, 2016 and will be located at the Institute for Defense Analyses (4850 Mark Center Drive, Alexandria, VA). **Additional information and background, including a draft agenda, is attached**.

Given your interest in methane emissions measurement and abatement opportunities and involvement in the oil and natural gas sector, we cordially invite you to attend this workshop. Furthermore, to the extent that your schedule allows, we invite you to participate in facilitated discussions on both days of the workshop to help us achieve our workshop goals. Your input is highly valued and appreciated.

RSVP through the provided link Ex. 6 - Personal Privacy **by September 26th, 2016** and direct any questions to Laurie Dacus (ldacus@ida.org).

Due to space limitations, this invitation is non-transferrable. Please contact Laurie if you would like to recommend another person from your organization to attend in your stead.

Please do not hesitate to reach out if you have any questions. We hope to see you in October in Virginia.

Best Regards,

James Bradbury

--

James Bradbury

Senior Policy Adviser for Climate, Environment and Efficiency

Office of Energy Policy and Systems Analysis

U.S. Department of Energy

Phone: 202-586-0683

From: Weitz, Melissa
Location: WebEx and Telecon: Ex. 6 - Personal Privacy
Importance: Normal
Subject: FW: DOE Methane Quantification Activity Discussion
Start Date/Time: Thur 3/31/2016 3:00:00 PM
End Date/Time: Thur 3/31/2016 4:00:00 PM

-----Original Appointment-----
From: Skone, Timothy J. [mailto:Timothy.Skone@NETL.DOE.GOV]
Sent: Tuesday, March 29, 2016 1:28 PM
To: Skone, Timothy J.; Weitz, Melissa; Marriott, Joseph M. (CONTR); Littlefield, James A. (CONTR); Smistad, Eric T.; Remson, Donald J.; Morgan, David J.; Pekney, Natalie J.
Subject: DOE Methane Quantification Activity Discussion
When: Thursday, March 31, 2016 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: WebEx and Telecon: Ex. 6 - Personal Privacy

Join WebEx meeting

Meeting number:
Meeting password:

Ex. 6 - Personal Privacy

Join by phone

Ex. 6 - Personal Privacy

Methane Quantification Workgroup:

The purpose of this meeting is to review the following three activities and discuss the strategy for each. The focus will be on the first two activities for this call. In addition, NETL will provide a quick overview of the EDF Synthesis Paper's key findings as it related to the Uncertainty Analysis work.

- *Time Series Modeling Investigation of Industry Changes to Emission Factors and Activity Data (EPA GHGI Priority)* The natural gas industry's emission sources and magnitude of emission is rapidly evolving under both regulatory and voluntary actions to reduce methane emissions. The purpose of this activity is to evaluate the data availability and representativeness for informing the GHGI modeling of the appropriate temporal changes in key emission factors and activity data. This information will be used to determine when updated emission factors are developed and to what extent the change should be

implemented in the GHGI time series update process conducted annually by EPA. Recommendations will be provided to the EPA GHGI Team on the data available for key emission sources to determine the time period and magnitude of change in emission factors and activity data. A list of data gaps/challenges will be identified and provided to EPA with a recommended strategy for incorporating time series changes.

- *Life Cycle Analysis & Annual Natural Gas Sector Methane Emission Studies (EPA GHGI Priority)* The body of scientific knowledge of methane emissions is continually evolving through a wide range of external and internal-DOE funded field measurement research. This effort will utilize the results of recent field measurements studies to improve upon the characterization of uncertainty for key methane contributions across the life cycle of the natural gas value chain. NETL will utilize the life cycle emissions modeling of the Environmental Defense Fund (EDF) methane field research to improve upon the uncertainty characterization within the GHGI. NETL will also evaluate the findings from the concurrent field research efforts internal to NETL as they become available to add to the body of knowledge on emission factors and representative characterization of uncertainty. The existing life cycle framework will be used to assess uncertainty and provide a report recommending updates to the GHGI.

EPA notes that the most recent uncertainty analysis for the natural gas and petroleum systems emissions estimates in the GHGI was conducted for the 1990-2009 GHG Inventory that was released in 2011. Since the analysis was last conducted, several of the methods used in the GHGI have changed, and industry practices and equipment have evolved. In addition, new studies note the presence of superemitters in many segments. An updated uncertainty analysis that takes into account superemitters could be used to improve the uncertainty ranges in the GHGI.

- *Technical Outreach on Analytical Tools and Techniques for Field Measurement & Data Collection* As rapidly as the natural gas industry's methane emissions are evolving, the tools and techniques to quantify these emission are changing. The objective of this activity is to categorize and characterize field measurement tools and techniques that are commercially available and near-commercial availability. The knowledge base will provide a public resource for both domestic and international efforts designing strategies for methane quantification. This effort will also provide educational assistance in how to integrate field measurements in to a life cycle analysis emission modeling framework.

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Allen, David T
Sent: Wed 9/30/2015 11:23:41 PM
Subject: RE: ARPA-E MONITOR Program: RFI on Independent Field Testing of Methane Emissions Detection Technologies

Thanks Eben – I'll be reviewing it and considering a response.

Dave

From: Thoma, Eben [mailto:Thoma.Eben@epa.gov]
Sent: Wednesday, September 30, 2015 3:00 PM
To: Harrison, Matt; Allen, David T
Subject: FW: ARPA-E MONITOR Program: RFI on Independent Field Testing of Methane Emissions Detection Technologies

Hi Matt and Dave,

I just wanted to make sure you were aware of this RFI.

Thanks,

Eben

From: Gorence, Nathaniel [mailto:Nathaniel.Gorence@Hq.Doe.Gov]
Sent: Wednesday, September 30, 2015 3:11 PM
Cc: Willson, Bryan <Bryan.Willson@Hq.Doe.Gov>; Lewis, AnneMarie (CONTR) <AnneMarie.Lewis@Hq.Doe.Gov>; Konek, Christopher (CONTR) <Christopher.Konek@Hq.Doe.Gov>; Fischer, Adam (CONTR) <Adam.Fischer@Hq.Doe.Gov>
Subject: ARPA-E MONITOR Program: RFI on Independent Field Testing of Methane Emissions Detection Technologies

All,

On behalf of ARPA-E's MONITOR team, I wanted to let you know that today we released a RFI on field test site considerations for methane detection technologies. As a reminder, a brief summary of the MONITOR program and the request is as follows:

The Advanced Research Projects Agency – Energy (ARPA-E) is considering providing financial assistance for operation of a multi-user field test site of (including some construction) for priority use by its MONITOR (Methane Observation Networks with Innovative Technology to Obtain Reductions) program awardees. ARPA-E is seeking information on associated capabilities, costs, and other considerations for operating such a field test site. The MONITOR program will support 11 project teams over three years (totaling $30M) to develop technologies focused on the detection, quantification, and localization of methane emissions. The field test site would enable MONITOR awardees to assess the technical performance of their technologies under realistic conditions on a simulated natural gas well pad.

Additional information, including the full RFI and submission instructions, can be found attached above and here. Please note the deadline for submissions is November 13, 2015.

Please don't hesitate to reach out to any of the MONITOR team members with questions about the RFI—or the MONITOR program more generally.

We look forward to your feedback and continued collaboration.

All the best,

Nate

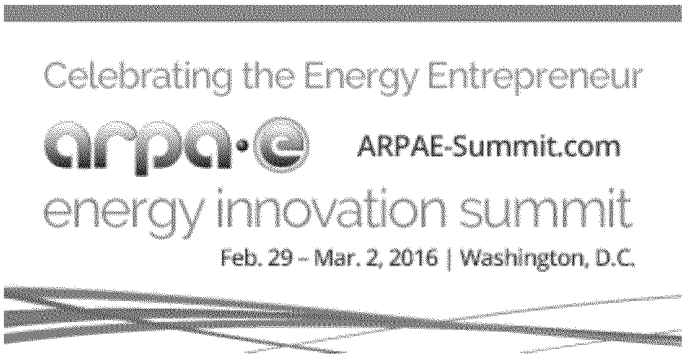
Nate Gorence

Technology-to-Market Advisor

Advanced Research Projects Agency for Energy (ARPA-E)

Mobile: 301.448.7189 | Office: 202.287.5522

nathaniel.gorence@hq.doe.gov



To: Thoma, Eben[Thoma.Eben@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/15/2016 8:07:54 PM
Subject: FW: Aliso Canyon Presentation by Dr. Stephen Conley
Conley_Presentation_ARB (1).pdf

From: Saracino, Ray
Sent: Tuesday, June 14, 2016 8:01 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Aliso Canyon Presentation by Dr. Stephen Conley

Melissa – Here are the slides from Stephen Conley's Aliso Canyon presentation last week at California's Methane Symposium. FYI. I got these off the internet, so they are publicly available. - Ray

Ray Saracino, Industry Clean Energy Lead | Clean Energy and Climate Change Office
USEPA Region 9 (AIR-9) | 75 Hawthorne Street | San Francisco, CA 94105
(415) 972-3361 | saracino.ray@epa.gov | http://www2.epa.gov/cleanpowerplan

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Mon 7/27/2015 10:07:55 PM
Subject: RE: Abstract for Abandoned Wells Presentation
Potential Methane Emissions from Abandoned Wells_072315 mw.docx

Hi Eben,

Ex. 5 - Deliberative Process

Let me know if you'd like to talk about this. Thanks! And thanks again for all of your input on today's call.

Melissa

From: Clint Burklin [mailto:Clint.Burklin@erg.com]
Sent: Monday, July 27, 2015 11:12 AM
To: Pekney, Natalie J.; Weitz, Melissa
Cc: Tracey Footer; Thoma, Eben
Subject: Abstract for Abandoned Wells Presentation

Melissa,

Eben Thoma and I are collaborating on the attached presentation for submittal to the upcoming GasSTAR conference in November. The call for papers is shown below. Please let us know if there are items that you want us to consider or stress in the presentation.

Natalie,

Eben mentioned that since the conference was in Pittsburg, you may want to attend. He also suggested that you may want to "put in something related to your work." Please let us know if there are points that we should include about your work. At the moment I was only planning to mention the published work of Mary Kang on abandoned wells.

Thanks,

Clint

Clinton E. Burklin, P.E. ERG

1600 Perimeter Park Drive, Suite 200

Morrisville, NC 27560, USA

P: +1.919 468-7874

CALL FOR ABSTRACTS DEADLINE REMINDER- 2015 Natural Gas STAR Implementation Workshop

REG
and
CAL
FOR
ABS

201
Natu
Gas
STA
Ann
Imp

Wor

Sher Pittsl Hotel at Static Squa Pittsl PA USA Nove 16-18, 2015

Mark your calen We are pleas to anno that the 2015 Natur Gas STAF Annu Imple Work will be held in Pittsb PA on Nove 16-18. This year's works come at a time of heigh intere in meth

emiss
and
is a
forum
for
sharir
soluti
and
cuttin
edge
techn
and
practi
to
reduc
emiss
The
works
will
featu
dome
and
intern
Partn
Comp
speak
sharir
their
innov
appro
to
reduc
metha
emiss
Agen
topics
will
cover
a
range
of
issue
such
as:

- Adva
Techı
for
Metha
Emiss
Detec
and
Quan

- Makir the Busin Case for Focus Metha Mana

- Captu and Use of Metha for Onsit Powe Gene

More than 150 partic gathe at the last imple works to netwo share inforn and celeb the achie of Natur Gas STAF Partn

CAL FOR TEC PRE DEA TO SUB IS

JUL
31

From: Weitz, Melissa
Location: DCRoomWJCS4228AOAP/DC-OAR-OAP
Importance: Normal
Subject: GHG Inventory updates under consideration for Production and Gathering and Boosting
Start Date/Time: Wed 1/27/2016 4:00:00 PM
End Date/Time: Wed 1/27/2016 5:00:00 PM
DRAFT Proposed Revision to NG Gathering-Boosting Segment Emissions_2015-01-22 for EPA review.docx
DRAFT Proposed Revision to Production Segment_Emissions_2015-01-22 for EPA review.docx

Attaching draft memos.

To keep the GHGI on schedule, we are trying to get these memos posted for review as soon as possible. We'll walk through the contents of the memos on the webinar and you can provide feedback during the webinar. We'd also appreciate any edits/comments you have on the memos by February 1 so that we can post the memos for review shortly after.

Thank you for your continued input to the GHGI!

This webinar will walk through the updates we are considering for the production and gathering and boosting segments in the GHG inventory.

Call in **Ex. 6 - Personal Privacy**

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/15/2016 4:04:13 PM
Subject: FW: Agenda for EPA - SoCal Gas Aliso Canyon Meeting

From: Saracino, Ray
Sent: Tuesday, June 14, 2016 7:22 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Agenda for EPA - SoCal Gas Aliso Canyon Meeting

Melissa – A few updates from the earlier version. I haven't shared this with SoCalGas, this is just to keep us on track and help me manage the time. Feel free to share with Mark and Eben. - Ray

EPA - SoCal Gas Aliso Canyon Meeting

June 15 from 9 – 10 AM

Ex. 6 - Personal Privacy (Rincon Room)

The **purpose** of this meeting is to discuss the climate aspects of the Aliso Canyon natural gas leak. Specifically, we'd be interested to hear SoCalGas' perspective on the monitoring, quantification and mitigation of the released methane.

Draft Agenda

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Meeting Invitees:

Ex. 5 - Deliberative Process

EPA: Melissa Weitz, Ben Machol, Ken Davidson, Michael Flagg, Ray Saracino, Mark DeFigueiredo, Eben Thoma

Ray Saracino, Industry Clean Energy Lead | Clean Energy and Climate Change Office
USEPA Region 9 (AIR-9) | 75 Hawthorne Street | San Francisco, CA 94105
(415) 972-3361 | saracino.ray@epa.gov | http://www2.epa.gov/cleanpowerplan

To: Thoma, Eben[Thoma.Eben@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/15/2016 3:49:21 PM
Subject: Fwd: SoCalGas Delivers on Commitment to Conduct Thorough Measurement of Emissions from Aliso Canyon Leak
5 26 16 SoCalGas Delivers on Commitment to Conduct Thorough Emissions Measurement of Aliso Canyon Leak.pdf
ATT00001.htm

Additional info for call with SoCalGas.

As additional background (sorry meant to touch base with you all beforehand), this discussion with SoCalGas is meant to inform the report of the task force on natural gas safety storage. Ray and I are drafting parts of the report and I'll share that with you soon.

Melissa

Sent from my iPhone

Begin forwarded message:

From: "Saracino, Ray" <Saracino.Ray@epa.gov>
Date: June 15, 2016 at 11:43:38 AM EDT
To: "Weitz, Melissa" <Weitz.Melissa@epa.gov>, "Machol, Ben" <Machol.Ben@epa.gov>
Subject: FW: SoCalGas Delivers on Commitment to Conduct Thorough Measurement of Emissions from Aliso Canyon Leak

FYI

From: Minter, George I [mailto:GIMinter@semprautilities.com]
Sent: Wednesday, June 15, 2016 8:03 AM
To: Saracino, Ray <Saracino.Ray@epa.gov>
Cc: Haines, Deanna <DHaines@semprautilities.com>
Subject: FW: SoCalGas Delivers on Commitment to Conduct Thorough Measurement of Emissions from Aliso Canyon Leak

I want to share with you that SoCalGas did announce the conclusion of our storage shut in study determining the volumes of methane released from the Aliso Canyon

leak. Our own physical measurement and an independent third party analysis concluded between 84,000 - 86,000 metric tons of methane were released to the atmosphere. This is slightly less than the ARB's own assessment made using atmospheric methane detection technology.

We have posted this information to both the gas and financial marketplaces, and we have released the attached statement publicly.

Please note that we have also publicly underscored our commitment to ***"mitigate the greenhouse gas emissions from the leak"***, and further indicated that we have already ***"signed letters of intent with several California dairies to manage methane emissions, and will finalize (our) mitigation plan in the coming months."***

Additionally, ***"as we go forward, the guidance provided by California Air Resources Board will be instrumental in developing our mitigation plan."***

Thank you.

George I. Minter | Reg. Vice President

External Affairs & Environmental Strategy

Southern California Gas Company

☎: 213 244 2550

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/21/2016 6:21:30 PM
Subject: FW: Update on Federal and Non-Governmental Methane Measurement and Monitoring Research Activities
IMS_Monitoring Interagency Update final 20151123.pdf

Have you had a chance to review this interagency CH4 activities update? If you haven't and would like to send comments through me, I'm happy to add your comments and send them on with ours.

Melissa

From: Weitz, Melissa
Sent: Thursday, January 21, 2016 1:20 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>
Cc: Franklin, Pamela <Franklin.Pamela@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>
Subject: RE: Update on Federal and Non-Governmental Methane Measurement and Monitoring Research Activities

Sorry for the delayed update on this-- I compiled and highlighted comments from Bill, OAQPS, and myself in the attached. I think we have it covered, but if anyone else would like to review and comment, please let me know. Otherwise, I'll send these over to Austin today.

The call to discuss feedback has not yet been scheduled.

Thanks!

From: DeFigueiredo, Mark
Sent: Tuesday, January 12, 2016 6:08 PM

To: Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Ragnauth, Shaun <Ragnauth.Shaun@epa.gov>
Cc: Franklin, Pamela <Franklin.Pamela@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Banks, Julius <Banks.Julius@epa.gov>
Subject: Fwd: Update on Federal and Non-Governmental Methane Measurement and Monitoring Research Activities

FYI - the distribution list was a bcc but sounds like it went to the interagency methane data group.

Sent from my iPhone

Begin forwarded message:

From: "Brown, Austin" Ex. 6 - Personal Privacy
Date: January 12, 2016 at 5:38:03 PM EST
Cc: "Clavin, Christopher T" <cclavin@ida.org>, "Ressler, Anne E" <aressler@ida.org>, "Simon, Bob" < Ex. 6 - Personal Privacy >
Subject: Update on Federal and Non-Governmental Methane Measurement and Monitoring Research Activities

Colleagues,

Thank you for your contributions so far regarding your agency activities on methane measurement and monitoring in support of the Interagency Methane Strategy. As I mentioned the last time we spoke, one of the purposes of this activity is to make sure the White House is kept up to date on Federal activities and the state of science and technology regarding methane measurement. To that end, IDA has prepared the attached draft summary based on the activities we have heard about so far. We will be briefing a few colleagues around the White House next week based on this document, so please look in the next few days for any show stoppers. We can also accept suggestions, additions, and edits over the next several weeks. We will convene a call in two weeks to hear feedback, and can accept them by email any time. Also please let us know any additions or changes to agency POCs.

Thanks to Chris and Anne of IDA for their great work on this summary.

Let me know if you have any questions, and I look forward to speaking with everyone soon.

Best,

Austin

Austin L Brown, Ph.D.

Senior Policy Analyst

Executive Office of the President

Office of Science and Technology Policy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

To: Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]
From: Weitz, Melissa
Sent: Fri 8/14/2015 2:29:22 PM
Subject: FW: RE: RE:
G&P-Pre-Brief-081415-epa.pptx

Slides for today's call with EDF

From: Marchese,Anthony [mailto:Anthony.Marchese@colostate.edu]
Sent: Friday, August 14, 2015 10:15 AM
To: Weitz, Melissa; Drew Nelson; Gunning, Paul
Subject: RE: RE: RE:

Melissa and Paul,

Attached is a powerpoint presentation that I plan to present on the call today. Are the EPA folks going to be in a single conference room or will they be calling in from their offices?

I note that there is a call in number, but do you think it is possible to set up a webex? I could send out a webex invite to the mailing list if necessary.

If webex is not possible, please forward this presentation to everybody on the mailing list. When distributing, please remind everybody of the August 18 embargo date.

Thanks!

ajm

Anthony J. Marchese, Ph.D.

Professor, Department of Mechanical Engineering

Director, Engines and Energy Conversion Laboratory

A103H Engineering

Colorado State University

Fort Collins, CO 80523-1374

Campus: (970) 491-2328

Lab: (970) 491-4786

Cell: (267) 528-7954

marchese@colostate.edu

http://www.engr.colostate.edu/~marchese/

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Thursday, August 06, 2015 11:45 AM
To: Marchese,Anthony; Drew Nelson
Cc: Naim Jonathan Peress
Subject: RE: RE: RE:

Great-thank you!

I'll send you call in information when I have it.

Melissa

From: Marchese,Anthony [mailto:Anthony.Marchese@colostate.edu]
Sent: Thursday, August 06, 2015 11:24 AM

To: Weitz, Melissa; Drew Nelson
Cc: Naim Jonathan Peress
Subject: RE: RE: RE:

Melissa,

Confirmed on my end as well. Thanks!

Regards,

Anthony

Anthony J. Marchese, Ph.D.

Professor, Department of Mechanical Engineering

Director, Engines and Energy Conversion Laboratory

A103H Engineering

Colorado State University

Fort Collins, CO 80523-1374

Campus: (970) 491-2328

Lab: (970) 491-4786

Cell: (267) 528-7954

marchese@colostate.edu

http://www.engr.colostate.edu/~marchese/

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Thursday, August 06, 2015 9:09 AM
To: Drew Nelson

Cc: Naim Jonathan Peress; Marchese,Anthony
Subject: Re: RE: RE:

Yes, Friday August 14. Thanks Drew!

Sent from my iPhone

On Aug 5, 2015, at 7:17 PM, Drew Nelson <dnelson@edf.org> wrote:

Melissa

It looks as though 2 eastern will work for CSU. This is for friday the 14th, right?

On Aug 4, 2015, at 10:05 AM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

Right now it looks like 2PM will work for Joe. Will that still work for your group?

From: Drew Nelson [mailto:dnelson@edf.org]
Sent: Friday, July 31, 2015 6:03 PM
To: Weitz, Melissa
Subject: RE: RE:

excellent. let me know what time works for the briefing call on the 14th for joe or janet.

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Friday, July 31, 2015 3:02 PM
To: Drew Nelson
Subject: RE: RE:

Great-it's on our calendars!

From: Drew Nelson [mailto:dnelson@edf.org]
Sent: Thursday, July 30, 2015 5:50 PM

To: Weitz, Melissa
Subject: RE:

ok. I've got you marked down from 4-5 on Monday the 17th for the technical briefing.

From: Weitz, Melissa [mailto:Weitz.Melissa@epa.gov]
Sent: Thursday, July 30, 2015 11:31 AM
To: Drew Nelson
Subject:

Hi Drew,

Looking quickly across calendars, it looks like 4-5 Monday (8/17) or Tuesday (8/18) should work for us. Let me know if either works for you guys.

Thanks!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

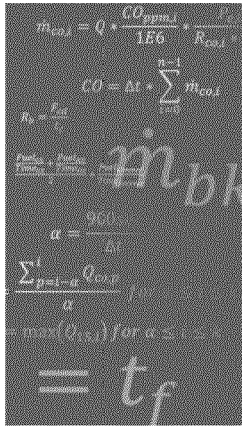
Weitz.Melissa@epa.gov

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify

the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

FOIA EPA-HQ-2018-0005849

Prepublication Briefing, Washington, DC
August 17-18, 2015



Methane Emissions from U.S. Natural Gas Gathering and Processing

Anthony Marchese[1,*], Daniel Zimmerle[2], Timothy Vaughn[1], David Martinez[2],, Laurie Williams[2], Allen Robinson[3], Austin Mitchell[3], Daniel Tkacik[3], R. Subramanian[3], Scott Herndon[4], Rob Roscioli[4]

[1]Department of Mechanical Engineering, Colorado State University, [2]The Energy Institute, Colorado State University, [3]Department of Mechanical Engineering, Carnegie Mellon University, [4]Aerodyne Research

** Principal Investigator, http://www.engr.colostate.edu/~marchese*

ENGINES & ENERGY CONVERSION LAB

Colorado State University

EDF ENVIRONMENTAL DEFENSE FUND™

ED_001785C_00001731-00001

Methane Emissions from U.S Gathering and Processing
Study Team

ENGINES & ENERGY CONVERSION LAB

Partners

Environmental Defense Fund, Anadarko Petroleum, Access Midstream, Williams, SWN, Hess, DCP Midstream*

Total Partner Inventory

738 gathering facilities

28 processing plants

Study Team

Colorado State University (Anthony Marchese, Dan Zimmerle)

Carnegie Mellon University (Allen Robinson)

Aerodyne Research (Scott Herndon)

*DCP provided access to one randomly chosen processing plant but did not provide funding.

Methane Emissions from U.S Gathering and Processing

Project Objectives

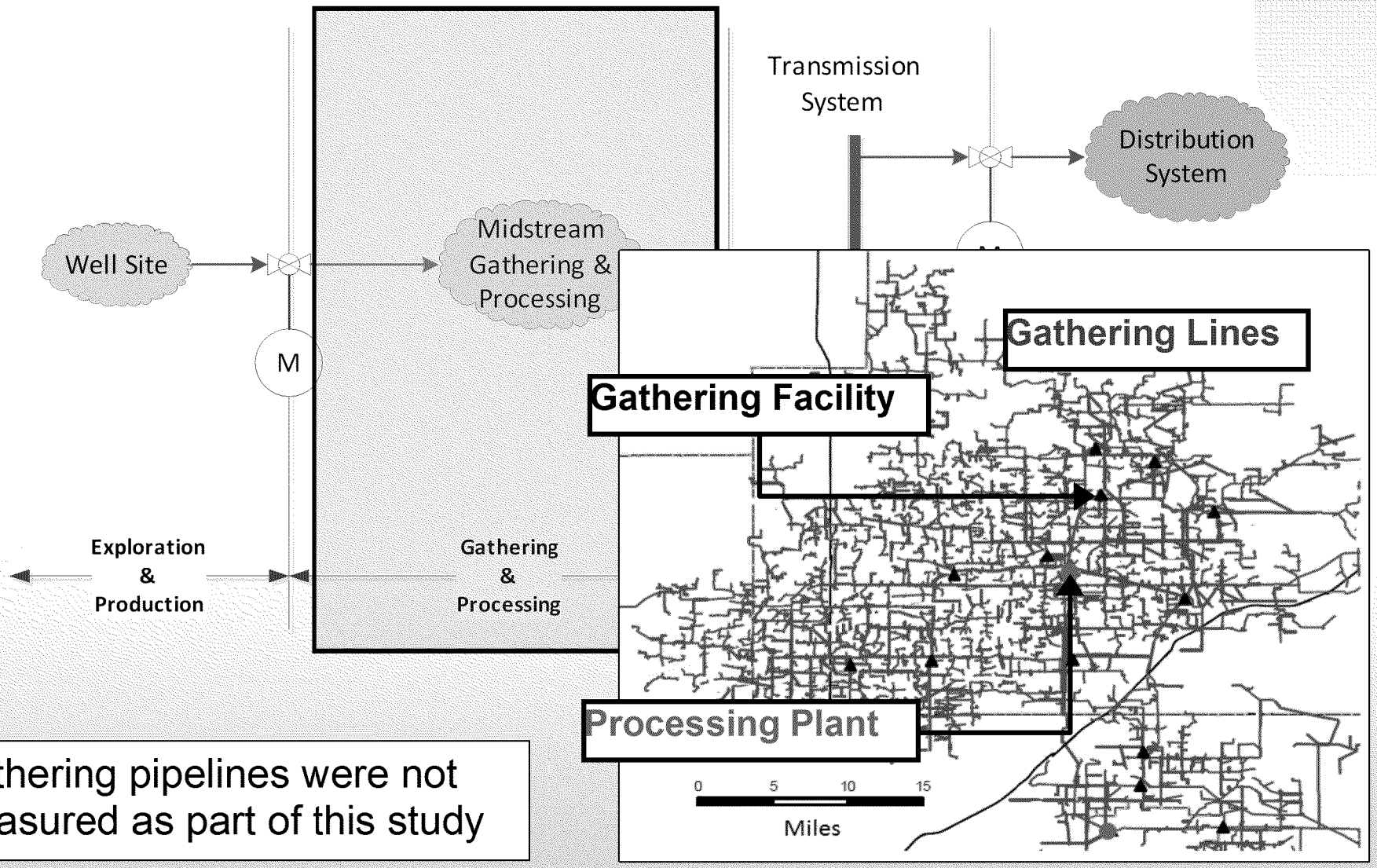
ENGINES & ENERGY CONVERSION LAB

The goal of this study was to quantify methane emissions from all U.S. gathering and processing systems and operations:

1. **Measure facility-level CH_4 emissions from all partner processing plants (N ≈ 24);**
2. **Measure facility level CH_4 emissions from randomly selected gathering facilities (N ≈ 120);**
3. **Compile facility data (e.g. facility count, equipment, NG throughput) using partner (N=768), state and national data bases**
4. **Develop a Monte Carlo model to estimate methane emissions from all U.S. gathering facilities and processing plants;**
5. **Employ the model to quantify the national methane emissions from all U.S. gathering and processing operations.**
6. **Compare model results against existing methane emissions estimates/inventories (e.g. EPA GHGI; EPA GHGRP).**

Methane Emissions from Gathering and Processing
Sector Definition

Gathering and Processing Systems = gathering pipelines, gathering compressor/booster stations and processing plants

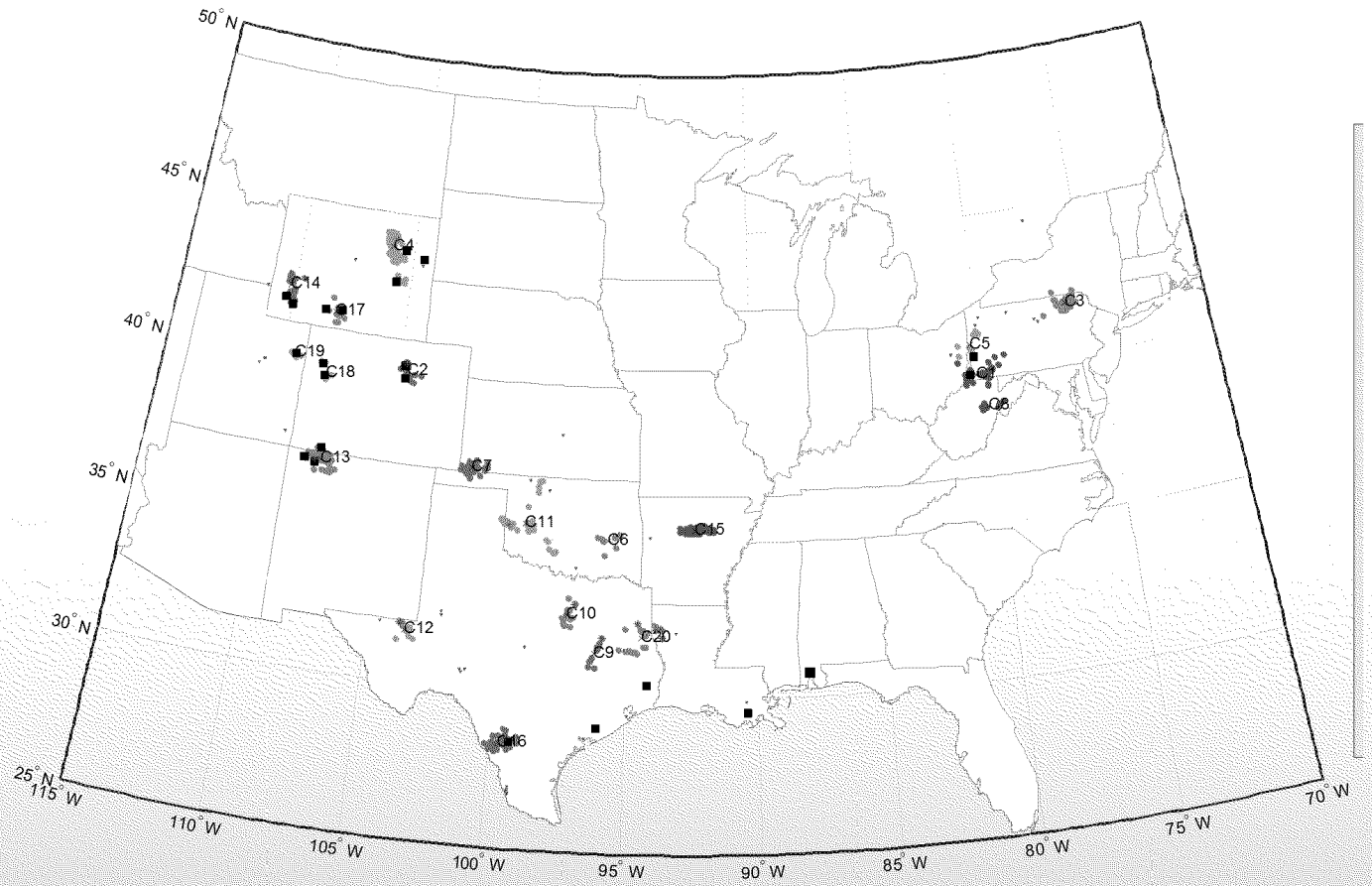


Gathering pipelines were not measured as part of this study

Methane Emissions from U.S Gathering and Processing Field Campaign

Study Partner Assets

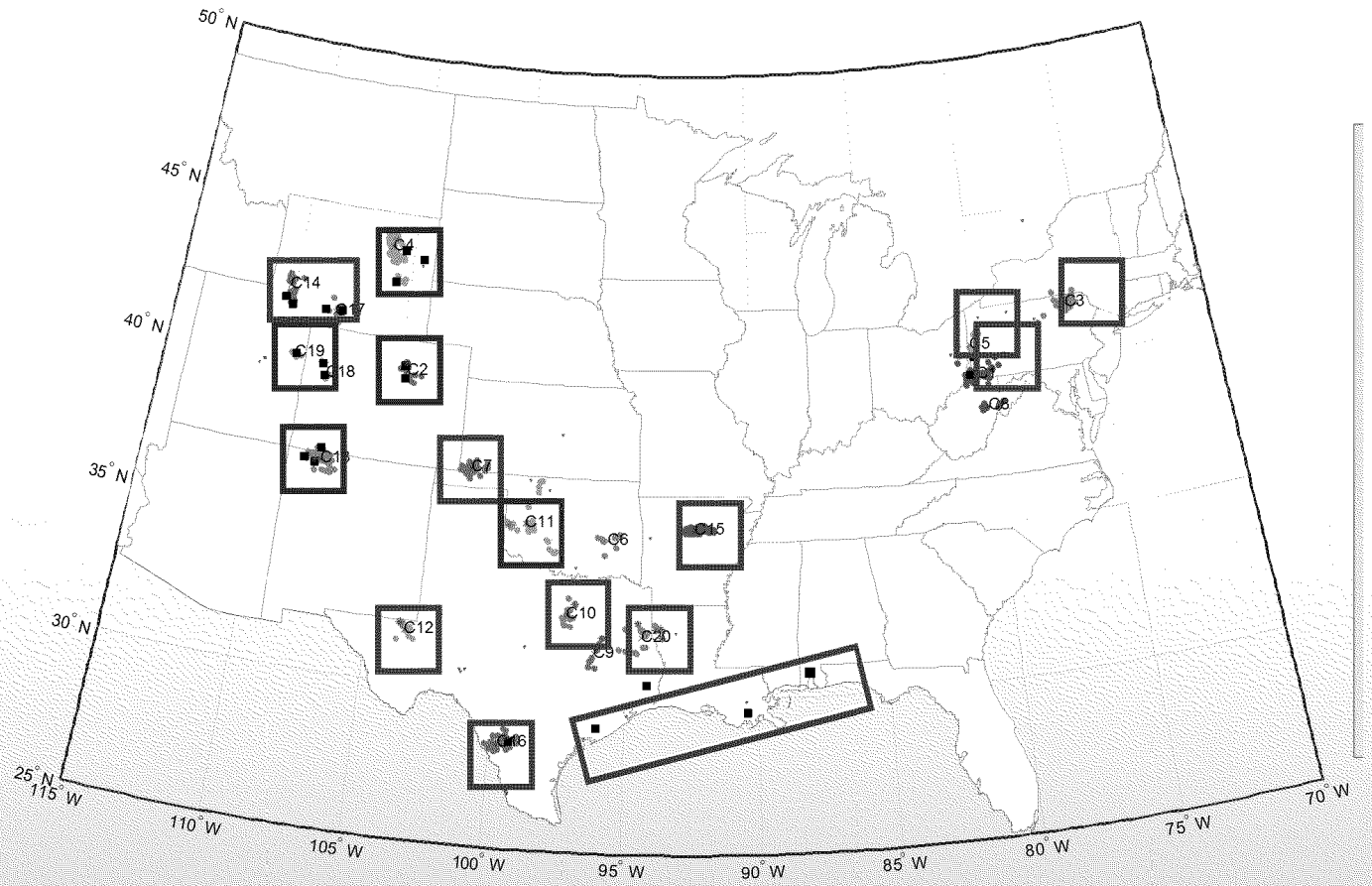
Study partner assets included 738 gathering facilities and 28 Subpart KKK processing plants located in 13 U.S. states.



Methane Emissions from U.S Gathering and Processing
Field Campaign

Comprehensive Measurements

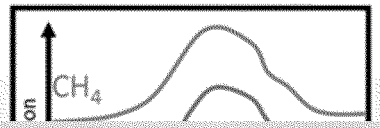
Facility-level CH_4 emissions were acquired from **16 processing plants** and **114 gathering facilities** in 13 U.S. states in 20 weeks.



Methane Emissions from the G&P Sectors

Dual Tracer Gas Method

Leak = {downwind molar ratio} x controlled release

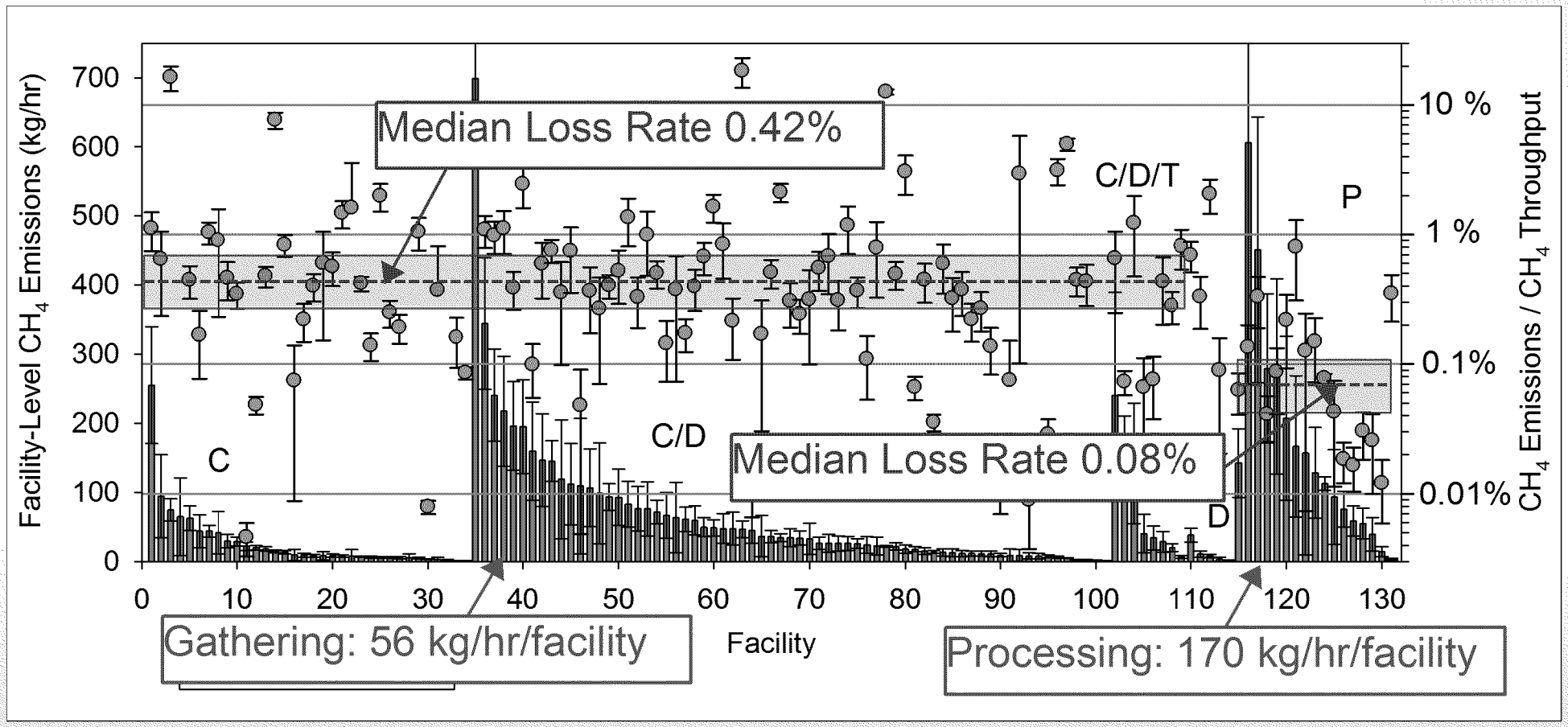


Roscioli, J. R., Herndon, S. C., et al (2015). Measurements of methane emissions from natural gas gathering facilities and processing plants: measurement methods. *Atmos. Meas. Tech.*, **8**, 2017-2035

Methane Emissions from the G&P Sectors
Facility-Level CH_4 Emission Rates

ENGINES & ENERGY CONVERSION LAB

Facility-Level Methane Emissions (kg/hr) and Loss Rate(%)

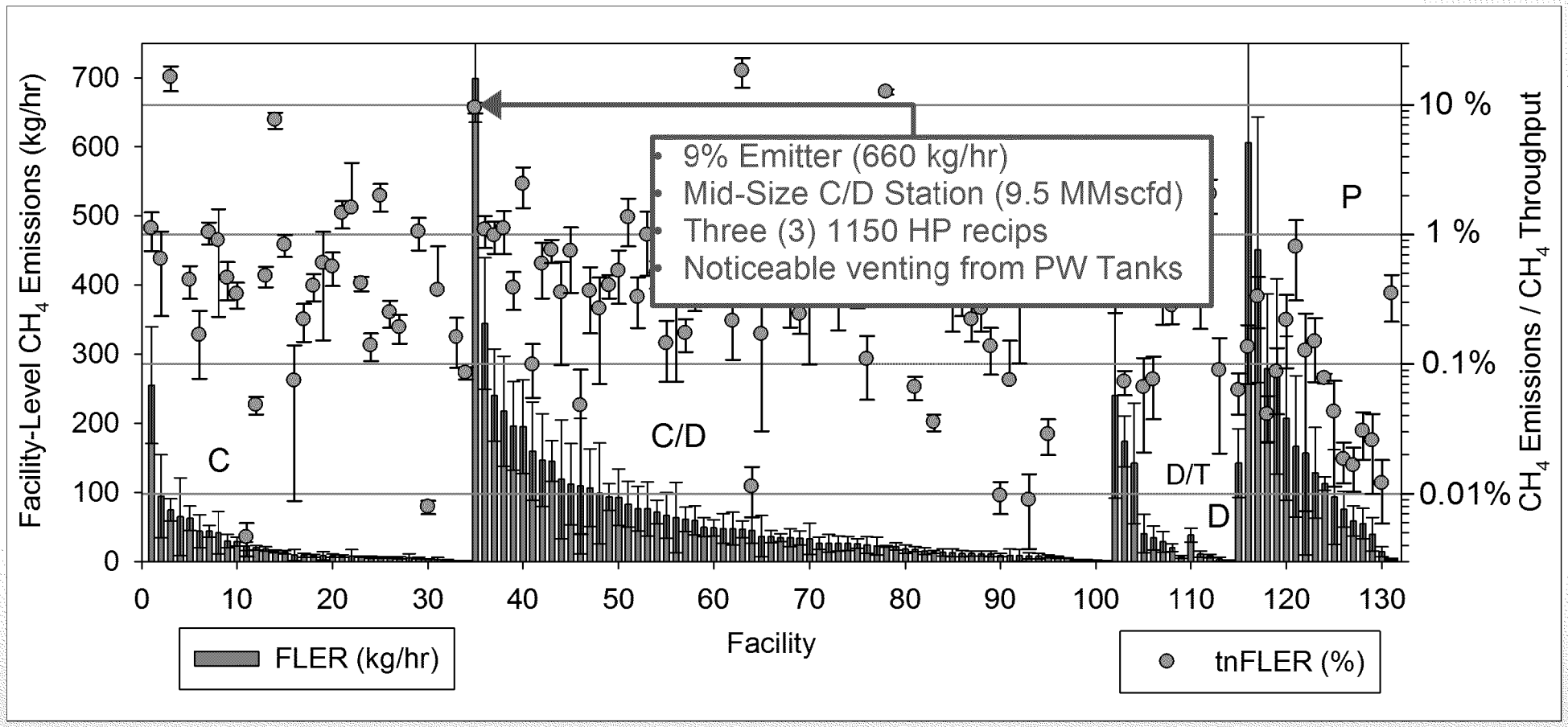


Mitchell, A.L., Zimmerle, D., Marchese, A.J., Robinson, A.L. et al. Measurements of Methane Emissions from Natural Gas Gathering Facilities and Processing Plants: Measurement Results. *Environ. Sci. Technol.*, **49** (5) 3219-3227.

Methane Emissions from the G&P Sectors
Facility-Level CH_4 Emission Rates

ENGINES & ENERGY CONVERSION LAB

High Emitters: 25 facilities had methane loss rates > 1%

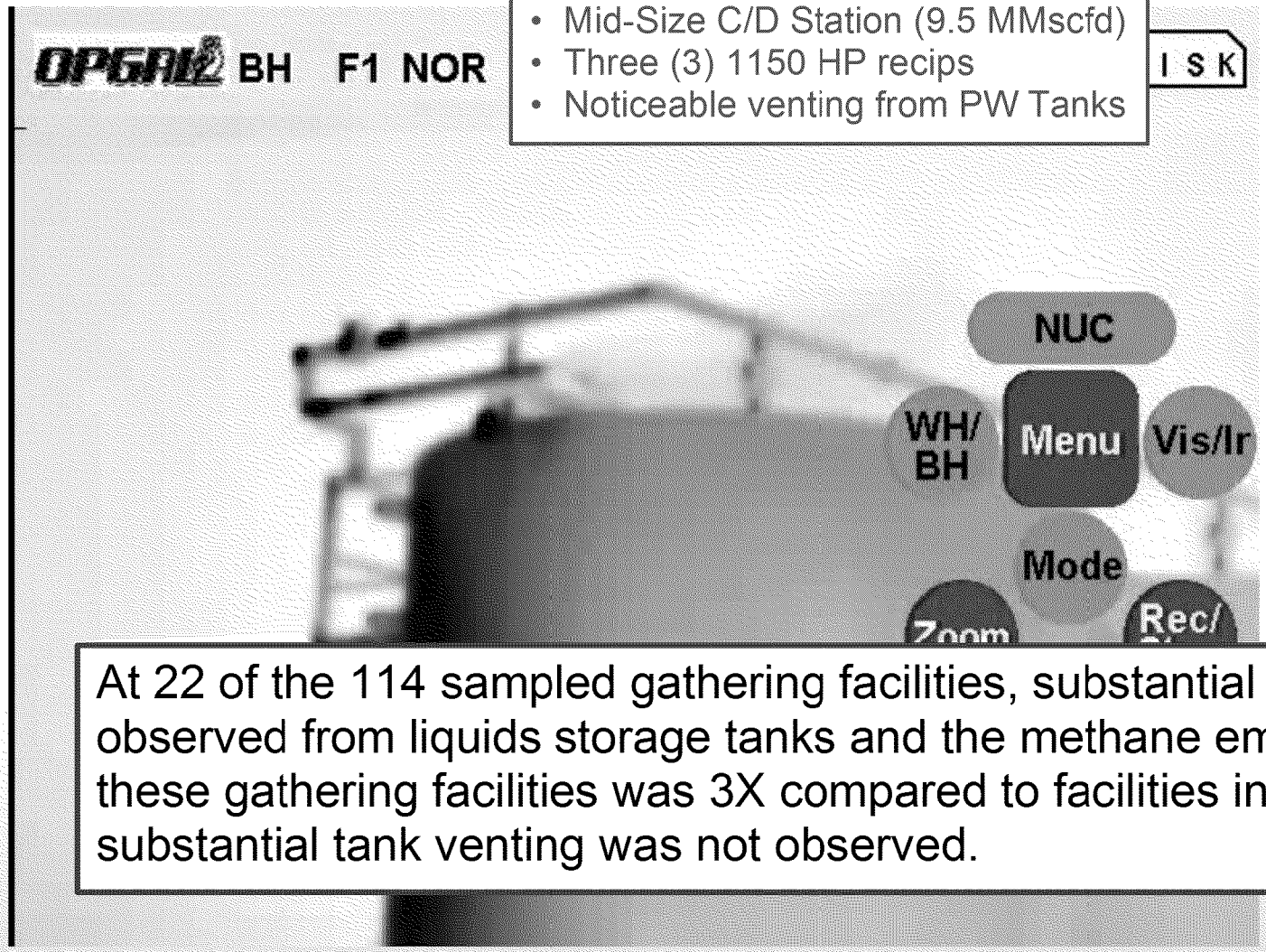


Mitchell, A.L., Zimmerle, D., Marchese, A.J., Robinson, A.L. et al. Measurements of Methane Emissions from Natural Gas Gathering Facilities and Processing Plants: Measurement Results. *Environ. Sci. Technol.*, **49** (5) 3219-3227.

Methane Emissions from the G&P Sectors
Facility-Level CH_4 Emission Rates

ENGINES & ENERGY CONVERSION LAB

- 9% Emitter (660 kg/hr)
- Mid-Size C/D Station (9.5 MMscfd)
- Three (3) 1150 HP recips
- Noticeable venting from PW Tanks



At 22 of the 114 sampled gathering facilities, substantial venting was observed from liquids storage tanks and the methane emissions from these gathering facilities was 3X compared to facilities in which substantial tank venting was not observed.

Methane Emissions from the G&P Sectors
"Back of the Envelope" Estimates

ENGINES & ENERGY CONVERSION LAB

Median loss rates (%) and facility-level emission factors (kg/hr/facility) can provide order of magnitude estimates of how the emissions might scale nationally.

Gathering Facilities

- (0.42% CH_4 loss rate) x (421 Tg CH_4 gathered in 2012) ≈ 1770 Gg
- (≈ 4500 facilities) x (56 kg/hr/facility) ≈ 2200 Gg

Subpart KKK Processing Plants

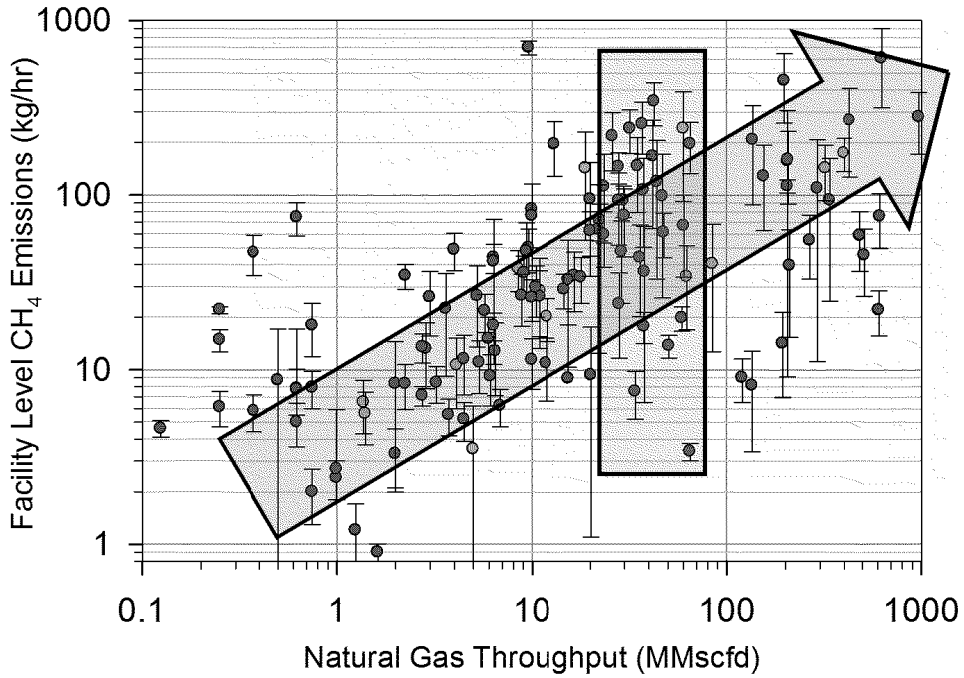
- (0.08% CH_4 loss rate) x (287 Tg CH_4 processed in 2012) ≈ 230 Gg
- (≈ 600 facilities) x (170 kg/hr/facility) ≈ 890 Gg

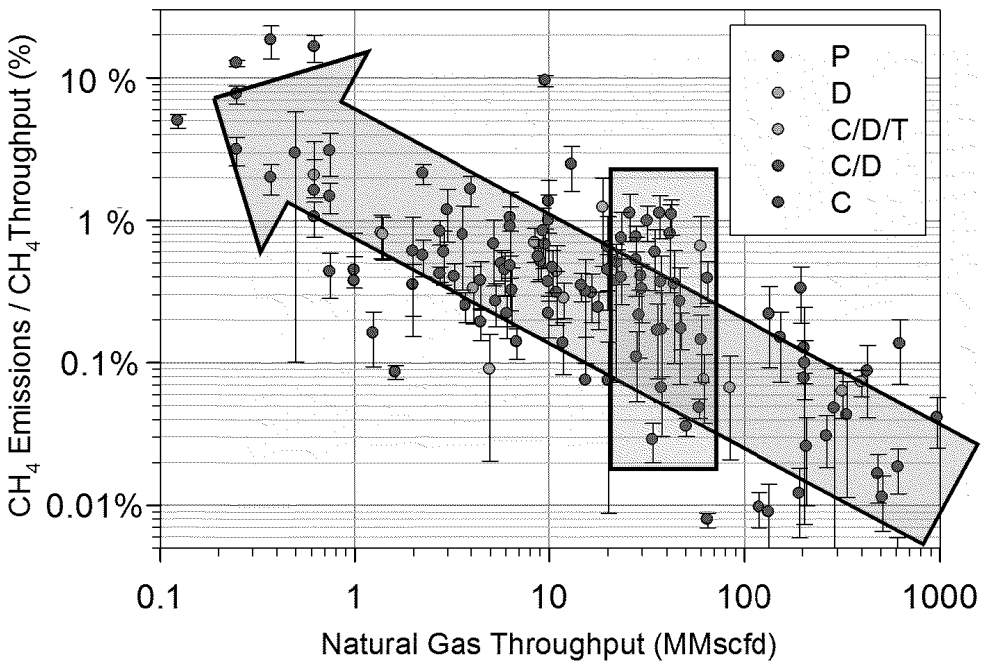
Even without a sophisticated model, the experimental results indicate that methane emissions from gathering facilities are substantial (≈ 30% of entire NG supply chain methane emissions).

Methane Emissions from the G&P Sectors
Development of National Estimate

ENGINES & ENERGY CONVERSION LAB

Scale Up of CH_4 Measurements to National Estimate





Issues for Scale Up:

- Facility size varies over several orders of magnitude (0.1 to 1000 MMscfd)
- Emissions vary with throughput
- Large variation in emissions for a given throughput range
- Natural gas can flow through multiple gathering/boosting stations during transit from the production site to transmission.

Scale up to a national estimate requires:

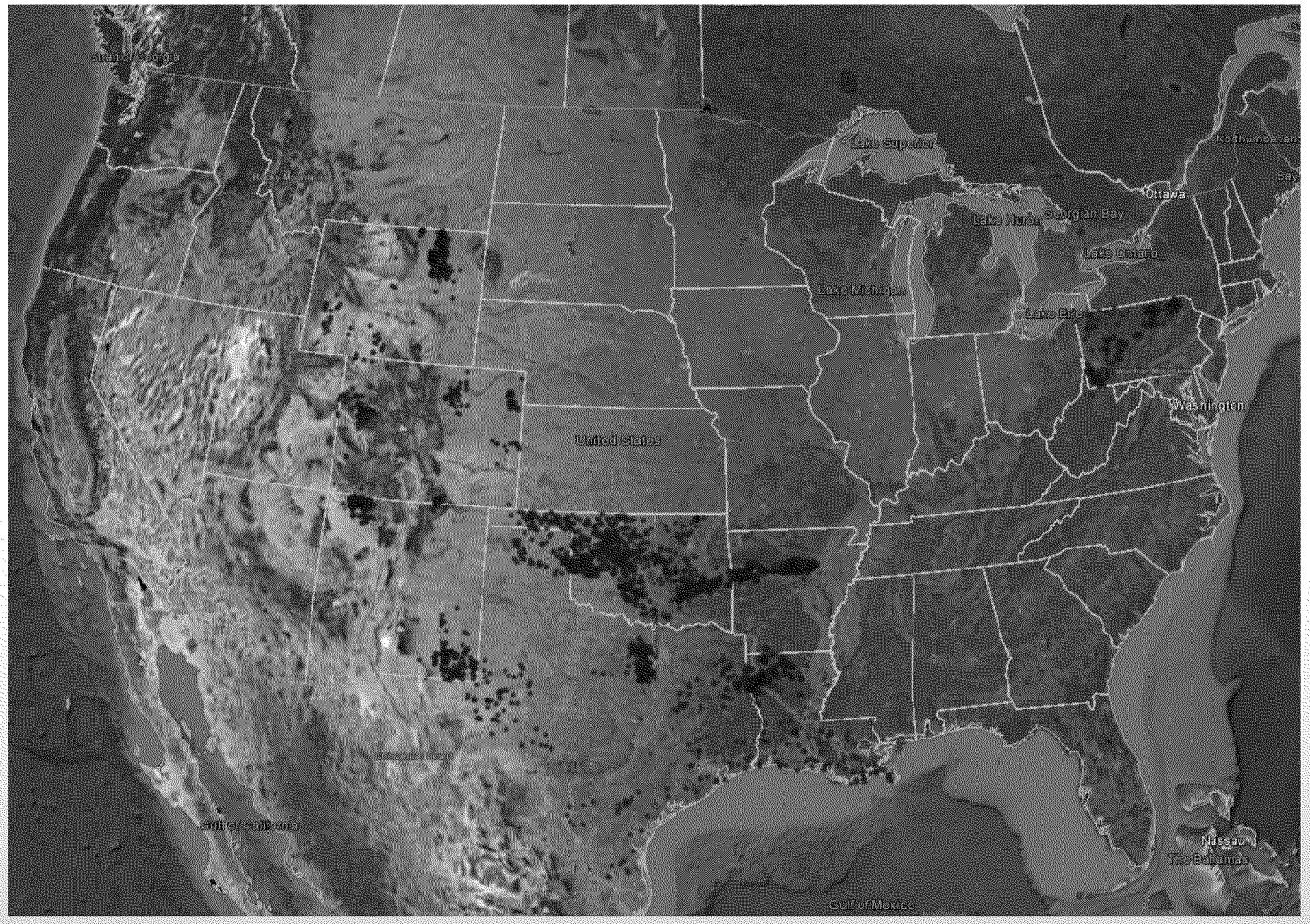
- Accurate facility count of all gathering facilities and processing plants
- Average natural gas throughput (MMscfd) or proxy such as installed horsepower for each facility

Methane Emissions from the G&P Sectors

Development of National Estimate

Gathering Facility Data

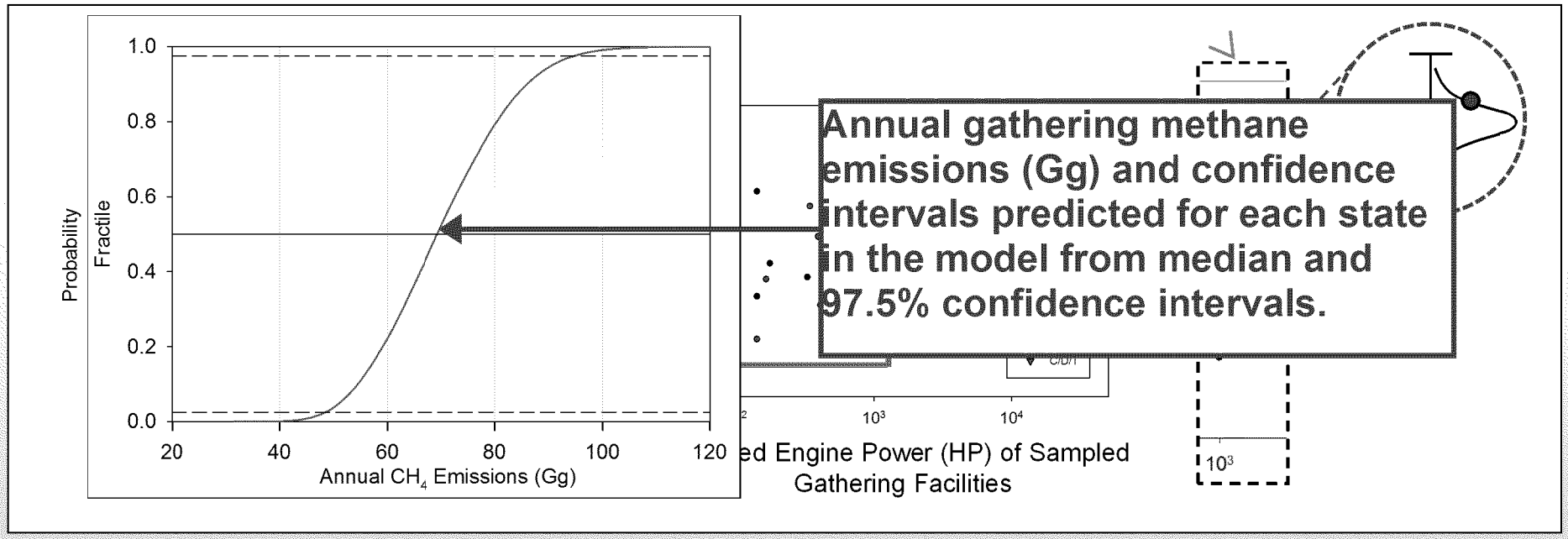
Natural gas facility lists (with installed compressor engine data) were obtained from state air permit data from AR, CO, OK, TX, NM, PA, WY and LA - these states account for ≈ 83% of U.S. natural gas production. The initial lists contained production sites, gathering facilities, processing plants and transmission stations.



Methane Emissions from the G&P Sectors
Development of National Estimate

Monte Carlo Simulation Scheme (Non-Partner Facilities)

- Installed compressor engine power is used as a proxy for facility natural gas throughput.
- For each facility in a state database, an emissions value is randomly drawn from among the 10 sampled facilities with closest HP.
- Experimental uncertainty and uncertainty in facility count included.
- Process is repeated for 50,000 iterations.



Methane Emissions from the G&P Sectors

Development of National Estimate

ENGINES & ENERGY CONVERSION LAB

Monte Carlo Simulation Results

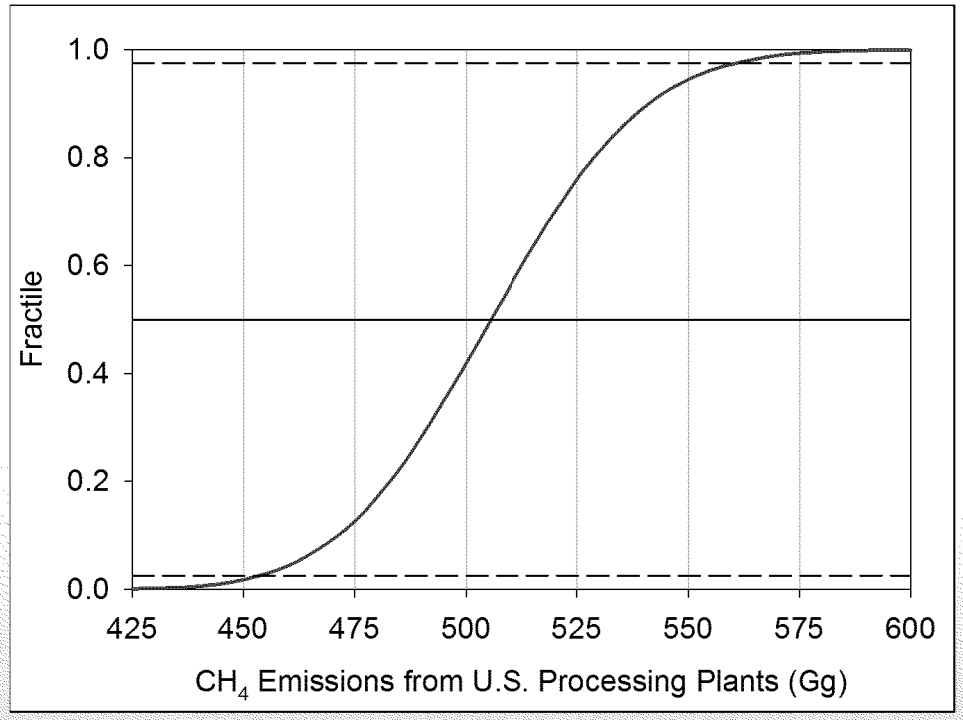
Total annual emission of methane (Gg) from all gathering facilities in the states of AR, CO, LA, OK, PA, TX and WY, and extrapolated U.S. results.

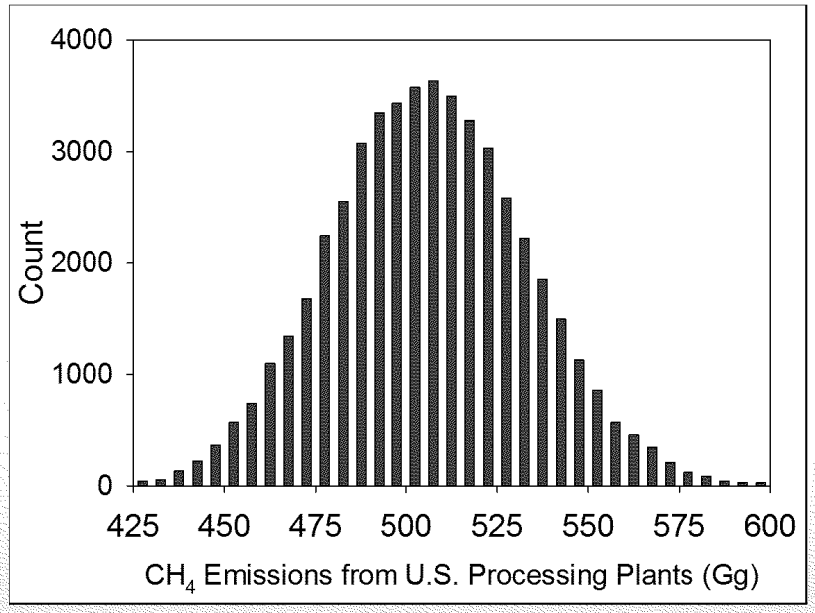
State	Number of Gathering Facilities	Annual Emission of CH_4 from Gathering Facilities (Gg)	2012 CH_4 Gathered (Gg)	Modeled CH_4 Loss Rate (%)
AR	214 (+43/-38)	53 (+20/-25)	19,723	0.27% (+0.10%/-0.08%)
CO	193 (+46/-35)	69 (+25/-21)	28,261	0.25% (+0.09%/-0.07%)
LA	364 (+62/-124)	104 (+42/-36)	50,207	0.21% (+0.08%/-0.07%)
NM	282 (+82/-82)	96 (+40/-33)	20,215	0.47% (+0.20%/-0.16%)
OK	1103 (+132/-132)	322 (+56/-52)	34,263	0.94% (+0.16%/-0.15%)
PA	247 (+22/-7)	70 (+16/-14)	37,676	0.19% (+0.04%/-0.04%)
TX	1012 (+304/-101)	616 (+124/-118)	126,552	0.49% (+0.10%/-0.09%)
WY	382 (+77/-66)	86 (+25/-22)	34,414	0.25% (+0.07%/-0.06%)
Total States in Model	3,797 (+768/-587)	1,417 (+158/-154)	351,310	0.40% (+0.05%/-0.04%)
Total U.S.	4,549 (+921/-703)	**1,697 (+189/-185)**	420,906	0.40% (+0.05%/-0.04%)

Methane Emissions from the G&P Sectors
Development of National Estimate

Monte Carlo Simulation Results for Processing

Cumulative distribution function of predicted total annual emission of methane (Gg) from all U.S. Subpart KKK processing plants. Model results predict **506 Gg +55/-52 Gg** for normal operation.





Methane Emissions from the G&P Sectors

Comparison to EPA GHGI

ENGINES & ENERGY CONVERSION LAB

Processing

2014 EPA Inventory of CH_4 emissions (Gg) f
operation is **851 Gg**, which is higher than ou

Majority of CH_4 emissions in processing

Observations from the field campaign suggest differences in reciprocating and centrifugal compressor activity data:

- **3890 reciprocating**
- **1473 centrifugal**

Activity	Activity Data	Activity Units	Emissio Factor (Potenti					alculated t CH4 ons (Mg)	% Total Net Emissions
Normal Fugitives									
Plants	606	plants	7906	Scfd/ plant	33,680.5	(5,068.2)		28,612.3	3.21%
Reciprocating Comp.	5,624	compressors	11,196	Scfd/ comp	442,633.5	(66,606.5)		376,027.0	42.17%
Centrifugal Comp. (wet seals)	658	compressors	31,370	Scfd/ comp	237,724.1	(35,772.2)		201,951.9	22.65%
Centrifugal Comp. (dry seals)	248	compressors	25,189	Scfd/ comp	43,936.6	(6,611.5)		37,325.1	4.19%
Vented and Combusted									
Normal Operation									
Compressor Exhaust									
Gas Engines	40,403	MMHPhr/year	0.24	scf/HPhr	186,750.5	**(6,100.0)**		180,650.5	20.26%
Gas Turbines	47,907	MMHPhr/year	0.01	scf/HPhr	5,259.3	(791.4)		4,467.9	0.50%
AGR Vents	307	AGR units	6,083	scfd/AGR	13,134.2	(1,976.4)		11,157.8	1.25%
Kimray Pumps	1,463,675	MMscf/yr	178	scf/MMscf	5,010.8	(754.0)		4,256.8	0.48%
Dehydrator Vents	13,186,262	MMscf/yr	122	scf/MMscf	30,869.7	**(9,300.0)**	**(16,300.0)**	5,269.7	0.59%
Pneumatic Devices	606	plants	164,721	scfy/plant	1,922.6	(289.3)		1,633.3	0.18%
Routine Maintenance									
Blowdowns/Venting	606	plants	4,060	Mscfy/plant	47,386.5	(7,130.6)		40,255.9	4.51%
Regulatory Reductions (Gg)							**(16.3)**		
Voluntary Reductions (Gg)						**(140.4)**			
Total Reductions (Gg)									
Total Potential Emissions (Gg)					**1,048.3**				
Total Net Methane Emissions from Processing (Gg)								**891.6**	100%
Total Net Emission from Processing less Routine Maintenance (Gg)								**851.4**	

Methane Emissions from the G&P Sector

Comparison to EPA GHGI

ENGINES & ENERGY CONVERSION LAB

Gathering. The 2014 EPA Greenhouse Gas Inventory (GHGI) embeds gathering systems (pipelines and facilities) within its natural gas production inventory.

Activity	Activity Data	Activity Units	Total Potential CH_4 Emissions (Mg)	2012 Voluntary Reductions (Mg)	2012 Regulatory Reductions (Mg)	2012 Net CH4 Emissions (Mg)	% Total Net Emissions
Field Separation Equipment							
Heaters	112,786	heaters	33,300	(12,437)		20,863	1.46%
Separators	276,938	separators	106,700	(39,850)		66,850	4.67%
Dehydrators	65,653	dehydrators	32,800	(12,250)		20,550	1.44%
Meters/Piping	398,662	meters	106,200	(39,663)		66,537	4.65%
Gathering Compressors							
Small Reciprocating Compressors	35,930	compressors	70,900	(26,480)		44,420	3.10%
Large Reciprocating Compressors	136	compressors	15,400	(5,752)		9,648	0.67%
Large Reciprocating Stations	17	stations	1,000	(373)		627	0.04%
Gathering Pipelines							
Pipeline Leaks	445,135	miles	175,500	-		175,500	12.26%
Pipeline Blowdowns	445,135	miles	2,800	(1,046)		1,754	0.12%
Mishaps	111,284	miles	1,500	(560)		940	0.07%
Normal Operation							
Pneumatic Device Vents	477,606	controllers	1,207,500	**(873,100)**		334,400	23.37%
Chemical Injection Pumps	44,637	active pumps	67,300	**(2,800)**		64,500	4.51%
Kimray Pumps	16,392,515	MMscf/year	388,400	(145,059)		243,341	17.00%
Dehydrator Vents	21,567,356	MMscf/year	121,100		**(38,900)**	82,200	5.74%
Compressor Exhaust							
Gas Engines	54,971	MMHPhr/year	265,700	**(139,900)**		125,800	8.79%
Condensate Tank Vents							
Without Control Devices	88	MMbbl/yr	187,700		**(60,300)**	127,400	8.90%
With Control Devices	88	MMbbl/yr	37,500			37,500	2.62%
Blowdowns							
Vessel Blowdowns	455,376	vessels	700	(261.43)		439	0.03%
Compressor Blowdowns	35,930	compressors	2,700	(1,008.39)		1,692	0.12%
Compressor Starts	35,930	compressors	6,100	**(500.0)**		5,600	0.39%
Upsets							
Pressure Relief Valves	1,058,977	PRV	700	(261.43)		439	0.03%
Regulatory Reductions (Gg)					**(99.2)**		
Voluntary Reductions (Gg)				**(1,301.3)**			
Total Potential Emissions from Shared Gathering and Production Categories (Gg)			**2,831.5**				
Total Net Emissions from Shared Gathering and Production Categories(Gg)						1,431.0	

A total of 1,431 Gg of methane emissions are

The model results for gathering facilities alone (1,697 Gg) are greater than all of the source categories common to both gathering and production in the EPA GHGI (1,431 Gg).

Methane Emissions from the G&P Sector

Comparison to EPA GHGI

ENGINES & ENERGY CONVERSION LAB

Gathering. The 2014 EPA Greenhouse Gas Inventory (GHGI) embeds gathering systems (pipelines and facilities) within its natural gas production inventory.

Activity	Activity Data	Activity Units	Mass Emission Factor (Net)	Mass Emission Factor Units	2012 Net CH4 Emissions (Mg)	% Total Net Emissions for Gathering Sector	% Total Net Emissions for Gathering Facilities
Field Separation Equipment							
Heaters	*4,549*	heaters	0.1850	Mg/heater	841	0.21%	0.37%
Separators	*6,784*	separators	0.2414	Mg/sep	1,637	0.41%	0.73%
Dehydrators	*5,187*	dehydrators	0.3130	Mg/dehy	1,624	0.40%	0.72%
Meters/Piping	*13,886*	meters	0.1669	Mg/meter	2,318	0.57%	1.03%
Gathering Compressors							
Small Reciprocating Compressors	*25,575*	compressors	1.2363	Mg/comp	31,619	7.83%	14.00%
Large Reciprocating Compressors	136	compressors	70.9445	Mg/comp	9,648	2.39%	4.27%
Large Reciprocating Stations	17	stations	36.8543	Mg/station	627	0.16%	0.28%
Gathering Pipelines							
Pipeline Leaks	445,135	miles	0.3943	Mg/mile	175,500	43.44%	
Pipeline Blowdowns	445,135	miles	0.0039	Mg/mile	1,754	0.43%	
Mishaps	111,284	miles	0.0084	Mg/mile	940	0.23%	
Normal Operation							
Pneumatic Device Vents	*54,588*	controllers	0.7002	Mg/cont	38,220	9.46%	16.93%
Chemical Injection Pumps	*9,098*	active pumps	1.4450	Mg/pump	13,147	3.25%	5.82%
Kimray Pumps	*1,295,226*	MMscf/year	0.0148	Mg/MMscf	19,227	4.76%	8.52%
Dehydrator Vents	*1,704,107*	MMscf/year	0.0038	Mg/MMscf	6,495	1.61%	2.88%
Compressor Exhaust							
Gas Engines	*39,128*	MMHPhr/year	2.2885	Mg/MMHPhr	89,545	22.17%	39.66%
Condensate Tank Vents							
Without Control Devices	*3*	MMbbl/yr	1447.7273	Mg/MMbbl	4,343	1.08%	1.92%
With Control Devices	*3*	MMbbl/yr	426.1364	Mg/MMbbl	1,278	0.32%	0.57%
Blowdowns							
Vessel Blowdowns	*4,549*	vessels	0.0010	Mg/vessel	4	0.00%	0.00%
Compressor Blowdowns	*25,575*	compressors	0.0471	Mg/comp	1,204	0.30%	0.53%
Compressor Starts	*25,575*	compressors	0.1559	Mg/comp	3,986	0.99%	1.77%
Upsets							
Pressure Relief Valves	*13,647*	PRV	0.0004	Mg/PRV	6	0.00%	0.00%
Total Net Emissions from Gathering (Gg)					**404.0**		
Total Net Emissions from Gathering Facilities (Gg)					**225.8**		

The relatively small fraction of activity data assigned to "gathering" is consistent with Allen et al (2015) observations that suggest a high volume of equipment at production sites:

- **124,000 heaters**
- **495,000 separators**
- **36,000 dehydrators**
- **12,000 compressors**
- **1,608,000 pneumatic controllers**
- **247,000 liquid tanks**

Methane Emissions from the G&P Sectors

Methane Loss Rates

National estimate of total CH_4 emissions (Gg) and rate of CH_4 loss (%) for U.S. natural gas gathering and processing systems (gathering lines, gathering facilities and processing plants). Comparisons are made against the 2014 EPA GHGI.

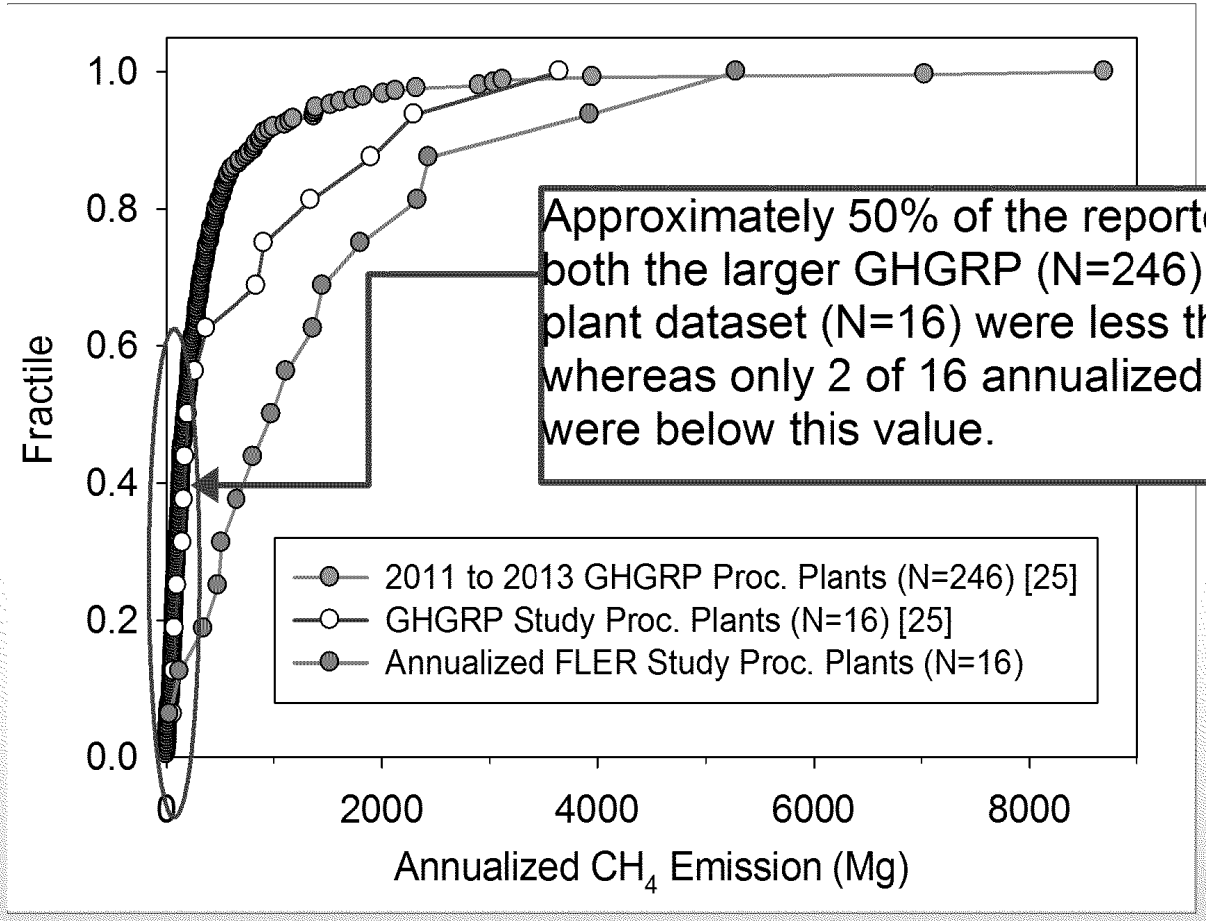
		Gathering Facilities	Gathering Lines[a]	Processing Plants (Normal Ops)	Processing Plants[b] (Blowdowns)	Total
Study Results	Total CH_4 Emissions (Gg)	1697 (+189/-185)	178	506 (+55/-52)	40	2421 (+245/-237)
	Sub-category CH_4 Loss Rate[c] (%)	**0.40%**	0.04%	**0.18%**	0.01%	-------
	U.S. Natural Gas Supply Chain CH_4 Loss Rate[d] (%)	0.33%	0.04%	0.10%	0.01%	**0.47%**
EPA GHGI	Total CH_4 Emissions (Gg)	226[e]	178	851	40	1,296
	Sub-category CH_4 Loss Rate[c] (%)	0.05%	0.04%	0.30%	0.01%	------
	U.S. Natural Gas Supply Chain CH_4 Loss Rate[d] (%)	0.04%	0.04%	0.17%	0.01%	**0.25%**

a. Unmodified from EPA GHGI estimates, includes pipeline leaks, blowdowns and mishaps
b. Unmodified from EPA GHGI estimates, includes routine blowdowns and venting
c. Normalized by 421 Tg of total CH4 gathered in 2012 and 287 Tg of CH4 processed in 2012.
d. Normalized by 513 Tg of total production of CH4 for 2012.
e. As derived from apportionment of combined gathering /production inventory as described in SI Section S.6.2

Methane Emissions from the G&P Sectors

Comparison to GHGRP: Processing

Comparison of measured annual equivalent methane (Mg) for the sampled processing plants (N=16), average annual emissions reported under the 2011 to 2013 EPA CHGRP for the same processing plants (N=16) and all processing plants that reported emissions for which average daily natural gas throughput was available (N=246).

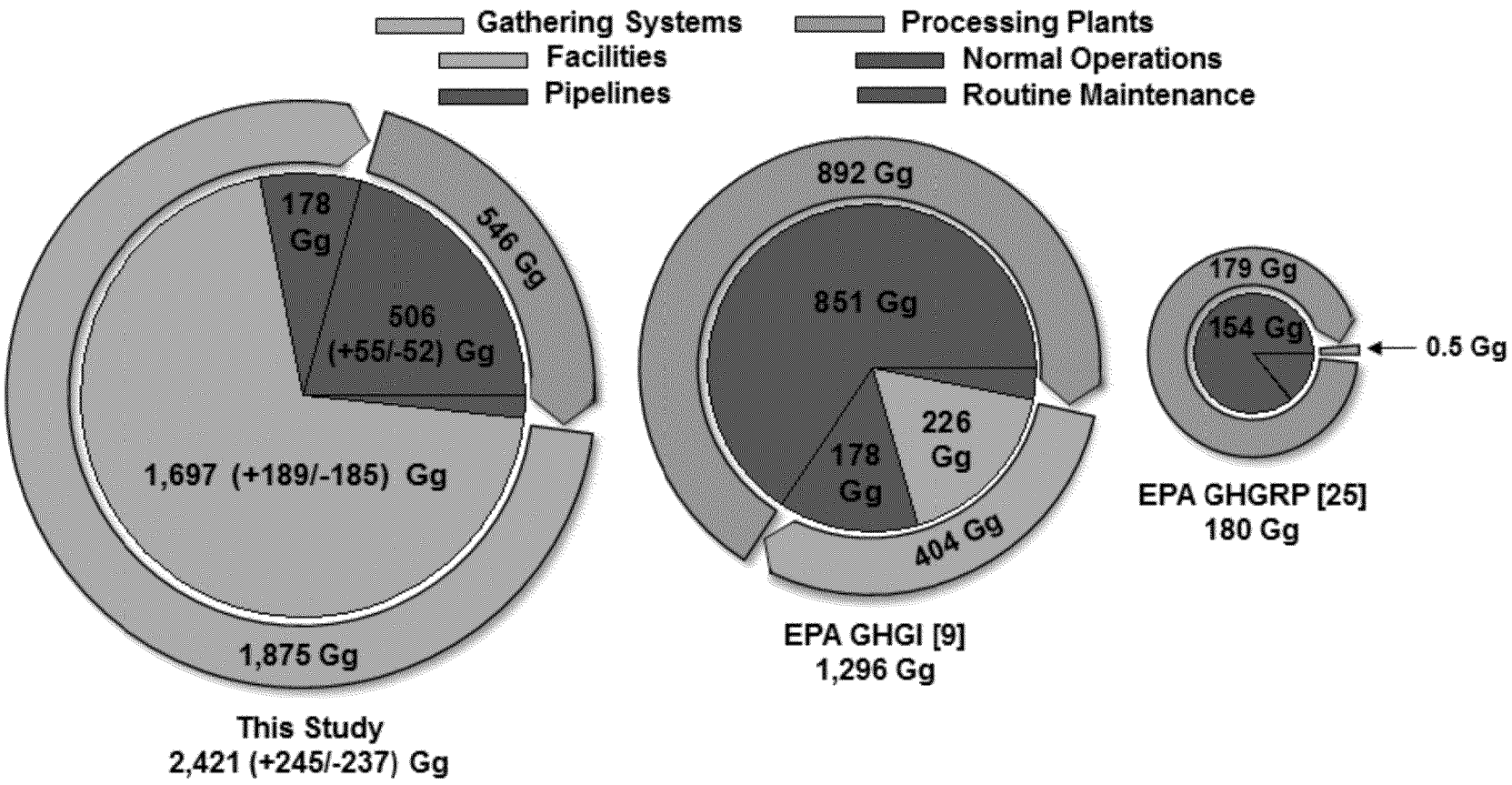


Approximately 50% of the reported CH_4 emissions in both the larger GHGRP (N=246) and the sampled plant dataset (N=16) were less than 200 Mg, whereas only 2 of 16 annualized CH_4 measurements were below this value.

Methane Emissions from the G&P Sectors

Summary of Results

National estimate of total CH_4 emissions (Gg) from U.S. natural gas gathering systems (facilities and pipelines) and processing plants (normal operation and routine maintenance) in comparison to the 2014 EPA GHGI and 2013 EPA GHGRP.



Methane Emissions from the G&P Sector
Summary

1. Facility-level CH_4 emissions were measured at 16 processing plants: median tnFLER < 0.1%
2. Facility-level CH_4 emissions were measured at 114 gathering facilities: median tnFLER = 0.41%
3. Facility data were compiled (e.g. facility count, equipment, NG throughput) using partner (N=768), state and national data bases for implementation into Monte Carlo model.
4. The model predicts median annual methane emissions of 1,697 Gg from ≈ 4,600 gathering facilities and 506 Gg of methane emissions from ≈ 600 Subpart KKK processing plants.
5. Methane loss rates of 0.40% and 0.18% were predicted for gathering facilities and processing plants, respectively. When normalized by production, the loss rate was 0.47% for G&P sector.

Methane Emissions from the G&P Sector
Summary

6. Emissions from gathering pipelines were not measured. Future studies should be conducted to better quantify total length and emission factors.
7. Model predictions for processing plants were less than the EPA GHGI (891 Gg) but higher than that reported to EPA GHGRP (179 Gg).
8. Model predictions for gathering facilities were substantially higher than EPA GHGI (≈ 226 Gg) and that reported to the GHGRP (<0.5 Gg).
9. Not all source categories for Subpart KKK processing plants are reported under GHGRP and very few gathering facilities (<10%) are required to report under current regulations (and those that report only report Subpart C emissions).
10. Observations from field campaign suggest that emissions can be reduced from gathering by incorporating systems and/or practices to quickly identify and repair high emitting gathering facilities

To: Joe Rudek[jrudek@edf.org]; Thoma, Eben[Thoma.Eben@epa.gov]; john.albertson@duke.edu[john.albertson@duke.edu]
Cc: Cassandra Brunette[cbrunette@edf.org]; Steven Hamburg[shamburg@edf.org]; Smith, Denzil W[the_denz@mail.utexas.edu]
From: Allen, David T
Sent: Wed 5/20/2015 4:36:35 PM
Subject: RE: coordinating the methane emission measurements from ammonia plants

All:

Denzil Smith will be assembling information about the potential sampling sites. I just briefed him, so he is up to date. I will be on travel nearly continuously for the next month, so we should tie Denzil in to the email traffic so that there is no delay in communicating information to him. He is copied on this email.

Please note that the information that we are assembling is all public information. We will not be able to provide contacts at these facilities.

Dave

From: Joe Rudek [mailto:jrudek@edf.org]
Sent: Wednesday, May 20, 2015 11:01 AM
To: Allen, David T; thoma.eben@epa.gov; john.albertson@duke.edu
Cc: Cassandra Brunette; Steven Hamburg
Subject: coordinating the methane emission measurements from ammonia plants

Hello all,

Thanks to everyone for contributions to these measurements. Here's where we are and what are our next steps:

1) Dave is plotting the route around the ammonia plants. Dave - when will you be able to get us the first draft of the route?

2) Eben and John have both identified staff that can set up and operate the portable Met station and accompany the Google driver. Can one individual accomplish both these tasks over the selected route or do we need both? If only one needed, which staff makes the most sense? EDF can cover travel expenses. Eben and John – can you discuss this and let us know what works best?

3) The Google car will be completing its work in Jacksonville, FL in the next 2 – 3 weeks (estimated date: week of June 8 or 15). The car will need to be in Pittsburgh the second week of July.

Once we have more information on the above points, we can schedule a planning call.

With regards,

Joe

****

Joe Rudek, Ph.D.

Lead Senior Scientist

Office of the Chief Scientist

Environmental Defense Fund

Remote Office: Philadelphia, PA

484-431-6768

Skype: joe.rudek1

jrudek@edf.org

****

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/21/2016 2:49:07 PM
Subject: FW: Good news on methane quantification - FY-16 appropriations

Hi Eben,

I just forwarded you a meeting invite (though I can't tell if it actually sent, so let me know if you don't see an invite for a 1/28 meeting with DOE).

DOE was appropriated $5M for methane quantification for natural gas systems. OAP is having the 1/28 call with them to discuss the plan moving forward. We think it'd be great to have ORD input on the planning.

I've pasted below the original list of priority data needs we shared with DOE—I believe you provided input here so you likely have seen this already, but here it is as a reminder. We can already think of some areas we may want to add (intermittent pneumatic controllers, hi-flow sampler in production) so this shouldn't be considered the final list and we're open to other ideas.

<u>Preliminary priority areas for new data (discussed on 6/11/2015 call with DOE)</u>

- Time series data
- Abandoned wells
- Natural seepage
- Gathering lines
- Casinghead gas
- Malfunctioning tanks
- Top-down/bottom-up in distribution segment
- Excavation damages and high-pressure pipeline blowdowns in distribution

Let me know if you'd like additional background, and if you can join the 1/28 call.

Thanks!

Melissa

From: Gunning, Paul
Sent: Tuesday, January 12, 2016 8:55 AM
To: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Hargrove, Anne <Hargrove.Anne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

James, this is great news and we look forward to working with you on this. Next week is pretty busy for me, but might be workable. The week of the 25th would work better and is pretty open at the moment. Let us know what might work for you.

Thanks!

Paul

Paul M. Gunning

Director, Climate Change Division

U.S. EPA (6207J)

1200 Pennsylvania Avenue

Washington, DC 20460

Direct (202) 343-9736

Fax (202) 343-2202

Cell (202) 251-1436

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Monday, January 11, 2016 4:00 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>
Subject: Good news on methane quantification - FY-16 appropriations

Dear Paul and Melissa,

Happy New Year to both of you!

The good news that I wanted to share with you is that the FY16 omnibus appropriations bill included $5 million for emissions quantification from natural gas infrastructure. The bill also includes $7 million for R&D on emissions mitigation from midstream infrastructure and both of these new programs will managed by DOE's Office of Fossil Energy.

As you may recall, the President's FY16 budget requested $10 million for methane emissions quantification (and here is the relevant guidance):

Emissions Quantification from Natural Gas Infrastructure

The Emissions Quantification from Natural Gas Infrastructure research subprogram will focus on better quantifying methane emissions from the natural gas value chain. The program will work with the Environmental Protection Agency to ensure that data produced is compatible with the national Greenhouse Gas Inventory. Efforts will focus on understanding regional variation and reducing uncertainty in emissions estimates.

Christopher Freitas (cc'd) is the Program Manager for both of the above-mentioned programs. He is working with NETL and in cooperation with EPSA to develop an annual operating plan

and, ultimately, FOA, to help move this forward.

We would love to schedule a conference call with you to hear your thoughts on how this new program could be targeted to help improve the GHG Inventory. Please let us know when you might be available for a call on this subject.

We look forward to being in touch.

Thanks very much,

James

--

James Bradbury

Senior Policy Adviser for Climate, Environment and Efficiency

Office of Energy Policy and Systems Analysis

U.S. Department of Energy

Phone: 202-586-0683

To: Cassandra Brunette[cbrunette@edf.org]; Joe Rudek[jrudek@edf.org]; Steven Hamburg[shamburg@edf.org]; Smith, Denzil W[the_denz@mail.utexas.edu]; Brantley, Halley[Brantley.Halley@epa.gov]; Zhou, Xiaochi[Zhou.Xiaochi@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; john.albertson@duke.edu[john.albertson@duke.edu]
Cc: Smith, Denzil W[the_denz@mail.utexas.edu]; Joe.von_Fischer@colostate.edu[Joe.von_Fischer@colostate.edu]
From: Allen, David T
Sent: Tue 5/26/2015 5:54:19 PM
Subject: RE: Ammonia Plant Mobile Monitoring Suggested Route

FYI – I will be back in the country beginning on June 13 if I can assist in any way.

Dave Allen

From: Cassandra Brunette [mailto:cbrunette@edf.org]
Sent: Tuesday, May 26, 2015 12:51 PM
To: Joe Rudek; Allen, David T; Steven Hamburg; Smith, Denzil W; Brantley, Halley; Zhou, Xiaochi; Thoma, Eben (Thoma.Eben@epa.gov); john.albertson@duke.edu
Cc: Smith, Denzil W; Joe.von_Fischer@colostate.edu
Subject: RE: Ammonia Plant Mobile Monitoring Suggested Route

+ Joe von Fischer at Colorado State University

Hi Joe R,

We should move forward as if the car will be available the beginning of the week of the 15th. I am still working out the particulars of the driver's availability and will have more information on that in the next few days.

Best,

Cassie

Cassandra Brunette
Manager

Office of Chief Scientist

Environmental Defense Fund
123 Mission St. 28th Floor
San Francisco, CA 94105
T (415) 293-6084

C (415) 902-1566
F (415) 293-6051
CBrunette@edf.org

From: Joe Rudek
Sent: Tuesday, May 26, 2015 8:50 AM
To: Allen, David T; Cassandra Brunette; Steven Hamburg; Smith, Denzil W; Brantley, Halley; Zhou, Xiaochi; Thoma, Eben (Thoma.Eben@epa.gov); john.albertson@duke.edu
Cc: Smith, Denzil W
Subject: RE: Ammonia Plant Mobile Monitoring Suggested Route

Thanks Dave and Denzil,

Cassie – do we have any further information on the date of the availability of the Google car?

All – I will send a Doodle poll (except to Dave) to find a good time for a call. We should line up schedules and develop a critical path to getting the measurements done.

Cheers,

Joe

From: Allen, David T [mailto:allen@che.utexas.edu]

Sent: Saturday, May 23, 2015 11:29 AM
To: Cassandra Brunette; Steven Hamburg; Smith, Denzil W; Brantley, Halley; Zhou, Xiaochi; Thoma, Eben (Thoma.Eben@epa.gov); Joe Rudek; Allen, David T; john.albertson@duke.edu
Cc: Smith, Denzil W
Subject: FW: Ammonia Plant Mobile Monitoring Suggested Route

All:

Denzil Smith and I at the University of Texas at Austin have prepared preliminary information for sampling of ammonia production facilities. In designing this possible sampling plan, we made the presumption that a sampling vehicle would be available at a starting location in the panhandle of Florida, for slightly over a week of sampling. Our goal was to use publicly available information to identify as many facilities as possible that use natural gas as a feedstock and that would be likely to have road access and favorable wind conditions to allow for downwind sampling.

We identified a set of seven facilities in Louisiana, Mississippi, Oklahoma and Texas that all appear, from the public information that we utilized, to have significant on-going production (~1000 tons ammonia production capacity/d) and utilize natural gas as a feedstock. Methane utilization (mass flow rate) will be of the same scale as the ammonia production, so, IF emissions are 0.1% of natural gas utilization, this would be roughly 1 ton methane/d emission rate if the plants are running at full capacity. Information about the facilities, including production information, site contacts (where available), Google Earth images of the sites, and local wind roses (when available) are attached. We strongly urge the sampling team to do additional confirmation of this information before launching the field campaign.

Of the facilities that we were able to identify, the closest to the Florida panhandle are in Geismar and Faustina, Louisiana. These facilities are in a rural area along the Mississippi River, and have a number of nearby chemical manufacturing operations that may confound the sampling. Nevertheless, the prevailing wind directions, the flat terrain, and the road network may allow isolation of the plumes from these facilities.

Another group of facilities are in Verdigris, Enid and Woodward Oklahoma and Borger Texas. The Enid, Woodward and Borger sites all appear reasonably isolated with good road access. The Verdigris site appears to have a number of nearby industrial facilities that may confound downwind analyses.

If there is the desire to sample a site located between the Louisiana and Oklahoma/Texas sites, Yazoo City, Mississippi is a possibility. The site is isolated and has a roadway that runs roughly north-south near the facility. This may allow for sampling with the prevailing southerly winds, but we note that the terrain to the east of the facility appears to have very limited public road access visible on Google Earth.

We hope that this information is useful to the sampling team. Again, we strongly urge the sampling team to do further confirmation of this preliminary information. I will be on travel with uncertain email access for the next 3 weeks, so I suggest that any question about this information be directed to Denzil.

Dave Allen

From: Smith, Denzil W
Sent: Thursday, May 21, 2015 3:41 PM
To: Allen, David T
Subject: Ammonia Plant Mobile Monitoring Suggested Route

Dr. Allen,

Attached are two zip files:

Mobile Monitoring Plan.zip has plant spreadsheet, area wind rose, overall Google Earth route map and zoomed Google Earth views of each plant.

Ammonia Plant Contacts.zip has web page listing of contact telephone numbers for the plants.

Thanks,

Denzil

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]
From: Weitz, Melissa
Sent: Tue 8/11/2015 2:07:52 PM
Subject: Friday EDF call is on gathering/boosting and processing study

Some background on the Friday EDF meeting—

The 2PM Friday EDF meeting is EDF and Colorado State's pre-brief on the gathering and boosting and processing segments methane study, which will be coming out next Tuesday.

On Monday at 4PM, the EDF/Colorado State team will be in DC and will provide us with a more detailed technical briefing on the study.

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: monthly methane research and data call
Start Date/Time: Thur 11/12/2015 6:30:00 PM
End Date/Time: Thur 11/12/2015 7:00:00 PM
a411_7.pdf
AWAM VOC Brantley.pdf
2015 Howard ESE HI FLO and UT EDF implications.pdf
Howard_2015b JAWMA high flow sensor.pdf

The 11/12/2015 call will focus on new research on Hi Flow samplers. Attached are some key papers.

To: Cassandra Brunette[cbrunette@edf.org]; Steven Hamburg[shamburg@edf.org]; Smith, Denzil W[the_denz@mail.utexas.edu]; Brantley, Halley[Brantley.Halley@epa.gov]; Zhou, Xiaochi[Zhou.Xiaochi@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Joe Rudek[jrudek@edf.org]; john.albertson@duke.edu[john.albertson@duke.edu]
Cc: Smith, Denzil W[the_denz@mail.utexas.edu]
From: Allen, David T
Sent: Tue 5/26/2015 7:27:50 AM
Subject: RE: Ammonia Plant Mobile Monitoring Suggested Route

FYI – EIA story on all the new ammonia/urea plants being built.

http://www.eia.gov/naturalgas/weekly/archive/2015/05_21/index.cfm

Dave

From: Allen, David T
Sent: Saturday, May 23, 2015 10:29 AM
To: Cassandra Brunette; Steven Hamburg; Smith, Denzil W; Brantley, Halley; Zhou, Xiaochi; Thoma, Eben (Thoma.Eben@epa.gov); Joe Rudek; Allen, David T; john.albertson@duke.edu
Cc: Smith, Denzil W
Subject: FW: Ammonia Plant Mobile Monitoring Suggested Route

All:

Denzil Smith and I at the University of Texas at Austin have prepared preliminary information for sampling of ammonia production facilities. In designing this possible sampling plan, we made the presumption that a sampling vehicle would be available at a starting location in the panhandle of Florida, for slightly over a week of sampling. Our goal was to use publicly available information to identify as many facilities as possible that use natural gas as a feedstock and that would be likely to have road access and favorable wind conditions to allow for downwind sampling.

We identified a set of seven facilities in Louisiana, Mississippi, Oklahoma and Texas that all appear, from the public information that we utilized, to have significant on-going production (~1000 tons ammonia production capacity/d) and utilize natural gas as a feedstock. Methane

utilization (mass flow rate) will be of the same scale as the ammonia production, so, IF emissions are 0.1% of natural gas utilization, this would be roughly 1 ton methane/d emission rate if the plants are running at full capacity. Information about the facilities, including production information, site contacts (where available), Google Earth images of the sites, and local wind roses (when available) are attached. We strongly urge the sampling team to do additional confirmation of this information before launching the field campaign.

Of the facilities that we were able to identify, the closest to the Florida panhandle are in Geismar and Faustina, Louisiana. These facilities are in a rural area along the Mississippi River, and have a number of nearby chemical manufacturing operations that may confound the sampling. Nevertheless, the prevailing wind directions, the flat terrain, and the road network may allow isolation of the plumes from these facilities.

Another group of facilities are in Verdigris, Enid and Woodward Oklahoma and Borger Texas. The Enid, Woodward and Borger sites all appear reasonably isolated with good road access. The Verdigris site appears to have a number of nearby industrial facilities that may confound downwind analyses.

If there is the desire to sample a site located between the Louisiana and Oklahoma/Texas sites, Yazoo City, Mississippi is a possibility. The site is isolated and has a roadway that runs roughly north-south near the facility. This may allow for sampling with the prevailing southerly winds, but we note that the terrain to the east of the facility appears to have very limited public road access visible on Google Earth.

We hope that this information is useful to the sampling team. Again, we strongly urge the sampling team to do further confirmation of this preliminary information. I will be on travel with uncertain email access for the next 3 weeks, so I suggest that any question about this information be directed to Denzil.

Dave Allen

From: Smith, Denzil W
Sent: Thursday, May 21, 2015 3:41 PM
To: Allen, David T
Subject: Ammonia Plant Mobile Monitoring Suggested Route

Dr. Allen,

Attached are two zip files:

Mobile Monitoring Plan.zip has plant spreadsheet, area wind rose, overall Google Earth route map and zoomed Google Earth views of each plant.

Ammonia Plant Contacts.zip has web page listing of contact telephone numbers for the plants.

Thanks,

Denzil

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/21/2015 9:53:30 PM
Subject: RE: Updated methane emissions prospectus for Wed meeting

Thanks Eben—

These make sense to me. I'll cover them in my general overview of our comments but feel free to chime in with details.

Thanks!

From: Thoma, Eben
Sent: Tuesday, July 21, 2015 3:49 PM
To: Weitz, Melissa
Subject: RE: Updated methane emissions prospectus for Wed meeting

Melissa,

Some comments attached. Ex. 5 - Deliberative Process
Ex. 5 - Deliberative Process We can discuss if you like.

Eben

From: Weitz, Melissa
Sent: Tuesday, July 21, 2015 2:40 PM
To: Thoma, Eben
Subject: FW: Updated methane emissions prospectus for Wed meeting

From: Weitz, Melissa
Sent: Monday, July 20, 2015 5:37 PM
To: Gunning, Paul; Irving, Bill
Cc: Kocchi, Suzanne
Subject: RE: Updated methane emissions prospectus for Wed meeting

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Location: DCRoomWJCE5140OAPTB/DC-OAR-OAP
Importance: Normal
Subject: NAS methane study briefing
Start Date/Time: Mon 3/26/2018 5:00:00 PM
End Date/Time: Mon 3/26/2018 6:00:00 PM
2 - EPA - Final Methane Briefing Slides 3-23-2018.pptx

Webinar link: **http://epawebconferencing.acms.com/r86x98ljqjm/**

Call in information:

Ex. 6 - Personal Privacy

Additional information on the methane study:

http://nas-sites.org/dels/studies/methane-study/

To: Thoma, Eben[Thoma.Eben@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/21/2015 8:16:12 PM
Subject: Fwd: Emailing: T&S Detailed Presentation v1.pdf
T&S Detailed Presentation v1.pdf
ATT00001.htm

Slides for EDF call

Sent from my iPhone

Begin forwarded message:

From: "Zimmerle,Dan" <Dan.Zimmerle@colostate.edu>
To: "Weitz, Melissa" <Weitz.Melissa@epa.gov>
Subject: Emailing: T&S Detailed Presentation v1.pdf

Your message is ready to be sent with the following file or link attachments:

T&S Detailed Presentation v1.pdf

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

ENERGY
INSTITUTE
Colorado State University

Methane Emissions from T&S Sector Detailed Technical Review

Daniel Zimmerle

A. L. Robinson, L. L. Williams, T. L. Vaughn, A. J.Marchese, R. Subramanian, A.L. Mitchell, C. Quinn, G.P. Duggan, B. Willson, J.D. Opsomer, D. M. Martinez, S. Herndon

Study Team

Study Team

ENERGY INSTITUTE
Colorado State University

Carnegie Mellon University

Aerodyne Research

Funding & Access Partners

EDF ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

Dominion

Columbia Pipeline Group

DOW

ENABLE MIDSTREAM PARTNERS

KINDER MORGAN

Williams

TransCanada
In business to deliver

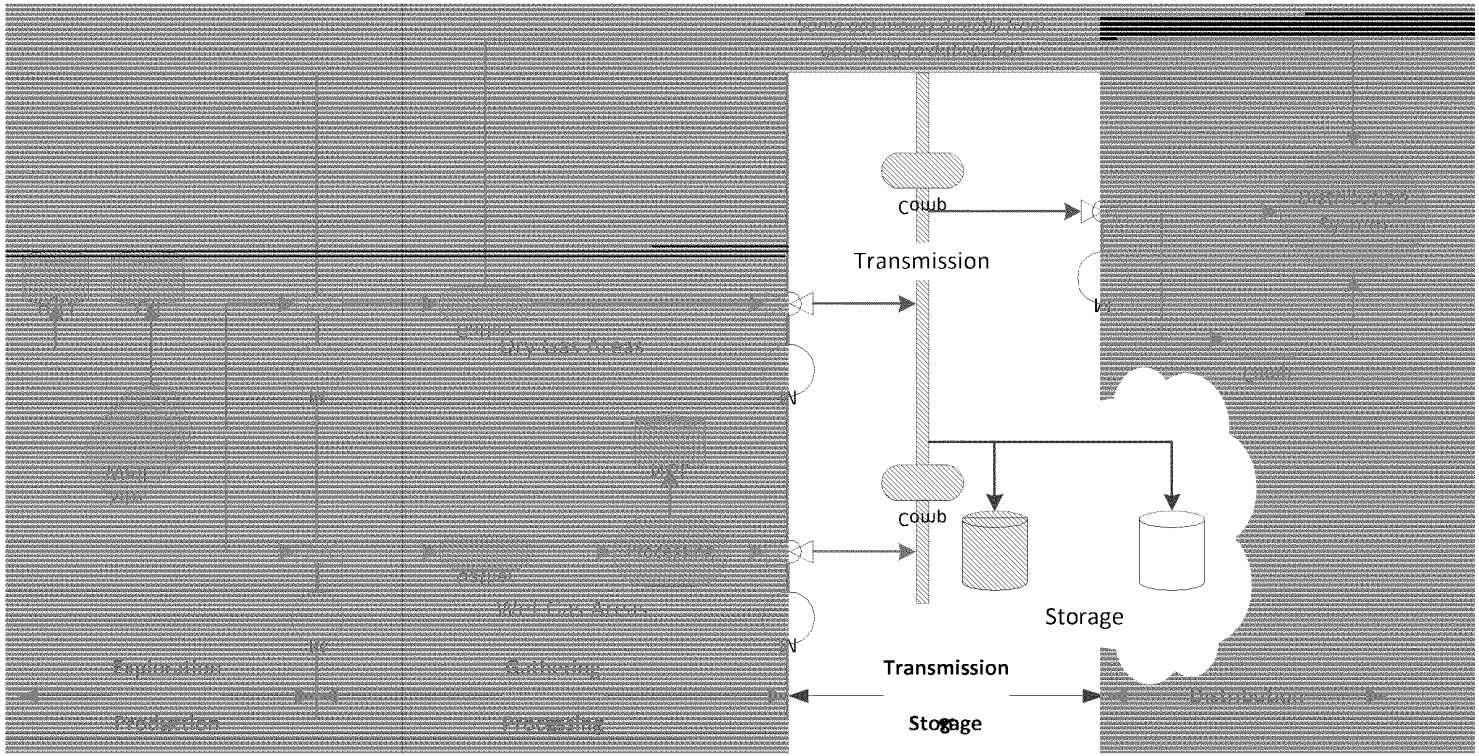
INGAA

STUDY DESIGN & FIELD MEASUREMENT CAMPAIGN

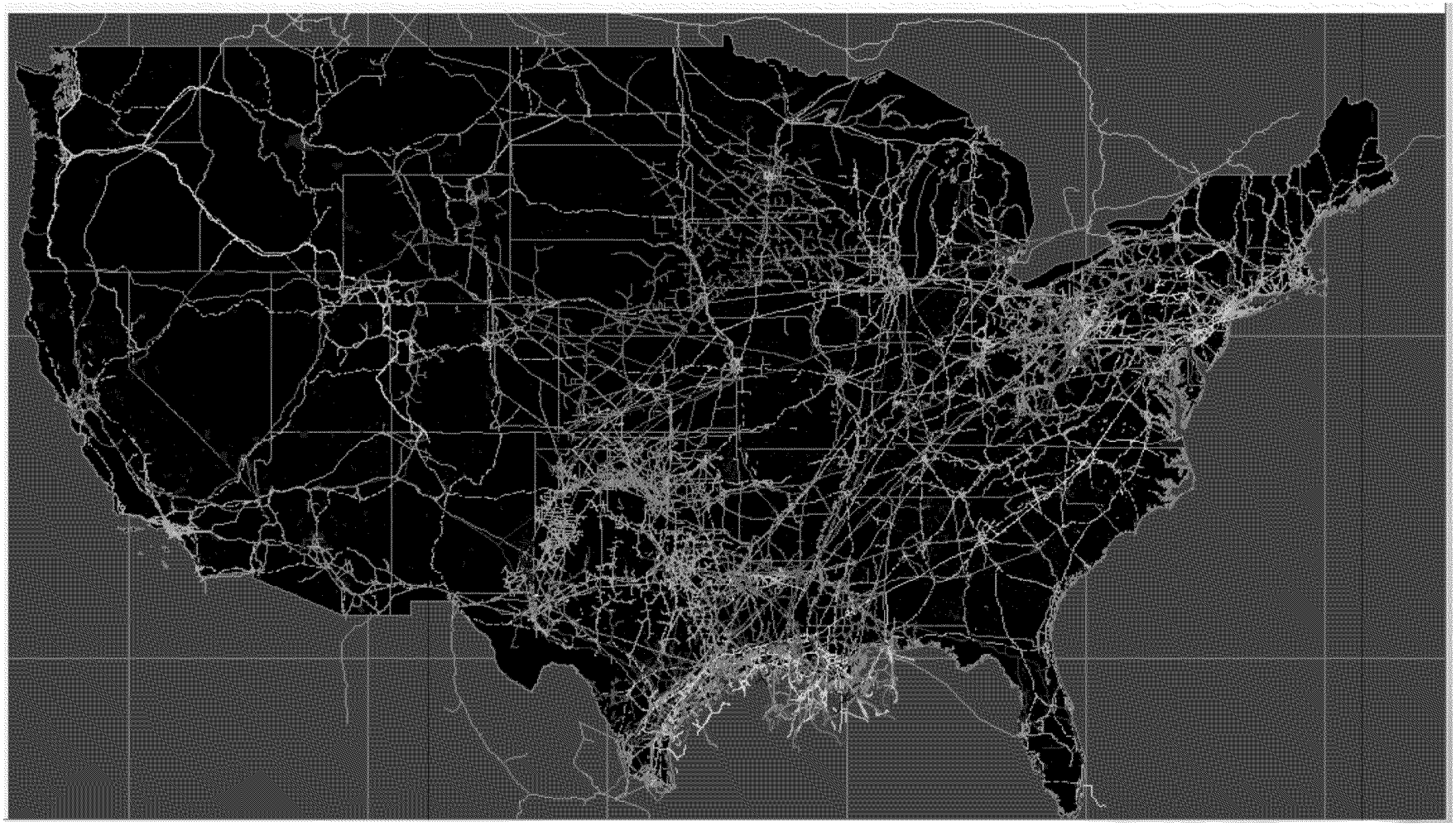
Definitions

- Transmission & Storage (T&S) sector of natural gas system
  - All storage facilities in this study are *underground* natural gas storage facilities
- *Greenhouse Gas Inventory (*GHGI)
  - EPA estimate of GHG emissions for USA
- *Greenhouse Gas Reporting Program* (GHGRP)
  - EPA reporting program for GHG emissions
  - For T&S, facilities report if *total* GHG emission >25,000 metric tons equivalent CO_2

Operational System Boundaries



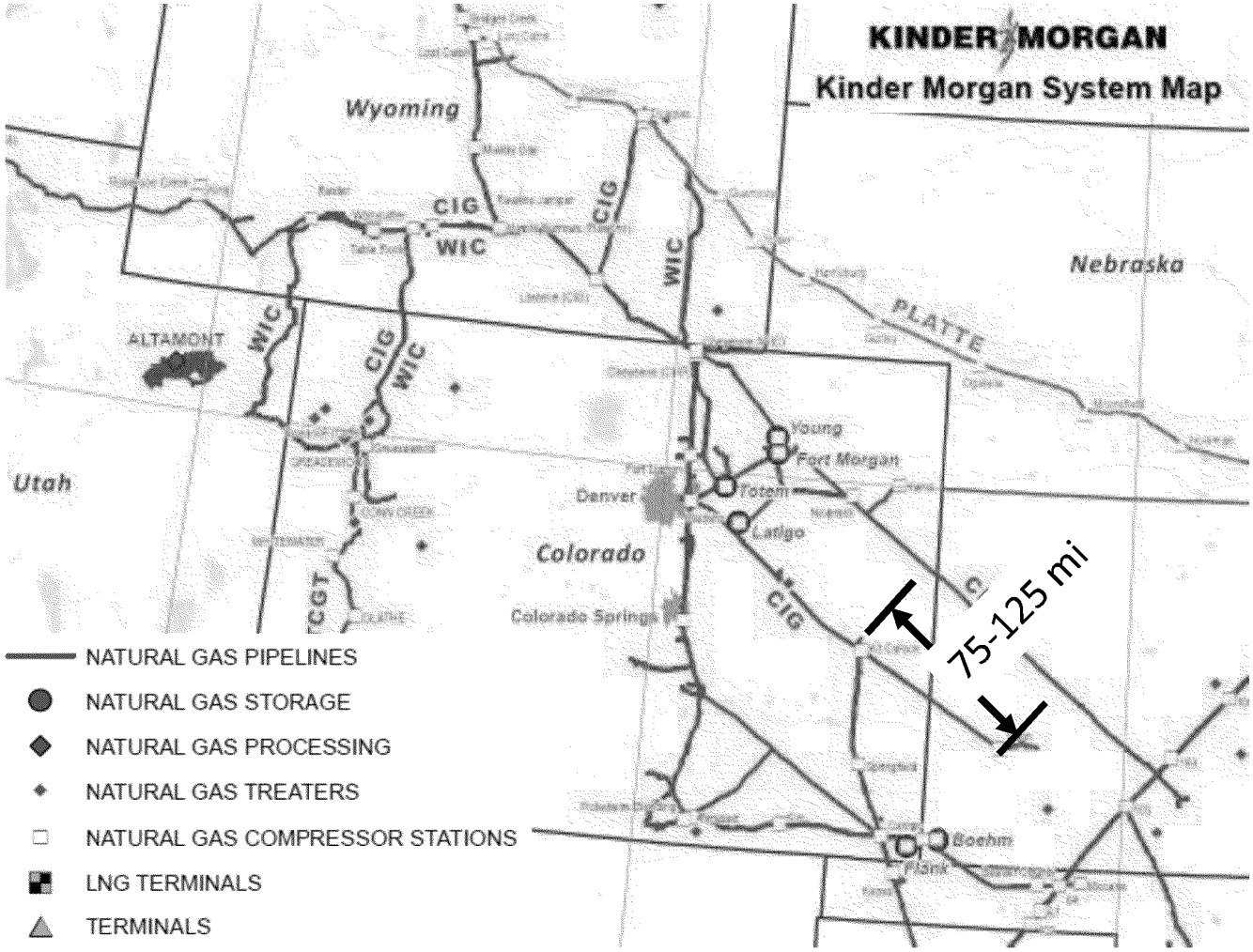
Full Transmission System



Color coded by company. Transmission classification is inexact. Data from MapSearch™, 2013

ENERGY INSTITUTE
Colorado State University

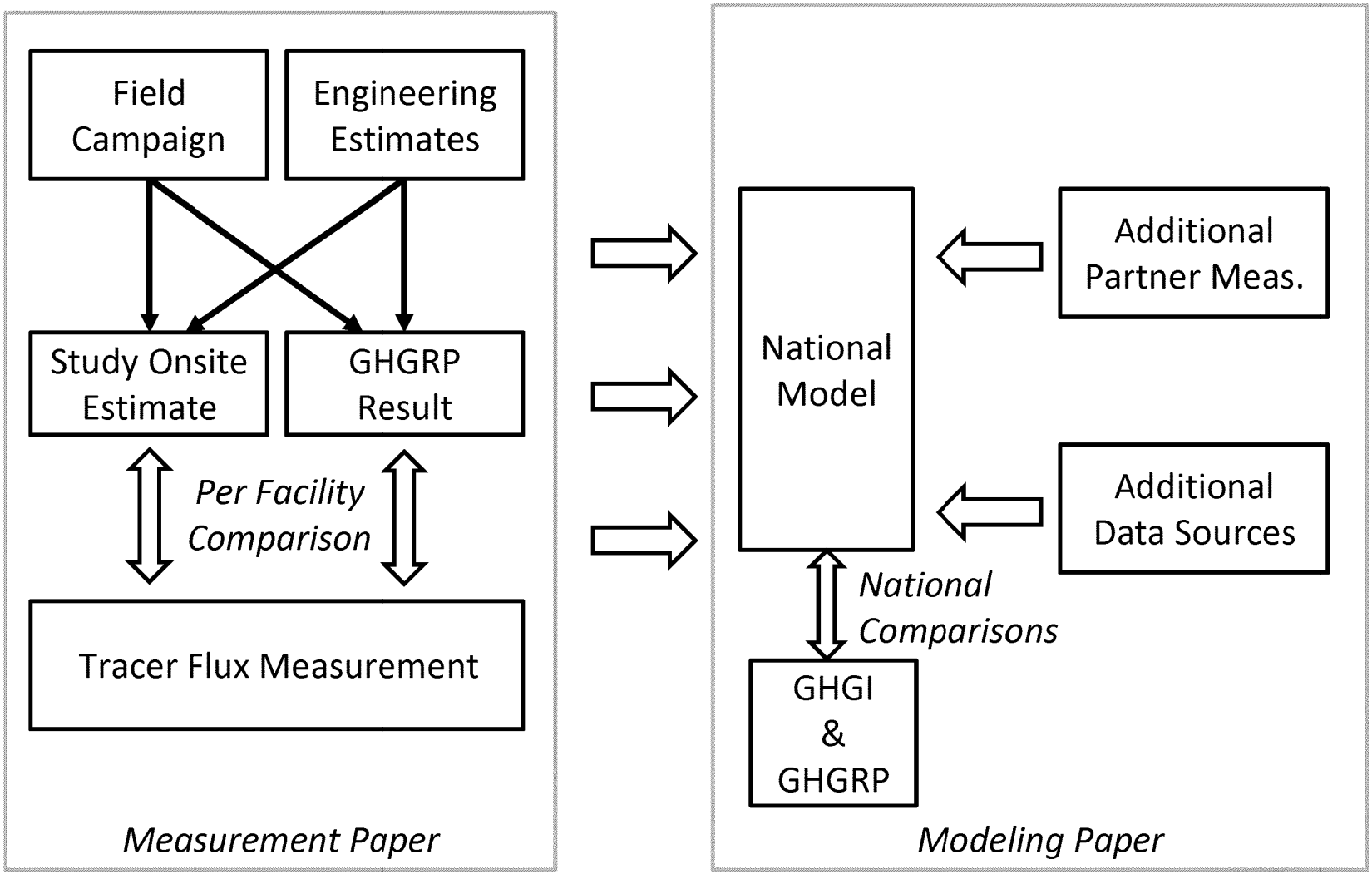
Sample of System Layout



Extracted from Kinder Morgan system map, www.kindermorgan.com

ENERGY INSTITUTE Colorado State University

Study Design



Field Campaign Methodology

- Paired downwind (tracer flux) and comprehensive on-site measurements
  - Dual tracer method (Aerodyne & Carnegie Mellon)
  - Onsite using combo of partner & contractor teams following same protocol
- Selected from partner sites / national distribution

Field study:

Subramanian, R., et. al., *Methane Emissions from Natural Gas Compressor Stations in the Transmission and Storage Sector: Measurements and Comparisons with the EPA Greenhouse Gas Reporting Program Protocol. Environmental Science & Technology* (2015).

Tracer methods paper:

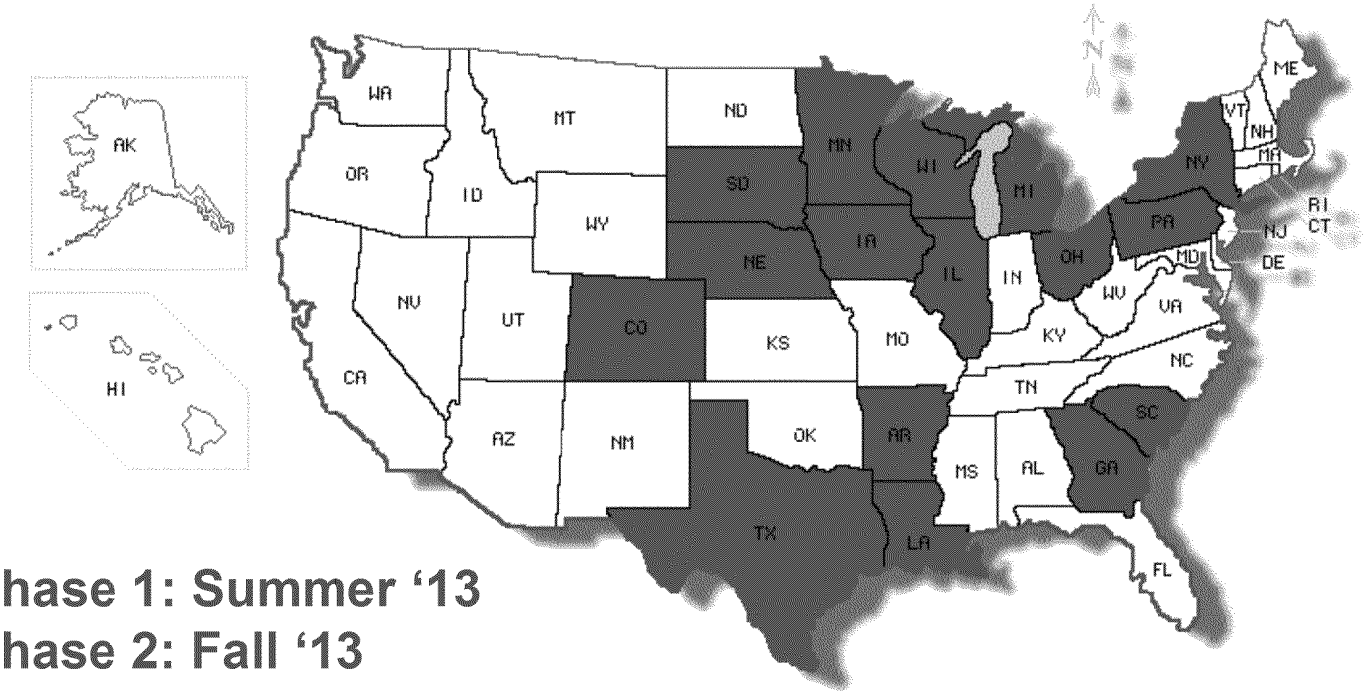
Roscioli, J. R., et. al, *Measurements of methane emissions from natural gas gathering facilities and processing plants: measurement methods*, Atmos. Meas. Tech. Discuss., 7, 12357-12406, doi:10.5194/amtd-7-12357-2014, 2014.

T&S Field Study

On-site and downwind emissions @ 45 sites nationwide

Randomly selected within sampling windows

9 storage / 36 transmission / multiple operating modes



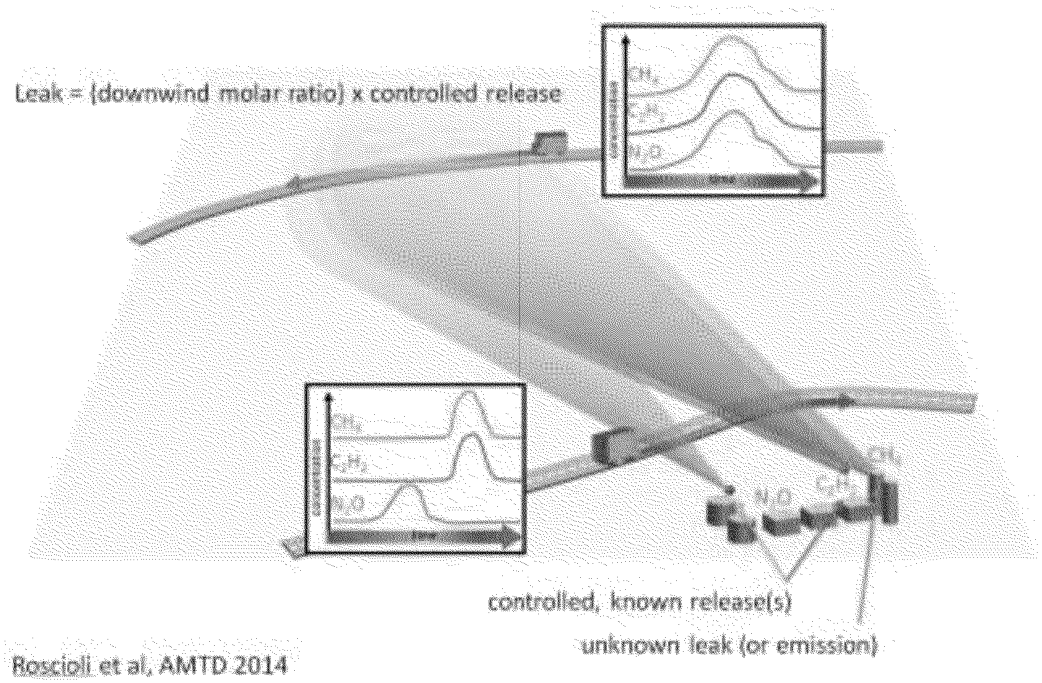
Phase 1: Summer '13
Phase 2: Fall '13

Partners represent ≈56% of *interstate* natural gas facilities

ENERGY INSTITUTE
Colorado State University

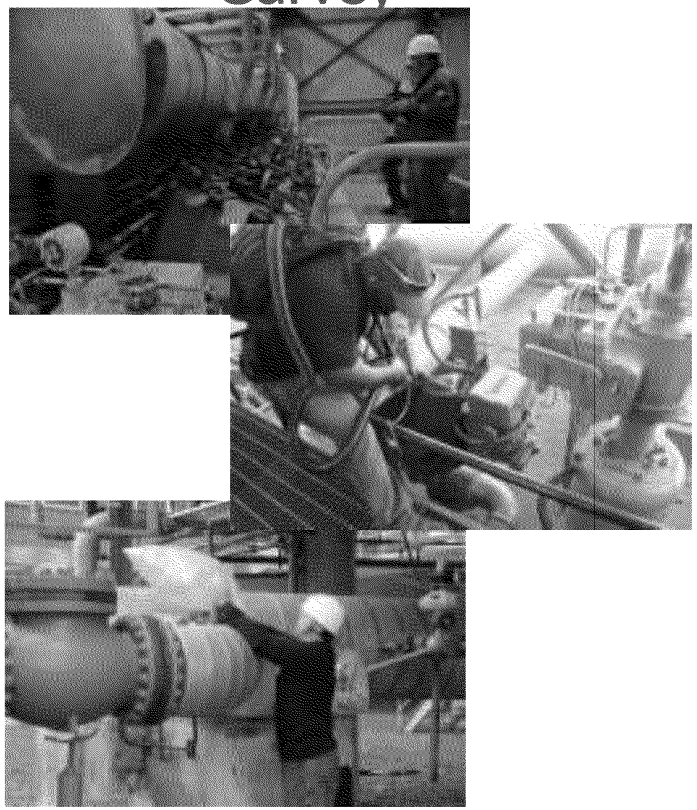
Measurement Methods

Dual Tracer Gas Method

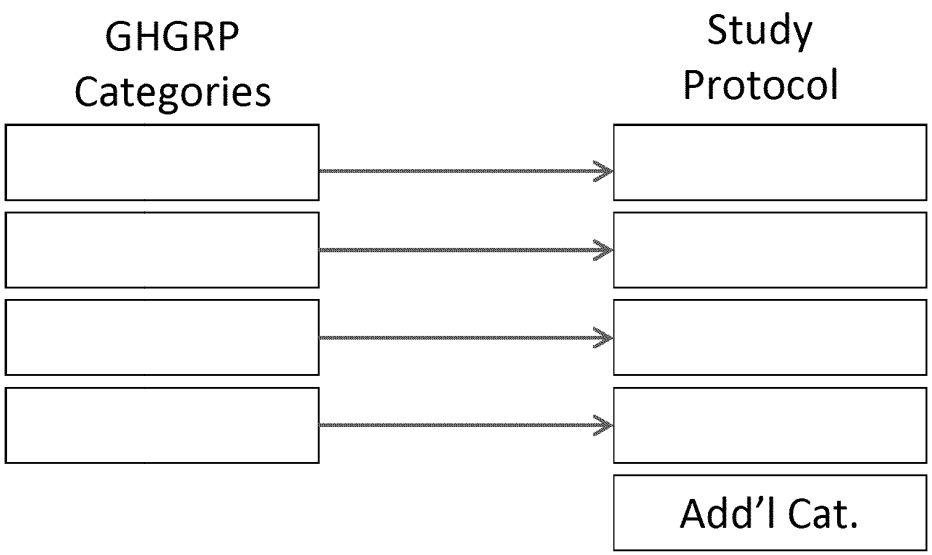


Roscioli et al, AMTD 2014

Comprehensive On-Site Survey

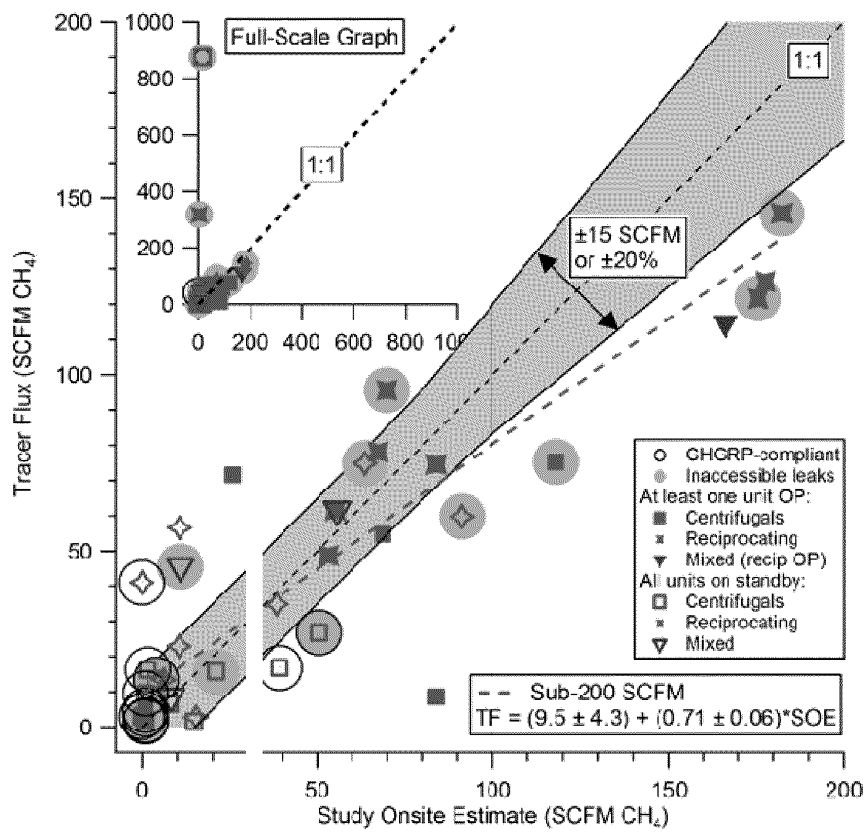


Field Measurements: Onsite Protocol



- Protocol Differences Relative to GHGRP (examples)
  - Measure in all compressor modes (NOP, NOD & OP)
  - Measure same components at storage & transmission facilities
  - Measure all seal vents
  - ID all leaks with IR camera & measure all
  - No portable acoustic meters
  - Did not measure intermittent pneumatic devices

Key Field Study Result: Comparison Between Methods



Two "super-emitter" facilities with > 300 SCFM emission rate

Seen by tracer methods but not by on-site methods

Remaining sites:

- Agreement between on-site and tracer within experimental uncertainty correlation
- Operating engine type drives significant part of the emissions

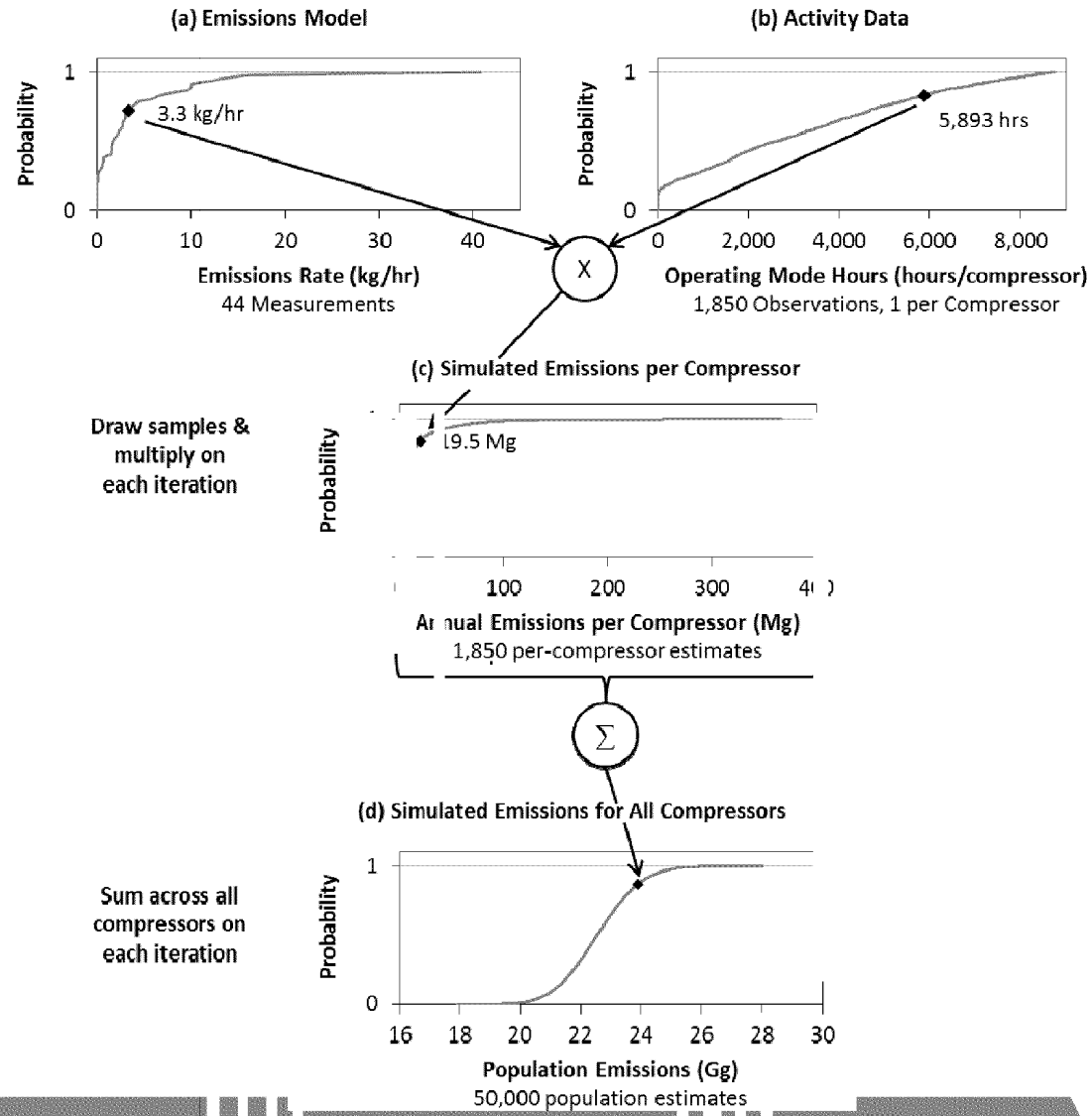
Conclusion:

- Emissions can be modeled using on-site measurements *if* super-emitters are modeled explicitly

ENERGY INSTITUTE Colorado State University

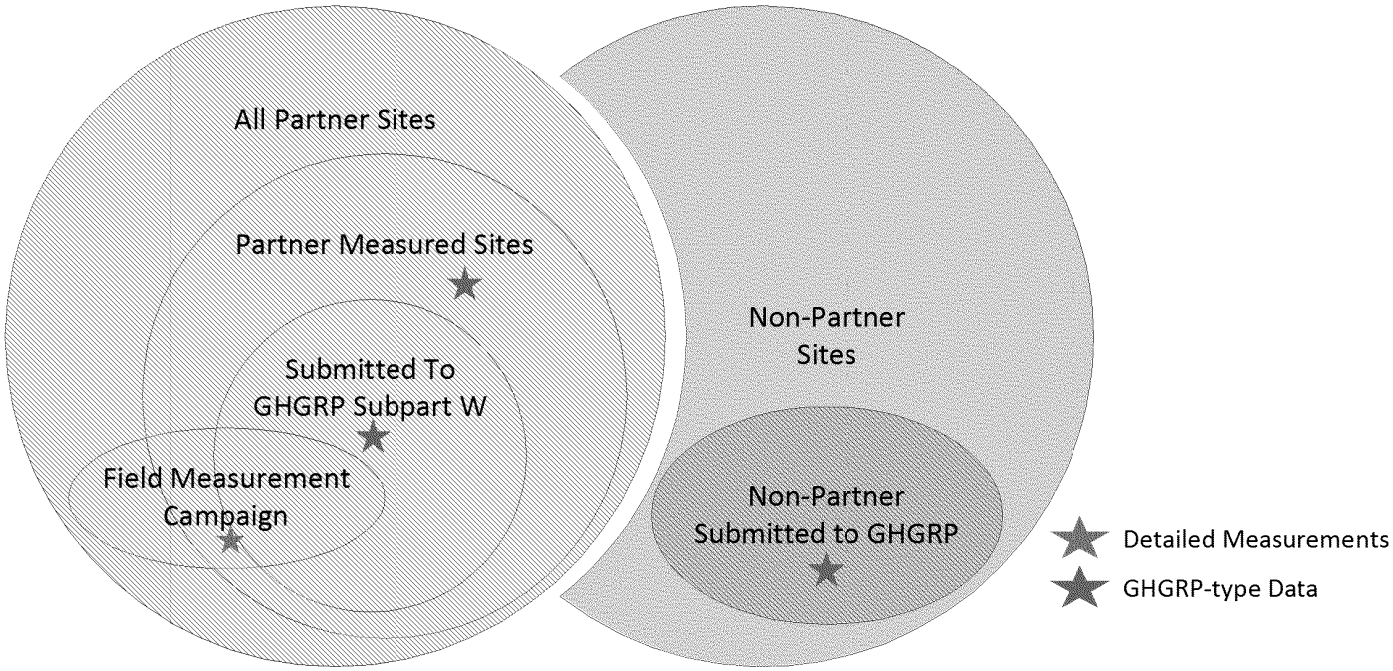
DATA AND MODELS

Monte Carlo Model Example



ENERGY INSTITUTE
Colorado State University

Model Inputs



Drawing is representational only and is not scaled to match site count

922 *known* facilities – 823 transmission & 99 underground storage

1,279 measurements from field campaign
1,013 measurements from other measurements
EIA data underground storage facility count
FERC Form 2 data 2nd transmission facility count

Activity (Census) Data for Model

- Partner site details provided by partners
- Non-partner sites:
  - Site configuration from GHGRP data
  - EIA data for underground storage facility count
  - FERC Form 2 data for transmission facility count
- Omitted:
  - Pipelines
  - LNG
  - M&R
  - Add'l small categories

Emissions Data for Model

- Field Data (1,279 measurements)
- Additional measurement data (1,013 measurements)
  - Measurements from three partner companies
  - Measurements used same protocol as field campaign
  - All or nothing from each partner in each emission category
- Blowdown data from partners
- Methane in combustion exhaust:
  - Emissions measurements underlying AP-42
  - Additional exhaust measurements from partners

Facility-Specific Emissions Data

(in addition to field & partner measurements)

- Reported GHGRP data for 498 facilities
  - Partners provided data underlying submitted reports (262 facilities)
- Facilities which were measured by partners, but not required to report to GHGRP (179 facilities)

KEY FINDINGS

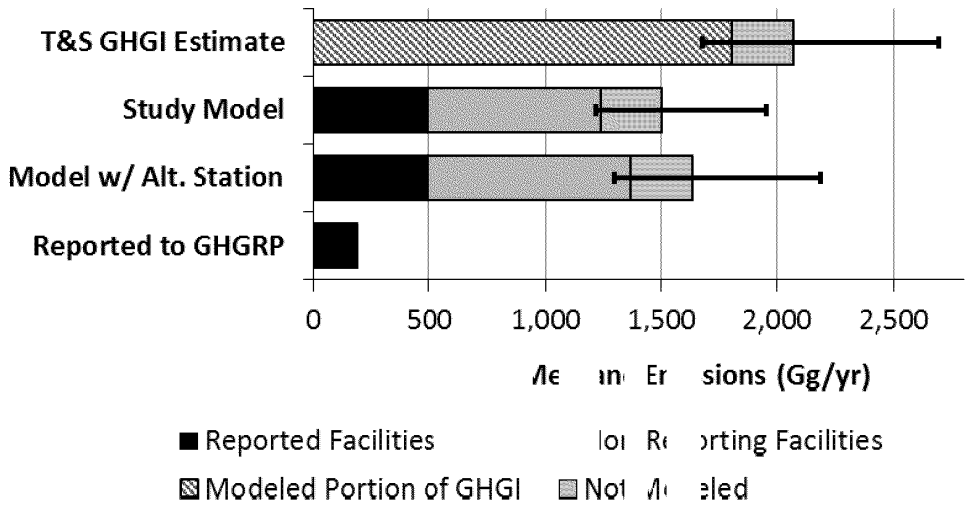
http://energyinstitute.colostate.edu/p/transmission-and-storage.html

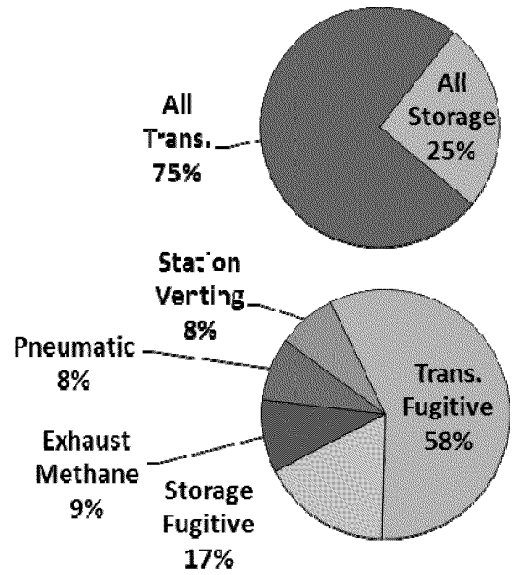
ENERGY INSTITUTE
Colorado State University

Key Findings

- Statistically similar to GHGI Due to significant offsetting factors in emission & activity categories
- "Activity" estimates have big impact on emissions estimates Facility counts & equipment mix
- Super-emitters Big impact but high uncertainty
- GHGRP under-reports significantly due to reporting requirements & some emissions factors

Overall Study Results

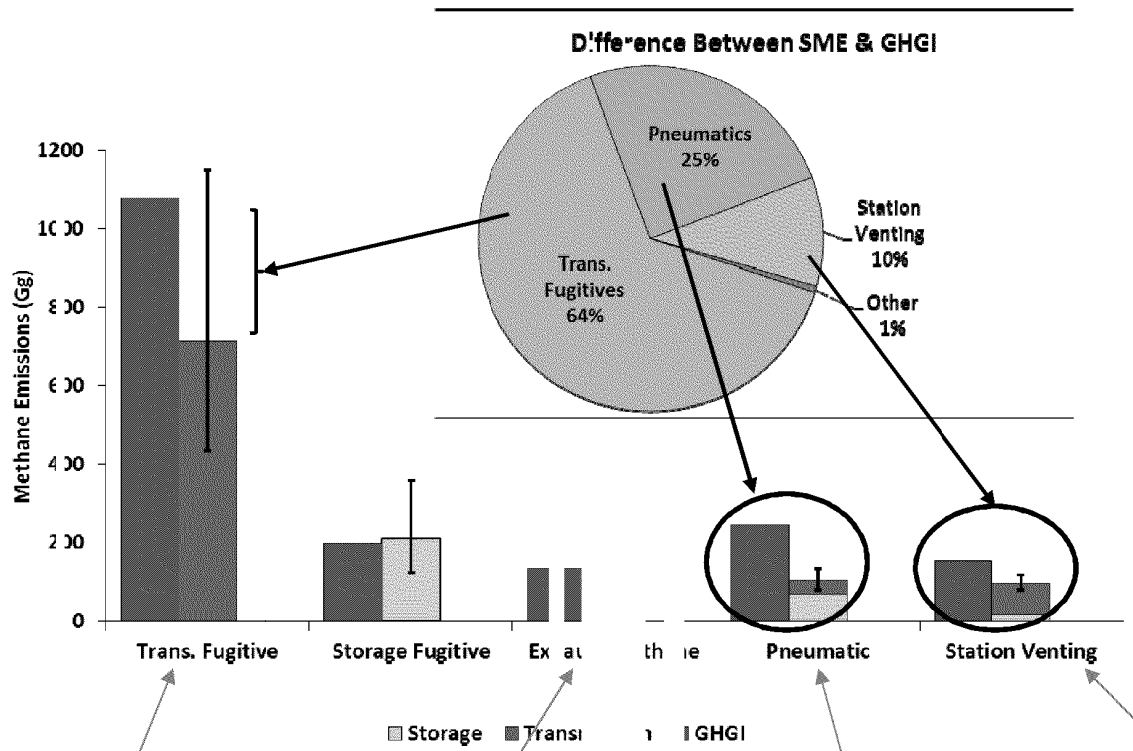




Notes:

- T&S GHGI GHGI estimate net of "voluntary reductions"
- Model w/ Alt Station Model with alternative method of estimating transmission station count
- Reported to GHGRP ≈498 facilities in T&S that report to GHGRP

Results Compared to GHGI



Why?
(major reasons)

Emissions, Facility Count, Comp. Diff.

Offsetting Usage + Emissions Factors
(esp transmission)

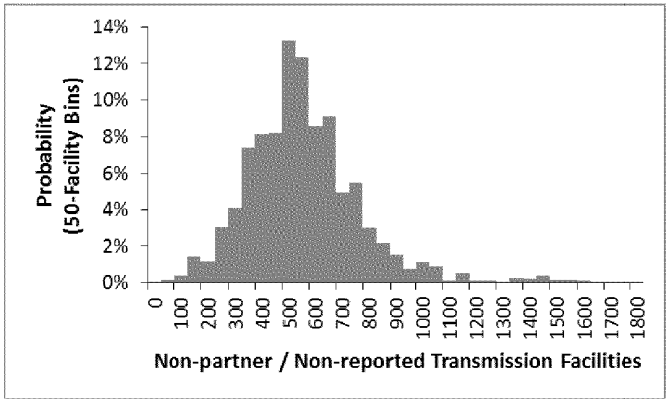
Usage Difference
(esp transmission)

More Data Available
(transmission GHGRP)

ENERGY INSTITUTE
Colorado State University

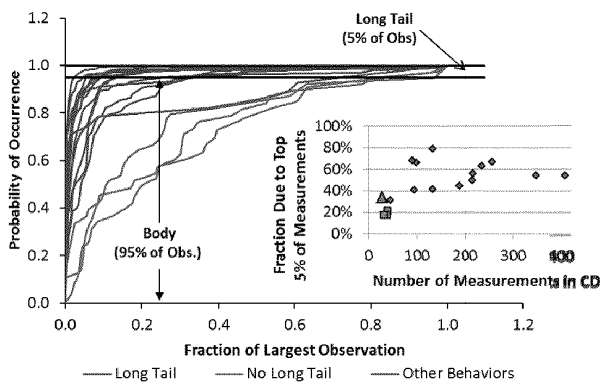
Challenge of Activity Estimates

- Facility Types:
  - GHGRP reported
  - Partner facilities
  - Non-Partner / Non-GHGRP
- Study estimates:
  - Fewer transmission stations than GHGI — 1,375 [+32%/-22%] vs 1799
  - ≈equal compressor power to GHGI — 20.3 GW [+25%/-18%] vs ≈19.5 GW
  - Slightly more underground storage stations — 382 [+9%/-9%] vs 344



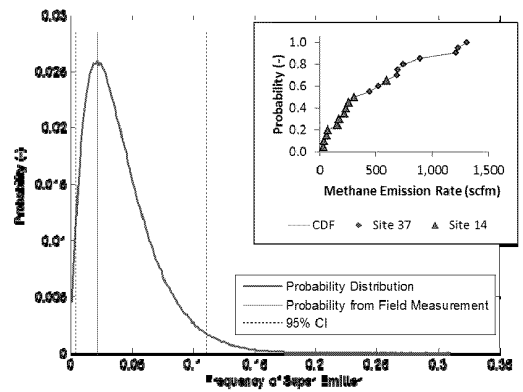
Two Types of Skewed Emissions Models

At device level



- "Long tail" present in most emissions distributions
- Included in emission model for each emission category

At facility level

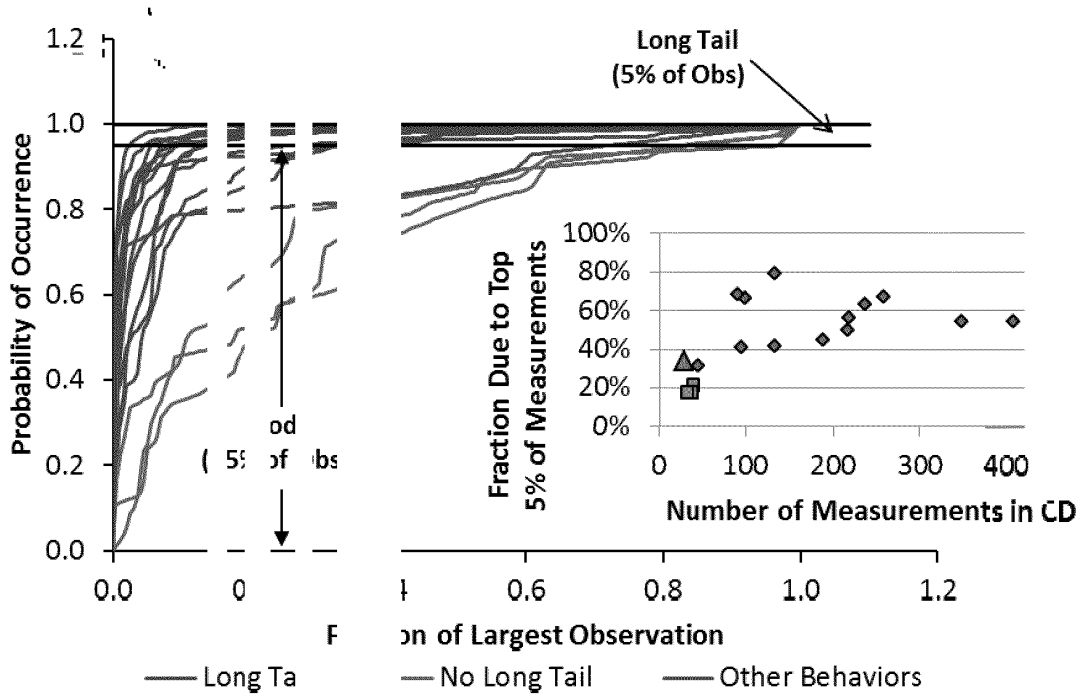


- "Super-emitters"- Exceptional emissions measured by tracer but not captured by on-site measurements
- Included for each *facility* as extra emission category

Skewed Emissions Distributions

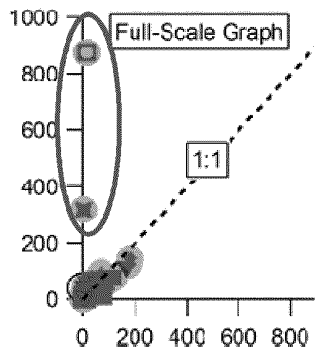
17 core emissions models from study

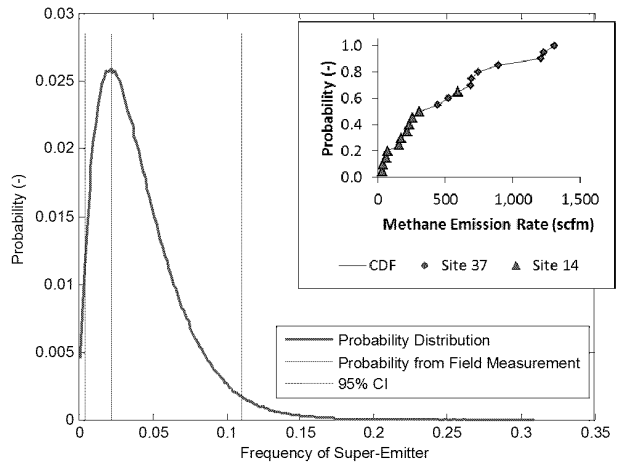
(excludes combustion methane & super-emitter models)

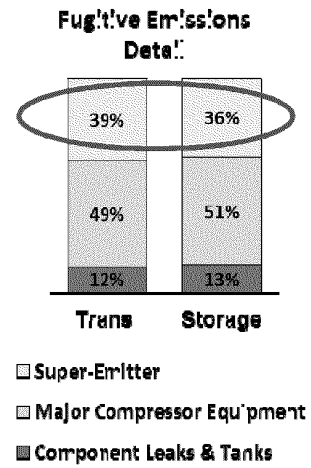


- "Skewed" defined as: ≥30% of emission from 5% of measurements
- All distributions > 90 measurements *skewed*
- All distributions < 40 measurements *not skewed*

Modeling Super-Emitters







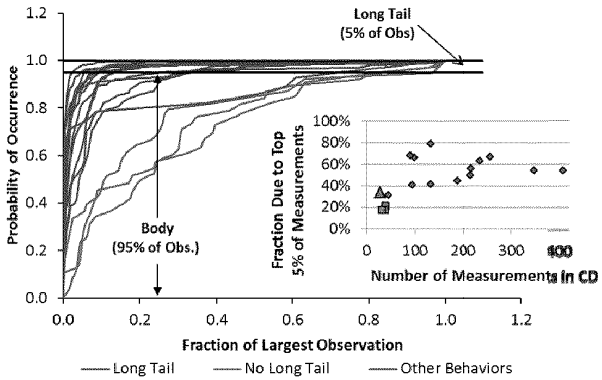
Field observation:
2 of 45 facilities
> 300 SCFM
2 operating modes

Model uncertainty of finding large emitters
Mean ≈ 4% of facilities for each operating mode

Big impact but high uncertainty:
+103%/-63% transmission
+153%/-83% storage

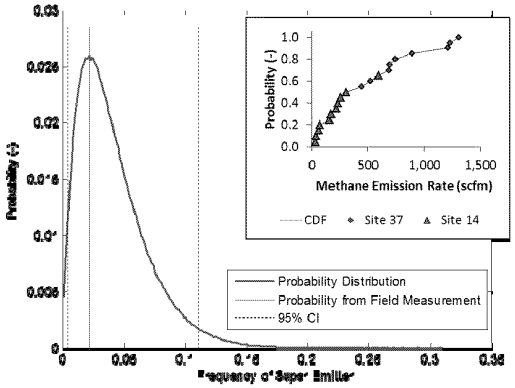
Impact of Skewed Emissions Models

- At device level



- "Long tail" present in most emissions distributions

- At facility level



- "Super-emitters"- Exceptional emissions measured by tracer but not captured by on-site measurements

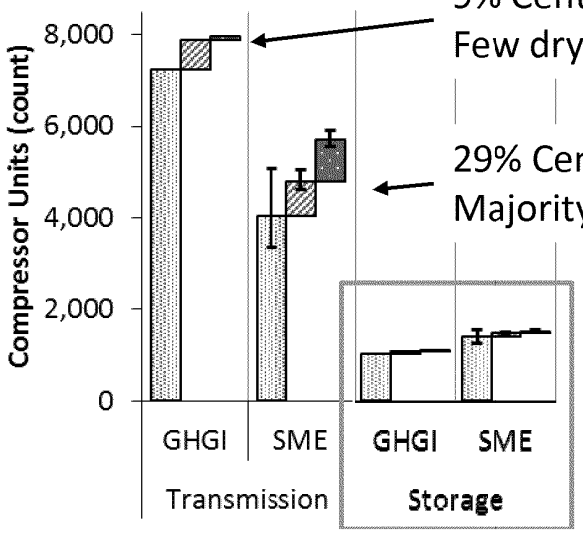
Long tail in 11 emission categories:
≈14-15% of total emissions

36-39% of fugitive emissions
23% of total emissions

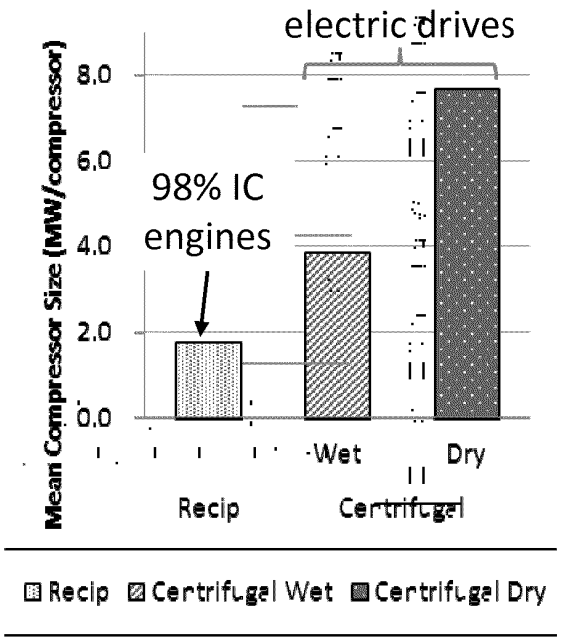
40% of total emissions

ENERGY INSTITUTE
Colorado State University

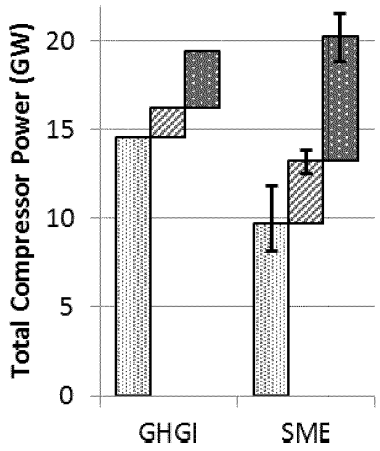
Compressor Types: One Large Driver of Facility Emissions



Storage – GHGI/SME similar

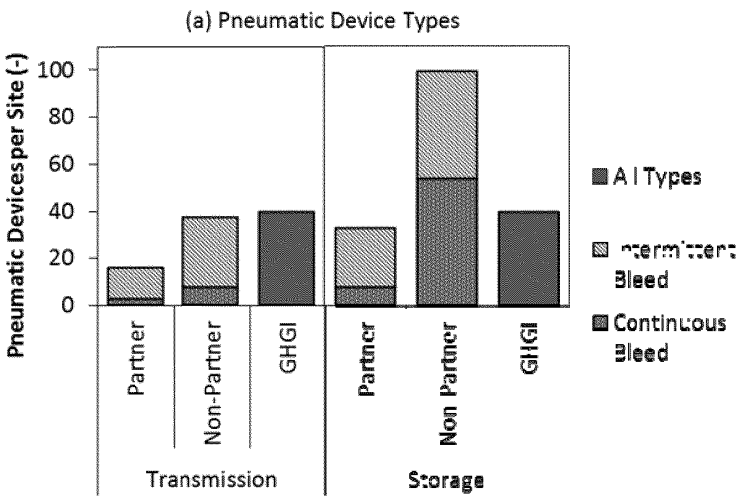


≈ Same estimated total compressor power

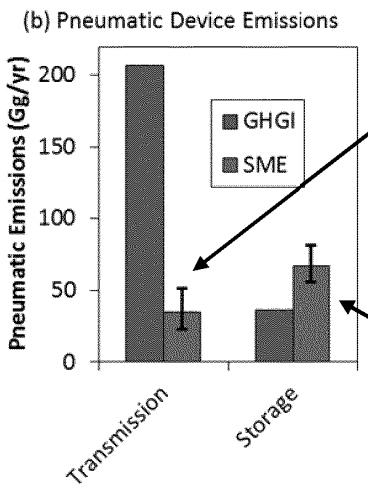


Notes:
- Based on activity data from partner & non-partner facilities
- Uses baseline transmission facility count estimate

Pneumatics



From GHGRP Data



17% of GHGI
Combo of device mix, station count & usage changes

239% of GHGI
Lower emission factor more than offset by increase in device usage

- Mix of intermittent and continuous drives emission factor
- May be seeing a shift from gas-driven to compressed air devices

	Emission Rate (Mg/device/yr)	
Facility Type	GHGI	Study
Transmission	2.9	1.0
Storage	2.7	2.1

Seals

- Study data shows smaller difference between wet and dry seals for centrifugal compressors
  - GHGI: Factor of 8 difference
  - Study: Factor of 3 difference
- Impact on centrifugal compressor fugitives
  - GHGI: Wet = 1.6 X dry
  - Study: Wet = 1.7 X dry … but for dry seal compressors much larger portion is due to dry seal vents (22%) than estimated in GHGI (8%)

Station Venting

- Transmission:
  - GHGRP blowdowns (>50 scf)
  - From 617 facilities
- Storage:
  - No GHGRP data
  - Transmission data weighted by compressor count

Station Type	Venting (Mg/station/yr)	
	GHGI	Study
Transmission Stations	72	57
Storage Stations	72	43

- Significantly more data than used for the GHGI

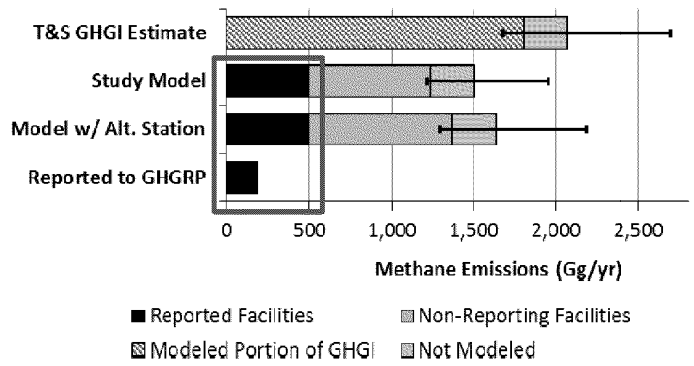
Engine Exhaust

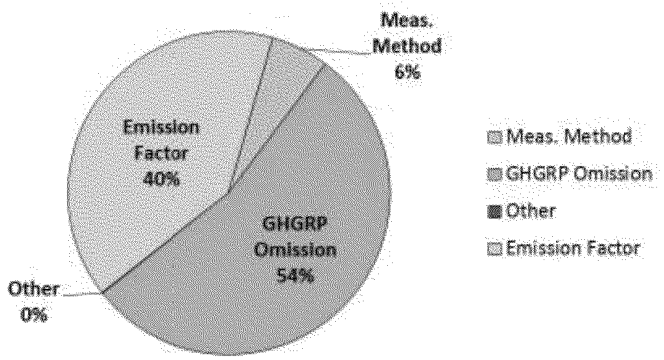
	Emissions Factor	Voluntary Reductions	Net Emissions Factor
GHGI	4.6 g/hp-hr	124 Gg	2.4 g/hp-hr
GHGRP			0.09 g/hp-hr
Study			3.7 g/hp-hr

- Emission model developed from AP-42 data + partner data Not measured in study
- Study:
  - 3.7 g/hr-hr based upon AP-42 + new data
  - 1.6X higher than GHGI
  - Study >550X higher than GHGRP for lean-burn engines

Comparison to GHGRP

- Study:
  - 260% [215% to 330%] of reported emissions
- Why?
  - Omitted emission sources (including super-emitters)
  - Combustion exhaust & other emission factors
  - Measurement methods





GHGRP Details

Comparison of Study Model Estimate to GHGRP for Sites With Measured Emissions (Lane 1 Reported & Lane 2)									
Emission Source		GHGRP (Mg)	SME (Mg)	SME Confidence Interval	Category Ratio	Difference (SME - MRR) (Mg)	Fraction of Total Difference	Primary Origin of Difference in Emissions	Notes
Component Leaks, All GHGRP Categories		17,780	43,961	[+81%/-31%]	2.5	26,181	8.6%	Emission Factor	
Pneumatics	High & Low Continuous Bleed	7,387	13,152	[+7%/-7%]	1.8	5,765	1.9%	Emission Factor	
	Intermittent Bleed	4,312	4,312	[+0%/0%]	1.0	0	0.0%	Not modeled	1
Wellhead Components		762	762	[+0%/0%]	1.0	0	0.0%	Not modeled	1
Transmission Tanks	Flares	0	0	[+0%/0%]	1.0	0	0.0%	Not modeled	3
	Vent stack or dump valve	4,062	5,832	[+18%/-18%]	1.4	1,770	0.6%	Meas. Method	
Reciprocating Compressor Venting	Blowdown vent - NOP	11,730	18,281	[+12%/-10%]	1.6	6,551	2.2%	Meas. Method	
	Blowdown vent - OP	9,480	17,077	[+15%/-13%]	1.8	7,597	2.5%	Meas. Method	
	Isolation Valve - NOD	16,105	28,284	[+22%/-19%]	1.8	12,179	4.0%	Meas. Method	
	Rod Packing - NOP	0	44,407	[+7%/-7%]	-	44,407	14.6%	GHGRP Omission	
	Rod Packing - OP	42,994	35,701	[+9%/-9%]	0.8	-7,293	-2.4%	Other	
Centrifugal Compressor Venting	Blowdown vent - NOP	0	1,385	[+74%/-45%]	-	1,385	0.5%	Meas. Method	
	Blowdown vent - OP	3,393	6,131	[+25%/-19%]	1.8	2,738	0.9%	Meas. Method	
	Dry Seal Vent - OP	0	4,814	[+13%/-12%]	-	4,814	1.6%	GHGRP Omission	
	Isolation Valve - NOD	16,055	20,602	[+7%/-7%]	1.3	4,547	1.5%	Meas. Method	
	Wet Seal Vent - OP	4,580	11,651	[+20%/-18%]	2.5	7,071	2.3%	Other	
Combustion Methane	Lean 2 Stroke	115	64,137	[+4%/-4%]	558	64,022	21.1%	Emission Factor	
	Lean 4 Stroke	29	16,499	[+13%/-12%]	577	16,470	5.4%	Emission Factor	
	Rich 4 Stroke	6	535	[+19%/-17%]	91	529	0.2%	Emission Factor	
	Combustion Turbine	221	889	[+23%/-20%]	4.0	667	0.2%	Emission Factor	
Station Venting (Blowdowns)		51,250	55,744	[+9%/-5%]	1.1	4,494	1.5%	GHGRP Omission	2
Super-Emitter		0	100,074	[+128%/-80%]	-	100,074	32.9%	GHGRP Omission	
Total for Available Emissions Data		**190,524**	**494,539**	**[+26%/-17%]**	**2.60**	**303,970**	**100.0%**		

Notes

1 Intermittent bleed pneumatics and wellhead componen ts were modeled using GHGRP emission factors.

2 SME estimate for blowdowns reflects a pass through of transmission blowdowns and a per-facility estima te of storage blowdowns. The storage blowdowns are an omission from the GHGRP re quirements.

3 Tank flare emissions (both GHGRP and SME) are small er than the precision of the model and display as z ero

ENERGY INSTITUTE Colorado State University

Additional Observations

- Survey teams had a hard time distinguishing between "compressor component" and "non-compressor component" categories
- Hi/low bleed pneumatic categories are ambiguous at best – we use "continuous bleed"
- We saw a difference in *reported* emissions between partner & non-partner facilities

Conclusions

- Statistically similar to GHGI hides significant offsetting differences embedded in:
  - Emissions factors
  - Facility & equipment utilization
- Super-emitters must be modeled carefully More data on large emitters needed
- Significant challenges estimating "easy to get" data counts of facilities & major equipment
- GHGRP under-reports significantly due to reporting requirements & some emissions factors

References

- Link to paper

- Web site

  http://energyinstitute.colostate.edu/p/transmission-and-storage.html

- Prior Papers:

Field study:

Subramanian, R., et. al., *Methane Emissions from Natural Gas Compressor Stations in the Transmission and Storage Sector: Measurements and Comparisons with the EPA Greenhouse Gas Reporting Program Protocol. Environ. Sci. Technol. 2015, 49 (5), 3252–3261.*

Tracer methods paper:

Roscioli, J. R., et. al, *Measurements of methane emissions from natural gas gathering facilities and processing plants: measurement methods*, Atmos. Meas. Tech. Discuss., 7, 12357-12406, 2014.

Thank You

Contact

Dan Zimmerle
dan.zimmerle@colostate.edu
970-581-9945

ENERGY INSTITUTE
Colorado State University

http://energyinstitute.colostate.edu/p/transmission-and-storage.html

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/21/2015 6:39:52 PM
Subject: FW: Updated methane emissions prospectus for Wed meeting
Changes in 7.20 NRC Prospectus from 6.23.docx

From: Weitz, Melissa
Sent: Monday, July 20, 2015 5:37 PM
To: Gunning, Paul; Irving, Bill
Cc: Kocchi, Suzanne
Subject: RE: Updated methane emissions prospectus for Wed meeting

I did a quick document compare and the latest NRC draft prospectus--

Ex. 5 - Deliberative Process

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Allen, David T
Sent: Fri 6/10/2016 11:25:57 AM
Subject: FYI
University Statement.pdf

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Wed 6/10/2015 3:17:47 PM
Subject: RE: methane monthly

Nope. Should I cancel for now and we can check in once the papers come out or something else comes up?

From: Thoma, Eben
Sent: Wednesday, June 10, 2015 11:17 AM
To: Weitz, Melissa
Subject: RE: methane monthly

I really don't think so. Any news on the EDF papers?

From: Weitz, Melissa
Sent: Wednesday, June 10, 2015 11:08 AM
To: Thoma, Eben
Subject: methane monthly

Anything specific to cover on the CH4 monthly?

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: Steven Hamburg[shamburg@edf.org]; Thoma, Eben[Thoma.Eben@epa.gov]
Cc: Joe Rudek[jrudek@edf.org]; Cassandra Brunette[cbrunette@edf.org]
From: Allen, David T
Sent: Fri 5/15/2015 4:55:36 PM
Subject: RE: Next steps in getting initial estimates of methane emissions from Ammonia plants

Eben:

I will also update you on the deliverable I promised on the call.

Dave

From: Steven Hamburg [mailto:shamburg@edf.org]
Sent: Friday, May 15, 2015 11:53 AM
To: Thoma, Eben
Cc: Allen, David T; Joe Rudek; Cassandra Brunette
Subject: Next steps in getting initial estimates of methane emissions from Ammonia plants

Eben

Not a problem – hopefully the emergency did not have any lasting effects. Happy to talk – we are looking to try to do a one week on the ground effort roughly mid-June – more work is needed to tie down the exact time. It would be great to find out if it is still possible, we very much hope so, for you to have a technician in the field with a portable micro-met system collecting data while we do the methane measurements – as we discussed we can cover travel or other out of pocket expenses that might be harder for you to fund. I am copying Joe and Cassie who will serve as point on this effort for EDF – Joe for the science and Cassie for the logistics related to the car.

Cheers

Steve

From: Thoma, Eben [mailto:Thoma.Eben@epa.gov]
Sent: Friday, May 15, 2015 12:21 PM
To: Steven Hamburg
Cc: allen@che.utexas.edu

Subject: Re: We are on the call regarding measuring methane form Ammonia plants - will you be able to join? - eom

Steve, Dave,

My apologies for missing the call. I was looking forward to it but had a minor emergency. I look forward to catching up when can.

Eben

Sent from my iPhone

On May 15, 2015, at 11:17 AM, Steven Hamburg <shamburg@edf.org> wrote:

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/21/2015 12:46:19 PM
Subject: Fwd: Your ACS manuscript acs.est.5b01669 has been made open access

EDF transmission and storage paper

Sent from my iPhone

Begin forwarded message:

From: "Zimmerle,Dan" <Dan.Zimmerle@colostate.edu>
Date: July 21, 2015 at 8:13:32 AM EDT
To: "Weitz, Melissa" <Weitz.Melissa@epa.gov>, "James Bradbury (James.Bradbury@Hq.Doe.Gov)" <James.Bradbury@Hq.Doe.Gov>
Subject: FW: Your ACS manuscript acs.est.5b01669 has been made open access

For your reference, here is a link to the paper. If you can forward within your teams, I would appreciate it.

Daniel Zimmerle

970-581-9945 (cell)

dan.zimmerle@colostate.edu

Scheduling: Contact Jacqueline Vance at Jacqueline.Vance@colostate.edu

Senior Researcher & Director, Electric Power System Laboratory

Personal Page: http://energy.colostate.edu/p/dan-zimmerle.html

Smart Village Microgrids: http://energy.colostate.edu/p/svm

Energy Institute: http://energy.colostate.edu/

From: support@services.acs.org [mailto:support@services.acs.org]
Sent: Tuesday, July 21, 2015 8:01 AM
To: Zimmerle,Dan
Cc: Ex. 6 - Personal Privacy
Subject: Your ACS manuscript acs.est.5b01669 has been made open access

Dear Prof. Daniel Zimmerle,

Your published article
Methane Emissions from the Natural Gas Transmission and Storage System in the United States
was purchased into open access and is now openly available to all readers under the terms of the AuthorChoice license.

If you have questions regarding this purchase, please reach out to support@services.acs.org.
Thank you for publishing with ACS.

Best regards,
Darla Henderson, Ph.D.
Asst. Director, Open Access Programs
American Chemical Society

To: Brantley, Halley[Brantley.Halley@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Fri 11/21/2014 9:41:36 PM
Subject: RE: ACS Publication Proof Review for es503070q

Thanks so much Halley!

We're looking through this now and will get back to you with any questions.

Have a great weekend!!

From: Brantley, Halley
Sent: Thursday, November 20, 2014 6:46 PM
To: Weitz, Melissa; Thoma, Eben
Subject: RE: ACS Publication Proof Review for es503070q

Hi Melissa,

Here is the data we discussed earlier. The coordinates are the location at which the measurement was made, this is within 10-200 m of the pad and is more reliable than the coordinates of the permits. Let me know if you have any questions.

Best,

Halley

From: Weitz, Melissa
Sent: Thursday, November 20, 2014 10:42 AM
To: Thoma, Eben; Brantley, Halley
Subject: RE: ACS Publication Proof Review for es503070q

Great! Are you free at 11?

From: Thoma, Eben
Sent: Thursday, November 20, 2014 6:08 AM
To: Weitz, Melissa; Brantley, Halley
Subject: RE: ACS Publication Proof Review for es503070q

Sounds Good Melissa, we look forward to discussing. I believe Hally can provide that information pretty quickly.

From: Weitz, Melissa
Sent: Wednesday, November 19, 2014 5:58 PM
To: Brantley, Halley; Thoma, Eben
Subject: RE: ACS Publication Proof Review for es503070q

Thanks so much for sending over the paper and including us on the earlier review. Congrats on publication!

There were few items that would be helpful for our analyses that you may have available from the study.

We're very interested in information on the average # of wells present at a well pad, and average emissions per well.

Ideally, we'd like a list of well pads from the study that includes coordinates, number of wells, production and whether the site is oil or gas, and measured emissions.

I can give you a call tomorrow to see what data is available.

Thanks!

Melissa

From: Thoma, Eben
Sent: Wednesday, November 12, 2014 6:17 AM
To: Weitz, Melissa; DeFigueiredo, Mark; Frantz, Chris; Moore, Bruce
Subject: Fwd: ACS Publication Proof Review for es503070q

All,

Just making you aware of the below publication we have previously discussed.

Thanks,

Eben

Sent from my iPhone

Begin forwarded message:

> **From:** "Brantley, Halley" <Brantley.Halley@epa.gov>
> **To:** "Thoma, Eben" <Thoma.Eben@epa.gov>, "David Lyon" <dlyon@edf.org>
> **Subject: Fw: ACS Publication Proof Review for es503070q**
>
> Woohooo!! OTM33A article accepted!! Proof is attached.
>
> Halley
>
> ---
> From: acsproof@acs.org <acsproof@acs.org>
> Sent: Tuesday, November 11, 2014 3:07 PM
> To: Brantley, Halley
> Subject: ACS Publication Proof Review for es503070q
>
> Dear Dr. Halley Lee Brantley,
>
> You are invited to review the galley proof for your article

Assessment of Methane Emissions from Oil and Gas Production Pads using Mobile Measurements

(manuscript number es503070q). To view the galley proof and associated materials, please click on the link below:

https://proof-review.acs.org/aprs/APRSHome.html?x=91spLf2QD7u5p_Amx9qtpA

Please note: An ACS ID is required to access proof materials. If you do not have an ACS ID, you will be prompted to create one or go to http://www.acschemworx.org to register.

Your article may now be cited using the DOI assigned to it. The DOI assigned to this article is http://dx.doi.org/10.1021/es503070q, and is an accepted form of citation before and after the article appears in an issue.

Sincerely,

The American Chemical Society

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Thur 3/19/2015 9:59:47 PM
Subject: RE: EDF methane synthesis efforts - communication

Thanks for coordinating Eben. Looking forward to the discussion.

Some times that should work well for us are

March 31 at 3:30

April 1 at 3:30

April 2 at 1PM

April 8 at 1PM or 3:30PM

Melissa

From: Thoma, Eben
Sent: Thursday, March 19, 2015 8:47 AM
To: Drew Nelson; Teichman, Kevin; Steven Hamburg; Weitz, Melissa
Cc: Gullett, Brian
Subject: RE: EDF methane synthesis efforts - communication

Hi Drew,

I will be happy to help coordinate the call. I have a good feel for some of the folks that need to be involved here in Durham, NC and I imagine that you have already talked with Melissa's folks in DC so perhaps she and I can work together. We will cross check our list internally up the line. What is the basic date range you envision for the call…mid-April?

Melissa,

Please see email chain below and let discuss when you have a minute. You guys may already have something scheduled and we perhaps can just join-in.

Many thanks,

Eben

From: Drew Nelson [mailto:dnelson@edf.org]
Sent: Wednesday, March 18, 2015 2:59 PM
To: Teichman, Kevin; Thoma, Eben; Steven Hamburg
Cc: Gullett, Brian
Subject: RE: EDF methane synthesis efforts - communication

Ok great. Is there a scheduler Steve's assistant can work with to find times that work on the ORD side?

From: Teichman, Kevin [mailto:Teichman.Kevin@epa.gov]
Sent: Wednesday, March 18, 2015 12:39 PM
To: Thoma, Eben; Drew Nelson; Steven Hamburg
Cc: Gullett, Brian
Subject: Re: EDF methane synthesis efforts - communication

I prefer a joint phone call of EDF, OAR, and ORD.

Kevin Teichman

Senior Science Advisor

Office of Research and Development (8101R)

U.S. Environmental Protection Agency

1200 Pennsylvania Ave., NW

Washington, DC 20460

Phone: (301) 975-6421

Fax: (301) 975-4409

From: Thoma, Eben
Sent: Wednesday, March 18, 2015 1:36 PM
To: Drew Nelson; Steven Hamburg
Cc: Gullett, Brian; Teichman, Kevin
Subject: RE: EDF methane synthesis efforts - communication

Drew,

I will let Kevin chime-in but I think a joint ORD-OAR call would be optimal. Please note that Kevin is also reaching down through DOE but any discussion with NETL only would not capture the full synthesis effort.

Thanks,

Eben

From: Drew Nelson [mailto:dnelson@edf.org]
Sent: Wednesday, March 18, 2015 1:27 PM
To: Thoma, Eben; Steven Hamburg
Cc: Gullett, Brian; Teichman, Kevin
Subject: RE: EDF methane synthesis efforts - communication

Eben

Thanks for the e-introduction. I agree it would make a lot of sense for us to have a call about the synthesis effort and discuss areas of common interest. OAR has also expressed interest in having a similar conversation. Would it be ok with you if we do one call between EDF, ORD, and OAR?

From: Thoma, Eben [mailto:Thoma.Eben@epa.gov]
Sent: Wednesday, March 18, 2015 6:34 AM
To: Steven Hamburg; Drew Nelson
Cc: Gullett, Brian; Teichman, Kevin
Subject: EDF methane synthesis efforts - communication

Steve, (Drew),

Thanks again for the invite to yesterday's end use meeting. I found it very interesting and productive and look forward to exploring ways EPA ORD and EDF can continue to work together.

In our hallway conversation you clarified the role of the DOE NETL LCA folks in the methane synthesis work. I mentioned to you that a call/webinar to EPA with basic information on elements of the synthesis design, projected timing, envisioned review/comment process, and the status of journal paper progress could be very helpful. You may have already reached out to some at EPA but I am not sure the message and the importance of this work has been optimally registered.

To that end, I would like to introduce you to Kevin Teichman our Senior Science Advisor, in ORD. Kevin is also the current steering committee lead for the EPA, DOE, DOI unconventional oil and gas (UOG) collaborative research effort. As a note, in our first in person meeting of the UOG interagency collaboration in January, much research was discussed including work from DOE NETL. Tim Skone and the DOE NETL LCA folks were not present and now I understand

that this was due in part to constraints of CRADA arrangement.

Related to a discussion on optimal communication is how we at EPA ORD may further assist your efforts without the perception of interference. I now understand that a major design aspect of the synthesis efforts is to remain independent (makes perfect sense). We do for example have a new research paper on well pad emissions (focusing on condensate tanks) which I believe could be of some help to both Tim's team and Daniel's current work. This paper was cleared last week by Bob Kavlock's office and we are now submitting for journal peer review. This draft paper is essentially the same prepublication status as much of the work that is feeding into the synthesis efforts. Of course, this would take some discussion on our side since technically this paper is little outside of the current EDF-EPA MOU on fugitive methane emissions but is in the same spirit.

I will leave it to you, Drew and perhaps Kevin to discuss the possibility of a call/webinar to EPA on basic communication of the synthesis efforts and stand ready to help as needed.

Thanks,

Eben

Eben Thoma, Ph.D.

U.S. Environmental Protection Agency

Office of Research and Development

National Risk Management Research Laboratory

109 TW Alexander Drive (M/S E343-02)

Research Triangle Park, NC 27711

Phone: 919-541-7969

Fax: 919-541-0359

Email: thoma.eben@epa.gov

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Thur 1/28/2016 4:13:05 PM
Subject: FW: Good news on methane quantification - FY-16 appropriations

From: Weitz, Melissa
Sent: Thursday, January 21, 2016 9:49 AM
To: Thoma, Eben <Thoma.Eben@epa.gov>
Subject: FW: Good news on methane quantification - FY-16 appropriations

Hi Eben,

I just forwarded you a meeting invite (though I can't tell if it actually sent, so let me know if you don't see an invite for a 1/28 meeting with DOE).

DOE was appropriated $5M for methane quantification for natural gas systems. OAP is having the 1/28 call with them to discuss the plan moving forward. We think it'd be great to have ORD input on the planning.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Let me know if you'd like additional background, and if you can join the 1/28 call.

Thanks!

Melissa

From: Gunning, Paul
Sent: Tuesday, January 12, 2016 8:55 AM
To: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>; Hargrove, Anne <Hargrove.Anne@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>
Subject: RE: Good news on methane quantification - FY-16 appropriations

James, this is great news and we look forward to working with you on this. Next week is pretty busy for me, but might be workable. The week of the 25th would work better and is pretty open at the moment. Let us know what might work for you.

Thanks!

Paul

Paul M. Gunning

Director, Climate Change Division

U.S. EPA (6207J)

1200 Pennsylvania Avenue

Washington, DC 20460

Direct (202) 343-9736

Fax (202) 343-2202

Cell (202) 251-1436

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Monday, January 11, 2016 4:00 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Greenwald, Judith <Judi.Greenwald@Hq.Doe.Gov>; Freitas, Christopher <Christopher.Freitas@hq.doe.gov>
Subject: Good news on methane quantification - FY-16 appropriations

Dear Paul and Melissa,

Happy New Year to both of you!

The good news that I wanted to share with you is that the FY16 omnibus appropriations bill included $5 million for emissions quantification from natural gas infrastructure. The bill also includes $7 million for R&D on emissions mitigation from midstream infrastructure and both of these new programs will managed by DOE's Office of Fossil Energy.

As you may recall, the President's FY16 budget requested $10 million for methane emissions quantification (and here is the relevant guidance):

Emissions Quantification from Natural Gas Infrastructure

The Emissions Quantification from Natural Gas Infrastructure research subprogram will focus on better quantifying methane emissions from the natural gas value chain. The program will work with the Environmental Protection Agency to ensure that data produced is compatible with the national Greenhouse Gas Inventory. Efforts will focus on understanding regional variation and reducing uncertainty in emissions estimates.

Christopher Freitas (cc'd) is the Program Manager for both of the above-mentioned programs. He is working with NETL and in cooperation with EPSA to develop an annual operating plan and, ultimately, FOA, to help move this forward.

We would love to schedule a conference call with you to hear your thoughts on how this new program could be targeted to help improve the GHG Inventory. Please let us know when you might be available for a call on this subject.

We look forward to being in touch.

Thanks very much,

James

--

James Bradbury

Senior Policy Adviser for Climate, Environment and Efficiency

Office of Energy Policy and Systems Analysis

U.S. Department of Energy

Phone: 202-586-0683

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Thur 4/21/2016 9:16:41 PM
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Awesome! I mentioned this at our division oil and gas weekly and there is a lot of interest. Let's check back in on this when you're back in the office.

From: Thoma, Eben
Sent: Thursday, April 21, 2016 11:07 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Hi Mellissa,

Here on the EPA RTP campus. Perhaps you guys can tie it to some other things you need to do here and come on down for a visit and we can all go to a Durham Bulls game! Our timing is flexible.

Eben

From: Weitz, Melissa
Sent: Thursday, April 21, 2016 10:19 AM
To: Thoma, Eben <Thoma.Eben@epa.gov>
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Hi Eben,

Where is your testing range? I can see if I and/or others from OAP may be able to go.

Thanks!

Melissa

From: Thoma, Eben
Sent: Thursday, April 21, 2016 7:16 AM
To: Beeler, Cindy <Beeler.Cindy@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; natalie.pekney@netl.doe.gov
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Thanks Cindy,

Copying Melissa and Natalie with DOE.

Natalie,

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Beeler, Cindy
Sent: Wednesday, April 20, 2016 4:56 PM
To: Stovern, Michael <Stovern.Michael@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; Deshmukh, Parikshit J <Parikshit.Deshmukh@jacobs.com>
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Here is the paper I mentioned on our call today where Hi-Flow, DPIR and RMLD were used …

1. Emissions of coalbed and natural gas methane from abandoned oil and gas wells in the United States

http://onlinelibrary.wiley.com/doi/10.1002/2015GL067623/abstract

Summary points

•□□□□□□□□ They did a randomized sampling of 138 abandoned wells in UT, CO, WY and OH – all on federal land so they wouldn't have to deal with getting land access permission

•□□□□□□□□ Of those 138, 119 were plugged and 19 were unplugged. Only 1 of the 119 plugged had detectable methane from around well, whereas 8 of the 19 unplugged wells had detectable methane.

•□□□□□□□□ There are ~4,500 unplugged wells in the Uinta Basin and ~10,000 inactive/shut-in wells in the D-J Basin

Abstract

Recent work indicates that oil and gas methane (CH4) inventories for the United States

are underestimated. Here we present results from direct measurements of CH4 emissions from 138 abandoned oil and gas wells, a source currently missing from inventories. Most abandoned wells do not emit CH4, but 6.5% of wells had measurable CH4 emissions. Twenty-five percent of wells we visited that had not been plugged emitted > 5 g CH4 h−1. Stable isotopes indicate that wells emit natural gas and/or coalbed CH4. We estimate that abandoned wells make a small contribution (<1%) to regional CH4 emissions in our study areas. Additional data are needed to accurately determine the contribution of abandoned wells to national CH4 budgets, particularly measurements in other basins and better characterization of the abundance and regional distribution of high emitters.

Cindy Beeler
US EPA Region 8, Energy Advisor
Office of the Regional Administrator
Tel: 303-312-6204
Beeler.Cindy@epa.gov

CONFIDENTIALITY NOTICE: This e-mail, including all attachments, is for the sole use of the intended recipients and may contain Confidential and privileged information. Any unauthorized use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender and destroy all copies of this message.

From: Stovern, Michael
Sent: Wednesday, April 20, 2016 1:52 PM
To: Beeler, Cindy <Beeler.Cindy@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; Deshmukh, Parikshit J <Parikshit.Deshmukh@jacobs.com>
Subject: RE: UB RARE weekly call

Meeting Notes

Attendees: Mike, Cindy, Chris, Parik and Eben

•□□□□□□□□ Updates from team members

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

Mike

From: Stovern, Michael
Sent: Wednesday, April 20, 2016 8:23 AM
To: Beeler, Cindy <Beeler.Cindy@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; 'Deshmukh, Parikshit J' <Parikshit.Deshmukh@jacobs.com>
Subject: UB RARE weekly call

Hello Team,

A quick agenda for today's call at 12:00 MST:

- Updates from team members
- Potential duties for summer interns
- Data gathering survey
  - Preparation

Call in: Ex. 6 - Personal Privacy

Conf Code: Ex. 6 - Personal Privacy

Thanks,

Mike Stovern

To: Frantz, Chris[Frantz.Chris@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]
From: Weitz, Melissa
Sent: Wed 2/18/2015 7:08:11 PM
Subject: liquids unloading and pneumatic controllers memo for public review draft inventory
NG-Petro Inv Improvement - Pneumatic Controllers - PUBLIC REV 2015-02-18 mw.docx
NG Inv Improvement - Liquids Unloading - PUBLIC REV 2015-02-18 mw.docx

Attached is the liquids unloading memo, and the same pneumatics memo that I sent earlier so that you can have them both in one email.

Thanks.

From: Weitz, Melissa
Sent: Wednesday, February 18, 2015 12:11 PM
To: Frantz, Chris; Macpherson, Alex; DeFigueiredo, Mark; Waltzer, Suzanne; Thoma, Eben; Snyder, Jennifer
Subject: pneumatic controllers memo for public review draft inventory

Attached is a draft memo that discusses new data available on pneumatic controllers (focusing on Allen et al.) and potential approaches to incorporating new data into the GHG Inventory. The plan is to post this memo along with the others (refineries, offshore platforms, etc.) on our website when the public review draft is released.

The snow day pushed back the release of the FR notice for the GHG Inventory (likely on Monday now). I'll need to have this memo finalized by Monday a.m. Comments/edits/questions on the memo by this Friday would be great. By tomorrow would be even better. ☺

A similar (but shorter) memo on liquids unloading will be coming your way soon.

Thank you!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: Thoma, Eben[Thoma.Eben@epa.gov]
Cc: Bylin, Carey[Bylin.Carey@epa.gov]; Beeler, Cindy[Beeler.Cindy@epa.gov]
From: Weitz, Melissa
Sent: Wed 3/9/2016 3:45:29 PM
Subject: RE: natural gas CH4 quantification list for DOE

Great-thanks!

Cindy, let me know if your trip ends up conflicting with the 3/22 meeting. We can fairly easily reschedule that call so that you can participate.

From: Thoma, Eben
Sent: Wednesday, March 09, 2016 10:44 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Bylin, Carey <Bylin.Carey@epa.gov>; Beeler, Cindy <Beeler.Cindy@epa.gov>
Subject: Re: natural gas CH4 quantification list for DOE

Thanks Melissa, already talked with Cindy (copied) and you can please forward the invite (thanks, on my cell). She may have a conflict however as she had a new trip pop up recently.

Sent from my iPhone

On Mar 9, 2016, at 10:07 AM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

This sounds great-let's use the 3/22 monthly. Eben do you want to reach out to Cindy or should I? Thanks!

From: Thoma, Eben
Sent: Wednesday, March 09, 2016 6:53 AM
To: Bylin, Carey <Bylin.Carey@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: natural gas CH4 quantification list for DOE

Hi Carey,

Yes. Looks like the next one is on 3/22. We can invite Cindy to that one if Mellissa wants to make that a topic.

Eben

From: Bylin, Carey
Sent: Tuesday, March 08, 2016 9:35 PM
To: Thoma, Eben <Thoma.Eben@epa.gov>
Subject: RE: natural gas CH4 quantification list for DOE

Hi Eben,

Oh, that's great, I'd definitely like to catch up with you on this. I agree this would likely be good for others to hear – do you mean the monthly meetings that Melissa organizes?

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: Thoma, Eben
Sent: Saturday, February 27, 2016 10:26 AM
To: Bylin, Carey <Bylin.Carey@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>
Subject: RE: natural gas CH4 quantification list for DOE

Hi Carey,

Just making you aware that Cindy Beeler (R8) and I are working on a pneumatic controller characterization and methods study this year. Lets find a time to chat with you about it. Others may also be interested and perhaps we can make this the subject of one our monthly meetings.

Thanks,

Eben

From: Bylin, Carey
Sent: Friday, February 26, 2016 4:36 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>
Subject: RE: natural gas CH4 quantification list for DOE

Hi Melissa,

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

From: DeFigueiredo, Mark
Sent: Thursday, February 18, 2016 9:02 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>
Subject: RE: natural gas CH4 quantification list for DOE

<< File: DOE research and analysis areas OAP MdF.docx >>

Ex. 5 - Deliberative Process

Best - Mark

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: Weitz, Melissa
Sent: Wednesday, February 17, 2016 4:23 PM
To: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Hambrick, Amy <Hambrick.Amy@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>
Subject: RE: natural gas CH4 quantification list for DOE

Hello,

Ex. 5 - Deliberative Process

Thank you!

Melissa << File: DOE research and analysis areas OAP.docx >>

-----Original Appointment-----
From: Weitz, Melissa
Sent: Thursday, February 11, 2016 6:05 PM
To: Weitz, Melissa; DeFigueiredo, Mark; McKittrick, Alexis; Thoma, Eben; Moore, Bruce;

Macpherson, Alex; Hambrick, Amy; Thompson, Lisa; Bylin, Carey; Shine, Brenda
Subject: natural gas CH4 quantification list for DOE
When: Wednesday, February 17, 2016 10:30 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: 866-299-3188; 2023439897

(Attaching additional information sent over today from DOE)

DOE was recently given $5 million to conduct research that can be used to update the GHGI for natural gas systems (language from congressional budget request is below).

DOE has given us a list of their thoughts for projects (I'll send around soon). We need to get back to DOE with our priority list of emissions sources/research projects, on a tight time frame (by February 19). I'll take a first stab at a list (based on information we already shared with DOE and this group several months ago) and send that around before the call, and then I'd like to use this call to discuss whether any of the priorities may be duplicative with other research or data efforts, and whether there are any additional priority areas we should consider.

Congressional Budget Request FY 2016-- Emissions Quantification form Natural Gas Infrastructure

The Emissions Quantification from Natural Gas Infrastructure research subprogram will focus on better quantifying methane emissions from the natural gas value chain. The program will work with the Environmental Protection Agency to ensure that data produced is compatible with the national Greenhouse Gas Inventory. Efforts will focus on understanding regional variation and reducing uncertainty in emission estimates.

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Thur 4/21/2016 2:19:17 PM
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Hi Eben,

Ex. 5 - Deliberative Process

Thanks!

Melissa

From: Thoma, Eben
Sent: Thursday, April 21, 2016 7:16 AM
To: Beeler, Cindy <Beeler.Cindy@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; natalie.pekney@netl.doe.gov
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Thanks Cindy,

Copying Melissa and Natalie with DOE.

Natalie,

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Beeler, Cindy
Sent: Wednesday, April 20, 2016 4:56 PM
To: Stovern, Michael <Stovern.Michael@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; Deshmukh, Parikshit J <Parikshit.Deshmukh@jacobs.com>
Subject: RE: UB RARE weekly call - CH4 Emissions from Abandoned Wells

Here is the paper I mentioned on our call today where Hi-Flow, DPIR and RMLD were used …

1. Emissions of coalbed and natural gas methane from abandoned oil and gas wells in the United States

http://onlinelibrary.wiley.com/doi/10.1002/2015GL067623/abstract

Summary points

•□□□□□□□□ They did a randomized sampling of 138 abandoned wells in UT, CO, WY and OH – all on federal land so they wouldn't have to deal with getting land access permission

•□□□□□□□□ Of those 138, 119 were plugged and 19 were unplugged. Only 1 of the 119

plugged had detectable methane from around well, whereas 8 of the 19 unplugged wells had detectable methane.

•□□□□□□□□ There are ~4,500 unplugged wells in the Uinta Basin and ~10,000 inactive/shut-in wells in the D-J Basin

Abstract

Recent work indicates that oil and gas methane (CH4) inventories for the United States are underestimated. Here we present results from direct measurements of CH4 emissions from 138 abandoned oil and gas wells, a source currently missing from inventories. Most abandoned wells do not emit CH4, but 6.5% of wells had measurable CH4 emissions. Twenty-five percent of wells we visited that had not been plugged emitted > 5 g CH4 h−1. Stable isotopes indicate that wells emit natural gas and/or coalbed CH4. We estimate that abandoned wells make a small contribution (<1%) to regional CH4 emissions in our study areas. Additional data are needed to accurately determine the contribution of abandoned wells to national CH4 budgets, particularly measurements in other basins and better characterization of the abundance and regional distribution of high emitters.

Cindy Beeler
US EPA Region 8, Energy Advisor
Office of the Regional Administrator
Tel: 303-312-6204
Beeler.Cindy@epa.gov

CONFIDENTIALITY NOTICE: This e-mail, including all attachments, is for the sole use of the intended recipients and may contain Confidential and privileged information. Any unauthorized use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender and destroy all copies of this message.

From: Stovern, Michael
Sent: Wednesday, April 20, 2016 1:52 PM
To: Beeler, Cindy <Beeler.Cindy@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; Deshmukh, Parikshit J <Parikshit.Deshmukh@jacobs.com>

Subject: RE: UB RARE weekly call

Meeting Notes

Attendees: Mike, Cindy, Chris, Parik and Eben

- Updates from team members

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Mike

From: Stovern, Michael
Sent: Wednesday, April 20, 2016 8:23 AM
To: Beeler, Cindy <Beeler.Cindy@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Thoma, Eben <Thoma.Eben@epa.gov>; 'Deshmukh, Parikshit J' <Parikshit.Deshmukh@jacobs.com>
Subject: UB RARE weekly call

Hello Team,

A quick agenda for today's call at 12:00 MST:

- Updates from team members
- Potential duties for summer interns
- Data gathering survey
  - Preparation

Call in Ex. 6 - Personal Privacy

Conf Code: Ex. 6 - Personal Privacy

Thanks,

Mike Stovern

To: McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Wed 1/7/2015 7:49:15 PM
Subject: FW: AGU update and slides
AGU slides.pdf

Just sending around some info from AGU and my slides.

From: Weitz, Melissa
Sent: Tuesday, December 23, 2014 5:59 PM
To: DeFigueiredo, Mark; Waltzer, Suzanne
Subject: AGU update and slides

I'm sending some things I wanted to share from AGU because I'm sure I will forget about this entirely by the time I see you all next!

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Wed 9/10/2014 9:05:03 PM
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Eben,

Ex. 5 - Deliberative Process

Thanks!

Melissa

Caulton, D.R. et al. "Toward a better understanding and quantification of methane emissions from shale gas development." Proceedings of the National Academy of Sciences of the United States of America, 2014

From: Thoma, Eben
Sent: Tuesday, September 09, 2014 1:31 PM
To: McKittrick, Alexis; Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

No thoughts on the references, but don't know many others at this second (there will soon be).

Ex. 5 - Deliberative Process

-Eben

From: McKittrick, Alexis
Sent: Tuesday, September 09, 2014 12:38 PM
To: Thoma, Eben; Weitz, Melissa
Subject: RE: Subpart W 2015 revisions - question on citations

Thanks, Eben. Any thoughts on the citations, or are those the ones you would use?

Alexis

From: Thoma, Eben
Sent: Tuesday, September 09, 2014 12:09 PM
To: Weitz, Melissa
Cc: McKittrick, Alexis
Subject: RE: Subpart W 2015 revisions - question on citations

Hi Melissa and Alexis,

Sorry for not providing comments sooner. The attached looks great to me, just a couple of optional points to consider (please see comments).

Thanks,

Eben

From: Weitz, Melissa
Sent: Tuesday, September 09, 2014 11:47 AM
To: Thoma, Eben
Cc: McKittrick, Alexis
Subject: FW: Subpart W 2015 revisions - question on citations

Hi Eben,

Would you be able to take a quick look at the attached Advanced Innovated Monitoring Methods section of the Subpart W revisions proposal (less than 2 pages)? There are some references listed (page 1) to studies that use advanced methods, and I think you may know of some alternative or additional references to include. We'd also welcome any comments you have on the write up.

Alexis is planning to send on the text for review by our management in a few days, so if you have a chance to review today or tomorrow, we'd really appreciate it.

Feel free to contact me or Alexis with questions.

Thank you!!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: McKittrick, Alexis
Sent: Monday, September 08, 2014 1:46 PM
To: Weitz, Melissa
Subject: Subpart W 2015 revisions - question on citations

Hi Melissa,

We have a few citations in our Advanced Innovative Monitoring Methods section of the 2015 Subpart W revisions proposal (attached), which is the section that seeks comment on potentially proposing innovative and advanced monitoring (e.g. Picarro) in the GHGRP in a future rule. Mark mentioned that you might have better references than the ones we have in here. Do you mind taking a quick look and letting me know if you have any better or different references we should use here?

Thanks!

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Work phone (Mon - Thurs): 202-343-9153

Telework phone (Fri): 202-680-3589

From: Weitz, Melissa
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: prep for NRC call
Start Date/Time: Tue 7/14/2015 2:00:00 PM
End Date/Time: Tue 7/14/2015 2:30:00 PM
Methane emissions prospectus DRAFT 06-23-2015 (3).docx

Background:
The National Academy of Sciences/National Research is considering developing a research project on methane emissions (all sources, anthropogenic and natural).
They drafted the attached prospectus based on previous meetings and have set up a call with EPA next week (7/22) to discuss our comments/concerns on the draft prospectus.

7/14 EPA prep call (this call):
On the 7/14 call, I'll give some brief background on our interactions with NRC on this topic to date, and then we can discuss initial comments and concerns with NRC's prospectus, with a goal of having coordinated input from this group to inform next week's (7/22) discussion with NRC.

7/22 call with NRC:
Paul Gunning meeting with NRC to provide NRC with EPA feedback on prospectus.

Thanks!

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Tue 5/12/2015 9:57:48 PM
Subject: RE: Modrak 2012 reference from white papers

Hi Eben,

I'm putting together a summary of the super-emitter issue for the NSPS preamble. I did a quick review of the Modrak paper and your paper "Assessment of Methane Emissions from Oil and Gas Production Pads using Mobile Measurements"

It seemed that neither of the papers observed super emitters or fat tailed/skewed distributions in their data sets (though my assessment was done by quickly skimming the papers and doing a search on some key words so I may have missed it!). Is that correct?

If you did observe a skewed distribution, just let me know and I will mention it in my write up.

Thanks!

Melissa

From: Thoma, Eben
Sent: Tuesday, March 10, 2015 4:09 PM
To: Weitz, Melissa
Subject: RE: Modrak 2012 reference from white papers

Hi Melissa,

Yes I can still do 3:00 pm tomorrow. I am attaching here the Modrak 2012 AWAM conference paper (early work) and the more advanced paper that we are now submitting to peer review.

Thanks,

Eben

From: Weitz, Melissa
Sent: Tuesday, March 10, 2015 3:13 PM
To: Thoma, Eben
Subject: FW: Modrak 2012 reference from white papers

Hi Eben,

I'm trying to track down a publication that was referenced in the equipment leaks white paper. The reference given was: 2.7 Measurements of Well Pad Emissions in Greeley, CO (Modrak, 2012).

Alex sent me the link below but I'm unable to open the document. If you have a copy or a different link, could you please it send to me?

Also, are we still on for tomorrow at 3?

Thank you!

Melissa

From: Macpherson, Alex

Sent: Tuesday, March 10, 2015 11:46 AM
To: Weitz, Melissa; Alsalam, Jameel
Subject: RE: Modrak 2012 reference from white papers

Is it this? Eben is a co-author

http://www.linknovate.com/publication/understanding-direct-emission-measurement-approaches-for-

upstream-oil-and-gas-production-operations-1628432/

From: Weitz, Melissa
Sent: Tuesday, March 10, 2015 11:43 AM
To: Alsalam, Jameel; Macpherson, Alex
Subject: RE: Modrak 2012 reference from white papers

The Modrak 2012 reference.

From: Alsalam, Jameel
Sent: Tuesday, March 10, 2015 11:43 AM
To: Weitz, Melissa; Macpherson, Alex
Subject: RE: Modrak 2012 reference from white papers

Are you asking for the white paper? Or the reference you asked about? I'm a little out of my depth on the detailed studies. I have just been coming at this from the perspective of looking at the national impacts. Maybe this is a question for ECR if they supported the white paper process?

From: Weitz, Melissa
Sent: Tuesday, March 10, 2015 11:38 AM
To: Macpherson, Alex; Alsalam, Jameel
Subject: Modrak 2012 reference from white papers

I'm having trouble tracking down the reference below from the white paper on leaks. Could one of you send me a link or a copy of the paper? Thank you!

Melissa

2.7 Measurements of Well Pad Emissions in Greeley, CO (Modrak, 2012)

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Mon 6/6/2016 4:06:07 PM
Subject: FW: May 23 -- BNA, Inc. Daily Environment Report
EPA letter 5-20-16.pdf

Hi Eben,

Ex. 5 - Deliberative Process

Climate Regulation

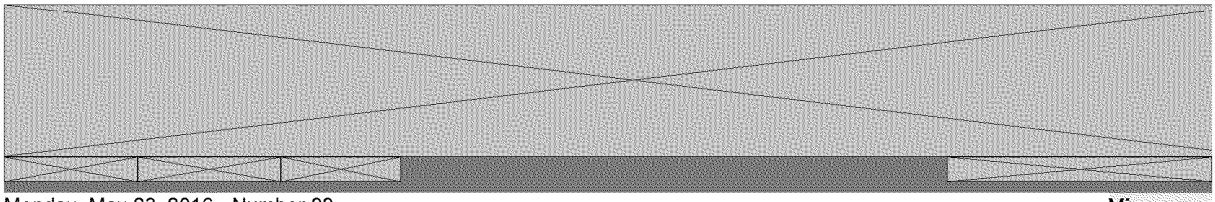
Basis for EPA's Methane Data Estimates Questioned

The Environmental Protection Agency must not move ahead with methane emissions regulations before "demonstrating a comprehensive understanding of the extent of emissions and their sources," six Republican senators wrote May...

From: BNA Highlights [mailto:bhighlig@bna.com]
Sent: Friday, May 20, 2016 10:19 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: May 23 -- BNA, Inc. Daily Environment Report

Manage your email subscriptions

Email not displaying correctly? View publication in your browser.



Monday, May 23, 2016 · Number 99

The Bloomberg BNA Daily Environment Report is brought to you by EPA Libraries. Please note, these materials may be copyrighted and should not be forwarded outside of the U.S. EPA. If you have any questions or no longer wish to receive these messages, please contact Shari Clayman at clayman.shari@epa.gov, 202-566-2370.

View Recent Articles By:
Agencies
States
Courts
Internatio
Organizat
Federal
Statutes
Cases
Reported

Key Features:
Special
Reports
Regulato
Agenda
Congress
Comment
Deadlines
PDF
Archives

NEWS

Air Pollution

Air Agencies Outline Uses for Volkswagen Settlement Funds

Any funds to offset excess emissions from Volkswagen diesel engines equipped to cheat on federal air emissions tests should be distributed to states based on the number of affected vehicles in their jurisdiction, excess emissions of nitrogen...

Air Pollution

Minnesota Asks Court to Temporarily Shut Down Shredder

The Minnesota Pollution Control Agency asked a state court to temporarily enjoin Northern

Metals of Minneapolis from operating its metal shredder until it receives a new air quality permit that would protect the public health and environment...

Air Pollution

Oregon Orders Glass Company to Stop Using Toxic Metals

Oregon Gov. Kate Brown (D) ordered state environmental regulators May 19 to issue a cease and desist order to a Portland art glass manufacturer after air monitoring found high lead levels at a daycare center near the company....

Biotechnology

Bayer Takeover of Monsanto Means Attention From GMO Critics

A deal proposed by Bayer AG has an undeniable industrial logic, marrying its crop-chemicals operations with Monsanto Co.'s market-leading seed business to create the largest company of its kind....

Brownfields

EPA Awards $55.2 Million for Brownfields Redevelopment

The U.S. Environmental Protection Agency will give out $55.2 million in 218 new grants to clean up brownfields properties in underserved and economically disadvantaged communities, the agency announced May 20....

Budget

House to Take Up Energy, Water Spending Bill

The House is slated to take up a $37.4 billion energy and water spending bill the week of May 23 that would block the Clean Water Rule among other policy riders. ...

Chemicals

Chemical Bill's Preemption Provisions Panned as Vote Nears

The House released a bill May 20 that reconciles the House and Senate's separate measures to revamp the Toxic Substances Control Act....

Chemicals

General Mills Wins Reversal of TCE Class Certification

General Mills successfully challenged certification of a class of homeowners alleging the company's former plant contaminated their properties (Ebert v. Gen. Mills Inc., 2016 BL 161161, 8th Cir., No. 15-1735, 5/20/16)....

Chesapeake Bay

Chesapeake Bay States to Meet Watershed Deadline: EPA

The six states and the District of Columbia making up the Chesapeake Bay watershed will have in place by December 2018 the third phase of watershed plans to clean up the nutrient-impaired waters of the bay, despite misgivings expressed recently...

Climate Regulation

Basis for EPA's Methane Data Estimates Questioned

The Environmental Protection Agency must not move ahead with methane emissions regulations before "demonstrating a comprehensive understanding of the extent of emissions and their sources," six Republican senators wrote May...

Climate Regulation

House Subcommittee Plans Clean Power Plan Hearing

The House Science, Space and Technology Subcommittee on the Environment will hold a hearing May 26 to gather state perspectives on the impact of the Environmental Protection Agency's Clean Power Plan, according to a notice....

Congress

Ariel Rios, Estuary Program, Offensive-Terms Bills Signed

The name Ariel Rios, which graced the Environmental Protection Agency's headquarters until 2013, has a new home in the federal government after President Barack Obama signed legislation (H.R. 4957) into law May 20. ...

Drinking Water

Gov. Snyder Creates Board on Children's Protection From Lead

Michigan Gov. Rick Snyder (R) signed an executive order May 20 that creates the Child Lead Poisoning Elimination Board....

Elections

Congress: Environment, Energy to Influence White House Race

House and Senate lawmakers think environmental and energy issues can still play a big role in this fall's presidential election, but outside observers aren't so sure. ...

Emissions Trading

EU Records Slight Drop in 2015 ETS Emissions

The volume of greenhouse gases pumped out by industrial participants in the European Union's emissions trading system (ETS) declined slightly in 2015, as measures to reduce a surplus of carbon allowances started to take effect, according...

Energy

Panel to Vote on Energy Bill Conference

The House Rules Committee is scheduled to vote May 24 on a procedural motion to go to conference with the Senate on broad energy legislation....

Energy

U.S. Nuclear Reactors Fall Short on Disaster Prevention

More than five years after a tsunami struck Japan, triggering one of the worst nuclear disasters in history, U.S. reactors and industry regulators haven't done enough to prevent a similar catastrophe, a government-sponsored study...

Hazardous Waste

White House Completes Review of E-Manifest Fee Proposal

The Office of Management and Budget completed May 19 its review of the Environmental Protection Agency's proposed rule to create a fee schedule for the hazardous waste e-manifest system....

Hazmat Transport

Canada's Crude-by-Rail Insurance Requirement Begins June 18

Canada's new requirements that railways transporting significant volumes of crude oil and other dangerous goods must carry at least C$1 billion ($760 million) in liability insurance will take effect June 18, the government announced....

Hydraulic Fracturing

County in Colorado Adopts Drilling Ban Despite Ruling

Boulder County, Colo., has rescinded a four-year moratorium on new oil and gas applications and replaced it with a six-month moratorium designed to give the county time to update its drilling rules....

International Climate

At UN Climate Talks, Some See 1.5-Degree Goal Fading

At United Nations climate talks in Bonn this week, observers and participants have been discussing whether the ambitious long-term 1.5-degree goal included in the world's first global climate change pact—reached just five months...

Oil & Gas

Underground Gas Storage Rules Coming This Summer

New regulations for underground natural gas storage facilities will be put in place this summer, the Pipeline and Hazardous Materials Safety Administration said in the latest update to its regulatory agenda. ...

Oil & Gas

Utah Resolution Opposes National Monument Designation

Utah Gov. Gary Herbert (R) signed a resolution (H.C.R. 201) urging President Barack Obama to refrain from establishing a new national monument in the state without local and legislative approval, saying such a move "would remove forever...

Ozone Depletion

EPA Approves Alternatives to Ozone-Depleting Substances

The Environmental Protection Agency is approving four alternative substances for use in refrigeration, air conditioning and food processes as part its Significant New Alternatives Policy for substances that deplete the ozone layer. ...

Pennsylvania

Pennsylvania's Top Environmental Regulator Steps Down

Pennsylvania's top environmental regulator has resigned, the governor's office announced May 20. In a statement, Gov. Tom Wolf (D) said he accepted the resignation of Department of Environmental Protection Secretary John Quigley....

Pesticides

EPA Taking on Unusual Projects in Fight Against Zika

While the Centers for Disease Control and Prevention is coordinating the U.S. government's fight against the Zika virus, the Environmental Protection Agency is playing a leading role, according to a senior EPA official....

Pesticides

Malathion, Two Other Pesticides Added to Prop. 65 List

California's Office of Environmental Health Hazard Assessment added malathion, parathion and tetrachlorvinphos to the state's Proposition 65 list of carcinogens....

Pipeline Safety

Trans Mountain Oil Sands Expansion Still Faces Many Hurdles

Before shovels hit the ground for construction of Kinder Morgan's Trans Mountain Expansion pipeline, the project still faces several regulatory, political, aboriginal, and social license hurdles, not to mention potential legal challenges,...

Radioactive Waste

Yucca Still to Face Resistance After Reid Retirement

Those jockeying to fill the holes on Capitol Hill created by the looming departure of Senate Minority Leader Harry Reid (D-Nev.) are espousing opposition to a permanent Yucca Mountain nuclear waste repository, raising questions about the...

REACH

European Commission Confirms REACH Review Details

The European Commission May 18 published a planning document that confirms its intentions for a wide-ranging review of the implementation and functioning of the European Union's REACH chemicals law, which must be completed by June 1,...

Regulatory Policy

Energy Rules Loom at Interior, DOE, NRC, EPA

The Interior Department has an array of regulations pending for oil and gas drilling and production in federal onshore and offshore areas, according to the spring regulatory agenda by the White House Office of Management and Budget....

Renewable Energy

Mexican Solar Panel Market Seen Taking Off

The Mexican market for solar panels is starting to heat up, driven by new laws, low panel costs and some of the world's best solar resources, a senior energy regulator said May 19. ...

Renewable Energy

SunEdison Has Loan Deal, Gives Creditors Funds for Probe

SunEdison Inc. reached a new agreement on a loan to fund its operations in bankruptcy, overcoming objections from creditors—who will also be allowed to investigate the renewable-energy giant's pre-bankruptcy conduct to...

Solid Waste

Utility Companies, Green Groups Spar Over EPA Coal Ash Rule

Utilities groups and environmental organizations clashed May 18 in separate briefs filed with the U.S. Court of Appeals for the District of Columbia Circuit over the Environmental Protection Agency's obligation to regulate inactive...

Storage Tanks

Discovery of Underground Tanks Triggers New Filing Clock

A buyer's knowledge that a property in New Jersey was contaminated when it bought the site didn't trigger the clock for a suit based on later-discovered contamination, a federal court ruled (N. River Mews Assocs. v. Alcoa Corp., 2016...

Superfund

Sovereign Immunity Bars State Superfund Claims: DOJ

The sovereign immunity doctrine bars state Superfund claims against federal agencies for the cleanup of a landfill in Washington state, the Department of Justice contends in a motion to dismiss filed in federal court (Basin Disposal Inc....

Vehicle Fuels

Highway Agency Explores Alternative Fuel Corridors

The Federal Highway Administration is soliciting input on designation of alternative fuel corridors on major national highways, launching the effort with two national webinars held May 12 and May 16....

Water Pollution

EPA Partly Rejects West Virginia's Impaired Waters List

After three environmental groups threatened to sue the Environmental Protection Agency for failing to take timely action on West Virginia's proposed list of impaired streams, the agency has partially disapproved the state's...

Water Resources

California Court Denies Bid to Block Sale of Islands

A California court refused to block the Metropolitan Water District of Southern California's purchase of five islands in the Sacramento-San Joaquin River Delta (Cnty. of San Joaquin v. MWD of Southern California, Cal. Super. Ct., STK-cv-UWM-2016-0003597,...

Water Resources

House Releases Its Draft Water Infrastructure Bill

A bipartisan $5 billion bill to authorize water infrastructure projects was unveiled May 20 by the House Transportation and Infrastructure Committee in a streamlined form very different from the Senate version....

Wetlands

Corps Proposes to Renew Wetlands Permits, Add Two More

The U.S. Army Corps of Engineers is proposing to renew its 50 existing nationwide permits, some with slight modifications, under Section 404 of the Clean Water Act, as well as issue two new ones, according to a pre-publication Federal Register...

CORRECTION

A May 19 article, "Lead-in-Water Rule to be Proposed in August," incorrectly said the Environmental Protection Agency has pushed up the promulgation of its upcoming proposed lead and copper rule. The rule, which is a technology-based...

INTERVIEW

International Climate

Q&A With Tosi Mpanu-Mpanu, Representing Poor Countries on Climate Change

For climate change negotiators, Tosi Mpanu-Mpanu is the new face of the world's poorest countries. In January, Mpanu-Mpanu, a 42-year-old diplomat, was named as chairman of the LDC Group—the acronym stands for least-developed...

REGULATORY AGENDA

Comment Deadlines

MAY 20 FEDERAL REGISTER

MAY 23 FEDERAL REGISTER

Daily Environment Report

Manage/Customize Your Email | Contact Us | Privacy Policy

Copyright © 2016 The Bureau of National Affairs, Inc. Use of this service is subject to terms and conditions of the license agreement with Bloomberg BNA. Unauthorized access or distribution is prohibited. "BNA" is a registered trademark of The Bureau of National Affairs, Inc. All other trademarks are property of their respective owners. All rights reserved.

To: Thoma, Eben[Thoma.Eben@epa.gov]
Cc: McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Weitz, Melissa
Sent: Tue 9/9/2014 3:46:59 PM
Subject: FW: Subpart W 2015 revisions - question on citations
Subpart W 2015 revisions - AIMM preamble section.docx

Hi Eben,

Ex. 5 - Deliberative Process

Feel free to contact me or Alexis with questions.

Thank you!!

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: McKittrick, Alexis
Sent: Monday, September 08, 2014 1:46 PM
To: Weitz, Melissa
Subject: Subpart W 2015 revisions - question on citations

Hi Melissa,

Ex. 5 - Deliberative Process

Thanks!

Alexis

Alexis McKittrick, Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Work phone (Mon - Thurs): 202-343-9153

Telework phone (Fri): 202-680-3589

To: Gunning, Paul[Gunning.Paul@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Moore, Bruce[Moore.Bruce@epa.gov]; Snyder, Jennifer[Snyder.Jennifer@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]
Cc: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/7/2015 3:54:10 PM
Subject: links to Barnett studies--printed copies coming soon

The ES&T issue containing the Barnett papers came out today. The EDF series papers in the issue are listed in the table below.

Alexis is having copies printed, and they'll be available later today or tomorrow.

Melissa

Barnett Shale Coordinated Campaign papers published in *Environmental Science & Technology*

ES&T Volume 49, Issue 13 cover:
http://pubs.acs.org/action/showLargeCover?jcode=esthag&vol=49&issue=13

Authors	Lead Institution	Title	Link
Harriss et al.	EDF	Using Multi-Scale Measurements to Improve Methane Emissions Estimates from Oil and Gas Operations in the Barnett Shale, Texas: Campaign Summary	http://pubs.acs.org/doi/abs/10.1021/acs.est
Karion et al.	NOAA / CIRES	Aircraft-based Estimate of Total Methane Emissions from the Barnett Shale Region	http://pubs.acs.org/doi/abs/10.1021/acs.est
Smith et al.	U. Michigan	Airborne ethane observations in the Barnett shale: Quantification of ethane flux and attribution of methane emissions	http://pubs.acs.org/doi/abs/10.1021/acs.est
Johnson et al.	WVU	Methane Emissions from Leak and Loss Audits of Natural Gas Compressor Stations and Storage Facilities	http://pubs.acs.org/doi/abs/10.1021/es5061
Nathan et al.	UT-Dallas / Princeton	Near field characterization of methane emissions from a compressor station using a model aircraft	http://pubs.acs.org/doi/abs/10.1021/acs.est
Lavoie et al.	Purdue	Aircraft-Based Measurements of Point Source Methane Emissions in the Barnett Shale Basin	http://pubs.acs.org/doi/abs/10.1021/acs.est
Yacovitch et al.	Aerodyne	Mobile Laboratory Observations of Methane	http://pubs.acs.org/doi/abs/10.1021/es5063

		Emissions in the Barnett Shale Region	
Lan et al.	U. Houston	Characterizing fugitive methane emissions in the Barnett Shale area using a mobile laboratory	http://pubs.acs.org/doi/abs/10.1021/es5063
Rella et al.*	Picarro	Measuring Emissions from Oil and Natural Gas Well Pads Using the Mobile Flux Plane Technique	http://pubs.acs.org/doi/abs/10.1021/acs.est *published in earlier issue of ES&T
Townsend-Small et al.	U. Cincinnati / UC-Irvine	Integrating source apportionment tracers into a bottom-up inventory of methane emissions in an urban natural gas producing region	http://pubs.acs.org/doi/abs/10.1021/acs.est
Zavala-Araiza et al.	EDF	Towards a Functional Definition of Methane Super-Emitters: Application to Natural Gas Production Sites	http://pubs.acs.org/doi/abs/10.1021/acs.est
Lyon et al.	EDF	Constructing a Spatially Resolved Methane Emission Inventory for the Barnett Shale Region	http://pubs.acs.org/doi/abs/10.1021/es5063

From: Weitz, Melissa
Sent: Monday, July 06, 2015 3:33 PM
To: Gunning, Paul; Irving, Bill; McKittrick, Alexis; Waltzer, Suzanne; Bylin, Carey; Alsalam, Jameel; Ragnauth, Shaun; Moore, Bruce; Snyder, Jennifer; Macpherson, Alex; Eben.thoma@epa.gov
Cc: DeFigueiredo, Mark
Subject: Slides from today's call-- FW: Barnett presentation

See attached, and please do not cite, distribute, etc.

Melissa

From: David Lyon [mailto:dlyon@edf.org]
Sent: Monday, July 06, 2015 3:16 PM
To: Weitz, Melissa
Subject: Barnett presentation

Melissa,

Can you distribute this presentation to the other EPA participants on the call? Please do not cite or distribute the slides without our permission.

Thanks,

David

David Lyon

Scientist

Environmental Defense Fund
301 Congress Avenue, Suite 1300

Austin, TX 78701
(512) 691-3414
dlyon@edf.org

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Thoma, Eben[Thoma.Eben@epa.gov]; Torres, Vincent[vmtorres@mail.utexas.edu]; sullivan231@mail.utexas.edu[sullivan231@mail.utexas.edu]
From: Allen, David T
Sent: Wed 2/11/2015 2:14:51 PM
Subject: FW: Time for a quick chat? (thanks)
Thoma_2014 AWMA_Philly PS and Sensor Study 020415.pdf
AWMA OTM 33_020615.pdf

Eben:

Thanks for the email and the follow-up. It might be a very interesting opportunity to locate some of your passive monitors in our Corpus Christi monitoring network, demonstrating its potential use as a platform for field tests of next generation sensors. I think that a logical next step would be to arrange for a conference call to discuss the requirements for siting these in Corpus Christi, beginning this summer. I have copied Vince Torres and Dave Sullivan on this email, since they are the leads in the operation of the network and the data analysis for the network.

Can you suggest some days/times that might work for a call?

Dave

From: Thoma, Eben [mailto:Thoma.Eben@epa.gov]
Sent: Friday, February 06, 2015 11:36 AM
To: Allen, David T
Subject: RE: Time for a quick chat? (thanks)

Dave,

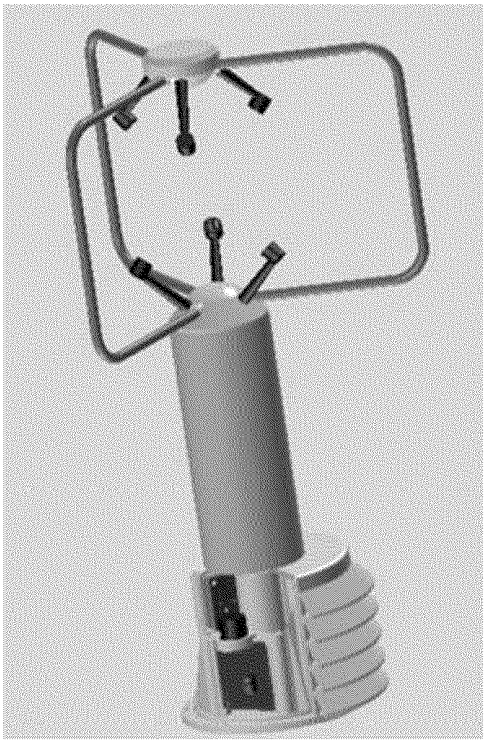
Thanks for the interesting call yesterday. I really appreciate your time and look forward to the opportunity to potentially work together in the future. I figure that you will likely not make this year's AWMA meeting (in Raleigh) so I thought I would pass along a couple of draft conference

papers with information on our recent fence line work with passive samplers, low cost sensors, and some thoughts on development of mobile measurement methods. A couple of things I forgot to mention yesterday (too many exciting things going on):

Ex. 5 - Deliberative Process

Thanks again for keeping in touch,

Eben



From: Allen, David T [mailto:allen@che.utexas.edu]
Sent: Wednesday, February 04, 2015 5:23 PM
To: Thoma, Eben
Subject: RE: Time for a quick chat?

Confirmed. You can call me at Ex. 6 - Personal Privacy

From: Thoma, Eben [mailto:Thoma.Eben@epa.gov]
Sent: Wednesday, February 04, 2015 2:59 PM
To: Allen, David T
Subject: RE: Time for a quick chat?

Yes thanks Dave. How about 1:00 pm Eastern?

Eben

Eben Thoma, Ph.D.

U.S. Environmental Protection Agency

Office of Research and Development

National Risk Management Research Laboratory

109 TW Alexander Drive (M/S E343-02)

Research Triangle Park, NC 27711

Phone: 919-541-7969

Fax: 919-541-0359

Email: thoma.eben@epa.gov

From: Allen, David T [mailto:allen@che.utexas.edu]
Sent: Wednesday, February 04, 2015 3:16 PM
To: Thoma, Eben
Subject: RE: Time for a quick chat?

How about sometime tomorrow (Thursday)? I am available any time except 12-12:30 eastern.

Dave

From: Thoma, Eben [mailto:Thoma.Eben@epa.gov]
Sent: Wednesday, February 04, 2015 12:40 PM
To: Allen, David T
Subject: Time for a quick chat?

Hi Dave,

I just left you a message. If you can spare a moment, I just wanted to continue the conversation we began at the EDF meeting on SOF.

Thanks, in advance.

Eben

Eben Thoma, Ph.D.

U.S. Environmental Protection Agency

Office of Research and Development

National Risk Management Research Laboratory

109 TW Alexander Drive (M/S E343-02)

Research Triangle Park, NC 27711

Phone: 919-541-7969

Fax: 919-541-0359

Email: thoma.eben@epa.gov

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Thoma, Eben[Thoma.Eben@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Brantley, Halley[Brantley.Halley@epa.gov]
From: McKittrick, Alexis
Sent: Wed 12/10/2014 8:05:21 PM
Subject: RE: monthly methane check-in with ORD: discuss GHGRP advanced monitoring methods
EPA-HQ-OAR-2014-0831-0017 Alt Monitoring.pdf

GHGRP Alternative Monitoring paper attached.

Alexis

From: DeFigueiredo, Mark
Sent: Wednesday, December 10, 2014 2:59 PM
To: Weitz, Melissa; Thoma, Eben; Waltzer, Suzanne; Brantley, Halley
Cc: McKittrick, Alexis
Subject: RE: monthly methane check-in with ORD: discuss GHGRP advanced monitoring methods

Hi everyone - We'll use a different call in number for our ORD/OAP check in. See below. Sorry - we had another meeting that was running long.

Call In: Ex. 6 - Personal Privacy
Passcode: Ex. 6 - Personal Privacy

--
Mark de Figueiredo, J.D., Ph.D.
Climate Change Division
U.S. Environmental Protection Agency
Office: (202) 343-9928
Mobile: (202) 251-4951
Email: defigueiredo.mark@epa.gov

-----Original Appointment-----
From: Weitz, Melissa
Sent: Tuesday, February 25, 2014 6:11 PM
To: Weitz, Melissa; DeFigueiredo, Mark; Thoma, Eben; Waltzer, Suzanne; Brantley, Halley
Cc: McKittrick, Alexis
Subject: monthly methane check-in with ORD: discuss GHGRP advanced monitoring methods
When: Wednesday, December 10, 2014 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Ex. 6 - Personal Privacy

To: Thoma, Eben[Thoma.Eben@epa.gov]
From: Weitz, Melissa
Sent: Tue 12/9/2014 7:06:51 PM
Subject: FW: PNAS article on abandoned wells

Hi Eben,

Not sure if you saw this yet. A new study on abandoned wells came out today.

If there is time on our call tomorrow, I'd like to get your thoughts on this study.

Are we still good for the monthly tomorrow? And still discussing advanced monitoring methods?

Melissa

From: Weitz, Melissa
Sent: Tuesday, December 09, 2014 2:05 PM
To: Waltzer, Suzanne; Ragnauth, Shaun
Cc: DeFigueiredo, Mark
Subject: FW: PNAS article on abandoned wells

There's a new study on abandoned wells. Summary info is below and saved on the g:drive.

Direct Measurements of Methane Emissions from Abandoned Oil and Gas Wells in Pennsylvania

Authors: Kang, Mary et al. Princeton

Published: December 2014 in PNAS

http://www.pnas.org/content/early/2014/12/04/1408315111.full.pdf+html?with-ds=yes

Overview:

•□□□□□□□ Measured methane flow rate from 19 abandoned wells in Pennsylvania, using a flux chamber

•□□□□□□□ Sampled both plugged and unplugged wells, all likely to be 50 years old or older

Key findings:

•□□□□□□□ Average emission factor of 0.27 kg/d/well, estimated error within a factor of 2

•□□□□□□□ Emissions from plugged wells not different from emissions from unplugged wells

•□□□□□□□ Estimated that these emissions are around 4-7% of PA CH4 emissions, but note that this estimate is highly uncertain

Relevance to CCD programs:

•□□□□□□□ First measurements available on abandoned well CH_4

•□□□□□□□ EPA does not have an estimate for this source in the GHG Inventory

o To include this source, we would need an estimate of total abandoned oil and gas wells in the U.S.

▪ Data unavailable, estimates are typically 1-3 million

o Study has a limited sample size (19 wells and only in PA)

o May be best to add a note on potential magnitude of emissions from this source, and then seek additional data/comment on emissions, and on additional activity data

o If total abandoned wells are 1,000,000, and the study EF is used, emissions from this source are 2.5 MMT CO2e; if 3 million wells, then 7.5 MMT CO2e.

•□□□□□□□ Abandoned wells do not report under GHGRP

From: DeFigueiredo, Mark
Sent: Tuesday, December 09, 2014 11:59 AM
To: Weitz, Melissa
Subject: PNAS article on abandoned wells

Greenwire:

http://www.eenews.net/climatewire/2014/12/09/stories/1060010153

http://www.eenews.net/energywire/2014/12/09/stories/1060010150

PNAS study: http://www.pnas.org/cgi/doi/10.1073/pnas.1408315111

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: Thoma, Eben
Sent: Tue 11/29/2016 5:43:32 PM
Subject: RE: publication of paper on gridded CH4 inventory

Thanks Melissa, yes, very good Thanksgiving and I hope the same for you as well.

I appreciate you sending this and I look forward to reading. Soon I will send a draft of our Uinta Basin Pneumatic controller study paper.

Eben

From: Weitz, Melissa
Sent: Tuesday, November 29, 2016 12:36 PM
To: Thoma, Eben <Thoma.Eben@epa.gov>
Subject: publication of paper on gridded CH4 inventory

Hi Eben,

I hope you had a nice Thanksgiving!

I wanted to let you know that our work with Harvard on gridding the CH4 emissions in the GHG Inventory has been published.

Sorry-I meant to give you a heads up on this earlier and the paper ended up being published about a month sooner than we expected!

More information, and a link to the paper itself can be found on our website below.

https://www.epa.gov/ghgemissions/gridded-2012-methane-emissions

Please let me know if you have any questions or would like to discuss.

Best,

Melissa

To: Eisele, Adam[Eisele.Adam@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Shine, Brenda[Shine.Brenda@epa.gov]; Dewees, Jason[Dewees.Jason@epa.gov]; Michael Stovern (Stovern.Michael@epa.gov)[Stovern.Michael@epa.gov]; Cindy Beeler (Beeler.Cindy@epa.gov)[Beeler.Cindy@epa.gov]
From: Thoma, Eben
Sent: Fri 3/24/2017 2:15:33 PM
Subject: RE: Uinta PC Study paper final look opportunity
Uinta Basin PC Study_032317 mw_ape.docx
Supplemental File_SF1_032417.xlsx

Mike, Melissa, Adam,

Thanks for the comments, responses and essentially final version attached along with SF1. There was one key sentence in conclusion I wanted to make sure I got right (current version below):

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Eisele, Adam
Sent: Thursday, March 23, 2017 9:48 AM
To: Thoma, Eben <Thoma.Eben@epa.gov>
Cc: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: RE: Uinta PC Study paper final look opportunity

Eben-

Pls find attached some comments on the latest draft of your Uinta paper.

Let us know if there are any Qs or concerns.

From: Thoma, Eben
Sent: Tuesday, March 21, 2017 2:25 PM
To: Stovern, Michael <Stovern.Michael@epa.gov>; Beeler, Cindy <Beeler.Cindy@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>
Subject: Uinta PC Study paper final look opportunity

Hi Everyone,

Attached is a near final version of the Uinta pneumatic controller study paper in track changes, reflecting response to review comments. The conclusions and comparisons to inventory values have been beefed up a bit.

I talked with Papa Adam about this yesterday and know he is out soon with his baby so just trying to get this in under the wire. I hope Melissa has a minute to take a look at Section 3.4 and 4.0.

Thanks,

Eben

Eben Thoma, Ph.D.

U.S. Environmental Protection Agency

Office of Research and Development

National Risk Management Research Laboratory

109 TW Alexander Drive (M/S E343-02)

Research Triangle Park, NC 27711

Phone: 919-541-7969

Fax: 919-541-0359

Email: thoma.eben@epa.gov

To: Allen, David T[allen@che.utexas.edu]
Cc: Parikshit.Deshmukh@jacobs.com[Parikshit.Deshmukh@jacobs.com]
From: Thoma, Eben
Sent: Thur 5/5/2016 11:57:56 AM
Subject: RE: Unita Study
Uinta PC Study Webinar 050316.pptx

Dave,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

Eben

From: Allen, David T [mailto:allen@che.utexas.edu]
Sent: Thursday, April 28, 2016 10:08 AM
To: Thoma, Eben <Thoma.Eben@epa.gov>
Subject: RE: Unita Study

Thanks for the update Eben. Keep us posted on progress.

Dave

From: Thoma, Eben [mailto:Thoma.Eben@epa.gov]
Sent: Thursday, April 28, 2016 5:52 AM
To: Allen, David T
Cc: Deshmukh, Parikshit J
Subject: Unita Study

Dave,

As an update, yesterday we received permission from EPA R8 to approach the Unita operators regarding the study so that process is beginning. The contract option period for Parik at JTI has now started so we are officially moving forward. We are still shooting for mid-August field study start date. Sorry we can't be more specific on timing but we aim to lock this in as soon as possible.

Thanks,

Eben

Eben Thoma, Ph.D.

U.S. Environmental Protection Agency

Office of Research and Development

National Risk Management Research Laboratory

109 TW Alexander Drive (M/S E343-02)

Research Triangle Park, NC 27711

Phone: 919-541-7969

Fax: 919-541-0359

Email: thoma.eben@epa.gov

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Eisele, Adam[Eisele.Adam@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Mon 3/12/2018 8:12:50 PM
Subject: FYI: Review Request: ITRC's "Evaluation of Innovative Methane Detection Technologies"
Adam Eisele OAP.XLS

As mentioned at our last oil and gas monthly, OAP (along with OAQPS and ORD) was asked by EPA's Office of Intergovernmental Relations to provide comments on the ITRC report "Evaluation of the Innovative Methane Detection Technologies."

OAP is planning to submit the attached comments today.

Below is background on the report and information on OAP's comments.

Please let us know if you would like additional information.

Melissa

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

o PDF Version of Body of Draft Document (Sections 1-7) is available for downloading from the Methane Team web page (File Cabinet/Guidance Documents) at:

https://www.itrcweb.org/FileCabinet/GetFile?fileID=12037

o PDF Version of Appendices (Appendix A, B, and C) is available for downloading from the Methane Team web page (File Cabinet/Guidance Documents) at:

https://www.itrcweb.org/FileCabinet/GetFile?fileID=12038

To: Gunning, Paul[Gunning.Paul@epa.gov]
From: Weitz, Melissa
Sent: Thur 3/1/2018 9:41:20 PM
Subject: FW: News release and fact sheets on the NSPS OOOOa amendments and CTG
CTG Proposed Withdrawal. Fact Sheet. 3.1.18.pdf
EPA Amends Certain Aspects of NSPS.Fact Sheet.2.23.18.pdf

FYI

From: Thompson, Lisa
Sent: Thursday, March 01, 2018 4:39 PM
To: Hambrick, Amy <Hambrick.Amy@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Mia, Marcia <Mia.Marcia@epa.gov>; Gregory, John <Gregory.John@epa.gov>; Sorrell, Virginia <Sorrell.Virginia@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Gilbreath, Jan <Gilbreath.Jan@epa.gov>; Kopits, Elizabeth <Kopits.Elizabeth@epa.gov>; Marten, Alex <Marten.Alex@epa.gov>; Durkee, Stanley <Durkee.Stan@epa.gov>; Vyas, Himanshu <vyas.himanshu@epa.gov>; Topinka, Natalie <topinka.natalie@epa.gov>; Lawrence, Rob <Lawrence.Rob@epa.gov>; Beeler, Cindy <Beeler.Cindy@epa.gov>; Marsh, Karen <Marsh.Karen@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Garwood, Gerri <Garwood.Gerri@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Miller, Elizabeth <Miller.Elizabeth@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Pryor, Justin <Pryor.Justin@epa.gov>; Chan, Elizabeth <Chan.Elizabeth@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; Kaleri, Cynthia <kaleri.cynthia@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: News release and fact sheets on the NSPS OOOOa amendments and CTG

All –

EPA is announcing two action todays: (1) Amendments to the fugitives requirements in NSPS OOOOa and (2) the proposed CTG withdrawal. See the attached fact sheets and links below for information. Please reach out to me, or the rule leads – Karen Marsh (Amendments) or Jonathan Witt (CTG) with any questions.

Thanks,

Lisa

Amendments link

https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/amendments-new-source-performance-standards

CTG link

https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/proposed-withdrawal-2016-control-techniques

To: Gunning, Paul[Gunning.Paul@epa.gov]
From: Weitz, Melissa
Sent: Mon 2/5/2018 10:28:43 PM
Subject: FW: For your review: Oil and Gas Policy Proposal - Options Selection Presentation
O&G Policy Options Selection Briefing 2.5.2018.pptx

Current draft of policy OS briefing . We can add comments through COB Wednesday.

From: Thompson, Lisa
Sent: Monday, February 05, 2018 10:33 AM
To: Cozzie, David <Cozzie.David@epa.gov>; Marsh, Karen <Marsh.Karen@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Garwood, Gerri <Garwood.Gerri@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Miller, Elizabeth <Miller.Elizabeth@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Mills, Kathy <Mills.Kathy@epa.gov>; Culligan, Kevin <Culligan.Kevin@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Eisele, Adam <Eisele.Adam@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; Hoffman, Howard <hoffman.howard@epa.gov>
Subject: For your review: Oil and Gas Policy Proposal - Options Selection Presentation

Oil and Gas team –

Please review the draft OS presentation for the policy proposal by COB 2/7. Currently the briefing with the Administrator is scheduled for 2/16, and pre-briefs with Penny, Peter, and Bill may be scheduled shortly. Thanks in advance for your quick review.

https://usepa.sharepoint.com/:p:/r/sites/oar_Work/OilandGas/Shared%20Documents/NSPS_3/Internal%20Pager

Lisa Thompson

Fuels and Incineration Group

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

919-541-9775

To: Gunning, Paul[Gunning.Paul@epa.gov]
From: Weitz, Melissa
Sent: Thur 2/1/2018 11:14:36 PM
Subject: final background document--RE: tomorrow's CH4 meeting
Notes for Methane Update with Bill 2-2 .docx

From: Gunning, Paul
Sent: Thursday, February 01, 2018 5:39 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Re: tomorrow's CH4 meeting

Thanks Melissa!!

Sent from my iPhone

On Feb 1, 2018, at 5:01 PM, Weitz, Melissa <Weitz.Melissa@epa.gov> wrote:

There is no agenda for tomorrow's meeting, but the plan for now is to cover two questions OGC raised related to the policy package.

Ex. 5 - Attorney Client

There is no plan to share background materials at the meeting, but OAQPS and OGC are pulling together some talking points and background for Peter. These are attached, but are still a work in progress. I'll send a final version when it is ready.

<Notes for Methane Update with Bill 2-2 .docx>

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Banks, Julius[Banks.Julius@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]
From: Weitz, Melissa
Sent: Thur 4/28/2016 9:54:56 PM
Subject: updates on NSPS and ICR
NSPS update 4.28.docx
ICR updates 4.28.docx

;
Hello Paul,

As Mark and I mentioned to you yesterday, the oil and gas team developed a list of areas where we might see pushback on the upcoming final NSPS, attached.

Also attached is an update on the ICR.

Please let us know if you have questions or would like to discuss any of these.

Thanks,

Melissa

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Fri 1/8/2016 8:55:34 PM
Subject: FW: Oil Gas Strategy next steps
OG strategy 1 8 2016 OAP.pptx

Peter is meeting with Janet on the ICR on Monday, and OAQPS developed slides to walk through for that meeting. OAP has reviewed and provided edits (see attached).

An earlier draft of the slides was sent forward today, but Amy said they would make edits before the briefing Monday.

Please let me know if you have any questions or would like to discuss.

Thanks,

Melissa

From: Weitz, Melissa
Sent: Friday, January 08, 2016 3:50 PM
To: Hambrick, Amy <Hambrick.Amy@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>
Cc: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Miller, Elizabeth <Miller.Elizabeth@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Roder, Aileen <Roder.Aileen@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>
Subject: RE: Oil Gas Strategy next steps

Hi Amy,

Some edits and comments from OAP are in the attached.

Please let me know if you'd like to discuss.

Thanks,

Melissa

From: Hambrick, Amy
Sent: Friday, January 08, 2016 1:20 PM
To: Cozzie, David <Cozzie.David@epa.gov>
Cc: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Miller, Elizabeth <miller.elizabeth@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Roder, Aileen <Roder.Aileen@epa.gov>
Subject: RE: Oil Gas Strategy next steps

Hi All-

Ex. 5 - Deliberative Process

Thanks for your input and patience,

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

From: Hambrick, Amy
Sent: Thursday, January 07, 2016 1:27 PM
To: Cozzie, David <Cozzie.David@epa.gov>
Cc: McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Thompson, Lisa <Thompson.Lisa@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>; Spells, Charlene <Spells.Charlene@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Witosky, Matthew <Witosky.Matthew@epa.gov>; Howard, Jodi <Howard.Jodi@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>; Miller, Elizabeth <Miller.Elizabeth@epa.gov>; Alsalam, Jameel <Alsalam.Jameel@epa.gov>; Branning, Amy <Branning.Amy@epa.gov>; Roder, Aileen <Roder.Aileen@epa.gov>
Subject: Oil Gas Strategy next steps

David & all,

Per direction from Peter T. here is the next round of (what will look familiar) the OG strategy briefing which will focus on the considerations of an ICR. This is pretty rough but wanted to get something out for internal dialog. Please send comments (if possible) by 2p tomorrow, Friday 1/8.

Some additional guidance would be useful on the following:

Ex. 5 - Deliberative Process

FYI for an example of a recent ICR OAQPS did, please check out the Refineries ICR:

-

https://refineryicr.rti.org/

-

http://www3.epa.gov/ttn/atw/petref/petrefpg.html

These are the 2 FR notices we put out for our ICR. The first was actually on 9/29/2010, and the second on 02/02/11; the final ICR got approved on 3/31/2011, so it did only take 6 months to get through the 2 notices and send the ICR out., but we did spend a lot of up front time developing

the detailed questionnaire before that happened. We put the draft questionnaire in the docket and the emission estimation protocol in the docket for the first notice; we put the detailed testing component 4 and the crude sampling component 3 in the docket for the second notice (and also revised Components 1 and 2 and the protocol based on comments).

Our docket number is epa-hq-oar-2010-0682—the ICR materials are the first entries in this docket so it is easy to see what was done when.

Our docket has all the comments we received and the supporting information that was loading in at each juncture.

Here is the first notice:

http://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2010-0682-0001&disposition=attachment&contentType=pdf

Here is the second notice:

http://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2010-0682-0015&disposition=attachment&contentType=pdf

Thank you,

Amy

Amy Hambrick

U.S. Environmental Protection Agency

(919)541-0964

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Hogan, Sean[Hogan.Sean@epa.gov]
From: Weitz, Melissa
Sent: Fri 8/28/2015 8:52:51 PM
Subject: summary of interagency call on Methane S&T Needs Activities
Methane S&T interagency Aug 2015 meeting agency activities 20150826.docx
Methane emissions prospectus DRAFT 8-17-2015 (EPA).docx
Interagency Methane Strategy Call - 27 Aug_Gant.pdf
Methane (NOAA) 20150827_jhb.pptx

Yesterday (8/27), Mark and I called into the OSTP-led interagency call on methane activities. We gave an update on GHGRP and the GHG inventory, gave an overview of the proposed actions on oil and gas, and shared information on ORD activities. I've attached the activity write-ups submitted by participants prior to the call and slides presented by DOE and NOAA. Below is a brief overview of some of the highlights from each agency.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Best,
Melissa

From: Brown, Austin Ex. 6 - Personal Privacy
Sent: Thursday, August 27, 2015 10:01 AM
To: Adrian.Down@Hq.Doe.Gov; Alexander.E.MacDonald@noaa.gov; Ann.Bartuska@osec.usda.gov; arlyn.andrews@noaa.gov; ateitz@blm.gov; bdeangelo@usgcrp.gov; bryan.willson@hq.doe.gov; camille.mittelholtz@dot.gov; charles.e.miller@jpl.nasa.gov; DeFigueiredo, Mark; douglas.morris@bsee.gov; Dunham, Sarah; ed.dlugokencky@noaa.gov; Elizabeth_Klein@ios.doi.gov; elke.hodson@hq.doe.gov; eric.smistad@hq.doe.gov; ESALTZMA@nsf.gov; gabrielle.petron@noaa.gov; garvin.heath@nrel.gov; Goffman, Joseph; Gullett, Brian; Gunning, Paul; hatch.mark@dol.gov; Irving, Bill; james.bradbury@hq.doe.gov; james.h.butler@noaa.gov; james.whetstone@nist.gov; jonathan.pershing@hq.doe.gov; Judith.Greenwald@Hq.Doe.Gov; kenneth.lee@dot.gov; Kenneth.w.jucks@nasa.gov; kfalkner@nsf.gov; Lori.Bruhwiler@noaa.gov; marlen.eve@ars.usda.gov; Marni.Lenahan@hq.doe.gov; Melanie.kenderdine@hq.doe.gov; Michaels.David@dol.gov; Miller, Andy; ncavallaro@nifa.usda.gov; nkornze@blm.gov; pshepson@nsf.gov; Rebecca.Shively@osec.usda.gov; riley.duren@jpl.nasa.gov; Robert.W.Smith@dot.gov; russell.c.schnell@noaa.gov; rwakimot@nsf.gov; sismith@nifa.usda.gov; Timothy.Skone@netl.doe.gov; Todd.Campbell@osec.usda.gov; Weitz, Melissa; whohenst@oce.usda.gov; mkuperberg@usgcrp.gov; amanda_leiter@ios.doi.gov; Paula.Gant@Hq.Doe.Gov; janice_schneider@ios.doi.gov; christopher.freitas@hq.doe.gov; rick.elliott@hq.doe.gov
Cc: Simon, Bob; Utech, Dan G.; Zaidi, Ali; Jencks, Fae; Clavin, Christopher T; 'ldacus@ida.org'
Subject: Methan S&T Needs Activities

Colleagues,

I'm attaching the activities we've received collected in one document. Thank you everyone for the great summaries. I look forward to speaking to those of you who can make it at 2 ET. Most of the time will be for agency updates. Here is a rough agenda. If anyone has other items they'd like to raise, let me know and I can allocate time.

Ex. 5 - Deliberative Process

Best,

Austin

Austin L Brown, Ph.D.

Senior Policy Analyst

Executive Office of the President

Office of Science and Technology Policy

Ex. 6 - Personal Privacy

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 3/20/2018 6:14:02 PM
Subject: RE: NAS methane study briefing
NAS CH4 Study overview 3.20.2018 final.docx

Please see attached one pager and let me know if you have any questions.

Thanks,

Melissa

From: Gunning, Paul
Sent: Tuesday, March 20, 2018 12:58 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Irving, Bill <Irving.Bill@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: NAS methane study briefing

Perfect, thx Melissa

From: Weitz, Melissa
Sent: Tuesday, March 20, 2018 12:55 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Irving, Bill <Irving.Bill@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: RE: NAS methane study briefing

I'm working on revising an old NAS one pager and will have it ready shortly after our GHG Inventory briefing.

From: Gunning, Paul
Sent: Tuesday, March 20, 2018 12:12 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Irving, Bill <Irving.Bill@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>
Subject: FW: NAS methane study briefing

Melissa – do you have a one pager/backrounder on the study that I can share with Sarah? My weekly is at 3 today.

From: Krieger, Jackie
Sent: Tuesday, March 20, 2018 11:04 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Cc: Irving, Bill <Irving.Bill@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Subject: RE: NAS methane study briefing

Thanks, Melissa. I'll let Sarah know that NAS is coming in on Monday at 1:00; she has a conflict at that time but I'm sure is interested – perhaps a brief summary of the report (in a note or from Paul during one of his weeklies) might make sense. There's also this meeting that they've (NAS) requested with Bill – Clint is going to take the meeting and the OAR IO has asked who to invite from OAP. As they mentioned the methane study in their note requesting the meeting, I think I'll tell them to invite Bill and you and you guys can decide who should attend once the meeting is scheduled. Let me know if that doesn't work for you. Thanks again!

Jackie Krieger / Chief of Staff / Office of Atmospheric Programs / U.S. EPA / O: 202-343-9905 / C: 202-236-3934

From: Weitz, Melissa
Sent: Tuesday, March 20, 2018 10:46 AM
To: Krieger, Jackie <Krieger.Jackie@epa.gov>
Cc: Irving, Bill <Irving.Bill@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Subject: FW: NAS methane study briefing

Hello,

Next week, NAS will release its report *"Improving Characterization of Anthropogenic Methane Emissions in the United States."* EPA, along with NOAA, NASA, and DOE,

sponsored the report.

On Monday, NAS and methane study committee members will be coming to EPA to brief us on the report. Sarah may be interested in attending the briefing. Meeting details are below. Please let me know if you'd like any additional information.

Thank you,

Melissa

-----Original Appointment-----
From: Weitz, Melissa
Sent: Thursday, March 08, 2018 3:20 PM
To: Weitz, Melissa; Irving, Bill; DeFigueiredo, Mark; Desai, Mausami; Wirth, Tom; Sherry, Christopher; Eisele, Adam; Schmeltz, Rachel; Camobreco, Vincent; Steller, John; Hight, Cate; Thoma, Eben; Thompson, Lisa; Waltzer, Suzanne; Pryor, Justin; Hooper, Daniel; Alsalam, Jameel; DeLuca, Isabel
Subject: NAS methane study briefing
When: Monday, March 26, 2018 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomWJCE5140OAPTB/DC-OAR-OAP

Call in information:

Ex. 6 - Personal Privacy

Additional information on the methane study:

http://nas-sites.org/dels/studies/methane-study/

To: Gunning, Paul[Gunning.Paul@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]
From: Weitz, Melissa
Sent: Tue 4/8/2014 8:59:29 PM
Subject: one pager on final 2014 GHG Inventory
Final 2014 US GHG Inv One Pager 4.8.docx

Hello,

Please see the attached one pager on the final 2014 GHG Inventory.

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

To: Gunning, Paul[Gunning.Paul@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Wed 11/16/2016 7:22:38 PM
Subject: FW: Gridded CH4 inventory-paper out, website up

FYI-gridded CH4 inventory is out.

-----Original Message-----
From: Weitz, Melissa
Sent: Wednesday, November 16, 2016 1:09 PM
To: Hockstad, Leif <Hockstad.Leif@epa.gov>; Wirth, Tom <Wirth.Tom@epa.gov>; Desai, Mausami <Desai.Mausami@epa.gov>; Hight, Cate <Hight.Cate@epa.gov>; Schmeltz, Rachel <Schmeltz.Rachel@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Cc: Irving, Bill <Irving.Bill@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Nayem, Tasfia <Nayem.Tasfia@epa.gov>
Subject: Gridded CH4 inventory-paper out, website up

Though we were expecting this to come out about a month from now, ES&T published and posted the gridded inventory paper this morning.
http://pubs.acs.org/doi/full/10.1021/acs.est.6b02878

Our website on the gridded inventory is up and running today, thanks to Isabel and Tasfia!
https://www.epa.gov/ghgemissions/gridded-2012-methane-emissions

Congrats, coauthors! I'll keep you posted if I see any press, etc. on this.

Melissa

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
From: Weitz, Melissa
Sent: Wed 10/30/2013 7:23:55 PM
Subject: Response to Inhofe and updated overview memo on update to HF factors
Updating GHG Inventory Estimate for Hydraulically Fractured 10 30_SW MW.docx
Letter to Inhofe 10 30 mdf mw.docx

Attached please find a draft response to the Inhofe letter, and the updated overview memo on the update to HF factors.

I'm bringing hard copies up to your office.

Melissa

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Thur 10/24/2013 5:36:35 PM
Subject: Update on schedule and process for HF emission estimate revision
Updating GHG Inventory Estimate for Hydraulically Fractured 10.24.docx

Hello,

Below is an update on the schedule for the HF Emission Estimate Update. We are currently working with ERG on recalculating the emission factors using the resubmitted 2011 GHGRP data and the 2012 GHGRP data and expect to have updated numbers and an updated memo late next week.

The most recent version of the overview memo is attached. The numbers in the table are from a previous version of the 2011 data and will change slightly in the version of the memo we'll have next week.

-

Revised Schedule and Process for HF Emission Estimate Update

•□□□□□□□ Early-Mid November 2013--2-week targeted stakeholder review of information on proposed approach

o Information will be posted to EPA's Inventory website and distributed by email to oil and gas stakeholders

o Stakeholder list includes participants in previous stakeholder workshops and webcasts and expert reviewers for the GHG Inventory

o Materials include EPA overview document with questions for stakeholders, and ERG technical memo showing detailed analysis of GHGRP data

o EPA will hold a webcast to walk through the proposed approach

•□□□□□□□ Mid-November 2013-- EPA updates methodology based on stakeholder feedback

•□□□□□□□ Early December 2013-- Release of updated methodology (through posting memo to inventory website) for HF well completions and workovers.

•□□□□□□□ December 2013 - January 2014—Inventory expert review draft released with updated methodology.

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
From: Weitz, Melissa
Sent: Tue 11/8/2016 8:44:51 PM
Subject: Gridded CH4 Inventory--may be published next week
Gridded 2012 Methane Emissions website 11.8.docx

I wanted to give you a heads up that the journal article on the gridded inventory may be published next week in ES&T. This is on the OAP list.

I've attached a draft of our website on the gridded inventory, mostly as an FYI but I'm happy to make edits. This will be linked from the GHG Inventory page.

We are not giving the journal approval to publish (and there is still a delay after our approval) until we have the website ready to go, so that we have the data available on the website for researchers to access.

Let me know if you have any questions or would like more information.

Thanks,

Melissa

To: Gunning, Paul[Gunning.Paul@epa.gov]
From: Weitz, Melissa
Sent: Thur 7/30/2015 7:58:20 PM
Subject: Fwd: pre-briefing of JISEA report for EPA
JISEA NG methane emissions inventory Presentation_7_30_2015_final_no supplemental.pdf
ATT00001.htm

Sent from my iPhone

Begin forwarded message:

From: "Warner, Ethan" <Ethan.Warner@nrel.gov>
To: "Hodson, Elke (HQ)" <elke.hodson@hq.doe.gov>, "Weitz, Melissa" <Weitz.Melissa@epa.gov>, "McKittrick, Alexis" <McKittrick.Alexis@epa.gov>, "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>, "Heath, Garvin" <Garvin.Heath@nrel.gov>, "Steinberg, Daniel" <Daniel.Steinberg@nrel.gov>, "Greenwald, Judith (HQ)" <judi.greenwald@hq.doe.gov>, "Bradbury, James (HQ)" <james.bradbury@hq.doe.gov>, "Down, Adrian (FELLOW) (HQ)" <adrian.down@hq.doe.gov>
Subject: RE: pre-briefing of JISEA report for EPA

Here is a pdf of the technical brief slides for the meeting in about 20 minutes.

Best regards,
Ethan

-----Original Appointment-----
From: Hodson, Elke [mailto:Elke.Hodson@Hq.Doe.Gov]
Sent: Tuesday, July 28, 2015 8:37 AM
To: Hodson, Elke; Melissa Weitz (Weitz.Melissa@epa.gov); 'McKittrick, Alexis'; DeFigueiredo, Mark; Heath, Garvin; Warner, Ethan; Steinberg, Daniel; Greenwald, Judith (HQ); Bradbury, James (HQ); Down, Adrian (FELLOW) (HQ)
Subject: pre-briefing of JISEA report for EPA
When: Thursday, July 30, 2015 4:00 PM-5:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: **Ex. 6 - Personal Privacy**

To: Gunning, Paul[Gunning.Paul@epa.gov]; Staudt, Amanda[AStaudt@nas.edu]; Thomas, Katherine C[KCThomas@nas.edu]
Cc: Irving, Bill[Irving.Bill@epa.gov]
From: Weitz, Melissa
Sent: Tue 7/28/2015 7:51:08 PM
Subject: RE: Updated methane emissions prospectus for Wed meeting
Methane emissions prospectus DRAFT 7-20-2015 EPA.docx

Hello Amanda,

In the attached 7/20 version of the draft prospectus, I've inserted comment bubbles that cover the EPA comments we discussed last week.

Please let us know if you have any questions.

Thanks again for sharing the draft,

Melissa

From: Gunning, Paul
Sent: Tuesday, July 28, 2015 12:35 PM
To: Staudt, Amanda; Thomas, Katherine C
Cc: Weitz, Melissa; Irving, Bill
Subject: RE: Updated methane emissions prospectus for Wed meeting

Sounds great Amanda. Thanks again for coming over last week.

Paul

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Friday, July 24, 2015 5:49 PM
To: Gunning, Paul; Thomas, Katherine C

Subject: RE: Updated methane emissions prospectus for Wed meeting

Dear Paul,

Thanks so much for the meeting earlier this week. The input was very helpful! It would be great if Melissa could send along her written notes when she has a chance.

In terms of next steps, we will work on revising the prospectus over the next week or so, and then share a revised version for you to review again. Our plan is to get it to you the week of August 3rd. Hopefully by then we'll be getting pretty close, but we can continue to iterate as needed. Once we are in agreement, we will submit the project for Academies approval.

Have a nice weekend,

Amanda

From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]
Sent: Tuesday, July 21, 2015 10:18 AM
To: Thomas, Katherine C
Cc: Staudt, Amanda
Subject: RE: Updated methane emissions prospectus for Wed meeting

Thanks Katie. See you tomorrow.

Paul

From: Thomas, Katherine C [mailto:KCThomas@nas.edu]
Sent: Monday, July 20, 2015 4:44 PM
To: Gunning, Paul

Cc: Staudt, Amanda
Subject: Updated methane emissions prospectus for Wed meeting

Dear Paul,

Amanda and I are looking forward to meeting with you Wednesday morning to discuss a potential Academies study on methane emissions monitoring and inventories. I am attaching an updated version of the prospectus.

Many thanks,

Katie

Katie Thomas
Program Officer

Board on Atmospheric Sciences and Climate
The National Academies of Sciences, Engineering, and Medicine
500 Fifth Street NW
Washington, DC 20001
202-334-3860

kcthomas@nas.edu

The National Academies of
SCIENCES · ENGINEERING · MEDICINE

To: Gunning, Paul[Gunning.Paul@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Clayton, Margie[Clayton.Margie@epa.gov]; Harris, Jarrod[Harris.Jarrod@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Thur 5/5/2016 2:36:31 PM
Subject: FW: REE: Request for Task Order Proposal for Methane Emission Measurement Monitoring and Inventories
RFP Letter.doc
PWS on Methane Emission Measuement.pdf

Status update on NAS task—ORD sent out the RFP today, and we'll be getting a proposal from NAS by 5/27.

From: Yates, William
Sent: Thursday, May 05, 2016 9:01 AM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: REE: Request for Task Order Proposal for Methane Emission Measurement Monitoring and Inventories

Good morning Melissa,

Wanted to make sure you knew this on has been sent.

William M Yates

Contracting Officer

Cincinnati Procurement Operations Division

513-487-2055

From: Yates, William
Sent: Thursday, May 05, 2016 8:58 AM

To: 'Denning, Doug' <DDenning@nas.edu>
Cc: Clarke, Robin <Clarke.Robin@epa.gov>
Subject: REE: Request for Task Order Proposal for Methane Emission Measurement Monitoring and Inventories

Good morning all,

Please find attached a RFP for Methane Emission Measurement Monitoring and Inventories. This will be Task Order 14. I am requesting a proposal by May 27, 2016. Should this date pose a problem for you, please let me know.

William M Yates

Contracting Officer

Cincinnati Procurement Operations Division

513-487-2055

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]
From: Weitz, Melissa
Sent: Wed 11/26/2014 4:52:53 PM
Subject: Overview of ORD study on oil and gas production pads using mobile measurements
OTM33A_proof.pdf
ORD 2014 OTM 33A Assessment of Methane Emissions from Oil and Gas Production Pads using Mobile Measurements.docx

Hi Paul,

An ORD paper on oil and gas CH4 emissions was recently published in Environmental Science and Technology http://pubs.acs.org/doi/abs/10.1021/es503070q. Below is overview information about the study, and its relevance to CCD programs. I've attached the study (PDF) and a more detailed one-pager on the study.

Title: Assessment of Methane Emissions from Oil and Gas Production Pads using Mobile Measurements

Authors: ORD (Halley Brantley, Eben Thoma, William Squier), Houston Advanced Research Center (Birnur Guven), and EDF (David Lyon)

Overview:

•□□□□□□□ Used a new mobile inspection approach, OTM 33A, which uses a combination of mobile sampling to identify sources (Picarro-type instrument) and stationary measurements to quantify emissions. Method uncertainty is +/- 60%

•□□□□□□□ Short term emissions rates (grams CH4 per second) were quantified from 210 oil and gas production pads in Texas, Colorado, and Wyoming from 2010-2013

•□□□□□□□ Only measured sites where large CH4 plumes were detected

Relevance to CCD programs:

•□□□□□□□ Generally is a useful first step in assessing a new method to measure fenceline CH_4

•□□□□□□□ Not possible to compare results to other EPA data

o Data not available on total national number of well pads--difficult to compare to GHG Inventory

- GHGRP facilities report at a basin level, not well pad level

•□□□□□□□ Not possible to use data from this study for GHG Inventory

- Does not contain data on equipment or number of wells
- Any emission factors would be biased high due to sampling method

•□□□□□□□ Could possibly be used as a GHGRP advanced monitoring methods approach

•□□□□□□□ Potentially useful information for mitigation assessments

Note on ORD (Eben Thoma) coordination:

•□□□□□□□ ORD walked through an early draft of the report with CCD and made several revisions based on our questions and comments

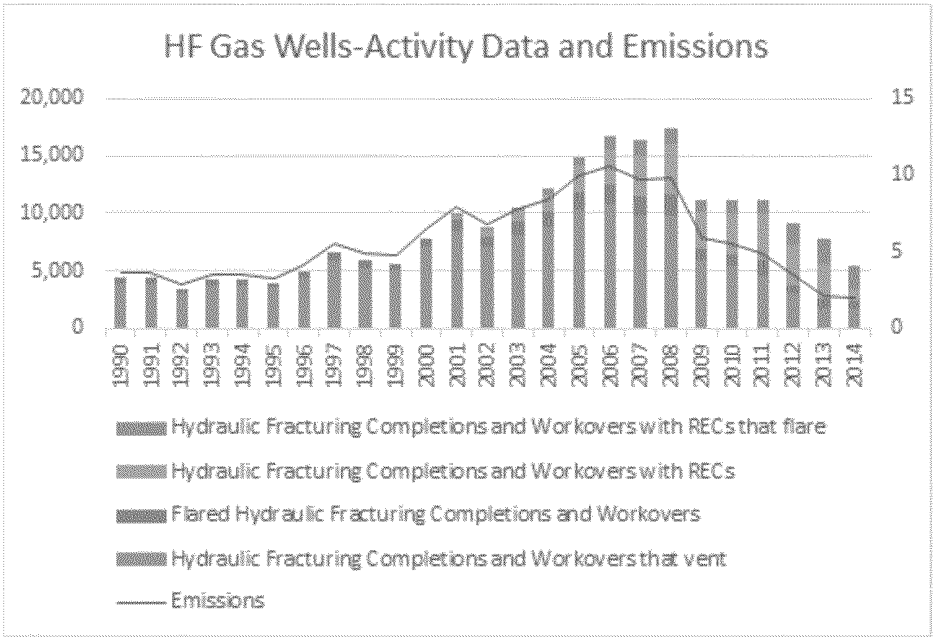
•□□□□□□□ ORD provided CCD/OAQPS with detailed background data collected for the study but not published on activity data and emissions that may be useful for analyses

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]
From: Weitz, Melissa
Sent: Wed 4/6/2016 6:31:59 PM
Subject: HF gas well

;
I looked into the trend information for HF gas well completions and workovers. Please let me know if the information below is enough to cover the question.

The key reason for the decrease in emissions from 2008 to 2009 from this source category is a large drop off in the number of HF gas well completion and workover events in 2009 compared to 2008.

The chart below shows the annual number of HF gas well completion and workover events (bar chart, left axis), and methane emissions in MMT CO2e (red line, right axis).



For a quick check on this with another data source, please see the EIA time series on annual well drilling (not the exact same thing, but a good check on this) which also shows the large drop off, and annual gas production (which increases over that same time period, as we discussed).

EIA data--annual total wells drilled (both HF and nonHF, so the total will be larger than in the above chart)

https://www.eia.gov/dnav/ng/hist/e_ertwg_xwc0_nus_cA.htm

EIA data-annual gas production (both HF and nonHF)

https://www.eia.gov/dnav/ng/hist/n9050us2a.htm

To: Christopher.Freitas@hq.doe.gov[Christopher.Freitas@hq.doe.gov]; Smistad, Eric (NETL[eric.smistad@netl.doe.gov]; Skone, Timothy (NETL[timothy.skone@netl.doe.gov]; Bradbury, James[James.Bradbury@Hq.Doe.Gov]; Brown, Bruce (NETL[bruce.brown@netl.doe.gov]; DeHoratiis, Guido[Guido.DeHoratiis@hq.doe.gov]; Vargas, Maria (NETL[maria.vargas@netl.doe.gov]
Cc: Gunning, Paul[Gunning.Paul@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Weitz, Melissa
Sent: Fri 2/19/2016 8:40:33 PM
Subject: RE: Draft_-DOE-FE FY16 Methane Emissions Quantification Research Areas
DOE research and analysis areas EPA 2.19.docx

Hello,

Please see the attached for the list of EPA GHG Inventory priority research areas.

Using the table you provided on potential DOE research areas, we marked GHG Inventory high priority research areas (labeled with "X") and noted why each area is a priority for the GHGI and what data is needed. All of the items on DOE's list are of interest to us to some extent. Some areas that are priorities for the GHG Inventory are also areas that may be covered by other research activities and so they are not marked as priority research areas in the attachment.

Looking forward to our discussion next Wednesday.

Best,

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Freitas, Christopher [mailto:Christopher.Freitas@hq.doe.gov]
Sent: Friday, February 12, 2016 10:04 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Smistad, Eric (NETL) <eric.smistad@netl.doe.gov>; Skone, Timothy (NETL) <timothy.skone@netl.doe.gov>; Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Brown, Bruce (NETL) <bruce.brown@netl.doe.gov>; DeHoratiis, Guido <Guido.DeHoratiis@hq.doe.gov>; Vargas, Maria (NETL) <maria.vargas@netl.doe.gov>
Subject: Draft_-DOE-FE FY16 Methane Emissions Quantification Research Areas

Paul,

Thank you and the EPA Team for the discussion yesterday on oil and gas sector emission quantification research opportunities to support the EPA GHGI. I'm excited that Congress appropriated FY 2016 funds for a "Back To The Future" natural gas midstream infrastructure research program and the methane emissions quantification subprogram. The $5 million in FY 2016 for the methane emission quantification are provided to DOE Fossil Energy in support of assisting EPA to better quantify and analyze methane emissions across the natural gas value (supply) chain. **Attached is additional background information on the proposed methane emissions quantification areas discussed yesterday**. I'm looking forward to EPA's input and assessment of the proposed research areas along with EPA's research priorities to enhance and improve the GHGI. Please send the information to me by COB February 19, 2016 and I look forward to the 1:00 pm conference call on Tuesday, February 23.

Best,

Christopher

Christopher J. Freitas

Senior Program Manager Natural Gas Infrastructure

United States Department of Energy

Office of Oil and Natural Gas, FE-30,

1000 Independence Ave. S.W., Forrestal Building, Room 3G-048

Washington, D.C. 20585

Desk: (202) 586-1657/ Mobile: (301) 820-2004

Email: Christopher.Freitas@HQ.DOE.GOV

To: Gunning, Paul[Gunning.Paul@epa.gov]; Karimjee, Anhar[Karimjee.Anhar@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; DeLuca, Isabel[DeLuca.Isabel@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Wed 5/7/2014 2:23:08 PM
Subject: FW: New NOAA DJ Basin Study coming out this week
2013JD021272R2_main_article.pdf
2013JD021272R2_SI.pdf

We spoke with the DJ Basin study team at NOAA on Monday and have a summary of the study coming out today below. The study and supporting information are attached. See also the note below on several other upcoming NOAA studies.

A new NOAA study on oil and gas emissions to be released Wednesday, May 7th (earliest) in JGR-Atmospheres calculates DJ Basin emissions to be 3x higher than EPA estimates. The study was funded by EDF, NOAA, University of Colorado, and NSF.

Title: Petron et al., A new look at methane and non-methane hydrocarbon emissions from oil and natural gas operation in the Colorado Denver-Julesberg Basin

Methods: Conducted 12 flights from May 4-31, 2012; could only use data from 2 flights (due issues with clouds, changes in wind speed and direction, and lack of a turbulent boundary layer)

- Measured on both flights ~26 tonnes CH4/hour

- Calculated CH4 emissions from other sources (7 tonnes CH4/hour)

  - Used GHGRP data for landfills and industrial wastewater treatment

  - Used county-level population for livestock, EPA NI age distribution for beef and dairy, emission factors for a variety of sources for enteric and manure management

  - For domestic wastewater, used an emission factor and population served

- Subtracting other sources from total, calculated 19 tonnes per hour of CH4 from oil and gas

Results: Estimated that oil and gas is responsible for 75% of CH4 in DJ Basin and that oil and gas CH4 is 3x larger than reported to GHGRP. Top down estimate for non-methane hydrocarbons 2x larger than CO state inventory.

Other upcoming NOAA work

- EDF-led effort on Barnett

•□□□□□□□ Work on Fayetteville, Haynesville, Marcellus coming out in a few months. Closer match to GHG Inventory. Will give us a briefing.

•□□□□□□□ DOE-funded work on CH4 in Marcellus

•□□□□□□□ RIPSEA DOE-funded work on bottom-up, top-down reconciliation, working with School of Mines, NREL, CU, CSU, and ENVIRON to develop an inventory. They just received funding and seemed open to us working with them.

Previous Petron DJ Basin Study

Petron, et al., Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study, JGR-Atmospheres February 2012

•□□□□□□□ Automobile-based surveys of DJ Basin were carried out during the summer of 2008.

•□□□□□□□ Used the WRAP Phase III inventory of VOC from oil and gas exploration, production and processing, and flashing and venting emission profiles from State agencies or the oil and gas industry, to develop bottom up estimate for Weld County

•□□□□□□□ Suggested that the emissions are most likely underestimated in current inventories and that the uncertainties attached to these estimates can be as high as a factor of two.

To: Gunning, Paul[Gunning.Paul@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 2/16/2016 9:15:05 PM
Subject: FW: Scientist Letter Urging Incorporation of Latest Scientific Findings to Update Emissions from Natural Gas Systems
Scientist Letter on Updates to the EPA GHG Inventory - 2_12_16 final.pdf

FYI-a team of EDF study scientists sent a letter to Gina, Janet, Sarah, etc. on Friday that generally supports the proposed updates to the GHGI, but also urges us to work with them to incorporate additional superemitter information.

From: David McCabe [mailto:dmccabe@catf.us]
Sent: Tuesday, February 16, 2016 3:52 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: FW: Scientist Letter Urging Incorporation of Latest Scientific Findings to Update Emissions from Natural Gas Systems

—

David McCabe

Clean Air Task Force

dmccabe@catf.us

626-710-6542

From: <Allen>, David T <allen@che.utexas.edu>
Date: Friday, February 12, 2016 at 5:32 PM
To: "mccarthy.gina@epa.gov" <mccarthy.gina@epa.gov>, "McCabe.Janet@epamail.epa.gov" <McCabe.Janet@epamail.epa.gov>, "Goffman, Joseph" <Goffman.Joseph@epa.gov>, "Dunham, Sarah" <Dunham.Sarah@epa.gov>, "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>
Cc: "swofsy@seas.harvard.edu" <swofsy@seas.harvard.edu>, 'Ken Davis' <kjd10@psu.edu>, "Stephen W. Pacala" <pacala@princeton.edu>, Brian K Lamb <blamb@wsu.edu>, Eric Kort <eakort@umich.edu>, Francis O'Sullivan <frankie@mit.edu>, "Talbot, Robert" <rtalbot@Central.UH.EDU>, Don Blake <drblake@uci.edu>, David McCabe <dmccabe@catf.us>, Matthew Fraser <Matthew.Fraser@asu.edu>, "Robert F. Sawyer"

<sawyer@berkeley.edu>, Allen Robinson <alr@andrew.cmu.edu>, Dan Zimmerle <Dan.Zimmerle@colostate.edu>, "Marchese,Anthony" <Anthony.Marchese@colostate.edu>, "Brandt, Adam" <abrandt@stanford.edu>, "Bryan.Willson@ColoState.EDU" <Bryan.Willson@ColoState.EDU>, Rob Jackson <robertj2@stanford.edu>, "shamburg@edf.org" <shamburg@edf.org>
Subject: Scientist Letter Urging Incorporation of Latest Scientific Findings to Update Emissions from Natural Gas Systems

Dear Administrator McCarthy and Assistant Administrator McCabe:

I have attached a letter, signed by 19 scientists who have conducted or followed recent scientific studies to measure methane emissions from the oil and natural gas sector. In the letter, we support EPA's work to update the Greenhouse Gas Inventory and urge the Agency to incorporate the latest scientific findings on methane emissions to ensure that the inventory accurately estimates emissions from this important source category. We would be pleased to provide any additional information or to discuss these scientific issues in greater detail.

David Allen

Gertz Regents Professor in Chemical Engineering, and

Director, Center for Energy and Environmental Resources
The University of Texas at Austin

To: Gunning, Paul[Gunning.Paul@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
From: Weitz, Melissa
Sent: Tue 11/24/2015 7:13:38 PM
Subject: summary of JISEA webinar --- RE: SAVE-THE-DATE: JISEA Webinars on Natural Gas Methane Inventory Improvement, New Report
GHeath_EPA GHGI workshop_JISEA NG methane emissions inventory_11.19.15_v....pptx

Hello,

I watched the JISEA webinar on natural gas in the GHG Inventory today. The slides presented were the same as those presented by Garvin at our GHG data workshop last week, see attached. Doug Arent and James Bradbury opened the webinar and noted that the JISEA report would help with DOE research planning should congressional funding move forward. JISEA reserved 20 minutes for questions, but there were no questions or comments made by webinar participants. There was really no new information, but I've provided a list of the key recommendations from the presentation (same as recommendations in the report) below.

Melissa

Recommendations in the JISEA Presentation

Though it wasn't presented this way (the target of the recommendations was not always clear in the presentation or report), I've attempted to split the recommendations from the presentation into two groups below so that they make more sense—1). Recommendations for groups developing studies that could be used to update the GHG Inventory, and 2) Recommendations for EPA to update the GHG Inventory.

Recommendations for top down and bottom up studies to improve the GHG Inventory:

-improve source attribution to better align study boundaries

-improve understanding of non-O&G CH4 sources

-design new studies to capture source variability and minimize self-selection bias

-robustly quantify uncertainty

Recommendations for EPA to improve the GHG Inventory (all of which we are already working on, except considering restructuring the Inventory):

-update EF for prioritized sources

-develop new AD sources

-fill prioritized source gaps in GHGI (e.g. abandoned wells)

-consider restructuring the GHGI (e.g. combining oil and gas)

-develop a gridded inventory

-update uncertainty assessment

From: Gunning, Paul
Sent: Tuesday, November 17, 2015 8:51 AM
To: Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>
Subject: FW: SAVE-THE-DATE: JISEA Webinars on Natural Gas Methane Inventory Improvement, New Report

FYI……..

From: Meixner , Debbie [mailto:Debbie.Meixner@jisea.org] **On Behalf Of** Arent, Doug
Sent: Monday, November 16, 2015 5:36 PM
To: JISEA Coordinator <jisea.coordinator@jisea.org>
Cc: Heath, Garvin <Garvin.Heath@nrel.gov>; Meixner , Debbie <Debbie.Meixner@jisea.org>
Subject: SAVE-THE-DATE: JISEA Webinars on Natural Gas Methane Inventory Improvement, New Report

Dear colleague

I am pleased to invite you to participate in one of two webinar briefings on a recent report from the Joint Institute for Strategic Energy Analysis of the National Renewable Energy Laboratory, entitled:

Estimating Methane Emissions from the Natural Gas Supply Chain: Approaches, Uncertainties, Current Estimates and Future Studies

The report summarizes current estimates of methane emissions from the natural gas sector in the United States Greenhouse Gas Inventory, analyzing the sources, uncertainties, and identifying opportunities for improvement to accuracy from new bottom-up and top-down measurement studies. You can view and download the report here: http://www.nrel.gov/docs/fy16osti/62820.pdf.

The webinar will last 1 hour, with opportunity for discussion. It will be offered once before and once after Thanksgiving to accommodate varying schedules.

1. November 24: 10-11 am MT (noon ET and 9 am PT). Please register for this webinar at https://attendee.gotowebinar.com/register/3568490647327926785 (After registering, you will receive a confirmation email containing information about joining the webinar).

2. November 30: 2-3 pm MT (4-5 ET, 1-2 PT). Please register for this webinar at https://attendee.gotowebinar.com/register/4021522423320629249 (After registering, you will receive a confirmation email containing information about joining the webinar).

My assistant, Debbie Meixner, will send a calendar invitation with the registration link for each of the above webinars. Please remember to register for the webinar and please feel free to forward the registration link to other individuals within your organization.

On behalf of the authors (Garvin Heath, Ethan Warner, Daniel Steinberg and Adam Brandt of Stanford University), I hope this report provides useful insights regarding inventory-based estimates of methane emissions from natural gas systems and how the work you might conduct or fund could be used for inventory improvement. We would like thank the US Department of Energy's Office of Energy Policy and Systems Analysis (EPSA) for their support of this research. Apologies for cross postings; feel free to forward the invitation to others who may be

interested in the report or webinar.

Please feel free to contact me if you have any questions.

Thank You!

Doug Arent

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Harvey, Reid[Harvey.Reid@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
From: Gunning, Paul
Sent: Fri 12/20/2013 10:54:09 PM
Subject: Re: Is it okay to send this on? FW: V2 incorporating all suggestions

Ex. 5 - Deliberative Process

From: Weitz, Melissa
Sent: Friday, December 20, 2013 5:40:12 PM
To: Gunning, Paul
Subject: Is it okay to send this on? FW: V2 incorporating all suggestions

From: Weitz, Melissa
Sent: Friday, December 20, 2013 3:19 PM
To: Gunning, Paul
Cc: Irving, Bill; Kocchi, Suzanne; Alsalam, Jameel; Hight, Cate; Fawcett, Allen
Subject: FW: V2 incorporating all suggestions
Importance: High

Hello Paul,

A group of us provided inventory numbers and projections to OAQPS to do a preliminary look at upstream emissions impacts of a power sector scenario that induces an increase in production of natural gas and a decrease in production of coal.

Alex would like to send preliminary results (attached) of the quick analysis to Peter early next week.

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,

Melissa

From: Macpherson, Alex
Sent: Friday, December 20, 2013 2:40 PM
To: Weitz, Melissa; Chappell, Linda; Alsalam, Jameel; Sims, Ryan; Hight, Cate
Subject: V2 incorporating all suggestions

All,

Here is a revised version with all changes, including the below which revised Ryan's statement from the previous msg.

Are we good to go? If yes, I will reach out to Ravi first thing Monday am.

Alex

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

To: Allen, David T[allen@che.utexas.edu]
From: Gunning, Paul
Sent: Fri 12/20/2013 7:31:00 PM
Subject: RE: Methane emissions from natural gas production

Dave – I just wanted to follow up on your email exchange with Sarah. We would be more than happy to learn more about the measurement work. Let me know if you would like to set something up in the new year and I can pull together all the relevant EPA staff.

I hope all is well with you and I wish you and your family all the best over the holidays.

Paul

Paul M. Gunning

Director, Climate Change Division

U.S. EPA (6207J)

1200 Pennsylvania Avenue

Washington, DC 20460

Direct (202) 343-9736

Fax (202) 343-2202

Cell (202) 251-1436

Office Address - Overnight Mail

US EPA

1310 L Street, NW

Washington, DC 20005

From: Dunham, Sarah
Sent: Tuesday, December 17, 2013 4:01 PM
To: Allen, David T
Cc: Gunning, Paul
Subject: Re: Methane emissions from natural gas production

Dr Allen-
I appreciate the offer, and we certainly would welcome the opportunity to talk further with you. I was part of the higher level briefing you gave to EPA, but I'm copying Paul Gunning who I know you've talked to, and can identify further areas we'd be interested in hearing about.
Thanks
Sarah

From: Allen, David T <allen@che.utexas.edu>
Sent: Tuesday, December 17, 2013 3:20:16 AM
To: Dunham, Sarah
Subject: Methane emissions from natural gas production

Ms. Dunham:

We met briefly during the hearing held by Senator Whitehouse on methane emissions from the natural gas supply chain. I was there as the leader of a team from the University of Texas that made measurements of methane emissions at natural gas production sites. As a follow-up to that hearing I would welcome the opportunity to brief you or any of your staff about the emission factors that emerged from our measurements, if that would be of use to your team.

Dave Allen

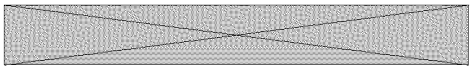
David Allen

Gertz Regents Professor in Chemical Engineering, and

Director, Center for Energy and Environmental Resources
Cockrell School of Engineering

The University of Texas at Austin
McKetta Department of Chemical Engineering
200 E Dean Keeton St. Stop C0400
Austin, TX 78712-1589

CPE 3.462 / tel: (512) 471-0049
Email allen@che.utexas.edu



********** ATTACHMENT NOT DELIVERED ********** This Email message contained an attachment named image001.jpg which may be a computer program. This attached computer program couldcontain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted. This was done to limit the distribution of computer viruses introducedinto the EPA network. EPA is deleting all computer program attachmentssent from the Internet into the agency via Email. If the message sender is known and the attachment was legitimate, youshould contact the sender and request that they rename the file nameextension and resend the Email with the renamed attachment. Afterreceiving the revised Email, containing the renamed attachment, you canrename the file extension to its correct name. For further information, please contact the EPA Call Center at(866) 411-4EPA (4372). The TDD number is (866) 489-4900. ********** ATTACHMENT NOT DELIVERED **********

To: Melissa Weitz[Weitz.Melissa@epa.gov]; Bill Irving[Irving.Bill@epa.gov]
From: Gunning, Paul
Sent: Wed 5/2/2018 1:00:37 PM
Subject: FW: NETL Collaborates with Industry Group to Improve the Understanding of Methane Emissions from Natural Gas Production and Delivery | Department of Energy

-----Original Message-----
From: Fiji George [mailto:Fiji_George@SWN.COM]
Sent: Tuesday, May 01, 2018 6:23 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Menassian, Sarah <menassian.sarah@epa.gov>; Melissa Winkler <Melissa_Winkler@SWN.COM>; Pryor, Justin <Pryor.Justin@epa.gov>; Blackman, Jerome <Blackman.Jerome@epa.gov>
Subject: NETL Collaborates with Industry Group to Improve the Understanding of Methane Emissions from Natural Gas Production and Delivery | Department of Energy

https://www.energy.gov/fe/articles/netl-collaborates-industry-group-improve-understanding-methane-emissions-natural-gas

Here is a new ONE Future report developed by NETL.

Regards,

Fiji George
Notice: This e-mail may contain privileged and/or confidential information and is intended only for the addressee. If you are not the addressee or the person responsible for delivering it to the addressee, you may not copy or distribute this communication to anyone else. If you received this communication in error, please notify us immediately by telephone or return e-mail and promptly delete the original message from your system.

To: Irving, Bill[Irving.Bill@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]
From: Gunning, Paul
Sent: Thur 5/26/2016 8:02:08 PM
Subject: RE: USGS EPA data request for calculating greenhouse gas emissions from Federal lands

Ex. 5 - Deliberative Process

From: Irving, Bill
Sent: Wednesday, May 18, 2016 1:50 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Subject: Fwd: USGS EPA data request for calculating greenhouse gas emissions from Federal lands

Sent from my iPhone

Begin forwarded message:

From: Peter Warwick <pwarwick@usgs.gov>
Date: May 18, 2016 at 9:54:31 AM EDT
To: <irving.bill@epa.gov>, <hockstad.leif@epa.gov>, "Weitz, Melissa" <weitz.melissa@epa.gov>
Cc: Matthew Merrill <mmerrill@usgs.gov>, Philip Freeman <pfreeman@usgs.gov>, Robin O'Malley <romalley@usgs.gov>
Subject: USGS EPA data request for calculating greenhouse gas emissions from Federal lands

All,

Ex. 5 - Deliberative Process

gas wells from Federal lands. We have mine production data from ONRR, and have requested lists of active and abandoned mines on Federal land from BLM. In addition, we have developed a working spreadsheet that allows us to estimate stationary and mobile emissions due to fossil fuel combustion, and emissions from petroleum and natural gas systems. However, we have a few requests regarding estimating emissions from coal mining and abandoned mines.

Ex. 5 - Deliberative Process

We are planning to brief DOI Deputy Secretary Conner on June 9, and in preparation, we ask that you provide us with a time and cost estimate for the above items by May 27, 2016.

Thanks so much, and let us know if you have any questions.

Regards,

Peter

++++++++++++++++++

Peter D. Warwick

U.S. Geological Survey

956 National Center

12201 Sunrise Valley Drive

Reston, VA 20192

Tel: 1-703-648-6469

Fax: 1-703-648-6419

Email: pwarwick@usgs.gov

http://energy.usgs.gov

http://go.usa.gov/8X8

++++++++++++++++++

To: Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Hambrick, Amy[Hambrick.Amy@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; Davis, Alison[Davis.Alison@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Bill Irving[Irving.Bill@epa.gov]
Cc: Suzanne Kocchi[Kocchi.Suzanne@epa.gov]; Jackie Krieger[Krieger.Jackie@epa.gov]
From: Gunning, Paul
Sent: Thur 5/26/2016 2:32:35 PM
Subject: FW: progress towards methane goal
Supplementary Material - ONG projections_052616v1.docx
ONG projections summary_5-25-16_v3.docx

Just wanted to make sure everyone has the latest. I incorporated Joe's changes in the attached……..

From: Goffman, Joseph
Sent: Thursday, May 26, 2016 10:16 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: Re: progress towards methane goal

Ex. 5 - Deliberative Process

Sent from my iPhone

On May 26, 2016, at 3:23 PM, Gunning, Paul <Gunning.Paul@epa.gov> wrote:

Joe

Ex. 5 - Deliberative Process

There is also a one-page, supplementary document that provides additional background and discusses some of our assumptions and methods. This document was more for you and our internal consumption, of course it is up to you if you want to share it

Please let me know if you have any questions or need anything else.

Paul

From: Goffman, Joseph
Sent: Tuesday, May 24, 2016 1:55 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: Re: progress towards methane goal

Thanks, Paul. I will be on my iPhone and should be able to look at the table and give you feedback. Meanwhile, I will let Dan know what the schedule is. Thanks, again.

Sent from my iPhone

On May 24, 2016, at 1:05 PM, Gunning, Paul <Gunning.Paul@epa.gov> wrote:

Ex. 5 - Deliberative Process

Paul

From: Goffman, Joseph
Sent: Tuesday, May 24, 2016 11:36 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>
Subject: Fwd: progress towards methane goal

Ex. 5 - Deliberative Process

Sent from my iPhone

Begin forwarded message:

From: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Date: May 23, 2016 at 4:55:17 PM EDT
To: "Utech, Dan G. G. EOP/WHO" <Ex. 6 - Personal Privacy
Subject: Re: progress towards methane goal

Won't know until tomorrow AM what a doable time frame is. Will let you know. Thanks

Sent from my iPhone

On May 23, 2016, at 2:49 PM, Goffman, Joseph <Goffman.Joseph@epa.gov> wrote:

Got it. Will let you know if that is not doable. Thanks.

Sent from my iPhone

On May 23, 2016, at 2:17 PM, Utech, Dan G. G. EOP/WHO <Dan_G._Utech@who.eop.gov> wrote:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

<Supplementary Material - ONG projections_052616v1.docx>

<ONG projections summary_5-25-16_v3.docx>

To: Bill Irving[Irving.Bill@epa.gov]; Suzanne Kocchi[Kocchi.Suzanne@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]
From: Gunning, Paul
Sent: Thur 3/22/2018 8:08:48 PM
Subject: FW: Prepublication of NAS report on methane emissions
METHANE-PREPUB-embargo 3-22-2018.pdf

FYI.

From: Thomas, Katherine C [mailto:KCThomas@nas.edu]
Sent: Thursday, March 22, 2018 4:04 PM
To: Thomas, Katherine C <KCThomas@nas.edu>; Hudson, Michael <MHudson@nas.edu>
Subject: Prepublication of NAS report on methane emissions

Dear Sponsors,

Please find attached the prepublication of the National Academies' report ***Improving Characterization of Anthropogenic Methane Emissions in the United States***. As a reminder, this report is confidential until the embargo is lifted on Tuesday, March 27 at 11am ET. If you receive any questions from the media about the report before the embargo lifts, please refer them to our Office of News and Publications who are managing the embargo. They can be reached at 202-334-2138.

We looking forward to seeing you at the sponsor pre-release briefing at the Keck Center on Monday, March 27 at 10am. The Keck Center is located at 500 Fifth St., NW and the briefing will be in room 103. Your names will be on the guard's list so you should be able to check in relatively easily and go directly to the meeting room.

Thank you for supporting this report!

Kind Regards,

Katie

Katie Thomas
Senior Program Officer

Board on Atmospheric Sciences and Climate
The National Academies of Sciences, Engineering, and Medicine
500 Fifth Street NW
Washington, DC 20001
202-334-3860

kcthomas@nas.edu

The National Academies of
SCIENCES · ENGINEERING · MEDICINE

To: Bill Irving[Irving.Bill@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]
Cc: Suzanne Kocchi[Kocchi.Suzanne@epa.gov]; Clayton, Margie[Clayton.Margie@epa.gov]
From: Gunning, Paul
Sent: Wed 6/21/2017 3:34:30 PM
Subject: FW: OIG Project Notification: EPA's Estimation of Methane Emissions From the Oil and Natural Gas Production Sector, Project No. OPE-FY17-0017
project notification OPE-FY17-0017.pdf

From: Vincent, Marc
Sent: Wednesday, June 21, 2017 11:32 AM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>; Shaw, Betsy <Shaw.Betsy@epa.gov>; Harvey, Reid <Harvey.Reid@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Price, Doris <Price.Doris@epa.gov>; Bullard, Pamela <Bullard.Pamela@epa.gov>; Salgado, Omayra <Salgado.Omayra@epa.gov>; Hyde, Courtney <Hyde.Courtney@epa.gov>
Cc: Marusiak, Eleanor <Marusiak.Eleanor@epa.gov>
Subject: OIG Project Notification: EPA's Estimation of Methane Emissions From the Oil and Natural Gas Production Sector, Project No. OPE-FY17-0017

Hi All,

Alerting you to OIG's notification for a new engagement on *EPA's Estimation of Methane Emissions From the Oil and Natural Gas Production Sector (OPE-FY17-0017).* As you will see in OIG's email below, the project is included in their FY 17 Annual Plan. The objectives are to determine:

1. How the EPA estimates methane emissions from the oil and natural gas production sector, including the extent to which the EPA has used the results of 2013 and 2014 emission studies conducted jointly by the Environmental Defense Fund and the University of Texas - Austin to estimate those emissions; and

2. Whether concerns about technical or other problems with the Environmental Defense Fund and University of Texas - Austin studies were identified or brought to the EPA's attention, and how the EPA addressed and resolved any such concerns.

I will work with Doris and Pamela to coordinate this engagement.

Please let me know if you have any questions.

Marc Vincent

Office of Program Management Operations

Office of Air and Radiation

(202)564-0876

From: Hauck, Erica
Sent: Wednesday, June 21, 2017 11:23 AM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Shaw, Betsy <Shaw.Betsy@epa.gov>; Goffman_Joseph_Calendar_ReviewerAccess <Goffman_Joseph_Calendar_ReviewerAccess@epa.gov>; Harvey, Reid <Harvey.Reid@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Vincent, Marc <Vincent.Marc@epa.gov>; Deane, Benita <Deane.Benita@epa.gov>; Hull, George <Hull.George@epa.gov>; Valentine, Julia <Valentine.Julia@epa.gov>; Marusiak, Eleanor <Marusiak.Eleanor@epa.gov>; Bataille, Valerie <Bataille.Valerie@epa.gov>; Svec, John <Svec.John@epa.gov>; Fleury, Lorraine <FLEURY.LORRAINE@EPA.GOV>; Johnson, Kathie <Johnson.Kathie@epa.gov>; Eubanks, Kristy <Eubanks.Kristy@epa.gov>; Levy, Eric <levy.eric@epa.gov>; Jenkins, Susan <Jenkins.Susan@epa.gov>; Hah, Josephine <Hah.Josephine@epa.gov>; Finazzo, Kathy <Finazzo.Kathy@epa.gov>; Hageman, James <hageman.james@epa.gov>; Mak, Magdalen <Mak.Magdalen@epa.gov>; Ortesi, Marie <Ortesi.Marie@epa.gov>; Williams, Carrie <Williams.Carrie@epa.gov>; Elkins, Arthur <Elkins.Arthur@epa.gov>; Sheehan, Charles <Sheehan.Charles@epa.gov>; Larsen, Alan <Larsen.Alan@epa.gov>; Christensen, Kevin <Christensen.Kevin@epa.gov>; Copper, Carolyn <Copper.Carolyn@epa.gov>; Sullivan, Patrick F. <Sullivan.Patrick@epa.gov>; Shields, Edward <Shields.Ed@epa.gov>; El-Zoghbi, Christine <El-Zoghbi.Christine@epa.gov>; Kaplan, Jennifer <Kaplan.Jennifer@epa.gov>; Lagda, Jeffrey <Lagda.Jeffrey@epa.gov>; Elbaum, Kentia <elbaum.kentia@epa.gov>; Hatfield, James <Hatfield.Jim@epa.gov>; Hauck, Erica <Hauck.Erica@epa.gov>; Jones, Richard <Jones.Richard@epa.gov>; Mariscal, Alicia <Mariscal.Alicia@epa.gov>
Subject: OIG Project Notification: EPA's Estimation of Methane Emissions From the Oil and Natural Gas Production Sector, Project No. OPE-FY17-0017

The attached memorandum is to inform you that the EPA Office of Inspector General (OIG) plans to begin a review of EPA's estimation of methane emissions from the oil and natural gas production sector. This project is included in our OIG Fiscal Year 2017 Annual Plan. Our objectives are to determine: (1) how the EPA estimates methane emissions from the oil and natural gas production sector, including the extent to which the EPA has used the results of 2013 and 2014 emission studies conducted jointly by the Environmental Defense Fund and the University of Texas - Austin to estimate those emissions; and (2) whether concerns about technical or other problems with the Environmental Defense Fund and University of Texas - Austin studies were identified or brought to the EPA's attention, and how the EPA addressed and resolved any such concerns.

We will contact your audit liaison in the near future to arrange a mutually agreeable time for a kickoff meeting to discuss the assignment objectives and our planned work. If you or your staff have any questions, please contact me at Ex. 6 - Personal Privacy, or Erica Hauck, Project Manager, at Ex. 6 - Personal Privacy

Erica Hauck

for

Jim Hatfield

Director, Air Evaluations, Office of Program Evaluation

Office of Inspector General

To: Bill Irving[Irving.Bill@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]
From: Gunning, Paul
Sent: Wed 6/18/2014 1:32:52 PM
Subject: Quick Request
Methane - DOJ - 6-16-14.pptx

I am giving a presentation on methane to a bunch of DOJ folks on Thursday (slides attached). Can you please just send me the updated pie charts for Slide 3? If it could be sometime this AM, that would be great.

Thank you!

To: Melissa Weitz[Weitz.Melissa@epa.gov]
From: Gunning, Paul
Sent: Thur 7/30/2015 5:17:31 PM
Subject: FW: Follow up information - Methane Webex - July 23, 2015

FYI……

From: Betsy Natz [mailto:bnatz@icac.com]
Sent: Thursday, July 30, 2015 11:16 AM
To: Gunning, Paul
Subject: RE: Follow up information - Methane Webex - July 23, 2015

Paul,

Thanks so much for the information. This is terrific.

A phone conversation would be great. I would like to have the co-chairs of our emissions measurement division on the phone or at least invited as I may not pick up all the nuisances. Is that okay? If so just let me know a good time next week and we will give you a call.

Betsy

Please note our new contact information:
Betsy Natz

Executive Director
Institute of Clean Air Companies
3033 Wilson Blvd., Suite 700

Arlington, VA 22201

571-858-3708 (office)

703-243-8696 (fax)

From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]

Sent: Wednesday, July 29, 2015 12:48 PM
To: Betsy Natz <bnatz@icac.com>
Subject: RE: Follow up information - Methane Webex - July 23, 2015

Betsy,

Great to hear from you. Yes, we are excited about the proposed program. We actually have a ton of info. on our website (http://www.epa.gov/gasstar/methanechallenge/index.html) that I think you will find helpful. We are looking for feedback over the rest of the summer with the plan of finalizing a program framework in the Fall and launching the new program this winter.

As for the measurement issue, it might be easier to have a quick chat by phone. Just give me a call when you have a moment. I will be around most of the afternoon.

Hope all is well.

Paul

Paul M. Gunning

Director, Climate Change Division

U.S. EPA (6207J)

1200 Pennsylvania Avenue

Washington, DC 20460

Direct (202) 343-9736

Fax (202) 343-2202

Cell (202) 251-1436

From: Betsy Natz [mailto:bnatz@icac.com]
Sent: Tuesday, July 28, 2015 7:25 PM
To: Gunning, Paul
Subject: FW: Follow up information - Methane Webex - July 23, 2015

Hi Paul,

I hope you are doing well. I was wondering if you have any new information on timing, etc of the voluntary program for methane control?

Also, I was hoping that you might be able to give me some guidance on what EPA will be or is currently measuring with regard to methane emissions from industrial sources, eg fugitive emissions or other emission point sources? We are trying to get our emissions measurement division together on a webex to discuss and I just thought it would be helpful if I could get your input if you have a minute.

Many thanks,
Betsy

Please note our new contact information:
Betsy Natz

Executive Director
Institute of Clean Air Companies
3033 Wilson Blvd., Suite 700

Arlington, VA 22201

571-858-3708 (office)

703-243-8696 (fax)

Hoping to entice gas companies to curb emissions, EPA proposes methane challenge program

By Sarah Smith [SNL Energy]

The U.S. EPA on July 23 announced plans to launch a voluntary methane challenge program that would recognize oil and gas companies for curbing their methane emissions.

The program would build off the agency's Natural Gas STAR program, which the EPA started in the early 1990s to motivate the oil and gas industry to put in place cost-effective methane emission reduction technologies and practices. And as with the Natural Gas STAR program, networking, sharing of best practices and federal acknowledgement of progress is the carrot to motivate companies to join.

As proposed, the methane challenge would allow companies to choose one or both of two routes to participate. One would be the so-called best management practice option, which would focus on driving near-term, widespread implementation of methane mitigation activities. The other would be an emissions-intensity-focused option through an existing, industry-led program known as One Future. The One Future initiative would require companies to meet program-defined, sector-specific emission intensity targets.

The agency also tentatively offered a third option: an emissions reduction commitment that would let companies have the flexibility to address whatever mix of emission sources they want to tackle. But while the EPA noted that some industry participants favor this approach, the agency has not yet found a practical way of implementing it.

"However, given the interest in this approach that some have expressed, we welcome feedback on more fully developing this option, contingent on addressing the identified challenges and having strong industry support," the EPA noted.

To participate in the methane challenge, a company would have to commit to making meaningful methane reductions across company operations, being transparent and demonstrating progress, and showing continuous improvement over time, the EPA said. The agency proposed that within six months of joining the methane challenge program, each

company would have to develop an implementation plan that would include expected progress rates and key milestones, among other things.

Not to be overlooked, the program would also serve as a data-gathering tool that would help EPA get a better sense of the level of methane being emitted by the industry. The need for better data on methane emissions has been an overwhelming focus for industry, academics and environmental groups in recent years, as it became clearer that U.S. natural gas consumption would be expanding in the near term.

The White House in January announced plans to bring oil and gas industry methane emissions down 40% to 45% from 2012 levels by 2025. However, while the EPA does plan to issue rules to govern methane output from the industry, the agency said it also plans to in part rely on voluntary measures such as the ones described in the methane challenge.

The Environmental Defense Fund, which has been a champion of methane emissions data collection and reduction, lauded the idea behind the EPA's proposed program, although Mark Brownstein, vice president in EDF's U.S. energy and climate program, said in a July 24 blog post that the methane challenge will have to be more detailed to be effective.

Specifically, Brownstein encouraged the EPA to set rigorous monitoring and repair requirements; demand that companies set concrete, near-term goals; put more emphasis on management practices; and provide more context around how the agency defines "progress."

"We're glad to see that EPA has taken some significant steps to improve its voluntary methane reduction program for those in the oil and gas industry, and look forward to the proposal being further developed and strengthened as it is finalized," Brownstein wrote.

The American Petroleum Institute said it would work with the EPA on the voluntary methane emissions reduction program, but the trade group was cautious about supporting any measures that imposed regulatory requirements on the industry.

"Even as oil and natural gas production has risen dramatically, methane emissions have fallen, thanks to industry leadership and investment in new technologies," Howard Feldman, API senior director of regulatory and scientific affairs, said in a July 23 statement. "Voluntary programs are the best way to reduce methane emissions from existing sources. Industry is already incentivized to best determine how to cost-effectively reduce emissions and will consider

participation in a voluntary program provided it has the necessary flexibility and incentives."

America's Natural Gas Alliance and the Interstate Natural Gas Association of America, too, emphasized the importance of flexibility and collaboration in methane emissions reduction efforts.

INGAA recently developed industry guidelines for directed inspection and maintenance that include routine screening for leaks, followed by cost-effective repair or maintenance at natural gas pipeline facilities, INGAA President and CEO Donald Santa said in a July 24 statement. The association plans work with research groups to create a roadmap for developing technological innovations, including better leak-quantification tools and cost-effective mitigation, Santa said.

Brownstein expressed skepticism about companies' voluntary participation level in emissions reduction efforts.

"We hope that more companies will demonstrate leadership by joining the program, and making and keeping commitments to dramatically reduce emissions," he wrote. "But given the realistic rate of participation (using years of experience as our guide), it's clear that comprehensive standards are necessary to protect the health of all communities, put the brakes on the rate of climate change, and allow gas to play a credible role in transitioning to a low carbon economy."

The EPA has asked for feedback on the methane challenge proposal by Sept. 1, and the agency said it plans to work with companies that are interested in joining the program to make sure the initiative's implementation details meet both EPA's and partner companies' needs. The EPA intends to launch the methane challenge program by the end of 2015.

To: Melissa Weitz[Weitz.Melissa@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Bill Irving[Irving.Bill@epa.gov]
Cc: Suzanne Kocchi[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Tue 11/1/2016 3:08:51 PM
Subject: FW: Joint Comments on EPA's Second Draft Information Collection Request
Joint Environmental Comments 10 31.pdf

FYI…

From: Peter Zalzal [mailto:pzalzal@edf.org]
Sent: Tuesday, November 01, 2016 11:08 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Cc: Vickie Patton <vpatton@edf.org>; Tomas Carbonell <tcarbonell@edf.org>; Alice Henderson <ahenderson@edf.org>
Subject: Joint Comments on EPA's Second Draft Information Collection Request

Dear EPA Officials:

We have attached comments filed last night on EPA's second draft Oil and Natural Gas Sector Information Collection Request. The comments were filed on behalf of Environmental Defense Fund, Natural Resources Defense Council, Sierra Club, Clean Air Task Force, Environmental Integrity Project, and Earthjustice and provide support for several of the improvements the agency has made between the first and second draft ICR. We also respectfully urge the agency to strengthen the ICR in additional, discrete ways, including:

•□□□□□□□□ Ensuring information collected concerning equipment leaks reflects the context and granularity necessary for meaningful analysis and use in designing future rulemakings. In particular, we recommend clarifying the history and scope of leak detection and repair practices so as to better discern whether reported data reflect controlled or uncontrolled emissions.

•□□□□□□□□ Assessing the current use of zero-emitting control devices and the feasibility of establishing standards that broadly deploy these technologies. In particular, we recommend that the agency collect information on the availability of onsite electricity in the Part 1 survey, and better characterize the availability and use of zero-emitting pumps and controllers in the Part 2 survey.

•□□□□□□□□ Ensuring that facilities in the gathering & boosting segment are included in the Part 1 survey assessment, given that these facilities are associated with substantial emissions.

•□□□□□□□□ Ensuring requests related to costs incurred by operators include guidance for calculation, so that the data collected is rigorous, comparable, and reflects a range of potential future resource prices.

Thank you for your consideration of these comments.

Best wishes,

Peter Zalzal

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Bill Irving[Irving.Bill@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]
Cc: Suzanne Kocchi[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Wed 6/21/2017 3:33:29 PM
Subject: FW: OIG Project Notification: EPA's Estimation of Methane Emissions From the Oil and Natural Gas Production Sector, Project No. OPE-FY17-0017

From: Harvey, Reid
Sent: Wednesday, June 21, 2017 11:31 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Subject: Fwd: OIG Project Notification: EPA's Estimation of Methane Emissions From the Oil and Natural Gas Production Sector, Project No. OPE-FY17-0017

Ex. 5 - Deliberative Process

Begin forwarded message:

From: "Hauck, Erica" <Hauck.Erica@epa.gov>
To: "Dunham, Sarah" <Dunham.Sarah@epa.gov>
Cc: "Jackson, Ryan" <jackson.ryan@epa.gov>, "Shaw, Betsy" <Shaw.Betsy@epa.gov>, "Goffman_Joseph_Calendar_ReviewerAccess" <Goffman_Joseph_Calendar_ReviewerAccess@epa.gov>, "Harvey, Reid" <Harvey.Reid@epa.gov>, "Gunning, Paul" <Gunning.Paul@epa.gov>, "Vincent, Marc" <Vincent.Marc@epa.gov>, "Deane, Benita" <Deane.Benita@epa.gov>, "Hull, George" <Hull.George@epa.gov>, "Valentine, Julia" <Valentine.Julia@epa.gov>, "Marusiak, Eleanor" <Marusiak.Eleanor@epa.gov>, "Bataille, Valerie" <Bataille.Valerie@epa.gov>, "Svec, John" <Svec.John@epa.gov>, "Fleury, Lorraine" <FLEURY.LORRAINE@EPA.GOV>, "Johnson, Kathie" <Johnson.Kathie@epa.gov>, "Eubanks, Kristy" <Eubanks.Kristy@epa.gov>, "Levy, Eric" <levy.eric@epa.gov>, "Jenkins, Susan" <Jenkins.Susan@epa.gov>, "Hah, Josephine" <Hah.Josephine@epa.gov>, "Finazzo, Kathy" <Finazzo.Kathy@epa.gov>, "Hageman, James" <hageman.james@epa.gov>, "Mak, Magdalen" <Mak.Magdalen@epa.gov>, "Ortesi, Marie" <Ortesi.Marie@epa.gov>, "Williams, Carrie" <Williams.Carrie@epa.gov>, "Elkins, Arthur" <Elkins.Arthur@epa.gov>, "Sheehan, Charles" <Sheehan.Charles@epa.gov>, "Larsen, Alan" <Larsen.Alan@epa.gov>, "Christensen, Kevin" <Christensen.Kevin@epa.gov>, "Copper, Carolyn" <Copper.Carolyn@epa.gov>, "Sullivan, Patrick F." <Sullivan.Patrick@epa.gov>, "Shields, Edward" <Shields.Ed@epa.gov>, "El-Zoghbi, Christine" <El-Zoghbi.Christine@epa.gov>, "Kaplan, Jennifer" <Kaplan.Jennifer@epa.gov>, "Lagda, Jeffrey" <Lagda.Jeffrey@epa.gov>, "Elbaum, Kentia" <elbaum.kentia@epa.gov>, "Hatfield, James" <Hatfield.Jim@epa.gov>, "Hauck, Erica" <Hauck.Erica@epa.gov>, "Jones, Richard"

<Jones.Richard@epa.gov>, "Mariscal, Alicia" <Mariscal.Alicia@epa.gov>
Subject: OIG Project Notification: EPA's Estimation of Methane Emissions From the Oil and Natural Gas Production Sector, Project No. OPE-FY17-0017

The attached memorandum is to inform you that the EPA Office of Inspector General (OIG) plans to begin a review of EPA's estimation of methane emissions from the oil and natural gas production sector. This project is included in our OIG Fiscal Year 2017 Annual Plan. Our objectives are to determine: (1) how the EPA estimates methane emissions from the oil and natural gas production sector, including the extent to which the EPA has used the results of 2013 and 2014 emission studies conducted jointly by the Environmental Defense Fund and the University of Texas - Austin to estimate those emissions; and (2) whether concerns about technical or other problems with the Environmental Defense Fund and University of Texas - Austin studies were identified or brought to the EPA's attention, and how the EPA addressed and resolved any such concerns.

We will contact your audit liaison in the near future to arrange a mutually agreeable time for a kickoff meeting to discuss the assignment objectives and our planned work. If you or your staff have any questions, please contact me at Ex. 6 - Personal Privacy or Erica Hauck, Project Manager, at Ex. 6 - Personal Privacy

Erica Hauck

for

Jim Hatfield
Director, Air Evaluations, Office of Program Evaluation
Office of Inspector General

<project notification OPE-FY17-0017.pdf>

Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: Gunning, Paul
Sent: Mon 12/7/2015 10:22:35 AM
Subject: Fwd: Methane Talking Points

I know we have been working on this. Let's plan on getting something to them this AM Thanks

Paul

Paul M Gunning
202-251-1436

Begin forwarded message:

From: "McCabe, Janet" <McCabe.Janet@epa.gov>
Date: December 7, 2015 at 12:55:07 AM EST
To: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Cc: "Gunning, Paul" <Gunning.Paul@epa.gov>, "Dunham, Sarah" <Dunham.Sarah@epa.gov>, "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>, "Millett, John" <Millett.John@epa.gov>, "Drinkard, Andrea" <Drinkard.Andrea@epa.gov>
Subject: Re: Methane Talking Points

Yes please. The question might come to one of in Paris as well, so please send along whatever you come up with.

Thanks

Sent from my iPhone

On Dec 7, 2015, at 12:16 AM, Goffman, Joseph <Goffman.Joseph@epa.gov> wrote:

Please note Candace request. Presumably we will want to have some kind of response ourselves. Apologies is this is already in circulation and I am whiffing on it. Thanks

- Joseph Goffman
Sent from my iPhone

Begin forwarded message:

From: "Vahlsing, Candace" **Ex. 6 - Personal Privacy**
Date: December 6, 2015 at 6:04:20 PM EST
To: "'McCabe.Janet@epa.gov'" <McCabe.Janet@epa.gov>,

"'Goffman.Joseph@epa.gov'" <Goffman.Joseph@epa.gov>
Cc: "Utech, Dan G." Ex. 6 - Personal Privacy
Subject: Methane Talking Points

Hi Janet and Joe,

I hope you both are having a good weekend. On Friday, EDF briefed us on their NAS methane measurement study that is set to be released tomorrow. This is the one where they found that emissions in the Barnett are substantially higher than those reported in the inventory/GHGRP. They said they briefed Paul too. Do you guys have talking points you could share that explain/provide rationale for the discrepancy? We only need super toplines.

Many thanks,

Candace

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Tue 5/20/2014 8:11:19 PM
Subject: FW: MATERIALS due MONDAY for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)
20140520 - ELI Methane Presentation.pdf

Just FYI……..

From: Francis Martin O'Sullivan [mailto:frankie@MIT.EDU]
Sent: Saturday, May 17, 2014 2:01 PM
To: Chandra Middleton; Gunning, Paul; allen@che.utexas.edu; Drew Nelson (dnelson@edf.org); Bob Sussman. Ex. 6 - Personal Privacy
Cc: Hargrove, Anne; Friedman, Kristina
Subject: Re: MATERIALS due MONDAY for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

Chandra,

Attached is my deck for Tuesday.

Regards,

Frank

Francis O'Sullivan, Ph.D.

MIT Energy Initiative

Office Ph: 617-715-5433

Cell Ph: 617-459-1274

From: Chandra Middleton <middleton@eli.org>
Date: Thursday, May 15, 2014 4:17 PM
To: "Gunning.paul@Epa.gov" <Gunning.paul@Epa.gov>, "allen@che.utexas.edu" <allen@che.utexas.edu>, "Drew Nelson (dnelson@edf.org)" <dnelson@edf.org>, Francis O'Sullivan <frankie@mit.edu>, "Bob Sussman. Ex. 6 - Personal Privacy Ex. 6 - Personal Privacy
Cc: "Hargrove, Anne" <Hargrove.Anne@Epa.gov>, "Friedman, Kristina" <Friedman.Kristina@Epa.gov>
Subject: MATERIALS due MONDAY for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

Hello everyone,

Just a quick note to remind you that **grants of license and materials for our webinar are due by 9AM on Monday**. I have attached draft slide decks from Drew and Dave for your reference.

I have updated the RSVPs, below, and included an attached and forwardable (below) event announcement. Please do circulate to your colleagues and appropriate listservs.

Thanks,

Chandra

From: Chandra Middleton
Sent: Thursday, May 01, 2014 4:08 PM
To: 'Gunning.paul@Epa.gov'; allen@che.utexas.edu; Drew Nelson (dnelson@edf.org); frankie@mit.edu; Bob Sussman. (bobsussman1@comcast.net)
Cc: 'Hargrove, Anne'; 'Friedman, Kristina'
Subject: NOTES from Planning Call for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

Hello everyone,

Thanks for your participation in today's call. Below is a summary, your dial-in/webinar information, basic logistics for the webinar, and a list of current registrations. At the very bottom is a forward-able event announcement.

LINE-UP & TOPICS (per my non-expert notes):

1. 11:45 – Dial in and unmute yourselves, check audio
2. 12:00 – Seminar begins.
3. Chandra (~2 min) will say a few words to open the event
4. Bob (5-7 min) will introduce the panel and set the stage
5. Paul (10-12 mins): EPA perspective on sizing up the problem; US GHG Inventory: what it is, how it works, driver for policy position; ongoing work as part of the GHG reporting program; Climate Action plans to orient the discussion
6. Dave (10-12 mins): how top-down and bottom-up measuring methods complement each other and what each of those are; what the studies are telling us now; need to coordinate both methods moving forward to track progress accurately
7. Frank (10-12 mins): talk about outcomes of systems level analysis to contextualize the scale of the problem and how different elements of the oil and gas value chain differ; the dangers of elevating the results of individualized studies above (meta) studies due to the variations at various levels of the value chain [I hope I got that right.]
8. Drew (10-12mins): why methane matters and EDF's efforts to come up with an estimate; cost of methane
9. Q&A (~20 mins) from Bob and discussion } timing depends on
10. Q&A from audience (~15 mins) } shyness of audience
11. Seminar will end no later than 1:30.

PowerPoints are due by 9AM ET on Monday, May 19th. Your PowerPoints will be posted as PDFs on the event site: http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar. If possible, please circulate your presentation before the May 19th deadline to other panelists; this will help reduce overlap and let others know what you will cover. I've also attached Dave's slides that he sent out earlier today.

We are planning to record this webinar. **Please review the attached Grant of License and send me, by reply or by returning the signed form, your permission.** We might also transcribe the event for subsequent publication in the *Environmental Law Reporter*; if we decide to do this, we will email you again.

We also discussed the topic of questions from a shy audience. **Please send questions** that might

be asked of your presentation and questions you would like to ask of other panelists' presentations to Bob so he can compile a list to have at hand in case the audience is shy.

DIAL-IN INFORMATION For May 20th

For sound quality, please use a **landline with a handset or headset**, not speakerphone.

Please dial in at 11:45 a.m. on May 20thso that we can verify that everyone is on the line and unmuted by 12:00, the beginning of the seminar.

Dial: **1-857-232-0300**

Follow the prompts and enter the participant pass code of**55655#.**

You MUST enter * 6 ("Star, Six") to unmute yourself. Chandra will check to make sure all of you are on the line and unmuted.

WEBCAST INFORMATION for May 20th

- Twenty minutes before the webinar begins, go to www.joingotowebinar.com
- Enter **339468167** into the Webinar ID space.
- Enter your email address.
- Click "continue."
- Fill out the registration form: First and Last Name, email address, and organization. Then click "Register Now." [Your name and email address will not be visible to other attendees or panelists.]
- Click "Download GoToWebinar"

•□□□ Select "Save File" on the popup window.

•□□□ Double click "g2m_download.exe" in the download window.

•□□□ Click "ok" to open executable files.

•□□□ Click "run" in the "Open File – Security Warning" window.

•□□□ A new window will open with dial-in information, which is **Dial 1-857-232-0300**, access code **55655#**.

BASIC LOGISTICS

Now for basic logistics of the **Methane Leakage from Hydraulic Fracturing: A Science Update** seminar:

- Date and time: Tuesday, May 20, 2014, from 12:00 to 1:30 PM ET.

- Format: This will be a teleconference and webinar. If you would like to use PowerPoints, we can provide them to the audience at the registration page so the teleconference audience can follow along as the slides advance (based on panelists' verbal cues to me) in a webinar. To do so, **we need to receive your PowerPoint no later than 9AM ET on Monday, May 19th.**

- Attendees: The seminar will be open to the public. I will circulate RSVP lists to keep you informed about the audience, once before the planning call and once before the seminar. The audience can include law firm, government and NGO attorneys, consultants, policy staff, corporate counsel, academics, and students. With your permission, we will record the seminar and post the audio recording online, along with a brief written summary of the event. I need your permission to do so; **please fill out the attached grant of license form and return to me**, preferably via email, **no later than Monday, May 19th.** We might also transcribe the event for subsequent publication in the *Environmental Law Reporter*; if we decide to do this, we will email you again.

- Event announcement: The online event announcement, with RSVP information, is

available at http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar and below. I encourage each of you to pass it along to your colleagues.

RSVPs

It is still early yet, so I expect these numbers to increase. Please feel free to circulate announcement to appropriate listservs.

Carswell, Cally High Country News Journalist

Cassel, Jennifer Environmental Law & Policy Center

Chase, Stephanie Environmental Law & Policy Center

Cray, Charlie Greenpeace

Gardner, Jennifer Western Interstate Energy Board

Goldman, Michael

Gutierrez, Ana Hogan Lovells US LLP

Jacobs-Smith, Aaron Clean Air Council

Johnson, Jeffrey Chemical and Engineering News

Kirsch, Rob C. WilmerHale

Klein, Eric Beveridge & Diamond, P.C.

Kretzmann, Hollin Center for Biological Diversity

Leiter, Amanda American University Washington College of Law

Lusk, Mark US DOE/NETL

Olson, Margaret ND Office of Attorney General

Parrish, Rick A. Southern Environmental Law Center

Paul, Detwiler US DOE/NETL

Schroeder, Darin Clean Air Task Force

Tarr, Jennifer Environmental Law & Policy Center

Torrent, Karen E. Environmental Law & Policy Center

Waeckerlin, Eric Davis Graham & Stubbs LLP

Wagner, John American Petroleum Institute

Warren, Patricia washington legal clinic for the homeless volunteer

Weiss, Harry Ballard Spahr, LLP

Wilke, Mary E Edgcomb Law Group, LLP

If you have any questions, please don't hesitate to contact me.

Best,

Chandra

Chandra L. Middleton

Director, Associates Program
Environmental Law Institute
2000 L Street NW, Suite 620 | Washington, DC 20036
p: 202.939.3823 | f: 202.939.3868
middleton@eli.org | www.eli.org

Please consider the environment before printing this e-mail.

When:

May 20, 2014
12:00 PM to 1:30 PM ET

Where:

Via webinar.

RSVP:

To attend, please visit http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar.

Methane Leakage from Hydraulic Fracturing: A Science Update

An ELI Professional Practice Seminar

Methane, the main component of natural gas and a potent greenhouse gas, is released from oil and gas drilling operations and from distribution and processing infrastructure. Some companies also flare methane for a variety of reasons. With the proliferation of hydraulic fracturing to produce oil and gas in the United States, attention is increasingly turning to the studying the magnitude of methane releases and flaring, their contribution to U.S. greenhouse gas emissions, and the need for further regulation.

How much methane leaks into our atmosphere? How much is intentionally flared? Several recent attempts to quantify such emissions have varying results. US EPA has included one set of estimates in its Inventory of GHG Emissions and Sinks. Studies from researches at Stanford and Harvard have presented papers that argue that EPA's estimates are too low. An MIT report concludes that hydraulic fracturing emits not much more methane than conventional gas drilling. Meanwhile, a comprehensive University of Texas study based on measurements at drilling operations concludes that EPA has overestimated emissions for some types of equipment but underestimated them for others.

Some states are beginning to examine and regulate methane leakage, despite conflicting reports on the quantities emitted. After industry and environmentalists came together to develop a proposal, Colorado now requires wells to add equipment that captures or controls 95% of emissions at extraction sites. Opinion is divided on whether additional regulation at the federal level is needed. EPA is examining its options and the Obama Administration has created a task force on methane emissions as part of the president's Climate Action Plan.

Join us for a seminar examining the status of the science and policy on methane leakage from oil and gas wells, pipelines, and processing.

Panelists

Robert Sussman, former Senior Policy Counsel to EPA Administrator Lisa Jackson *(moderator)*
Dr. David T. Allen, Melvin H. Gertz Regents Chair in Chemical Engineering, University of Texas at Austin

Paul Gunning, Director, Climate Change Division, Office of Air and Radiation, Environmental Protection Agency

Drew Nelson, Senior Manager, Natural Gas, Environmental Defense Fund

Dr. Francis O'Sullivan, Director of Research & Analysis, MIT Energy Initiative

To: Bill Irving[Irving.Bill@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]
From: Gunning, Paul
Sent: Fri 1/27/2017 7:43:27 PM
Subject: FW: Methane measurement research strategies report published based on October 2016 DOE workshop

From: Clavin, Christopher T [mailto:cclavin@ida.org]
Sent: Friday, January 27, 2017 2:31 PM
To: Clavin, Christopher T <cclavin@ida.org>
Cc: Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Cunliff, Colin (FELLOW) <Colin.Cunliff@hq.doe.gov>; McKittrick, Alexis MW <amckittr@ida.org>; Abrahams, Leslie S <labraham@ida.org>; Ressler, Anne E <aressler@ida.org>; Behrens, Jonathan R "Jonny" <jbehrens@ida.org>
Subject: Methane measurement research strategies report published based on October 2016 DOE workshop

Dear Colleagues,

This week we published and delivered to DOE the report titled "Research Strategies for Detection and Measurement of Oil and Gas Sector Methane Emissions" based upon analysis of proceedings from the October 13-14, 2016 DOE workshop. The report is now publicly available and has no limitations on distribution.

The report can be found here:
https://www.ida.org/idamedia/Corporate/Files/Publications/STPIPubs/2017/P-8315.ashx

On behalf of my co-authors and my colleagues at STPI and DOE, we want to thank you once again. Your input and participation in the workshop, constructive feedback from reviewers on early drafts of the report, and continued interest in this important science and technology topic was essential to the successful development of this report.

Kind regards,

Chris

Christopher Clavin
Institute for Defense Analyses
Science & Technology Policy Institute
1899 Pennsylvania Avenue NW, Suite 520
Washington, DC 20006
202-419-5416, cclavin@ida.org

To: Drew Nelson[dnelson@edf.org]
From: Gunning, Paul
Sent: Fri 11/15/2013 5:13:02 PM
Subject: RE: naruc/orlando

Drew – that sounds good. Our stuff should be complementary. I am assuming the NARUC audience will be interested in the larger emissions issue (beyond just production) so I am planning on talking at a high level about all four oil and gas industry segments, our inventory and GHGRP.

Getting together on Monday evening sounds great. I am supposed to go out with a colleague of mine and it would be great if you wanted to join us (Do you know Joe Bryson?). Let me know.

From: Drew Nelson [mailto:dnelson@edf.org]
Sent: Thursday, November 14, 2013 3:23 PM
To: Gunning, Paul
Subject: naruc/orlando

Hey Paul,

Glad to see that you will be on the NARUC panel on Tuesday. I don't know if you've seen my presentation yet, but it's largely focused on why methane matters and what EDF is doing on the studies. I'd be happy to make any changes if there are things in here you were planning on covering in your presentation. Also, I get in Monday night at 8 if you want to meet up for dinner or drinks. Let me know if you are available.

Drew

Drew Nelson
Environmental Defense Fund

301 Congress Avenue, Suite #1300

Austin , TX 78701

Office (512) 691-3429

Mobile (202) 247-0520

Fax (512) 478-8140
dnelson@edf.org

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: Pamela Franklin[Franklin.Pamela@epa.gov]; Bill Irving[Irving.Bill@epa.gov]; Anhar Karimjee[Karimjee.Anhar@epa.gov]
From: Gunning, Paul
Sent: Tue 5/13/2014 12:55:11 PM
Subject: FW: NOTES from Planning Call for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)
drew nelson ELI.pptx

FYI

From: Drew Nelson [mailto:dnelson@edf.org]
Sent: Monday, May 12, 2014 11:59 AM
To: 'Chandra Middleton'; Gunning, Paul; allen@che.utexas.edu; frankie@mit.edu; Bob Sussman. Ex. 6 - Personal Privacy
Cc: Hargrove, Anne; Friedman, Kristina
Subject: RE: NOTES from Planning Call for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

All

Attached is a draft of the presentation I intend to give next week.

Thanks

Drew

From: Chandra Middleton [mailto:middleton@eli.org]
Sent: Thursday, May 01, 2014 3:08 PM
To: Gunning.paul@Epa.gov; allen@che.utexas.edu; Drew Nelson; frankie@mit.edu; Bob Sussman. Ex. 6 - Personal Privacy
Cc: Hargrove, Anne; Friedman, Kristina
Subject: NOTES from Planning Call for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

Hello everyone,

Thanks for your participation in today's call. Below is a summary, your dial-in/webinar information, basic logistics for the webinar, and a list of current registrations. At the very bottom is a forward-able event announcement.

LINE-UP & TOPICS (per my non-expert notes):

1. 11:45 – Dial in and unmute yourselves, check audio
2. 12:00 – Seminar begins.
3. Chandra (~2 min) will say a few words to open the event
4. Bob (5-7 min) will introduce the panel and set the stage
5. Paul (10-12 mins): EPA perspective on sizing up the problem; US GHG Inventory: what it is, how it works, driver for policy position; ongoing work as part of the GHG reporting program; Climate Action plans to orient the discussion
6. Dave (10-12 mins): how top-down and bottom-up measuring methods complement each other and what each of those are; what the studies are telling us now; need to coordinate both methods moving forward to track progress accurately
7. Frank (10-12 mins): talk about outcomes of systems level analysis to contextualize the scale of the problem and how different elements of the oil and gas value chain differ; the dangers of elevating the results of individualized studies above (meta) studies due to the variations at various levels of the value chain [I hope I got that right.]
8. Drew (10-12mins): why methane matters and EDF's efforts to come up with an estimate; cost of methane
9. Q&A (~20 mins) from Bob and discussion } timing depends on
10. Q&A from audience (~15 mins) } shyness of audience
11. Seminar will end no later than 1:30.

PowerPoints are due by 9AM ET on Monday, May 19th. Your PowerPoints will be posted as PDFs on the event site: http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar. If possible, please circulate your presentation before the May 19th deadline to other panelists; this will help reduce overlap and let others know what you will cover. I've also attached Dave's slides that he sent out earlier today.

We are planning to record this webinar. **Please review the attached Grant of License and send me, by reply or by returning the signed form, your permission.** We might also transcribe the

event for subsequent publication in the *Environmental Law Reporter*; if we decide to do this, we will email you again.

We also discussed the topic of questions from a shy audience. **Please send questions** that might be asked of your presentation and questions you would like to ask of other panelists' presentations to Bob so he can compile a list to have at hand in case the audience is shy.

DIAL-IN INFORMATION For May 20th

For sound quality, please use a **landline with a handset or headset**, not speakerphone.

Please dial in at 11:45 a.m. on May 20th so that we can verify that everyone is on the line and unmuted by 12:00, the beginning of the seminar.

Dial: **1-857-232-0300**

Follow the prompts and enter the participant pass code of **55655#.**

You MUST enter * 6 ("Star, Six") to unmute yourself. Chandra will check to make sure all of you are on the line and unmuted.

WEBCAST INFORMATION for May 20th

- Twenty minutes before the webinar begins, go to www.joingotowebinar.com
- Enter **339468167** into the Webinar ID space.
- Enter your email address.
- Click "continue."

•□□□ Fill out the registration form: First and Last Name, email address, and organization. Then click "Register Now." [Your name and email address will not be visible to other attendees or panelists.]

•□□□ Click "Download GoToWebinar"

•□□□ Select "Save File" on the popup window.

•□□□ Double click "g2m_download.exe" in the download window.

•□□□ Click "ok" to open executable files.

•□□□ Click "run" in the "Open File – Security Warning" window.

•□□□ A new window will open with dial-in information, which is **Dial 1-857-232-0300**, access code **55655#**.

BASIC LOGISTICS

Now for basic logistics of the **Methane Leakage from Hydraulic Fracturing: A Science Update** seminar:

- Date and time: Tuesday, May 20, 2014, from 12:00 to 1:30 PM ET.

- Format: This will be a teleconference and webinar. If you would like to use PowerPoints, we can provide them to the audience at the registration page so the teleconference audience can follow along as the slides advance (based on panelists' verbal cues to me) in a webinar. To do so, **we need to receive your PowerPoint no later than 9AM ET on Monday, May 19th.**

- Attendees: The seminar will be open to the public. I will circulate RSVP lists to keep you informed about the audience, once before the planning call and once before the seminar. The audience can include law firm, government and NGO attorneys, consultants, policy staff, corporate counsel, academics, and students. With your permission, we will record the seminar and post the audio recording online, along with a brief written summary of the event. I need your permission to do so; **please fill out the attached grant of license form and return to me**, preferably via email, **no later than Monday, May 19th.** We might

also transcribe the event for subsequent publication in the *Environmental Law Reporter*; if we decide to do this, we will email you again.

- Event announcement: The online event announcement, with RSVP information, is available at http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar and below. I encourage each of you to pass it along to your colleagues.

RSVPs

It is still early yet, so I expect these numbers to increase. Please feel free to circulate announcement to appropriate listservs.

Charlie	Cray	Greenpeace
Paul	Detwiler	US DOE/NETL
Aaron	Jacobs-Smith	Clean Air Council
Eric	Klein	Beveridge & Diamond, P.C.
Hollin	Kretzmann	Center for Biological Diversity
Amanda	Leiter	American University Washington College of Law
Mark	Lusk	US DOE/NETL
Harry	Weiss	Ballard Spahr, LLP
Mary	Wilke	Edgcomb Law Group, LLP

If you have any questions, please don't hesitate to contact me.

Best,

Chandra

Chandra L. Middleton

Director, Associates Program

Environmental Law Institute
2000 L Street NW, Suite 620 | Washington, DC 20036
p: 202.939.3823 | f: 202.939.3868
middleton@eli.org | www.eli.org

Please consider the environment before printing this e-mail.

When:

May 20, 2014
12:00 PM to 1:30 PM ET

Where:

Via webinar.

RSVP:

To attend, please visit http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar.

Methane Leakage from Hydraulic Fracturing: A Science Update

An ELI Professional Practice Seminar

Methane, the main component of natural gas and a potent greenhouse gas, is released from oil and gas drilling operations and from distribution and processing infrastructure. Some companies also flare methane for a variety of reasons. With the proliferation of hydraulic fracturing to produce oil and gas in the United States, attention is increasingly turning to the studying the magnitude of methane releases and flaring, their contribution to U.S. greenhouse gas emissions, and the need for further regulation.

How much methane leaks into our atmosphere? How much is intentionally flared? Several recent attempts to quantify such emissions have varying results. US EPA has included one set of estimates in its Inventory of GHG Emissions and Sinks. Studies from researches at Stanford and Harvard have presented papers that argue that EPA's estimates are too low. An MIT report concludes that hydraulic fracturing emits not much more methane than conventional gas drilling. Meanwhile, a comprehensive University of Texas study based on measurements at drilling operations concludes that EPA has overestimated emissions for some types of equipment but underestimated them for others.

Some states are beginning to examine and regulate methane leakage, despite conflicting reports on the quantities emitted. After industry and environmentalists came together to develop a proposal, Colorado now requires wells to add equipment that captures or controls 95% of emissions at extraction sites. Opinion is divided on whether additional regulation at the federal level is needed. EPA is examining its options and the Obama Administration has created a task force on methane emissions as part of the president's Climate Action Plan.

Join us for a seminar examining the status of the science and policy on methane leakage from oil and gas wells, pipelines, and processing.

Panelists

Robert Sussman, former Senior Policy Counsel to EPA Administrator Lisa Jackson *(moderator)*
Dr. David T. Allen, Melvin H. Gertz Regents Chair in Chemical Engineering, University of Texas at Austin

Paul Gunning, Director, Climate Change Division, Office of Air and Radiation, Environmental Protection Agency

Drew Nelson, Senior Manager, Natural Gas, Environmental Defense Fund

Dr. Francis O'Sullivan, Director of Research & Analysis, MIT Energy Initiative

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Melissa Weitz[Weitz.Melissa@epa.gov]
From: Gunning, Paul
Sent: Tue 12/6/2016 6:23:07 PM
Subject: FW: MethaneTransition_SPPD_edits 12-6-2016.docx
MethaneTransition_SPPD_edits 12-6-2016.docx

From: Cozzie, David
Sent: Tuesday, December 06, 2016 1:00 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Lassiter, Penny <Lassiter.Penny@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>
Subject: MethaneTransition_SPPD_edits 12-6-2016.docx

Paul,

Attached are edits from SPPD on the transition paper for Oil and Gas ICR.

David

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Hockstad, Leif[Hockstad.Leif@epa.gov]
From: Gunning, Paul
Sent: Thur 12/11/2014 10:40:54 AM
Subject: Fw: US GHG Inventory Expert Review draft

Guys please see Janet's question below. I think shhe is asking about historical trends

Sent from my BlackBerry 10 smartphone.

[redacted]

Thank you for the heads up, Sarah. Is the O/G uptick consistent?

copying Lori for purposes of the weekly hotlist.

From: Dunham, Sarah
Sent: Wednesday, December 10, 2014 5:21 PM
To: McCabe, Janet
Cc: Goffman, Joseph; Gunning, Paul; Krieger, Jackie
Subject: US GHG Inventory Expert Review draft

Hi Janet-

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Sarah

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
From: Gunning, Paul
Sent: Tue 5/3/2016 3:21:55 PM
Subject: Fwd: ICF LDAR Cost-Effectiveness Modeling Updates (Attn: Doc Id. No. EPA-HQ-OAR-2010-0505)
EDF LDAR Analysis 120415 v7.pdf
ATT00001.htm

Paul Gunning
202-251-1436
Sent from my iPhone

Begin forwarded message:

From: Peter Zalzal <pzalzal@edf.org>
Date: May 2, 2016 at 11:26:06 PM EDT
To: "'McCabe.Janet@epamail.epa.gov' (McCabe.Janet@epamail.epa.gov)" <McCabe.Janet@epamail.epa.gov>, "Goffman, Joseph (Goffman.Joseph@epa.gov)" <Goffman.Joseph@epa.gov>, "Tsirigotis, Peter (Tsirigotis.Peter@epa.gov)" <Tsirigotis.Peter@epa.gov>, "Dunham, Sarah (Dunham.Sarah@epa.gov)" <Dunham.Sarah@epa.gov>, "Gunning, Paul" <Gunning.Paul@epa.gov>, "Cozzie, David (Cozzie.David@epa.gov)" <Cozzie.David@epa.gov>, "Moore, Bruce (Moore.Bruce@epa.gov)" <Moore.Bruce@epa.gov>
Subject: ICF LDAR Cost-Effectiveness Modeling Updates (Attn: Doc Id. No. EPA-HQ-OAR-2010-0505)

Dear EPA Officials:

Attached please find an updated version of modeling that EDF commission ICF to perform to estimate the cost-effectiveness of leak detection and repair at different types of facilities. We originally submitted this modeling as part of EDF's comments on EPA's proposed NSPS for the oil and gas sector (Doc Id. No. EPA-HQ-OAR-2010-0505-7033). We respectfully submit this updated analysis to the same docket. The analysis includes additional slides documenting the effectiveness of quarterly leak detection and repair, which the analysis shows would secure reductions of 78% below baseline emissions.

Best wishes,

Peter Zalzal

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Bill Irving[Irving.Bill@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]
Cc: Suzanne Kocchi[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Wed 6/24/2015 6:25:34 PM
Subject: FW: NRC Methane emissions study prospectus
Methane emissions prospectus DRAFT 06-23-2015.docx

See below, I have not looked at the prospectus yet. I will ask Anne to set up a time for us to meet with Amanda. Bill, I know you will be on travel a lot, so hopefully Anne will be able to accommodate.

Paul

From: Staudt, Amanda [mailto:AStaudt@nas.edu]
Sent: Wednesday, June 24, 2015 1:26 PM
To: Gunning, Paul
Cc: Thomas, Katherine C
Subject: NRC Methane emissions study prospectus

Dear Paul,

I'm writing to follow up on our discussions regarding a potential NRC study on methane emissions monitoring and inventories. Thanks again for meeting with us a couple months back and apologies that it has taken much longer than I anticipated to get back in touch. We were a bit shorthanded this spring, and are finally getting caught up.

We have drafted the attached prospectus based on the discussions that we had with you, other potential sponsors, and our board members. Our hope is that the project described addresses your needs and will be useful in moving forward research, policy, and practice regarding methane emissions monitoring and inventory development. We welcome your feedback and would be happy to discuss any concerns or suggested adjustments.

Also, we would like to continue to explore whether EPA might have an interest in co-sponsoring the study. At this point we are envisioning an activity with multiple sponsors, which will allow

us to ensure that the study addresses broader national needs, and also makes it possible to share the costs among the several agencies engaged on the topic.

Perhaps a good next step would be to arrange a time for us to meet in a few weeks' time to discuss any input you have on the draft and next steps? If you agree, please go ahead and send some windows that look promising on your end, and we'll figure out a time that works for all of us.

Many thanks,

Amanda

Amanda Staudt, Ph.D., Director

Board on Atmospheric Sciences and Climate

Polar Research Board

(202) 334-1245

http://dels.nas.edu/basc

http://dels.nas.edu/prb

To: Melissa Weitz[Weitz.Melissa@epa.gov]; Bill Irving[Irving.Bill@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]
From: Gunning, Paul
Sent: Fri 2/12/2016 5:38:50 PM
Subject: FW: Draft_-DOE-FE FY16 Methane Emissions Quantification Research Areas
DOE-FE-FY16-Methane Quantification Actions-11FEB16(v2) .docx

Follow up from our call

From: Freitas, Christopher [mailto:Christopher.Freitas@hq.doe.gov]
Sent: Friday, February 12, 2016 10:04 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Smistad, Eric (NETL) <eric.smistad@netl.doe.gov>; Skone, Timothy (NETL) <timothy.skone@netl.doe.gov>; Bradbury, James <James.Bradbury@Hq.Doe.Gov>; Brown, Bruce (NETL) <bruce.brown@netl.doe.gov>; DeHoratiis, Guido <Guido.DeHoratiis@hq.doe.gov>; Vargas, Maria (NETL) <maria.vargas@netl.doe.gov>
Subject: Draft_-DOE-FE FY16 Methane Emissions Quantification Research Areas

Paul,

Thank you and the EPA Team for the discussion yesterday on oil and gas sector emission quantification research opportunities to support the EPA GHGI. I'm excited that Congress appropriated FY 2016 funds for a "Back To The Future" natural gas midstream infrastructure research program and the methane emissions quantification subprogram. The $5 million in FY 2016 for the methane emission quantification are provided to DOE Fossil Energy in support of assisting EPA to better quantify and analyze methane emissions across the natural gas value (supply) chain. **Attached is additional background information on the proposed methane emissions quantification areas discussed yesterday**. I'm looking forward to EPA's input and assessment of the proposed research areas along with EPA's research priorities to enhance and improve the GHGI. Please send the information to me by COB February 19, 2016 and I look forward to the 1:00 pm conference call on Tuesday, February 23.

Best,

Christopher

Christopher J. Freitas

Senior Program Manager Natural Gas Infrastructure

United States Department of Energy

Office of Oil and Natural Gas, FE-30,

1000 Independence Ave. S.W., Forrestal Building, Room 3G-048

Washington, D.C. 20585

Desk: (202) 586-1657/ Mobile: (301) 820-2004

Email: Christopher.Freitas@HQ.DOE.GOV

To: Irving, Bill[Irving.Bill@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Karimjee, Anhar[Karimjee.Anhar@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Wed 11/26/2014 10:02:24 PM
Subject: Fw: Information for next week's meeting on methane emissions
Methane emissions agenda 11-26-2014.pdf
Participant List 11-26-2014.pdf

I am planning on attending this meeting on Tuesday. If you guys can provide some insights on the questions they are posing I would really appreciate it.

Thanks

Paul

Sent from my BlackBerry 10 smartphone.

Dear meeting participants,

Thank you for agreeing to participate at the upcoming NRC planning meeting on *Estimating, Monitoring, and Mitigating Anthropogenic Methane Emissions* to be held next **Tuesday, Dec. 2, 10am-3pm at the Keck Center**. Please see attached updated agenda and participant list.

As a reminder, there are two main goals for this meeting:

1. Facilitate engagement of relevant agencies and experts in a discussion of the topic

2. Develop a potential NRC study or workshop, brainstorm list of questions to be answered during activity, and identify potential sources of financial support

There is a session at 11:20am on agency needs. Please be prepared to discuss the following questions informally as part of the discussion (no need for PowerPoint slides):

•□□□□□□□□ What are key gaps in knowledge and data?

•□□□□□□□□ What are priority needs and target audiences?

•□□□□□□□□ What questions would an NRC study or workshop address that could add value to current and future efforts?

•□□□□□□□□ What is the appropriate breadth for the topic?

Please let me know if you have any questions. We look forward to robust discussions at our meeting.

Have a happy Thanksgiving!

Best,

Katie

Katie Thomas
Program Officer

Board on Atmospheric Sciences and Climate
The National Academies
500 Fifth Street NW
Washington, DC 20001
202-334-3860

kcthomas@nas.edu

To: Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: Bill Irving[Irving.Bill@epa.gov]; Pamela Franklin[Franklin.Pamela@epa.gov]; Anhar Karimjee[Karimjee.Anhar@epa.gov]; Suzanne Kocchi[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Fri 5/2/2014 12:28:39 PM
Subject: FW: Review of Draft Multi-Agency Unconventional Oil and Gas Research Strategy
Multiagency UOG Research Strategy_Draft-20140501.docx
Multiagency Research_Internal briefing DRAFT Final 23April kyt.pptx
Copy of Comments on MAC-Research Strategy.xlsx

Just wanted to make sure that you all have this and that someone is attending the briefing on Monday. I also wanted to check and see who from OAR is coordinating our comments. Is this Bruce? Hopefully there are not any major issues.

Paul

From: Dunham, Sarah
Sent: Thursday, May 01, 2014 4:07 PM
To: Gunning, Paul; Krieger, Jackie
Subject: Fw: Review of Draft Multi-Agency Unconventional Oil and Gas Research Strategy

I can't see who else got this

From: Williams, Larke

Sent: Thursday, May 1, 2014 3:59 PM

To: Dunham, Sarah; Grevatt, Peter; Johnson, Barnes; Page, Steve; Sawyers, Andrew; Southerland, Elizabeth; Bahadori, Tina; Corona, Elizabeth; Costa, Dan; Kavlock, Robert; Lan, Alexis; Mazur, Sarah; Rea, Anne; Olden, Kenneth; Orme-Zavaleta, Jennifer; Slimak, Michael; Sonich-Mullin, Cynthia; Vandenberg, John; vanDrunick, Suzanne; Zenick, Hal; Davis, Alison; Mazza, Carl; Moore, Bruce; Weitz, Melissa; Perry, Dale; Briskin, Jeanne; Burgoon, Lyle; Gillespie, Andrew; Gullett, Brian; Martinez, Barbara; Miller, Andy; Norton, Sue; Stanek, John; Bates, William; Bergman, Ronald; Biddle, Lisa; Matuszko, Jan; Moore, Keara; Ohanian, Edward; Ruf, Christine; Wilson, Scott

Cc: Teichman, Kevin

Subject: FW: Review of Draft Multi-Agency Unconventional Oil and Gas Research Strategy

Hi All,

Kevin has send the following email to your DAAs to initiate intra-Agency review of the draft

Multi-Agency Unconventional Oil and Gas Research Strategy. We wanted to you to know that this may be coming your way soon.

Cheers,

Larke Williams
Environmental Engineer
Office Research and Development
US Environmental Protection Agency
Phone: 202-564-0664

From: Teichman, Kevin
Sent: Thursday, May 01, 2014 3:27 PM
To: Johnson, Alisha; Trovato, Ramona; Shapiro, Mike; Shaw, Betsy
Cc: Feldt, Lisa; Kadeli, Lek; Williams, Larke; Martinez, Barbara
Subject: Review of Draft Multi-Agency Unconventional Oil and Gas Research Strategy

The purpose of this email is to initiate intra-Agency review of the draft Multi-Agency Unconventional Oil and Gas (UOG) Research Strategy (attached) developed by DOE, DOI, and EPA pursuant to the Memorandum of Agreement among the agencies on this important topic (http://unconventional.energy.gov/index.html).

In April 2012, DOE, DOI, and EPA signed an MOA to develop a multiagency research plan to address the highest priority research questions associated with safely and prudently developing UOG resources. The primary goal of this effort is to ensure coordination and collaboration among the agencies and others in the development of timely, policy - relevant science and technology research.

At this time, the three agencies have developed a draft Multi-Year Strategy for Research and Development (Strategy), which is ready for intra-agency review. The Strategy identifies research topics, initial priorities, and defines the research roles of the three agencies. It does not make policy recommendations.

To facilitate intra-Agency review, ORD will be hosting two (identical) joint briefings to explain the document. The list of appended contacts below identifies the offices within your AA-ship as well as those within those offices who are familiar with this effort and whom, among others, you may wish to have attend one of the briefings and perform the review. The presentation to be given at the briefings is attached. We have also attached the spreadsheet we will use to collect comments.

To keep on the aggressive schedule the three agencies have set, we would like to schedule the briefings for Monday, May 5th (1:30 – 2:30 pm), and Thursday, May 8th, (9:00 – 10:00 am). Both briefings will be held in room RRB 41213. Our goal is to have your office's consolidated comments provided to Larke Williams in ORD by COB May 15th. If your reviewers cannot attend either of these briefings, please let Larke Williams know.

Thank you in advance for your attention to this important review. If you have any questions, please contact me or Larke Williams.

Appended list

Office Directors: Sarah Dunham, OAP; Peter Grevatt, OGWDW; Barnes Johnson, ORCR (OSWER); Steve Page, OAQPS; Andrew Sawyers, OWM; Betsy Southerland, OST

ORD: Tina Bahadori, Elizabeth Corona, Dan Costa, Robert Kavlock, Alexis Lan, Sarah Mazur, Anne Rea, Kenneth Olden, Jennifer Orme-Zavaleta, Michael Slimak, Cynthia Sonich-Mullin, John Vandenberg, Suzanne Van Drunick, Harold Zenick,.

Staff Contacts:

- OAR: Alison Davis, Carl Mazza, Bruce Moore, Melissa Weitz
- OEAEE: Dale Perry
- ORD: Jeanne Briskin, Lyle Burgoon, Andrew Gillespie, Brian Gullet, Barbara Martinez, Andrew Miller, Susan Norton, John Stanek
- OW: William Bates, Ron Bergman, Lisa Biddle, Jan Matuszko, Keara Moore, Ed Ohanian, Christine Ruf, Scott Wilson

To: Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]
From: Gunning, Paul
Sent: Wed 11/26/2014 5:24:06 PM
Subject: RE: Overview of ORD study on oil and gas production pads using mobile measurements

Thanks Melissa. Unfortunately it sounds like this if not very useful for us!

From: Weitz, Melissa
Sent: Wednesday, November 26, 2014 11:53 AM
To: Gunning, Paul
Cc: Irving, Bill; Waltzer, Suzanne; DeFigueiredo, Mark; Ragnauth, Shaun
Subject: Overview of ORD study on oil and gas production pads using mobile measurements

Hi Paul,

An ORD paper on oil and gas CH4 emissions was recently published in Environmental Science and Technology http://pubs.acs.org/doi/abs/10.1021/es503070q. Below is overview information about the study, and its relevance to CCD programs. I've attached the study (PDF) and a more detailed one-pager on the study.

Title: Assessment of Methane Emissions from Oil and Gas Production Pads using Mobile Measurements

Authors: ORD (Halley Brantley, Eben Thoma, William Squier), Houston Advanced Research Center (Birnur Guven), and EDF (David Lyon)

Overview:

•□□□□□□□□ Used a new mobile inspection approach, OTM 33A, which uses a combination of mobile sampling to identify sources (Picarro-type instrument) and stationary measurements to quantify emissions. Method uncertainty is +/- 60%

•□□□□□□□□ Short term emissions rates (grams CH4 per second) were quantified from 210 oil and gas production pads in Texas, Colorado, and Wyoming from 2010-2013

•□□□□□□□□ Only measured sites where large CH4 plumes were detected

Relevance to CCD programs:

•□□□□□□□□ Generally is a useful first step in assessing a new method to measure fenceline CH_4

•□□□□□□□□ Not possible to compare results to other EPA data

o Data not available on total national number of well pads--difficult to compare to GHG Inventory

o GHGRP facilities report at a basin level, not well pad level

•□□□□□□□□ Not possible to use data from this study for GHG Inventory

o Does not contain data on equipment or number of wells

o Any emission factors would be biased high due to sampling method

•□□□□□□□□ Could possibly be used as a GHGRP advanced monitoring methods approach

•□□□□□□□□ Potentially useful information for mitigation assessments

Note on ORD (Eben Thoma) coordination:

•□□□□□□□□ ORD walked through an early draft of the report with CCD and made several revisions based on our questions and comments

•□□□□□□□□ ORD provided CCD/OAQPS with detailed background data collected for the study but not published on activity data and emissions that may be useful for analyses

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Bill Irving[Irving.Bill@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Fri 5/2/2014 12:03:40 PM
Subject: FW: Allen's slides
Allen_ELI_Slides.pptx

Just FYI.....these are the slides David Allen is using for the upcoming webinar.....

From: Allen, David T [mailto:allen@che.utexas.edu]
Sent: Thursday, May 01, 2014 11:35 AM
To: Chandra Middleton; Gunning, Paul; Drew Nelson (dnelson@edf.org); frankie@mit.edu; Bob Sussman. **Ex. 6 - Personal Privacy**
Subject: Allen's slides

Here are the slides I intend to use.

Dave Allen

From: Chandra Middleton [mailto:middleton@eli.org]
Sent: Thursday, May 01, 2014 7:51 AM
To: Gunning.paul@Epa.gov; Allen, David T; Drew Nelson (dnelson@edf.org); frankie@mit.edu; Bob Sussman. **Ex. 6 - Personal Privacy**
Cc: Hargrove, Anne; Friedman, Kristina
Subject: REMINDER: TODAY @ 10.30 AM ET for Planning Call Scheduling for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

Hello everyone,

Just a reminder to dial-in to our planning call later this morning at 10.30 AM ET. The dial-in information is below.

Talk to you soon,

Chandra

From: Chandra Middleton
Sent: Tuesday, April 29, 2014 4:38 PM
To: 'Gunning.paul@Epa.gov'; allen@che.utexas.edu; Drew Nelson (dnelson@edf.org); frankie@mit.edu; Bob Sussman. **Ex. 6 - Personal Privacy**
Cc: 'Hargrove, Anne'; 'Friedman, Kristina'
Subject: CONFIRMED: May 1 @ 10.30 AM ET for Planning Call Scheduling for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

Hello everyone,

Thank you all for participating in the planning-call-scheduling process. This email confirms that we will have our 30 min call **this Thursday, May 1 at 10.30AM ET**. Please use the following dial-in information:

Dial: **Ex. 6 - Personal Privacy**
Bridge: Ex. 6 - Personal Privacy
PIN: Ex. 6 - Personal Privacy
(You will need to input both Bridge number and PIN number.)

I will begin the call by talking about logistics before turning it over to Bob to briefly chat with the panelists to determine in what order folks should speak and on which topics. The entire call should last no longer than 30 minutes.

Many thanks,

Chandra

Chandra L. Middleton

Director, Associates Program
Environmental Law Institute

2000 L Street NW, Suite 620 | Washington, DC 20036
p: 202.939.3823 | f: 202.939.3868
middleton@eli.org | www.eli.org

Please consider the environment before printing this e-mail.

From: Chandra Middleton
Sent: Thursday, April 24, 2014 12:36 PM
To: 'Gunning.paul@Epa.gov'; Bob Sussman. Ex. 6 - Personal Privacy allen@che.utexas.edu; Drew Nelson (dnelson@edf.org); frankie@mit.edu
Cc: Hargrove, Anne; 'Friedman, Kristina'
Subject: Welcome & Planning Call Scheduling for ELI's "Methane Leakage from Hydraulic Fracturing: A Science Update" (5/20)

Dear Bob, Dave, Paul, Drew, and Frank,

Thank you all, again, for agreeing to participate in ELI's webinar: **Methane Leakage from Hydraulic Fracturing: A Science Update**, scheduled for May 20, 2014, from 12:00 to 1:30 PM ET. We are very excited to convene a webinar on this topic with such a high level of expertise!

Now for basic logistics of the **Methane Leakage from Hydraulic Fracturing: A Science Update** seminar:

- Date and time: Tuesday, May 20, 2014, from 12:00 to 1:30 PM ET.

- Format: This will be a teleconference and webinar. If you would like to use PowerPoints, we can provide them to the audience at the registration page so the teleconference audience can follow along as the slides advance (based on panelists' verbal cues to me) in a webinar. To do so, **we need to receive your PowerPoint no later than 9AM ET on Monday, May 19th.**

- Attendees: The seminar will be open to the public. I will circulate RSVP lists to keep you informed about the audience, once before the planning call and once before the

seminar. The audience can include law firm, government and NGO attorneys, consultants, policy staff, corporate counsel, academics, and students. With your permission, we will record the seminar and post the audio recording online, along with a brief written summary of the event. I need your permission to do so; **please fill out the attached grant of license form and return to me**, preferably via email, **no later than Monday, May 19th.** We might also transcribe the event for subsequent publication in the *Environmental Law Reporter*; if we decide to do this, we will email you again.

- Bios: **Paul**, if you could send to me a link to an online biography or a short biographical paragraph, we will use this bios to introduce you.

- Event announcement: The online event announcement, with RSVP information, is available at http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar and below. I encourage each of you to pass it along to your colleagues.

If you have any questions, please don't hesitate to contact me.

Best,

Chandra

Chandra L. Middleton

Director, Associates Program
Environmental Law Institute
2000 L Street NW, Suite 620 | Washington, DC 20036
p: 202.939.3823 | f: 202.939.3868
middleton@eli.org | www.eli.org

Please consider the environment before printing this e-mail.

When:

May 20, 2014
12:00 PM to 1:30 PM ET

Where:

Via webinar.

RSVP:

To attend, please visit http://www.eli.org/events/methane-leakage-hydraulic-fracturing-science-update-eli-professional-practice-seminar.

Methane Leakage from Hydraulic Fracturing: A Science Update

An ELI Professional Practice Seminar

Methane, the main component of natural gas and a potent greenhouse gas, is released from oil and gas drilling operations and from distribution and processing infrastructure. Some companies also flare methane for a variety of reasons. With the proliferation of hydraulic fracturing to produce oil and gas in the United States, attention is increasingly turning to the studying the magnitude of methane releases and flaring, their contribution to U.S. greenhouse gas emissions, and the need for further regulation.

How much methane leaks into our atmosphere? How much is intentionally flared? Several recent attempts to quantify such emissions have varying results. US EPA has included one set of estimates in its Inventory of GHG Emissions and Sinks. Studies from researches at Stanford and Harvard have presented papers that argue that EPA's estimates are too low. An MIT report concludes that hydraulic fracturing emits not much more methane than conventional gas drilling. Meanwhile, a comprehensive University of Texas study based on measurements at drilling operations concludes that EPA has overestimated emissions for some types of equipment but underestimated them for others.

Some states are beginning to examine and regulate methane leakage, despite conflicting reports on the quantities emitted. After industry and environmentalists came together to develop a proposal, Colorado now requires wells to add equipment that captures or controls 95% of emissions at extraction sites. Opinion is divided on whether additional regulation at the federal level is needed. EPA is examining its options and the Obama Administration has created a task force on methane emissions as part of the president's Climate Action Plan.

Join us for a seminar examining the status of the science and policy on methane leakage from oil and gas wells, pipelines, and processing.

Panelists

Robert Sussman, former Senior Policy Counsel to EPA Administrator Lisa Jackson *(moderator)*
Dr. David T. Allen, Melvin H. Gertz Regents Chair in Chemical Engineering, University of Texas at Austin

Paul Gunning, Director, Climate Change Division, Office of Air and Radiation, Environmental Protection Agency

Drew Nelson, Senior Manager, Natural Gas, Environmental Defense Fund

Dr. Francis O'Sullivan, Director of Research & Analysis, MIT Energy Initiative

To: Suzanne Kocchi[Kocchi.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Allen Fawcett[Fawcett.Allen@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Bill Irving[Irving.Bill@epa.gov]; Carey Bylin[Bylin.Carey@epa.gov]
From: Gunning, Paul
Sent: Mon 2/1/2016 4:20:08 PM
Subject: FW: politico clip on methane just fyi

FYI

From: Krieger, Jackie
Sent: Monday, February 01, 2016 8:45 AM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Friedman, Kristina <Friedman.Kristina@epa.gov>; Lemon, Mollie <Lemon.Mollie@epa.gov>
Subject: politico clip on methane just fyi

THE CLEAN POWER PLAN IS NOT ENOUGH: Greens and their allies in Congress are leaning on President Obama to add one more climate rule to the bevy his administration has already produced: Regulate methane emissions from existing oil and gas wells. As Pro's Elana Schor and Andrew Restuccia report this morning, the administration is racing to finalize a pair of methane rules, one from Interior and another from the EPA, but a recent report indicated the U.S. would have to reduce methane emissions further in order to meet the commitment it made in Paris last year. And the pressure is coming from all sides, as 21 Senate Democrats sent the administration a letter last week calling for a methane rule on existing wells, and Sen. Brian Schatz of Hawaii is hoping to get a methane provision into the Senate energy bill. Greens are providing pressure from outside the Capitol: "This is the single most important thing that this administration or frankly any administration can do to make a real step forward in reducing the rate of warming right now," said Mark Brownstein, the vice president of the climate and energy program at the Environmental Defense Fund.

To: Bill Irving[Irving.Bill@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
From: Gunning, Paul
Sent: Tue 11/17/2015 1:50:39 PM
Subject: FW: SAVE-THE-DATE: JISEA Webinars on Natural Gas Methane Inventory Improvement, New Report

FYI……..

From: Meixner , Debbie [mailto:Debbie.Meixner@jisea.org] **On Behalf Of** Arent, Doug
Sent: Monday, November 16, 2015 5:36 PM
To: JISEA Coordinator <jisea.coordinator@jisea.org>
Cc: Heath, Garvin <Garvin.Heath@nrel.gov>; Meixner , Debbie <Debbie.Meixner@jisea.org>
Subject: SAVE-THE-DATE: JISEA Webinars on Natural Gas Methane Inventory Improvement, New Report

Dear colleague

I am pleased to invite you to participate in one of two webinar briefings on a recent report from the Joint Institute for Strategic Energy Analysis of the National Renewable Energy Laboratory, entitled:

Estimating Methane Emissions from the Natural Gas Supply Chain: Approaches, Uncertainties, Current Estimates and Future Studies

The report summarizes current estimates of methane emissions from the natural gas sector in the United States Greenhouse Gas Inventory, analyzing the sources, uncertainties, and identifying opportunities for improvement to accuracy from new bottom-up and top-down measurement studies. You can view and download the report here: http://www.nrel.gov/docs/fy16osti/62820.pdf.

The webinar will last 1 hour, with opportunity for discussion. It will be offered once before and once after Thanksgiving to accommodate varying schedules.

1. November 24: 10-11 am MT (noon ET and 9 am PT). Please register for this webinar at https://attendee.gotowebinar.com/register/3568490647327926785 (After registering, you will receive a confirmation email containing information about joining the webinar).

2. November 30: 2-3 pm MT (4-5 ET, 1-2 PT). Please register for this webinar at https://attendee.gotowebinar.com/register/4021522423320629249 (After registering, you will receive a confirmation email containing information about joining the webinar).

My assistant, Debbie Meixner, will send a calendar invitation with the registration link for each of the above webinars. Please remember to register for the webinar and please feel free to forward the registration link to other individuals within your organization.

On behalf of the authors (Garvin Heath, Ethan Warner, Daniel Steinberg and Adam Brandt of Stanford University), I hope this report provides useful insights regarding inventory-based estimates of methane emissions from natural gas systems and how the work you might conduct or fund could be used for inventory improvement. We would like thank the US Department of Energy's Office of Energy Policy and Systems Analysis (EPSA) for their support of this research. Apologies for cross postings; feel free to forward the invitation to others who may be interested in the report or webinar.

Please feel free to contact me if you have any questions.

Thank You!

Doug Arent

FOIA EPA-HQ-2018-0005849

To: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
From: Gunning, Paul
Sent: Thur 9/5/2013 4:40:24 PM
Subject: FW: EDF-Administrator Methane meeting next Wednesday

Yet another one pager for the oil and gas team.! This should be pretty straight forward and likely pulled from existing material, but we will also have to check in with OAQPS on the NSPS front. If you guys can get me something by tomorrow afternoon that should be fine and I can share with Joe in advance of his meeting with Vickie.

Thanks

Paul

From: Dunham, Sarah
Sent: Thursday, September 05, 2013 12:16 PM
To: Goffman, Joseph; Gunning, Paul
Cc: Tsirigotis, Peter
Subject: Re: EDF-Administrator Methane meeting next Wednesday

Yes, I think it certainly ok. We might want to put down on a piece of paper the variety of methane efforts EDF is involved in for your (and the Administrators) background because at least to me the different papers/studies they are doing are getting confusing.

From: Goffman, Joseph
Sent: Thursday, September 05, 2013 4:11:42 PM
To: Dunham, Sarah; Gunning, Paul
Cc: Tsirigotis, Peter
Subject: EDF-Administrator Methane meeting next Wednesday

As you know (and we may have discussed yesterday), EDF, per the below, is coming in to meet with the Administrator on the 11th. Vickie Patton has called me to set up a conversation in the next couple of days. I would prefer to do it with at least one or two of you participating. Is that OK? Do I need to know anything before I set that up? Thanks.

ED_001785B_00001197-00001

11:00 AM - 12:00 PM Meeting with EDF Team re: Methane - Alm Conference Room

SCt: Ryan Robison

EDF Ct: Laurel Lee, 212-616-1348 - llee@edf.org

Staff:

TBD

EDF Attendees:

Fred Krupp, President (By phone as of 9-3)

Vickie Patton, General Counsel, Climate/Air Legal-Regulatory team

Elizabeth Thompson, VP, US Climate & Political Affairs and President, Environmental Defense Action Fund

Tomás Carbonell, Attorney, Climate/Air Legal-Regulatory team

Tom Murray, VP, Corporate Partnerships Program

Joseph Goffman

Senior Counsel to the Assistant Administrator

Office of Air and Radiation

US EPA

202 564 3201

To: Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; Shaun Ragnauth[Ragnauth.Shaun@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Anhar Karimjee[Karimjee.Anhar@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Bill Irving[Irving.Bill@epa.gov]; Suzanne Kocchi[Kocchi.Suzanne@epa.gov]; Allen Fawcett[Fawcett.Allen@epa.gov]
From: Gunning, Paul
Sent: Mon 11/24/2014 5:21:16 PM
Subject: FW: "Waste Not" full report and Technical Appendix
Waste Not Technical Appendix November 20, 2014.pdf
ATT00001.htm
Waste Not Report DRAFT November 23, 2014.pdf
ATT00002.htm

FYI

From: Dunham, Sarah
Sent: Monday, November 24, 2014 12:13 PM
To: Gunning, Paul
Subject: FW: "Waste Not" full report and Technical Appendix

From: Goffman, Joseph
Sent: Monday, November 24, 2014 12:12 PM
To: Tsirigotis, Peter; Dunham, Sarah
Subject: Fwd: "Waste Not" full report and Technical Appendix

- Joseph Goffman

Sent from my iPhone

Begin forwarded message:

From: "Conrad Schneider" <cschneider@catf.us>
To: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Cc: "David McCabe" <dmccabe@catf.us>
Subject: Re: "Waste Not" full report and Technical Appendix

Hi Joe-

Attached please find the full "Waste Not" O&G methane report and "Technical Appendix". We are finalizing the report for posting, so what I've sent you here is the text-only version. The Appendix is posted on our website. The calculations behind the numbers in the full report are contained in the Technical Appendix. I wanted you and your team to have the detailed support for our recommendations as you consider your approach under the Methane Strategy. We've put a tremendous amount of work into this and would ask that your team read and carefully consider it before making a decision about what regulatory path to pursue.

Hope you have a good Thanksgiving. You know where we'll be — in the sprint to December1!

Thanks,
CS

Conrad G. Schneider
Advocacy Director
Clean Air Task Force
cschneider@catf.us
www.catf.us
8 Museum Way
Brunswick, Maine 04011
207/721-8676
207/721-8696 (facsimile)

On Nov 20, 2014, at 9:45 AM, Conrad Schneider <cschneider@catf.us> wrote:

And here is the press release.

CS

Conrad G. Schneider

Advocacy Director

Clean Air Task Force

cschneider@catf.us

www.catf.us

8 Museum Way

Brunswick, Maine 04011

207/721-8676

207/721-8696 (facsimile)

<Waste Not press release November 20, 2014.pdf>

To: Bill Irving[Irving.Bill@epa.gov]; Melissa Weitz[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[defigueiredo.mark@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; McKittrick, Alexis[McKittrick.Alexis@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Suzanne Waltzer[Waltzer.Suzanne@epa.gov]; Suzanne Kocchi[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Thur 1/28/2016 3:38:48 PM
Subject: FW: Request for Meeting re EPA's Methane Emissions Inventory

FYI

From: Goffman, Joseph
Sent: Thursday, January 28, 2016 8:53 AM
To: Vickie Patton <vpatton@edf.org>
Cc: Browne, Cynthia <Browne.Cynthia@epa.gov>; Atkinson, Emily <Atkinson.Emily@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: Re: Request for Meeting re EPA's Methane Emissions Inventory

Certainly. Thanks

- Joseph Goffman

Sent from my iPhone

On Jan 28, 2016, at 8:50 AM, Vickie Patton <vpatton@edf.org> wrote:

Dear Mr. Goffman,

We respectfully request a meeting to discuss EPA's methane emissions inventory in light of rigorous field studies showing that super emitters are not reflected in EPA's emissions factors. We would include Dr. Steve Hamburg in the discussion.

As Dr. Hamburg will be traveling to DC on February 4th, would it be viable to meet on the 4th at any time after 11am ET?

Sincerely yours,

Vickie Patton

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Krieger, Jackie[Krieger.Jackie@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: Gunning, Paul
Sent: Tue 11/29/2016 8:58:50 PM
Subject: FW: updated slides on ICR
slides on ICR 11.28.16 .pptx

Thanks guys, this is great.

Jackie – here is the updated briefing that we discussed the other day.

Paul

From: Weitz, Melissa
Sent: Tuesday, November 29, 2016 2:14 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: updated slides on ICR

Hi Paul,

Mark and I updated the ICR slides to include information on changes made in the final ICR, and updated the dates in the schedule.

Please see attached and let us know if this is the information you need.

Thanks!

Melissa

To: Banks, Julius[Banks.Julius@epa.gov]
Cc: Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Wed 12/9/2015 3:52:21 PM
Subject: FW: Massive underground CH4 leak in CA?

Ex. 5 - Deliberative Process

Thanks!

Paul

From: Dunham, Sarah
Sent: Wednesday, December 09, 2015 10:41 AM
To: Krieger, Jackie <Krieger.Jackie@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>
Subject: RE: Massive underground CH4 leak in CA?

Ex. 5 - Deliberative Process

From: Krieger, Jackie
Sent: Wednesday, December 09, 2015 10:36 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>
Cc: Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>
Subject: RE: Massive underground CH4 leak in CA?

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Gunning, Paul
Sent: Monday, November 23, 2015 9:22 AM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>
Cc: Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Krieger, Jackie <Krieger.Jackie@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Subject: RE: Massive underground CH4 leak in CA?

Sarah –

More info. on the Aliso Canyon storage facility leak. The first link is to a local story that ran on Friday. The leak is at an underground storage facility owned and operated by SoCal Gas and has been ongoing now for over a month. The second link is to a draft report - CARB's preliminary estimate of the leak's methane emissions is 0.8 million metric tons CO2e.

http://www.nbclosangeles.com/news/local/SoCal-Gas-Ordered-to-Relocate-Residents-Due-to-Gas-Leak-in-Porter-Ranch-352475461.html

http://documents.latimes.com/report-greenhouse-gas-emissions-aliso-canyon-leak/

From: Dunham, Sarah
Sent: Saturday, November 21, 2015 11:14 AM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Subject: RE: Massive underground CH4 leak in CA?

Ex. 5 - Deliberative Process

From: Gunning, Paul
Sent: 11/21/2015 10:51 AM
To: Dunham, Sarah
Subject: Fwd: Massive underground CH4 leak in CA?

FYI

Paul M Gunning

202-251-1436

Begin forwarded message:

From: "Irving, Bill" <Irving.Bill@epa.gov>
Date: November 21, 2015 at 8:01:29 AM EST
To: "Weitz, Melissa" <Weitz.Melissa@epa.gov>, "DeFigueiredo, Mark" <DeFigueiredo.Mark@epa.gov>
Cc: "Gunning, Paul" <Gunning.Paul@epa.gov>
Subject: FW: Massive underground CH4 leak in CA?

FYI

From: Reidmiller, David R
Sent: 11/20/2015 11:40 PM
To: Talley, Trigg; Artusio, Christo F; Sierawski, Clare S; Hochstrasser, Franz J.; Florini, Karen L; Cerqueira, Julie; Schuler, Reed M; Strait, Elan P; Akhtar, Farhan H; LeFranc, Maurice; Irving, Bill; Nakagawa, Melanie Y
Subject: Massive underground CH4 leak in CA?

Ex. 5 - Deliberative Process

To: Hargrove, Anne[Hargrove.Anne@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: Gunning, Paul
Sent: Tue 6/14/2016 4:47:20 PM
Subject: FW: referral for methane detection technology

Ex. 5 - Deliberative Process

Thanks

Paul

From: Lewis, Josh
Sent: Tuesday, June 14, 2016 11:32 AM
To: Krieger, Jackie <Krieger.Jackie@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Levine, Carolyn <Levine.Carolyn@epa.gov>
Subject: FW: referral for methane detection technology

Jackie/Paul,

Ex. 5 - Deliberative Process

Josh Lewis

EPA/Office of Congressional Affairs

Office: 202 564 2095

Cell: 202 329 2291

levine.carolyn@epa.gov

From: Krenik, Edward [mailto:Edward.Krenik@bracewelllaw.com]
Sent: Monday, June 13, 2016 5:56 PM
To: Levine, Carolyn <Levine.Carolyn@epa.gov>
Subject: RE: RE:

The people for whom I am seeking to set up the meetings are Mike Bahorich, former CTO for Apache, and his colleague, Steve Deiker, the CEO of Kairos Aerospace in California. They have developed a methane detection technology that is pulled behind small aircraft and efficiently identifies methane leaks. Given EPA's moves to regulate methane emissions from new and existing oil and gas wells, they thought the agency should know about this technology and how it can help companies comply with these new rules.

Thanks, Ed!

EDWARD KRENIK
Partner
Edward.Krenik@policyres.com
T: +1.202.828.5877 | F: +1.202.857.2130

BRACEWELL LLP
2001 M Street, NW, Suite 900 | Washington, DC | 20036-3310
policyres.com | profile | download v-card

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]
From: McKittrick, Alexis
Sent: Thur 12/3/2015 10:42:05 PM
Subject: Re: FYI tomorrow

Me too.

Sent from my iPhone

On Dec 3, 2015, at 5:06 PM, DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov> wrote:

I'm fine with that.

--

Mark de Figueiredo, J.D., Ph.D.

Climate Change Division

U.S. Environmental Protection Agency

Office: (202) 343-9928

Mobile: (202) 251-4951

Email: defigueiredo.mark@epa.gov

From: DeLuca, Isabel
Sent: Thursday, December 03, 2015 5:03 PM
To: Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>
Subject: FW: FYI tomorrow

Hi all,

The press office is already asking about this EDF paper, because an advisory has gone out in Politico Pro. Here's what I propose to send up to them for background and a

statement—please edit as needed!

This will be the 25th paper EDF has published in a series of studies on methane emissions from the oil and gas sector. This paper analyzes methane emissions data collected over two different week-long periods near the Barnett Shale, including top-down (airplane) measurements and bottom up (ground-level) measurements.

Ex. 5 - Deliberative Process

From: Jones, Enesta
Sent: Thursday, December 03, 2015 4:49 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Dennis, Allison <Dennis.Allison@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: RE: FYI tomorrow

It was on POLITICO PRO's calendar. Is the report in line with us?

From: DeLuca, Isabel
Sent: Thursday, December 03, 2015 4:48 PM
To: Jones, Enesta <Jones.Enesta@epa.gov>; Dennis, Allison <Dennis.Allison@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: RE: FYI tomorrow

Yep, we met with them today. I'll send you a statement we can use tomorrow (it will probably be the same one we always use). Was this a press advisory?

From: Jones, Enesta
Sent: Thursday, December 03, 2015 4:35 PM
To: Dennis, Allison <Dennis.Allison@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: FYI tomorrow

12/07/15

Teleconference on new oil and gas methane emissions report

EDF experts will hold a teleconference to discuss the findings of a paper introducing a new method for measuring oil and gas methane emissions. To participate, please dial Ex. 6 - Personal Privacy Conference ID Ex. 6 - Personal Privacy

Participants:

Steve Hamburg, Chief Scientist, Environmental Defense Fund

Mark Brownstein, Vice President, Climate and Energy Program, Environmental Defense Fund

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Tue 11/1/2016 3:08:51 PM
Subject: FW: Joint Comments on EPA's Second Draft Information Collection Request
Joint Environmental Comments 10 31.pdf

FYI…

From: Peter Zalzal [mailto:pzalzal@edf.org]
Sent: Tuesday, November 01, 2016 11:08 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Cc: Vickie Patton <vpatton@edf.org>; Tomas Carbonell <tcarbonell@edf.org>; Alice Henderson <ahenderson@edf.org>
Subject: Joint Comments on EPA's Second Draft Information Collection Request

Dear EPA Officials:

We have attached comments filed last night on EPA's second draft Oil and Natural Gas Sector Information Collection Request. The comments were filed on behalf of Environmental Defense Fund, Natural Resources Defense Council, Sierra Club, Clean Air Task Force, Environmental Integrity Project, and Earthjustice and provide support for several of the improvements the agency has made between the first and second draft ICR. We also respectfully urge the agency to strengthen the ICR in additional, discrete ways, including:

•□□□□□□□□ Ensuring information collected concerning equipment leaks reflects the context and granularity necessary for meaningful analysis and use in designing future rulemakings. In particular, we recommend clarifying the history and scope of leak detection and repair practices so as to better discern whether reported data reflect controlled or uncontrolled emissions.

•□□□□□□□□ Assessing the current use of zero-emitting control devices and the feasibility of establishing standards that broadly deploy these technologies. In particular, we recommend that the agency collect information on the availability of onsite electricity in the Part 1 survey, and better characterize the availability and use of zero-emitting pumps and controllers in the Part 2 survey.

•□□□□□□□□ Ensuring that facilities in the gathering & boosting segment are included in the Part 1 survey assessment, given that these facilities are associated with substantial emissions.

•□□□□□□□□ Ensuring requests related to costs incurred by operators include guidance for calculation, so that the data collected is rigorous, comparable, and reflects a range of potential future resource prices.

Thank you for your consideration of these comments.

Best wishes,

Peter Zalzal

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

To: Goffman, Joseph[Goffman.Joseph@epa.gov]
Cc: Vahlsing, Candace M. EOP/WHO Ex. 6 - Personal Privacy Irving, Bill[Irving.Bill@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Utech, Dan G. EOP/WHO Ex. 6 - Personal Privacy ; DeLuca, Isabel[DeLuca.Isabel@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Fri 4/15/2016 10:52:49 AM
Subject: Re: US Inventory

We will draft something this AM

Paul Gunning
202-251-1436
Sent from my iPhone

> On Apr 14, 2016, at 8:29 PM, Goffman, Joseph <Goffman.Joseph@epa.gov> wrote:
>
> Ex. 5 - Deliberative Process
>
> - Joseph Goffman
> Sent from my iPhone
>
>> On Apr 14, 2016, at 8:09 PM, Vahlsing, Candace M. EOP/WHO Ex. 6 - Personal Privacy wrote:
>>
>> Hi Paul and Joe,
>>
>> We're in the process of providing comments through comms channels on the inventory Q and A.
>>

Ex. 5 - Deliberative Process

>>
>>
>>
>> -----Original Message-----
>> From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]
>> Sent: Monday, April 11, 2016 2:59 PM
>> To: Vahlsing, Candace M. EOP/WHO Ex. 6 - Personal Privacy Goffman, Joseph <Goffman.Joseph@epa.gov>
>> Cc: Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>
>> Subject: RE: US Inventory
>>
>> Candace
>>

Ex. 5 - Deliberative Process

>>
>> Let me know if you need anything else.
>>
>> Paul
>>
>> -----Original Message-----
>> From: Vahlsing, Candace M. EOP/WHO Ex. 6 - Personal Privacy
>> Sent: Monday, April 11, 2016 1:38 PM
>> To: Gunning, Paul <Gunning.Paul@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>
>> Subject: RE: US Inventory
>>

Ex. 5 - Deliberative Process

>>

To: Irving, Bill[Irving.Bill@epa.gov]
Cc: Clavin, Christopher T[cclavin@ida.org]; Behrens, Jonathan R "Jonny" (UNC)[jbehrens@ida.org]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis MW
Sent: Fri 8/26/2016 6:37:56 PM
Subject: RE: Workshop on federal priorities on R&D for energy sector methane

Hi Bill,

Sorry we keep missing each other via phone. Since I'm out Monday to Wednesday next week, I figured I'd follow up via e-mail to get your feedback on the potential workshop dates. I am copying two of my STPI colleagues, Chris and Jonny, who can answer any questions you have next week while I'm out.

We would like to try to ensure that you and the GHGI can have a presenting role and attend the full 1.5 day workshop. We intend to schedule the workshop during the 3-week period from September 26-October 14 (less the October 10th holiday).

Can you provide a general sense of your and Melissa's availability to attend the workshop during this 3-wk period? We would like to consider scheduling constraints for key participants to the extent feasible.

We're hoping to lock down the date next week, and are planning to share preliminary agenda drafts shortly thereafter. If you have questions, or would like more information, please let us know.

Thanks,

Alexis

Alexis McKittrick, Ph.D.

Research Staff Member

Institute for Defense Analyses

Science and Technology Policy Institute

1899 Pennsylvania Ave. NW, Suite 520

Washington, DC 20006

(202) 419-5412

amckittr@ida.org

From: Bradbury, James [mailto:James.Bradbury@Hq.Doe.Gov]
Sent: Friday, August 19, 2016 1:45 PM
To: Irving, Bill <Irving.Bill@epa.gov>
Cc: Clavin, Christopher T <cclavin@ida.org>; Weitz, Melissa <Weitz.Melissa@epa.gov>
Subject: Workshop on federal priorities on R&D for energy sector methane

Dear Bill,

Greetings. I hope this finds you doing well.

The DOE Office of Energy Policy and Systems Analysis (EPSA) is convening a workshop on federal priorities for research on energy sector methane emissions. The goal of the workshop is to identify strategic research priorities to improve sensing and quantification of methane emissions from the oil & gas industry with input from key stakeholders, including Federal and state government officials, industry, researchers and technology vendors. The workshop proceedings aim to increase understanding of current research and technology development activities, identify challenges and opportunities to improve how we monitor, detect, and quantify oil and gas sector methane emissions, and identify how advances in oil and gas sector methane measurement technology can support industry best practices and U.S. climate goals.

Given EPA's interest and past involvement in related efforts, I would like to invite you to attend and present at this workshop. Of course, we would also welcome participation from Paul Gunning, if he is available and interested. The workshop will be held at the end of September or early October. EPSA is working with the Science and Technology Policy Institute (STPI) to plan and coordinate this workshop (Chris Clavin is cc'd). Researchers from STPI from be following up with you in the upcoming week to discuss your potential participation and interest.

Thank you for your interest and we look forward to your participation.

Very best regards,

James

To: 'pshepson@nsf.gov'[pshepson@nsf.gov]; 'kenneth.w.jucks@nasa.gov'[kenneth.w.jucks@nasa.gov]; james.whetstone@nist.gov[james.whetstone@nist.gov]; 'james.h.butler@noaa.gov'[james.h.butler@noaa.gov]; 'lori.bruhwiler@noaa.gov'[lori.bruhwiler@noaa.gov]; Winner, Darrell[Winner.Darrell@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; 'Neelesh.Nerurkar@hq.doe.gov'[Neelesh.Nerurkar@hq.doe.gov]; 'Christopher.Freitas@hq.doe.gov'[Christopher.Freitas@hq.doe.gov]; 'pwarwick@usgs.gov'[pwarwick@usgs.gov]; 'reed@usgs.gov'[reed@usgs.gov]; 'ateitz@blm.gov'[ateitz@blm.gov]; 'Jared.Ciferno@NETL.DOE.GOV'[Jared.Ciferno@NETL.DOE.GOV]; 'eric.smistad@netl.doe.gov'[eric.smistad@netl.doe.gov]; 'James.Bradbury@Hq.Doe.Gov'[James.Bradbury@Hq.Doe.Gov]; 'Joseph.King@hq.doe.gov'[Joseph.King@hq.doe.gov]; 'Marlen.Eve@ARS.USDA.GOV'[Marlen.Eve@ARS.USDA.GOV]; 'mbaranski@oce.usda.gov'[mbaranski@oce.usda.gov]; 'robert.w.smith@dot.gov'[robert.w.smith@dot.gov];

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy Benjamin DeAngelo[bdeangelo@usgcrp.gov]; mkuperberg@usgcrp.gov[mkuperberg@usgcrp.gov]; Wuebbles, Donald J. EOP/OSTP **Ex. 6 - Personal Privacy**

Cc: Green, Ellen K[egreen@ida.org]; Clavin, Christopher T[cclavin@ida.org]; Abrahams, Leslie S[labraham@ida.org]; Ressler, Anne E[aressler@ida.org]

From: McKittrick, Alexis MW

Sent: Tue 11/1/2016 1:12:36 PM

Subject: MMCWG - RSVP for 11/2 meeting by Noon today

All,

If you are planning to come in-person to the first MMCWG meeting this Wednesday, November 2nd, from 1PM to 3PM eastern time, please note that you **must complete the following RSVP form by Noon today**: https://events.whitehouse.gov/form?rid=9FMPMR4HP6.

If you are not planning to attend in-person, then please use the call-in number provided in the calendar invitation for the meeting. Meeting materials will be provided electronically ahead of the meeting for those who wish to call-in. Please let me know if you have any immediate questions.

Regards,

Alexis

Alexis McKittrick, Ph.D.

Research Staff Member

Institute for Defense Analyses

Science and Technology Policy Institute

1899 Pennsylvania Ave. NW, Suite 520

Washington, DC 20006

(202) 419-5412

From: McKittrick, Alexis MW
Sent: Monday, October 24, 2016 12:38 PM
Subject: MMCWG - first meeting & background

Greetings,

You are receiving this message because you have been nominated to join the to the Methane Monitoring and Characterization Working Group (MMCWG) by your agency. The MMCWG is a new working group under the Committee on Environment, Natural Resources and Sustainability (CENRS) within the White House National Science and Technology Council (NSTC). If you are not familiar with the NSTC or its role within the White House, you can find more information here: https://www.whitehouse.gov/administration/eop/ostp/nstc.

The MMCWG aims to facilitate a government-wide approach to identifying and prioritizing uncharacteristically high methane emission sources in the U.S. and assist Federal agencies in identifying technology and solutions to enable mitigation of these methane sources. The signed MMCWG charter is attached for reference. Please review it ahead of our first meeting. The current MMCWG membership list is also attached.

We plan to have our first face-to-face meeting of this group on **Wednesday, November 2nd, from 1PM to 3PM eastern time**. A calendar invite for this time will follow this e-mail. The meeting will take place in room 230A of the White House Eisenhower Executive Office Building. If you plan to join in-person, please complete the following RSVP form for admittance into the building by this Friday, 10/28: https://events.whitehouse.gov/form?rid=9FMPMR4HP6. If you are not local to the DC area, then a call-in number will be provided on the calendar invite for your use.

There will be more information forthcoming on the agenda for this meeting and the MMCWG work plan. In the meantime, below are several background documents and references. If you are not already familiar with these, please review them ahead of our first meeting.

- 2014 White House Climate Action Plan: Strategy to Reduce Methane Emissions - This strategy document has driven many of the methane-focused initiatives within the Federal government in the past few years and this working group will be supporting the goals of the strategy. (https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf)

- EPA Greenhouse Gas Inventory (GHGI) Executive Summary – The EPA GHGI tracks total annual U.S. emissions by source, sector, and greenhouse gas going back to 1990 and is submitted annually by the U.S. to the United Nations in accordance with the Framework Convention on Climate Change. Please see pages ES-13 and ES-14 of the GHGI Executive Summary for background on methane in the GHGI: https://www.epa.gov/sites/production/files/2016-04/documents/us-ghg-inventory-2016-chapter-executive-summary.pdf. Additionally, for more information on the EPA GHGI or additional portions of the most recent report, please see: https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014.

- IDA Science and Technology Policy Institute (STPI) oil & gas research memo – STPI memo reviewing recent Federal and NGO methane measurement and monitoring programs and initiatives covering the oil & gas sector: https://www.ida.org/idamedia/Corporate/Files/Publications/STPIPubs/2016/D-8029.ashx

Please let me know if you have any immediate questions ahead of next week's meeting.

Regards,

Alexis

Alexis McKittrick, Ph.D.

Research Staff Member

Institute for Defense Analyses

Science and Technology Policy Institute

1899 Pennsylvania Ave. NW, Suite 520

Washington, DC 20006

(202) 419-5412

amckittr@ida.org

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
Cc: Weitz, Melissa[Weitz.Melissa@epa.gov]; Blackman, Jerome[Blackman.Jerome@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
From: McKittrick, Alexis
Sent: Thur 11/12/2015 4:38:56 PM
Subject: RE: Teresa Marks' TPs for Gas STAR workshop -- Bruce's edits and help from OAP
Marks TPs_Background for Pittsburgh BMoore edits 11-12 AM.docx

Suzie,

My suggested edits are attached. Let me know if you have any questions!

Thanks,

Alexis

From: Waltzer, Suzanne
Sent: Thursday, November 12, 2015 10:49 AM
To: Moore, Bruce <Moore.Bruce@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>
Cc: Bylin, Carey <Bylin.Carey@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Blackman, Jerome <Blackman.Jerome@epa.gov>
Subject: RE: Teresa Marks' TPs for Gas STAR workshop -- Bruce's edits and help from OAP
Importance: High

Hi Bruce,

I am looping in Jerome who has been leading this for GasSTAR. We will take a look and get back to you shortly.

Melissa and Alexis, please send any edits you have on the GHG data TPs to me and Jerome. We can consolidate for CCD.

Thanks!

Suzie

From: Moore, Bruce
Sent: Thursday, November 12, 2015 10:33 AM
To: Davis, Alison <Davis.Alison@epa.gov>
Cc: Bylin, Carey <Bylin.Carey@epa.gov>; McKittrick, Alexis <McKittrick.Alexis@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>
Subject: Teresa Marks' TPs for Gas STAR workshop -- Bruce's edits and help from OAP
Importance: High

Alison and I need to respond to Mary by 1:00 today. I edited the regulatory part of AIR but need OAP to look at the voluntary piece and the GHG piece.

Please get your edits to Alison and me ASAP. Thank you.

Bruce

Bruce Moore

Senior Technical Advisor - Oil & Natural Gas Sector

Office of Air Quality Planning and Standards

U.S. Environmental Protection Agency

Research Triangle Park, NC 27711

(919) 541-5460

moore.bruce@epa.gov

For information, visit: *www.epa.gov/airquality/oilandgas*

To: DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
Cc: Franklin, Pamela[Franklin.Pamela@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
From: Gunning, Paul
Sent: Fri 9/25/2015 1:12:27 PM
Subject: FW: On eve of methane hearings, oil industry touts GHG investments

FYI.....

From: Gunning, Paul
Sent: Friday, September 25, 2015 9:11 AM
To: 'Vahlsing, Candace'; Goffman, Joseph; Dunham, Sarah
Cc: Utech, Dan G.
Subject: RE: On eve of methane hearings, oil industry touts GHG investments

Candace – we will take a look and get back to you. In recent years (since 2011) there has been a sharp decline in HF emissions. This is clear in the GHGRP (Subpart W) data and is likely driven by the success of the 2012 NSPS and not voluntary action.

Paul

From: Vahlsing, Candace **Ex. 6 - Personal Privacy**
Sent: Thursday, September 24, 2015 8:44 PM
To: Goffman, Joseph; Dunham, Sarah; Gunning, Paul
Cc: Utech, Dan G.
Subject: FW: On eve of methane hearings, oil industry touts GHG investments

Have you guys run these numbers so see if they check out? What portion of this is due to the 2012 NSPS.

Gerard pointed to EPA's own figures highlighting a 79 percent reduction in methane from hydraulically fractured wells from 2005 and a 38 percent reduction from total natural gas production from 2005 to 2013 as proof that voluntary efforts were working.

From: EnergyGuardian [mailto:energy@email.energyguardian.net]
Sent: Wednesday, September 23, 2015 7:13 AM
To: Vahlsing, Candace
Subject: On eve of methane hearings, oil industry touts GHG investments

Advertise | Contact

Energy and environment headlines for the morning of Wednesday, September 23, 2015

On eve of methane hearings, oil industry touts GHG investments

By Kevin Rogers

The oil industry is seeking to highlight its investments in greenhouse gas emissions reductions as the Environmental Protection Agency begins soliciting public input on regulations to cut methane emissions by as much as 45 percent over the next decade.

In a report released Tuesday, the American Petroleum Institute touted $90 billion in total industry GHG mitigation investment from 2000 to 2014. The investments included renewable energy technology, efficiency upgrades, methane and carbon capture efforts and increased use of cleaner-burning fuels.

The report, conducted by T2 and Associates, based its findings off of industry documents, federal reports and other public data. According to the findings, the oil and gas industry was only bested by the federal government, which invested $110.3 billion over the 14-year period.

The report comes as EPA is set to kick off three hearings on its rule to reduce methane, a short-lived but potent greenhouse gas, at new and modified oil and gas infrastructure. The rules would also put new limits on sector emissions of volatile organic compounds, which are chemicals emissions that pose cardiovascular and cancer risks.

EPA has hearings planned in Denver and Dallas this week, and Pittsburgh next Tuesday.

Though API President Jack Gerard said the report wasn't intended to coincide with EPA's public hearings, he told reporters on a call that it would be part of API's case against the regulations.

"We will be testifying on some of the data we've talked about today," he said. "There's something very important taking place today, and it goes right to the heart of those hearings. It's the policy the administration is pushing, which we believe are counterproductive to our ability to not only reduce emissions but to create high-paying jobs to benefit all consumers."

Gerard pointed to EPA's own figures highlighting a 79 percent reduction in methane from hydraulically fractured wells from 2005 and a 38 percent reduction from total natural gas production from 2005 to 2013 as proof that voluntary efforts were working.

EPA, in a statement, defended the proposal as a necessity to combat climate change and protect health.

"EPA has proposed a suite of commonsense requirements that together will help address climate change, reduce air pollution that harms public health, and provide greater certainty about Clean Air Act permitting requirements for the oil and natural gas industry," the agency said.

Gerard, however, expressed doubt that the agency was properly corresponding with the Bureau of Land Management, which is moving forward on its own proposal to reducing natural gas flaring from federal oil and gas production sites. He said the agencies could end up putting out conflicting regulations that would only reduce certainty for the industry.

"We wish we had more confidence that the government is talking to itself, that the left hand knows what the right had is doing, but to date we don't have that confidence," he said. "So one of the things we will be articulating as part of this hearing process is that we hope the federal government is talking to its sister entities."

API's calls for more voluntary efforts to reduce methane drew criticism from Lena Moffitt, director of the Sierra Club's Dirty Fuels campaign. While she hadn't reviewed the report, she said the arguments API made were a tired effort to evade the new regulations.

"It's a pretty predictable response from the American Petroleum Institute in advance of the hearing, and it doesn't jive with the fact that voluntary measures just aren't enough," she said.

"While there have been a few years in the past where emissions from the sector may have decreased, that very well could be from regulations that EPA issued in 2012," she continued, referencing the agency's rules to limit emissions of volatile organic compounds.

Moffitt will represent the Sierra Club at the Pittsburgh meeting, though she said the group would be out in "full force" on Wednesday in Denver and Dallas. The group plans a rally in Denver alongside Native American groups and other environmentalist organizations.

"We see this as a key opportunity and we'll be out in full force to support them and urge the EPA to go further," she said. "We think it's clear that the magnitude of the problem in terms of methane emissions is huge and absolutely warrants these commonsense protections from EPA."

Quick Links

Climate change high on agenda as Pope, Obama meet in Oval Office

Judge overturns New York City ban on plastic foam containers

Investment treaty between China and US key business goal

Sponsored Links

Lawsuits filed over VW emissions scandal

Exposing vehicle emissions problems not new for university

Judge denies Peabody Energy's request to strike protest song

Pipe replacement aids in GHG emissions reduction: Study

Climate activists hope for papal boost

Quake study getting up and running in Texas

Declining use of coal could help China hit its climate goals earlier

More big corporations to go all-renewable

NY gel fracking project to get October hearing

Oil gains on stockpile drop

Further trimming at Total as oil prices drag

California net metering cap worries San Diego solar firms

Weatherford ditches fundraising plans after stock plunge

Climate 'doubters': AP Stylebook reference fosters debate

Upcoming Events

Climate change high on agenda as Pope, Obama meet in Oval Office

By Nancy Benac and Nicole Winfield

WASHINGTON (AP) — In a moment weaving strands of politics, religion and emotion, Pope Francis and President Barack Obama are set to meet in the grandeur of the Oval Office to advance causes -- like the fight against climate change -- that are dear to them both.

Eagerly watching will be a nation that cannot get enough of Francis, a humble man rejuvenating American Catholicism while giving heartburn to its

conservatives.

The pope was to deliver his opening remarks to the United States on the White House lawn on Wednesday morning and speak to America's bishops later. That speech was highly anticipated, given a certain disconnect between Francis' focus on social justice and a merciful church and the culture wars that America's bishops have waged in recent years over abortion and gay rights.

From the instant the white-robed and broad-grinned Francis landed in the U.S. on Tuesday, doffed his skullcap in the breeze and got into a modest, charcoal-gray Fiat, his visit electrified wonky Washington, which can be jaded about the comings and goings of world figures.

Judge overturns New York City ban on plastic foam containers

By Jake Pearson

NEW YORK (AP) — A state judge has overturned New York City's ban on plastic foam containers, finding the nearly 30,000 tons of dirty meat trays and to-go cups now sent to landfills can be recycled in a cost-effective way, according to a decision made public Tuesday.

The ban went into effect July 1 after lawmakers voted in 2013 to approve it unless a yearlong inquiry found the foam could be effectively recycled. An industry group of manufacturers, recyclers and restaurant-owners then sued, arguing that the ban was based on politics, not policy, and that recycling was feasible.

The environmental initiative was spearheaded by former Mayor Michael Bloomberg, an independent, and supported by current Mayor Bill de Blasio, a Democrat.

But state Supreme Court Judge Margaret Chan ruled that Department of Sanitation Commissioner Katheryn Garcia didn't properly take into account industry estimates of the market and recycling opportunities generated during the yearlong review period when she decided that plastic foam couldn't be recycled economically and in an environmentally friendly way.

Investment treaty between China and US key

business goal

By Gene Johnson and Phuong Le

SEATTLE (AP) — When Chinese President Xi Jinping addresses a meeting of some of the top names in Chinese and American business Wednesday, they may be most interested what he says about progress toward a treaty between the nations that would provide a framework for broader investment in each other's economy.

Apple Chief Executive Tim Cook, Microsoft's Satya Nadella, Amazon's Jeff Bezos, investor Warren Buffett and Jack Ma of Chinese e-commerce giant Alibaba are among the 30 top executives attending a closed-door discussion being moderated by former U.S. Treasury Secretary Henry Paulson, who has advocated for such a treaty. All of the American CEOs participating signed a letter to Xi and U.S. President Barack Obama urging them to support an agreement.

Bilateral investment treaties provide the rules of the road for companies doing business in other countries, and can help ensure that the rights of foreign investors are protected and that foreign companies operate on a level playing field with domestic ones. An agreement with China would open up more of that nation's massive market to American companies, provide clearer rules for Chinese investment in the U.S., and create jobs on both sides, supporters say.

Such treaties "can be a powerful catalyst for more economic growth," Evan Feigenbaum, vice chairman of the Paulson Institute, which is co-hosting Wednesday's meeting, said Tuesday.

Lawsuits filed over VW emissions scandal

By The Associated Press

BERLIN (AP) — Several law firms are filing class action lawsuits against Volkswagen over its admission that it used special software to get its cars to pass U.S. emissions tests.

Clifford Law Offices, based in Chicago, said it is filing a complaint to the Northern District of Illinois alleging that VW engaged in deceptive and fraudulent business practices.

Meanwhile, law firm Sutts, Strosberg LLP, based in Windsor, Canada, was reported in local media to have filed a class action lawsuit seeking $1 billion in

damages and $100 million in punitive damages.

In Germany, the head of the main industry lobby organization is calling for "transparency, openness and speed" in getting to the bottom of the Volkswagen emissions scandal.

Exposing vehicle emissions problems not new for university

By John Raby

CHARLESTON, W.Va. (AP) — A West Virginia University research unit that helped expose Volkswagen AG's smog-test scandal was involved in another emissions test two decades ago with similar results involving polluting trucks.

In October 1998, the WVU Center for Alternative Fuels, Engines and Emissions discovered that more than 1.1 million trucks whose heavy-duty diesel engines had passed emission inspections at the factory were polluting much more than allowed because of devices designed to overcome emissions controls, Dan Carder, interim director of the unit, told The Associated Press on Tuesday.

The Justice Department publicly announced the findings, after which several manufacturers agreed to a $1 billion settlement.

In the Volkswagen case, the WVU research team was hired by nonprofit pollution control advocate International Council on Clean Transportation to measure emissions on three cars: a 2012 VW Jetta, a 2013 VW Passat and a BMW X5 SUV.

A message from America's Natural Gas Alliance

Clean is Powerful. Natural gas helps Georgia Power's plant generate electricity with 50% fewer emissions. Think about it.

Learn more at >www.thinkaboutit.org<.

Judge denies Peabody Energy's request to strike protest song

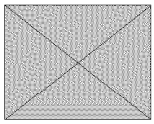
By Ben Neary

CHEYENNE, Wyo. (AP) — A federal judge in Wyoming says it's tough luck that the world's largest private coal company doesn't dig a 1970s-era protest song.

U.S. Magistrate Kelly Rankin in Cheyenne rejected a request by Peabody Energy Corp. to strike lyrics from singer-songwriter John Prine's "Paradise" from a federal lawsuit against the company. Prine's 1971 song criticized Peabody's mining activities in Kentucky.

Environmental activists Thomas Asprey and Leslie Glustrom, of Boulder, Colorado, claim in their lawsuit that the company violated their civil rights by having them arrested outside a 2013 shareholders meeting in Gillette. The company denies their claims.

Sponsored Links



Week in Review – House Panel Moves To Lift Export Ban

Congress Gears up for Papal Visit.

Click here to read the brief

Pipe replacement aids in GHG emissions reduction: Study

A study led by Stanford University researchers concluded cities with programs to replace older natural gas pipelines have 90 percent fewer leaks and are reducing methane emissions, Platts reports.

Climate activists hope for papal boost

Activists and lawmakers pushing the fight against climate change –- including Tom Steyer and Rep. Raul Grijalva, D-Ariz. -- hope it gains momentum from Pope Francis' speech to Congress Thursday, The Hill reports

Quake study getting up and running in Texas

The multimillion dollar TexNet Seismic Monitoring Program, authorized and funded by Texas lawmakers to examine any links between earthquakes and

disposal wells in the state, is gearing up its operations, Rigzone reports.

Declining use of coal could help China hit its climate goals earlier

The decline in China's coal demand and coal industry could help the country meet its climate change emission reduction pledges earlier than the government has promised, The New York Times reports.

More big corporations to go all-renewable

Firms including Proctor & Gamble, Starbucks, Walmart and Goldman Sachs are expected to join the global RE100 coalition Wednesday and pledge to power their operations entirely through renewable energy, The New York Times reports.

NY gel fracking project to get October hearing

A community in New York has set an October public hearing to examine the Snyder Farm Group project, which is proposing to get around the state ban on hydraulic fracturing by using a gel instead of water in the natural gas drilling process, the Ithaca Times reports.

Oil gains on stockpile drop

An American Petroleum Institute report of a 3.7 million barrel drop in U.S. crude stockpiles last week helped boost oil prices early Wednesday. U.S. benchmark crude rose 50 cents to $46.86 a barrel in electronic trading on the Nymex, while in London Brent jumped 55 cents to $49.63, Reuters reports.

Further trimming at Total as oil prices drag

French oil giant Total SA said Wednesday it will cut costs again in the face of continuing low oil and gas prices but plans to maintain its dividend, Reuters reports.

California net metering cap worries San Diego solar firms

Trouble seeing this email? Click here.

Rooftop solar firms in San Diego are concerned that the California Public Utilities Commission won't come up with a new tariff structure in time for them to avoid hitting the grid's 5 percent cap on solar generating that's in place under the current system, The San Diego Union-Tribune reports.

Weatherford ditches fundraising plans after stock plunge

Oil field services firm Weatherford has abandoned a plan to raise $1 billion through debt and stock offerings after a drastic fall in its share price, FuelFix reports.

Climate 'doubters': AP Stylebook reference fosters debate

AP's decision use the phrase "climate change doubters" to refer to those questioning the link between human activity and global warming – announced in a blogpost Tuesday – has generated an instant social media debate, National Journal reports.

Upcoming Events

- Sep. 23, Dallas: The Environmental Protection Agency to hold a hearing on its proposal to cut methane emissions from new and modified oil and gas systems. 11:00 am , 1500 Marilla Street Dallas, Texas 75201
- Sep. 23, Denver: The Environmental Protection Agency to hold a hearing on its proposed rule to cut methane emissions at new and modified oil and natural gas sites. 11:00 am , 1595 Wynkoop Street, Denver, CO 80202.
- Sep. 23, Washington: The Senate Homeland Security and Governmental Affairs Committee to hold a hearing to examine the use of agency regulatory guidances in rulemaking. 11:00 am , Dirksen 342.
- Sep. 23, Washington: President Barack Obama to hold a bilateral meeting with Pope Francis. 10:15 am , White House.

Trouble seeing this email? Click here.

To ensure you receive uninterrupted delivery, please add the address

energy@email.energyguardian.net to your email address book.

This email was sent to CVahlsing@who.eop.gov by energy@washingtonguardian.net
To unsubscribe from this newsletter please Click Here

© 2015, Packard Media Group LLC, all rights reserved | P.O. Box 9977 | McLean, VA 22102
Privacy Policy

To: DeLuca, Isabel[DeLuca.Isabel@epa.gov]
Cc: Fawcett, Allen[Fawcett.Allen@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]
From: Gunning, Paul
Sent: Thur 6/2/2016 4:40:34 PM
Subject: RE: ONE Future/ICF Methane Emissions Report

Thanks Isabel.

From: DeLuca, Isabel
Sent: Thursday, June 02, 2016 12:37 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Fawcett, Allen <Fawcett.Allen@epa.gov>; Irving, Bill <Irving.Bill@epa.gov>; Weitz, Melissa <Weitz.Melissa@epa.gov>; Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>; DeFigueiredo, Mark <DeFigueiredo.Mark@epa.gov>; Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>
Subject: FW: ONE Future/ICF Methane Emissions Report

FYI, here's the communications One Future is dong around their new report, out today, on methane reduction potential from the natural gas sector-- see links in the email below. (And thanks to Jerome for sharing.)

Clip from their website:

The analysis estimates reductions for each segment of the natural gas industry. The MAC analysis identified reductions totaling 88.3 Bcf/year of methane at a total annualized cost of $296 million or $3.35/Mcf of methane reduced for all segments except the distribution segment. The reductions for the distribution segment were calculated separately, and total 8.9 Bcf. An additional 12.3 Bcf of reductions were projected for the application of reduced emission completions for gas wells with hydraulic fracturing. This was not required in 2012 but is now legally required, and was therefore included as a reduction from the baseline but not as part of the MAC analysis. This brings the total industry?wide methane reduction to 109.5 Bcf from the 2012 baseline emissions.

Ex. 5 - Deliberative Process

From: Fiji George [mailto:Fiji_George@SWN.COM]
Sent: Thursday, June 02, 2016 12:10 PM
Subject: ONE Future/ICF Methane Emissions Report

Dear All,

In the spirit of advancing the science related to characterization of methane emissions and abatement opportunities from the natural gas sector, ONE Future is pleased to release this study titled "Economic Analysis of Methane Emission Reduction Potential from Natural Gas Systems" developed by ICF International (ICF).

The hyperlinks to the study, press release and twitter handle are below:

Study: http://www.onefuture.us/study-icf-analysis-methane-emission-reduction-potential-nat-gas-systems/

Press release: http://www.onefuture.us/press-release-one-future-statement-new-icf-study/

Twitter handle: https://twitter.com/ONEFutureEnergy

Thanks,

Fiji George
Director, Strategic Solutions

Tel: 832-796-2891
Mobile: 281.770.1744
Email: fiji.george@swn.com

Notice: This e-mail may contain privileged and/or confidential information and is intended only for the addressee. If you are not the addressee or the person responsible for delivering it to the addressee, you may not copy or distribute this communication to anyone else. If you received this communication in error, please notify us immediately by telephone or return e-mail and promptly delete the original message from your system.

To: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: Gunning, Paul
Sent: Wed 11/25/2015 2:14:26 PM
Subject: FW: Alberta Climate Strategy - Supported by Al Gore and the Canadian Association of Petroleum Producers
climate-leadership-report-to-minister.pdf

FYI

From: Harvey, Reid
Sent: Monday, November 23, 2015 2:28 PM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Subject: FW: Alberta Climate Strategy - Supported by Al Gore and the Canadian Association of Petroleum Producers

From: Haeuber, Richard
Sent: Monday, November 23, 2015 11:56 AM
To: Harvey, Reid <Harvey.Reid@epa.gov>
Cc: Stenhouse, Jeb <Stenhouse.Jeb@epa.gov>
Subject: FW: Alberta Climate Strategy - Supported by Al Gore and the Canadian Association of Petroleum Producers

FYI

From: Teel, Pam
Sent: Monday, November 23, 2015 11:14 AM
To: Shoaff, John; Haeuber, Richard; LeFranc, Maurice; Kasman, Mark; Nishida, Jane
Cc: Keating, Terry; Correa, Sylvia; Almodovar, Lisa
Subject: FW: Alberta Climate Strategy - Supported by Al Gore and the Canadian Association of Petroleum Producers

FYI. If anyone would like for the Alberta Representative at the Canadian Embassy to brief on the details, please let me know to arrange a meeting.

Thanks,

Pam

****

Pam Teel, Program Manager for Canada

Office of International and Tribal Affairs/North America Programs

U.S. Environmental Protection Agency

Tel. 202-564-6424

http://www.epa.gov/

http://www2.epa.gov/international-cooperation/epa-efforts-north-america

From: Liam.Stone@international.gc.ca [mailto:Liam.Stone@international.gc.ca]
Sent: Monday, November 23, 2015 11:03 AM
To: Teel, Pam <Teel.Pam@epa.gov>
Subject: Alberta Climate Strategy - Supported by Al Gore and the Canadian Assocation of Petroleum Producers

Good morning Pam,

Yesterday, the Government of Alberta released a new Climate Change Strategy for the province. Policy highlights are below and the full plan is attached.

Notable for U.S. audiences, the plan adopts:

1) Economy-wide carbon pricing, covering 78 - 90% of provincial emissions. The carbon price will be $30/tonne by 2018.

2) An output-based credit system to protect trade exposed emitters similar to the system in California.

3) A methane emissions target similar to the EPA that will lead to regulation of new and existing oil and gas facilities (including putting a carbon price on flaring).

4) A plan to move Alberta from the most coal-reliant electricity system in Canada to off coal by 2030 with renewables accounting for approximately 2/3 of replacement generation.

5) A hard cap on oil sands emissions.

The plan received statements of support from NRDC, Shell Oil, EDF, Suncor Energy, the Pembina Institute, Cenovus Energy, World Resources Institute, Canadian Natural Resources Limited, Al Gore, and Canadian Association of Petroleum Producers.

I would be happy to come over and discuss the details if you are interested. Please pass this along to anyone in EPA you think may be interested.

Regards,

Liam

CLIMATE LEADERSHIP

Climate Leadership Plan

A summary of Alberta's new policy response to climate change.

Alberta is developing a new strategy on climate change based on recommendations put forward by the Climate Change Advisory Panel. Details of the final strategy are being developed, but there are 4 key areas that the Alberta government is moving forward on:

- Phasing out coal-generated electricity and developing more renewable energy
- Implementing a new carbon price on greenhouse gas pollution
- A legislated oilsands emission limit
- Employing a new methane emission reduction plan

Coal and electricity

Pollution from coal-fired sources of electricity will be phased out completely by 2030. In place of coal, cleaner sources of generation (e.g., natural gas, wind, solar, biomass) will meet our power needs.

Greater investment in renewable energy projects over time will help us work towards a cleaner energy future.

Read more about the plan for coal and electricity

Carbon pricing

A key component of Alberta's response to climate change will involve replacing our present emissions intensity carbon pricing program with one that is based on an emissions performance standard.

Alberta's use of a carbon price would cover 78 to 90 per cent of provincial emissions, which would be the highest in Canada.

This new approach is expected to generate sufficient revenue to help fund:

- Provincial efforts to reduce greenhouse gas emissions
- Research and innovation
- Green infrastructure
- Development of renewable energy projects
- An offset of potential cost increases for low- to mid-income Albertans.

Read more about carbon pricing

Capping oil sands emissions

Alberta will transition to a $30/tonne carbon price for oil sands facilities to drive towards reduced emissions. A legislated maximum emissions limit of 100Mt in any year, with provisions

for cogeneration and new upgrading capacity, will help drive technological progress and ensure operators have time to develop and implement new technology that takes more carbon emissions out of every barrel and reduces Alberta's overall emissions.

Read more about capping oil sands emissions

Reducing methane emissions

Alberta is targeting a 45 per cent reduction in methane gas emissions from Alberta's oil and gas operations by 2025.

Read more about reducing methane emissions

Liam Stone

Executive Director, Policy

Government of Alberta Washington Office

Embassy of Canada

202-448-6478

To: Ioannis Economou[IEconomou@slb.com]
Cc: Moore, Bruce[Moore.Bruce@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]
From: Gunning, Paul
Sent: Thur 6/30/2016 2:52:58 PM
Subject: Re: EPA regulations

Yani

I am copying Bruce Moore on this email. I am sure he can point you to the right person

Paul

Paul Gunning
202-251-1436
Sent from my iPhone

On Jun 30, 2016, at 10:38 AM, Ioannis Economou <IEconomou@slb.com> wrote:

Schlumberger-Private

Paul,

The person I was put in contact with (Mia Marcia) is currently out of the office. Is there anyone else that can answer those questions (especially number 1)? I was also wondering if it were possible to have a quick phone call with somebody who confirm whether we are understand other aspects of the regulations correctly. Thank you so much, I greatly appreciate this.

Regards,

Yanni

From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]
Sent: Thursday, June 30, 2016 6:54 AM
To: Ioannis Economou <IEconomou@slb.com>
Subject: [Ext] RE: EPA regulations

Yanni – thanks for the email and questions. I understand that you have already been in contact with Bruce Moore down in our RTP office. They are working on your questions and you should hear from them soon.

Best Regards,

Paul

Director, Climate Change Division

Office of Atmospheric Programs

202-343-9736

202-251-1436 (cell)

From: Ioannis Economou [mailto:IEconomou@slb.com]
Sent: Tuesday, June 28, 2016 4:35 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Subject: EPA regulations

Schlumberger-Private

Hi Paul,

I hope this email finds you well. My name is Yanni Economou and I am working at Schlumberger (based in Houston, TX) on a project that explores different methane emissions monitoring technologies. Many of these technologies go hand-in-hand with the new EPA regulations. I found you from a list of people that attended the ARPA-E MONITOR conference, one of the organizations taking a proactive approach on informing the public on methane emissions.

I have read many of the EPA documents, and I am somewhat familiar with the new EPA regulations. One area that I have not been able to find information on is enforcement. I would greatly appreciate it if you can answer the following questions:

1) How does the EPA enforce the detection of methane? Do they perform random checks?

2) I understand that many operators hire third party consultants to check for leaks. For meeting the "2 checkups per year for fugitive emissions" requirement, is it enough for the operator to say that another company to do a checkup, or do they need to file and report data to the EPA?

Regards,

Yanni

To: Franklin, Pamela[Franklin.Pamela@epa.gov]; Bylin, Carey[Bylin.Carey@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Wed 11/25/2015 1:52:48 PM
Subject: FW: O_G table 11 24 15 v3
O_G table 11 24 15 v3.docx

FYI

From: Goffman, Joseph
Sent: Tuesday, November 24, 2015 8:37 PM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: FW: O_G table 11 24 15 v3

From: Goffman, Joseph
Sent: Tuesday, November 24, 2015 7:28 PM
To: Adm13McCarthy, Gina <Adm13McCarthy.Gina@epa.gov>
Cc: McCabe, Janet <McCabe.Janet@epa.gov>
Subject: O_G table 11 24 15 v3

Ex. 5 - Deliberative Process

To: Betsy Natz[bnatz@icac.com]
Cc: Weitz, Melissa[Weitz.Melissa@epa.gov]; Irving, Bill[Irving.Bill@epa.gov]
From: Gunning, Paul
Sent: Fri 7/31/2015 5:52:33 PM
Subject: RE: Follow up information - Methane Webex - July 23, 2015

No problem Betsy. I am copying Melissa Weitz who is our lead on the emissions issues and would be the best person to contact. I have already connected with her and she will be around next week and can pull together the appropriate EPA staff for a call. She will get back to you with a suggested date/time.

Have a great weekend!

Paul

From: Betsy Natz [mailto:bnatz@icac.com]
Sent: Thursday, July 30, 2015 11:16 AM
To: Gunning, Paul
Subject: RE: Follow up information - Methane Webex - July 23, 2015

Paul,

Thanks so much for the information. This is terrific.

A phone conversation would be great. I would like to have the co-chairs of our emissions measurement division on the phone or at least invited as I may not pick up all the nuisances. Is that okay? If so just let me know a good time next week and we will give you a call.

Betsy

Please note our new contact information:
Betsy Natz

Executive Director
Institute of Clean Air Companies

3033 Wilson Blvd., Suite 700

Arlington, VA 22201

571-858-3708 (office)

703-243-8696 (fax)

From: Gunning, Paul [mailto:Gunning.Paul@epa.gov]
Sent: Wednesday, July 29, 2015 12:48 PM
To: Betsy Natz <bnatz@icac.com>
Subject: RE: Follow up information - Methane Webex - July 23, 2015

Betsy,

Great to hear from you. Yes, we are excited about the proposed program. We actually have a ton of info. on our website (http://www.epa.gov/gasstar/methanechallenge/index.html) that I think you will find helpful. We are looking for feedback over the rest of the summer with the plan of finalizing a program framework in the Fall and launching the new program this winter.

As for the measurement issue, it might be easier to have a quick chat by phone. Just give me a call when you have a moment. I will be around most of the afternoon.

Hope all is well.

Paul

Paul M. Gunning

Director, Climate Change Division

U.S. EPA (6207J)

1200 Pennsylvania Avenue

Washington, DC 20460

Direct (202) 343-9736

Fax (202) 343-2202

Cell (202) 251-1436

From: Betsy Natz [mailto:bnatz@icac.com]
Sent: Tuesday, July 28, 2015 7:25 PM
To: Gunning, Paul
Subject: FW: Follow up information - Methane Webex - July 23, 2015

Hi Paul,

I hope you are doing well. I was wondering if you have any new information on timing, etc of the voluntary program for methane control?

Also, I was hoping that you might be able to give me some guidance on what EPA will be or is currently measuring with regard to methane emissions from industrial sources, eg fugitive emissions or other emission point sources? We are trying to get our emissions measurement division together on a webex to discuss and I just thought it would be helpful if I could get your input if you have a minute.

Many thanks,
Betsy

Please note our new contact information:
Betsy Natz

Executive Director
Institute of Clean Air Companies
3033 Wilson Blvd., Suite 700

Arlington, VA 22201

571-858-3708 (office)

703-243-8696 (fax)

Hoping to entice gas companies to curb emissions, EPA proposes methane challenge program

By Sarah Smith [SNL Energy]

The U.S. EPA on July 23 announced plans to launch a voluntary methane challenge program that would recognize oil and gas companies for curbing their methane emissions.

The program would build off the agency's Natural Gas STAR program, which the EPA started in the early 1990s to motivate the oil and gas industry to put in place cost-effective methane emission reduction technologies and practices. And as with the Natural Gas STAR program, networking, sharing of best practices and federal acknowledgement of progress is the carrot to motivate companies to join.

As proposed, the methane challenge would allow companies to choose one or both of two routes to participate. One would be the so-called best management practice option, which would focus on driving near-term, widespread implementation of methane mitigation activities. The other would be an emissions-intensity-focused option through an existing, industry-led program known as One Future. The One Future initiative would require companies to meet program-defined, sector-specific emission intensity targets.

The agency also tentatively offered a third option: an emissions reduction commitment that would let companies have the flexibility to address whatever mix of emission sources they want to tackle. But while the EPA noted that some industry participants favor this approach, the agency has not yet found a practical way of implementing it.

"However, given the interest in this approach that some have expressed, we welcome feedback on more fully developing this option, contingent on addressing the identified challenges and having strong industry support," the EPA noted.

To participate in the methane challenge, a company would have to commit to making meaningful methane reductions across company operations, being transparent and demonstrating progress, and showing continuous improvement over time, the EPA said. The agency proposed that within six months of joining the methane challenge program, each company would have to develop an implementation plan that would include expected progress rates and key milestones, among other things.

Not to be overlooked, the program would also serve as a data-gathering tool that would help EPA get a better sense of the level of methane being emitted by the industry. The need for better data on methane emissions has been an overwhelming focus for industry, academics and environmental groups in recent years, as it became clearer that U.S. natural gas consumption would be expanding in the near term.

The White House in January announced plans to bring oil and gas industry methane emissions down 40% to 45% from 2012 levels by 2025. However, while the EPA does plan to issue rules to govern methane output from the industry, the agency said it also plans to in part rely on voluntary measures such as the ones described in the methane challenge.

The Environmental Defense Fund, which has been a champion of methane emissions data collection and reduction, lauded the idea behind the EPA's proposed program, although Mark Brownstein, vice president in EDF's U.S. energy and climate program, said in a July 24 blog post that the methane challenge will have to be more detailed to be effective.

Specifically, Brownstein encouraged the EPA to set rigorous monitoring and repair requirements; demand that companies set concrete, near-term goals; put more emphasis on management practices; and provide more context around how the agency defines "progress."

"We're glad to see that EPA has taken some significant steps to improve its voluntary methane reduction program for those in the oil and gas industry, and look forward to the proposal being further developed and strengthened as it is finalized," Brownstein wrote.

The American Petroleum Institute said it would work with the EPA on the voluntary methane emissions reduction program, but the trade group was cautious about supporting any measures that imposed regulatory requirements on the industry.

"Even as oil and natural gas production has risen dramatically, methane emissions have fallen, thanks to industry leadership and investment in new technologies," Howard Feldman, API senior director of regulatory and scientific affairs, said in a July 23 statement. "Voluntary programs are the best way to reduce methane emissions from existing sources. Industry is already incentivized to best determine how to cost-effectively reduce emissions and will consider participation in a voluntary program provided it has the necessary flexibility and incentives."

America's Natural Gas Alliance and the Interstate Natural Gas Association of America, too, emphasized the importance of flexibility and collaboration in methane emissions reduction efforts.

INGAA recently developed industry guidelines for directed inspection and maintenance that include routine screening for leaks, followed by cost-effective repair or maintenance at natural gas pipeline facilities, INGAA President and CEO Donald Santa said in a July 24 statement. The association plans work with research groups to create a roadmap for developing technological innovations, including better leak-quantification tools and cost-effective mitigation, Santa said.

Brownstein expressed skepticism about companies' voluntary participation level in emissions reduction efforts.

"We hope that more companies will demonstrate leadership by joining the program, and making and keeping commitments to dramatically reduce emissions," he wrote. "But given the realistic rate of participation (using years of experience as our guide), it's clear that comprehensive standards are necessary to protect the health of all communities, put the brakes on the rate of climate change, and allow gas to play a credible role in transitioning to a low carbon economy."

The EPA has asked for feedback on the methane challenge proposal by Sept. 1, and the agency said it plans to work with companies that are interested in joining the program to make sure the initiative's implementation details meet both EPA's and partner companies' needs. The EPA intends to launch the methane challenge program by the end of 2015.

To: Weitz, Melissa[Weitz.Melissa@epa.gov]; Ragnauth, Shaun[Ragnauth.Shaun@epa.gov]; Alsalam, Jameel[Alsalam.Jameel@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]
Cc: Irving, Bill[Irving.Bill@epa.gov]; Banks, Julius[Banks.Julius@epa.gov]; Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Thur 6/2/2016 1:18:18 PM
Subject: FW: ONE Future/ICF report (Embargoed 10:30A ET)
One%20Future%20MAC%20Final%206-1%20Embargo.pdf

-----Original Message-----
From: Franklin, Pamela
Sent: Thursday, June 02, 2016 9:13 AM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Pryor, Justin <Pryor.Justin@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>
Subject: FW: ONE Future/ICF report (Embargoed 10:30A ET)
Importance: High

Paul and Isabel -

Just received this heads-up from ONE Future.

Ex. 5 - Deliberative Process

-----Original Message-----
From: Jim Kibler [mailto:jkibler@aglresources.com]
Sent: Thursday, June 02, 2016 9:07 AM
To: Pryor, Justin <Pryor.Justin@epa.gov>; Franklin, Pamela <Franklin.Pamela@epa.gov>; Bylin, Carey <Bylin.Carey@epa.gov>
Cc: Richard Hyde <rhyde@aglresources.com>; Fiji George <Fiji_George@SWN.COM>; Schaaff, Lesley <lschaaff@hess.com>; Ed Mongan <Edwin.Mongan@bhpbilliton.com>
Subject: ONE Future/ICF report (Embargoed 10:30A ET)

Justin, Pamela and Carey - We wanted to alert you that at 1030A ET ONE Future will release a report prepared by ICF that updates the work done for EDF's cost analysis. We asked ICF to use the same model that it developed for EDF, but to update the inputs. Specifically, we were able to provide ICF with actual cost data where it had employed some assumptions before. And we asked that the model be updated to reflect a price environment that is consistent with the market. Finally, EDF has assumed that a unit of cost incurred anywhere in the value chain can be monetized. That's not universally true, so this study takes into account where costs might be incurred in an effort to look holistically at the value chain.

We are taking great pains to ensure that our messaging emphasizes that there are cost-effective measures to address methane emissions in the value chain. We have hired FTI to handle the roll-out and manage the message to this end. The study will be valuable to us as we move forward in finalizing our ONE Future program and our shared goal of working collaboratively to address emissions in a responsible way. The updated approach, based on experience and more accurate data, shows that the prior study underestimates costs and overstates the potential net reductions.

The ultimate conclusion in all of this, from our perspective, is that there remains a viable and sensible way to reduce emissions, but if we are to be successful, we should use the best science and data available.

Please let us know if you have any questions.

Jim

Sent with Good (www.good.com)

To: Banks, Julius[Banks.Julius@epa.gov]; DeFigueiredo, Mark[DeFigueiredo.Mark@epa.gov]; Weitz, Melissa[Weitz.Melissa@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]; Franklin, Pamela[Franklin.Pamela@epa.gov]
Cc: Kocchi, Suzanne[Kocchi.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Mon 4/25/2016 12:47:06 PM
Subject: FW: O&G ICR: Materials in prep for Monday's meeting with Janet
OG ICR_McCabe_April 26 2016 revised.pptx
First-FR-Notice_v3.docx
SupportStatement_draft_v3.docx
Copy of Draft Part 1 Operator Survey.xlsx
Copy of Draft_Part_II_Survey_.xlsx

Just wanted to check in with you guys ahead of the meeting this AM. Did we have a chance to provide input, and are we OK with this?

From: South, Peter
Sent: Friday, April 22, 2016 3:10 PM
To: Alston, Lala <Alston.Lala@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; OAQPS WOPS <OAQPS_WOPS@epa.gov>; Atkinson, Emily <Atkinson.Emily@epa.gov>; Browne, Cynthia <Browne.Cynthia@epa.gov>; Cyran, Carissa <Cyran.Carissa@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Jones, Marlene <Jones.Marlene@epa.gov>; Knapp, Kristien <Knapp.Kristien@epa.gov>; McCoy, Britney <McCoy.Britney@epa.gov>; Resendez, Mary <Resendez.Mary@epa.gov>; Stewart, Lori <Stewart.Lori@epa.gov>; Sanders, Maria <Sanders.Maria@epa.gov>; Walker, Jean <Walker.Jean@epa.gov>
Cc: Conner, Lisa <Conner.Lisa@epa.gov>; Culligan, Kevin <Culligan.Kevin@epa.gov>; Eck, Janet <Eck.Janet@epa.gov>; Johnson, Tanya <Johnson.Tanya@epa.gov>; McLamb, Marguerite <McLamb.Marguerite@epa.gov>; Pemberton, Wanda <Pemberton.Wanda@epa.gov>; Srivastava, Ravi <Srivastava.Ravi@epa.gov>; Thompson, Fred <Thompson.Fred@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Friedman, Kristina <Friedman.Kristina@epa.gov>; Krieger, Jackie <Krieger.Jackie@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Cozzie, David <Cozzie.David@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>; Shine, Brenda <Shine.Brenda@epa.gov>; Lassiter, Penny <Lassiter.Penny@epa.gov>
Subject: O&G ICR: Materials in prep for Monday's meeting with Janet

I have attached the briefing slides and four documents in prep for Monday's meeting with Janet on the O&G ICR. Please print the Powerpoint slides and the first two MS Word documents for Janet's reading folder. Please do not print the Excel files—the Excel files should be sent electronically to Janet for her review on screen (they will not print properly on a standard printer and include multiple tabs, etc.).

Feel free to call me with any questions.

Thank you.

Pete South

OAR/OAQPS/IO

U.S. EPA

office: 919 541-5359

cell: 919 599-7213

Oil and Gas Draft Information Collection Reques

FILE MEETING INSERT FORMAT TEXT REVIEW

This email message will be sent to about 34 recipients.

Lassiter, Penny **Sanders, Maria** **DeFigueiredo, Mark** : These recipients are sending automa

Attendee responses: 5 accepted, 0 tentatively accepted, 0 declined.
Next to another appointment on your calendar.

Send Update

To... Goffman, Joseph; Banister, Beverly; Page, Steve; Koerber, Mike; Tsirigotis, Peter; Cozzie, Da
Lassiter, Penny; Davis, Alison; Versace, Paul; Rodman, Sonja; South, Peter; Henigin, Mary; T

Subject Oil and Gas Draft Information Collection Request (ICR)

Location WJC-N 5400 + Video with RTP + Ex. 6 - Personal Privacy

Start time Mon 4/25/2016 10:00 AM All day event

End time Mon 4/25/2016 11:00 AM

To: McCabe, Janet; Goffman, Joseph, Banister, Beverly; Page, Steve; Koerber, Mike; Tsirig
Weitz, Melissa; Banks, Julius; Gunning, Paul; Lassiter, Penny; Davis, Alison; Versace, Paul
Andrea; Niebling, William
Cc: South, Peter; Henigin, Mary; Thompson, Fred; Srivastava; Ravi; McLamb, Marguerite;
Johnson, Tanya; Hunt, Virginia; Eck, Janet

URGENT McCabe
Meeting Reques...

To: Cook-Shyovitz, Becky[Cook-Shyovitz.Becky@epa.gov]
Cc: Weitz, Melissa[Weitz.Melissa@epa.gov]; Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Gunning, Paul
Sent: Wed 4/13/2016 6:21:28 PM
Subject: RE: LGAC Air Workgroup: Call Wed., April 20 - GHG Inventory

No worries. We can certainly cover the inventory piece. I am hoping that Melissa, copied above, is available.

Paul

From: Cook-Shyovitz, Becky
Sent: Wednesday, April 13, 2016 12:11 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Subject: LGAC Air Workgroup: Call Wed., April 20 - GHG Inventory

Hi Paul-

I'm working with OAQPS to have someone cover the methane proposal next week (sorry if I reached out to the wrong office!).

Can you or someone else from your office cover the GHG inventory report? Just a 5-10 minute overview, plus a few minutes for Q&A.

Thanks again!

Becky

From: Cook-Shyovitz, Becky
Sent: Monday, April 11, 2016 1:13 PM
To: Gunning, Paul <Gunning.Paul@epa.gov>
Cc: Cozzie, David <Cozzie.David@epa.gov>; Moore, Bruce <Moore.Bruce@epa.gov>;

Waltzer, Suzanne <Waltzer.Suzanne@epa.gov>
Subject: LGAC Air Workgroup: Call Wed., April 20 - Methane Regs

Hi all,

The Local Government Advisory Committee's Air, Climate & Energy workgroup will meet via conference call on Wednesday, April 20 from 1-2pm EST. The members have requested a briefing on the recent announcement that EPA will develop regulations for methane emissions from existing oil and gas sources.

Please let me know if you are able to join us next week to provide a 10-15 minute overview, plus about 5 minutes for Q&A. Thanks!

Becky Cook-Shyovitz

Intergovernmental Liaison

U.S. Environmental Protection Agency

202-564-5340

From: Thoma, Eben
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: Abandoned Well discussion (and slide review)
Start Date/Time: Wed 10/21/2015 7:00:00 PM
End Date/Time: Wed 10/21/2015 8:00:00 PM
Draft Abandoned Well Presentation 10-19-15.ppt

Great!. This time is good for all. Adding draft slides (EPA version) and call-in Ex. 6 - Personal Privacy
Ex. 6 - Personal Privacy

Melissa, as discussed earlier, these slides are for EPA and the version for the gas star meeting will differ a bit but will use a lot of this. We need to get the meeting version finished soon as it needs to go through EPA clearance. We can discuss next steps and strategy in the call as we are now a month out.

Thanks,

Eben

Clint, Tracey, and Melissa,

Looking for a time to discuss abandoned wells and specifically the slides for the upcoming meeting. I am proposing Wed 10/21 3:00 pm to 4:00 pm eastern, available for Melissa and I (not sure about Clint and Tracey). Clint and Tracey proposed Tuesday between 12:00 and 3:00 pm eastern. 2:30 pm is a possibility but only for 30 min for all. Hopefully the Wed time works for all.

I will send out slides and call-in # tomorrow.

Thanks,

Eben

To: Bylin, Carey[Bylin.Carey@epa.gov]
Cc: Weitz, Melissa[Weitz.Melissa@epa.gov]
From: McKittrick, Alexis
Sent: Fri 8/7/2015 7:51:56 PM
Subject: RE: Pneumatics Doc
Technical Guidance Document Number 1 SWN Comments(clean)cb mw v2 AM.docx

Carey,

Ex. 5 - Deliberative Process

Hope this helps! Thanks again for your patience with my review!

Regards,

Alexis

From: Bylin, Carey
Sent: Friday, July 31, 2015 4:51 PM
To: McKittrick, Alexis
Cc: Weitz, Melissa
Subject: Pneumatics Doc

Hi Alexis,

Ex. 5 - Deliberative Process

Ms. Carey Bylin

International Programs Leader, Oil and Gas

Natural Gas STAR Program

Global Methane Initiative

U.S. Environmental Protection Agency

Phone: +1-202-343-9669

Visiting Address & Private Deliveries (courier, FedEx etc.)

1201 Constitution Ave NW, Room Number 4353 UU, Washington DC 20004

U.S. Mail Address:

Mail Code 6207M, 1200 Pennsylvania Ave NW, Washington DC 20460

To: Gunning, Paul[Gunning.Paul@epa.gov]; Vahlsing, Candace[Ex. 6 - Personal Privacy
Cc: Waltzer, Suzanne[Waltzer.Suzanne@epa.gov]
From: Weitz, Melissa
Sent: Tue 1/6/2015 4:30:02 PM
Subject: RE: Reporting rule question

Hi Candace,

Ex. 5 - Deliberative Process

Melissa

Melissa Weitz

Climate Change Division

U.S. Environmental Protection Agency

(202) 343-9897

Weitz.Melissa@epa.gov

From: Gunning, Paul
Sent: Tuesday, January 06, 2015 10:21 AM
To: Vahlsing, Candace

Cc: Weitz, Melissa
Subject: RE: Reporting rule question

Candace – happy new year to you. Melissa is our inventory lead and will get back to you shortly. Ex. 5 - Deliberative Process

Paul

From: Vahlsing, Candace Ex. 6 - Personal Privacy
Sent: Tuesday, January 06, 2015 9:54 AM
To: Gunning, Paul
Subject: FW: Reporting rule question
Importance: High

Hi Paul,

Ex. 5 - Deliberative Process

From: Vahlsing, Candace
Sent: Monday, January 05, 2015 7:32 PM
To: 'Ragnauth, Shaun'
Cc: Gunning, Paul; Waltzer, Suzanne
Subject: RE: Reporting rule question

Hi Team,

Happy New Year!

Ex. 5 - Deliberative Process

From: Ragnauth, Shaun [mailto:Ragnauth.Shaun@epa.gov]
Sent: Wednesday, December 17, 2014 10:44 AM
To: Vahlsing, Candace
Cc: Gunning, Paul; Waltzer, Suzanne
Subject: RE: Reporting rule question

Ex. 5 - Deliberative Process

From: Vahlsing, Candace Ex. 6 - Personal Privacy
Sent: Wednesday, December 17, 2014 10:22 AM
To: Ragnauth, Shaun
Cc: Gunning, Paul; Waltzer, Suzanne
Subject: RE: Reporting rule question

Ex. 5 - Deliberative Process

See attached table.

From: Ragnauth, Shaun [mailto:Ragnauth.Shaun@epa.gov]
Sent: Wednesday, December 17, 2014 10:19 AM
To: Vahlsing, Candace
Cc: Gunning, Paul; Waltzer, Suzanne
Subject: RE: Reporting rule question

Candace,

Ex. 5 - Deliberative Process

Thanks,

Shaun

From: Vahlsing, Candace Ex. 6 - Personal Privacy
Sent: Tuesday, December 16, 2014 9:32 PM
To: Ragnauth, Shaun
Cc: Gunning, Paul; Waltzer, Suzanne
Subject: RE: Reporting rule question

Ex. 5 - Deliberative Process

From: Ragnauth, Shaun [mailto:Ragnauth.Shaun@epa.gov]
Sent: Thursday, December 11, 2014 4:48 PM
To: Vahlsing, Candace
Cc: Gunning, Paul; Waltzer, Suzanne
Subject: RE: Reporting rule question

Candace,

Ex. 5 - Deliberative Process

Shaun Ragnauth

U.S. EPA - Climate Change Division

O: 202-343-9142

M: 202-285-3795

From: Vahlsing, Candace **Ex. 6 - Personal Privacy**
Sent: Thursday, December 11, 2014 4:22 PM
To: Ragnauth, Shaun
Subject: RE: Reporting rule question

From: Ragnauth, Shaun [mailto:Ragnauth.Shaun@epa.gov]
Sent: Thursday, December 11, 2014 12:35 PM
To: Vahlsing, Candace
Cc: Gunning, Paul; Waltzer, Suzanne
Subject: RE: Reporting rule question

Thanks. I'm looping Paul and Suzie in on the discussion. We can use my conference line. Talk to you at 3:00.

Ex. 6 - Personal Privacy

Shaun

From: Vahlsing, Candace **Ex. 6 - Personal Privacy**
Sent: Thursday, December 11, 2014 11:43 AM
To: Ragnauth, Shaun
Subject: RE: Reporting rule question

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Ragnauth, Shaun [mailto:Ragnauth.Shaun@epa.gov]

Sent: Thursday, December 11, 2014 11:31 AM
To: Vahlsing, Candace
Subject: Re: Reporting rule question

Yes, I'm available around 3:00. If you can let me know what you want to discuss I can pull in others as needed.

Thanks,

Shaun

On Dec 11, 2014, at 11:28 AM, Vahlsing, Candace Ex. 6 - Personal Privacy wrote:

> Do you have a few minutes to talk this afternoon, possibility around 3 pm?
>
> **From:** Ragnauth, Shaun [mailto:Ragnauth.Shaun@epa.gov]
> **Sent:** Friday, December 05, 2014 2:08 PM
> **To:** Vahlsing, Candace
> **Subject:** Reporting rule question
>
> Hi Candace,
>
> Ex. 5 - Deliberative Process
>
> Thanks,
>
> Shaun
>
> _____
>
> Shaun Ragnauth

U.S. EPA - Climate Change Division

O: 202-343-9142

M: 202-285-3795