Message

From: Dominguez, Alexander [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5CED433B4EF54171864ED98A36CB7A5F-DOMINGUEZ,]
Sent: 1/17/2018 3:47:02 PM
To: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
CC: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Meeting Request

Happy to set something up.

Aaron – Could you do Friday, February 2 at 3:00? If not, we can look at February 7-9.

Thanks,
Alex

Alex Dominguez
Policy Analyst to the Principal Deputy
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Gunasekara, Mandy
Sent: Tuesday, January 16, 2018 5:38 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Cutler, Aaron S. <aaron.cutler@hoganlovells.com>; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Meeting Request

Byron, thank you for the connection. Alex, can you find a time hat we can meet?

Sent from my iPhone

On Jan 16, 2018, at 11:14 AM, Brown, Byron <brown.byron@epa.gov> wrote:

> Hi Mandy – I received an email from Aaron Cutler of Hogan Lovells representing SmartTruck requesting a meeting the week of Jan. 22 or Jan. 29. They came in last year and met with me to discuss the SmartWay program. Now that you have moved to OAR and that office is staffed up, I am sending the meeting request your way. Aaron is copied on the message. Thanks.
>
> Byron R. Brown
> Deputy Chief of Staff for Policy
> Office of the Administrator
> U.S. Environmental Protection Agency

Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 2/20/2018 6:19:19 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Quick ring?

Hey Byron,

Just tried you. If you get a second can you give me a call on my office line or cell?

Thanks,

Dimitri

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 - Personal Privacy | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

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Message

From: John Ward [wardo@wardo.com]
Sent: 1/9/2018 2:22:39 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: We are at security north entrance.

John N. Ward
Ex. 6
wardo@wardo.com
Twitter: @WorldWideWardo

Message

From: John Ward [wardo@wardo.com]
Sent: 1/9/2018 1:05:43 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: 9:30 Meeting Today

Got it. Thanks, Byron. See you soon.

John N. Ward
wardo@wardo.com
Ex. 6
Twitter: WorldWideWardo

From: Brown, Byron <brown.byron@epa.gov>
Sent: Tuesday, January 9, 2018 6:03 AM
To: John Ward
Subject: Re: 9:30 Meeting Today

No please come to the North building entrance near the federal triangle metro.

Sent from my iPhone

On Jan 9, 2018, at 7:40 AM, John Ward <wardo@wardo.com> wrote:

> Good morning, Byron,
>
> Looking forward to seeing you at 9:30 this morning at the 1301 Constitution Avenue, SW, location.
>
> Please let us know if there is anyone other than you we should contact at the security desk.
>
> Thank you!
> --wardo
>
> **John N. Ward**
> wardo@wardo.com
> Ex. 6
> Twitter: WorldWideWardo

Message

From: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
Sent: 1/12/2018 9:35:13 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Meeting

Hi Byron,

I hope you had a nice holiday break with your family.

Last year, you were very generous with your time and met with my client, SmartTruck (HQ in Greenville, SC) related to some issues they were having with the EPA SmartWay program. Would you have some time the week of Jan. 22nd or 29th for a short follow-up meeting on this topic?

Thanks very much,

Aaron

Aaron Cutler
Partner

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004

Tel: +1 202 637 5600
Direct: Ex. 6
Fax: +1 202 637 5910
Email: aaron.cutler@hoganlovells.com
www.hoganlovells.com

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Message

From: Gunasekara, Mandy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=53D1A3CAA8BB4EBAB8A2D28CA59B6F45-GUNASEKARA,]
Sent: 5/11/2017 9:35:54 PM
To: Donald K. Shandy [don.shandy@crowedunlevy.com]; Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; Rob.Lehman@wilmerhale.com
Subject: RE: Fitzgerald Trucking

Great – that works well. Ignore my previous email – we will use your conference line.
Best,
Mandy

From: Donald K. Shandy [mailto:don.shandy@crowedunlevy.com]
Sent: Thursday, May 11, 2017 3:05 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Brown, Byron <brown.byron@epa.gov>; Rob.Lehman@wilmerhale.com
Subject: RE: Fitzgerald Trucking

Hi Mandy,
The best time for me would be Tuesday morning at 10 eastern time.
If that works, we can use my dial –in number:

Ex. 6 - Personal Privacy

Code: Ex. 6 - Personal Privacy

Thanks!
Don

CROWE DUNLEVY
ATTORNEYS AND COUNSELORS AT LAW
A LexMundi Member

Donald K. Shandy
Attorney at Law
405.234.3205

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From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Thursday, May 11, 2017 2:01 PM
To: Brown, Byron; Rob.Lehman@wilmerhale.com; Donald K. Shandy
Subject: RE: Fitzgerald Trucking

Thank you, Byron.

Rob and Don – nice to e-meet you. I have a meeting with some of our program folks regarding the heavy-duty truck issues on Thursday the 18th. Ideally, I would like to touch base with you and get your perspective before that meeting.

Do you have any availability for a call between now and then? I'm free tomorrow afternoon (any time after 1:30 pm); Also Monday and Tuesday at 10 am.

I look forward to touching base soon.
Best,
Mandy

From: Brown, Byron
Sent: Thursday, May 11, 2017 2:43 PM
To: Rob.Lehman@wilmerhale.com; don.shandy@crowedunlevy.com
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Fitzgerald Trucking

Hi Rob and Don – I spoke with Mandy this morning about your issue. I am sending an email copying her to facilitate scheduling a follow up meeting. - Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

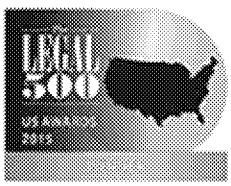
From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/8/2017 3:55:18 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Dimitri.Karakitsos@hklaw.com
Subject: Portland Harbor Sampling Plan
Attachments: Summary PH Pre-RD Studies and Costs_Draft_sent rev6.6.17.docx

Importance: High

This was delivered to the Region yesterday. It is about the max doable in a 24 month timeframe. PRP group open to moving forward on cleanup work on parallel track. Region definitely looking at more like a 5 year sampling plan.

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group.byron@epa.gov
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
T Ex. 6 - Personal Privacy | M Ex. 6 - Personal Privacy
rich.gold@hklaw.com | www.hklaw.com

Add to address book | View professional biography



Government/Government Relations
"Law Firm of the Year"

From: Edwards, Deborah A [mailto:deborah.a.edwards@exxonmobil.com]
Sent: Wednesday, June 07, 2017 3:07 PM
To: Gold, Richard (WAS - X77143) <rich.gold@hklaw.com>
Cc: Edwards, Deborah A <deborah.a.edwards@exxonmobil.com>
Subject: revised summary of scope

Rich, Scope document was delivered to EPA region 10 today. It is labeled confidential settlement so management doesn't want to send until day of meeting which is 14th. This is my summary showing costs and years. Len wanted to know if you have time to speak to us today for a few minutes. D

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DRAFT

Table 1. Potential List of PHSP Pre-Design Studies – Updated 6/6/217

Phase 1 Scope Item		Purpose	Estimated Costs ($K)		Expenditures by Year		
	Task		Best Estimate	Reasonable Worst Case	Year 1	Year 2	Year 3
Pre-Design Field Studies							
1	Bathymetry survey	Current sediment depths	$300	$390	100%		
2	Surface sediment sampling	Current levels of contamination (N=300 to 500)	$1,392	$1,800	10%	90%	
3	Fish tissue sampling	Current risk of eating fish (N=95)	$510	$765		100%	
4	Surface water sampling	Fate and Transport model calibration	$982	$1,473	30%	70%	
5	Sediment Coring	Subsurface extent of contamination (N=90)	$1,568	$2,350		100%	
6	Fish Acoustic Tracking Study	Where fish are located	$140	$608	30%	70%	
7	Camera Survey of Anglers	Where people fish in the river	$150	$225	30%	70%	
8	Porewater sampling	Upstream for background metals	$60	$100		100%	
Technical Analyses / Reporting							
A	Focused Work Plan for AOC scope		$200	$400	100%		
B	Refine SWACs and evaluate MNR trends		$200	$400	40%	60%	
C	Evaluate background		$300	$450		60%	40%
D	Refine active footprint		$300	$450		60%	40%
E	Refine foodweb model and risks		$350	$525			100%
F	Data interpretation reports		$450	$860			100%
		Management and Meetings (8%, 10%)	*$552*	*$1,080*	*0.3*	*0.4*	*0.3*
		Contingency Costs (10%, 10%)	*$690*	*$1,080*	*0.3*	*0.4*	*0.3*
		Oversight costs for DEQ, EPA, and Tribes (25%, 35%)	*$1726*	*$3,770*	*0.3*	*0.4*	*0.3*
Estimated TOTAL Costs for Phase 1 Pre-Design Studies			**$9,870**	**$16,734**	$3,443K	$9,674K	$3,526K

Note 1: These timeframes are approximate and begin post-discussion with EPA and after selection of a consultant to do the work (except for fish tracking pilot).
Note 2: Fish tracking study is only the pilot study at low-end cost; upper end is whole study. Sediment sampling count at low end is 300 and 500 at upper end.

Note 3: Labor for preparation of ROD amendment is included in the technical analyses scope.

SWAC = concentration of contaminants

Message

From: Gunasekara, Mandy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=53D1A3CAA8BB4EBAB8A2D28CA59B6F45-GUNASEKARA,]
Sent: 5/11/2017 8:46:35 PM
To: Butland, Celine [Celine.Butland@wilmerhale.com]; Washington, Valerie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9d031c02ce3a416dad0d421ee998d5a3-VWASHING]
CC: Donald K. Shandy [don.shandy@crowedunlevy.com]; Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; Lehman, Rob [Rob.Lehman@wilmerhale.com]
Subject: Re: Fitzgerald Trucking

Great- let's plan for 10 am on Tuesday. Valerie, can you add this to the calendar and email around dial-in info?

Thanks,
Mandy

Sent from my iPhone

On May 11, 2017, at 3:15 PM, Butland, Celine <Celine.Butland@wilmerhale.com> wrote:

> Rob is available for a call on Tuesday at 10:00 am, as well. Thanks
>
> **From:** Donald K. Shandy [mailto:don.shandy@crowedunlevy.com]
> **Sent:** Thursday, May 11, 2017 3:05 PM
> **To:** 'Gunasekara, Mandy' <Gunasekara.Mandy@epa.gov>; Brown, Byron <brown.byron@epa.gov>; Lehman, Rob <Rob.Lehman@wilmerhale.com>
> **Subject:** RE: Fitzgerald Trucking
>
> Hi Mandy,
> The best time for me would be Tuesday morning at 10 eastern time.
> If that works, we can use my dial –in number:
>
> **Ex. 6 - Personal Privacy**
>
> Thanks!
> Don
>
> <image001.gif> **Donald K. Shandy**
> Attorney at Law
> 405.234.3205
>
> This message may be protected by the attorney-client privilege and/or other privileges or protections. If you believe that it has been sent to you in error, do not read it. Please reply to the sender that you have received the message in error and then delete it. Thank you.
>
> **From:** Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
> **Sent:** Thursday, May 11, 2017 2:01 PM
> **To:** Brown, Byron; Rob.Lehman@wilmerhale.com; Donald K. Shandy
> **Subject:** RE: Fitzgerald Trucking
>
> Thank you, Byron.

Rob and Don – nice to e-meet you. I have a meeting with some of our program folks regarding the heavy-duty truck issues on Thursday the 18th. Ideally, I would like to touch base with you and get your perspective before that meeting. Do you have any availability for a call between now and then? I'm free tomorrow afternoon (any time after 1:30 pm); Also Monday and Tuesday at 10 am.

I look forward to touching base soon.
Best,
Mandy

From: Brown, Byron
Sent: Thursday, May 11, 2017 2:43 PM
To: Rob.Lehman@wilmerhale.com; don.shandy@crowedunlevy.com
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Fitzgerald Trucking

Hi Rob and Don – I spoke with Mandy this morning about your issue. I am sending an email copying her to facilitate scheduling a follow up meeting. - Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 6/2/2017 3:42:17 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: FYI for call today
Attachments: Letter to EPA Ryan Jackson Final 170522-4.docx; ATT00001.txt

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May 22, 2017

Mr. Ryan Jackson
Chief of Staff
Office of the Administrator 1101A
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
ryan.jackson@epa.gov

Re: BISSELL Matter in Region 9

Dear Mr. Jackson,

Please excuse me for directly reaching out to you, but my company, BISSELL Inc., has an urgent, time sensitive issue involving the EPA that needs intervention to avoid significant commercial losses for no health or safety reason. I'm happy to discuss the matter in greater length, but here is a little background.

BISSELL, a 140-year-old company based in Grand Rapids, Michigan, manufactures deep cleaning machines that are co-packaged with sample-sized bottles of an antimicrobial cleaning solution. Under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), antimicrobial products are considered pesticides. Our product is registered as such with EPA's Office of Pesticide Programs (OPP). Please note that BISSELL is one of the Twenty-four companies to receive the EPA's Safer Choice Partner of the Year award for 2016.

The sample bottles of antimicrobial cleaning solution are manufactured in Grand Rapids, then shipped to China where our deep cleaning machines are manufactured. The co-packing occurs in China. Under EPA regulations, the manufacturing facility must have an EPA establishment number which must be displayed on the product packaging. BISSELL has establishment numbers for both the Grand Rapids facility and the facility in China. We made the mistake of putting the Grand Rapids facility's establishment number on the product that was imported to the U.S. from China. In early April, Customs and Border Protection (CBP) correctly flagged this to EPA and held the product in early April, and the imports were quarantined.

For a full month thereafter, BISSELL could not get information from EPA regarding the Agency's specific concerns; despite asking numerous times for information on how to get the products released, BISSELL did not get a substantive response from a Region 9 attorney until May 10, 2017. BISSELL has been prepared to add a sticker to the product cartons with a corrected establishment number, but EPA would never agree that this step will satisfy their concerns.

As we have waited for direction, the number of quarantined products has grown, and will pass 50,000 this week. BISSELL's supply chain has run dry and we are under extreme pressure to fulfill obligations to our customers. One large retail promotion beginning June 1 will fail badly if product in quarantine is not released immediately, and a substantial TV and digital advertising spend will be wasted if inventory is not available for distribution. These marketing programs are vital to BISSELL's business.

Finally, last Wednesday, Region 9 staff clarified its expectation that BISSELL must re-face a side panel section on every carton of the quarantined products. Their concern has nothing to do with product safety or protecting the environment; instead, they are strictly construing a regulation to require an expensive, time-consuming change to product labels that will be of no consequence to US consumers or the public.

Here's the problem Region 9 took six weeks to identify: Consistent with pesticide regulations, the product cartons show an exact replica of an EPA approved label for the antimicrobial cleaning solution, but as Region 9 now points out, that replica is not of the sample-sized bottle packed into the box, but of a larger bottle of the same antimicrobial cleaning solution.

Just to be clear: both the label on the sample bottle in the carton, and the label depicted on the side of the machine carton, are EPA-approved versions from the same antimicrobial Master Label. But Region 9 says it is "misbranded" because the labels are not one in the same. David Kim, an attorney at Region 9, asserted in his email of Friday, May 19 that 40 C.F.R. section 156.10(a)(4) requires BISSELL to duplicate the exact label from the bottle inside the box onto the carton label outside of the box. In his view, another EPA approved label for the same antimicrobial product does not satisfy that regulation.

So what is the difference between the two labels triggering this supposed "misbranding" violation? The use instructions for the anti-microbial cleaning solution are not identical. The version shown on the carton has this EPA-approved language:

1. After adding water, fill tank to Easy Fill formula line
2. Deep clean carpet following machine's user guide
3. Flush machine with clean water after use
4. Stay off cleaned area until completely dry and vacuumed

Meanwhile, the version on the trial-sized bottle enclosed in the box has these directions for use, which also have been previously approved by the EPA:

1. Vacuum thoroughly to remove loose dirt.
2. For best results removing tough stains, use a BISSELL Pretreat before deep cleaning.
3. Fill measuring cup provided or fill tank to formula fill lines.
4. Deep clean carpet following machine's user guide.
5. Flush machine with clean water after use.
6. Stay off cleaned area until completely dry and vacuumed.

Region 9 takes the position that adding lines 1. and 2. to the directions on the sample bottle, and not using the same exact words to instruct how to pour the cleaning solution into the machine, justifies a major misbranding enforcement action as well as holding all product shipments until BISSELL has manually relabeled all products according to these demands.

But note: these label differences are immaterial. No one at Region 9 is suggesting that they create any risk of harm to our ecology, or to any potential consumer, or the public at large.

BISSELL is being told to absorb enormous costs and a very expensive further delay to accomplish no public benefit, with no net effect on the health and safety of any product user or anyone else. All to replace one EPA-approved label for another.

We spoke on Friday with Kathleen Johnson, Region 9 Enforcement Director, and she has chosen to support her staff. Her stated position was that she did not have or wish to exercise the discretion to allow BISSELL to distribute products not strictly complying with all regulations.

We know, however, that EPA has this inherent discretion, and is authorized to craft a reasonable, rational approach to enforcing its regulations. Certainly if we had more time – had BISSELL been told to make this carton change three weeks ago, for instance – the position Region 9 is taking now could have worked, as this correction would have been finished by now and our products would be back into distribution in time to meet our commercial obligations. But at this point, BISSELL doesn't have more time.

We are urging you to exercise your discretion to adopt a common sense approach to resolving this matter. We will take every reasonable step necessary to bring newly produced units into exact alignment with respect to the on-carton label instructions; but with respect to the 50,000+ boxes currently in quarantine or already on their way to the US, we are asking for you to release the quarantine and allow for distribution once the establishment number is corrected.

As I stated, there are no health and safety issues at stake, BISSELL is not trying to skirt responsibility for mistakenly affixing the wrong facility's establishment number. We are simply seeking an appropriate resolution that meets our urgent and reasonable commercial needs.

We very much appreciate your attention to this matter. Please call me if you should have any questions or wish to discuss the matter further.

Very truly yours,

James A. Krzeminski
President, BISSELL North America

Cc:
Lawrence Starfield, Acting Assistant Administrator, Office of Enforcement and Compliance Assurance (lawrence.starfield@epa.gov)
Alexis Strauss (Acting Region 9 Administrator) (alexis.strauss@epa.gov)
Kathleen Johnson (Enforcement Director Region 9) (kathleen.johnson@epa.gov)

Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 6/29/2017 7:02:58 PM
To: Traylor, Patrick [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6d06c6b766c4b4b8bfdf6b0fea4b998-Traylor, Pa]
CC: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Checking in on Bissell

Just wanted to make sure what we sent over Monday was helpful and that you all don't need anything else. If there is any news or anything we can provide please let me know.

Thanks,

Dimitri

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 - Personal Privacy | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

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Message

From: T.A. Hawks [TAHawks@monumentpolicy.com]
Sent: 10/22/2017 11:52:59 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: Bloom follow-up

So sorry and completely understand.

T.A. Hawks
Monument Policy Group
Ex. 6
Ex. 6 mobile
www.monumentpolicy.com

On Oct 22, 2017, at 6:05 PM, Brown, Byron <brown.byron@epa.gov> wrote:

> I have been out of the office Ex. 6 y so may not be able to respond with suggested meeting times until later next week. - Byron
>
> **From:** T.A. Hawks [mailto:TAHawks@monumentpolicy.com]
> **Sent:** Friday, October 20, 2017 5:55 PM
> **To:** Brown, Byron <brown.byron@epa.gov>
> **Subject:** Bloom follow-up
>
> Byron,
>
> Wanted to follow up and ask for a meeting with you to discuss Bloom Energy's previous request for an MPU exemption. We're flexible on timing, Shawn Soderberg is based in California, but can come to DC anytime in the coming weeks except for the 30th and 31st of October and the week of November 13th.meeting.
>
> Thanks very much for considering.
>
> T.A.
>
> **From:** T.A. Hawks
> **Sent:** Monday, October 9, 2017 4:05 PM
> **To:** brown.byron@epa.gov
> **Subject:** Re: Bloom follow-up
>
> Byron,

Hope you're well. Wanted to check in and see if you have a few minutes tomorrow to talk about the original request we had when Bloom Energy came in to discuss with you our request for a manufacturing process unit exemption (MPU) under RCRA.

Thanks and if tomorrow doesn't work, let me know if you have time early next week. Shawn Soderberg is very interested in getting a meeting with you, but prior to that wanted to get your thoughts before I submit a formal meeting request.

Thanks,
T.A.

T.A. Hawks
Monument Policy Group
Ex. 6
Ex. 6 mobile
www.monumentpolicy.com

Message

From: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
Sent: 4/10/2017 12:09:31 AM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: RE: Meeting Request

Thanks very much!

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Sunday, April 09, 2017 8:09 PM
To: Cutler, Aaron S.
Subject: Re: Meeting Request

Sorry my assistant has been out the past couple of days. I will be unavailable on 4/28 but hope we can find time on 4/27.

Sent from my iPhone

On Apr 9, 2017, at 7:35 PM, Cutler, Aaron S. <aaron.cutler@hoganlovells.com> wrote:

> Sorry to bug you. Can't imagine how busy you are. Hoping to lock a time in with you and your colleagues for 4/27 or 4/28. Thanks so much.
>
> ---
>
> **From:** Cutler, Aaron S.
> **Sent:** Thursday, March 30, 2017 8:51 PM
> **To:** 'Brown, Byron'
> **Subject:** RE: Meeting Request
>
> Just wanted to follow up and see if there was a good time for you and your colleagues on April 27th or 28th for this meeting. Thank you very much!
>
> ---
>
> **From:** Cutler, Aaron S.
> **Sent:** Tuesday, March 21, 2017 4:29 PM
> **To:** Brown, Byron
> **Subject:** RE: Meeting Request
>
> Thanks Byron. We'd like to get some information about the future of the EPA SmartWay program and also try to get a sense of the future of the CA waiver. Additionally, SmartTruck would like to share some technical information regarding some issues with testing methodologies utilized in SmartWay program. Happy to have you include relevant program office staff.
> Look forward to reconnecting.
>
> ---
>
> **From:** Brown, Byron [mailto:brown.byron@epa.gov]
> **Sent:** Tuesday, March 21, 2017 3:03 PM
> **To:** Cutler, Aaron S.
> **Subject:** RE: Meeting Request
>
> Hi Aaron – Yes, of course I remember you. Happy to meet. Is this an informational meeting, or do they have an ask? Assume it's OK to involve relevant program office staff.

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

From: Cutler, Aaron S. [mailto:aaron.cutler@hoganlovells.com]
Sent: Tuesday, March 21, 2017 1:34 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Meeting Request

Hi Byron,

Congratulations on the new position! We worked together a bit when I was with Leader Cantor and managed the Resources Committee and also when I moved over to the Committee for a few months after Eric lost.

I wanted to see if you had time on April 27th or April 28th to meet with the CEO (Steve Ingham) and Senior VP (Steve Wulff) of SmartTruck. They want to discuss the EPA SmartWay program with you. SmartTruck is a technology company that provides precision aerodynamic components that reduce drag and improve fuel mileage for heavy truck trailers based in Greenville, SC.

Thank you very much,

Aaron

Aaron Cutler
Partner

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004

Tel: +1 202 637 5600
Direct: +1 Ex. 6 - Personal Privacy
Fax: +1 202 637 5910
Email: aaron.cutler@hoganlovells.com
www.hoganlovells.com

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Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/21/2017 1:04:17 AM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: RooftopCaucus6.29.17.oft
Attachments: RooftopCaucus6.29.17.oft; ATT00001.htm

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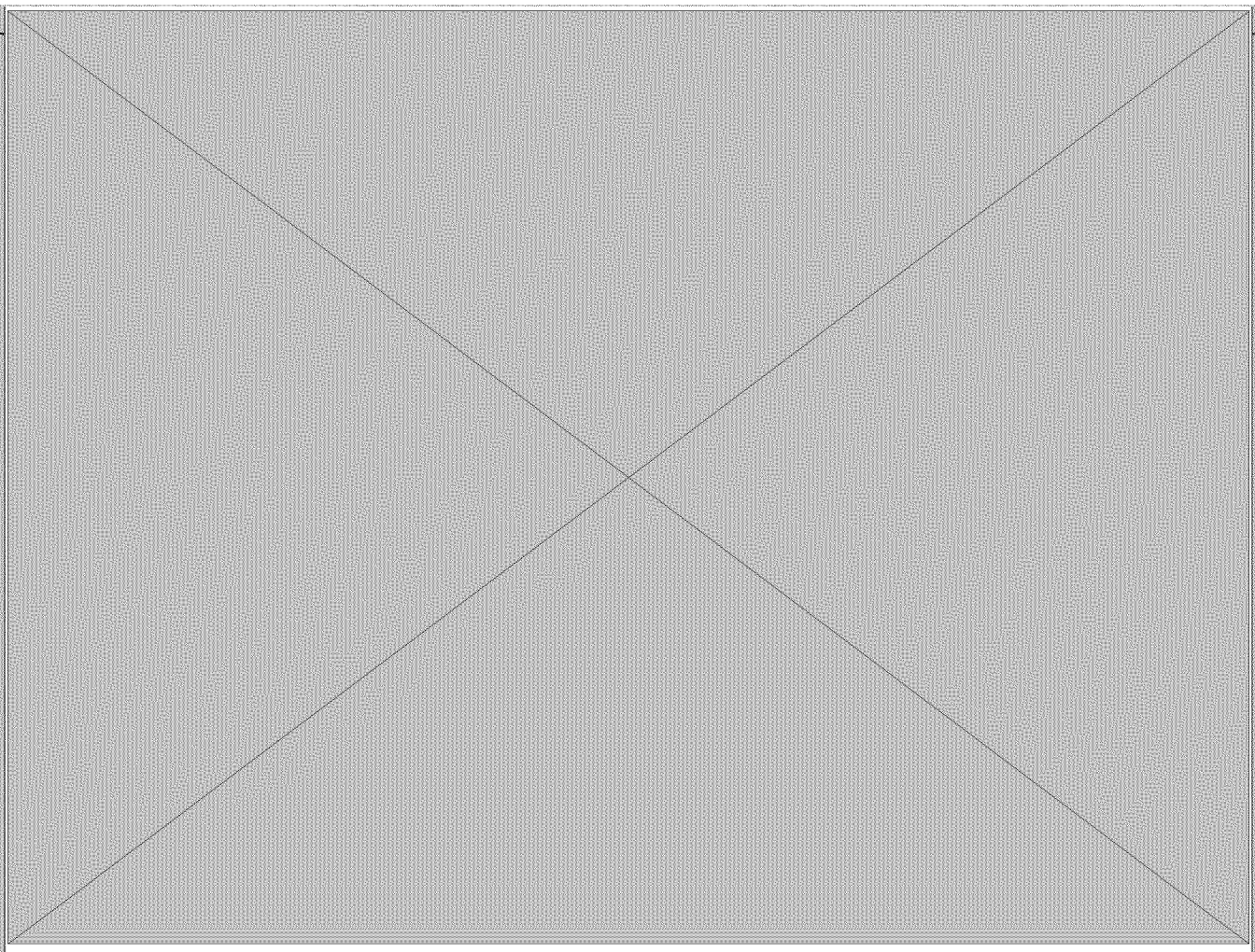
Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100
Washington, D.C. 20006
T Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com | @HK_PPR

Subject: Come Join Holland & Knight at the 19th Hole for a Rooftop Par-tee



Cannonball! Cannonball, comin' through, Cannonball!
D.C. greenskeepers have found the latest round of congressional golfers on the 19th hole, scoring their own way to success by dodging bunkers and maintaining their composure in the face of adversity.
Cut through the heat of D.C. and tee up with members of Holland & Knight's Public Policy & Regulation Group for a memorable Rooftop Par-tee. Enjoy a great summer evening with friends and colleagues sharing riveting conversations, food and a couple of Arnold Palmers while overlooking the fairways of D.C.
We look forward to seeing you at the annual Rooftop Deck Caucus celebration. This is sure to be a Cinderella story. Well, we're waiting.

DATE/TIME: **Thursday, June 29, 2017**
5:30 – 9:00 p.m.

WHERE: Holland & Knight
800 17th Street N.W.
Suite 1100
Washington, DC 20006

PLEASE NOTE: Holland & Knight has consulted with the House and Senate Ethics Committees regarding this event's compliance with applicable House and Senate rules.
This invitation is nontransferable.

RSVP:

Space is limited. Please register here to attend by June 27.

CONNECT WITH US:

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Message

From: Todd D Young [TDYoung@uss.com]
Sent: 5/18/2017 10:35:29 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: January 18, 2017 Denial of U. S. Steel Petitions
Attachments: DENVER-#564059-v1-taconite;_EPA_response_US_Steel_petition.pdf

United States Steel Corporation

Todd D. Young
Managing Director - Federal Governmental Affairs

901 K Street, NW
Suite 1250
Washington, DC 20001
Ex. 6 - Personal Privacy office
mobile
tdyoung@uss.com

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THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

JAN 18 2017

John D. Lazzaretti
Squire Patton Boggs LLP
4900 Key Tower
127 Public Square
Cleveland, Ohio 44114

Dear Mr. Lazzaretti:

On November 26, 2013, on behalf of the United States Steel Corporation, you submitted a petition requesting that the U.S. Environmental Protection Agency reconsider and stay our final rulemaking captioned "States of Minnesota and Michigan; . . . Federal Implementation Plan for Regional Haze," published on February 6, 2013, at 78 Fed. Reg. 8706, as well as our final rulemaking captioned "States of Michigan and Minnesota; Regional Haze," published on September 30, 2013, at 78 Fed. Reg. 59825. By the February 6, 2013, rulemaking, the EPA promulgated a Federal Implementation Plan establishing Best Available Retrofit Technology (BART) emission limits for certain taconite facilities in Michigan and Minnesota.

By the September 30, 2013, rulemaking, the EPA partially disapproved the Michigan and Minnesota regional haze State Implementation Plans for failure to mandate appropriate BART emission limits for taconite facilities within these states. Further, on June 13, 2016, on behalf of U.S. Steel, you submitted a petition requesting that the EPA reconsider and stay our final rulemaking captioned "Revision to 2013 Taconite Federal Implementation Plan Establishing BART for Taconite Plants," published on April 12, 2016, at 81 Fed. Reg. 21672.

As discussed more fully in the enclosure, the EPA denies the above-referenced petitions because the petitions do not meet the two-step test to determine whether reconsideration should be granted, as required by section 307(d)(7)(B) of the Clean Air Act. Under that test a petitioner must first show that it was impracticable to raise the comment or objection within the time period for public comment of the rule or that the grounds for the comment or objection arose after the period for public comment (but within the time specified for judicial review). Secondly, the petitioner must show that the comment or objection is of "central relevance to the outcome of the rule." Based upon our review, the petitions fail to meet the two steps required by section 307(d)(7)(B) of the Act.

Should you have additional questions about this matter, you may contact Matthew Marks, at (202) 564-3276 or marks.matthew@epa.gov.

Sincerely,

Gina McCarthy

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Basis for Denial of Petitions for Reconsideration submitted by
U.S. Steel Corporation on November 26, 2013, and June 13, 2016

I. Background

A. Petitions for Reconsideration

Section 307(d)(7)(B) of the Clean Air Act ("CAA") requires the EPA to convene a proceeding for reconsideration of a rule if a party raising an objection to the rule can demonstrate (1) "that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review)" and (2) that "such objection is of central relevance to the outcome of the rule." 42 U.S.C. § 7607(d)(7)(B). In the EPA's view, an objection is of central relevance to the outcome of a rule only if it provides substantial support for the argument that the rule should be revised. *See, e.g.*, the EPA's Denial of the Petitions to Reconsider the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202 of the Clean Air Act, 75 Fed. Reg. 49,556, 49,561 (Aug. 13, 2010); *see also Coal. for Responsible Regulation v. EPA*, 684 F.3d 102, 125 (D.C. Cir. 2012) (acknowledging and applying the EPA's interpretation of the central relevance criterion); *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008) (holding that a petitioner fails to demonstrate that its objection is of central relevance when the petitioner "vaguely alludes to EPA's incorrect factual assumptions," but "fails to support [its] assertion") (internal quotation omitted). Put another way, an objection is of central relevance to the outcome of a rule if the objection has substantive merit and would thus lead the EPA to reach a different outcome. When the EPA denies a petition for reconsideration, the "EPA certainly may . . . provide an explanation for that denial, including by providing support for that decision, without triggering a new round of notice and comment for the rule." *Coal. for Responsible Regulation*, 684 F.3d at 126.

B. The CAA's Visibility Program, the Regional Haze Rule, and Best Available Retrofit Technology

Congress created a program for protecting visibility in the nation's parks and wilderness areas by enacting Section 169A of the CAA in 1977. Section 169A establishes as a national goal the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas[1] which impairment results from manmade air pollution." 42 U.S.C. § 7491(a)(1). Congress added Section 169B to the CAA in 1990 to address regional haze issues. The EPA promulgated a rule to address regional haze on July 1, 1999. 64 Fed. Reg. 35,714, *codified* at 40 C.F.R. pt. 51, subpt. P (the "Regional Haze Rule"). The Regional Haze Rule revised the EPA's existing visibility regulations to address regional haze and established a comprehensive visibility protection program for Class I areas. The Regional Haze Rule required states to submit state implementation plans ("SIPs") to implement the rule's requirements by no later than December 17, 2007. Many states failed to meet this deadline.

[1] Areas designated as mandatory Class I Federal areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. 42 U.S.C. § 7472(a).

Among other things, Section 169A directs states, or the EPA when developing a FIP, to determine the best available retrofit technology ("BART") for certain larger, often uncontrolled, older stationary sources in order to address visibility impacts from those sources. 42 U.S.C. § 7491(b)(2)(A). On July 6, 2005, EPA published the *Guidelines for BART Determinations Under the Regional Haze Rule* to assist states in determining which sources are subject to the BART requirements, what controls represent BART at each applicable source, and what the appropriate emission limits are for each source. 70 Fed. Reg. 39,104, *codified* at 40 C.F.R. pt. 51 app. Y (the "BART Guidelines"). Once a state or the EPA has made a BART determination, Section 169A requires the source to install and operate the controls as expeditiously as practicable, but no later than five years after the date of SIP approval or FIP promulgation. 42 U.S.C. § 7491(g)(4).

C. Regulatory History

Minnesota did not submit a regional haze SIP by the December 17, 2007 deadline. Therefore, in 2009, the EPA made a finding that Minnesota had failed to submit a required plan revision. *See* 74 Fed. Reg. 2392 (Jan. 15, 2009). At the same time, the EPA found that Michigan had failed to submit as part of its regional haze SIP a plan for addressing the BART requirement for taconite facilities subject to BART. *Id.* In accordance with Section 110(c) of the CAA, these findings created independent obligations for the EPA to issue a FIP for each state within two years (i.e., by January 15, 2011) to address BART for taconite facilities unless the states subsequently submitted SIPs addressing the deficiencies that the EPA approved. The EPA missed this deadline, was sued under the CAA's citizen-suit provision for failing to perform a non-discretionary duty, and entered into a consent decree that contained new deadlines for issuing FIPs or fully approving SIPs for Minnesota and Michigan.

Consequently, on February 6, 2013, the EPA promulgated a FIP that included BART limits for sulfur dioxide ("SO_2") and nitrogen oxide ("NO_X") emissions from furnaces at seven taconite facilities in Michigan and Minnesota. 78 Fed. Reg. 8706 ("2013 FIP"). The EPA determined that NO_X BART was an emission limit of either 1.2 or 1.5 lb NO_X/MMBtu (depending on fuel), which were based on a technology called low NO_X burners that had been successfully installed on two taconite furnaces owned and operated by U.S. Steel Corporation ("U.S. Steel"). The EPA also determined that SO_2 BART was the use of low-sulfur fuels, with the emissions limit for each furnace being based on the production levels at the furnace and other site-specific factors. The taconite facilities are variously owned and operated by Cliffs Natural Resources ("Cliffs"), ArcelorMittal USA LLC ("ArcelorMittal"), and U.S. Steel. ArcelorMittal owns and operates ArcelorMittal Minorca Mine. Cliffs owns and operates Northshore Mining Company, Tilden Mining Company, and United Taconite. U.S. Steel owns and operates Keetac and Minntac. ArcelorMittal, Cliffs, and U.S. Steel jointly own Hibbing Taconite Company, which is operated solely by Cliffs. All of the taconite facilities are located in Minnesota except Tilden, which is located in Michigan.

ArcelorMittal, Cliffs, and the State of Michigan filed timely petitions for review of the 2013 FIP in the Eighth Circuit Court of Appeals. Cliffs and ArcelorMittal also filed a joint motion seeking a stay of the 2013 FIP, which the Eighth Circuit granted on June 14, 2013. In addition, ArcelorMittal, Cliffs, Congressman Richard M. Nolan, the National Mining Association, and the State of Michigan submitted petitions for reconsideration of the 2013 FIP pursuant to Section

307(d)(7)(B) of the CAA. U.S. Steel did not file a timely petition for review of the 2013 FIP or submit a petition for reconsideration at this time.

On September 30, 2013, in a separate action, the EPA finalized partial disapprovals of Minnesota and Michigan's late-submitted regional haze SIPs for failing to require BART for the taconite furnaces. 78 Fed. Reg. 59,825 ("SIP Disapprovals"). Among other things, the EPA found that Minnesota and Michigan had erred by determining that an undefined set of "good combustion practices" represented NO_X BART when U.S. Steel had successfully installed low NO_X burners, a more effective control technology, on Lines 6 and 7 of its Minntac facility in Minnesota. While the EPA intended to finalize the SIP Disapprovals and the 2013 FIP at the same time, the EPA was unable to do so due to complications arising from the aforementioned consent decree deadlines in the citizen-suit litigation.

Subsequently, ArcelorMittal, Cliffs, the State of Michigan, and U.S. Steel filed petitions for review of the SIP Disapprovals in the Eighth Circuit. They also filed a joint motion to consolidate the petitions for review of the SIP Disapprovals with the petitions for review of the 2013 FIP, but the Eighth Circuit denied that motion. The petitions for review of the SIP Disapprovals are in abeyance and remain pending at this time. In addition, ArcelorMittal, Cliffs, and U.S. Steel submitted petitions for reconsideration of the SIP Disapprovals. In its petition for reconsideration, U.S. Steel simultaneously sought reconsideration of the 2013 FIP and an administrative continuation of the stay put in place by the Eighth Circuit.

In 2015, the EPA reached an agreement with Cliffs, ArcelorMittal, and the State of Michigan to settle their petitions for review of the 2013 FIP and the SIP Disapprovals. The EPA published notice of the settlement agreement in the Federal Register on January 30, 2015, *see* 80 Fed. Reg. 5111, and executed the agreement on April 9, 2015. On July 2, 2015, pursuant to the settlement agreement, the EPA granted partial reconsideration of the 2013 FIP based on new information raised in the petitions for reconsideration submitted by Cliffs and ArcelorMittal. Specifically, the EPA granted reconsideration with respect to the BART emission limits and compliance schedules for United Taconite, Hibbing, Tilden, and ArcelorMittal Minorca Mine.

On October 22, 2015, consistent with the settlement agreement, the EPA proposed to revise the 2013 FIP and promulgate new BART limits and compliance schedules for the facilities owned and operated by Cliffs and ArcelorMittal. 80 Fed. Reg. 64,160. The EPA finalized the FIP revision on April 12, 2016. 81 Fed. Reg. 21,672 ("2016 FIP").

Subsequently, ArcelorMittal, Cliffs, and U.S. Steel filed petitions for review of the 2016 FIP in the Eighth Circuit and submitted petitions for reconsideration of the 2016 FIP to the EPA. The petitions for review of the 2016 FIP remain pending at this time.

On November 15, 2016, over the objection of U.S. Steel, the Eighth Circuit dismissed the original petitions for review of the 2013 FIP filed by ArcelorMittal, Cliffs, and the State of Michigan and terminated the stay entered on June 14, 2013. The Eighth Circuit extended the remaining deadlines in the 2013 FIP, which apply to U.S. Steel's Keetac and Minntac facilities, by one day for each day that the stay was in place. Thus, U.S. Steel must comply with NO_X BART emission limits at Keetac by September 8, 2019, and at Minntac Lines 3-7 by

August 8, 2021, September 8, 2020, September 8, 2019, September 8, 2017 and September 8, 2018. These deadlines are comparable to the new NO_X BART deadlines with which ArcelorMittal and Cliffs must comply in the 2016 FIP.

II. U.S. Steel's Petitions for Reconsideration

A. Petition for Reconsideration of the 2013 FIP and the SIP Disapprovals

In its 2013 petition for reconsideration, U.S. Steel argues that variations in the furnaces at Keetac and Minntac Lines 3, 4, and 5 will lead to significantly higher installation costs for low NO_X burners than U.S. Steel incurred at Minntac Lines 6 and 7. U.S. Steel further claims that these furnace variations will make it difficult or impossible to achieve NO_X reductions similar to those achieved at Minntac Lines 6 and 7 without some impact to pellet quality or production. U.S. Steel supports its claims with (1) a declaration from one of its employees; (2) a November 26, 2013 preliminary engineering report from Hatch, the firm U.S. Steel retained to retrofit a low NO_X burner at Keetac; and (3) a table comparing the scope of the low NO_X burner installation projects for Keetac and Minntac Lines 4, 5, 6, and 7. U.S. Steel asserts that it would have been impracticable to introduce this information during the public comment period for the 2013 FIP or the SIP Disapprovals because "significant study" was needed before the cost, pellet quality, and safety impacts of installing low NO_X burners at Keetac and Minntac Lines 3, 4, and 5 became known. U.S. Steel maintains that the information is timely for reconsideration purposes because it was developed in November 2013, within the period for judicial review of the SIP Disapprovals. U.S. Steel argues that its petition should be deemed timely with respect to the 2013 FIP as well because the 2013 FIP was "integral" to the SIP Disapprovals and was "incorporated by reference into" the SIP Disapprovals. Finally, U.S. Steel argues that the information is of central relevance to the 2013 FIP and the SIP Disapprovals because the rules relied heavily on the success of low NO_X burners at Minntac Lines 6 and 7 to justify requiring them as BART for U.S. Steel's other furnaces. U.S. Steel concludes by requesting that the EPA "promulgate a case-by-case BART determination process or approve the case-by-case BART analysis contained in Minnesota's SIP after adequate clarification of what constitutes good combustion practices" and, if necessary, issue an administrative stay pending reconsideration.

B. Petition for Reconsideration of the 2016 FIP

In its 2016 petition for reconsideration, U.S. Steel raises two arguments. First, U.S. Steel argues that the 2016 FIP created a competitive disadvantage for U.S. Steel by requiring it to install continuous emissions monitoring systems ("CEMS") and comply with SO_2 emission limits before its competitors (ArcelorMittal and Cliffs). U.S. Steel argues that the EPA did not provide notice of the new CEMS deadlines for its Keetac and Minntac facilities in the 2016 FIP proposal, which prevented U.S. Steel from commenting on the schedule. U.S. Steel also argues that its schedule for complying with the CEMS requirements does not comport with the stayed schedule for complying with SO_2 emission limits in the 2013 FIP, meaning the EPA's action was arbitrary and capricious.

Second, U.S. Steel argues that new information submitted with its petition demonstrates the continued need for revisions to the BART requirements for Keetac and Minntac. This information includes (1) a declaration from a U.S. Steel employee; (2) a two-page regression analysis of baseline NO_X emissions at Keetac; (3) a February 24, 2016 BART analysis for

Keetac prepared by Barr Engineering; (4) an executive summary of a modeling report issued in the fall of 2015 by FCT Combustion that evaluated the potential performance of a low-stoich low-NO_X burner at Keetac; (5) the FCT modeling report; (6) a three-page proposal for new NO_X emission limits for Keetac based on the installation of new "preheat burners" instead of new low-NO_X main burners; (6) a May 24, 2016 addendum to a December 18, 2012 technical analysis performed by Metso; (7) a two-page summary of an investigation conducted by Coen regarding the installation of high-stoich low-NO_X burners at Keetac; and (8) a table accompanying the summary of the Coen investigation. U.S. Steel asserts that "much" of this information was obtained after the comment period for the 2016 FIP, but within the time for judicial review, and that the information is centrally relevant to the outcome of the rule because it shows that a different approach to BART for the furnaces at Keetac and Minntac is needed. At bottom, U.S. Steel believes that the 2016 FIP placed U.S. Steel at a competitive disadvantage because it revised requirements for taconite facilities owned and operated by ArcelorMittal and Cliffs, but not U.S. Steel's Keetac and Minntac facilities. Finally, U.S. Steel requests an administrative stay of the 2016 FIP pending the completion of a reconsideration proceeding that promulgates new emission limits and compliance schedules for the furnaces at Keetac and Minntac.

III. The EPA's Response to U.S. Steel's Petitions

A. U.S. Steel's 2013 Petition

The EPA is denying U.S. Steel's 2013 petition for reconsideration of the 2013 FIP and the SIP Disapprovals, as well as U.S. Steel's request for an administrative stay of the 2013 FIP because U.S. Steel has not satisfied either prong of the test in Section 307(d)(7)(B) of the CAA. With respect to the 2013 FIP, U.S. Steel's request is not timely. The EPA promulgated the 2013 FIP on February 6, 2013. 78 Fed. Reg. 8706. The 2013 FIP specified that the time to file petitions for judicial review ended on April 8, 2013. *Id.* at 8733. U.S. Steel submitted its petition for reconsideration to the EPA on November 26, 2013, over seven months after the April 8, 2013 deadline. U.S. Steel does not argue that the information contained in the petition arose after the comment period but within the time specified for judicial review. Instead, U.S. Steel relies on two cases, *Montana v. Clark*, 749 F.2d 740, 743-44 (D.C. Cir. 1984) and *Ohio v EPA*, 838 F.2d 1325, 1328 (D.C. Cir. 1988), to argue that the EPA reopened the 2013 FIP when the Agency partially disapproved the Minnesota SIP. U.S. Steel's argument lacks merit. In *Montana*, the Secretary of the Interior re-promulgated regulations to determine whether they complied with Executive Order 12291 and did not limit comments to consideration of the burdensomeness of the regulations. 749 F.2d at 743. Likewise, in *Ohio*, the EPA revised a regulation and republished certain portions unchanged, but explained the unchanged portions and responded to a comment on them. 838 F.2d at 1328. Here, in contrast, the EPA did not re-promulgate or republish the 2013 FIP when the Agency disapproved the Minnesota SIP. While the two actions are related, they are clearly distinct and separate. In the 2013 FIP, the EPA made BART determinations for the taconite industry and promulgated emission limits and compliance schedules. The EPA's authority to promulgate the 2013 FIP was based on the EPA's 2009 finding that Michigan and Minnesota had failed to submit all or part of their regional haze SIPs by the statutory deadline. In the SIP Disapprovals rulemaking, on the other hand, the EPA determined that the regional haze SIPs submitted by Michigan and Minnesota after the EPA's finding of failure to submit were inadequate. The EPA did not republish the regulatory language in the 2013 FIP in the SIP

Disapprovals, nor did the EPA seek comment on the 2013 FIP. Therefore, the reopener doctrine does not apply, and U.S. Steel's petition for reconsideration of the 2013 FIP is untimely.

Even if U.S. Steel's petition was timely with respect to the 2013 FIP, however, U.S. Steel has not demonstrated why it was impracticable to raise its objections during the public comment period or how its objections are of central relevance to the outcome of the rule. While U.S. Steel styles its objections as relying on newly developed information that required significant study, U.S. Steel either had knowledge or should have had knowledge of the information during the comment period. For example, U.S. Steel points to several differences between Minntac Lines 6 and 7 and Keetac as support for its argument that new BART determinations are necessary. These include increased airflow that will necessitate larger fans at Keetac and the fact that Keetac does not have preheaters or ported kilns like Minntac Lines 6 and 7. Clearly, U.S. Steel was aware of the design differences among its furnaces during the comment period and could have raised objections related to those issues at that time. With respect to the need for new fans, U.S. Steel actually raised this issue during the comment period on the 2013 FIP proposal. In its comments dated September 28, 2012, U.S. Steel stated: "[D]ue to the lead time associated with acquiring process fans at Keetac, which is estimated to be 52 weeks according to a third-party engineering firm working on the project, and the timing of the major outage schedule, which only occurs once per year . . . U.S. Steel requests an additional 12 months to the proposed schedule for installation." Comments at 6. Further, in recognition of the time it would take to adapt the low NO_X technology used at Minntac Lines 6 and 7 for installation at Keetac, U.S. Steel requested additional time to install and shakedown the technology. *Id.* ("In addition, because this will be the first installation of this technology at Keetac and based upon the experience with installation of this technology at Minntac, U. S. Steel requests an additional 6 months prior to compliance with the proposed emission limit to allow for a shakedown period to optimize the burner for NO_X reductions."). Consequently, in the final rule, the EPA provided U.S. Steel with additional time to procure new fans and achieve compliance. 78 Fed. Reg. at 8726-27. Furthermore, U.S. Steel encountered the same issue when installing a low NO_X burner at Minntac Line 6. U.S. Steel's December 1, 2011 final report detailing the installation states: "There were 3 significant design changes that were made when compared to the Line 7 low NO_X main burner. The first modification was increasing the size of the combustion air fans. The fan capacity was increased by 25% to ensure there was sufficient combustion air to ensure the appropriate stoichiometric ratio to achieve the NO_X reductions. This required an addition to the north side of the Step 3 Agglomerator building in order to house the combustion fans." Minntac Line 6 Report at 8. Thus, U.S. Steel has not identified any new information that arose after the close of the public comment period regarding differences among the Keetac and Minntac furnaces that could not have been raised earlier. The dimensions of the grate-kiln and surrounding area at Keetac have not changed, and U.S. Steel was aware of the size of low NOx burners, the need for increased air flow, and the likely need to modify the burner size or physical space to best accommodate the installation.

U.S. Steel also raises concerns with pellet quality and health and safety issues, alleging that these too are based on new information. Specifically, U.S. Steel states: "Since the combustion air at Keetac is used to dry the green balls before they enter the furnace, an increase in airflow at the burner will result in a proportional increase in air pressure up the line. At this point in the production process, since they have not been hardened, the pellets are not capable of withstanding significant pressure and can deform adversely impacting pellet quality." 2013

Petition at 13; *see also* 2013 Petition Exhibit A at 2; 2013 Petition Exhibit B at 3. With respect to health and safety concerns, U.S. Steel states that "it is expected that installing a [low NO_X burner] at Keetac will result in much higher pellet discharge temperatures. Dumping hot pellets from the cooler can result in safety issues such as burning belts and steam, which can be a visibility impairment and burn hazard." 2013 Petition Exhibit A at 2. The EPA disagrees that these concerns could not have been raised during the public comment period. As discussed above, U.S. Steel was fully aware of the increased airflow necessary at Keetac at the time of the proposed rule. Thus, it was not impracticable for U.S. Steel to have raised potential concerns with pellet quality at that time. Furthermore, U.S. Steel has not performed any testing to simulate the deformation of green balls or explored ways of reducing or mitigating the issue, such as baffles or a redistribution of the airflow. Without such analysis, U.S. Steel has not presented new information, only unsubstantiated speculation based on information that was available during the comment period and that is not centrally relevant to the outcome of the rule. Likewise, U.S. Steel was aware of potential health and safety issues long ago. The December 1, 2011 Minntac Line 6 report identified "pellets dumping hot from the cooler . . . created steam and poor visibility on the burner floor which is a safety concern." Minntac Line 6 Report at 15. The report also indicated that this resulted in "excessive mechanical wear, high fuel rates, and below target pellet quality." *Id.* at 16. But, the report concludes by explaining that U.S. Steel eliminated these problems through the implementation of corrective projects and process optimization. *Id.*

Finally, U.S. Steel raises concerns with the cost of installing low NO_X burners at Keetac. U.S. Steel states that installing low NO_X burners at Keetac would "require a significant increase in both the size of the burner and the amount of air required to achieve NO_X reductions . . . [and] would require upgrades to the physical plant, combustion fans, and cooling system that would increase the costs of the installation and operation well beyond EPA's estimates." 2013 Petition at 3-4. U.S. Steel asserts that the "installation of low NO_X technology at Keetac would cost between $21,000,000 and $26,000,000, four to five times the cost of installing similar technology at Minntac." *Id.* at 14. Again, U.S. Steel has failed to explain how it was impracticable to raise this objection during the public comment period. As previously discussed, U.S. Steel knew that the installation and operation of low NO_X burners at Keetac would require significantly more airflow. U.S. Steel also knew, based on the physical changes that were necessary at Minntac Line 6, that significant physical changes would likely be required at Keetac as well. Moreover, the cost information that U.S. Steel presents is simply an order of magnitude capital cost estimate. U.S. Steel provides no vendor quotes or any other apparent basis to support the cost estimates. For example, the report prepared by Hatch estimates indirect costs of over $4 million dollars for EPCM (Engineering, Procurement, Construction, Management) and $3.5 million dollars for contingency, but does not explain or document these estimates, which are much higher than those indicated in the EPA's Air Pollution Control Cost Manual ("CCM"). *See* CCM at 2-42. Finally, even if the costs were accurate, they are still reasonable. The cost-effectiveness of low NO_X burners at Minntac Line 6 was $210 per ton of NO_X reduced when burning natural gas and $441 per ton when co-firing coal and gas. Five times these amounts is $1,050 to $2,200 per ton, well within the range where costs have been deemed reasonable by states and the EPA in other BART determinations. For example, the EPA's FIP for Wyoming required NO_X BART controls that cost over $4,000 per ton. *See* 79 Fed. Reg. 5039, 5156-58 (Jan. 30, 2014). Consequently, U.S. Steel's cost concerns are not of central relevance to the outcome of the rule.

U.S. Steel also petitions for reconsideration of the SIP Disapprovals. While timely, U.S. Steel's objections could have been raised during the comment period for the reasons explained above. More importantly, however, U.S. Steel has failed to raise any objection that would justify a different outcome with respect to the SIP Disapprovals. In the SIP Disapprovals, the EPA rejected Michigan and Minnesota's BART determinations for the taconite facilities on numerous grounds, including that the states summarily dismissed technically feasible controls, selected an unidentified set of "good combustion practices" as NO_X BART even though the term usually refers to practices that increase NO_X emissions, and failed to properly assess the costs of SO_2 controls. 78 Fed. Reg. at 58,838. The EPA's full rationale for disapproving the SIPs is laid out in detail in the proposal for that action. 78 Fed. Reg. 8478 (Feb. 6, 2013). U.S. Steel does not explain why the EPA's conclusions were incorrect or how the alleged new information in the petition could possibly cure the analytical deficiencies in the states' SIPs. Indeed, U.S. Steel has already installed low NO_X burners on Minntac Lines 5, 6, and 7, so Minnesota's conclusion that the technology was not technically feasible is clearly incorrect. Moreover, even if U.S. Steel's objections had merit with respect to Keetac and the remaining Minntac lines, which they do not, it would not make an unidentified set of practices that increases NO_X emissions approvable as BART. Therefore, U.S. Steel's objections are not relevant, let alone centrally relevant, to the outcome of the SIP Disapprovals.

In conclusion, U.S. Steel's petition for reconsideration of the 2013 FIP is untimely and raises objections that could have been made during the public comment period. Moreover, the alleged hurdles U.S. Steel identifies are either speculative or addressable, so they are not centrally relevant to the outcome of the rule. While timely, U.S. Steel's petition for reconsideration of the SIP Disapprovals rests on the same objections. They could have been raised during the public comment period and, in any event, are not centrally relevant to the outcome of that rulemaking. Therefore, in accordance with Section 307(d)(7)(B) of the CAA, the EPA is denying the 2013 petition and denying U.S. Steel's request for an administrative stay.

B. U.S. Steel's 2016 Petition

1. SO_2 CEMS Deadline

The EPA is denying U.S. Steel's 2016 petition for reconsideration of the 2016 FIP with respect to this issue because U.S. Steel has not demonstrated that its objection is of central relevance to the outcome of the final rule in accordance with Section 307(d)(7)(B) of the CAA. The 2013 FIP required U.S. Steel's Keetac and Minntac facilities to comply with SO_2 emission limits beginning 3 months from March 8, 2013, the effective date of the final rule. 78 Fed. Reg. at 8739-40. The SO_2 limits for Keetac and Minntac reflected the performance levels that the facilities were already achieving with existing controls. *Id.* at 8730-31. The 2013 FIP also required U.S. Steel to install and operate SO_2 CEMS no later than six months after March 8, 2013. *Id.* at 8740. U.S. Steel was already complying with this requirement as well because U.S. Steel installed SO_2 CEMS at Keetac and Minntac in 2008 and had been operating them since that time. For example, in its comments on the 2013 FIP proposal, U.S. Steel submitted three years of CEMS data to justify a request for modifications to the EPA's proposed SO_2 emission limits for Minntac, which the EPA granted. *Id.* at 8719.

In the 2016 FIP proposal, the EPA proposed new SO_2 CEMS deadlines for taconite facilities owned and operated by ArcelorMittal and Cliffs that were consistent with the terms of a settlement agreement. The EPA did not propose any changes to the SO_2 CEMS deadlines for U.S. Steel's facilities because U.S. Steel was not a party to the settlement agreement. In the final 2016 FIP, however, the EPA inadvertently changed U.S. Steel's SO_2 CEMS installation deadline from six months after March 8, 2013, to six months after May 12, 2016, the effective date of the 2016 FIP. While U.S. Steel is correct that it did not have notice of the change, U.S. Steel fails to explain how the change had any practical effect, let alone how it could possibly be of central relevance to the outcome of the rule. As explained above, U.S. Steel installed SO_2 CEMS at Keetac and Minntac in 2008, and the SO_2 emission limits in the 2013 FIP were based on those facilities' existing performance. Therefore, U.S. Steel was not prejudiced by the unnoticed change. U.S. Steel states that the new SO_2 CEMS installation deadline triggers other deadlines for a performance evaluation, QA/QC checks, and recordkeeping and reporting requirements. 2016 Petition at 12. But U.S. Steel's Title V operating permits for Minntac and Keetac reveal that the SO_2 CEMS at both facilities meet these requirements as well.

Finally, U.S. Steel alleges that the new SO_2 CEMS deadline is "illogical" because it differs from U.S. Steel's SO_2 emission limit deadlines and "inequitable" because it differs from the deadlines for its competitors, ArcelorMittal and Cliffs. While these arguments are irrelevant for the reasons discussed above, U.S. Steel is also incorrect. U.S. Steel's new SO_2 CEMS installation deadline was November 12, 2016 (six months after the effective date of the 2016 FIP). This is the same deadline by which ArcelorMittal and Cliffs had to install SO_2 CEMS, and it was just three days prior to U.S. Steel's deadline for complying with its status-quo SO_2 emission limits[2] (November 15, 2016, the day the Eighth Circuit lifted the stay of the 2013 FIP). Moreover, these dates have now passed, and the EPA has no reason to believe that U.S. Steel is not in compliance. For all of these reasons, the EPA is denying U.S. Steel's petition for reconsideration with respect to this issue.

2. NO_X BART Determinations

The EPA is denying U.S. Steel's 2016 petition for reconsideration of the 2016 FIP with respect to this issue because U.S. Steel's petition is not timely and U.S. Steel has not demonstrated that its objection is of central relevance to the outcome of the final rule, as required by Section 307(d)(7)(B) of the CAA. The 2016 FIP rulemaking implemented the terms of a settlement agreement entered into by the EPA, ArcelorMittal, Cliffs, and the State of Michigan. U.S. Steel was not a party to that settlement agreement. As such, the EPA did not propose to revise the BART requirements in the 2013 FIP that applied to U.S. Steel's facilities in the 2016 FIP rulemaking and, with the exception of the inadvertent change to the SO_2 CEMS deadline discussed above, did not finalize any revisions to those requirements. Furthermore, the EPA did not seek comment on whether the Agency should revise the BART requirements for U.S. Steel's facilities and rejected any such comments it did receive as outside the scope of the rulemaking. 81 Fed. Reg. at 21,678-79. Consequently, while U.S. Steel styles its objection as a timely attack on the lack of new NO_X BART determinations for Keetac and Minntac in the 2016 FIP, it is just

[2] In the 2013 FIP proposal, the EPA similarly proposed the same deadlines for SO_2 CEMS installation and SO_2 emission limit compliance. 77 Fed. Reg. at 49,339-41. U.S. Steel filed no adverse comments regarding this schedule.

another untimely attack on the appropriateness of the NO_X BART requirements that were promulgated in the 2013 FIP.

Moreover, even under U.S. Steel's characterization of its petition, U.S. Steel has not demonstrated why it was impracticable to raise its objections during the public comment period for the 2016 FIP. The comment period for the 2016 FIP proposal was open from October 22, 2015, to November 23, 2015. 80 Fed. Reg. at 64,160. The EPA reopened the comment period on the 2016 FIP proposal from December 16, 2015, to December 23, 2015. 80 Fed. Reg. 78,159 (Dec. 16, 2015). U.S. Steel's objection relies on an attached declaration from its employee, Lawrence Sutherland, and eight exhibits to that declaration. The declaration itself merely references and describes the information in the attachments. *See* 2016 Petition Attachment A. The first exhibit is a regression analysis of NO_X emissions from 2013 to 2014 from Keetac. *See* 2016 Petition Exhibit A. Because this analysis relies on data from 2013 to 2014, it could have been submitted during the comment period. The second exhibit is a February 24, 2016 report from Barr Engineering. *See* 2016 Petition Exhibit B. U.S. Steel does not explain why it was impracticable for U.S. to have contracted for the report earlier so that it could have been submitted during the public comment period. Indeed, the report relies on the same emissions information and alleged technical challenges that were discussed several years earlier in the Hatch report that U.S. Steel submitted with its 2013 petition for reconsideration. The third and fourth exhibits are a FCT modeling summary and report. *See* 2016 Petition Exhibits C & D. The summary indicates that the FCT modeling report was finalized in the fall of 2015, well before the end of the public comment period on December 23, 2015. The fifth exhibit is a short three-page document recommending specific emission limits at Keetac based on the installation of a different technology, new preheat burners. *See* 2016 Petition Exhibit E. U.S. Steel makes no effort to explain when it created the document or why it was impracticable to provide the information therein during the public comment period on the 2016 FIP. The sixth exhibit is a May 24, 2016 update to a December 18, 2012 analysis performed by Metso. *See* 2016 Petition Exhibit F. In the addendum, Metso states that it used "the original base model June 30, 2010 airflow study performed on Keetac Line II along with the modified base model to simulating LNB operation" for the purpose of analyzing and reviewing "specific issues not previously emphasized." 2016 Petition Exhibit F at 1. Given that the Metso addendum is merely a re-analysis of a six-year-old modeling run that opines on issues "not previously emphasized," the EPA fails to see how it was impracticable for U.S. Steel to have contracted for the report earlier so that it could have been submitted during the public comment period. Finally, the seventh and eighth exhibits describe conversations U.S. Steel had with burner manufacturer Coen during the 2011 to 2012 timeframe. *See* 2016 Petition Exhibits G & H. There is no reason why this information could not have been submitted during the public comment period. In summary, while U.S. Steel packages its information as "new," none of it actually relies on facts or data that did not exist or could not have been compiled prior to December 23, 2015.

Finally, the EPA has reviewed U.S Steel's petition, the Sutherland declaration, and its accompanying exhibits and determined that nothing contained therein is of central relevance to the outcome of the 2016 FIP. First, as explained above, the 2016 FIP only revised NO_X BART requirements for taconite furnaces owned and operated by ArcelorMittal and Cliffs. Thus, U.S. Steel's objections related to requirements in the 2013 FIP are not relevant, let alone centrally relevant, to the outcome of the 2016 FIP. Second, U.S. Steel's petition does not include any information that even purports to justify new NO_X BART determinations for Minntac, only

information related to Keetac. Interestingly, whereas U.S. Steel asserted in its 2013 petition for reconsideration that the EPA should either approve Minnesota's determination that "good combustion practices" was NO_X BART for Minntac Lines 3, 4, and 5 or conduct new NO_X BART determinations for those lines, U.S. Steel's 2016 petition for reconsideration now admits that U.S. Steel was able to install a low NO_X burner on Minntac Line 5 in December 2015. 2016 Petition at 10-11.

Third, with respect to Keetac, U.S. Steel's information explains that Hatch and Coen developed a solution (Case 12) to overcome difficulties related to available space and burner sizing. 2016 Petition Exhibit G at 3. This solution required new cooling fans, which the EPA accommodated in the 2013 FIP. Citing to the Barr report and Metso addendum, U.S. Steel asserts that "[a]lthough Case 12 satisfied the requirements of capacity and space for a up to 115% stoichiometric burner, it did not address the issues that came to light regarding pellet quality concerns . . . and economic feasibility." *Id.* The EPA reviewed the Metso addendum, which asserts that modeling simulations show that a high-stoich low NO_X burner will lead to broken pellets and pellet fusing at Keetac. The Hatch report submitted with U.S. Steel's 2013 petition made similar claims. Nevertheless, U.S. Steel has never performed any testing to confirm whether pellet quality issues are real or speculative, nor has U.S. Steel explored ways to reduce or mitigate the issue, such as baffles or a redistribution of the airflow. The EPA also reviewed the Barr report, which asserts that the installation of low NO_X burners at Keetac will cost between $10,100 and $21,000 per ton of NO_X reduced. 2016 Petition Exhibit B at 6. These figures appear seriously inflated, as they are several orders of magnitude larger than the costs experienced at Minntac and ten times larger even than the estimated costs in the Hatch report submitted with U.S. Steel's 2013 petition. The Barr report indicates that the major cost drivers were the need for a revised burner design and new process fans, *id.* at 6-7, but these facts were known to U.S. Steel and Hatch in 2012. After reviewing Barr's estimates, the EPA identified a number of serious flaws, including a lack of documentation (such as vendor quotes), conflicts with the cost estimates in the Hatch report (upon which the Barr report partially relies), and a significant under-prediction of the NO_X reductions that can be achieved by a low NO_X burner. For example, while the Hatch report estimated direct annual operating costs of $3,000,000, the Barr report estimates such costs will be over $8,000,000 without explaining the discrepancy or justifying the underlying dramatic increases in fuel and electricity costs. *Id.* at 6. Also, Keetac has an uncontrolled emission rate of 5.5 lb NO_X/MMBtu when burning natural gas and 2.1 lb NO_X/MMBtu when burning mixed fuels and uncontrolled annual emissions of 3,455 tons per year. Consequently, the installation of low NO_X burners and compliance with the emission limits in the 2013 FIP will reduce annual NO_X emissions at Keetac by 2,695 tons per year when burning natural gas and 1,002 tons per year when burning mixed fuels. Without explanation, however, the Barr report assumes that the 2014 FIP will only reduce NO_X by 1,121.6 tons per year and 538.2 tons per year, respectively. Correcting for this change alone cuts Barr's cost-effectiveness estimates in half. In sum, because the Metso addendum is speculative and the Barr report is seriously flawed, U.S. Steel's objection would not change the outcome of the EPA's determination of NO_X BART at Keetac.

For all of these reasons, in accordance with Section 307(d)(7)(B) of the CAA, the EPA denies the 2016 petition and denies U.S. Steel's request for an administrative stay.

Dated: JAN 18 2017.

Gina McCarthy,
Administrator.

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

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Message

From: Davis, Patrick [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7FCA02D1EC544FBBBD6FB2E7674E06B2-DAVIS, PATR]
Sent: 9/25/2017 6:23:22 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Rozsa, Gabe [Gabe.Rozsa@prime-policy.com]; Deanna Krupa [DeannaKrupa@ipc.org]
Subject: Re: Call with IPC CEO

Hi Byron and Gage,

I do not plan to attend. I had been looped into this topic of discussion in the early days of the Administration when I was covering OCSPP. Nancy Beck is better positioned to help you with this topic.

Thanks,

Patrick Davis
Environmental Protection Agency
Deputy Associate Administrator, Office of Land and Emergency Management
Ex. 6 - Personal Privacy office
cell

Information sent to this email address may be subject to FOIA.

Sent from my iPad

On Sep 25, 2017, at 2:20 PM, Brown, Byron <brown.byron@epa.gov> wrote:

> I do not know if Patrick plans to participate but I have invited Nancy Beck, the Deputy AA for the chemical program working this issue.
>
> **From:** Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
> **Sent:** Monday, September 25, 2017 2:18 PM
> **To:** Brown, Byron <brown.byron@epa.gov>
> **Cc:** Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
> **Subject:** RE: Call with IPC CEO
>
> Byron,
>
> Will you have others on the call or would you prefer just you and John ?
>
> Gabe
>
> **From:** Brown, Byron [mailto:brown.byron@epa.gov]
> **Sent:** Monday, September 25, 2017 1:53 PM
> **To:** Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>
> **Cc:** Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
> **Subject:** RE: Call with IPC CEO
>
> We can use my call-in number: **Ex. 6 - Personal Privacy**

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Monday, September 25, 2017 12:50 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Byron,

This is one of the issues we raised with the Administrator relating to language in the Lautenberg TSCA reform bill on manufacturing byproducts that are sent for recycling and what type of relief EPA may be able to offer from the burdensome reporting requirements as provided for under the language in Section 8(a)(6) of TSCA as amended by the Lautenberg bill. See the language at the bottom of first page of the attached text. We are nearing the end of the negotiated rulemaking process and EPA will need to decide what to do to implement the language if consensus with all stakeholders is not achieved.

Gabe

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Monday, September 25, 2017 11:38 AM
To: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Can you provide additional information on the topic you want to discuss?

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Monday, September 25, 2017 8:16 AM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Byron,

Let me know if you plan on having anyone else on the call and we need to set up a bridge. If not, what number should we call. John is in Chicago but if we want additional staff from EPA or IPC on the call, I can offer a dial in number.

Gabe

From: Rozsa, Gabe
Sent: Friday, September 22, 2017 9:31 AM
To: 'Brown, Byron' <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>; 'Deanna Krupa' <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Byron,

Let's go with 11:30. I am copying John's assistant Deanna to facilitate the logistics. Let us know what number he should call.

Gabe

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Thursday, September 21, 2017 5:25 PM
To: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>
Cc: Davis, Patrick <davis.patrick@epa.gov>
Subject: RE: Call with IPC CEO

Tuesday at either 11:30 or 12 noon should work.

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Thursday, September 21, 2017 3:27 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>
Subject: Call with IPC CEO

Dear Byron,

We met during an electronics industry meeting with the Administrator on May 2nd. During that meeting, our client IPC, which is a global trade association representing large and small companies in the electronics industry, described issues of concern under various EPA programs affecting the industry and our desire to find solutions that advance environmental stewardship while also minimizing or eliminating unnecessary or overly burdensome reporting/regulation. Per my discussion yesterday with Patrick Davis, I was hoping to set up a call next week between you and the CEO of IPC, John Mitchell, to update you on one of the issues we raised in that meeting. Would you have time either on Monday between 3 and 4:30 or Tuesday at either 11:30 or 12 for a short call?

Thank you,

Gabe

Gabe Rozsa
Managing Director
1110 Vermont Avenue, NW | Suite 1000 | Washington, DC 20005
Office Ex. 6 - Personal Privacy | Fax: 202 530 4800 | Cell: Ex. 6 - Personal Privacy
www.prime-policy.com

<image002.png>

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Message

From: John Ward [wardo@wardo.com]
Sent: 1/5/2018 7:06:45 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: Meeting Request: Coal Combustion Products Partnership

9:30 Tuesday will work great. Thanks for making the time, Byron.

1301 Constitution Avenue entrance? Anyone we should call for an escort?

Stay warm back there!
--wardo

John N. Ward
wardo@wardo.com
Ex. 6
Twitter: WorldWideWardo

From: Brown, Byron <brown.byron@epa.gov>
Sent: Friday, January 5, 2018 11:59 AM
To: John Ward
Subject: RE: Meeting Request: Coal Combustion Products Partnership

Can we do 9:30 just to be safe.

From: John Ward [mailto:wardo@wardo.com]
Sent: Friday, January 5, 2018 11:27 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Fw: Meeting Request: Coal Combustion Products Partnership

Good morning, Byron,
Just checking back to see if 9:00 a.m. Tuesday will work for you or if we should shoot for another time...
Stay warm back there!
--wardo

From: John Ward
Sent: Thursday, January 4, 2018 11:13 AM
To: Brown, Byron
Subject: Re: Meeting Request: Coal Combustion Products Partnership

Thanks for the quick response, Byron. Our only conflict at this point is 2 p.m. Tuesday. Otherwise we're wide open.

Shall we say 9:00 a.m. on Tuesday? Or please let us know whatever else would work best for you.

Thanks!
--wardo

John N. Ward
wardo@wardo.com
Ex. 6
Twitter: WorldWideWardo

From: Brown, Byron <brown.byron@epa.gov>
Sent: Thursday, January 4, 2018 10:31 AM
To: John Ward
Subject: RE: Meeting Request: Coal Combustion Products Partnership

Hi Wardo-I should have availability those days, so please suggest a couple of times that might work. Thanks. - Byron

---

From: John Ward [mailto:wardo@wardo.com]
Sent: Thursday, January 4, 2018 11:09 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Meeting Request: Coal Combustion Products Partnership

Good morning, Byron,

You may already be aware that shortly before the holidays, environmental groups led by Earthjustice launched active opposition to re-establishment of the Coal Combustion Products Partnership (C2P2 program.) This action has already sparked interest on Capitol Hill.

I will have Tom Adams, executive director of the American Coal Ash Association, with me in Washington next Tuesday and Wednesday, January 9-10. Would you have a few minutes to meet with us so that we can bring you up to speed on our discussions with EPA program offices over the past several months and what may be in the offing now that Earthjustice appears to be making this a priority?

Thanks!
--wardo

John N. Ward
wardo@wardo.com
Ex. 6
Twitter: WorldWideWardo

Message

From: Brent de Jong [brent.dejong@castlelake.com]
Sent: 6/7/2017 9:22:52 PM
To: Mackey, Cyndy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b2f2b414786040ee8d75a21fa1c04a9b-Mackey, Cyndy]; Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; Fotouhi, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=febaf0d56aab43f8a9174b18218c1182-Fotouhi, Da]
CC: Brian Zatarain [brian.zatarain@itafos.com]; 'Marten Walters' [marten.walters@itafos.com]; Kelley, Rosemarie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=23b7c900323047fca012df62c58c4d22-Rkelley]
Subject: RE: Miss Phos - Agenda For Today's MPC Technical Call

Thank you. Speak in a few moments.

I know not on your agenda points, but at the right time we would like to discuss the other uses of gypsum. Below are extracts from IAEA:

p114 "The indefinite stacking of phosphogypsum has negative impacts in terms of the engineering and environmental aspects of the stacks themselves and the associated costs and long term liabilities ..... This awareness of the negative impacts of indefinite stacking and the huge increases in the amounts of phosphogypsum having to be stored in stacks in the future have highlighted the need for a systematic reappraisal of the merits of, and potential for, increased use of phosphogypsum worldwide. "

p164 "The storage of phosphogypsum in stacks, irrespective of its radioactivity content, creates potential environmental and physical safety hazards and, therefore, needs to be controlled by the relevant authorities in a consistent and harmonized manner. ....

This, together with the increasing rate of phosphogypsum production, provides a very compelling reason for creating a regulatory environment that is conducive to identifying and promoting further ways of safely using phosphogypsum as a co-product of phosphoric acid production rather than having to manage it as waste."

From: Mackey, Cyndy [mailto:Mackey.Cyndy@epa.gov]
Sent: Wednesday, June 07, 2017 11:49 AM
To: Brent de Jong; Brown, Byron; Fotouhi, David
Cc: Brian Zatarain; 'Marten Walters'; Kelley, Rosemarie
Subject: RE: Miss Phos - Agenda For Today's MPC Technical Call

Brent:

Below is a proposed agenda for today's MPC Technical Call:

Agenda: June 7 Call at 5:30 pm Regarding MPC Site - Call with Brent de Jong and Technical Staff

1. **DJC folks provide background on the following issues including what the issue is, where it stems from and what DJC is seeking**
    a. ▪ **Deepwater injection**
    b. ▪ **Rolling Average Rainfall Test**
    c. ▪ **Water Level Management**
    d. ▪ **Treatment of Water From DAP scrubber**
2. **Government follow-up questions, clarifications (if any), responses (if any)**

3. **Next Steps**
   a. **Follow-up on technical issues if government teams needs to discuss internally based on today's discussion**
   b. **Set up subsequent global discussion on where we are on all issues, DJC feedback from Board, steps necessary to get to agreement**
   c. **Follow-up as separate action item further discussions regarding Gypsum reuse with appropriate folks from program offices**

Cyndy Mackey
Director, Office of Site Remediation Enforcement
EPA-Office of Enforcement and Compliance Assurance (Mail Code-2271A)
1200 Pennsylvania Ave., N.W. (Room-WJC 5206) Washington, DC 20460
202 564-8206 (Direct Line)
202 564-5110 (Office Line)
Ex. 6 (Office Cell)

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---

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Tuesday, June 06, 2017 4:26 PM
To: Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Brown, Byron <brown.byron@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>
Subject: RE: Miss Phos feedback

Ok – thanks – speak to all then.

From: Mackey, Cyndy [mailto:Mackey.Cyndy@epa.gov]
Sent: Tuesday, June 06, 2017 2:55 PM
To: Brent de Jong; Brown, Byron; Fotouhi, David
Cc: Brian Zatarain; 'Marten Walters'; Kelley, Rosemarie
Subject: RE: Miss Phos feedback

Brent:

To respond to the technical questions you raised in your May 23 email below, I am planning to invite people from EPA Headquarters, Region 4, DOJ and the State to participate in tomorrow's call. This includes the following people:

- EPA Headquarters: Cyndy Mackey, Rosemarie Kelly, Helena Healy, Pete Raack
- EPA Region 4: Sean Ireland (Water technical lead), Alan Annicella (RCRA technical lead), Marshall Binford (ORC), Joan Redleaf-Durbin (ORC)
- DOJ: Ken Long
- State of Mississippi: To be determined

Please let me know if you have any questions or concerns about tomorrow's call at 5:30 EST. The conference line number is Ex. 6 / Conf Code: Ex. 6

Cyndy Mackey
Director, Office of Site Remediation Enforcement
EPA-Office of Enforcement and Compliance Assurance (Mail Code-2271A)

1200 Pennsylvania Ave., N.W. (Room-WJC 5206) Washington, DC 20460
202 564-8206 (Direct Line)
202 564-5110 (Office Line)
Ex. 6 (Office Cell)

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---

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Tuesday, June 06, 2017 12:15 PM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>
Subject: RE: Miss Phos feedback

Great – thanks.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, June 06, 2017 10:52 AM
To: Brent de Jong; Mackey, Cyndy; Fotouhi, David
Cc: Brian Zatarain; 'Marten Walters'
Subject: RE: Miss Phos feedback

Hi Brent – yes, we can do 5:30 pm on Wednesday. Here is the conference call information: Call in number Ex. 6 Ex. 6 / Conf Code: Ex. 6

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Monday, June 5, 2017 7:40 PM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>
Subject: RE: Miss Phos feedback

If it is possible to do it later in the day e.g. 5:30 or 6 pm would be great as I am in Asia this week. But if not, lets leave it.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Monday, June 05, 2017 2:53 PM
To: Brent de Jong; Mackey, Cyndy; Fotouhi, David
Cc: Brian Zatarain; 'Marten Walters'
Subject: RE: Miss Phos feedback

Hi Brent – will Wednesday at 4 pm (eastern) work for you and your technical team for a follow up call?

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Friday, June 2, 2017 10:59 AM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>
Subject: RE: Miss Phos feedback

Can you do 3:30 pm EST today? Otherwise next week early in the day Tuesday or Wednesday work as well.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, May 30, 2017 10:03 AM
To: Brent de Jong; Mackey, Cyndy; Fotouhi, David
Cc: Brian Zatarain
Subject: RE: Miss Phos feedback

Hi Brent – you indicated your technical team would be available for a call this afternoon. Do you have a specific time in mind, and are there any other times in the next week that would also work for a technical call?

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Tuesday, May 23, 2017 9:37 AM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>
Subject: Miss Phos feedback

EPA Team,

As discussed on the last call, I spent more time with the Itafos team and can provide you feedback on what we need upfront for on site management:

1. Deepwater injection (as discussed previously)
2. Rolling average rainfall test instead of single event
3. Ability to bring down water levels / increase freeboard in anticipation of upcoming bad weather
4. Treatment of water from DAP scrubber ... is it Beville excluded or not? We would like to comingle as it is much better environmentally - the ammonia in the DAP scrubber water raises the pH of the water coming from the phosacid plant.

Additionally we had some further thoughts for Gypsum stack and use of materials:

1. Roadbed (as discussed previously)
2. Landfill cover - it helps the bugs grow to breakdown refuse
3. Agricultural uses e.g. peanut farms work well up to 25 pCi/g (increase limit from 10)
4. Export

Our technical team can do a call on Tuesday May 30th in the afternoon.

Thanks,

Brent de Jong | Castlelake
Partner
4600 Wells Fargo Center | 90 South 7th Street | Minneapolis, MN 55402
Tel: + Ex. 6 | Mobile: + Ex. 6
brent.dejong@castlelake.com
www.castlelake.com

Message

From: Fern Abrams [FernAbrams@ipc.org]
Sent: 5/4/2017 7:31:04 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: John Hasselmann [JohnHasselmann@ipc.org]; John Mitchell [JohnMitchell@ipc.org]
Subject: Thank you and follow up from IPC meeting
Attachments: May 9-10 Byproducts Mtg 1 Agenda.pdf; EPA Inorganic Byproducts Situation Assessment_042017.pdf; IPC Comments on Situation Assessment Report.pdf

Dear Byron,

Thank you for meeting with IPC members earlier this week. Several of our members said that the meeting with you and Administrator Pruitt was the highlight of the week.

In advance of our written comments for the May 15th docket, I wanted to provide you with some timely information about two of the issues we discussed, the negotiated rulemaking on TSCA reporting of byproducts, which starts on Tuesday May 9th, and the RCRA Hazardous Waste Generator Rule, for which there is a court order for June briefing.

Please find below and attached the meeting notice provided by EPA's facilitators, along with their situation report and our comments on the situation report. As we said during the meeting with you and the Administrator, we look forward to collaboration with the EPA and we are hopeful that after a proper vetting of this issue by the negotiating committee, a rule will be proposed and finalized that allows EPA and industry to better focus our resources.

Additionally, with regards to the November 2016 RCRA Hazardous Waste Generator rule also discussed during the meeting, we hope that EPA will speedily agree to putting the case in abeyance for a limited period of time to allow for settlement discussions. We are currently under court order to start briefing this case in June, but as we mentioned we would prefer to work with EPA to address our concerns. Agreeing to a abeyance will allow EPA and industry to avoid dedicating a lot of resources to briefing the court on an issue that potentially could be resolved through settlement.

Thank you in advance for your assistance, and please let me know if there is additional information that you need.

Sincerely,

Fern Abrams
Director of Regulatory Affairs and Government Relations
IPC- Association Connecting Electronics Industries
1331 Pennsylvania Avenue, Suite 910
Washington, DC 20004
Ex. 6 - Personal Privacy
fabrams@ipc.org
www.ipc.org

From: Laura Sneeringer [mailto:lsneeringer@cbuilding.org]
Sent: Wednesday, May 3, 2017 11:02 AM
To: Christopher Moore <cmoore@mediate.org>
Subject: Final Materials for May 9-10 CDR Byproducts Meeting

Hello Everyone,

This e-mail is being sent to everyone interviewed as part of the convening process for the EPA Chemical Data Reporting (CDR) Inorganic Byproducts Negotiated Rulemaking and individuals nominated by their organizations to be Committee Members.

Attached are final documents to prepare for our upcoming organizational planning meeting on May 9-10, 2017 at the Capitol Hilton, 1001 16th Street NW, Washington, DC. We will be in the South American Rooms A &B, and the meeting is scheduled for 9am to 5pm on May 9th and 9am to 3 pm on May 10th. Those of you who have been nominated as Committee Members – please let us know if you will not be able to attend the meeting (or parts of the meeting), if you haven't already.

Attached information includes:

- **Agenda**
- **Operating Protocol** that describes how we propose to conduct the regulatory negotiation. Please read the draft before the organizational planning meeting. We will discuss it at the meeting, make any needed changes and approve it at the first reg-neg meeting on June 8-9th. We look forward to your insights and comments on how we will conduct our work together.
- **Situation Assessment**, which will form the basis of much of our conversation.
- **Web resources for key background information** that was compiled by EPA.

Please let us know if you do not want to be included on future e-mails. Future information will also be saved here: https://www.epa.gov/chemical-data-reporting/negotiated-rulemaking-committee-chemical-data-reporting-requirements.

Do not hesitate contacting us with any questions.

Laura and Chris

Facilitators/ Mediators
Laura Sneeringer, Senior Associate, Consensus Building Institute, Ex. 6 - Personal Privacy lsneeringer@cbuilding.org
Christopher Moore, Ph.D., Partner, CDR Associates, Ex. 6 - Personal Privacy cmoore@mediate.org

Situation Assessment Report
on
Convening a Negotiated Rulemaking Process
to
Negotiate a Proposed Rule to limit Chemical Data Reporting Requirements for Certain Inorganic Byproducts under Section 8(a) of the Toxic Substances Control Act (TSCA), as amended by the Frank. R. Lautenberg Chemical Safety for the 21st Century Act

U.S. Environmental Protection Agency
Chemical Control Division (7405M), Office of Pollution Prevention and Toxics

Submitted by

Christopher Moore, Ph.D., Partner, CDR Associates
and
Laura Sneeringer, Senior Associate,
Consensus Building Institute

Under contract to CSRA

April 13, 2017

Situation Assessment Report
on
Convening a Negotiated Rulemaking Process
to
Negotiate a proposed Rule to limit Chemical Data Reporting Requirements under Section 8(a) of the Toxic Substances Control Act (TSCA), as amended by the Frank. R. Lautenberg Chemical Safety for the 21st Century Act

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I. INTRODUCTION

The United States Environmental Protection Agency Intent to Establish a Negotiated Rulemaking Committee and Negotiate a Proposed Rule on Chemical Data Reporting Requirements

On December 15, 2016, the United States Environmental Protection Agency (EPA) published a notice in the Federal Register concerning its Intent to Establish a Negotiated Rulemaking Committee and Negotiate a Proposed Rule on Chemical Data Reporting (CDR) Requirements under Section 8(a) of the Toxic Substances Control Act (TSCA), as amended by the Frank. R. Lautenberg Chemical Safety for the 21st Century Act. The latter Act requires EPA to initiate the regulatory negotiation specific to CDR reporting requirements for inorganic byproduct chemical substances that are subsequently recycled, reused or reprocessed.

Negotiated rulemaking[1] is a process in which a committee composed of representatives of stakeholder groups that will significantly be affected by a proposed rule is charged with reaching consensus on the text of a proposed rule. The convening Agency responsible for the regulation, "to the maximum extent possible consistent with the legal obligations of the agency, will use the consensus of the committee with respect to the proposed rule as the basis for the rule proposed by the agency for notice and comment" (Negotiated Rulemaking Act of 1996, §563(a)(7)). (See Appendix B for the U.S. EPA Fact Sheet on Negotiated Rulemaking.)

The regulatory negotiation will be conducted in accordance with procedures required in the Negotiated Rulemaking Act (NRA) of 1996, and the Federal Advisory Committee Act (FACA) of 1972. This includes the formation of a Federal Advisory Committee composed of concerned stakeholders.

The Convening Process and Situation Assessment

Part of the convening process for a FACA regulatory negotiation is the conduct of a situation assessment by an independent situation assessor that identifies key potential stakeholders, their issues and interests and recommendations on procedures for parties to engage in productive negotiations. This report describes the findings and recommendations of Dr. Christopher Moore, Partner of Collaborative Decision Resources (CDR Associates), and Ms. Laura Sneeringer, Senior Associate of the Consensus Building Institute, the impartial situation assessors and future mediators, or facilitators, of the regulatory negotiations.

Between January 9th and March 15th, 2017, Moore and Sneeringer contacted 35 potential stakeholder groups, and conducted 30 interviews in-person or by telephone to assess their interest in participating in the regulatory negotiation, and, if so, to solicit their views on issues to be addressed and interests met. Based on the results of the interviews, 22 stakeholder groups, including the EPA, stated they wanted to participate. These groups include manufacturing industries (including importers) and recyclers engaged in producing and/or processing inorganic byproducts, states with an interest in using EPA's CDR data, and the environmental community that also relies on CDR reporting.

It is the judgment of the situation assessors that EPA should convene the regulatory negotiation, as soon as is feasible. All concerned parties are ready to proceed.

---

[1] Negotiated rulemakings are also called regulatory negotiations or "reg-negs". The terms are used interchangeably in this situation assessment report.

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

ED_002061_00086828-00004

The EPA Administrator, under the FACA process, makes a final decision to proceed with the regulatory negotiation. The situation assessors, who will be the future facilitators/mediators of the process, will contact concerned stakeholders to identify mutually acceptable dates for the first and second meetings, prepare an operating protocol for the negotiations and, in consultation with the parties, develop mutually acceptable agendas for the first two meetings.

II. BACKGROUND

The U.S. Environmental Protection Agency Toxic Substances Control Act and Chemical Data Reporting of Inorganic Byproducts

Under TSCA, the EPA evaluates potential risks from new and existing chemicals and finds ways to prevent or reduce pollution before it gets into the environment. The EPA classifies chemical substances as either "existing" chemicals or "new" chemicals. "Existing" chemicals are chemicals that were identified as already in commerce and were reported for the initial TSCA Inventory or are chemicals that have undergone EPA new chemical review and subsequently were added to the TSCA Inventory. "New" chemicals are chemicals that are not listed on the TSCA Inventory.

In 1986, EPA promulgated the Inventory Update Reporting (IUR) regulation under TSCA Section 8 (a). Under the regulation, EPA requires manufacturers (including importers) of certain chemical substances included on the TSCA Inventory to report data on chemical manufacturing every 4 years. Initially limited to organic chemical substances, in 2005 EPA amended the IUR to, among other changes, require the reporting of information on inorganic chemical substances.

In 2011, EPA changed the name of the IUR to the CDR and required electronic reporting of CDR information.

EPA uses information collected under CDR, which is the only comprehensive collection of exposure-related data for chemicals in commerce, to inform and support Agency programs. EPA uses the data to help assess the potential human health and environmental effects of these chemicals and makes the non-confidential business information that it receives available to the public.

Some chemical substances are byproducts, which are defined at 40 CFR 704.3 as substances produced without a separate commercial intent during the manufacture, processing, use, or disposal of another chemical substance(s) or mixture(s). Byproducts used for a non-exempt commercial purpose are reportable under CDR. Those manufactured without commercial intent, not used for a separate commercial purpose, or used only for very limited specific types of commercial purposes (identified under the exemptions found at 40 CFR 720.30 (g) which includes burning the byproduct as a fuel, disposing of it as a waste such as in a landfill, or extracting a component chemical substance for commercial purposes) are exempt from reporting.

Background on the Negotiated Rulemaking

On June 22, 2016, TSCA was amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, to include the requirement that EPA convene a negotiated rulemaking to develop and publish a proposed rule providing for limiting the reporting requirements under TSCA section 8(a) for manufacturers of any inorganic byproducts, when such byproducts, whether by the byproduct manufacturer or by any other person, are subsequently recycled, reused, or reprocessed. In the event a proposed rule is developed through the negotiated rulemaking process, a final rule must be issued by December 22, 2019. (See §2607(a)(6) of TSCA.)

This situation assessment report is one of the first steps for convening the Federal Advisory Committee and conducting negotiated rulemaking. It includes identification of key stakeholders concerned about the issues in question, solicitation of their interest in participating in the initiative, recommendations on stakeholder groups and representatives to be involved, identification of issues to be discussed and addressed, and suggestions for procedures that will promote productive negotiations.

III. STAKEHOLDER GROUPS AND REPRESENTATIVES

During the situation assessment, the assessors contacted 35 groups of potential stakeholders from government, industry and the public interest sectors; and interviewed 30 groups and 80 individuals, either in groups or individually (see Appendix A: List of Interviewees).

The situation assessment identifies five categories of stakeholders that want to and should be involved in the negotiated rulemaking:

- **The U.S. Environmental Protection Agency (EPA**) This Agency, under TSCA, has, among many other authorities, the broad authority to require information collection from manufacturers and processors of chemical substances (including importers), and the maintenance of records and/or reports of such data as the Agency may reasonably require to carry out TSCA mandates. EPA uses data collected under CDR to support risk screening, assessment, priority setting and management activities which allows EPA to construct an in-depth picture of the types, amount, end uses, and possible exposure to chemicals in commerce.

- **States** – Because many states don't collect chemical data collected by EPA, they are dependent on getting data on chemical substances in commerce from EPA's reporting requirements under CDR. States interests are the prioritization of chemicals for risk evaluation, implementation of risk determinations and assurance that regulation of chemicals is not limited by preemption, confidential business information management, and other procedural processes that could impact or inform environmental statutes delegated to States to implement, such as the Clean Air Act (CAA), Clean Water Act (CWA) and the Resource Conservation and Recovery Act (RCRA), and other State legislation involving chemical substances. The State Committee representatives from the Massachusetts Department of Environmental Protection and Minnesota Pollution Control Agency will coordinate with the Environmental Council of the States (ECOS), the national non-profit, non-partisan association of state and territorial environmental agency leaders whose purpose is to improve the capability of state environmental agencies and their leaders to protect and improve human health and the environment in the U.S.

- **Environmental Organizations** – A number of national environmental groups are interested in CDR reporting of inorganic byproducts by manufacturing companies and recyclers. They use CDR data for research, and development of programmatic initiatives. A central interest is having adequate, detailed and regularly reported data.

  The situation assessors contacted and interviewed representatives of six leading environmental groups to solicit their interest in participation and issues they wanted to have addressed. While a number of environmental groups are very concerned about and interested in the focus of the regulatory negotiation and its potential outcome, they are under-resourced in terms of personnel, finances and time to engage in the negotiations.

It appears only a few representatives of the environmental community will be able to directly participate in negotiations and all meetings. To help assure that adequate input from the broader environmental community is secured, the mediators will assist Committee members representing environmental interests to maintain regular communication with a network of environmental groups that are not directly participating on the Committee. Periodic briefings on the work of the Committee will be conducted for this group with opportunities for participants to provide input that the Committee members representing environmental concerns can bring back to the full Committee.

- **Manufacturing Industry Associations and Companies** – There are a large number of industry associations and member companies that have concerns, questions and ideas about CDR reporting of inorganic byproducts resulting from their manufacturing processes. The situation assessment found that a larger number of industry representatives are needed to be able to represent the interests of diverse manufacturing processes and resulting inorganic byproducts and specific kinds of member companies (small and large). For the most part, each industry sector felt they needed to have a seat at the table in order to ensure buy-in from their unique constituents, as opposed to being represented by other industry members. The situation assessment found a high level of interest and commitment to participate.

- **Recycling Industry Associations and Companies** – This category of stakeholders includes both manufacturing companies that engage in internal recycling of inorganic byproducts, either on-site inside the "fence line" of a plant or at another company facility, and independent recycling companies that process these chemical substances.

  Recyclers, depending on the chemical substances being processed, use a combination of chemical reactions and physical procedures to separate out inorganic chemical substances from byproducts for future commercial sale and use. Recyclers are either paid by manufacturing companies to perform recycling services or purchase the chemical substances with inorganic chemical substances from the manufacturers for separation and later commercial sale. Products that result from recycling depend on various potential uses of inorganic chemical substances and the market for these products, which may vary over time.

IV. INTERESTS AND ISSUES

Interests

During stakeholder interviews, participants explicitly or implicitly noted a number of broad interests that they wanted to have met as a result of participation in the negotiated rulemaking.

- **Protection of human health and the environment** – Ensure that chemical substances manufactured, processed, or used for commercial purposes in the United States do not adversely impact the environment, human health or worker safety.

- **Adequacy, accuracy, and integrity of information** – Ensure that basic use and exposure-related data on chemical substances in commerce in the United States, including byproduct chemical substances, are available, accurate, and of legitimate quality so that EPA, states, and other users have information needed for screening-level assessments and risk evaluations of TSCA chemicals.

- **Cost effectiveness and efficiency** – Ensure that industry, companies and the EPA benefit from a clear and well-organized reporting process and do not incur unnecessary labor or financial burdens.

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- **Predictability** – Ensure predictability for industry and companies that they are meeting their regulatory responsibilities and are not incurring regulatory risk, and that EPA is confident that industry and companies are meeting their reporting requirements.

- **Consistency** –Ensure that guidance is consistent and does not frequently change, and if it does, adequate lead-time is provided to be informed of shifts and make changes in reporting requirements.

- **Recycling** – Ensure and promote the use of recycling, and other pollution prevention and source reduction activities, for appropriate inorganic byproducts, which are not better handled by burning, landfilling or other disposal mechanisms.

- **Consistent enforcement** – Ensure that there is consistent enforcement by EPA so that all parties are following the same rules.

- **Avoidance of unintended consequences** – Ensure that any regulatory changes to CDR reporting do not establish precedents that may have unintended consequences for reporting other byproducts covered under TSCA, CDR and other EPA Programs.

- **Close and prevent loopholes** – Ensure that any changes in reporting inorganic byproducts are specific enough that that in the future there will not be room for diverse interpretations that will inhibit accurate reporting.

Issues

The situation assessment identifies three categories of issues that should be considered for discussions and deliberations by the Committee. Listed below are ones identified by interviews and in written documents. Additional issues will, no doubt, be identified and raised in the course of the Committee's deliberations.

1) **Topics to be addressed by information exchange, briefings or education** – Correspondence between stakeholders and EPA and interviews conducted by the situation assessors indicate that there is lack of clarity regarding a number of aspects of inorganic byproduct identification and reporting. It will be important at the beginning of the negotiation process to have an information exchange session, with adequate time for all participants to ask and get answers to their questions, so that everyone has the same information and common understandings. Doing so will help minimize unnecessary differences or disagreements due to lack of accurate information. It will also help identify refined topics for discussion. Some of the topics for which information needs to be exchanged include:

    A. History of reporting inorganic byproducts under TSCA/IUR/CDR
        a. Logic and rationale for regulatory changes that led to CDR reporting requirements for inorganic byproducts, including changes in 2006.

    B. Overview of EPA and others' information needs concerning inorganic byproducts, including levels of detail needed or desired in reporting.
        a. How do EPA, the states and others use CDR data including on inorganic byproducts? What types of questions do the data help answer?
        b. Data on inorganic chemical substances were collected in 2006, 2012, and 2016. How have these data been used? What analyses on inorganic byproduct data have EPA or others conducted? What risks have been identified or conclusions reached? What was

missing from the data collection that limited the usefulness of the CDR data? How do the requirements of the revised TSCA affect how the data will be used?

C. Industry activities, including the costs/burdens to companies in terms of level of effort (LOE) and other financial expenditures, for CDR reporting specifically of inorganic byproducts, independent of other TSCA reporting requirements. This should include a description by each of the stakeholder industry sectors of how they determine downstream uses of their byproducts streams.

D. Descriptions of how potentially relevant programs define and regulate 'inorganic byproducts'.
   a. EPA programs: CDR, RCRA, and TRI, including the data reported under each program.
   b. International: the Basel Convention in Europe.
   c. Other potentially relevant definitions, such as from third-party standards (e.g., ASTM, ISO).

E. Requirements under CDR:
   a. Description of what constitutes a 'commercial purpose' and who reports.
      i. How to determine if imported chemical substances constitute a commercial purpose?
      ii. If a manufacturer does not directly use its inorganic byproduct, but sells it to a recycler to process, is this a commercial use? Who reports?
      iii. If a manufacturer recycles its own inorganic byproduct and reuses it in its manufacturing process (i.e., byproduct serving as feedstock), is this a commercial purpose? Does this need to be reported?
      iv. If a manufacturer keeps ownership of an inorganic byproduct, sends it to a recycler to process and gets back a chemical that is used in one of its manufacturing processes, is this a commercial purpose? Who reports it?
      v. Is research and development considered a commercial purpose? If so, how is reporting impacted (e.g., are the same volume thresholds applicable)?

   b. Guidance on if/how reporting is impacted when inorganic byproducts are exported outside of the U.S. for recycling or other uses.
   c. How to define 'reasonably ascertainable' in relation to manufacturers obtaining information from downstream recyclers/users on the products produced and procedures used (physical or chemical) to recycle inorganic byproducts.

F. Overview of the byproduct exemption at 720.30(g)(3) (referenced by 711.10(c)): 'extract a component chemical substance from the byproduct for commercial purposes'.

G. How to name byproducts.
   a. How does industry name products, and what are the specs (QA/testing protocols) for its products?
   b. How to identify inorganic byproducts on the TSCA Inventory, including describing available guidance.
   c. When should an inorganic byproduct be identified as a Chemical Substance of Unknown or Variable Composition, Complex Reaction Product, or Biological Material (UVCB)? When can it not be identified as an UVCB substance?
   d. How should companies determine whether to identify an inorganic byproduct as a UVCB substance or the main chemical component(s) in the UVCB substance?

e. How should companies identify inorganic byproducts when it is hard to identify components of their byproduct waste stream (e.g., washes or sludge that change due to where starting material is received from (geographically) or minor differences in processes)?

2) **Initial issues for discussion and negotiation** – These are topics that are expected to be the major focus of negotiations. Some specific topics include:

A. How to reduce disincentives and increase incentives for recycling.
   a. Are there potential disincentives for recycling that may result from reporting requirements?
   b. How significant are the disincentives, and how do they compare to potential human health and environmental protection benefits and the statutory obligation to identify conditions of use?
   c. How might incentives be maximized and disincentives be minimized? Consider factors outside of CDR and TSCA that make it undesirable/unprofitable to not recycle (or compelling to do recycling)?

B. Avoid duplication by aligning EPA programs (CDR, TRI, RCRA):
   a. Are there differences in how programs define and describe 'inorganic byproducts'?
   b. Are there differences among programs concerning "commercial products" and "wastes," related to inorganic byproducts?
   c. Should CDR consider different reporting requirements for inorganic byproducts that EPA has exempted from requirements under other programs (e.g., fly ash and synthetic gypsum reviewed through a RCRA process)?
   d. Are there gaps or opportunities across these programs for reporting on inorganic byproducts?
   e. Are there differences with how inorganic byproducts are treated under The Basel Convention in Europe?
   f. Are there opportunities to better align reporting across EPA programs, including standardization and harmonization of terminology and use codes related to inorganic byproducts? This may also be relevant for international reporting – Organisation for Economic Co-operation and Development (OECD) and Basel Convention.

C. CDR "need to report" determination. What can be done to make this determination easier to make?
   a. What level of information about the recycling process is needed to determine if the byproduct exemption can be applied?
   b. How do byproduct manufacturers obtain information from downstream recyclers/users on the products produced and procedures used (physical or chemical) to recycle inorganic byproducts?
   c. What should be done in these example situations that may impact the need to report determination?
      i. Multiple potential, future uses of inorganic byproducts (e.g., slag from steel industry could be used by DOTs for road aggregate or by farmers).
      ii. Changing market conditions (i.e., recyclers may process inorganic byproducts differently and produce different products based on changing markets).
      iii. Having difficulty or not able to obtain data from recyclers due to the recyclers' claims of proprietary information.

D. Streamline reporting. What opportunities are available? Some examples include:
   a. Does the byproduct exemption at 720.30(g) (3) need to be modified for CDR purposes to better reflect current recycling practices?
   b. Should the process for identifying byproducts for reporting be simplified? For example, what would be the impact, pros and cons of broadening the definition of 'component chemical substance' into categories (i.e., lead oxide same as lead, copper sulfide same as copper).
   c. Should reporting of ranges for production values (as opposed to coming up with specific numbers) be considered?
   d. Should reporting associated with byproducts being recycled onsite (i.e., within a facility's fence line) be considered and treated differently than off-site recycling?

E. Clarify reporting for subsets of inorganic byproducts:
   a. What might be done to clarify reporting for naturally occurring chemicals/ products compared to those resulting from manufacturing? For example, why is the use of a naturally occurring inorganic product used in a manufacturing process, such as mined gypsum for wall board, not reported, and the same inorganic byproduct produced in a manufacturing process is not exempt from reporting? More detail on specific processes will be needed for this discussion.
   b. Are 'heels' in return cylinders (i.e., tiny bit of residue left at the end) a byproduct or an unused starting product that is returned?

F. Compliance issues:
   a. How to increase compliance for reporting of inorganic byproducts?
   b. What facts should EPA consider before taking actions for past violations? Legacy violations would be very fact dependent.

G. Potential changes to communication between EPA and industry:
   a. What can be done to ensure industry has adequate time to setup automatic reporting tools for any reporting modifications?
   b. What are best practices for EPA to share guidance updates, interpretation changes, secure input and answer questions etc.?

3) **Issues outside of the scope for the negotiated rulemaking** – There are a number of issues that are beyond the mandate for the regulatory negotiation as defined in the Chemical Safety for the 21st Century Act. They are being addressed by other agencies or procedures or are not an appropriate topic for these negotiations. Some specific topics that at this time are currently considered to be outside of the scope of this regulatory negotiation include:

A. Guidelines for adding inorganic byproducts to TSCA Inventory via the Pre-manufacture Notice (PMN) Process.
   a. What are guidelines for defining UVCBs? For example, are process-oriented descriptions appropriate as they may be too narrow for long-term use? This type of characterization may make it difficult to innovate with updated processes.
   b. Are there ways to streamline the PMN process?

B. Fairness and equity within an industry – How to ensure that all companies, such as those mining a natural chemical substance or producing the same or similar chemical substance as an inorganic byproduct, are regulated in the same way by EPA, and have the same reporting requirements.

C. Modification of the lower volume threshold (currently 2,500 lbs. instead of 25,000 lbs.) for chemical substances that are the subject of certain TSCA actions.

D. Consideration of possible changes to or re-interpretations of existing CDR reporting exemptions other than the byproduct exemption. The other exemptions, such as for non-isolated intermediates, small businesses, and naturally occurring chemical substances, have a broad impact on chemical substances other than inorganic byproducts.

E. Consideration of possible changes to or re-interpretations of the concept of mixture for overall TSCA purposes, or to the TSCA policies with respect to chemical nomenclature, chemical representation, or listing substances on the TSCA Inventory. Such changes would have a much broader impact than just CDR.

F. Considerations of changes related to PMN reporting.

G. Industry- specific issues. Examples:
   a. Pulp/paper industry Kraft process - A manufacturing process that involves multiple chemical substances, only some of which could be considered byproducts.
   b. Import of scrap metal.

H. Broader reporting issues.
   a. How can EPA's electronic reporting system be improved? Some industry representatives said it is challenging, especially for small companies that do not have highly trained staff.
   b. What challenges for reporting on Form U need to be resolved?

I. Challenges related to confidential business information (CBI).
   a. Are there ways to streamline the process for substantiating CBI?
   b. How can EPA ensure as much information is publically available as possible (i.e., how to ensure CBI is being used appropriately)?

J. Consideration of possible changes or re-interpretations of other EPA rules, including TRI and RCRA regulations.

V. PROCEDURAL AND DECISION-MAKING ISSUES RELATED TO THE NEGOTIATED RULEMAKING

The Negotiated Rulemaking Act of 1996 (NRA) and Federal Advisory Committee Act of 1972 (FACA) Requirements for Regulatory Negotiations

Negotiated rulemaking is a process in U.S. administrative law that authorizes representatives of federal agencies, other government entities and interested stakeholders to engage in negotiations to develop recommendations for a proposed rule. If participants in a regulatory negotiation reach agreements on recommendations, the agency may incorporate them into a proposed rule that is published in the Federal Register. In developing the rule, the Agency follows all of its normal and required rulemaking procedures. Because negotiated rulemaking committees are federal advisory committees, their formation and operation are governed by the Federal Advisory Committee Act of 1972, P.L. 92-463, 86 Stat. 770 (FACA).

Decisions in regulatory negotiations are to be made by consensus, which the NRA defines as the unanimous concurrence among interests represented on a Negotiated Rulemaking Committee, unless the

Committee unanimously agrees to define consensus in another way. The forms of consensus and consensus decision-making procedures to be used in this regulatory negotiation are described below.

Consensus Decision Making

Described below is the definition of consensus that the situation assessors propose be used in the regulatory negotiation, procedures by which it can be reached, and steps that may be taken if a consensus is not possible. These will be discussed at the first meeting of the regulatory negotiation and approved or revised as appropriate.

Consensus

Consensus decision-making is a process by which a group makes a collective decision without voting, which all members can accept. A decision of this type, a consensus, is the strongest form of agreement a group can reach. A consensus decision indicates a greater level of acceptance and support of an outcome than a majority vote of 51% or even a super majority vote of 2/3 of group members.

Consensus is the most common method for decision-making in negotiations. This is especially the case when parties differ regarding their organizational structures (such as those of governmental agencies, companies in the private sector and public interest groups), the number and kinds of constituents they represent, and the issues and diverse interests they want to address. When these characteristics are present, win-lose decision-making processes – such as administrative decisions, litigation, or voting – are often inappropriate or ineffective for addressing or resolving issues where a broad level of support is desirable or necessary, or the issues involved are complex and require the development of integrative solutions.

For the purpose of this regulatory negotiation, three types of agreements will be considered to be a consensus on an individual, cluster or a total package of issues that will be the focus of the regulatory negotiation:

1) The first is an agreement on a solution to an issue or problem that all negotiators unanimously *concur with* and *support with identical levels of enthusiasm, dedication and, commitment.*

2) The second is an agreement on a solution to an issue or problem that negotiators generally prefer or like, but which does not perfectly address all of their interests. An agreement is reached by negotiators making trades or compromises on issues or interests they value differently so that all concerned can *"accept" or "live with"* the outcome.[2]

3) The third is an agreement on a solution to an issue or problem that a majority of negotiators accept, but about which one or more disagree with or oppose. An agreement, however, is still reached because the negotiator(s) opposed to the solution voluntarily decide to *"stand aside"* and *"not block"* other negotiators from reaching an accord. Parties may select this approach for agreement-making for a variety of reasons such as not having a more viable procedural alternative away from negotiations that would likely better satisfy their interests, or their opposition to the potential agreement in question is not a matter of principle or it is not of major importance to them.

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[2] Group participants often see this outcome as the best that can be achieved at a specific time given the relationships they have with each other, information currently available, time and resource constraints or perceptions of their Best Alternative(s) to a Negotiated Agreement (BATNAs), both substantively and procedurally, if a satisfactory negotiated accord cannot be reached. For more about BATNAs, see: R. Fisher and W. Ury *Getting to Yes: Negotiating Agreement without Giving in.* New York: Penguin Books, 1991.

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The Consensus Decision-Making Process

Reaching a consensus requires all group members to educate each other about their important needs, interests and concerns, and develop integrative solutions or agreements that address and satisfy both individual and group interests to the greatest extent possible. A consensus agreement will be considered to have been reached when either a facilitator or a group member states a proposal for an agreement and all Committee Members verbally affirm their support for it, or, at a minimum, agree not to actively oppose it.

All negotiators are free to oppose a proposal for agreement and block consensus if the matter in question is of significant importance to them or a matter of principle. Blocking, however, should not be initiated lightly.

EPA's Responsibilities and Commitments to Implement Recommendations by the Committee and its Members

Any proposed regulation resulting from the negotiated rulemaking process will be developed under the authority of TSCA section 8 (15 U.S.C. 2607), as amended by the Lautenberg Act (Pub. L. 114-182).

EPA will participate as a negotiator in the negotiated rulemaking and will represent the interests of the public, the Agency and other federal concerns. The Agency commits to participate in good faith and will make best efforts to help concerned stakeholders and the Committee as a whole reach consensus. The Agency commits to incorporate consensus recommendations in a potential proposed rule to the extent that they are authorized by Section 8(a) of TSCA, comply with applicable statutes and executive orders, and fulfill the Agency's mandate.

EPA's negotiators will maintain constant contact and communications with senior Agency leadership and other appropriate federal entities that may be affected by the rulemaking to assure they are apprised of the focus and progress of the talks and concur with the agreements on recommendations that are being reached by the Committee. EPA's negotiators will also voice any concerns they have in a timely manner.

EPA, in the consultation with regulatory negotiation Committee members, will determine the scope of negotiations and issues to be discussed. The Agency, however, has ultimate authority to determine issues for discussion, and when appropriate, refer those issues not addressed to other forums for input, deliberations or decision-making.

The Committee may reach consensus agreements and make recommendations on all issues raised and discussed in the regulatory negotiation, or only some of them. The Committee does not have to reach a consensus on all issues raised and discussed in the negotiations for EPA to include recommendations reached on more limited issues into a revised or new rule.

EPA has discretion to determine the threshold for the number and detail provided on issues raised and agreed upon as recommendations in the regulatory negotiation, and how they will be included in the proposed rule. EPA may also decide that some components of the Committee's deliberations should be incorporated as part of the Agency's guidance instead of a proposed rule. For example, there may be many situations in which it is determined that clarification is all that is needed. In that event, EPA staff will author any guidance updates and may request a review from Committee members.

If a consensus is not reached on any issues raised or discussed in the regulatory negotiation EPA is not under any statutory obligation to make any revisions to the CDR rule. Some stakeholders, however,

interpreted the Lautenberg Act requirement differently. They believe that regardless of the outcome of the negotiated rulemaking, the agency is obligated to publish a final rule.

If no agreements are reached on issues raised and discussed in the regulatory negotiation, EPA has the discretion to incorporate any information obtained during the talks to revise the rule for CDR reporting of recycled inorganic byproducts using its normal rulemaking authority and procedures and/or to revise its guidance.

VI. PARTICIPATION

A "Balanced Table"

An effective and successful regulatory negotiation is dependent on the active involvement of a broad spectrum of representative stakeholders and stakeholder groups concerned about the issues in question that can effectively represent and advocate for their groups' issues and interests. Ideally, every key stakeholder group would be directly represented. This, however, is not always possible if there are such a large number of concerned parties that efficient negotiations and consensus decision-making will be difficult.

Fortunately, the situation assessment identified that the number of stakeholder groups that want to participate in the regulatory negotiations on reporting of inorganic byproducts – from government agencies at the Federal and state levels, industry and environmental groups – is not so large that they cannot all be represented in some form.

A second issue beyond assuring the involvement of a broad spectrum of representative stakeholder groups is how to create balanced representation so that no one group or coalition will dominate the process by virtue of their numbers, either at the table or the number of their constituents. If a process of voting were to be used to make decisions, the number of stakeholder groups would be critical to prevent those with larger numbers "out-voting" stakeholders with fewer ones. Although the number of participants at the table from stakeholder groups representing common or similar views impacts committee dynamics, because a consensus decision making process is mandated by the NRA, stakeholder groups with larger numbers cannot "out-vote" smaller stakeholder groups. All stakeholders will have both a place at the table, and opportunities to share their views and engage in agreement making.

Regulatory negotiations on issues of concern to multiple industries almost automatically assure that many industry associations and companies will want to participate. Commonly, however, there may not be as many stakeholders from other groups, such as states or environmental organizations, with a specific programmatic concern or focus on the topic to be negotiated, or the personnel, expertise or financial resources to fully engage in the process. When this happens, significant efforts need to be made to assure that there are multiple stakeholder representatives from different non-industry groups with at least some interests in common, so that those with larger numbers do not dominate parties with a smaller numbers of representatives.

As noted above, the situation assessment identified five stakeholder groups with a keen interest in the focus of this regulatory negotiation – the U.S. Environmental Protection Agency, states, environmental organizations, manufacturing industry associations and companies, and recycling companies. All of these entities need to be engaged in the negotiated rulemaking to produce an informed, wise and broadly supported outcome.

There are a large number of industries and manufacturing companies that want to engage, and a smaller

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number of stakeholders with explicit environmental and health concerns, and representatives of independent recyclers. Many manufacturing companies, however, conduct extensive recycling. The situation assessors hope that additional recyclers can be identified and encouraged to participate in the negotiated rulemaking process.

While the above factors may make a totally balanced table difficult, the situation assessors believe that a relatively balanced one is possible if participants identify stakeholders with similar interests and informally form coalitions to advocate for them.

Qualifications for Stakeholder Representatives

During interviews, the situation assessors asked interviewees to recommend people they wanted to represent them in the negotiated rulemaking. To facilitate representative selection, the situation assessors often made suggestions on the kinds of qualifications, knowledge and skills that should be possessed by representatives, which would help promote productive deliberations. These included:

- Knowledge of technical issues related to inorganic byproducts;
- Experience with CDR and inorganic byproduct reporting;
- Have a constituency whom they directly represent, a stakeholder group as a whole, such as an industry, or as component parts, such as large or small companies;
- Are not external technical consultants or legal counsel without constituents;
- Authority to reach agreements and make commitments for their stakeholder group;
- Willingness and flexibility to discuss issues that will be the focus of the dialogue with parties that may have different views or interests;
- Willingness to engage in productive interest-based negotiations and avoid adversarial or legal argumentation; and
- A commitment to negotiate in good faith and strive to find solutions that will meet all parties' interests to the greatest extent possible.

Numbers of Representatives for each Stakeholder Group

Regarding numbers of representatives for each stakeholder group, the situation assessors recommend that, whenever possible, each stakeholder group have two. We recommend two representatives rather than one for the following reasons:

- Rarely will one representative have the knowledge and expertise to discuss in depth all of the issues that will be the focus of negotiations.
- Representatives are needed that can speak and advocate for the interests of their stakeholder group as a whole as well as having specific technical expertise on chemical byproducts and reporting.
- Two representatives are needed in case one cannot attend a meeting. The two-person model for representation assures that the stakeholder group's views will be presented at the meeting, and that deliberations and decision making by the Committee will not be delayed by the absence of a member.

If two stakeholder representatives cannot be identified from a specific stakeholder group, such as may be the case for environmental organizations, that group will be encouraged to work or form a coalition with stakeholder representatives that have interests identical or similar to theirs, and discuss how their views, interests and potential options for recommendations can best be presented and advocated.

A caveat should be noted regarding stakeholder groups that have two representatives. Members of these

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groups will be free to have and share different opinions during Committee discussion and deliberations to help develop wise and informed agreements that satisfy as many interests as possible. However, when the Committee is making decisions, stakeholder groups with two members will be expected to hold and present a common view and speak with only one voice. In the event that specific stakeholder teams cannot internally reach a unified decision regarding their views on an issue or proposal for agreement, they should abstain from participation in making the decision, and not block the whole group from reaching a consensus.

Representatives

EPA

- Lynn Vendinello, Deputy Director, Chemical Control Division, Office of Pollution Prevention and Toxics
- Susan Sharkey, Existing Chemicals Branch, Chemical Control Division, Office of Pollution Prevention and Toxics

States and Tribes

Massachusetts Department of Environmental Protection and Environmental Council of the States (ECOS)

- Mark Smith, Director, Office of Research and Standards, Massachusetts Department of Environmental Protection

Minnesota Pollution Control Agency and ECOS

- John Gilkeson, Resource Management and Assistance Division, Minnesota Pollution Control Agency

National Pollution Prevention Roundtable (NPPR)

- Rick Reibstein, Board Member, National Pollution Prevention Roundtable

National Tribal Toxic Council

- Larry Dunn, Toxic Chemical Cleanup Manager, Lower Elwha Klallam Tribe, Port Angeles, WA
- Kristin K'eit, Senior Environmental Scientist, Zender Environmental Health and Research Group

Environmental Organizations

Earthworks

- Aaron Mintzes, Policy Advocate, Earthworks
- Lauren Pagel, Policy Director, Earthworks

Natural Resources Defense Council (NRDC)

- David Lennett, Senior Attorney, NRDC

Sierra Club and CA Communities Against Toxic

- Amy Kyle, Retired Adjunct Professor from UC Berkeley School of Public Health and designated representative

WE ACT for Environmental Justice

- Dr. Adrienne L. Hollis, Esq., Director of Federal Policy, WE ACT for Environmental Justice

Manufacturing and Recycling Industry Associations and Companies

American Chemistry Council (ACC)
- Karyn Schmidt, Senior Director, Regulatory & Technical Affairs, ACC
- Schuyler Pulley, Regulatory Specialist, Chemours Company FC, LLC

American Coal Ash Association
- Rafic Minkara, PhD., PE, Vice President – Research & Development, Headwaters Resources, Inc.
- Danny, L. Gray, P.E., Executive Vice President- Governmental & Environmental Affairs, Charah, Inc.

American Fuel & Petrochemical Manufacturers
- Jim Cooper, American Fuel & Petrochemical Manufacturers
- David D. Dunlap, Koch Companies Public Sector, LLC

American Petroleum Institute (API)
- Derek Swick, Manager Regulatory and Scientific Affairs, API
- Uni Blake, Scientific Advisor, API

Association Connecting Electronics Industries (IPC)
- Fern Abrams, Director Regulatory Affairs, IPC
- Bret Bruhn, Environmental Operations Manager – Oregon, TTM Technologies

Guardian Industries
- Mark N. Duvall, Principal, Beveridge & Diamond, P.C.
- James Riley, Environmental Program Manager, Guardian Industries Corp.

Institute of Scrap Recycling Industries
- David Wagger, Chief Scientist and Director of Environmental Management, Institute of Scrap Recycling Industries

International Precious Metals Institute (IPMI)
- Gus Ruggiero, Group Industrial Hygiene Manager, Johnson Matthey Inc.
- JP Rosso, President, IPMI

North American Metals Council (NAMC)
- Kathleen M. Roberts, Executive Director, North American Metals Council
- Martin Jones, Senior Counsel, Fremont-McMoRan Copper and Gold

Phibro-Tech
- William Dwight Glover. President, Phibro-Tech

Portland Cement Association
- Michael B. Schon, Vice President & Counsel, Government Affairs, Portland Cement Association
- James S. Willis, III, P.E., P.G., Director Corporate Environmental, Titan America, LLC

Steel Industry – Representing American Iron and Steel Institute, Steel Manufacturers Association, Specialty Steel Industry of North America, and Copper & Brass Fabricators Council
- Joseph Green, Kelley Drye & Warren LLP

Utility Solid Waste Activities Group

- Jim Roewer, Executive Director, Utility Solid Waste Activities Group
- Douglas Green, Attorney at Law, Venable, LLP

VII. PROCESS DESIGN

Convening the Negotiated Rulemaking

The first meeting will be an organizational planning meeting. All prospective Committee Members are expected to attend and others are welcome to attend. The organizational planning meeting will be an opportunity for information exchange to clarify a number of aspects of inorganic byproduct identification and reporting. It will ensure that everyone has the same information and common understandings, clarify the mandate and scope for future discussions, and discuss operating protocol and the decision-making process for developing recommendations on a new proposed rule or changes in EPA's Guidance on CDR.

Several interviewees were very interested in components of expected Committee discussions, but declined serving as Committee Members because they did not have a significant enough stake in the overall scope and potential outcome of the negotiations, adequate expertise on issues that would be discussed or time and personnel resources to participate. The first meeting will explore other means to secure their input into the deliberations of the Committee, such as through interest group caucuses or periodic briefings.

The first meeting will be an opportunity for prospective Committee members to confirm their interest in participating. To begin the negotiated rulemaking process, EPA will need to establish a formal advisory committee in accordance with the Federal Advisory Committee Act (FACA). The FACA process and formal appointment of Committee Members will be finalized shortly after the first organizational planning meeting and prior to the first formal session of the Committee. This includes scheduling initial meetings of the negotiated rulemaking committee and publishing notices of those meetings in the Federal Register. Fifteen days after the Federal Register notice, the Agency can convene the first formal meeting. As required under FACA, all meetings of the negotiating committee will be announced in the Federal Register with at least 15 days' notice and will be open to the public.

The Negotiated Rulemaking Structure

The negotiated rulemaking structure will involve of a series of in-person plenary meetings attended by all stakeholder representatives. Meetings will involve information exchange, interest-based negotiations, agreement making and drafting recommendations.

EPA expects up to six meetings of one-and-a half days in duration will be held every month to month-and-a-half with the final session approximately six months after the first session. This includes the first organizational planning meeting. It is expected that within this timeframe the Committee will have developed recommendations on the proposed rule that will be submitted to EPA.

It is expected that all meetings will be held in Washington D.C., unless stakeholders decide otherwise.

Smaller multi-stakeholder working group meetings, or meetings between EPA and specific stakeholders, may also be held as long as they conform to requirements in FACA and the NRA. The purpose of these meetings may be to explore issues in more depth, develop proposals to bring to plenary sessions for consideration by all stakeholders or overcome any impasses that may develop. If small group meetings are

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required, provisions will be made for remote participation to minimize costs for travel.

Plenary meetings of all stakeholders will be facilitated by neutral and impartial facilitators/mediators who will manage the overall process and facilitate all deliberations. The facilitators will be accountable to all stakeholders and not to any one entity or group of stakeholders.

All meetings will be open to the public. An opportunity will be provided at an appropriate time during each meeting for public comment. Other opportunities for colleagues of stakeholders to engage or participate in the process may include participation in subcommittees or working groups, reading meeting notes posted on EPA's website, forming and meeting in a caucus with stakeholder representatives who share common interests and concerns, and commenting in writing on the proposed rule or in any public meetings conducted by EPA.

The First Meeting

The draft agenda for the first organizational planning meeting will be prepared by the facilitators/ mediators in consultation with the EPA, and will be refined based on feedback received from Committee Members. Subsequent meeting agendas will be prepared by the facilitators and a small Process Design Task group composed of members selected at the first meeting by all stakeholders. The first formal FACA meeting will include a FACA Committee member orientation required by EPA's Office of General Counsel (OGC).

The agenda for the first organizational planning meeting will include:

Process Issues and Decisions

- Clarification of the mandate, scope and participant goals and expectations for a successful negotiated rulemaking on CDR reporting
- Clarification of how the outcome of the negotiated rulemaking will be drafted and submitted to EPA
- A presentation and discussion of a draft protocol and meeting guidelines prepared by the facilitators/mediators, which will be approved at the first formal meeting
- An introduction to interest-based negotiation
- Selection of members of a Process Design Task Group to develop agendas for future meetings
- Agreement on a schedule for meetings and timeframe for each one

Substantive Issues and Decisions

- An overview of issues to be discussed
- Information exchange, questions and answers on topics identified in this situation assessment report (See Section IV: Interests and Issues on page 8).
- Scoping additional information needs required for productive future talks
- Group development of subsequent general agendas and areas of focus for future meetings
- An opportunity for public comment

Subsequent Meetings

Subsequent meetings will address issues identified by the Committee and Process Design Task Group. Facilitators/mediators will facilitate the meetings, and develop meeting summaries of discussions and agreement reached, which will be circulated to all Committee members for their review and comments. Final approved meeting summaries and relevant documents related to the negotiated rulemaking will be posted by EPA on its website as required by FACA.

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

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The process for each meeting will be designed to address the specific issues the Committee has determined to address. They may involve information exchange, presentations by Committee members or others with expertise on the topics under discussion that they designate, identification and confirmation of agreements in principle, and discussion and problem solving on specific issues.

Agreement Making and Drafting of Recommendations

As the Committee reaches agreements on individual elements of issues discussed, they will be recognized as either "tentative", if final agreement is conditional on reaching agreements on other issues, or final. Both levels of agreement will be recorded in meeting notes.

Close to the end of the negotiated rulemaking, both tentative and final agreements reached will be compiled in one document by the facilitators, a drafting committee composed of stakeholder representatives or their designees or EPA. This document, will be used as a "single-text negotiating document" and will be circulated, discussed and refined during deliberations at one or more later meetings of the Committee.

Ultimately, Committee members will be asked to affirm their acceptance and support for both recommendations to address individual issues, and the text for recommendations for the potential rule as a whole.

VIII. PROTOCOL AND PROCEDURES

Meeting Guidelines

Effective meetings and deliberations are often expedited by a mutually agreed upon protocol or set of meeting guidelines. Prior to the organizational planning meeting, the facilitators will prepare drafts of these documents that will be discussed and approved by all stakeholders as guidance for how the negotiated rulemaking will be conducted. Some of the issues that may be covered in the document(s) include:

- Background on the negotiated rulemaking
- The mission and purpose of the negotiating Committee
- The schedule for the negotiated rulemaking
- EPA's role, responsibilities and commitments
- The stakeholder representation structure and Committee members
- Responsibilities of Committee members
- Involvement of stakeholders' constituents
- Roles and responsibilities of the facilitators/mediators
- Requirements for notification of meetings and that they are open to the public
- A definition of consensus
- The consensus decision making process that will be used
- How decisions will be made
- Procedures to be used if a consensus cannot be reached
- How recommendations will be recognized and recorded
- How recommendations will be incorporated into a rule
- Relations with the press

The Final Operating Protocol and Meeting Guidelines will be publicly available and posted on the EPA's website.

IX. CONCLUSION

The Frank. R. Lautenberg Chemical Safety for the 21st Century Act mandates the U.S. Environmental Protection Agency to convene a negotiated rulemaking to *Negotiate a Proposed Rule to limit Chemical Data Reporting Requirements for Certain Inorganic Byproducts under Section 8(a) of the Toxic Substances Control Act (TSCA).* Dr. Christopher Moore of CDR Associates and Ms. Laura Sneeringer of the Consensus Building Institute, the independent situation assessors for the convening process, find that there is adequate interest and commitment on the part of diverse parties – EPA and state government agencies, various manufacturing industries and recyclers, and environmental organizations – for EPA to proceed to form and convene a Federal Advisory Committee, chartered under FACA, to explore and develop recommendations for a new rule.

Discussions with stakeholders interviewed for the situation assessment indicated a positive attitude toward the initiative. The parties affirmed that they are willing to share information and negotiate in good-faith to identify proposals for recommendations for components of the new rule, which to the greatest extent possible will address and meet the interests of all concerned. Stakeholders noted that they would like to identify proposed recommendations that will respond to cross-cutting concerns of multiple parties as well as explore how issues of specific groups can be addressed. The success of the regulatory negotiation will, however, depend on all participants' flexibility in seeking and developing mutually acceptable interest-based and integrative solutions.

EPA should make all efforts to convene the process by as early as possible, so that Committee recommendations for the new rule can be developed and submitted to the Agency by the Fall of 2017.

APPENDIX A: LIST OF INTERVIEWEES

Aluminum Association

- Curt Wells, Director, Regulatory Affairs, Aluminum Association

American Chemistry Council

- Christina Franz, Senior Director, American Chemistry Council
- Karyn Schmidt, Senior Director, Regulatory & Technical Affairs, American Chemistry Council
- Schuyler Pulley, Regulatory Specialist, The Chemours Company FC, LLC

American Coal Ash Association

- Thomas Adams, Executive Director, American Coal Ash Association
- Maryann Sanders, Senior Toxicologist/Microbiologist/Regulatory Compliance Specialist, Haley & Aldrich

American Fuel and Petrochemical

- Jim Cooper, American Fuel and Petrochemical

American Petroleum Institute (API)

- Derek Swick, Manager, Regulatory and Scientific Affairs, American Petroleum Institute
- Jill Cooper, Anadarko
- Steve Bowes, Consultant to ExxonMobil
- Rosalie Tibaldi, ExxonMobil

Association Connecting Electronics Industries (IPC)

- Fern Abrams, Director Regulatory Affairs, IPC
- John Hasselmann, VP Government Relations, IPC
- Bret Bruhn, Environmental Operations Manager, Oregon, TTM Technologies
- Chris Mitchell, Director, Prime Policy Group
- Gabe Rozsa, Prime Policy Group

Battery Council

- Saskia Mooney, Wiley Rein

Earth Justice

- Khushi Desai, Earth Justice
- Lisa Evans, Earth Justice
- Eve Gartner, Earth Justice

Earthworks

- Aaron Mintzes, Policy Advocate, Earthworks
- Lauren Pagel, Policy Director, Earthworks

Environmental Council of the States (ECOS)

- Alexandra Dunn, Executive Director and General Counsel, Environmental Council of the States (ECOS)
- Sarah Grace Longsworth, Project Associate, Environmental Council of the States (ECOS)
- Mark Smith, Director, Office of Research and Standards, Massachusetts Department of Environmental Protection
- John Gilkeson, Resource Management and Assistance Division, Minnesota Pollution Control Agency
- Ken Zarker, Pollution Prevention & Regulatory Assistance Section Manager, Washington Department of Ecology

Environmental Defense Fund (EDF)

- Richard Denison, Environmental Defense Fund (EDF)
- Lindsay McCormick, Environmental Defense Fund (EDF)

Environmental Working Group

- David Andrews, Environmental Working Group

Guardian Industries

- Mark Duvall, Principal, Beveridge & Diamond, PC
- Pamela Beilke, Global EH&S Director, Guardian Industries Corp
- Michael Metz, Assistant General Counsel, Guardian Industries Corp
- James Riley, Environmental Program Manager, Guardian Industries Corp
- Luke Contos, Senior Director, Environmental Health, SRG Global, Inc.

Honda North America

- Stephen Fogle, Honda North America

Institute of Scrap Recycling Industries

- David Wagger, Chief Scientist and Director of Environmental Management, Institute of Scrap Recycling Industries

International Precious Metals Institute (IPMI)

- Barbara Curtis, Manager, EHS Affairs North America, Johnson Matthey Inc.
- Gus Ruggiero, Group Industrial Hygiene Manager, Johnson Matthey Inc.
- JP Rosso, President-CEO, International Precious Metals Institute (IPMI)
- Stephen Gardner, IPMI General Counsel, Kalbian Hagerty LLP
- Mike Riess, Owner-Managing Director, Materials Management Corp.
- Larry Drummond, Retired CEO, Metalor North America

National Tribal Toxics Council (NTTC)

- Dianne Barton, Chair of NTTC, Columbia River Inter-Tribal Fish Commission, Portland, OR
- Larry Dunn, NTTC Member, Lower Elwha Klallam Tribe, Port Angeles, WA
- Kristin K'eit, Senior Environmental Scientist, Zender Environmental Health and Research Group
- Dr. Lynn Zender, Executive Director, Zender Environmental Health and Research Group

Natural Resources Defense Council (NRDC)

- Dave Lennett, Senior Attorney, Natural Resources Defense Council (NRDC)

Northeast Waste Management Officials' Association (NEWMOA)

- Terri Goldberg, Executive Director, NEWMOA

National Waste & Recycling Association

- Anne Germain, Director, Waste and Recycling Technology, National Waste & Recycling Association

North American Metals Council (NAMC)

- Martin Jones, Senior Counsel, Fremont
- Tawny Bridgeford, Deputy General Counsel, National Mining Association (NMA)
- Kathleen Roberts, Director, North American Metals Council (NAMC)

Phibro-Tech

- William Dwight Glover. President, Phibro-Tech

Portland Cement Association

- Desirea Haggard, Environmental Director, Cal Portland Company
- Gary Elliot, Environmental Director, Lafarge Holcim
- Elizabeth Horner, Director and Assistant Counsel, Government Affairs, Portland Cement Association
- Michael Schon, Vice President and Counsel for Government Affairs, Portland Cement Association
- Jay Willis, Corporate Environmental Director, Titan America LLC

Pulp and Paper Industry

- Stewart Holm, Chief Scientist, American Forest and Paper Association
- Ken Joerger, Global Manager, Industrial Hygiene, International Paper
- Arun Someshwar, National Council for Air and Stream Improvement (NCASI)
- Paul Weigard, Vice President, Water Resources & Director, Northern and Western Regions National Council for Air and Stream Improvement (NCASI)
- Richard Gardner, Packaging Corp of America
- Wayne Huttle, Director, Global Product Stewardship, Westrock

Sierra Club and CA Communities Against Toxic

- Amy Kyle, Retired Adjunct Professor from UC Berkeley School of Public Health
- Jane Williams, Executive Director California Communities Against Toxics and Chair of Sierra Club

Steel Industry

- Joseph Green, Kelley Drye & Warren LLP

US Environmental Protection Agency (EPA)

- Kent Anapolle, Industrial Chemistry Branch, Chemistry, Economics and Sustainable Strategies Division (CESSD); Office of Pollution Prevention and Toxics; US EPA
- David Berol, Office of General Counsel, US EPA
- Mark Garvey, Office of Enforcement and Compliance Assurance, US EPA
- Doyoung Lee, Industrial Chemistry Branch, CESSD; Office of Pollution Prevention and Toxics; US EPA
- Jonah Richmond, Regulatory Coordination Staff, Office of Chemical Safety and Pollution Prevention, US EPA
- Susan Sharkey, Existing Chemicals Branch, Chemical Control Division, Office of Pollution Prevention and Toxics, US EPA
- Tom Smith, Existing Chemicals Branch, Chemical Control Division, Office of Pollution Prevention and Toxics, US EPA
- Amelia Valberg, Region 5, US EPA
- Lynn Vendinello, Deputy Director, Chemical Control Division, Office of Pollution Prevention and Toxics, US EPA

US Steelworkers (USW)

- Anna Fendley, Legislative Representative, US Steel Workers

Utility Solid Waste Activities Group

- Jim Roewer, Executive Director, Utility Solid Waste Activities Group
- Doug Green, Attorney at Law, Venable, LLP

WE ACT for Environmental Justice

- Dr. Adrienne L. Hollis, Esq., Director of Federal Policy, WE ACT for Environmental Justice

Organizations that Declined an Interview

- American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) - Rebecca Reindel

- Association of State and Territorial Solid Waste Management Officials (ASTWAMO) - Kerry Callahan
- Environmental Technology Council – David Case
- International Chemicals Workers Union Council - John Morawetz and Darrell Hornback
- NORA – An Association of Responsible Recyclers – Jack Waggener
- Safer Chemicals, Healthy Families - Bob Sussman
- Tribes: On January 24, OPPT's Tribal Liaison circulated a notice to EPA's Tribal Partnership Group, with a summary of the December 15, 2016, Federal Register Notice of Intent to Establish a Negotiated Rulemaking Committee, as well as information on how interested Tribal entities could request participation in the Negotiated Rulemaking. EPA requested responses by February 6.

Association Connecting Electronics Industries

IPC®

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Washington, DC 20004

+1 202-661-8090 tel
+1 202-292-4612 fax
www.ipc.org

March 29, 2017

Christopher Moore, Ph.D.
CDR Associates

Laura Sneeringer
Consensus Building Institute

RE: Draft Situation Assessment Report on Convening a Negotiated Rulemaking Process to Negotiate a Proposed Rule to limit Chemical Data Reporting Requirements for Certain Inorganic Byproducts under Section 8(a) of the Toxic Substances Control Act (TSCA), as amended by the Frank. R. Lautenberg Chemical Safety for the 21st Century Act

Dear Dr. Moore and Ms. Sneeringer,

IPC-Association Connecting Electronic Industries appreciates your work in preparing the Draft Situation Assessment (Assessment). As one of the stakeholders in the process, and the primary advocate for this negotiated rulemaking, IPC and our member companies have a direct interest in the accuracy and completeness of the Assessment.

IPC has three concerns regarding the Assessment which are detailed below, along with our recommendations:

- The background information (Section I) regarding byproducts is incomplete and consequently provides a misleading situation description.
- The description of Consensus Decision Making (Section V) presents an unnecessarily limited definition.
- The assessment presents an interpretation of the statutory requirements pertaining to this rulemaking (Section V).

The Background Information Regarding Byproducts Should Include EPA Interpretations of TSCA

Although the background section accurately summarizes the federal regulations pertaining to the definition of and exemptions from TSCA pertaining to byproducts, it fails to include EPA's interpretations of these regulations. Longstanding EPA interpretation regarding byproducts has rendered the exemptions for byproducts that are manufactured without commercial intent and are not used for non-exempt purposes. Historically, EPA has interpreted almost every activity by a commercial entity as having a commercial purpose. For example, EPA has interpreted treatment to comply with wastewater treatment regulations as a commercial purpose and therefore the sludge resultant from that treatment as ineligible for the exemptions provided for byproducts. ***IPC recommends that the Assessment include a discussion of the EPA***

Interpretation of commercial purpose and the byproducts exemptions as this is a critical underpinning of the reporting requirements for inorganic byproducts under TSCA and the need for regulatory relief that is the subject of this rulemaking.

EPA is Required by the LCSA to Propose and Finalize a Rulemaking, Regardless of the Outcome of the Negotiated Rulemaking

IPC believes that the Assessment misinterprets the requirements of the LCSA as they pertain to a negotiated rulemaking to limit the reporting requirements, for manufacturers of inorganic byproducts are subsequently recycled, reused, or reprocessed. The Assessment mistakenly "presupposes" a conditional relationship between a consensus outcome of the negotiated rulemaking and the EPA's obligation under the LCSA to propose and finalize a rule lessening the reporting burdens for inorganic byproducts sent for recycling.

The LCSA does not state that a rule shall be proposed only if consensus is achieved. This conditional relationship between the obligation to conduct a negotiated rulemaking and the obligation to propose and publish a rule is not supported by the LCSA text. EPA should conduct and participate in the negotiated rulemaking with the good faith intention of using the outcome to inform and support their required proposal and publication of the rule, as required by the LSCA. Regardless of the outcome of the negotiated rulemaking, the agency is obligated to publish a final rule. **IPC recommends that the incorrect statement regarding statutory obligations, be removed from Section V of the Assessment.**

Definition of Consensus Should Reflect the Broad Interests of the Negotiated Rulemaking

IPC believes that the described goal of consensus sets an unreasonably high bar for success of the Committee. By proposing to define consensus as unanimous concurrence or abstention of 100 percent of the Committee, the agency bestows each member of the Committee with veto power, which significantly raises the likelihood of Committee being able to reach consensus. Further, given that the Committee is only negotiating the contents of a proposed rule, which will be published for public comment, there is no reason to require unanimous concurrence. **IPC strongly recommends that the Committee, with the assistance of the facilitators, select a more reasonable definition of consensus, closer to the supermajority used in the US legislative process (60%), requirements to amend the US constitution (75%), and the processes of US standards making bodies (51%-80%).**

Conclusion

IPC appreciates the opportunity to offer these comments and encourages the that the Assessment be revised as recommendations, which we believe will lead to a more productive

outcome and allow EPA to fulfill the LSCA requirement to propose and publish, by June 2019, a rule to lessen the reporting burden under TSCA for inorganic byproducts sent for recycling, recovery, or reprocessing.

Sincerely,

Fern Abrams

Fern Abrams
Director, Regulatory Affairs

Organizational Planning Meeting for the Chemical Data Reporting (CDR) Inorganic Byproducts Negotiated Rulemaking

May 9-10, 2017

South American Rooms, Capitol Hilton, 1001 16th Street NW, Washington, DC,

Agenda

Tuesday, May 9, 2017, 9:00 AM – 5:00 PM

Welcome, Introductions and Agenda Review (9:00-9:45 AM)

Meeting Guidelines Review, Revisions and Approval (9:45-10:00 AM)

Overview of the Mandate for the CDR Inorganic Byproducts Negotiated Rulemaking Committee (10:00-10:15 AM)
EPA will provide brief background on why the Committee was formed and the Agency's mandate.

FACA Expectations (10:15-10:45 AM)
EPA will provide an overview of FACA's legal requirements and EPA's policy positions.

Break (10:45-11:00 AM)

Introduction to Chemical Data Reporting (CDR), Toxics Release Inventory (TRI), and the Resource Conservation and Recovery Act (RCRA) (11:00-12:15 PM)

- Background on TSCA Section 8(a), including CDR
- Introduction to TRI
- Introduction to RCRA
- Byproduct-related requirements under CDR, TRI, and RCRA

Lunch (12:15-1:30 PM)

Industry Reporting Practices (1:30-2:15 PM)
A sampling of industry members will provide an overview of industry practices associated with reporting inorganic byproducts.

Examples: Reporting under CDR, TRI, and RCRA (2:15-3:30 PM)
EPA will describe examples displaying the reporting requirements across these three EPA programs.

Break (3:30-3:45 PM)

Summary of Potential Topics for Committee Discussion (3:45-4:30 PM)
The group will review initial issues for discussion outlined in the Situation Assessment Report and will discuss whether any additional issues need to be considered, based on additional questions that arose during the education and information exchange, or other significant concerns.

Public Comment Period (4:30-5:00 PM)

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Wednesday, May 10, 2019, 9:00 AM – 3:00 PM

Check-In and Agenda Review (9:00-9:15 AM)

Discussion of Draft Operating Protocol (9:15-10:15 AM)
The group will discuss any suggested modifications to the Draft Operating Protocol, which includes expectations of Committee Members, consensus decision-making approaches, use of a sub-group to develop agendas, communication protocols, expectations for timeframe and final products, etc. This is also an opportunity to discuss potential approaches for engaging stakeholders that are not Committee Members.

Recap of Day 1 and Refine Issues for Future Discussion (10:15-11:45 PM)
The group will build upon the previous day's discussion to clarify topics for future meetings. This will involve identifying specific questions, information needs and sequencing in order to develop future agendas.

Lunch (11:45-1:00 PM)

Public Comment Period or Continued Discussion (1:00-1:30 PM)

Identify Volunteers for Reg-Neg Process Subcommittee to Develop Meeting Agendas (1:30-1:45 PM)

Refine Issues for Future Discussion (Continued) (1:45-2:30 PM)

Meeting Wrap-Up (2:30-3:00)
The group will review next steps and any logistical reminders and share feedback on the process.

Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 12/13/2017 1:42:32 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Quick call

Do you have a min for a quick call today?

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 - Personal Privacy | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

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Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 11/2/2017 7:02:26 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: RE: Checking in

Appreciate the update - next week is rough because I'm traveling for a chunk of the week but I am around the following week and could do Monday or Tuesday around 12:30 or anytime Thursday.

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington DC 20006
Phone [redacted] | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

-----Original Message-----
From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Thursday, November 02, 2017 3:00 PM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: RE: Checking in

Thanks, I am back in the office. I am trying to track down info but do not have anything to report yet. Would be interested in taking you up on offer to grab lunch, perhaps next week if you're around.

-----Original Message-----
From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Thursday, November 2, 2017 2:11 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Checking in

Byron - sorry to bug you and hope things are as good as they can be on the family.

Just wanted to ping you and see if you had heard anything about the energy star issue we talked about? Happy to discuss over the phone and happy to grab lunch or a beverage one of these days to chat.

Thanks,

Dimitri

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Message

From: Todd D Young [TDYoung@uss.com]
Sent: 8/3/2017 2:16:05 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Fw: Request from U. S. Steel for mediation on Regional Haze FIP for Taconite
Attachments: Letter-Region5EPA-USSteel-RegionalHazeFIPTaconite-072117.pdf

Per my voicemail, sharing an update on the request for mediation on the matter for which the petitions for reconsideration were denied on January 18th by the prior Administration.

Best regards,

United States Steel Corporation

Todd D. Young
Managing Director - Federal Governmental Affairs

901 K Street, NW
Suite 1250
Washington, DC 20001
Ex. 6 - Personal Privacy office
mobile
tdyoung@uss.com

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From: "Fotouhi, David" <fotouhi.david@epa.gov>
To: Todd D Young <TDYoung@uss.com>
Date: 08/03/2017 09:28 AM
Subject: Automatic reply: Request from U. S. Steel for mediation on Regional Haze FIP for Taconite

Thank you for your message. I am out of the office on work-related travel with intermittent access to email until Monday, August 7. I will respond to your message as soon as I am able to do so. For time-sensitive matters, please contact Derek Mills (Ex. 6 - Personal Privacy), Gail Jones (Ex. 6 - Personal Privacy, or Monique Patrick (Ex. 6 - Personal Privacy Ex. 6 - Personal Privacy).

Best regards,

David

From: Todd D Young/Headquarters/USS
To: fotouhi.david@epa.gov
Cc: David W Hacker/Headquarters/USS@USS
Date: 08/03/2017 09:26 AM
Subject: Re: Request from U. S. Steel for mediation on Regional Haze FIP for Taconite

Mr. Fotouhi:

I am following up to my correspondence dated July 21st regarding U. S. Steel's request for mediation to resolve the Minnesota FIP litigation that remains before the Eighth Circuit Court of Appeals. We understand from EPA Region 5, the DOJ and Congressman Rick Nolan's office that EPA is considering this request and that it has the attention of headquarters in Washington. We believe mediation would be fruitful as we recently completed the temperature study that EPA Region 5 requested (which our third party contractor is preparing the requested report) and have generated additional data and information that we strongly believe would aid in reaching an equitable resolution.

As you may be aware, the parties provided briefs to the Court, with U. S. Steel's reply brief due to the Court on August 8th. The parties have also most recently provided the Court with dates of availability for oral arguments this Fall/Winter. Once the Court schedules the date for oral argument, the Court is unlikely to stay postpone or oral arguments. Since we remain committed to working with EPA on resolving the matter without continued litigation, we believe that the parties' resources would be best used to reach resolution as opposed to preparing for and providing oral arguments to the Court. In addition, the FIP deadline as applied to U. S. Steel (and no other facility) will begin to have operational impacts and undue compliance risks at U. S. Steel's Minntac facility beginning on August 9th. For these time sensitive reasons, I am reaching out to you to determine if we can provide any additional information to the Agency to assist in its deliberation of the issues raised in our July 21st letter, including our request to stay the effectiveness of the FIP NOx limit on Minntac Line 6.

We remain committed to working expeditiously with the Agency to reach an equitable resolution. Again, thank you for the Agency's careful consideration of this request.

Best regards,
Todd Young

United States Steel Corporation

Todd D. Young
Managing Director - Federal Governmental Affairs

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Suite 1250
Washington, DC 20001
Ex. 6 - Personal Privacy office
mobile
tdyoung@uss.com

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From: Todd D Young/Headquarters/USS
To: fotouhi.david@epa.gov
Cc: David W Hacker/Headquarters/USS@USS
Date: 07/21/2017 06:41 PM
Subject: Request from U. S. Steel for mediation on Regional Haze FIP for Taconite

Mr. Fotouhi,

Please find attached a letter from U. S. Steel Corporation requesting EPA to reconsider the agency's prior decision to reject mediation regarding the Federal Implementation Plan for taconite.

The letter is addressed to the Acting Regional Administrator from Region 5, Mr. Robert Kaplan, and copied to you.

We'd welcome an opportunity to share additional information regarding this matter and our belief that an equitable resolution can be reached in a timely manner, and which both adheres to the Clean Air Act's Best Available Retrofit Technology (BART) requirements and results in improved visibility. As stated in the letter, U. S. Steel believes the current FIP's application to U. S. Steel's two mine operations does not necessarily meet the goal of improved visibility, and in certain operating scenarios could actually result in contributing negatively to regional haze.

Thank you for your attention and consideration.

Best regards,
Todd Young

United States Steel Corporation

Todd D. Young
Managing Director - Federal Governmental Affairs

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Washington, DC 20001
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mobile
tdyoung@uss.com

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United States Steel Corporation
Environmental Affairs
1350 Penn Liberty Plaza I, Suite 200
Pittsburgh, PA 15219-2800
E-mail: twoodwell@uss.com

Tishie Woodwell
General Manager,
Environmental Affairs

Via Email and Regular Mail

July 21, 2017

Robert A. Kaplan
Acting Regional Administrator, Region 5
U.S. Environmental Protection Agency
77 West Jackson Boulevard, Mail Code: R-19J
Chicago, IL 60604-3507

Re: U. S. EPA Regional Haze Federal Implementation Plan for Taconite

Dear Acting Regional Administrator Kaplan:

In 2013, U. S. EPA (EPA) promulgated a Federal Implementation Plan (FIP) for taconite facilities based upon limited data that it acquired from United States Steel Corporation's (U. S. Steel) Minntac facility which was the first in the industry to implement nitrogen oxide (NO_x) reduction technology. However, after further investigation and evaluation of data provided by U. S. Steel and other taconite facilities regarding differences in furnaces and other relevant factors, EPA acknowledged that its approach of setting uniform standards in the industry was not feasible. This was the basis for EPA's promulgation of a revised FIP in April 2016. However, while in the revised FIP EPA reconsidered regional haze requirements for the other taconite facilities in the United States, it did not take the same approach or reconsider the limits for U. S. Steel's facilities in Minnesota. Because EPA rejected U. S. Steel's comments and request to apply the case-by-case approach for U. S. Steel's facilities as it did for other facilities in the industry, U. S. Steel was forced to file a petition for administrative review and a petition for judicial review.

Since those filings, U. S. Steel has provided EPA with additional data and information – and continues to provide such information – that supports a determination that the limits applicable to U. S. Steel in the FIP are not appropriate. Through this process of exchanging information and associated negotiation discussions, U. S. Steel firmly believed that EPA would recognize the inequities and revise the FIP for U. S. Steel's facilities consistent with the case-by-case approach utilized in assessing the other taconite facilities. While EPA and U. S. Steel have been working together on establishing case-by-case limits for U. S. Steel, more recently, EPA has advised U. S. Steel that it does not wish to continue that dialogue, rejected U. S. Steel's request to mediate, and instead elected to proceed with litigation to defend its application of the inequitable, uniform standards set forth in the 2013 FIP to U. S. Steel. It is in the spirit of the longstanding and continued collaboration with EPA that I am respectfully requesting that EPA reconsider its decision to reject U. S. Steel's request to mediate the issue so that an equitable resolution can be reached.

Despite unfavorable market conditions and unfairly traded imports, U. S. Steel remains one of the largest American integrated steel producers. We manufacture a wide range of value-added steel sheet and tubular products for the automotive, appliance, container, industrial machinery, construction, and oil and gas industries. The competitive production of taconite is critical to the vitality of U. S. Steel's operations, as steel-making starts at U. S. Steel's taconite facilities in Northern Minnesota; Minntac and Keetac. Although a steel company, U. S. Steel is the largest domestic producer of taconite pellets.

U. S. Steel also leads in the iron ore industry in developing Low NO_x technology that reduces regional haze. We have demonstrated our commitment to improving the air quality by already installing this Low NO_x burner technology on four of our six indurating furnace lines.

Although the FIP was litigated by the entire taconite industry (U. S. Steel, Cliffs Natural Resources and ArcelorMittal), only U. S. Steel remains without a settlement and revised rule. Notwithstanding EPA's denial of U. S. Steel's request to mediate, we strongly believe that an equitable agreement is within reach, and that with the assistance of a structured approach such as mediation, reasonable and fair resolution can be reached.

Despite EPA's rejection of the proposed mediation, we remain optimistic that a resolution can be reached and have illustrated our commitment to that end by our agreement to collect the additional temperature data, requested by the EPA pursuant to a Clean Air Act Section 114 Request. We agree with EPA that the information collected may be beneficial in determining the feasibility of additional control technology. We anticipate that this new information will be available within the next thirty days, though it is our goal to provide it to EPA sooner, if available. We believe that this data, along with a review of additional data from the application of Low NO_x burners at Minntac operating lines would contribute towards productive mediation.

In addition, it is important to identify a feasible solution for Keetac and Minntac that adheres to the Clean Air Act Best Available Retrofit Technology (BART) requirements. We strongly believe that the current FIP's application as it applies to U. S. Steel operations does not meet the Clean Air Act goal of improved visibility. In fact, while we will readily acknowledge that it was not EPA's intent, the FIP as currently applied to U. S. Steel's operations, could actually result in contributing negatively to regional haze. In addition, the revised April 2016 FIP places U. S. Steel in a significant competitive disadvantage. This is especially troubling since the foundation of the FIP is based upon technology developed by U. S. Steel.

We firmly believe mediation is an appropriate forum to further address this issue and are confident that mediation would result in a reasonable and fair FIP revision that is consistent with the Clean Air Act. Therefore, on behalf of U. S. Steel, I respectfully request the EPA reconsider its earlier decision and agree to engage in mediation to facilitate a reasonable resolution of the application of the FIP to U. S. Steel's Keetac and Minntac operations. Additionally, we believe that a stay in the application of the 2013 FIP NO_x limits for U. S. Steel is appropriate under the circumstances and would facilitate a successful mediation. The current FIP will impact U. S. Steel's operations at Minntac's Line 6 beginning in August 2017. Line 6 already has controls installed, is operating under an annual NO_x limit from the facility Title V permit and is also currently subject to SO_2 limits from the 2013 FIP. A stay would not negatively impact the environment, nor would it result in a competitive advantage for U. S. Steel, as the

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

ED_002061_00086857-00002

earliest compliance date applicable to other taconite facilities is not until late 2018, with the remaining taconite facility compliance dates extending into 2019 and beyond.

If you have any questions, or would like to schedule a meeting to discuss this matter please contact Chrissy Bartovich at (218) 749-7364 or clbartovich@uss.com; or me at (412) 433-5916 or twoodwell@uss.com.We look forward to your response and a swift resolution of the matter.

Sincerely,

Tishie Woodwell
General Manager
Environmental Affairs

Cc: David Fotouhi, Deputy General Counsel, EPA
Douglas Aburano (EPA Region V)
Chrissy Bartovich (USS)
Todd Young (USS)
Dave Hacker (USS)

Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/15/2017 6:19:55 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Dimitri.Karakitsos@hklaw.com
Subject: EPA Present on Baseline Study
Attachments: 2017-06-27_EPA Baseline Study Presentation.pdf

FYI, the Region is doing a public meeting on their plan in 10 days...again, 10 years over $100mm

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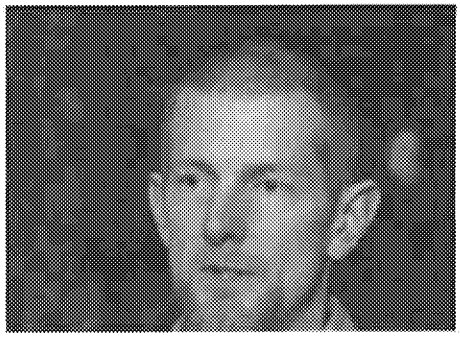
Superfund Update June 2017

Baseline Study

Learn about the Baseline Study used to create current data and information on which to base Remedial Design of construction of the remediation for Portland Harbor.



June 27, 2017 6:00—7:30

Central Library, 801 SW 10th Ave

Portland, OR 97205

Between Yamhill and Taylor

Smart Park
730 SW 10th Ave
Between Alder & Morrison
Blue or Yellow Max or Bus 75 or 8

Sean Sheldrake
EPA Project

Message

From: T.A. Hawks [TAHawks@monumentpolicy.com]
Sent: 6/27/2017 6:36:42 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: RE: EPA opens nominations for key science boards

Great, thank you for the quick response.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, June 27, 2017 9:12 AM
To: T.A. Hawks <TAHawks@monumentpolicy.com>
Subject: RE: EPA opens nominations for key science boards

I believe CASAC has specific statutory criteria for membership but generally inhouse scientists could be eligible for science boards but would have to undergo the ethics and financial disclosure review process.

From: T.A. Hawks [mailto:TAHawks@monumentpolicy.com]
Sent: Monday, June 26, 2017 8:41 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: FW: EPA opens nominations for key science boards

Byron,

Hope all is well and you're settled in more to the job. Thanks again for your help getting an answer for Bloom Energy.

Wanted to see if there are any restrictions/qualifiers on who can serve on the Advisory Boards at EPA. We have clients who are interested in putting forward in house scientists to serve, but we wanted to make sure that was okay before doing it.

Thanks for any insight you can give.

Best,
T.A.

T.A. Hawks
Monument Policy Group
Ex. 6
Ex. 6 cell
www.monumentpolicy.com

From: POLITICO Pro Energy Whiteboard [mailto:politicoemail@politicopro.com]
Sent: Monday, June 26, 2017 9:46 AM
To: Tamez, Patricia V SHLOIL-GRA <Patricia.Tamez@shell.com>
Subject: EPA opens nominations for key science boards

By Eric Wolff

06/26/2017 09:43 AM EDT

EPA is seeking nominations to fill key slots on the Clean Air Science Advisory Committee and the Science Advisory Board — committees the agency is required by law to maintain to advise it on air pollution and other scientific issues.

A notice will go into the Federal Register tomorrow that will allow 30 days for nominations to fill one opening on the Clean Air Science Advisory Committee, six slots on the Science Advisory Board and experts to serve on six SAB committees.

The timing for bringing on a new CASAC member is tight since committee chair Ana Diez Roux will depart at the end of September when her second term expires. As both a medical doctor and a member of the National Academy of Sciences, Diez Roux fills two roles required under the law. If her term ends without those roles filled, the committee will cease to function. CASAC provides essential advice for setting allowable air pollution levels for six key pollutants named in the Clean Air Act.

In addition to the six positions opening on the SAB committee, EPA is asking for nominees to serve on its Chemical Assessment Advisory Committee, the Drinking Water Committee, the Ecological Processes and Effects Committee, the Environmental Economics Advisory Committee; the Environmental Engineering Committee and the Radiation Advisory Committee.

WHAT'S NEXT: EPA will accept nominations for the positions for 30 days once the notice officially is published in the Federal Register, expected Tuesday.

To view online:
https://www.politicopro.com/energy/whiteboard/2017/06/epa-opens-nominations-for-key-science-boards-089670

"(2) a final rule promulgated under subsection (a), including the associated determination by the Administrator under subsection (b)(4)(A) that a chemical substance presents an unreasonable risk of injury to health or the environment, shall be considered to be a final agency action, effective beginning on the date of promulgation of the final rule.

"(j) DEFINITION.—For the purposes of this Act, the term 'requirement' as used in this section shall not displace statutory or common law.".

SEC. 7. IMMINENT HAZARDS.

Section 7 of the Toxic Substances Control Act (15 U.S.C. 2606) is amended—

(1) in subsection (b)(1), by inserting "(as identified by the Administrator without consideration of costs or other nonrisk factors)" after "from the unreasonable risk"; and

(2) in subsection (f), by inserting ", without consideration of costs or other nonrisk factors" after "widespread injury to health or the environment".

SEC. 8. REPORTING AND RETENTION OF INFORMATION.

(a) IN GENERAL.—Section 8 of the Toxic Substances Control Act (15 U.S.C. 2607) is amended—

(1) in subsection (a)—

(A) in paragraph (2), by striking the matter that follows subparagraph (G);

(B) in paragraph (3), by adding at the end the following:

Time period. Consultation.

"(C) Not later than 180 days after the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, and not less frequently than once every 10 years thereafter, the Administrator, after consultation with the Administrator of the Small Business Administration, shall—

Review.

"(i) review the adequacy of the standards prescribed under subparagraph (B); and

Public information. Determination.

"(ii) after providing public notice and an opportunity for comment, make a determination as to whether revision of the standards is warranted."; and

(C) by adding at the end the following:

"(4) CONTENTS.—The rules promulgated pursuant to paragraph (1)—

"(A) may impose differing reporting and recordkeeping requirements on manufacturers and processors; and

"(B) shall include the level of detail necessary to be reported, including the manner by which use and exposure information may be reported.

"(5) ADMINISTRATION.—In carrying out this section, the Administrator shall, to the extent feasible—

"(A) not require reporting which is unnecessary or duplicative;

"(B) minimize the cost of compliance with this section and the rules issued thereunder on small manufacturers and processors; and

Applicability.

"(C) apply any reporting obligations to those persons likely to have information relevant to the effective implementation of this title.

Publications.

"(6) NEGOTIATED RULEMAKING.—(A) The Administrator shall enter into a negotiated rulemaking pursuant to subchapter III of chapter 5 of title 5, United States Code, to develop

and publish, not later than 3 years after the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, a proposed rule providing for limiting the reporting requirements, under this subsection, for manufacturers of any inorganic byproducts, when such byproducts, whether by the byproduct manufacturer or by any other person, are subsequently recycled, reused, or reprocessed.

"(B) Not later than 3 and one-half years after such date of enactment, the Administrator shall publish a final rule resulting from such negotiated rulemaking."; and

(2) in subsection (b), by adding at the end the following:

"(3) NOMENCLATURE.—

"(A) IN GENERAL.—In carrying out paragraph (1), the Administrator shall—

"(i) maintain the use of Class 2 nomenclature in use on the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act;

"(ii) maintain the use of the Soap and Detergent Association Nomenclature System, published in March 1978 by the Administrator in section 1 of addendum III of the document entitled 'Candidate List of Chemical Substances', and further described in the appendix A of volume I of the 1985 edition of the Toxic Substances Control Act Substances Inventory (EPA Document No. EPA–560/7–85–002a); and

"(iii) treat the individual members of the categories of chemical substances identified by the Administrator as statutory mixtures, as defined in Inventory descriptions established by the Administrator, as being included on the list established under paragraph (1).

"(B) MULTIPLE NOMENCLATURE LISTINGS.—If a manufacturer or processor demonstrates to the Administrator that a chemical substance appears multiple times on the list published under paragraph (1) under different CAS numbers, the Administrator may recognize the multiple listings as a single chemical substance.

"(4) CHEMICAL SUBSTANCES IN COMMERCE.—

"(A) RULES.—

"(i) IN GENERAL.—Not later than 1 year after the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, the Administrator, by rule, shall require manufacturers, and may require processors, subject to the limitations under subsection (a)(5)(A), to notify the Administrator, by not later than 180 days after the date on which the final rule is published in the Federal Register, of each chemical substance on the list published under paragraph (1) that the manufacturer or processor, as applicable, has manufactured or processed for a nonexempt commercial purpose during the 10-year period ending on the day before the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act.

Notification. Federal Register, publication. Time period.

"(ii) ACTIVE SUBSTANCES.—The Administrator shall designate chemical substances for which notices are received under clause (i) to be active substances on the list published under paragraph (1).

Message

From: Steve Ingham [singham@smarttruckaero.com]
Sent: 4/27/2017 3:52:50 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Aaron S. Cutler [aaron.cutler@hoganlovells.com]; Steve Wulff [swulff@smarttruckaero.com]
Subject: SmartTruck

Byron,

It was a pleasure to meet you this morning, and thank you again for fitting us into your schedule during this busy time. As a technology provider with significant capability in the latest aerodynamic technologies we are very supportive of the alignment between these technologies and GHG - Phase 2. If we can be of service by providing information to others on your staff or at the EPA in general please do not hesitate to provide our contact information or reach us through Aaron.

Best,

Steve

SmartTruck
PRECISION AERODYNAMICS

Steve Ingham | CEO
(o) Ex. 6 - Personal Privacy

Visit: SmartTruckAero.com

Message

From: Todd D Young [TDYoung@uss.com]
Sent: 5/25/2017 4:01:49 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Fw: FIP Appeal Case Nos.

From: David W Hacker <DWHacker@uss.com>
Sent: Thursday, May 25, 2017 11:02 AM
To: Todd D Young
Subject: FIP Appeal Case Nos.

2016 Appeal - Petitioners brief due May 31, 2017.
Eighth Circuit Court of Appeals - Case No. 16-2643 (consolidated with Case Nos. 16-2653, 16-2668, and 16-3446).

2013 FIP Appeal - Proceedings Stayed/Case remains in Abeyance
Eighth Circuit Court of Appeals - Case Nos. 13-3573, (and consolidated Case Nos.13-3575, 13-3595, 14-1710, and 14-1712)

Thanks.

United States Steel Corporation

David W. Hacker
Counsel - Environmental
United States Steel Corporation
Law Department
600 Grant Street - Room 1500
Pittsburgh, PA 15219
Phone: Ex. 6 - Personal Privacy
Fax: 412.433.2964

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Message

From: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
Sent: 4/27/2017 3:12:39 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: RE: meeting

Thank you very much for your time this morning. Much appreciated. Was really great to see you.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Wednesday, April 26, 2017 5:52 PM
To: Cutler, Aaron S.
Subject: meeting

Aaron – let me know if you have any material you want me to read in advance. Also, my assistant has been out of the office and not sure if she will be in tomorrow so best to just send me an email upon your arrival and I'll come down to meet you.

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

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Message

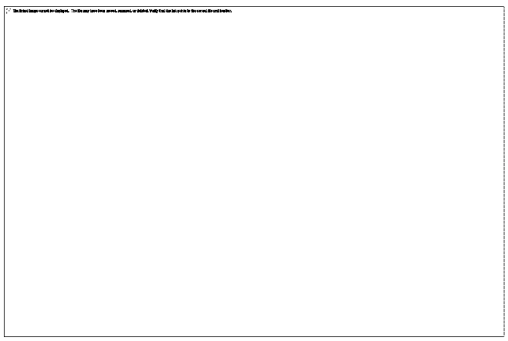
From: John Ward [wardo@wardo.com]
Sent: 8/14/2017 10:05:29 AM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Coal Ash Idea

Good morning, Byron,

You may be familiar with the news clipping below regarding potential modifications to the EPA museum. Given EPA's decades long history with coal ash and the agency's prior success in encouraging its recycling, including some information about that would be very interesting and appropriate. Is there anyone in the Agency we should meet with to advance this idea?

Thanks very much for your consideration...
--wardo

https://www.washingtonpost.com/politics/at-epa-museum-history-might-be-in-for-a-change/2017/07/30/9d83692c-6bd1-11e7-96ab-5f38140b38cc_story.html?utm_term=.69e9ee4efb0a&wpisrc=nl_energy202&wpmm=1



At EPA museum, history might be in for a change

www.washingtonpost.com

Different administrations tell very different stories about the past and the present.

John N. Ward
wardo@wardo.com
Ex. 6
Twitter: WorldWideWardo

Message

From: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
Sent: 4/27/2017 1:18:43 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]

Going through security now.

Sent from my iPhone

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Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 5/10/2017 3:30:08 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Superfund Follow-up
Attachments: West Vermont Initial Petitioners Brief - Filed.pdf

Byron,

Wanted to follow-up with you about general superfund issues as well as the Indiana specific issue I previously mentioned. Attached is a brief filed last month that lays out the situation pretty well. If there is any chance we could come in and meet with you and your team next Thursday in the afternoon (anytime but 2 pm I think works) that would be great. If another time works better for you please let me know.

Thanks,

Dimitri

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Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 - Personal Privacy | Fax 202.955.5564
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ORAL ARGUMENT NOT YET SCHEDULED

Nos. 16-1416 & 16-1418

IN THE

United States Court of Appeals for the District of Columbia Circuit

AIMCO MICHIGAN MEADOWS HOLDINGS, LLC (in No. 16-1418)

and

GENUINE PARTS COMPANY (in No. 16-1416),

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

On Petitions for Review from the United States Environmental Protection Agency

INITIAL OPENING BRIEF FOR PETITIONERS

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HOGAN LOVELLS US LLP
555 Thirteenth Street, N.W.
Washington, DC 20004
(202) 637-5491

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(303) 899-7355

Counsel for Aimco Michigan Meadows Holdings, LLC

DOUGLAS E. CLOUD
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Atlanta, GA 30309
(404) 812-0839

Counsel for Genuine Parts Company

April 7, 2017

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

A. PARTIES

1. The following are parties in this Court:

a. Petitioners: Aimco Michigan Meadows Holdings, LLC and Genuine Parts Company.

b. Respondent: United States Environmental Protection Agency.

2. a. Aimco Michigan Meadows Holdings, LLC was formed in 1999 for the purpose of acquiring and operating an apartment property and a shopping center in Indianapolis, Indiana. Aimco Michigan Meadows Holdings, LLC currently does not conduct any business other than overseeing the voluntary remediation of the Michigan Meadows Apartments and Michigan Plaza properties. Aimco Michigan Meadows Holdings, LLC is a wholly owned subsidiary of AIMCO Properties, L.P. AIMCO Properties, L.P. is a limited partnership which is owned as follows: AIMCO-GP, Inc. is the general partner of, and owns, 1.03% of AIMCO Properties, L.P.; AIMCO-LP Trust is a limited partner of, and owns, 94.2% of AIMCO Properties, L.P.; unrelated entities own the remaining 4.77% of AIMCO Properties, L.P. AIMCO-LP Trust and AIMCO-GP, Inc. are wholly owned by Apartment Investment and Management Company, which is a publicly held company.

b. Genuine Parts Company is a corporation engaged in the distribution of automotive replacement parts, industrial replacement parts, office products, and electrical and electronic materials. The U.S. Environmental Protection Agency (EPA) has alleged that a corporate predecessor of Genuine Parts Company contributed to environmental contamination at the 700 North Olin Avenue property in Indianapolis, Indiana. JA__ [Revised Documentation at 69]. Genuine Parts Company has no parent corporation. No publicly held corporation owns 10 percent or more of Genuine Parts Company's stock.

B. RULING UNDER REVIEW

Aimco Michigan Meadows Holdings, LLC and Genuine Parts Company petition for review of a final rule issued by EPA on September 9, 2016, placing the "West Vermont National Drinking Water Contamination Site" on the National Priorities List pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9613(a). EPA published the final rule in the Federal Register at 81 Fed. Reg. 62,397–62,403 (Sept. 9, 2016).

C. RELATED CASES

Aimco Michigan Meadows Holdings v. United States Environmental Protection Agency, No. 16-1418, is consolidated with Genuine Parts Company v. United States Environmental Protection Agency, No. 16-1416. The Court initially consolidated Sunnyside Gold Corporation v. United States Environmental

Protection Agency, No. 16-1417 with these petitions, but because Sunnyside Gold Corporation's petition pertains to the listing of a different site on the National Priorities List, EPA moved to unconsolidate that petition from these petitions, and this Court granted the motion.

There are no other related cases of which undersigned counsel is aware currently pending in this Court or in any other court involving substantially the same parties and the same or similar issues.

Respectfully submitted,

/s/ Catherine E. Stetson
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(404) 812-0839

Counsel for Genuine Parts Company

Dated: April 7, 2017

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

ED_002061_00087093-00005

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GLOSSARY

APA:	Administrative Procedure Act
AMMH:	Aimco Michigan Meadows Holdings, LLC
CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601 *et seq*.
EPA:	Environmental Protection Agency
Genuine:	Genuine Parts Company
PCE:	perchloroethylene (also known as tetrachloroethene)
Site:	West Vermont Drinking Water Contamination Site

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IN THE

United States Court of Appeals for the District of Columbia Circuit

Nos. 16-1416 & 16-1418

AIMCO MICHIGAN MEADOWS HOLDINGS, LLC (in No. 16-1418)
and
GENUINE PARTS COMPANY (in No. 16-1416),
Petitioners,
v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Respondent,

On Petitions for Review from the United States Environmental Protection Agency

INITIAL OPENING BRIEF FOR PETITIONERS

JURISDICTIONAL STATEMENT

This Court has jurisdiction under Section 113(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. § 9613(a), to review Petitioners' challenge to the final rule published by EPA placing the "West Vermont Drinking Water Contamination Site" (the Site) on CERCLA's National Priorities List. EPA promulgated the final rule on September 9, 2016, at 81 Fed. Reg. 62,397–62,403 (Final Rule). Petitioners timely filed their

petitions for review within 90 days of publication.

In challenging the Final Rule, Petitioners also challenge the application of EPA's Hazard Ranking System regulation, 40 C.F.R. Part 300, Appendix A, to the facts here. *See* JA__–__ [AMMH Comment at 12–13]. This Court has jurisdiction over that challenge. *See US Magnesium, LLC v. EPA*, 630 F.3d 188, 194 (D.C. Cir. 2011). As this Court has explained, "the statutory time limit restricting judicial review of [agency] action is applicable only to cut off review directly from the order promulgating a rule. It does not foreclose subsequent examination of a rule where properly brought before this court for review of further [agency] action applying it." *NLRB Union v. FLRA*, 834 F.2d 191, 195–197 (D.C. Cir. 1987) (alterations in original, internal quotation marks omitted); *see Nat'l Air Transp. Ass'n v. McArtor*, 866 F.2d 483, 486–487 (D.C. Cir. 1989) ("*NLRB Union* allows, outside statutory time limits, substantive claims that [a] rule '*conflicts with the statute* from which its authority derives.'"); *see also Mead Corp. v. Browner*, 100 F.3d 152, 153–157 (D.C. Cir. 1996) (permitting challenge to listing on the ground that EPA regulations conflict with statutory requirements).

INTRODUCTION

CERCLA required EPA to create the National Priorities List, a list of high-priority sites in the United States contaminated with hazardous substances. 42 U.S.C. § 9605(a)(8)(B). EPA adds sites to the list based on their "relative risk or

danger to public health or welfare or the environment," *id.* § 9605(a)(8)(A), according to a set of rules called the Hazard Ranking System. 40 C.F.R. pt. 300 app. A. Sites receiving a score of 28.5 or above on the Hazard Ranking System become eligible for listing. *See* JA__ [Guidance Manual at 30].

EPA does not have free rein when it comes to scoring and listing contaminated sites; Congress specifically amended CERCLA years ago to require EPA to "assure, to the maximum extent feasible, that the hazard ranking system accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review." 42 U.S.C. § 9605(c)(1).

In September 2016, EPA promulgated the Final Rule adding the Site to the National Priorities List. 81 Fed. Reg. at 62,397. According to EPA, the Site consists of groundwater contamination from properties formerly owned by Petitioner Aimco Michigan Meadows Holdings, LLC (AMMH) and a corporate predecessor of Petitioner Genuine Parts Company (Genuine). EPA based its Hazard Ranking System score for the Site—which placed the Site above the listing threshold—in part on two critical assumptions: (1) aquifers within a two-mile radius of the Site are "interconnected"; and (2) municipal wellfields up to four miles away from the Site could be affected by contamination present at the Site, even though Site groundwater flows *away* from those wellfields. JA__, __–__ [Support Document at 18, 28–29].

Both of EPA's assumptions are impermissible as a matter of law. Under EPA regulations, aquifers are *not* interconnected unless data are "adequate to *establish*" interconnections within two miles of the Site. 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1 (emphasis added). Petitioners' comments identified multiple independent sources showing that aquifers within a two-mile radius of the Site are not interconnected. EPA ignored the evidence, the comments, and its own regulation, relying instead on selected sources that do not even support its position. EPA's listing decision should thus be vacated.

In addition, EPA acted contrary to the Administrative Procedure Act (APA) and CERCLA by scoring the Site based in part on the assumption that the municipal wellfields located one to three miles to the *east-northeast, northeast, and northwest* of the Site would be impacted by contamination at the Site, despite undisputed evidence—and EPA's concession—that groundwater flows *south*, away from the wells. If EPA had properly excluded those wellfields from consideration, the Site would not have qualified for listing. *See* JA__ [Ramboll Comment at 1].

EPA attempts to justify its refusal to consider groundwater flow by asserting that the Hazard Ranking System "does not consider ground water flow direction in determining the eligibility of wells subject to potential contamination." JA__ [Support Document at 53]. That again was error. CERCLA requires EPA to

"accurately" assess the risk posed by the Site before listing it, 42 U.S.C. § 9605(c)(1), and EPA's refusal to consider the direction of groundwater flow rendered that risk assessment completely inaccurate. EPA also asserts that "sufficient data are not available at this stage in the listing process to accurately assess the ground water flow directions" within a four-mile radius of the Site. JA__ [Support Document at 29]. EPA fails to explain why that alleged data gap matters, and given substantial record evidence documenting the direction of groundwater flow both at the Site and within a four-mile radius of the Site, EPA's conclusion is arbitrary and capricious, and contrary to CERCLA.

This Court should accordingly vacate the Final Rule as it relates to the Site.

ISSUES PRESENTED FOR REVIEW

1. Whether EPA acted arbitrarily and capriciously, without substantial evidence, and contrary to law by scoring the Site under the Hazard Ranking System on the basis of interconnected aquifers, when EPA failed to follow its own regulations, respond to comments, and distinguish record evidence that the aquifers are *not* interconnected.

2. Whether EPA violated the APA and CERCLA by refusing to consider and otherwise deeming "insufficient" record evidence regarding the direction of groundwater flow when determining whether to list the Site.

STATUTES AND REGULATIONS

Pertinent statutes and regulations are reprinted in the Addendum.

STATEMENT OF THE CASE

The National Priorities List. CERCLA directs the President to create a list of sites—the National Priorities List—with "releases or threatened releases" of hazardous substances "for the purpose of taking remedial action." 42 U.S.C. § 9605(a)(8)(A); Exec. Order No. 12,580, 3 C.F.R. § 193 (1988), *reprinted in* 42 U.S.C. § 9615 app. at 893–896 (1988) (delegating authority to EPA).

Only the most contaminated sites in the country make the cut: EPA is required to prioritize sites based on the "relative risk or danger to public health or welfare or the environment," taking into account "to the extent possible the population at risk." 42 U.S.C. § 9605(a)(8)(A). As this Court has explained, "[p]ermitting the inclusion of low-risk sites on the [National Priorities List] would thwart rather than advance Congress's purpose of creating a priority list based on evidence of high risk levels." *Mead Corp.*, 100 F.3d at 156. State and federal authorities can still ensure cleanup under other programs for sites not placed on the National Priorities List. *See* JA__ [Support Document at v].

The Hazard Ranking System. EPA adopted the Hazard Ranking System to determine which sites are eligible for listing. 40 C.F.R. pt. 300 app. A. The Hazard Ranking System "serves as a screening device to evaluate the potential for

releases of uncontrolled hazardous substances to cause human health or environmental damage." *Id.* § 1.0. Its purpose is to provide "a measure of relative rather than absolute risk," *id.*, meaning that it measures the danger posed by a site compared to other contaminated sites.

After early experience with EPA's Hazard Ranking System, Congress was "troubled" with EPA's listing of "a disproportionate number of high volume, low toxicity hazardous waste sites." *Linemaster Switch Corp. v. EPA*, 938 F.2d 1299, 1303 (D.C. Cir. 1991). Congress thus "substantially revised CERCLA" to (among other things) direct the President to "make the [Hazard Ranking System] more accurate in assessing relative potential risk." 55 Fed. Reg. 51,532 (Dec. 14, 1990). Specifically, Congress amended Section 105 of CERCLA to require the President to revise "the [Hazard Ranking System] to 'assure, to the maximum extent feasible, that the hazard ranking system accurately assesses the relative degree of risk to human health and the environment.'" *Linemaster Switch Corp.*, 938 F.2d at 1302 (quoting 42 U.S.C. § 9605(c)(1)).

The Hazard Ranking System evaluates risk through four "pathways": groundwater, surface water, soil, and air. 40 C.F.R. pt. 300 app. A, § 2.1. (In this case, EPA evaluated only the groundwater pathway.) For each pathway, EPA considers: (1) the likelihood a hazardous substance will be released into the environment; (2) the characteristics of the substances released, including their

quantity and toxicity; and (3) the target population and environmental resources that could be affected by a release. *Id.* §§ 2.3–2.5, 3.4. EPA determines a score for each factor, performs a series of calculations, and arrives at the Hazard Ranking System score. Sites that receive a score of at least 28.5 are eligible for inclusion on the National Priorities List. JA__ [Guidance Manual at 2].

The score for a site involving only the groundwater pathway—as here—is based on the site's "Aquifer Score." An aquifer is a layer of rock or sediment below ground that transmits a substantial amount of water. JA__ [*Id.* 116]. There are often multiple aquifers below ground, and those aquifers may or may not be interconnected. Two aquifers are interconnected if water can pass unimpeded from one aquifer to another. *See* JA__ [Guidance Manual at 116]. If aquifers within a two-mile radius of a site are interconnected, EPA must "combine the aquifers having interconnections in scoring the site." 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1. "If data are not adequate to *establish* aquifer interconnections," however, EPA must "*evaluate the aquifers as separate aquifers*." *Id.* (emphases added).

The Aquifer Score's purpose is to take into account the target population that could be affected by contamination at a site. *See id.* § 2.5. EPA's approach under the Hazard Ranking System is to assume that a site could contaminate any wellfield within four miles—in any direction. EPA then calculates the target population based on the entire population served by those wells. *See id.* § 3.3.

This case raises an as-applied challenge to that approach. *See* JA__–__ [AMMH Comment at 12–13].

The Site. The Site is located in Marion County, Indiana. JA__ [Support Document at 1]. It consists of groundwater contamination allegedly originating from two areas: the Michigan Meadows apartment complex and the Michigan Plaza shopping center, both formerly owned by AMMH (collectively the Michigan Plaza properties); and the 700 North Olin property, which Genuine has been remediating. JA__–__ [*Id.* 1–2], __ [Genuine Comment at 1].[1]

Michigan Plaza. AMMH is an apartment company. It purchased the Michigan Plaza properties in 1999. JA__ [AMMH Comment at 2]. In 2001, in connection with a possible sale of both properties, AMMH discovered that a former dry cleaner operation—which closed before AMMH purchased the properties—had operated at the shopping center. *See id.*; JA__ [EPA Reference 40 at 21]. The dry cleaner had discharged wastewater containing perchloroethylene

[1] EPA initially proposed including two residential wells as part of the Site. *See* JA__ [Original Documentation at 73]. In 2016, EPA closed the residential wells and connected the residences to a municipal water supply. *See West Vermont Drinking Water Contamination Site Situation Report #7* (Mar. 2, 2016), https://response.epa.gov/site/sitrep_profile.aspx?site_id=6670&counter=26662.

(PCE) into a leaky sewer system, which permitted the PCE to migrate into the underlying groundwater.[2] *See* JA__ [AMMH Comment at 2].

Following the sale of the Michigan Plaza properties in 2008, AMMH continued to actively address environmental concerns at the properties. JA__–__ [*Id.* 2–3]; JA__ [Revised Documentation at 72]. In 2007, AMMH enrolled the properties in the Indiana Department of Environmental Management's Voluntary Remediation Program. JA__–__ [AMMH Comment at 2–3].[3] To date, AMMH has conducted more than twenty separate field investigations of the properties, and for ten years now it has sampled, on a quarterly basis, an extensive network that now consists of dozens of groundwater monitoring wells. *Id.* To remediate the contamination, under the Indiana Department of Environmental Management's oversight, AMMH injected bioremediation compounds into groundwater on three separate occasions. *Id.* As of December 2015, AMMH had incurred over a million dollars in voluntary investigation and remediation costs. *Id.*

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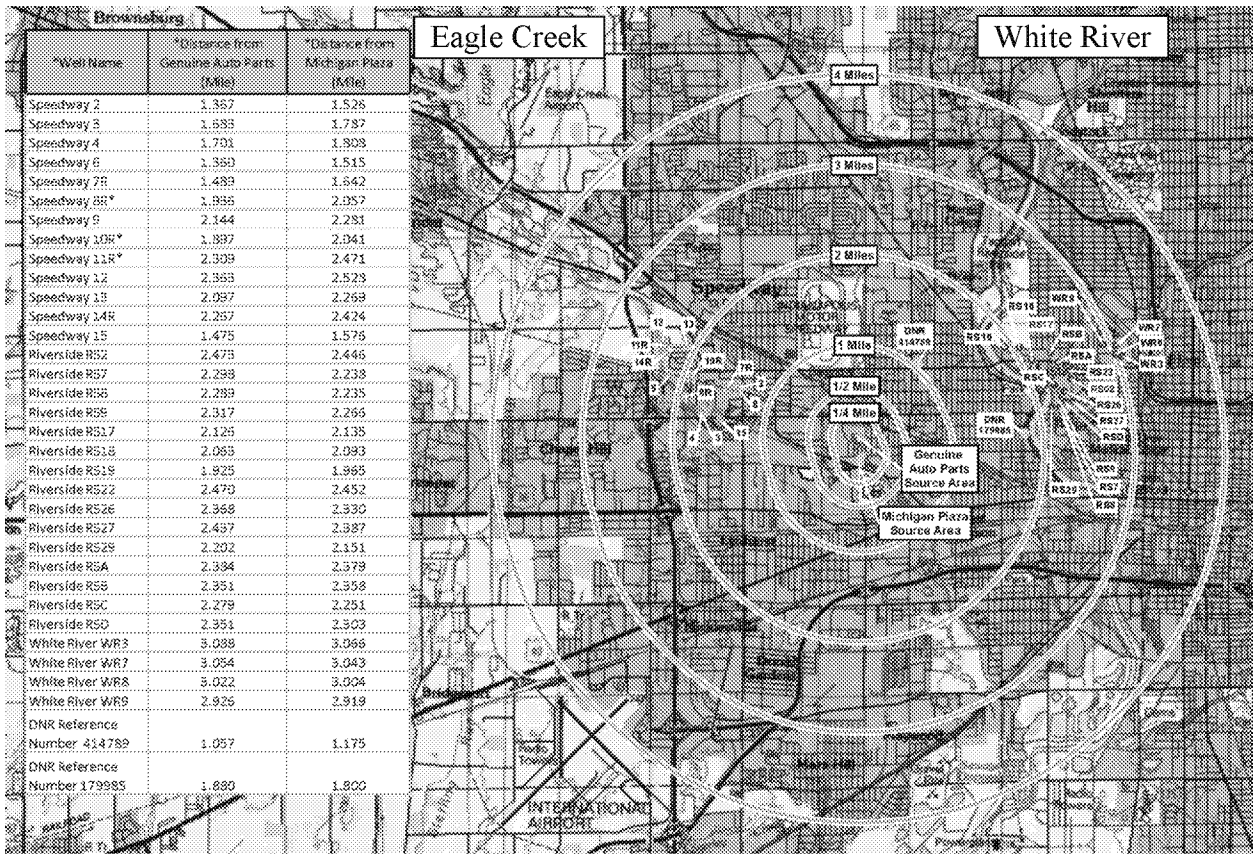
[2] Among other things, PCE is used in dry cleaning and as an industrial degreaser and cleaning agent. *See* JA__ [EPA Reference 64 at 1].

[3] On June 30, 2015, the Department issued a notice purporting to terminate AMMH's participation in the Voluntary Remediation Program. JA___ [Support Document at 2]. AMMH's appeal of the termination notice has been stayed by the Indiana Office of Environmental Adjudication.

700 North Olin Property. EPA alleges that soil contamination at 700 North Olin Avenue occurred over four decades ago and was caused by a corporate predecessor to Genuine. JA__ [Revised Documentation at 69]. Genuine has been voluntarily working with the State of Indiana to remediate the contamination at 700 North Olin for over seventeen years. *See* JA__ [Support Document at 2] ("The Genuine Parts facility was enrolled in the Voluntary Remediation Program (VRP) in an agreement signed January 11, 2000 (ID# 6991004)."). In that time Genuine has removed approximately 18,500 tons of hazardous and non-hazardous waste and performed groundwater remediation, resulting in significant decreases in contamination in on and off-site groundwater wells. *See* JA__–__ [EPA Reference 75 at 10–11].

Municipal Wellfields. The following Figure 1-5, *see* JA__ [Revised Documentation at 8], depicts the location of the Michigan Plaza and 700 North Olin properties and the three municipal wellfields at issue:



*Well Name	*Distance from Genuine Auto Parts (Mile)	*Distance from Michigan Plaza (Mile)
Speedway 2	1.367	1.526
Speedway 3	1.633	1.787
Speedway 4	1.701	1.808
Speedway 6	1.360	1.515
Speedway 7R	1.483	1.642
Speedway 8R*	1.855	2.057
Speedway 9	2.144	2.251
Speedway 10R*	1.887	2.041
Speedway 11R*	2.309	2.471
Speedway 12	2.363	2.523
Speedway 13	2.087	2.269
Speedway 14R	2.267	2.424
Speedway 15	1.475	1.576
Riverside RS2	2.473	2.446
Riverside RS7	2.298	2.238
Riverside RS8	2.289	2.235
Riverside RS9	2.317	2.266
Riverside RS17	2.126	2.135
Riverside RS18	2.063	2.093
Riverside RS19	1.925	1.965
Riverside RS22	2.479	2.452
Riverside RS26	2.368	2.330
Riverside RS27	2.437	2.387
Riverside RS29	2.202	2.151
Riverside RSA	2.384	2.379
Riverside RSB	2.351	2.358
Riverside RSC	2.279	2.251
Riverside RSD	2.351	2.303
White River WR3	3.088	3.066
White River WR7	3.054	3.043
White River WR8	3.022	3.004
White River WR9	2.926	2.919
DNR Reference Number 414789	1.057	1.175
DNR Reference Number 179985	1.880	1.800

The wellfields are within a four-mile radius of the Site, all to the north: (1) the Riverside Wellfield, between two and three miles east-northeast (red dots); (2) the White River Wellfield, between three and four miles northeast (purple dots); and (3) the Speedway Wellfield, between one and three miles northwest (light blue dots). *See* JA__ [Revised Documentation at 23]. Crucially, both Petitioners and EPA agree that groundwater at the Site flows toward the south. *See* JA__ [*Id.* 45].

The Listing. In September 2015, EPA issued a proposed rule listing the Site on the National Priorities List. 80 Fed. Reg. 58,658 (proposed Sept. 30, 2015). The agency calculated a Hazard Ranking System score of 50.0 for the Site. JA__ [Original Documentation at 1]. It based that score in part on two assumptions:

(1) aquifers within a two-mile radius of the Site are interconnected; and (2) municipal wellfields up to four miles away from the Site could be affected by contamination present at the Site even though Site groundwater flows *away* from those wellfields. *See* JA__–__, __–__ [Original Documentation at 43–46, 73–80].

AMMH, Genuine, and their respective environmental consultants submitted extensive comments on the proposed rule. *See, e.g.*, JA__ [AMMH Comment]; __ [Genuine Comment]; __ [EKI Comment]; __ [Minning Comment]; __ [Acuity Comment]; __ [Ramboll Comment]. Those comments explained that EPA's fundamental assumptions in scoring the Site were incorrect—and indeed ran counter to both the governing statute and EPA's implementing regulations. Among other things, Petitioners and their consultants pointed to compelling evidence in the record that the aquifers were *not* interconnected, and that hazardous substances from the Site are migrating away from the municipal wellfields due to the undisputed southerly direction of groundwater flow. *See id.*

EPA nevertheless issued the Final Rule listing the Site. 81 Fed. Reg. at 62,397. It continued to assume that the relevant aquifers are interconnected despite substantial record evidence to the contrary. And despite substantial record evidence that groundwater flows *away* from the wellfields, EPA determined that the Hazard Ranking System "does not consider ground water flow direction in determining the eligibility of wells subject to potential contamination." JA__

[Support Document at 53]. EPA also asserted that "sufficient data are not available at this stage in the listing process to accurately assess the ground water flow directions" within a four-mile radius of the Site. JA__ [*Id.* 29]. Based on those assumptions and assertions, EPA calculated a Hazard Ranking System score of 50.0 for the Site, and listed the Site on the National Priorities List.

These petitions followed.

SUMMARY OF ARGUMENT

EPA's score for the Site rests on two assumptions, both of which are wrong—resulting in the wrong Hazard Ranking System score, and ultimately the wrong decision to list the Site on the National Priorities List.

First, EPA scored the Site based on the assumption that aquifers within a two-mile radius of the Site are interconnected. Two aquifers are interconnected when groundwater flows unimpeded from one aquifer to another. JA__ [Guidance Manual at 116]. If the aquifers within a two-mile radius of a site are interconnected, EPA must "combine the aquifers having interconnections in scoring the site." 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1. "If data are not *adequate to establish* aquifer interconnections," however, EPA must "*evaluate the aquifers as separate aquifers*." *Id.* (emphases added). EPA's listing of the Site depends on the aquifers at the Site being interconnected: The Site receives a score of 50.0 on the Hazard Ranking System if the aquifers are interconnected, but if the data do not

establish interconnections, the Site receives a score of 20.0—below the listing threshold.

Record evidence demonstrates that the aquifers are not interconnected. Strikingly, however, EPA failed to discuss that evidence—even though Petitioners specifically pointed to it in their comments. In addition, the sources on which EPA relies to conclude that the aquifers are interconnected either fail to support the agency's position or flatly contradict it. To the extent there is any conflict in the record, moreover, EPA's own regulations require the agency to evaluate the aquifers as separate aquifers—which EPA failed to do. EPA's listing decision should thus be vacated.

Second, EPA scored the Site based on the assumption that contamination at the Site endangers municipal wellfields within a four-mile radius of the Site. EPA agreed with Petitioners, however, that groundwater at and in the vicinity of the Site flows south, *away* from the wellfields. *See* JA__ [Revised Documentation at 45]. EPA nevertheless refused to consider the direction of groundwater flow because the Hazard Ranking System purportedly "*does not consider ground water flow direction* in determining the eligibility of wells subject to potential contamination." JA__ [Support Document at 53] (emphasis added).

EPA's outright refusal to consider the well-documented and undisputed groundwater flow direction violates Congress's express directive requiring EPA to

assess the relative degree of risk at sites to the "maximum extent feasible." 42 U.S.C. § 9605(c). It also contradicts the long-standing admonition that agencies must "consider [the] important aspect[s] of the problem" in order to comply with the APA. *See Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

EPA also appears to assert that, regardless of the acknowledged direction of groundwater flow in the vicinity of the Site, "sufficient data are not available" to evaluate the direction of groundwater flow within a four-mile radius of the Site. JA__ [Support Document at 29]. But EPA's assertion is contrary to its own conclusions in the record—and the agency does not even attempt to explain why data from areas beyond the Site are necessary to evaluate whether contamination at the Site endangers the wellfields. *See supra* Figure 1-5 at p. 12 (depicting location of wellfields). EPA's conclusion that data are insufficient to evaluate the direction of groundwater flow is thus arbitrary and capricious, as well as contrary (again) to CERCLA's requirement that EPA accurately assess the risk posed by the Site.

For these reasons and as set forth below, EPA's listing decision should be vacated.

STANDING

EPA has alleged that properties formerly owned by Petitioners or their corporate predecessors are the source of contaminated groundwater at the Site.

See JA__ [Revised Documentation at 23]. EPA also has identified Petitioners as "potentially responsible parties" liable for contamination at the Site. JA__–__ [AMMH app. G at 2–3]. The Final Rule thus leads to significant additional environmental investigation, remediation, and enforcement costs for Petitioners—and immediately provides EPA with bargaining leverage over them. *See* JA__ [AMMH Comment at 1]; __ [Genuine Comment at 10]; *see also* 42 U.S.C. §§ 9604, 9607 (authorizing EPA to incur cleanup costs at National Priorities List sites and seek recovery of those costs from responsible parties); *CTS Corp. v. EPA*, 759 F.3d 52, 58 (D.C. Cir. 2014) (listing on the National Priorities List permits EPA "to exert increased leverage" over a former property owner "by expending appropriations on remediation while potentially constraining efforts by" the former owner "to cabin the scope of the cleanup action financially attributed to it"); *Mead Corp.*, 100 F.3d at 155 ("listing drastically increases the chances of costly activity" and gives EPA "bargaining leverage" over potentially responsible parties); *Kent Cty., Del. Levy Ct. v. EPA*, 963 F.2d 391, 394 (D.C. Cir. 1992) ("placement on the NPL has serious consequences").

For example, once EPA lists a site, it has authority to require responsible parties to conduct or pay for long-term "remedial actions." *See* 42 U.S.C. §§ 9604, 9606, 9607. Those remedial actions must comply with complex procedural and substantive federal requirements that do not apply to voluntary cleanups under

Indiana law or to federal cleanups of sites not on the National Priorities List—including requirements to prepare a formal Remedial Investigation and Feasibility Study, solicit extensive public involvement, and complete five-year reviews. *See* 40 C.F.R. pt. 300, § 300.430. Because CERCLA permits EPA to conduct costly long-term remedial actions only at sites on the National Priorities List, the Final Rule also exposes Petitioners, as potentially responsible parties, to liability for such costs. *See* 42 U.S.C. §§ 9604, 9607(a), 9611; *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1046–47 (2d Cir. 1985).

Additionally, the stigma of association with a site on the National Priorities List—which EPA considers to be a list of the most contaminated sites in the country—has caused AMMH and Genuine reputational harm. *See* JA__ [AMMH Comment at 1]; *see also Mead Corp.*, 100 F.3d at 155 (recognizing "damage to business reputation" caused by listing). EPA's listing of the Site also has injured Petitioners by linking them to a new and expanded area of potential contamination that includes each other's properties and the municipal wellfields. *See* JA__ [AMMH Comment at 1]; __ [Genuine Comment at 8]; __, __–__ [Revised Documentation at 23, 77–83]; *see also CTS Corp.*, 759 F.3d at 58 (finding standing based on "an increase in the expected geographic scope" of "remediation activity").

Moreover, although both Petitioners have been conducting voluntary

cleanup actions for years, as a result of the Final Rule, EPA asserts that Petitioners must now receive EPA approval before conducting further remediation. *See* JA__ [Support Document at 15] ("If any PRP wishes to undertake cleanup efforts, such as those discussed by [Genuine] and AMMH, it may do so under EPA supervision pursuant to appropriate agreements."). Obtaining EPA approval is itself costly and time-consuming; that increased compliance cost is an(other) injury in fact. *See, e.g.*, *State Nat'l Bank of Big Spring v. Lew*, 795 F.3d 48, 54 (D.C. Cir. 2015) (finding standing where plaintiff incurred costs to comply with agency regulations); *Ass'n of Private Sector Colls. & Univs. v. Duncan*, 681 F.3d 427, 458 (D.C. Cir. 2012) (recognizing standing on the basis of "'greater compliance costs'").

STANDARD OF REVIEW

This Court will set aside a listing on the National Priorities List under both the APA and CERCLA if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); *see Kent Cty.*, 963 F.2d at 393. "When this court reviews the EPA's decision to include a particular site on the [National Priorities List], it must determine whether the decision is consistent with CERCLA and with the policies underlying" the National Priorities List and the Hazard Ranking System. *Anne Arundel Cty. v. EPA*, 963 F.2d 412, 415 (D.C. Cir. 1992). In addition, EPA's attempt to list a site is invalid if not

supported by "substantial evidence." *CTS Corp.*, 759 F.3d at 59 n.1.

"In contrast to traditional rulemaking under the APA, the procedure for placing a hazardous waste site on the NPL consists of the application of a detailed scoring system to particular facts." *Anne Arundel Cty.*, 963 F.2d at 418. Although EPA's scientific determinations are entitled to deference, this Court's review of listing decisions is not "of the rubber-stamp variety." *Bd. of Regents of the Univ. of Wash. v. EPA*, 86 F.3d 1214, 1217–18 (D.C. Cir. 1996). Rather, the Court must review the record to ensure that EPA has examined relevant data, explained the scientific basis for its decisions, offered substantial evidence in support of those decisions, and followed its own regulations. *See Carus Chem. Co. v. EPA*, 395 F.3d 434, 441 (D.C. Cir. 2005); *Nat'l Gypsum Co. v. EPA*, 968 F.2d 40, 41 (D.C. Cir. 1992); *Algonquin Gas Transmission Co. v. FERC*, 948 F.2d 1305, 1315–16 (D.C. Cir. 1991). "[I]nquiry into the facts is to be searching and careful." *Bowman Transp., Inc. v. Ark.-Best Freight Sys., Inc.*, 419 U.S. 281, 285 (1974) (internal quotation marks omitted). EPA's listing decision should be vacated if EPA fails to meet any of those requirements. *See Nat'l Gypsum*, 968 F.2d at 47; *Anne Arundel Cty.*, 963 F.2d at 419; *Kent Cty.*, 963 F.2d at 393; *see also Tex Tin Corp. v. EPA*, 992 F.2d 353, 355–356 (D.C. Cir. 1993).

ARGUMENT

I. EPA IGNORED KEY EVIDENCE AND FAILED TO COMPLY WITH ITS OWN REGULATIONS IN SCORING THE SITE BASED UPON INTERCONNECTED AQUIFERS.

This case involves complex technical matters—but the legal arguments are straightforward. EPA failed to comply with the APA, CERCLA, and its own regulations in scoring the Site for inclusion on the National Priorities List, because it ignored or refused to consider clear record evidence contradicting the agency's central assumptions.

In scoring the Site, EPA assumed that the aquifers within two miles of the Site are interconnected. EPA calculated a Hazard Ranking System score of 50.0 for the Site based on the Site's "Aquifer Score." JA__ [Revised Documentation at 3]. The Aquifer Score in turn depends on three factors: (1) the "likelihood that a site has released or has the potential to release hazardous substances into the environment," (2) the "characteristics of the waste" released into the environment, and (3) the "people or sensitive environments (targets) affected by the release." JA__ [Support Document at v].

Under EPA regulations, if the aquifers within a two-mile radius of a site are *interconnected*, a single Aquifer Score is assigned to all of the interconnected aquifers. 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1. If the aquifers are *not* interconnected, however, each aquifer receives a separate score, and the site's

overall Aquifer Score is the highest score for any one aquifer. *Id.*; JA__ [Revised Documentation at 3]; __–__ [Guidance Manual at 197–202].

The theory behind this approach is that when aquifers are interconnected, contamination present in any of the aquifers can more easily flow to other aquifers (and populations that draw water from them). Conversely, if the aquifers are not interconnected, it is more difficult for contamination in a particular aquifer to flow to other aquifers, making it less likely that contamination in one aquifer will impact populations served by other aquifers.

EPA's regulations describe how the agency is to determine whether two aquifers are interconnected: EPA must "[e]valuate whether aquifer interconnections occur within 2 miles of the sources at the site," and if "data are not *adequate to establish* aquifer interconnections," EPA must "*evaluate the aquifers as separate aquifers*." 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1 (emphases added). As EPA itself has explained, "[a]quifer interconnections cannot be assumed, but must be supported by evidence." JA__ [Guidance Manual at 135].

EPA acted arbitrarily and capriciously, without substantial evidence, and contrary to law when it calculated the Aquifer Score for the Site without adhering to these requirements, the APA, and its statutory mandate to accurately assess risk. The agency concluded that aquifers within two miles of the Site are interconnected, and it scored the Site on that basis. It did so without distinguishing or even

considering numerous record sources demonstrating that the aquifers are *not* interconnected. Had it properly applied its regulations and considered all of the evidence, EPA would have scored the aquifers as separate aquifers—resulting in a Hazard Ranking System score *below* the listing threshold. *See* JA__ [EKI Comment at Table 2].

A. EPA Ignored Substantial Record Evidence Demonstrating That The Aquifers Are Not Interconnected.

"[A]n agency's refusal to consider evidence bearing on the issue before it constitutes arbitrary agency action within the meaning of § 706." *Butte Cty. v. Hogen*, 613 F.3d 190, 194 (D.C. Cir. 2010). In addition, it "is certainly incumbent upon the EPA" to respond "in a reasoned manner to significant comments received." *Northside Sanitary Landfill, Inc. v. Thomas*, 849 F.2d 1516, 1520 (D.C. Cir. 1988) (internal quotation marks omitted); *see Ass'n of Private Sector Colls.*, 681 F.3d at 441. Here, EPA ignored substantial record evidence—including evidence explicitly discussed in Petitioners' (and their consultants') comments—demonstrating that aquifers within a two-mile radius of the Site are *not* interconnected.

An aquifer is defined as "[o]ne or more strata of rock or sediment that is saturated and sufficiently permeable to yield economically significant quantities of water to wells or springs." JA__ [Guidance Manual at 116]. For example, layers of sand, gravel, or limestone below ground may transmit substantial volumes of

water and act as aquifers. Two aquifers may be separated by a "confining layer," which is a "layer of low hydraulic conductivity (relative to adjacent geologic materials) that is not expected to be used as an aquifer." *Id.* Hydraulic conductivity measures the "overall ability of water to flow through a geologic material." *Id.* Layers of shale or clay (also called "till" or "fine-grained units")[4] have a low hydraulic conductivity (they do not transmit much water) and may serve as confining layers. Below ground, aquifers and confining layers may be stacked on top of each other like Legos®, with confining layers separating aquifer layers.

Aquifers are interconnected when subsurface conditions "allow two or more aquifers . . . to be combined into a single aquifer." *Id.* If aquifers are interconnected, EPA must "combine the aquifers having interconnections in scoring the site." 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1. "If data are not adequate to establish aquifer interconnections," however, EPA must "evaluate the aquifers as separate aquifers." *Id.*

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[4] As a general matter, references to "clay," "till," and "fine-grained units" describe geologic materials with low hydraulic conductivity that may serve as a confining layer. *See* JA__ [55 Fed. Reg. at 51,601] (listing hydraulic conductivity of clay, till, and fine-grained units); *see, e.g.*, JA__ [EKI Comment at 4] (referring to "clay till and other fine-grained units"); __ [EPA Reference 129 at 24] (referring to "clay till"); __ [Revised Documentation at 43] (referring to "fine-grained units"). For ease of reference, Petitioners use the word "clay" to refer to clay, till, and fine-grained units.

Aquifers are *not* interconnected if they are separated by a confining layer with a "difference in hydraulic conductivity" of "at least two orders of magnitude." JA__ [Guidance Manual at 116]. In other words, aquifers are not interconnected if there is a confining layer between the aquifers that water cannot easily flow through.

EPA and Petitioners agree that there is a sand and gravel "outwash" aquifer (which Petitioners refer to as the Glacial Outwash Aquifer) directly below ground within a two-mile radius of the Site. JA__ [Revised Documentation at 43].[5] The issue in this case has to do with what exists beneath that Glacial Outwash Aquifer: a confining layer, or another aquifer. If a confining layer of shale or clay separates the upper Glacial Outwash Aquifer from the lower aquifers within a two-mile radius of the Site, the aquifers are *not* interconnected.

To determine whether aquifers are interconnected, EPA's Guidance Manual instructs the agency to consult "scientific journals on geology or ground water resources in the area published by Federal agencies" and "publications, circulars, bulletins or any other reports from state agencies responsible for geologic or ground water resource information." JA__ [Guidance Manual at 118]. Next, EPA

[5] EPA refers to this aquifer as the "Sand and Gravel Outwash Overburden." JA__ [Revised Documentation at 43]. The geologic cross sections in the record depict this aquifer as a layer of sand and gravel. *See infra* pp. 27–31.

must examine "site-specific information." *Id.* Finally, EPA may engage in additional data collection, including examining "well logs" and "[c]ross-sections generated from well log data." JA__–__ [*Id.* 118–119].

Geological Surveys. At least *three* geological surveys in the record all support the existence of a confining layer of shale or clay in the general area of the Site. First, a geological survey of Marion County, Indiana states that upper "sand and gravel units" form "a coherent shallow aquifer system" that "is, for the most part, distinct from deeper sand and gravel or bedrock aquifers." JA__, __ [EKI Ex. C at AMMH2195, 2231]. The same geological survey also explains that "a thick, persistent sequence of" clay "creates a low-permeability confining unit that, in most places, effectively separates the shallow system from deeper aquifers." JA__ [*Id.* AMMH2231]. Second, a study of Marion County by the Indiana Department of Natural Resources states that "[i]n places, particularly where it lies beneath a cover of till, the aquifer is divided into two units by a relatively thick and extensive till layer." JA__ [EPA Reference 127 at 4]. Third, a groundwater survey of Marion County based on U.S. Geological Survey data describes "an extensive confined aquifer in the northeastern portion" of the county and "laterally extensive clay layers in the central part of the county," and states that "clay layers locally separate the aquifer into an upper and lower zone." JA__, __ [EPA Reference 129 at 22, 26].

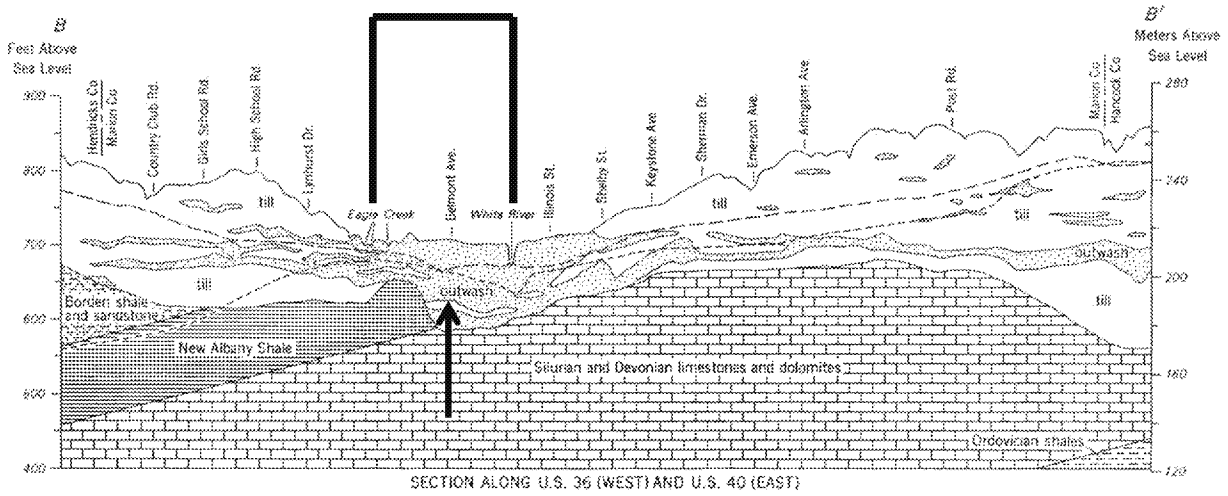
Each of these geological surveys suggests that the upper Glacial Outwash Aquifer is *not* interconnected with lower aquifers. But EPA did not even discuss these statements in the geological surveys—even though the first and third surveys were specifically cited by AMMH's consultant EKI, EPA cited the *previous page* of the second survey, and EPA cited the *following page* of the third survey. *See* JA__ [EKI Comment at 4]; __ [Revised Documentation at 44] (citing JA__ [EPA Reference 127 at 3]; __ [EPA Reference 129 at 23]).

Site-Specific Cross Sections. In addition to these geological surveys, site-specific evidence—including three cross sections of the geology within a two-mile radius of the Site—demonstrates that the upper Glacial Outwash Aquifer is *not* interconnected with the lower aquifers. These cross sections depict the geology below ground within a certain distance of the Site. To identify the relevant portion of these cross sections, it is helpful to locate landmarks within a two-mile radius of the Site. Figure 1-5, reproduced above, depicts the relevant two-mile radius. *See supra* p. 12. Figure 1-5 depicts that radius beginning roughly at Eagle Creek in the west and extending roughly to the White River in the east. The relevant two-mile radius on the cross sections reproduced below thus stretches from approximately the area labeled "Eagle Creek" in the west to the area labeled "White River" in the east.

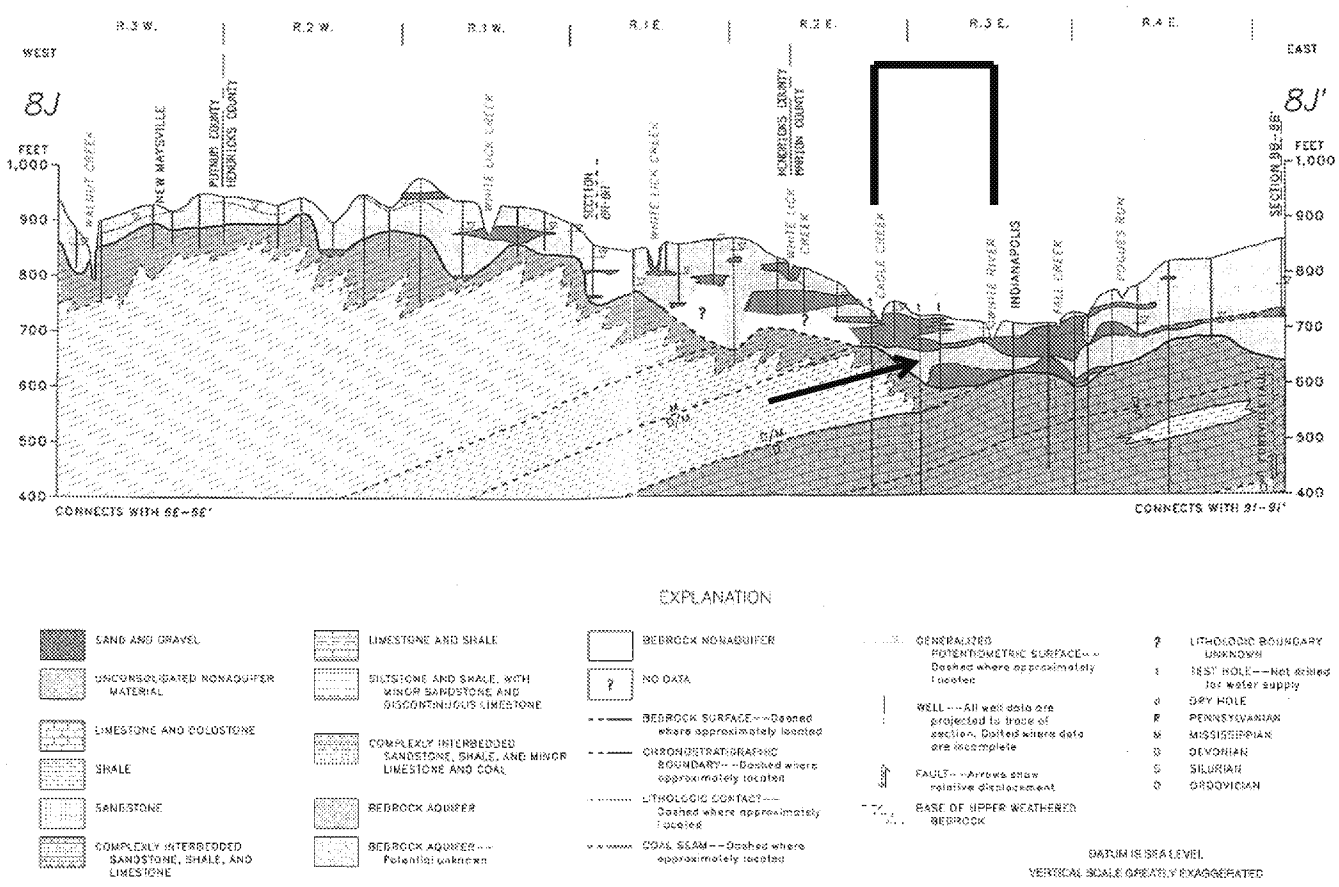
The first cross section, B-B' (pronounced "B, B prime"), is based upon

groundwater modeling of the Glacial Outwash Aquifer along the White River. JA__ [EPA Reference 129 at 22]. This cross section is included in the record and cited by EPA. *See* JA__ [Revised Documentation at 44] (citing JA__ [EPA Reference 129 at 23]). The cross section depicts four principal geologic layers, from top to bottom: (1) an upper sand and gravel aquifer (small dots) (i.e., the Glacial Outwash Aquifer); (2) a confining layer of shale (dark thatching) beginning to the west of Eagle Creek and touching a confining layer of clay (a white, finger-like layer) extending past the White River to the east;[6] (3) a middle sand and gravel aquifer below the clay layer (small dots); and (4) a lower limestone bedrock aquifer (bricks). Aquifers (1) and (3) are not connected except *beyond* the White River, at the location where the finger of clay ends. The aquifers are *not* interconnected within the relevant two-mile radius. An annotated version of the cross section, with a horseshoe indicating the two-mile radius and an arrow indicating the clay layer, is shown below:

[6] The white formations in cross section B-B' are identified as "till," which is equivalent to clay for present purposes. *See supra* n.4. This same finger-like layer is described in cross section 8J-8J' and Plate R-5 as clay or "nonaquifer material." *See infra* pp. 29–31.



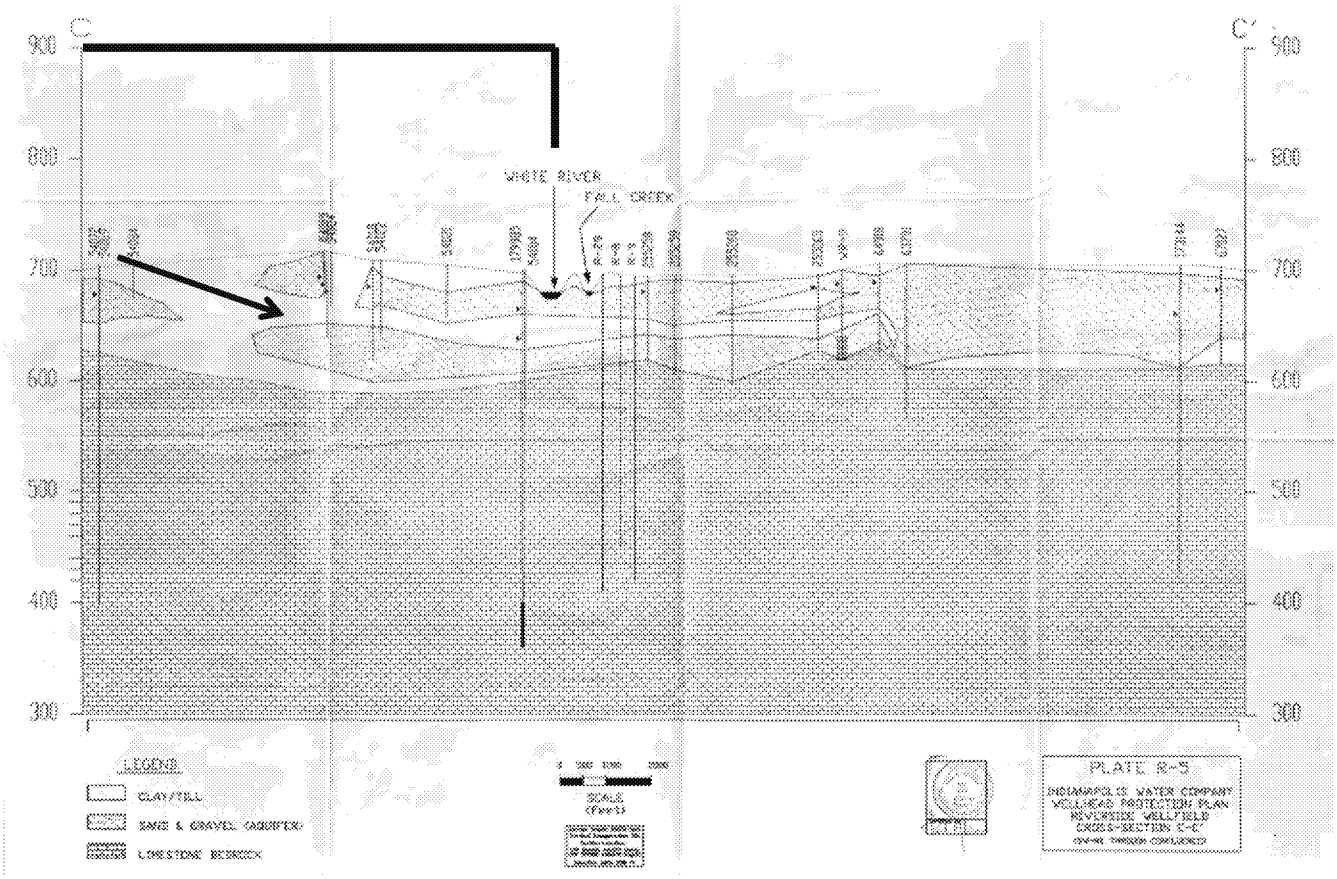
The second cross section, 8J-8J', is from the Hydrogeologic Atlas of Aquifers in Indiana. This cross section is included in the record, and this source is repeatedly cited by EPA. *See* JA__ [EPA Reference 130 at 16]; __–__ [Revised Documentation at 43–45] (citing JA__ [EPA Reference 130]). In the area between Eagle Creek and the White River, this cross section once again shows four principal geologic layers: (1) an upper sand and gravel aquifer (i.e., the Glacial Outwash Aquifer) (a darker color); (2) a confining layer of shale (dashed lines) touching a confining layer of "unconsolidated nonaquifer material" (a lighter color); (3) a middle sand and gravel aquifer (a darker color); and (4) a lower limestone bedrock aquifer (bricks). As in cross section B-B', the nonaquifer layer is shaped like a finger (annotated below with an arrow):



The third cross section, Plate R-5, was prepared as part of an "ongoing wellhead protection planning effort being conducted by the Indianapolis Water Company (IWC) for the well fields serving the city of Indianapolis." JA__ [EPA Reference 129 at 17]. This cross section is also included in the record. JA__ [Minning Comment at Plate R-5]; __ [EPA Reference 129 at 273]. EPA repeatedly references the source containing the cross section. JA__, __ [Revised Documentation at 27, 44] (citing JA__ [EPA Reference 129]). In addition, AMMH's consultant EKI cited Plate R-5 to support its conclusion that there is a confining clay layer separating the upper and lower aquifers, and AMMH's

consultant R.C. Minning included Plate R-5 in its comments to EPA. JA__ & n.22 [EKI Comment at 4 & n.22]; __ [Minning Comment at Plate R-5].

Plate R-5 displays the aquifers near the White River, which is the eastern boundary of the two-mile radius; Eagle Creek is not depicted. The cross section plainly shows the same principal geologic layers: (1) an upper sand and gravel aquifer (small dots) (i.e., the Glacial Outwash Aquifer); (2) a confining layer of clay (a white, finger-like layer); (3) a middle sand and gravel aquifer (small dots); and (4) a lower limestone bedrock aquifer (bricks). The clay layer is annotated with an arrow:



Well Logs. Data from well logs also confirm the existence of a confining layer of clay. Well log DNR 179985 lists a blue clay layer from 65 to 70 feet below ground, and a sandy clay layer from 93 to 100 feet below ground—the same general area where the cross sections depict a clay layer:

GROUND ELEVATION: 700.0

TOP	BOTTOM	FORMATION
0.0	3.0	FILL
3.0	10.0	CLAY YELLOW
10.0	25.0	GRAVEL DRY
25.0	40.0	SAND WATER BEARING
40.0	65.0	GRAVEL CLAY BLUE
65.0	70.0	CLAY BLUE
70.0	72.0	SAND & GRAVEL MUDDY
72.0	85.0	CEMENTED GRAVEL
85.0	93.0	WATER GRAVEL & SAND
93.0	100.0	CLAY SANDY
100.0	105.0	LIME BROKEN

Well log DNR 414789 similarly depicts a sandy gray clay layer from 45 to 82 feet below ground, and a second layer of sandy gray clay from 85 to 94 feet below ground—again, the same area where the cross sections depict a clay layer:

GROUND ELEVATION: 733.0

TOP	BOTTOM	FORMATION
0.0	2.0	BROWN CLAY
2.0	25.0	M-C SAND AND GRAVEL W/ BOULDERS
25.0	30.0	SANDY GRAY CLAY
30.0	45.0	M-C SAND AND GRAVEL W/ COBBLES
45.0	82.0	SANDY GRAY CLAY
82.0	85.0	F-M SAND AND GRAVEL
85.0	94.0	SANDY GRAY CLAY

94.0	100.0	F-M SAND AND GRAVEL W/ CLAY
100.0	130.0	F-M SAND AND GRAVEL
130.0		LIMESTONE

Both well logs are included in the record, cited by EPA, and depicted on EPA Figure 1-5. JA__ –__ [EPA Reference 116 at 51–54]; __ [Revised Documentation at 44] (citing JA__ [EPA Reference 116]); *supra* Figure 1-5 at p. 12 (depicting location of well logs).

In addition to those well logs, AMMH's consultant R.C. Minning created a cross section of well log data that is included in the record and referenced by both R.C. Minning and AMMH's consultant EKI. JA__ [Minning Comment at cross section A-A']; __ –__ [EKI Comment at 5–6]. The cross section covers roughly the same area as Plate R-5, and it once again shows a confining layer of clay extending from the western side of the cross section through the White River in the middle of the cross section.

All of these geological surveys, cross sections, and well logs point to the same conclusion: A continuous layer of shale or clay stretches across the relevant two-mile radius.

Under EPA's regulations, this layer is considered a confining layer if there is a "difference in hydraulic conductivity" of "at least two orders of magnitude" (a difference of 100 times) between the shale or clay layer and surrounding aquifers. JA__ [Guidance Manual at 116]. EPA's regulations also explain that shale and

some kinds of clay have a low hydraulic conductivity of 10^{-8} cm/sec. 55 Fed. Reg. at 51,601.[7] Other kinds of clay also have a low hydraulic conductivity of 10^{-6} cm/sec. *Id.* In contrast, sand has a higher hydraulic conductivity of 10^{-4} cm/sec; gravel, clean sand, and limestone have an even higher hydraulic conductivity of 10^{-2} cm/sec. *Id.*[8] Laboratory testing confirms that clay at the Site has a hydraulic conductivity between 2.8 x 10^{-8} and 4.2 x 10^{-8} cm/sec. JA__ [EPA Reference 40 at 33].

As AMMH's consultant EKI stated in its comments to EPA, these "measurements are *five* orders of magnitude lower than the average hydraulic conductivity value of 2.5 x 10^{-2} [cm/sec] reported for aquifer sediments" at the Site. JA__ n.28 [EKI Comment at 5 n.28] (emphasis added). Because there is a "difference in hydraulic conductivity" of "at least two orders of magnitude" between the shale or clay layer and surrounding aquifers, the continuous layer of shale or clay within a two-mile radius of the Site serves as a confining layer, and the upper and lower aquifers are *not* interconnected.

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[7] Hydraulic conductivity measures the "overall ability of water to flow through a geologic material." JA__ [Guidance Manual at 116]. It is measured in centimeters per second (cm/sec). Because the measurements are small, it is helpful to use exponents. 10^{-8} cm/sec, for example, corresponds to 0.00000001. 10^{-6} cm/sec corresponds to 0.000001.

[8] A hydraulic conductivity of 10^{-4} is two orders of magnitude lower than a hydraulic conductivity of 10^{-2}.

EPA did not discuss the relevant statements in the geological surveys. It did not discuss the cross sections depicting the clay layer. It did not discuss the clay layer plainly shown on the well logs. It even failed to discuss the low hydraulic conductivity of clay at the Site. And EPA failed to address all this evidence despite the fact that Petitioners and their consultants highlighted the evidence in their comments, and despite the fact that EPA relied on some of the same references to support *other* propositions. EPA's failure to acknowledge the existence of a confining layer of shale or clay separating the upper Glacial Outwash Aquifer from the lower aquifers is not a minor issue. It is a crucial factor in scoring the Site. *See infra* pp. 43–44. EPA acted arbitrarily and capriciously, and without substantial evidence, by failing to discuss or address this evidence, and by failing to respond to Petitioners' (and their consultants') comments about this evidence. *See Butte Cty.*, 613 F.3d at 194; *Northside Sanitary Landfill*, 849 F.2d at 1520.

B. EPA Failed To Adequately Explain The Basis For Its Decision Or Offer Substantial Evidence To Establish That The Aquifers Are Interconnected.

An EPA listing decision also should be vacated if EPA fails "to explain adequately the scientific basis for its decision" or "offer substantial evidence in support of its decision." *Nat'l Gypsum*, 968 F.2d at 41. EPA's conclusion that the aquifers within a two mile radius of the Site are interconnected again fails

Administrative Law 101. EPA relied on several references that do not support—and in some cases, flatly contradict—its conclusion. And to the extent the record evidence is unclear with respect to whether the aquifers are interconnected, EPA's own regulations required EPA to determine that the aquifers are *not* interconnected. EPA's conclusion that the aquifers are interconnected is thus arbitrary and capricious, unsupported by the evidence, and contrary to law.

First, EPA acknowledged the existence of a shale layer with low hydraulic conductivity both beneath and to the west of the Site. *See* JA__–__ [Revised Documentation at 44–45]. But EPA then proceeded to conclude that because the shale layer is absent on the eastern side of the relevant two-mile radius, the upper Glacial Outwash Aquifer is interconnected with the lower aquifers in this area. To support that conclusion, EPA explained that the shale layer "is not present throughout the study area and is specifically not present within 2 miles east of the study area where unconsolidated materials (the sand and gravel outwash overburden) sit directly on the carbonate Muskatatuck group," and that within "the Riverside wellfield, the outwash aquifer is directly on the bedrock." *See* JA__ [*Id.* 44]. EPA cited cross section B-B' and well logs DNR 179985 and 414789—both depicted above—as well as page 10 of an Indiana Geological Survey, which displays areas with and without shale near the Site. *See id.* (citing JA__ [EPA Reference 129 at 23]; __–__ [EPA Reference 116 at 51–55]; __ [EPA Reference

120 at 10]).

EPA's conclusion is not supported by those sources. It is true that *shale* is missing from part of the two-mile radius. What EPA failed to mention, however—and what is clearly depicted in the cross sections and well logs—is that *clay* is present as a confining layer below the Glacial Outwash Aquifer even when shale is not. *See, e.g.*, *supra* cross sections B-B', 8J-8J', Plate R-5; well logs DNR 179985 and 414789. EPA was also correct that on the eastern side of the two-mile radius, a sand and gravel aquifer sits directly on top of the lower limestone bedrock aquifer. Once again, however, EPA missed the point. The cross sections and well logs—including well logs DNR 179985 and 414789—plainly show that on the eastern side of the two-mile radius, a confining layer of clay sits *above* the lower aquifers and separates the Glacial Outwash Aquifer from those aquifers. *See, e.g.*, *supra* cross section B-B' (depicting white finger-like layer of clay separating the Glacial Outwash Aquifer from the lower aquifers). The key point is that there is a confining clay layer between the Glacial Outwash Aquifer and the lower aquifers; geologic conditions beneath the confining clay layer are immaterial. EPA's conclusion that the Glacial Outwash Aquifer and lower aquifers are interconnected thus lacks a scientific basis and is unsupported by the evidence.

Second, EPA cites Reference 129 for the proposition that "'the limestone aquifer is hydraulically connected to the outwash sand and gravel aquifer.'" JA__

[Revised Documentation at 44] (citing JA__ [EPA Reference 129 at 27]). Once again, EPA misses the point. Reference 129 states that in some areas, it is "likely that the limestone aquifer is hydraulically connected to the outwash sand and gravel aquifer." JA__ [EPA Reference 129 at 27]. EPA should have continued to the very next sentence, however, which states that in other areas, "the limestone aquifer is hydraulically isolated from the upper intertill aquifer system." *Id.* Cross section B-B', which is cited just a few pages earlier in the same source, shows where the aquifers are interconnected, and where they are not: In the relevant two-mile radius between Eagle Creek and the White River, the limestone aquifer is not interconnected with the upper Glacial Outwash Aquifer. Further to the east of the White River—and outside the relevant two-mile radius—the limestone aquifer is interconnected with the upper Glacial Outwash Aquifer. JA__ [*Id.* 23]. Ditto for cross sections 8J-8J' and Plate R-5. *See supra* pp. 29–31. Because Reference 129 fails to support EPA's position, the agency's conclusion lacks a scientific basis and is not supported by substantial evidence.

Third, EPA states that the "thickness and extent of the finer grained material in the project area are insufficient to form a barrier to vertical contaminant migration. The finer grained unit from 35-50 ft [below ground surface] is not present in parts of the project area." JA__ [Revised Documentation at 44]. In laymen's terms, EPA is arguing that there is no confining layer of clay within the

relevant two-mile radius because clay is absent between 35 and 50 feet below ground in some parts of the Site. Everything EPA says is true. It is also irrelevant.

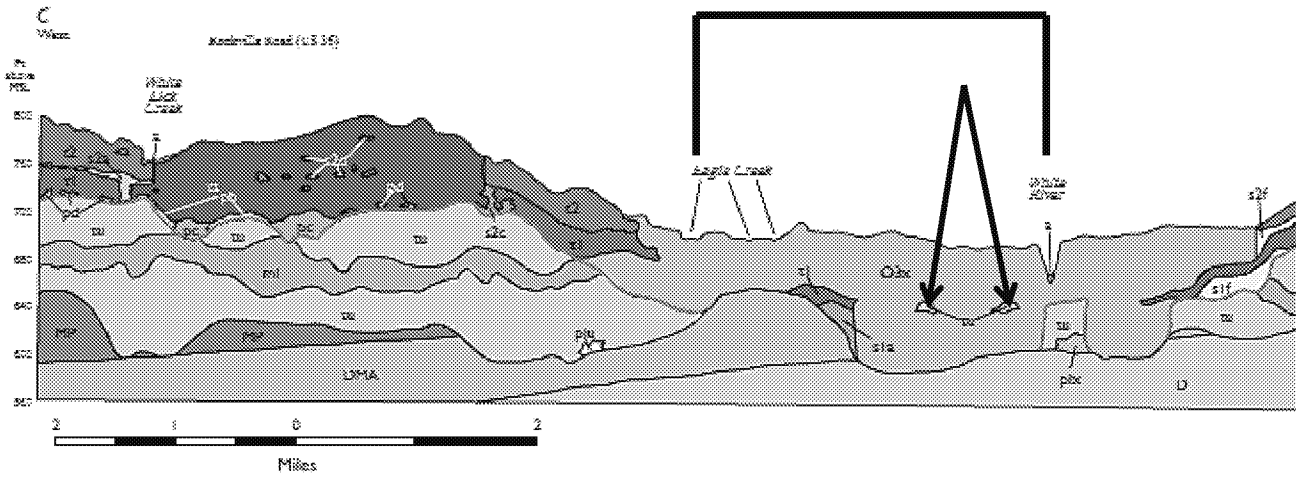
Petitioners *agree* that there is no confining clay layer within the upper Glacial Outwash Aquifer between 35 and 50 feet below the ground surface. *See* JA__–__ [Minning Comment at 6–7] (describing location where there is no confining clay layer within this *upper* Glacial Outwash Aquifer); __ [EPA Reference 16] (cross sections depicting no confining clay layer in some areas of the *upper* Glacial Outwash Aquifer). But the agency is focused on the wrong elevation. The cross sections and well logs depicted above show a confining clay layer between about 600 and 640 feet above sea level, which is at least 70 feet below the ground surface—far deeper than the 35 to 50 feet below ground surface EPA discusses. *See* JA__ [EPA Reference 16] (noting that the Site is between 710 and 720 feet above sea level); *supra* pp. 27–33. Moreover, the cross sections EPA cited as representing the geology underlying the Site show a confining clay layer at 640 feet above sea level. *See id.* (depicting brown clay layer at bottom of cross sections). AMMH's consultant EKI specifically pointed this out to EPA, explaining that the confining clay layer is *distinct* from other clay areas in the upper Glacial Outwash Aquifer, and that the relevant clay layer "generally corresponds to elevations of 630 to 640 feet" above sea level. JA__ & n.22 [EKI Comment at 4 & n.22] (citing Plate R-5). EPA's statement that there is no

confining clay layer at 35 to 50 feet below the ground surface thus is of no consequence. Yet again, EPA's conclusion lacks a scientific basis and is not supported by substantial evidence.

Fourth, EPA apparently concludes that there is no confining clay layer because five wells purportedly "show vinyl chloride contamination migrating below the fine-grained sediments down to a depth of 70 feet." JA__ [Revised Documentation at 43]. EPA again fails to acknowledge that the relevant clay layer is *deeper* than 70 feet below ground. *See* JA__ [EKI Comment at 4]; *supra* cross sections B-B', 8J-8J', and Plate R-5. The fact that vinyl chloride has migrated to an area *on top* of the relevant clay layer does not establish that vinyl chloride has traveled *through* that layer. EPA does not cite evidence of vinyl chloride *below* the confining clay layer that begins at about 640 feet above sea level, 70 feet or more below ground. EPA's conclusion therefore lacks a scientific basis and is unsupported by substantial evidence.

Fifth, although EPA does not appear to rely on it, a cross section from an Indiana Geological Survey lends some support to the agency's conclusion that a confining clay layer is not present within a two-mile radius of the Site. Unlike the cross sections and well logs cited above, cross section C-C' does not depict a confining clay layer separating the upper and lower aquifers. *See* JA__ [EPA Reference 120 at 8]. Instead, it shows two non-continuous clay areas (the two

small areas labeled "tu" below and to the right of the word "O3x"):



In its discussion of aquifer interconnections, EPA cites this cross section only for the general proposition that a "continuous sand and gravel outwash plain" stretches across the relevant two-mile radius. *See* JA__ [Revised Documentation at 43]. Petitioners agree with that basic point. But it is (again) simply immaterial to the question whether there is a confining clay layer *below* the upper Glacial Outwash Aquifer. *See State Farm*, 463 U.S. at 50 ("It is well established that an agency's action must be upheld, if at all, on the basis articulated by the agency itself."). Even if EPA had relied on this cross section to support its conclusion, moreover, EPA was required under the APA to explain why cross section C-C' is *more* accurate than the other cross sections and well logs contained in the record. *See Clark Cty. v. FAA*, 522 F.3d 437, 442 (D.C. Cir. 2008) (agency does "not satisfy the APA's reasoned decisionmaking requirement" if its conclusions "do not address the seemingly contrary findings" in the record). EPA did not do so.

In sum, substantial record evidence demonstrates that the aquifers within a two-mile radius of the Site are *not* interconnected. EPA's conclusions to the contrary lack a sound evidentiary basis, and EPA's listing decision should thus be vacated. *See Nat'l Gypsum*, 968 F.2d at 41.

C. EPA Failed To Follow Its Own Regulations, Which Require The Agency To Treat Two Aquifers As Separate If The Data Do Not Establish Interconnection.

Even if the evidence in the record is unclear (and it is not), EPA's own regulations state that "[i]f data are not *adequate to establish* aquifer interconnections, *evaluate the aquifers as separate aquifers*." 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1 (emphases added). It is thus EPA's burden to "establish" aquifer interconnections—not just to surmise that they may exist. In other words, a tie goes to Petitioners. This approach aligns with EPA's congressional mandate to accurately assess risk under the Hazard Ranking System, which in turn ensures that the National Priority List is truly populated with only high-priority sites. Given the geological surveys, cross sections, and well logs in the record all depicting a confining layer of shale or clay separating the Glacial Outwash Aquifer from the lower aquifers, EPA cannot credibly contend that the data is "adequate to establish aquifer interconnections." *Id.* EPA thus acted contrary to its own regulations when it scored the aquifers as interconnected. *See Algonquin Gas*, 948 F.2d at 1315–16 (reversing order where agency failed to follow its own regulations).

D. The Correct Score For The Site Is Below The Listing Threshold.

Because EPA incorrectly concluded that the aquifers are interconnected, it improperly scored the Site. The Site's Hazard Ranking System score is based on the "Aquifer Score." JA__–__ [Revised Documentation at 2–3]. If the aquifers are interconnected, the Aquifer Score reflects the combined score for all aquifers. *See* 40 C.F.R. pt. 300 app. A, § 3.0.1.2.1. If the aquifers are not interconnected, however, each aquifer is scored separately, and the Aquifer Score is the "highest value" for any single aquifer. JA__ [Revised Documentation at 3] (line 13).

EPA scored the aquifers as interconnected, so it assigned an Aquifer Score of 100.0 to the Site, resulting in a Hazard Ranking System score of 50.0. JA__–__ [Revised Documentation at 2–3].[9] Because the aquifers are not interconnected, however, they must be scored separately. The Glacial Outwash Aquifer is scored based on an observed release of hazardous substances into that aquifer, whereas the lower aquifers are scored based only on a potential to release into those aquifers. JA__ [EKI Comment at 8]. Because an observed release is scored much higher than a potential to release, the Glacial Outwash Aquifer receives an Aquifer Score

[9] Line 12 of the score sheet lists the Aquifer Score as 550 x 32 x 989 = 17,406,400/82,500 = 210.9. JA__ [Revised Documentation at 3]. This is an error. In response to comments from Petitioners, EPA revised the Waste Characteristics Score to 18 and the Targets score to 929, but failed to update line 12 of the score sheet. *See* JA___ [Support Document at 58].

of 40.0, whereas the two lower aquifers receive Aquifer Scores of 4.6 and 5.2, respectively. *See* JA__ –__ [EKI Comment at Tables 2–4]. The Aquifer Score for the Site is thus 40.0, resulting in a Hazard Ranking System Score of 20.0—well *below* the listing threshold. *See id.*

Bottom line: If EPA had properly determined that the aquifers are *not* interconnected, it would have scored the Site appropriately—resulting in a decision not to list the Site. Because EPA acted arbitrarily and capriciously, without substantial evidence, and contrary to law when it concluded that the aquifers are interconnected, EPA's listing decision should be vacated.

II. EPA VIOLATED CERCLA AND THE APA BY REFUSING TO CONSIDER AND IGNORING EVIDENCE OF THE DIRECTION OF GROUNDWATER FLOW WHEN SCORING THE SITE.

CERCLA requires EPA to ensure, "to the maximum extent feasible," that the Hazard Ranking System "accurately assesses the relative degree of risk to human health and the environment" posed by contaminants at a site. 42 U.S.C. § 9605(c); *see Mead Corp.*, 100 F.3d at 156. In this case, EPA scored the Site based on the assumption that contaminants at the Site pose a risk to the municipal wellfields—merely because those wellfields are located within four miles of the Site. *See* JA__, __–__ [Revised Documentation at 3, 77–83]; __ [Support Document at 9]. As EPA itself acknowledges, however, groundwater at the Site flows to the south, which is *away* from those wellfields. *See* JA__ [Revised

Documentation at 45]. EPA nevertheless refused to consider the direction of groundwater flow when scoring the Site. Correcting for that error renders the Site ineligible for listing, because it lowers the Hazard Ranking System score below the listing threshold.

In EPA's view, the Hazard Ranking System "does not consider ground water flow direction in determining the eligibility of wells subject to potential contamination," allowing the agency to simply assume that any wellfields within four miles of the Site are endangered. JA__ [Support Document at 53]. EPA also asserts that "sufficient data are not available at this stage in the listing process to accurately assess the ground water flow directions throughout the [target distance limit]," up to four miles away from the Site. JA__ [*Id.* 29].[10]

In this case, EPA's refusal to even consider groundwater flow direction in the face of definitive record evidence runs afoul of CERCLA's requirement to accurately assess risk "to the maximum extent feasible"—not to mention the APA's mandates to consider all important aspects of a problem and to reach rational conclusions consistent with the record. 42 U.S.C. § 9605(c); *see Mead*

[10] For groundwater contamination, EPA evaluates wellfields within a four-mile radius of the site, which EPA calls the "target distance limit." *See* 40 C.F.R. pt. 300 app. A, § 3.0.1.1.

Corp., 100 F.3d at 156; *State Farm*, 463 U.S. at 43.[11]

EPA's second statement, declaring that evidence of groundwater flow is "insufficient" in any event, ignores substantial record evidence, conflicts with EPA's own conclusions, and is based on the unexplained (and inexplicable) assumption that groundwater flow direction at or beyond the wellfields, miles *away* from the Site, is relevant to the question whether contamination at the Site poses a risk to the wellfields. Because EPA failed to consider that important aspect of the Site, and failed to use available data to accurately assess risk, EPA acted arbitrarily, capriciously, and contrary to law, and its listing decision should be vacated.

A. EPA Violated CERCLA By Refusing To Consider The Direction Of Groundwater Flow.

EPA's Hazard Ranking System must "be based upon relative risk or danger to public health or welfare or the environment," taking into account "to the extent possible the population at risk." 42 U.S.C. § 9605(a)(8). Following early overuse of the Hazard Ranking System—which resulted in EPA listing too many low-

[11] The Hazard Ranking System does not suspend the operation of either CERCLA or the APA and cannot excuse the agency's failure to satisfy those statutes in this as-applied challenge. *See, e.g.*, *Mead Corp.*, 101 F.3d at 155–156 (concluding in as-applied challenge that EPA regulation violates CERCLA); *Texas v. EPA*, 726 F.3d 180, 195 (D.C. Cir. 2013) (A "'valid statute always prevails over a conflicting regulation.'").

priority sites, *see supra* p. 7—Congress mandated that the Hazard Ranking System must "to the maximum extent feasible . . . accurately assess[] the relative degree of risk to human health and the environment posed by sites and facilities subject to review." 42 U.S.C. § 9605(c). Thus, this Court has interpreted CERCLA to prohibit EPA from listing sites without an accurate assessment of risk. *See Mead Corp.*, 100 F.3d at 156. By refusing to consider the direction of groundwater flow under the facts of this case, EPA acted contrary to those statutory requirements.

In situations where a contaminated site is newly identified, substantial data about groundwater flow may not yet have been collected. That is not the case here. Petitioners and their consultants cited voluminous record evidence demonstrating that groundwater flows south from the Site, away from the wellfields. *See, e.g.*, JA__–__ [Genuine Comment at 2–3]; JA__–__ [AMMH Comment at 11–12]; JA__ [Ramboll Comment at 2]; JA__–__ [Minning Comment at 3–4].

In fact, in documentation supporting the Final Rule, EPA specifically *agreed* that groundwater at the Site flows to the south, which is away from the wellfields: "[G]round water flow is in a southern direction for the shallow monitoring wells and a southern to southwestern direction for the deep monitoring wells," and "[t]he ground water flow direction in the project area is generally towards the south with some components of flow to the southeast and southwest." JA__, __ [Revised Documentation at 45, 71]. EPA similarly concluded that "[r]egional ground water

flow" between the Speedway Wellfield and the White River Valley (where the Riverside and White River Wellfields are located) is to the "southeast." JA__ [*Id.* 45]; *see supra* Figure 1-5 at p. 12 (depicting location of wellfields).

The record is compelling on this issue. Consider: Over twenty-five years, beginning in 1992, EPA, the Indiana Department of Environmental Management, General Motors, Genuine, and AMMH conducted groundwater studies including more than 7,000 groundwater measurements at the Site. *See* JA__–__ [Genuine Comment at 2–3]; __–__ [Revised Documentation at 69–70]. At least six different environmental consulting firms have analyzed that data, and all have concluded, in reports, figures, and maps in the record, that groundwater flow from the Site is in a southern direction. *See, e.g.*, JA__, __–__ [EPA Reference 21 at 3, 79–84]; __, __, __–__, __–__ [EPA Reference 23 at 27, 169, 176–179, 1585–95]; __ [EPA Reference 28 at 6]; __ [EPA Reference 40 at 36]. Groundwater maps from EPA's and Petitioners' consultants, U.S. Geological Survey, Indiana Geological Survey, Marion County Department of Health, and Indiana Department of Natural Resources show the same. *See, e.g.*, JA__–__ [EPA Reference 38 at 51–52]; __–__ [EPA Reference 75 at 80–83]; __–__, __–__ [EPA Reference 120 at 2–3, 5–7]; __ [EPA Reference 127 at 4]; __, __ [Ramboll References 7, 8]; __, __–__ [Ramboll Reference 1-2 at Drawings 3, 9–11]. And numerous additional sources in the record support the conclusion that groundwater flows to the south, including:

- "[G]roundwater flows in a general southeasterly direction." JA__ [EPA Reference 36 at 33].
- The "predominant" groundwater flow direction is "south-southwest." JA__ [EPA Reference 38 at 21].
- "[S]urface maps indicate that ground water flow is in a southern direction." JA__ [EPA Reference 53 at 8].
- "The ground water flow direction in the project area is generally towards the south with some components of flow to the southeast and southwest. Regional ground water flow near the Speedway wellfield is nearly parallel to Eagle Creek or northwest to southeast." JA__, __ [EPA Reference 53 at 14, 4223]; __ [EPA Reference 74 at 3].
- "[G]round water from the east flows regionally toward Big Eagle Creek" (i.e., to the south). JA__ [EPA Reference 74 at 3]; __ [EPA Reference 107 at 3].
- "[G]roundwater in the Site area predominantly flows south to southwest." JA__ [Ramboll Reference 14-1 at 11].

Despite substantial record evidence—and EPA's own conclusions about the direction of groundwater flow—EPA nevertheless refused to even consider the direction of groundwater flow in listing the Site, asserting that "the ground water flow direction between the sources and the municipal well fields *was not evaluated as part of the* [*Hazard Ranking System*] *evaluation* and thus it cannot be determined that contaminated ground water cannot reach the municipal well fields." JA__ [Support Document at 29] (emphasis added). EPA attempted to justify this approach with the conclusory statement that "determining the direction of ground water flow throughout the [target distance limit] is not consistent with a screening level evaluation such as the [Hazard Ranking System], and the ground

water flow direction is more accurately determined during a later stage of the superfund listing process." JA__, __ [Support Document at 29, 53].

EPA's refusal to consider the direction of groundwater flow is contrary to law. Under CERCLA, EPA is not permitted to list a site without accurately assessing risk. As this Court explained in *Mead Corp.*, an EPA regulation is "unreasonable as applied" to the facts of a particular listing if it results in "the inclusion of low-risk sites" on the National Priorities List. 100 F.3d at 155–156. Here, substantial data establishing the direction of groundwater flow shows that the Site does not endanger the wellfields. By refusing to even consider the direction of groundwater flow under the facts of this listing, EPA impermissibly included a low-risk site on the National Priorities List.

B. EPA Acted Arbitrarily And Capriciously By Refusing To Consider The Direction Of Groundwater Flow.

An agency acts arbitrarily and capriciously in violation of the APA if it fails "to consider an important aspect of the problem" or offer "an explanation for its decision that runs counter to the evidence before the agency." *State Farm*, 463 U.S. at 43. In this case, EPA's refusal to even consider substantial record evidence regarding the direction of groundwater flow—an essential aspect of evaluating whether the wellfields are subject to potential contamination from the Site—renders its listing decision arbitrary and capricious.

This Court's precedents confirm EPA's error. In *National Gypsum*, for

example, this Court held that EPA's refusal to consider important aspects of the toxicity of waste at a site was arbitrary and capricious. 968 F.2d at 47. In that case, EPA had scored a site above the listing threshold based on the conclusion that boron was present at the site. As petitioners pointed out, however, there are several different types of boron—some that pose a high risk of harm, and others that pose a low risk. *Id.* at 42. EPA claimed that "given the preliminary nature" of a listing, "it is entitled to *infer*" that the more toxic form of boron was present at the site. *Id.* at 43. This Court rejected that claim, stressing that EPA is not entitled "to base a listing decision on unsupported assumptions" and "must at least give a reasoned explanation" for its conclusions. *Id.* at 44.

In *Kent County*, this Court similarly held that EPA acted arbitrarily and capriciously when it failed to accurately assess the risk posed by a site. *See* 963 F.2d at 392–393. In that case, EPA had tested groundwater at the site using an unfiltered sample. *Id.* at 392. EPA was aware, however, that testing using both filtered and unfiltered samples led to more accurate results. *See id.* at 395. EPA claimed that it was not required to collect a filtered sample because "'filtering of samples is not a regulatory requirement.'" *Id.* This Court rejected that argument. *See id.* at 396–397. In part because EPA "failed to offer any reason why it would have been infeasible" to collect both kinds of samples, this Court concluded that EPA's listing decision was arbitrary and capricious. *Id.* at 397.

This Court also has held more generally that agencies may not ignore real-world data that contradict the agency's assumptions. *See W. Va. v. EPA*, 362 F.3d 861, 867 (D.C. Cir. 2004) (remand appropriate where EPA failed to explain its assumptions "in the face of contrary real-world data"); *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1050–55 (D.C. Cir. 2001) (per curiam) (remanding EPA decision for failure to address "stark disparities between [EPA] projections and real world observations"); *Chem. Mfrs. Ass'n v. EPA*, 28 F.3d 1259, 1266 (D.C. Cir. 1994) ("EPA's reliance upon generic studies in face of conflicting detailed and specific scientific evidence" is "arbitrary and capricious.") (quoting *Tex Tin Corp.*, 992 F.2d at 354–355); *NRDC, Inc. v. Herrington*, 768 F.2d 1355, 1391 (D.C. Cir. 1985) (an agency "may not tolerate needless uncertainties in its central assumptions when the evidence fairly allows investigation and solution of those uncertainties"); *see also Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 241 (D.C. Cir. 2008) (remanding where agency relied on modeling and "offered no reasoned explanation for its dismissal of empirical data").

Here, EPA claims that given the preliminary nature of the listing, it is not required to consider the direction of groundwater flow. This Court held in *National Gypsum*, however, that the preliminary nature of a listing does not permit EPA to make unwarranted inferences. *See* 968 F.2d at 43–44. Given the record evidence, and EPA's acknowledgment, that groundwater at the Site flows to the

south *away* from the wellfields, EPA's assumption that contaminants at the Site endanger those wellfields is unwarranted.

EPA also claims that it may ignore groundwater flow data and simply assume that the wellfields are at risk because collecting such data is not a regulatory requirement. In *Kent County*, however, this Court rejected that very argument. *See* 963 F.2d at 396–397. Here, EPA has already collected the relevant data. *See, e.g.*, JA__ [Revised Documentation at 45]. EPA simply may not ignore the real-world data undercutting its central assumptions. *See supra* pp. 50–52.

C. EPA Acted Arbitrarily And Capriciously, And Contrary To CERCLA, By Determining That Data Are Insufficient To Accurately Assess Groundwater Flow.

EPA asserts that it could not consider the direction of groundwater flow when listing the Site because "sufficient data are not available at this stage in the listing process to accurately assess the ground water flow directions throughout the [target distance limit]," up to four miles *away* from the Site. JA__ [Support Document at 29]. Despite EPA's protestation that it is "not ignoring data," *id.*, the agency once again ignores substantial record evidence and its own conclusions.

To begin with, EPA concedes that groundwater at the Site flows to the south. *See* JA__ [Revised Documentation at 45]. EPA also concedes that groundwater in the one to three miles between the Site and the wellfields flows to the south. *See id.* ("Regional ground water flow near the Speedway wellfield [flows] southeast

from the Eagle Creek valley toward the White River valley.")[12] Record evidence similarly demonstrates that groundwater up to four miles away from the Site flows to the south. *See, e.g.*, JA__–__ [Minning Comment at 3–4] (citing JA__ [EPA Reference 120 at 11]); __ [EPA Reference 127 at 4]; __, __ [Ramboll References 7, 8].

Despite EPA's protestations of insufficiency, EPA itself relies on groundwater data for other aspects of its Hazard Ranking System score. For example, EPA determined the "background" level of contamination at the Michigan Plaza and 700 North Olin properties based on data that groundwater in the area north of the Site flows in a southerly direction.[13] *See, e.g.*, JA__ [Revised Documentation at 47] ("The background level for the [Genuine] facility is established using samples that are located *upgradient (north) of the* [*Genuine*] *facility*.") (emphasis added). EPA's use of groundwater data in this context

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[12] EPA has proposed listing the Riverside and White River Wellfields on the National Priorities List. *See Hazard Ranking System Documentation Record – Riverside Ground Water Contamination* (Apr. 2016), at 16, https://www.regulations.gov/document?D=EPA-HQ-OLEM-2016-0153-0004. In that proceeding, EPA similarly stated that "ground water flow in the immediate area is primarily toward the White River," which is to the south. JA__ [*Id.* 22]; *see supra* Figure 1-5 at p. 12.

[13] The "background" level of contamination measures contamination present in the environment apart from a potential or observed release of contamination at a site. *See* JA__ [Guidance Manual at 55].

demonstrates that EPA not only has access to data documenting the direction of groundwater flow both at the Site and within its immediate vicinity, but that the agency views such data as reliable.

Moreover, even if the record somehow lacked sufficient data on groundwater flow miles *away* from the Site, EPA has not explained why such data is necessary to assess whether the Site endangers the wellfields. CERCLA and the APA simply require EPA to evaluate whether the record evidence shows that the Site endangers the wellfields—in CERCLA's words, to accurately assess the relative degree of risk a site poses. *See* 42 U.S.C. § 9605. EPA never explained why the data it has are insufficient to make that assessment. And EPA's refusal to consider the direction of groundwater flow because "sufficient data are not available" is contrary to the record.

D. The Site Does Not Qualify For Listing On The National Priorities List.

If EPA had properly concluded that the wellfields were not subject to potential contamination from the Site, the Site would have scored *below* the listing threshold. *See* JA__ [Genuine Comment at 5]; __–__ [Ramboll Comment at 1–2]. The purpose of the Hazard Ranking System is to ensure that only high-risk sites are included on the National Priorities List. *See Linemaster Switch*, 938 F.2d at 1302–03. EPA's listing of the Site thwarts that statutory purpose.

CONCLUSION

For the foregoing reasons, this Court should grant the petitions for review and vacate the portion of the Final Rule listing the Site on the National Priorities List.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

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/s/ Catherine E. Stetson
Catherine E. Stetson

CERTIFICATE OF SERVICE

I certify that on April 7, 2017, the foregoing Initial Opening Brief For Petitioners was electronically filed through this Court's CM/ECF system, which will send a notice of filing to all registered users.

/s/ Catherine E. Stetson
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Message

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Sent: 6/14/2017 11:54:42 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Dimitri.Karakitsos@hklaw.com
Subject: Interesting timing
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June 14, 2017

Mr. Scott Pruitt, Administrator
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Washington, DC 20460

RE: EPA's Record of Decision for the Portland Harbor Superfund Site

Administrator Pruitt:

As the Director of the Oregon Department of Environmental Quality (DEQ), I urge you to work with your staff at the United States Environmental Protection Agency (EPA) to continue moving as quickly as possible to implement the Portland Harbor Record of Decision (ROD), issued earlier this year. I have been in close communication with Oregon Governor Kate Brown on this important matter, and I know that she shares my strong desire to keep the momentum going that we have built to get this major Superfund site cleaned up and put back to the full productive potential it has as a centerpiece of the Pacific Northwest economy.

The Portland Harbor Superfund Site is one of the largest Superfund sites in the nation, spanning a 10-mile stretch of the Lower Willamette River in the heart of the Portland metropolitan region. Over 150 years of industrial and urban uses have left a legacy of heavily contaminated sediments and riverbanks presenting significant and unacceptable risks to people's health and the environment, particularly to people who eat contaminated resident fish. Those who rely on these fish, including Portland's ever growing number of low income and houseless residents, are at risk for a variety of health effects, including cardiovascular disease, diabetes, and various types of cancer. Newborns of nursing mothers who consume these fish are at greatest risk. They may suffer from low birth weight, lifelong reduced IQ, or alterations in reproductive function.

The risks to human health and the environment are too great, and any delay in ROD implementation only exacerbates the problem. EPA must initiate post-ROD work as soon as practicable in order to achieve our shared goal: timely completion of cleanup that protects people from unacceptable exposure to contamination in the Harbor. Further, with every year of delay, the Portland metropolitan area loses opportunities for economic, social, and cultural revitalization in this key part of the region.

Specifically, DEQ believes that remedial design should begin by the end of 2017 in at least three of the five high priority sediment management areas (SMAs). These areas include:

- Gasco – former gas manufacturing site where sediments are contaminated with PAHs and tar which are susceptible to river erosion;
- Arkema – former pesticide manufacturing site where sediments are contaminated with dioxins/furans, DDT and other pesticides;

- RM11E – upriver-most site with the highest concentration of PCBs in smallmouth bass;
- Willamette Cove – former dry dock and industrial site where sediments are contaminated with PCBs and dioxins/furans that is currently used by a homeless houseboat community; and
- Cathedral Park – major City park where sediments are contaminated with PCBs and heavy metals.

Initiation of remedial design this year, along with baseline sampling, will set the stage for remedial action (construction work) to begin as soon as 2020. Without a continued sense of urgency by EPA, DEQ is concerned that it will not be possible to implement the ROD and complete site-wide remedial actions for decades.

Initial cleanup tasks, such as those described above, need not be delayed by the ongoing non-judicial mediation through which public and private entities, including the State of Oregon, are working to allocate the costs associated with investigation and cleanup of sediment contamination in Portland Harbor. In fact, information gleaned in these initial cleanup tasks may inform the ongoing allocation work.

The ROD is the culmination of over 17 years of study to identify contamination, assess risks to human health and the environment, and evaluate cleanup options for the Harbor. EPA's cleanup decision reflects not only the results of many years of study, but an overwhelming public sentiment that EPA must act to make substantial improvements toward a cleaner and healthier river. During a 90-day public comment period on its draft cleanup plan, EPA received feedback from thousands of individuals and organizations affected by the cleanup. The majority of comments received asked for a more aggressive cleanup that dredged more, capped more, and encouraged early actions to get cleanup underway as soon as possible. EPA responded by selecting a remedy that more aggressively targets nearshore areas of the river where exposures are the greatest, while applying less stringent cleanup criteria in the federal navigation channel. This approach strikes a reasonable balance by targeting cleanup efforts where the greatest risk reductions can be realized, while maintaining a remedy that is both flexible and responsive to new data and site-specific conditions. The State of Oregon documented its concurrence with this approach in a letter dated December 22, 2017.

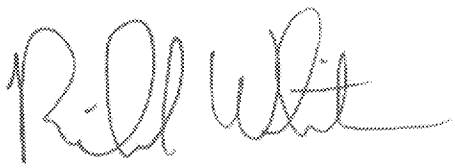
As expressed in the State's concurrence letter, EPA's cleanup plan presents financial, technical, and administrative challenges consistent with any project of this scope and magnitude. DEQ firmly believes that these challenges can and should be overcome during design and implementation of the remedy. In doing so, EPA must:

- Provide for legal and administrative incentives to encourage potentially responsible parties to promptly enter into performance agreements consistent with CERCLA, the NCP, and EPA policy and guidance;
- Divide the Harbor into manageable work areas for purposes of efficiently prioritizing design and construction;
- Dedicate sufficient staff and resources towards getting timely cleanup underway in priority cleanup areas;

- Continue to coordinate closely with Tribal governments, key stakeholders, and the community in order to meet the construction schedule, efficiently manage project costs, and solicit support of all actions taken consistent with the remedy;
- Support innovative engineering solutions and flexibility during remedy design to improve implementability and manage project costs;
- Develop a comprehensive long-term monitoring plan and data management system with Potential Responsible Parties (PRPs) to assess remedy effectiveness, which may not be measureable for some time;
- Improve community outreach and education on the risks of eating contaminated fish, including close coordination with the Oregon Health Authority to update to the existing fish advisory;
- Allow DEQ, through consultation with EPA, to perform certain oversight functions in order to maximize resources and achieve cleanup as soon as possible; and
- Be prepared to employ appropriate enforcement tools, if necessary, to secure performance

The Portland Harbor is a tremendous resource to the citizens of Oregon. DEQ remains committed to working with EPA on moving cleanup forward to restore the Harbor to its fullest potential as the economic, social, and cultural hub of the Portland metropolitan region.

Sincerely,



Richard Whitman
Director

Cc: Michelle Pirzadeh, Acting Regional Administrator, EPA Region 10
Jim Woolford, Director, EPA OSRTI
Sheryl Bilbrey, Director, EPA Office of Environmental Cleanup
Davis Zhen, Manager, EPA Region 10 Site Cleanup Unit 2
Jason Miner, Office of Governor Kate Brown, Natural Resources Policy Manager
Jim McKenna, Office of Governor Kate Brown, Portland Harbor Policy Analyst
Kevin Parrett, Manager, ODEQ Northwest Region Cleanup Program
Confederated Tribes and Bands of the Yakama Nation
Confederated Tribes of the Grand Ronde Community of Oregon
Confederated Tribes of Siletz Indians
Confederated Tribes of the Umatilla Indian Reservation
Confederated Tribes of the Warm Springs Reservation of Oregon
Nez Perce Tribe
National Oceanic and Atmospheric Administration
Oregon Department of Fish and Wildlife

Message

From: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
Sent: 4/27/2017 12:07:47 AM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: meeting

Thanks very much Byron. We do not have any materials for you to read in advance. Look forward to seeing you in the AM.

Sent from my iPhone

On Apr 26, 2017, at 5:52 PM, Brown, Byron <brown.byron@epa.gov> wrote:

> Aaron – let me know if you have any material you want me to read in advance. Also, my assistant has been out of the office and not sure if she will be in tomorrow so best to just send me an email upon your arrival and I'll come down to meet you.
>
> Byron R. Brown
> Deputy Chief of Staff for Policy
> Office of the Administrator
> U.S. Environmental Protection Agency

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Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/14/2017 10:31:15 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Dimitri.Karakitsos@hklaw.com
Subject: Meeting just ended

Report from the room:

We are done and recapping for the couple PRPs that didn't attend. I would say it's a 5 out of a 10. They want to still get tribes and ODEQ input....so they could blame them for a no go.....however, they (tribes and ODEQ) shouldn't be involved after a ROD. We will need help...we asked for a expert panel for potential disputes.... so June 23 rd<x-apple-data-detectors://0> in Portland is next meeting ...not sure how it will go. They sent their proposal to rest of PRP's and we just sent our proposal....am sure State and City will hammer our plan as not inclusive of everything EPA wants. We said devil is in details and that we have to rationalize two scopes….our scope is all we can do in 2years and their's is 10 times more work, 8 or more years, and $80-$100 million before any cleanup starts!

Rich Gold | Holland & Knight
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Public Policy & Regulation Group
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Message

From: Brent de Jong [brent.dejong@castlelake.com]
Sent: 4/14/2017 10:46:38 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: RE: Follow Up on Mississippi Phosphates

Byron,

It was nice to meet you today. The link to Florida's thinking is below.

http://www.fipr.state.fl.us/about-us/phosphate-primer/phosphogypsum-and-the-epa-ban/

If you loop in Cindy and David -- this weekend I will find and send around the link to the actual road that they built as a test.

Best,

Brent de Jong | Castlelake
Partner
4600 Wells Fargo Center | 90 South 7th Street | Minneapolis, MN 55402
Tel: Ex. 6 | Mobile: Ex. 6
brent.dejong@castlelake.com
www.castlelake.com

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Friday, April 14, 2017 9:31 AM
To: Brent de Jong
Subject: Re: Follow Up on Mississippi Phosphates

I'm in the lobby.

Sent from my iPhone

On Apr 14, 2017, at 10:24 AM, Brent de Jong <brent.dejong@castlelake.com> wrote:

> I am just arriving now.
>
> ---
>
> **From:** Brown, Byron [mailto:brown.byron@epa.gov]
> **Sent:** Friday, April 14, 2017 7:42 AM
> **To:** Brent de Jong; Kirsten Djadoo
> **Subject:** RE: Follow Up on Mississippi Phosphates
>
> The public entrance to our building is on 12th Street between Constitution and Pennsylvania Avenues, near the Federal Triangle Metro stop. Please enter through the north side doors, and at the guard station please ask the guards to call me at 564-1456. I will come down to meet you. See you then. – Byron
>
> Byron R. Brown
> Deputy Chief of Staff for Policy

Office of the Administrator
U.S. Environmental Protection Agency

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Thursday, April 13, 2017 8:53 PM
To: Kirsten Djadoo <kirsten.djadoo@castlelake.com>; Brown, Byron <brown.byron@epa.gov>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>
Subject: RE: Follow Up on Mississippi Phosphates

Yes - see you then.

From: Brown, Byron <brown.byron@epa.gov>
Date: April 13, 2017 at 3:24:43 PM EDT
To: Kirsten Djadoo <kirsten.djadoo@castlelake.com>, Brent de Jong <brent.dejong@castlelake.com>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>
Subject: RE: Follow Up on Mississippi Phosphates

Would 10:30 work? I have another meeting at 11 am.

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Thursday, April 13, 2017 3:16 PM
To: Kirsten Djadoo <kirsten.djadoo@castlelake.com>; Brown, Byron <brown.byron@epa.gov>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>
Subject: RE: Follow Up on Mississippi Phosphates

Byron,

I didn't hear back from you. I still have an opening at 10:45 am tomorrow if that works for you.

Best,

Brent

From: Kirsten Djadoo <kirsten.djadoo@castlelake.com>
Date: April 11, 2017 at 5:29:48 PM EDT
To: 'Brown, Byron' <brown.byron@epa.gov>, Brent de Jong <brent.dejong@castlelake.com>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>
Subject: RE: Follow Up on Mississippi Phosphates

Mr. Brown,

Brent will be in DC the end of this week and has availability Thursday afternoon for a 4:15 EST meeting or Friday morning.

Please let me know if either of those times will work for you.

Thank you!

Kirsten Djadoo | Castlelake
Tel: Ex. 6 Fax: 612-851-3090
kirsten.djadoo@castlelake.com

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, April 11, 2017 4:21 PM
To: Brent de Jong; Kirsten Djadoo
Cc: Starfield, Lawrence
Subject: Follow Up on Mississippi Phosphates

Mr. De Jong – We wanted to follow up on our recent discussion about the Mississippi Phosphates site. We would like to report back on the questions we discussed. You indicated you might be in DC later this week, but we could talk by phone if that is more convenient. Let me know your availability. Thanks. - Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Kelley, Rosemarie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=23B7C900323047FCA012DF62C58C4D22-RKELLEY]
Sent: 6/27/2017 1:57:53 PM
To: Brent de Jong [brent.dejong@castlelake.com]
CC: Mackey, Cyndy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b2f2b414786040ee8d75a21fa1c04a9b-Mackey, Cyndy]; Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; Walsh, Jonathan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3adec06d25bf4bd0b8f0a73cccc9cf03-Walsh, Jonathan]; Raack, Pete [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6d9701ac220d4bc8a7623ebe7364742f-Praack]
Subject: RE: Miss Phos - Agenda For Today's MPC Technical Call

Mr. de Jong—

As a follow-up item to your inquiry regarding phosphogypsum re-use, we have reached out to our colleagues in the program offices to discuss next steps for your inquiry. Because phosphogypsum has a radioactivity component, the appropriate office for you to work with is the Office of Radiation and Indoor Air (ORIA). We recommend that you or your technical representatives reach out to Jon Walsh, one of the scientists in ORIA. His email is walsh.jonathan@epa.gov and office telephone number is (202) 343-9238. We met with Mr. Walsh, so he has some background on the site. Mr. Walsh can provide all the pertinent information on the process to be followed regarding potential gypsum use, point you to the applicable regulations, and provide informative Agency documents on the topic.

Regards,
Rosemarie A. Kelley, Deputy Director
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
202-564-4014

From: Mackey, Cyndy
Sent: Wednesday, June 07, 2017 12:49 PM
To: Brent de Jong <brent.dejong@castlelake.com>; Brown, Byron <brown.byron@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>
Subject: RE: Miss Phos - Agenda For Today's MPC Technical Call

Brent:

Below is a proposed agenda for today's MPC Technical Call:

Agenda: June 7 Call at 5:30 pm Regarding MPC Site - Call with Brent de Jong and Technical Staff

1. **DJC folks provide background on the following issues including what the issue is, where it stems from and what DJC is seeking**
    a. ▪ **Deepwater injection**
    b. ▪ **Rolling Average Rainfall Test**
    c. ▪ **Water Level Management**
    d. ▪ **Treatment of Water From DAP scrubber**
2. **Government follow-up questions, clarifications (if any), responses (if any)**

3. **Next Steps**
    a. **Follow-up on technical issues if government teams needs to discuss internally based on today's discussion**
    b. **Set up subsequent global discussion on where we are on all issues, DJC feedback from Board, steps necessary to get to agreement**
    c. **Follow-up as separate action item further discussions regarding Gypsum reuse with appropriate folks from program offices**

Cyndy Mackey
Director, Office of Site Remediation Enforcement
EPA-Office of Enforcement and Compliance Assurance (Mail Code-2271A)
1200 Pennsylvania Ave., N.W. (Room-WJC 5206) Washington, DC 20460
202 564-8206 (Direct Line)
202 564-5110 (Office Line)
Ex. 6 Office Cell)

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From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Tuesday, June 06, 2017 4:26 PM
To: Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Brown, Byron <brown.byron@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>
Subject: RE: Miss Phos feedback

Ok – thanks – speak to all then.

From: Mackey, Cyndy [mailto:Mackey.Cyndy@epa.gov]
Sent: Tuesday, June 06, 2017 2:55 PM
To: Brent de Jong; Brown, Byron; Fotouhi, David
Cc: Brian Zatarain; 'Marten Walters'; Kelley, Rosemarie
Subject: RE: Miss Phos feedback

Brent:

To respond to the technical questions you raised in your May 23 email below, I am planning to invite people from EPA Headquarters, Region 4, DOJ and the State to participate in tomorrow's call. This includes the following people:

- EPA Headquarters: Cyndy Mackey, Rosemarie Kelly, Helena Healy, Pete Raack
- EPA Region 4: Sean Ireland (Water technical lead), Alan Annicella (RCRA technical lead), Marshall Binford (ORC), Joan Redleaf-Durbin (ORC)
- DOJ: Ken Long
- State of Mississippi: To be determined

Please let me know if you have any questions or concerns about tomorrow's call at 5:30 EST. The conference line number is Ex. 6 Conf Code: Ex. 6

Cyndy Mackey
Director, Office of Site Remediation Enforcement
EPA-Office of Enforcement and Compliance Assurance (Mail Code-2271A)

1200 Pennsylvania Ave., N.W. (Room-WJC 5206) Washington, DC 20460
202 564-8206 (Direct Line)
202 564-5110 (Office Line)
Ex. 6 (Office Cell)

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From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Tuesday, June 06, 2017 12:15 PM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>
Subject: RE: Miss Phos feedback

Great – thanks.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, June 06, 2017 10:52 AM
To: Brent de Jong; Mackey, Cyndy; Fotouhi, David
Cc: Brian Zatarain; 'Marten Walters'
Subject: RE: Miss Phos feedback

Hi Brent – yes, we can do 5:30 pm on Wednesday. Here is the conference call information: Call in number Ex. 6 Ex. 6 Conf Code: Ex. 6

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Monday, June 5, 2017 7:40 PM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>
Subject: RE: Miss Phos feedback

If it is possible to do it later in the day e.g. 5:30 or 6 pm would be great as I am in Asia this week. But if not, lets leave it.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Monday, June 05, 2017 2:53 PM
To: Brent de Jong; Mackey, Cyndy; Fotouhi, David
Cc: Brian Zatarain; 'Marten Walters'
Subject: RE: Miss Phos feedback

Hi Brent – will Wednesday at 4 pm (eastern) work for you and your technical team for a follow up call?

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Friday, June 2, 2017 10:59 AM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>; 'Marten Walters' <marten.walters@itafos.com>
Subject: RE: Miss Phos feedback

Can you do 3:30 pm EST today? Otherwise next week early in the day Tuesday or Wednesday work as well.

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, May 30, 2017 10:03 AM
To: Brent de Jong; Mackey, Cyndy; Fotouhi, David
Cc: Brian Zatarain
Subject: RE: Miss Phos feedback

Hi Brent – you indicated your technical team would be available for a call this afternoon. Do you have a specific time in mind, and are there any other times in the next week that would also work for a technical call?

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Tuesday, May 23, 2017 9:37 AM
To: Brown, Byron <brown.byron@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>
Cc: Brian Zatarain <brian.zatarain@itafos.com>
Subject: Miss Phos feedback

EPA Team,

As discussed on the last call, I spent more time with the Itafos team and can provide you feedback on what we need upfront for on site management:

1. Deepwater injection (as discussed previously)
2. Rolling average rainfall test instead of single event
3. Ability to bring down water levels / increase freeboard in anticipation of upcoming bad weather
4. Treatment of water from DAP scrubber ... is it Beville excluded or not? We would like to comingle as it is much better environmentally - the ammonia in the DAP scrubber water raises the pH of the water coming from the phosacid plant.

Additionally we had some further thoughts for Gypsum stack and use of materials:

1. Roadbed (as discussed previously)
2. Landfill cover - it helps the bugs grow to breakdown refuse
3. Agricultural uses e.g. peanut farms work well up to 25 pCi/g (increase limit from 10)
4. Export

Our technical team can do a call on Tuesday May 30th in the afternoon.

Thanks,

Brent de Jong | Castlelake
Partner
4600 Wells Fargo Center | 90 South 7th Street | Minneapolis, MN 55402
Tel: Ex. 6 | Mobile: Ex. 6
brent.dejong@castlelake.com
www.castlelake.com

Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 8/10/2017 2:44:56 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; Kelly, Albert [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=08576e43795149e5a3f9669726dd044c-Kelly, Albe]
CC: esap@ensresources.com
Subject: Orange County Water District North Basin NPL Listing

Hey gents, wanted to make sure you got this. Thanks for meeting with Mike while he was out. We look forward to working with you on approaches to get the responsible parties to the table including the proposed NPL listing....

FOR IMMEDIATE RELEASE
CONTACT: Gina Ayala, (714) 378-3323 or gayala@ocwd.com<mailto:gayala@ocwd.com>

(https://www.ocwd.com/media/5786/appellate-court-affirms-ocwds-rights-to-protect-gw-basin.pdf)

APPELLATE COURT AFFIRMS OCWD' S RIGHT TO PROTECT GROUNDWATER BASIN FROM CONTAMINATION

FOUNTAIN VALLEY, Calif. (August 9, 2017) - The California Fourth Appellate District Court of Appeal (the Court) recently reaffirmed the authority of the Orange County Water District (OCWD; the District) to voluntarily investigate and remediate contamination in the southern portion (South Basin) of the Orange County Groundwater Basin and recover costs for these efforts. The ruling in OCWD v. Sabic Innovative Plastics US, LLC et al. restored four out of five OCWD causes of action and reversed all trial court summary judgments that had been granted to 22 defendants, allowing OCWD to now have its day in court.

In particular, the Court held that OCWD does have standing to pursue a claim for its response costs under the Hazardous Substance Account Act and that the District' s Act allows OCWD to recover both investigation and clean-up costs from responsible parties.

The Court' s latest ruling comes on the heels of another appellate court decision recently issued relating to OCWD' s efforts to remediate contamination in the northern portion (North Basin) of the Orange County Groundwater Basin. In the North Basin appeals, the Court also affirmed OCWD' s right to recover its remediation and response costs and reversed a judgment that previously favored the principal defendant, Northrop Grumman Systems Corporation.

Together, the South and North Basin rulings not only validate the District' s right to reimbursement, but they also clarify the legal standards that trial courts will use to determine which parties are responsible for groundwater contamination. "This is a landmark step in preserving and protecting precious groundwater resources not only in Orange County, but throughout California," stated OCWD President Denis Bilodeau.

"This is just another phase in the long and difficult battle with responsible parties," added Bilodeau. "Despite this positive ruling, there is still a lot of work to be done. OCWD is committed to implementing a cost-effective solution to eliminate groundwater contamination and protect the long-term health and viability of the Orange County Groundwater Basin."

OCWD is proceeding with the remedial investigation and feasibility studies of both South and North Basin on a technical path independent of the legal effort. The District has voluntarily taken early action to capture contamination that has the potential to spread deeper into the groundwater basin. An initial pumping well in North Basin, referred to as EW-1, will be operational in late summer. In South Basin, the formal process of selecting a groundwater remedy will follow the completion of the remedial investigation and feasibility study currently being performed. That study is expected to be completed in late 2018.

"The cost of investigation and remediation of both sites are significant. OCWD will continue to participate in a multipart cleanup strategy, including legal remedies, if necessary, to protect residents and businesses from full exposure to that financial liability. However, it is our hope that those responsible for the problem will step away from litigation and work toward implementing a groundwater cleanup in collaboration with OCWD for the benefit of the environment and for the protection of our region' s most precious natural resource," stated Bilodeau.

The contamination consists of industrial solvents, referred to as volatile organic compounds (VOCs), which spilled into the ground from industrial/manufacturing activities. Stringent and ongoing testing by OCWD from hundreds of monitoring wells and all drinking water wells assures that drinking water meets or

exceeds state and federal drinking water standards. To date, one South Basin drinking water well and four in the North Basin area have been removed from service. If not remediated, the contamination could spread and impact other parts of the Orange County Groundwater Basin, which 19 cities rely on for 75 percent of their water demands.

For more information about OCWD, visit www.ocwd.com<http://www.ocwd.com>. For more information about OCWD's cleanup efforts, visit https://www.ocwd.com/what-we-do/water-quality/groundwater-cleanup/.

About Orange County Water District (OCWD)

The Orange County Water District is committed to enhancing Orange County's groundwater quality and reliability in an environmentally friendly and economical manner. The following cities rely on the groundwater basin, managed by OCWD, to provide 75 percent of their water demands: Anaheim, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, La Palma, Los Alamitos, Newport Beach, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster and Yorba Linda.

Rich Gold | Holland & Knight
Practice Group Leader
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Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 7/18/2017 8:05:28 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: Meeting with Orange County Water District Executives.
Attachments: image001.jpg

Just checking back

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com> | @HK_PPR

On Jul 17, 2017, at 10:27 AM, Gold, Richard (WAS - X77143)
<rich.gold@hklaw.com<mailto:rich.gold@hklaw.com>> wrote:

Or 10 or 11

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Ex. 6 - Personal Privacy
rich.gold@hklaw.com<mailto:rich.gold@hklaw.com> | www.hklaw.com<http://www.hklaw.com/>
_____
Add to address book<http://www.hklaw.com/vcard.aspx?user=Rgold> | View professional biography<http://www.hklaw.com/id77/biosRgold>

<image001.jpg>
Government/Government Relations
"Law Firm of the Year"

From: Gold, Richard (WAS - X77143)
Sent: Friday, July 14, 2017 6:58 PM
To: Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>>
Subject: Re: Meeting with Orange County Water District Executives.

How's first thing at 9?

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com> | @HK_PPR

On Jul 14, 2017, at 5:53 PM, Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>> wrote:
Thursday, July 27 looks pretty open. Will some time that day work?

-----Original Message-----
From: rich.gold@hklaw.com<mailto:rich.gold@hklaw.com> [mailto:rich.gold@hklaw.com]
Sent: Friday, July 14, 2017 10:10 AM
To: Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>>
Subject: Re: Meeting with Orange County Water District Executives.

Just circling back. Thx

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006 T Ex. 6 - Personal Privacy | M
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com><mailto:Rich.Gold@hklaw.com> | @HK_PPR

On Jul 12, 2017, at 2:34 PM, Gold, Richard (WAS - X77143)
<rich.gold@hklaw.com<mailto:rich.gold@hklaw.com><mailto:rich.gold@hklaw.com>> wrote:

Hey Byron, executives from the Orange County, CA Water District will be in DC the week of the 24th and wanted to meet with the Administrator's office on the proposed listing of their groundwater site on the NPL and issues related to the Clean Water SRF. Thought you would be good to cover both. Attendees will be:

Denis Bilodeau, Board President
Mike Markus, General Manager

Purpose: Make clear the District's support for listing the ground water contamination site in Orange County on the Superfund National Priorities List and discuss the coalition OCWD is putting together to boost funding for the EPA Clean Water and Drinking Water SRF's and modernize the funding formula.

They are here Monday, July 24th through Wednesday the 27th. Let me know if you have 30 minutes.

Thx

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006 T Ex. 6 - Personal Privacy | M
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com><mailto:Rich.Gold@hklaw.com> | @HK_PPR

NOTE: This e-mail is from a law firm, Holland & Knight LLP ("H&K"), and is intended solely for the use of the individual(s) to whom it is addressed. If you believe you received this e-mail in error, please notify the sender immediately, delete the e-mail from your computer and do not copy or disclose it to anyone else. If you are not an existing client of H&K, do not construe anything in this e-mail to make you a client unless it contains a specific statement to that effect and do not disclose anything to H&K in reply that you expect it to hold in confidence. If you properly received this e-mail as a client, co-counsel or retained expert of H&K, you should maintain its contents in confidence in order to preserve the attorney-client or work product privilege that may be available to protect confidentiality.

Message

From: Todd D Young [TDYoung@uss.com]
Sent: 8/2/2017 4:11:08 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: CERCLA 108(b) - additional iron ore comments
Attachments: CERCLA108(b)Comment by U. S. Steel.pdf; EPA - Reps. Nolan & Bergman - CERCLA108(b) Iron Ore Letter_170731.pdf

Paul Balserak previously consolidated iron ore related comments into one email and shared with you. Attached are two additional documents. The first are the comments that were officially filed by U. S. Steel Corporation on the draft rule. The second attachment is a bipartisan Congressional letter sent to Administrator Pruitt on Monday from Representatives Rick Nolan (D-MN) and Jack Bergman (R-MI) expressing concern on the inclusion of iron ore in the draft rule.
Best regards,
Todd

United States Steel Corporation

Todd D. Young
Managing Director - Federal Governmental Affairs

901 K Street, NW
Suite 1250
Washington, DC 20001
Ex. 6 - Personal Privacy office
mobile
tdyoung@uss.com

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United States Steel Corporation
Environmental Affairs
1350 Penn Liberty Plaza I, Suite 200
Pittsburgh, PA 15219-2800
E-mail: twoodwell@uss.com

Tishie Woodwell
General Manager,
Environmental Affairs

Via Electronic Submission at http://www.regulations.gov
Docket ID EPA-HQ-SFUND-2015-0781

July 11, 2017

The Honorable Scott Pruitt, Administrator
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: Proposed Rule; Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Industry, 82 Fed. Reg. 3,338 (Jan. 11, 2017); Docket ID EPA-HQ-SFUND-2015-0781

Dear Administrator Pruitt,

United States Steel Corporation (U. S. Steel) appreciates this opportunity to comment on the Environmental Protection Agency's (EPA) proposal to include iron ore mining as a form of "hardrock mining" requiring financial responsibility regulation pursuant to CERCLA § 108(b). (Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining, 82 Fed. Reg. 3,388 (Jan. 11, 2017)).

U. S. Steel owns and operates two iron ore mining facilities in northern Minnesota – Minntac in Mountain Iron and Keetac in Keewatin. These facilities have been producing taconite pellets for shipment and use in steelmaking blast furnaces for 40 years. Prior to that, natural iron ore was mined at these locations and shipped to steel plants. Iron ore was discovered in the area in the late 1800s.

U. S. Steel submits these comments to urge EPA to reconsider the inclusion of iron within the definition of hard rock mining that would be subject to new financial responsibility regulations under CERCLA § 108(b), 42 U.S.C. § 9608(b). As you will see from the following comments, the risk of iron mining is similar to that of categories that were exempted and does not warrant additional financial assurance requirements under CERCLA. Additionally, the only two states with iron ore mining maintain state financial assurance requirements, making the application of a new nationwide federal standard duplicative.

Lack of Risk from Iron Ore Mining to Necessitate Financial Assurance Requirements

A June 2009 EPA memo listed 59 classes of hardrock mining to be excluded from CERCLA § 108(b). Iron ore mining was not excluded, with no rationale given for why it was included. When the 2009 Priority

Notice was published in the Federal Register the public was not given the opportunity to comment on the definition. However, steel industry representatives met with EPA to discuss the listing and why iron ore mining should not be included due to the lack of risk drivers and no history that would necessitate the requirement. The January 11, 2017 Federal Register (FR) publication of the draft rule states the proposed rule "would apply to certain classes of facilities that engage in the extraction, beneficiation, and processing of metals, (*e.g.*, copper, gold, iron, lead, magnesium, molybdenum, silver, uranium, and zinc) and non-metallic, non-fuel minerals (*e.g.*, asbestos, phosphate rock, and sulfur). The FR publication also stated that EPA now "further solicits comment on whether classes of mines identified by commenters as presenting a lower level of risk of injury based on facility characteristics and operations could potentially encompass iron ore, phosphate, and uranium mines."

U. S. Steel urges EPA to determine iron ore was improperly included based on the lack of risk and therefore should be removed from the definition of hardrock mining in the final rule. The minimal environmental risks of the iron ore mining process warrant the exclusion that was provided to other commodities such as sand, gravel and limestone mining.

Iron ore mining is appreciably different from other commodities included in the definition of hardrock mining. Most of the risks EPA identifies in its proposal appear to relate to Iron and Steel Mills (NAICS 331110) not to iron ore mining (NAICS 212210). The activities for U. S. Steel Iron and Steel Mills are conducted not only at different sites, but in wholly separate states than the iron ore operations. Although iron ore mines supply a product to the steel mills (i.e. the blast furnaces), they are not collocated facilities and operate independently of each other. To lump together a separate downstream process when conducting a risk evaluation is inappropriate and was not done with other hardrock mining commodities.

The iron ore pellet making process is very physical in nature, using mainly water, crushing and physical separation by magnets. Iron ore is first mined from large open pits where material is drilled, blasted and then loaded by hydraulic or electric shovels into large production trucks (capable of carrying 240 tons) and transported up to multiple crushing circuits. The large rocks from the pit are crushed into progressively smaller size and then a series of magnets are applied to retain the magnetic fraction. The magnetic iron is then combined with a binding agent, typically bentonite, rolled into small balls and fired in kilns to ultimately become taconite pellets. The pellets are then shipped by rail and then typically boat to their final destination at steel mills.

The geology of the area containing the iron rich ore is quite different than other mineralized ore bodies, and therefore acid mine drainage is not a concern at Minntac or Keetac. Existing regulatory processes are in place to limit the physical size of the open pit and stockpile areas to the extent practicable. Environmental Review is required if a mine seeks an extension over a certain acreage threshold which results in a thorough environmental review of the proposed project and cumulative effects. For wetland permitting, requirements are in regulation to minimize impacts. One way this is accomplished is by stockpiling overburden materials (which cannot be processed into pellets) in areas of the pit where the mineable ore has already been removed. This eliminates the need for additional stockpile area outside of the mine footprint.

U. S. Steel's iron mining operations are both Small Quantity Generators of hazardous waste. Hazardous waste is not treated or disposed of on mining property. U. S. Steel has strict employee health and safety requirements and many chemicals are not allowed to be used on site due to potential health and safety concerns. Minntac and Keetac are both PCB free. The facilities expended considerable resources to

retrofill any remaining transformers and are proud to no longer have PCB transformers on site. The sites are also subject to regulation by the Mine Safety and Health Administration (MSHA). MSHA performs two inspections per year and is essentially on site for half of the year ensuring adherence to proper safety and health regulations and best practices.

No iron ore mining sites are on EPA's National Priorities List (NPL) and no federal government expenditures for CERCLA remediation of iron ore mining sites have occurred. There are multiple examples of iron ore mines that have closed, and are now used for other purposes by the surrounding communities. This includes recreation, as municipal drinking water sources, public beaches, scuba diving, camping, and several are home to Minnesota-stocked trout fishing lakes.

Based on the lack of risk by the iron mining industry, it is inappropriate to include iron in the definition of hardrock mining.

Draft Financial Responsibility Formula and the Potential Impact

EPA estimated the entire hardrock mining industry would be subject to $7 Billion in required financial responsibility based on the draft rule. Using the calculator provided on EPA's website U. S. Steel calculated the estimated financial responsibility requirement for Minntac and Keetac. This would be an initial cost, as the mine pits continue to extend as new areas are moved into to access additional ore. Using EPA's Financial Responsibility Calculator results in over $2.1 Billion of financial responsibility required for Minntac. For Keetac, the calculator results in over $1.2 Billion of required financial responsibility. That means for U. S. Steel alone, almost half of EPA's estimate is already consumed. This estimated responsibility is not in line with historic expenditures, as there have been none, or with the potential CERCLA risk. Although the calculator does have the potential for reductions, all potential options must be in place in order to receive a reduction in that category. For an existing facility to receive a "yes" in all categories is virtually impossible.

When evaluating financial assurance markets, even if the mechanisms are available, the resulting estimated annual costs for U. S. Steel's two iron mining facilities would be $45-50+ Million per year. In a globally competitive market, this high cost cannot be absorbed, especially when the risk does not warrant the requirement. Minntac and Keetac currently employ over 1700 people. Based on a study by the University of Minnesota Duluth Labovitz School of Business and Economics, every job in iron ore mining creates another 1.8 jobs in other industries. The iron ore mines are significant contributors to the economy of the state of Minnesota and the public education system greatly benefits from both the production tax from every ton produced and royalty payments from state lands as they are mined. The production tax goes to local towns and townships, school districts, municipalities, state government and other entities. The premature closure of any iron mining facilities due to the economic hardship of this rule would have devastating effects on Northeastern Minnesota and the entire state would feel the impact.

Blast furnace inclusion

Blast furnace operations that process products from the iron ore mining sector should also be excluded from this proposed new rule. It appears that the proposed rule's definition of "Mineral Processing," read together with the 2009 Priority Notice's characterization of processing, suggests that blast furnace operations may indeed fall under the definition of "mineral processing." Blast furnaces are clearly not associated with iron ore mining facilities, but for the fact that the end product from iron mines are used in blast furnace operations. Minntac and Keetac are operated in Northern Minnesota. After pellets are

produced they are loaded into rail cars and shipped to ports on Lake Superior. They are then loaded into vessels and shipped across the Great Lakes to steel mills in other states such as Indiana, Michigan and Pennsylvania, or even other countries, prior to being utilized in a blast furnace.

Blast furnaces use minimal hazardous substances and produce minimal hazardous waste. What waste they do use or generate is, moreover, already adequately regulated at the state and federal level. Further, the byproduct of blast furnace operations, blast furnace slag, has long had various practical uses ranging from construction of roadways to application as a key ingredient in cement manufacturing. Studies have even demonstrated that blast furnace slag can help neutralize pH levels in soil. There have been no new blast furnaces constructed since the 1960s, and many of those that remain in operation have been modernized, further minimizing any harmful impact they may have on the environment.

Issues with the Financial Responsibility Mechanism Requirements

Although we strongly believe it is inappropriate to include iron in the definition of hardrock mining, we have conducted a review of the proposed financial responsibility mechanisms and requirements. Comments related to this review are included as an appendix to this letter.

Conclusion

Financial assurance is required only to the extent "consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances" from an industrial category. This language calls upon the Administrator to exercise his judgment for each industrial classification, to determine whether *any* financial assurance is required under Section 108(b). Based on the lack of environmental risk the definition of hardrock mining should be revised and iron should be removed from the scope.

Sincerely,

Tishie Woodwell

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

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Appendix A – U. S. Steel Comments on Available Financial Responsibility Instruments

In addition to the comments provided above focused on the applicability of the requirements for financial assurance, U. S. Steel has concerns about the availability of and the requirements for financial responsibility instruments as provide below:

- General - EPA has drawn extensively on the history of financial assurance required by the Resource Conservation and Recovery Act ("RCRA"), but has proposed significant modifications to accepted RCRA practices (such as the proposed modification or elimination of a financial test) while adding unique CERCLA provisions (such as direct 3rd party claims on instrument providers). These modifications will make the implementation of the proposed rule problematic because financial institutions will decide not to participate in the new market for such instruments, or because the cost of the instruments will be prohibitive for the regulated community.

- General - Because EPA personnel who will be required to implement the regulation may not have the financial expertise necessary to properly review and evaluate many of the instruments and the supporting documents, the agency has decided to be proscriptive in the construction of the various instruments, dictating precise language that must be exclusively used in all submittals. Industry experience with RCRA, which attempted to impose similar restrictions, is that banks and other issuing institutions develop language for financial instruments in compliance with extensive financial regulations. Experience has proven that issuing institutions, when faced with language requirements that vary from the commercially accepted language, will either choose not to offer such instruments or to price the instruments at an extreme premium. Any instrument drafted by an issuer subject to commercial regulation should be acceptable for §108(b) purposes.

- General - The EPA has analyzed the market capacity of the issuers and concluded that §108(b) instruments do not adversely affect the capacity. As an example, the agency decided that AIG's decision to withdraw from the pollution legal liability market in January of 2016 will have no negative effect on the overall market. An alternate conclusion is that the market for third party environmental assurance is shrinking and that access to these instruments in the future will be more limited. The limited market will adversely affect the ability of the regulated community's ability to provide financial responsibility.

- Letters of Credit – The three proposed options for Letters of Credit vary greatly from the accepted commercial practices for the issuance of LC's, either in the construction of the LC or the requirement for administrative review to make payments from the LC. None of the proposed options are used in the financial assurance regulations under RCRA.

- Letters of Credit - In the proposed regulation, EPA admits that issuing institutions familiar with the proposed changes have expressed a "strong preference" for a single, named beneficiary and a similar strong preference against allowing direct action against

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

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the issuing institution. The proposed regulation should accept the current commercial practice of single beneficiary LC's with traditional construction as per the issuing institutions' preferred language.

- Insurance – The EPA should allow facilities to obtain policies from captive insurers. Captive insurers are a long established and widely used risk allocation practice and there is little historical evidence to support the dismissal of this method of assurance

- Insurance - Requiring a captive insurer to demonstrate a minimum financial rating from A.M. Best or a comparable nationally recognized statistical rating organization, is problematic as no plans have been made as to what rating is acceptable or who would verify that a rating is in place or the conditions under which a change in rating might be recognized. For the captive insurer, seeking such a rating would be costly and time consuming, as well as duplicative of regulations that already govern captive insurers in the states where they operate.

- Financial Test – Do not eliminate the financial test. The EPA believes that qualification for self-insurance does not provide adequate protection but does not offer proof of the belief. Financial tests have been part of other financial assurance regulations for decades and have served their intended purpose. In general, financial tests vary according to the nature of the liability being regulated (Closure/Post Closure, Underground Storage Tank, Liability). The availability of financial tests has protected the environment and allowed the regulated community to successfully demonstrate assurance.

- Financial Test - The proposed regulation relies too heavily on credit rating thresholds as the defining factor in evaluating a company's financial strength. Looking to other financial assurance regulations, there are alternatives to using credit ratings. In RCRA, one alternative for Closure/Post Closure Care allows the evaluation of specific company financial factors to determine economic viability. The RCRA financial test for Liability also uses financial factors, as does the financial test for demonstrating financial assurance for Underground Storage Tank liability. Consideration should be given to providing an alternative demonstration based on financial factors such as annual sales at or above $2 billion; or total assets at or above of $1 billion; or net worth at or above of $150 million; or at least 50% of asset must be located in the United States. Additional requirements may include that the company must be an SEC registrant, the company CFO provide a representation letter as to finances and a report from an independent accountant verifying the financial factors.

- Trust Fund - The four year "pay-in" period established by §320.1 is shorter than the pay-in period provided in other EPA regulations, such as the practices for landfills under RCRA. The four year deadline should be dropped in favor of a continuing payment into the Trust Fund. The annual pay-in would cease once the Trust Fund contained the full amount of the estimated liability, after which reviews would be performed by the facility every three years to verify that the amount of the fund still reflects the estimated liability.

Congress of the United States
Washington, DC 20515

July 31, 2017

The Honorable Scott Pruitt, Administrator
U.S. Environmental Protection Agency (EPA)
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 108(b) Hardrock Mining Financial Assurance Regulations (EPA-HQ-SFUND-2015-0781)

Dear Administrator Pruitt:

Representing all eight of the United States' active iron ore mining and processing facilities and the thousands of good-paying jobs they provide, we write to raise concerns regarding the EPA's inclusion of this industry in its proposed Section 108(b) rule[1].

Specifically, we believe the agency erred by including the domestic iron ore industry as a covered class in its definition of hardrock mining rather than excluding it with other similar hardrock mining classes that present low Superfund risk.

In doing so, EPA exposed approximately 4,500 family-sustaining jobs in Minnesota and Michigan to burdensome and financially devastating regulations that are not commensurate with the level of CERCLA risk posed by this well-established, low risk-industry that has a history of responsible environmental reclamation practices.

As you may know, in its proposed CERCLA 108(b) rule, EPA solicited comments on whether the iron ore industry presents a lower risk of injury as compared to other classes of hardrock mining and whether such a low-risk designation merits excluding the iron ore industry from the rule. As the EPA reviews these comments, we hope you'll see the merits of an exclusion for a number of reasons, including those outlined below.

Unlike other classes of hardrock mining that rely on heavy chemicals to process mineral commodities, the iron ore sector employs physical separation techniques to separate iron units from the host rock. These techniques have been employed in Michigan's Upper Peninsula and Northeast Minnesota for approximately 170 years and produce value-added iron ore pellets, which are the critical raw material used in the production of iron and steel. The resulting mined areas have been subsequently used for recreation and public drinking water reservoirs. As a

[1] This proposed rule is a product of lawsuits brought by environmental groups in 2008 and 2014, leading to a court order requiring EPA to issue a proposed Superfund/CERCLA 108(b) rule covering the hardrock mining sector by December 2016 and further requiring a final financial assurance rule or determination to be fully promulgated by December 2017.

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result, the iron ore industry has minimal CERCLA liabilities as compared to certain other classes of hardrock mining.

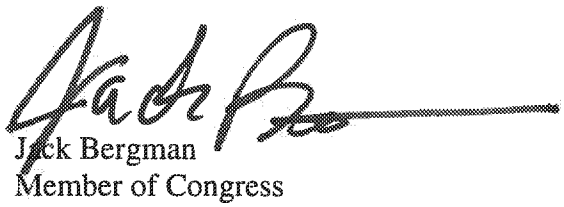
Compliance with the rule would come on top of current State regulatory authority and financial assurances already in place. Despite the fact that the iron ore industry has only negligible potential CERCLA liabilities and no history of leaving the federal government on the hook for cleanup costs, we are with the understanding that the proposed CERCLA 108(b) rule would require that the industry post financial assurance for an exorbitant amount that is orders of magnitude larger than any reasonable estimate of the industry's total potential CERCLA liability.

Any requirement to securitize these inflated liability estimates would deprive capital investment needed to remain cost competitive and cause devastating impacts for the strategically important iron ore and steel industries. Both of these industries remain in the fledgling stages of recovery following the commodity recession brought on by the steel import crisis of 2015 and 2016.

We thank you for weighing these concerns and understand EPA's desire to protect against future CERCLA expenditures arising from industries that pose significant CERCLA risks to the Superfund. However, we believe the iron ore industry poses no such imminent risk, and look forward to working with you and your staff on this important issue.

Sincerely,

Richard M. Nolan
Member of Congress



Jack Bergman
Member of Congress

CC: Mr. Byron R. Brown, Deputy Chief of Staff for Policy, Office of the Administrator

Sierra Club v. EPA 18cv3472 NDCA Tiers 8&9

ED_002061_00087222-00002

Message

From: T.A. Hawks [TAHawks@monumentpolicy.com]
Sent: 11/13/2017 3:49:59 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: Bloom follow-up

Great, we'll see you at 2:00.

T.A. Hawks
Monument Policy Group
Ex. 6
Ex. 6 mobile
www.monumentpolicy.com

On Nov 13, 2017, at 10:14 AM, Brown, Byron <brown.byron@epa.gov> wrote:

Sorry for the confusion. Let's plan to keep the 2 pm meeting as originally scheduled.

From: Brown, Byron
Sent: Monday, November 13, 2017 9:39 AM
To: 'T.A. Hawks' <TAHawks@monumentpolicy.com>
Subject: RE: Bloom follow-up

I now have a conflict at 2 pm. Will 3 pm work instead?

From: T.A. Hawks [mailto:TAHawks@monumentpolicy.com]
Sent: Friday, November 3, 2017 3:58 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Re: Bloom follow-up

That's perfect, thank you!

T.A. Hawks
Monument Policy Group
Ex. 6
Ex. 6 mobile
www.monumentpolicy.com

On Nov 2, 2017, at 2:23 PM, Brown, Byron <brown.byron@epa.gov> wrote:

Thanks. I am back in the office. Would 2 to 2:30 pm on Monday, Nov. 13 work?

From: T.A. Hawks [mailto:TAHawks@monumentpolicy.com]
Sent: Monday, October 30, 2017 11:48 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Bloom follow-up

Byron, hope things have calmed down with your family emergency.

Wanted to check back and see if you are back in DC if you have a better sense of your next couple of weeks for meeting availability. Thank you and sorry to be a pest!

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Sunday, October 22, 2017 6:06 PM
To: T.A. Hawks <TAHawks@monumentpolicy.com>
Subject: RE: Bloom follow-up

I have been out of the office Ex. 6 so may not be able to respond with suggested meeting times until later next week. - Byron

---

From: T.A. Hawks [mailto:TAHawks@monumentpolicy.com]
Sent: Friday, October 20, 2017 5:55 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Bloom follow-up

Byron,

Wanted to follow up and ask for a meeting with you to discuss Bloom Energy's previous request for an MPU exemption. We're flexible on timing, Shawn Soderberg is based in California, but can come to DC anytime in the coming weeks except for the 30th and 31st of October and the week of November 13th.meeting.

Thanks very much for considering.

T.A.

From: T.A. Hawks
Sent: Monday, October 9, 2017 4:05 PM
To: brown.byron@epa.gov
Subject: Re: Bloom follow-up

Byron,

Hope you're well. Wanted to check in and see if you have a few minutes tomorrow to talk about the original request we had when Bloom Energy came in to discuss with you our request for a manufacturing process unit exemption (MPU) under RCRA.

Thanks and if tomorrow doesn't work, let me know if you have time early next week. Shawn Soderberg is very interested in getting a meeting with you, but prior to that wanted to get your thoughts before I submit a formal meeting request.

Thanks,
T.A.

T.A. Hawks
Monument Policy Group
Ex. 6
Ex. 6 mobile
www.monumentpolicy.com

Message

From: Donald K. Shandy [don.shandy@crowedunlevy.com]
Sent: 5/16/2017 10:37:43 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: 'Joe Depew' [jdepew@fitzgeraldtrucksales.com]; Erin Potter Sullenger [erinpotter.sullenger@crowedunlevy.com]; 'Lehman, Rob' [Rob.Lehman@wilmerhale.com]
Subject: RE: Fitzgerald Trucking
Attachments: Fitzgerald Summary for EPA.PDF

Mandy and Byron,
In accordance with our recent discussions, attached is a document which summarizes various issues and concerns related to the Phase 2 engine rule.
We appreciate EPA's consideration in this matter.
Best,
Don

CROWE & DUNLEVY
ATTORNEYS AND COUNSELORS AT LAW
A LexMundi Member

Donald K. Shandy
Attorney at Law
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TO: Byron Brown and Mandy Gunasekara

FROM: Fitzgerald Truck Sales

DATE: May 16, 2017

RE: Fitzgerald Truck Parts' Summary of Issues Concerning the GHG Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2, 81 Fed. Reg. 73,478 (Oct. 25, 2016) ("Phase 2 Rule")

The following summary is provided by Fitzgerald Truck Parts ("Fitzgerald") to assist with the EPA's review and reconsideration of the Phase 2 Regulation as it is applied to the glider industry. Fitzgerald is a closely held company that repairs worn heavy duty trucks using a glider kit ("gliders"), which is a collection of new highway tractor parts sold as an assemblage. This memorandum summarizes several issues Fitzgerald has raised in ongoing conversations, including Fitzgerald's reuse of cast steel in its engines, engine weight reduction through redesign and machining of various engine components, and substantive factual and legal issues with the Phase 2 Regulation itself.

Item 1: Substantive Factual and Legal Issues in the Phase 2 Regulation

Fitzgerald has identified the following factual and legal issues in the Phase 2 Rule, specifically as it relates to the treatment of gliders in the Phase 2 Rule.

1) Glider – glider kit or glider vehicle is not "new" vehicle
    a. The CAA provides the EPA with authority to regulate "new motor vehicles" and their engines, defined as "self-propelled" vehicles "the equitable or legal title to which has never been transferred to the ultimate purchaser". *See* 42 U.S.C. §§ 7522(a) and 7550(3). Gliders are not new motor vehicles.
        i. The long-time NHTSA rule defines gliders as not new vehicles. NHTSA's rule provides, in pertinent part, "When a new cab is used in the assembly of a truck, the truck will be considered newly manufactured for purposes of paragraph (a) of this section, the application of the requirements of this chapter, and the Act, <u>unless</u> the engine, transmission, and drive axle(s) (as a minimum) of the assembled vehicle are not new, and at least two of these components were taken from the same vehicle." 49 C.F.R. 571.7(e).
        ii. Vehicle title to the glider is linked to the donor vehicle, meaning the purchaser of a glider is not taking "initial title"; EPA rejected this argument by relying on advertising language on Fitzgerald's website. (81 Fed. Reg. at 73,513-514).
        iii. Glider vehicles' VINs identify them as refurbished (state titles identify gliders as gliders, used, rebuilt, or remanufactured on the vehicle's title or in the sequencing of the VIN number); glider kit VINs identify them as incomplete vehicles. (*see, e.g.*, RTC 1832).

iv. The National Automobile Dealers Association (NADA) blue book values gliders significantly less than new vehicles, because they are not new vehicles.

b. The Phase 2 Rule and preamble makes circular and arbitrary arguments in an attempt to support its decision to regulate gliders for the first time. The Rule argues that it can regulate because:
   i. The Rule's reliance on cherry picked statements from the Fitzgerald website that the glider "…is like a new truck" (81 Fed. Reg. at 73,514).
      1. Of course, language from a company website does not meet the statutory requirement nor provide the legal authority for gliders to be new vehicles.
   ii. It already implicitly determined gliders were new vehicles in Phase 1 by exempting gliders from the Phase 1 rule and thus any challenge is too late (81 Fed. Reg. at 73,513)
      1. It is hard to understand how exempting gliders, for which the statutory language of the CAA does not support regulating, somehow allows for such regulation.
   iii. Argues that CAA grants authority to regulate parts of a vehicle in the past and can do so now (e.g. locomotives, vapor recovery systems). (81 Fed. Reg. at 73,514).
      1. The rule however is not regulating the engine for example, rather it is attempting to make a glider a new vehicle.

c. Apparently recognizing the lack of statutory authority and overreach, the Phase 2 Rule attempts to shroud its authority to regulate gliders under another equally flawed argument under the CAA. (81 Fed. Reg. at 73,517). The Rule states, in pertinent part, "[e]ven if, against our view, trailers and glider kits are not considered to be ''motor vehicles,'' and the entities engaged in assembling trailers and glider kits are not considered to be manufacturers of motor vehicles, the Clean Air Act still provides authority for the testing requirements adopted here."

2) Economics
   a. Glider Industry is over a billion dollars and supports upwards of 20,000 jobs nationally. The glider industry supplies the small businesses who need heavy-duty tractors to operate but cannot afford the cost of buying new. It also reduces their operating costs. (RTC p. 1885).
   b. Fitzgerald operates in small towns impacted by decreases in manufacturing jobs and provides high paying jobs in these communities. Fitzgerald and other glider assemblers are often the largest employer in the towns in which they operate.
   c. The Phase 2 rule forces an immediate business model change without sufficient lead time to prepare for compliance, thereby forcing glider companies to prepare for drastic reductions in workforce. Because of the insufficient lead time, starting January 1, 2018, Fitzgerald will have to reduce its output by 90% to comply with the 300 glider cap.

3) The Phase 2 Rule did not rely on independent data, its own testing or data from the glider industry.

a. Relied on data from foreign manufacturer of new vehicles where the data is decades old and long before ultra-low-sulfur diesel fuel. (RTC p. 1875)
b. Relied on articles in industry publications, public statements, or websites. (*See, e.g.*, 81 Fed. Reg. 73,514 n.82, 83, 73,518 n.93, 73,943 n.987; RTC p. 1881, 1883).
c. Tennessee Tech University has and continues to conduct independent and extensive testing to compare Fitzgerald re-built engines with Original Equipment Manufacturer ("OEM") engines to compare fuel efficiency and emissions.
d. Fitzgerald is able to reuse approximately 4,000 pounds of cast steel when rebuilding engines, transmissions and rear ends, preventing significant emissions and other environmental concerns associated with the casting of new parts. This in combination with superior fuel efficiency to an OEM substantially reduces the carbon footprint of the rebuilt vehicle.

4) Gliders are not "defeat" devices.
   a. "Principal effect" of a glider kit is <u>not</u> to "defeat" any regulation under CAA Section 202.
   b. EPA did not conduct any testing on fuel efficiency of engines installed in gilder vehicles. The Phase 2 Rule provides no support or substantial discussion in the preamble to this assertion. (81 Fed. Reg. 73,517).
   c. EPA relied on inaccurate and old data contained in comments from Volvo with regards to the new glider market being based on avoiding emission controls. (RTC p. 1866, 1878).
   d. Fitzgerald optimizes engines with new generation components. Independent research verifies significantly better fuel efficiency than new trucks and performance within 98% of GHG and PM standards.
5) Fuel Efficiency Standard
   a. Glider vehicles are more fuel efficient than today's OEM engines. Standard base model glider is consistently 20% better fuel mileage than national average at road speed a full load.
   b. Fitzgerald has developed methods and parts that are able to replace cast steel and reduce the weight of the engine resulting in better fuel efficiency. New engines are still built with the steel components.
   c. NHTSA elected not to include gliders in its Phase 2 program for fuel efficiency standards (p.73584).
6) Rule purports to be GHG and fuel efficiency standard rule but instead regulates NOx and PM emissions for gliders.
   a. This should have been a separate rulemaking.
      i. Phase 2 rule's stated design: GHG emissions and fuel consumption (p. 73524), yet without statutory authority EPA acknowledges this rule also regulates criteria pollutants (p. 73526, n.130).
      ii. While NOx and PM standards for new engines took full effect in 2010, the glider industry found itself suddenly subject to these requirements and had to start complying within 3 months of publication of the final rule and four days from effective date (except for the small business exceptions, touted

as flexibility for those businesses – however it was not flexible), with most significant impact within 12 months of effective date. (81 Fed. Reg. 73,518, 73,942-945).

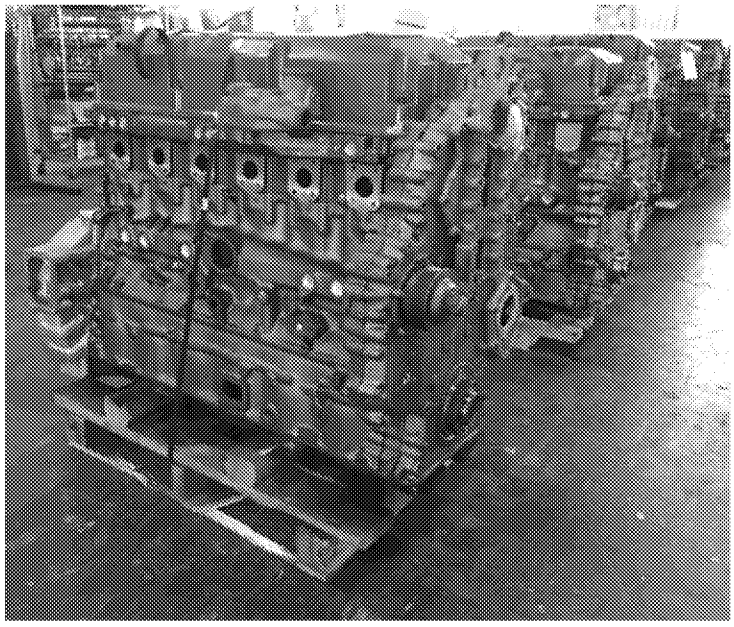
b. Rule for NOx/PM does not comply with CAA's four year lead time in CAA 202(a)(3)(C).
   i. Rule incorrectly states lead time is not required because these are not new standards (81 Fed. Reg. 73,518-519) and compliant engines are readily available (81 Fed. Reg. 73,945).
   ii. Rule notes specifically that Fitzgerald will need to reduce its production in 2017, but goes on to state, without any justification, that it does "not believe that manufacturer truly needs additional lead time." The Rule calls the gliders highly polluting in its justification of killing the industry, but fails to rely on actual data that takes into account the rebuilt engines with current technology, engine programming in the electronic control module and ultra-low-sulfur diesel fuel used in all engines since 2010.

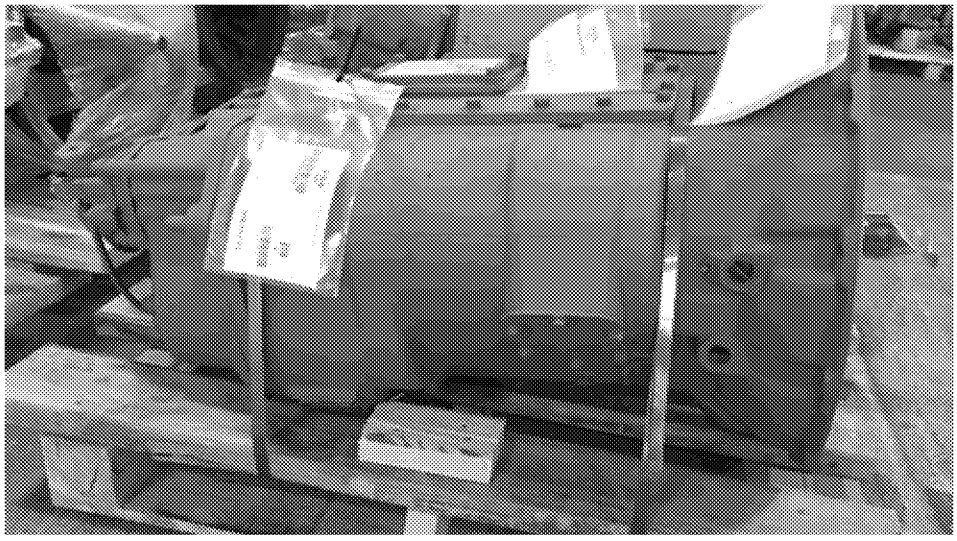
Item 2: Fitzgerald's Reuse of Cast Steel Engine Components

In rebuilding a worn or wrecked tractor with a glider kit, Fitzgerald utilizes engines, transmissions and rear ends (rears) from a donor tractor. The reuse of these items, the heart and soul of the tractor, results in the reuse of approximately 4,000 pounds of cast steel. Of course, the economic and environmental costs of casting 4,000 or more pounds of steel is significant when a glider is used to restore a worn or wrecked truck as opposed to building a new truck.

Engine Component	Weight of Cast Steel
Engine Assembly (block, crank shaft, rods)	3,000 lbs.
Transmission (13, 15, or 18 speed)	500-700 lbs.
Rears (2 sides)	600 lbs.
Total Weight	**4,100 – 4,300 lbs.**

The photographs below show an engine and transmission and give a perspective on the amount of cast steel reuse.



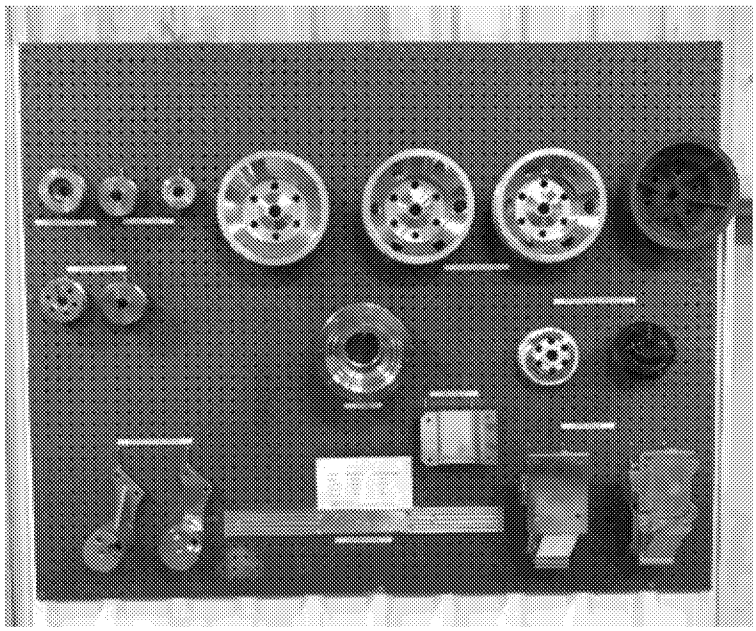


As is well known and documented, the casting of steel produces a significant environmental footprint. The impact includes use of significant resources and fossil fuels in the mining of the ore and environmental impacts of the mining, which may include destruction of vegetation, accelerated soil erosion, sedimentation of water bodies, toxic tailings and acid waste damage. Further, if a coke furnace is used, then there are the impacts of mining the coke as well. Once the ore is mined, there are the environmental consequences of the production of steel, including the coke (if used), the oven gas, naphthalene, ammonium compounds, sulfur, water emissions, slag, sulfur dioxide, hydrogen sulfide and various other gaseous emissions. *Cf* https://www3.epa.gov/ttn/chief/ap42/ch12/final/c12s13.pdf. Moreover, EPA should also consider the energy and fuels required to transport the materials and finished products.

As discussed, the Phase 2 Regulations did not take any of these issues regarding casting into consideration when evaluating the portion of the rule that concerns glider trucks. Instead, the Phase 2 Rule relies on dated third-party data that is contradicted by the EPA's own studies and data on ultra-low sulfur diesel fuel. When considering the impact of not having to newly cast these parts the tractor and the actual GHG emissions of gliders, it is very possible gliders may have a smaller carbon footprint than new trucks.

Item 3: Fitzgerald's Redesign and Machining of Engine Components

As discussed, in applying race car technology and improving the overall engine performance both from a fuel efficiency and a vibration standpoint, Fitzgerald researched and developed alternative pulleys, brackets and belt tensioners. Fitzgerald designed and made significant investment in machinery in order to produce aluminum pulleys, brackets and belt tension arms. These items were then used to replace the cast steel pulleys, brackets and belt tensioners utilized on the engines. The pulleys are depicted in the photo we provided at our meeting on May 8, 2017 and is shown again below. The overall result of such effort was to lightweight the engine by approximately 28 pounds.



The light-weighting of the rotating mass of the engine results in significant fuel savings, along with maintenance and other environmental benefits. For example, the front bearing and related seal of the accessory drive pulley would normally fail from the significant weight of the cast pulley within two to three years. Of course, when such failure occurs engine oil leaks from the engine and onto the pavement, roads and highways until the bearing and seal are replaced. The rebuilt Fitzgerald engines have shown a near zero failure rate of that bearing and seal as a result of the aluminum pulley designed by Fitzgerald. Yet, new trucks continue to utilize the cast pulleys, brackets and belt tension arms.

The redesigned pulleys include the following, along with the weight difference between the Fitzgerald designed and machined aluminum replacement versus the cast pulley. They are as follows:

Pulley	Steel Weight	Aluminum Weight
Crank	18.166 lbs.	8.68lbs
Clutch Fan	24.032 lbs.	11.724 lbs.
Accessory	4.18 lbs.	1.56 lbs.
Alternator	3.182 lbs.	.946 lbs.

The bracket and belt tensioner have also been light-weighted and which results in a total combined 28 pounds of reduction on the engine. As discussed, the Phase 2 Regulation failed to consider this or any other actual data, as it relates to gliders.

Message

From: Timothy Charters [tcharters@noia.org]
Sent: 8/1/2017 7:42:59 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: At water office....

Our group is going to run out after this meeting which was 3 pm but hasn't started. I wasn't sure about the lay out here so I wasn't sure about how close you were. Let's try and plan a social lunch soon. My office is like 4 blocks away

---

From: Brown, Byron <brown.byron@epa.gov>
Sent: Tuesday, August 1, 2017 3:40:20 PM
To: Timothy Charters
Subject: RE: At water office....

Assume you are in EPA East where Office of Water is located. I am in North building. You can get there from here, but you have to know your way. I could meet up around 4pm for a social call but just wanted to note that I am recused from working on oil and gas issues.

From: Timothy Charters [mailto:tcharters@noia.org]
Sent: Tuesday, August 1, 2017 3:31 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: At water office....

.... conference room if you are anywhere nearby.

Message

From: Lehman, Rob [Rob.Lehman@wilmerhale.com]
Sent: 6/26/2017 10:28:59 PM
To: rjackson@epa.gov
CC: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Gliders

Any insights on next steps? I know Mandy has been swamped but we want to help in any way we can.

Rob Lehman | WilmerHale
Senior Public Policy Advisor
1875 Pennsylvania Avenue NW
Washington, DC 20006 USA
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Message

From: T.A. Hawks [TAHawks@monumentpolicy.com]
Sent: 10/9/2017 8:04:57 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: Bloom follow-up

Byron,

Hope you're well. Wanted to check in and see if you have a few minutes tomorrow to talk about the original request we had when Bloom Energy came in to discuss with you our request for a manufacturing process unit exemption (MPU) under RCRA.

Thanks and if tomorrow doesn't work, let me know if you have time early next week. Shawn Soderberg is very interested in getting a meeting with you, but prior to that wanted to get your thoughts before I submit a formal meeting request.

Thanks,
T.A.

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On Apr 19, 2017, at 4:36 PM, T.A. Hawks <TAHawks@monumentpolicy.com> wrote:

> Byron,
>
> Thank you again for meeting with Shawn Soderberg and Paul Wilkins from Bloom Energy, Ken Kastner from Hogan and me a few weeks ago to discuss both the current status of our request for concurrence and the
> MPU position issued by EPA in October. If you have any insight into timing of a response or the current status of the review, I know it would be a huge relief to Bloom, who are continually worried about where things stand.
>
> Please let me know what you need from us and we're certainly glad to provide it!
>
> Best,
> T.A.

T.A. Hawks
Principal
Monument Policy Group
Ex. 6
www.monumentpolicy.com

Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 7/24/2017 10:43:24 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: See you at 9

I think we have 5. It'll be fine. Mimosas and bagels?

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com> | @HK_PPR

On Jul 24, 2017, at 6:33 PM, Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>> wrote:

Yes. I assume my office is big enough.

Sent from my iPhone

On Jul 24, 2017, at 6:29 PM, "rich.gold@hklaw.com<mailto:rich.gold@hklaw.com>" <rich.gold@hklaw.com<mailto:rich.gold@hklaw.com>> wrote:

Presume I'm just asking for you?

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com><mailto:Rich.Gold@hklaw.com> | @HK_PPR

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Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/13/2017 10:52:32 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Dimitri.Karakitsos@hklaw.com
Subject: Re: Portland Harbor -- EPA's Draft Sampling Plan

Yup. For sure. It looks like the Region has gone full rogue here though.

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com> | @HK_PPR

On Jun 13, 2017, at 6:50 PM, Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>> wrote:

Will you also be discussing the alternative developed by the PRPs that would focus on identifying the hot spots, etc. so cleanup can begin more quickly?

From: rich.gold@hklaw.com<mailto:rich.gold@hklaw.com> [mailto:rich.gold@hklaw.com]
Sent: Tuesday, June 13, 2017 6:38 PM
To: Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>>
Cc: Dimitri.Karakitsos@hklaw.com<mailto:Dimitri.Karakitsos@hklaw.com>
Subject: FW: Portland Harbor -- EPA's Draft Sampling Plan
Importance: High

This is basically a plan asking the private parties to re-do the Remedial Investigation which will take At MINIMUM 5 years and cost more than $25-30 million at least. This is what they are presenting in the meeting tomorrow. This is presented as the EPA position on the sampling plan.

From: "Cora, Lori" <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>
Cc: "Ebright, Stephanie" <EBRIGHT.STEPHANIE@EPA.GOV<mailto:EBRIGHT.STEPHANIE@EPA.GOV>>, "Sheldrake, Sean" <sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>>, "Zhen, Davis" <Zhen.Davis@epa.gov<mailto:Zhen.Davis@epa.gov>>
Subject: Portland Harbor -- EPA's Draft Sampling Plan
Attached is the sampling plan that EPA and its government partners have been working on. I would appreciate if you would distribute to the Pre-Remedial Design Group. We are sending this to the State, City, NW Natural, and Federal PRPs as well. We look forward to meeting with the Pre-Remedial Design Group on all ideas about pre-remedial design sampling.

Lori Houck Cora | Assistant Regional Counsel
U.S. Environmental Protection Agency | Region 10
Ex. 6 - Personal Privacy | cora.lori@epa.gov<mailto:cora.lori@epa.gov>
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Message

From: T.A. Hawks [TAHawks@monumentpolicy.com]
Sent: 10/6/2017 2:21:26 AM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: Bloom follow-up

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Thanks,
T.A.

T.A. Hawks
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>
> Best,
> T.A.
>
> T.A. Hawks
> Principal
> Monument Policy Group
> Ex. 6
> www.monumentpolicy.com

Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/13/2017 10:38:13 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Dimitri.Karakitsos@hklaw.com
Subject: FW: Portland Harbor -- EPA's Draft Sampling Plan
Attachments: ATT00001.htm; ATT00002.htm; PH baseline sampling cover letters Final.pdf; Portland Harbor_REVISED Working Draft Sampling Plan_6-6-17.pdf

Importance: High

This is basically a plan asking the private parties to re-do the Remedial Investigation which will take At MINIMUM 5 years and cost more than $25-30 million at least. This is what they are presenting in the meeting tomorrow. This is presented as the EPA position on the sampling plan.

From: "Cora, Lori" <Cora.Lori@epa.gov>
Cc: "Ebright, Stephanie" <EBRIGHT.STEPHANIE@EPA.GOV>, "Sheldrake, Sean" <sheldrake.sean@epa.gov>, "Zhen, Davis" <Zhen.Davis@epa.gov>
Subject: Portland Harbor -- EPA's Draft Sampling Plan

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Lori Houck Cora | Assistant Regional Counsel
U.S. Environmental Protection Agency | Region 10
P: (206) 553.1115 | F: (206) 553.1762 | cora.lori@epa.gov

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ENVIRONMENTAL CLEANUP

June 13, 2017

Sent via email only

Subject: The Environmental Protection Agency (EPA) Draft Baseline Sampling Plan for Portland Harbor

Dear PCI Group, State of Oregon, City of Portland, NW Natural, Federal PRPs,

Thank you for expressing interest and willingness to participate in the early phases of the Portland Harbor Record of Decision (ROD) implementation. EPA is committed to working with you to implement this critically important work as we look to parties to take early actions to accelerate cleanup and redevelopment at Portland Harbor. Consistent with our conversations with you during the release of the ROD, the EPA plans to continue working with you to identify possible cost reductions through the flexibility afforded by the final decision tree.

On June 6, 2017, we received the Pre-Remedial Design Group's pre-remedial design proposal. From an initial review we can see that the proposal identifies important parameters and data needs that would advance the allocation process, and has overlap with EPA's Draft Sampling Plan. We believe the proposal serves as a great starting point for our upcoming discussions, and for that reason encourage the Pre-Remedial Design Group to share the June 6th proposal with others on this communication.

In furtherance of our mutual goal of returning this site to productive reuse as quickly as possible, attached is EPA's Draft Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring for the Portland Harbor Superfund Site (Draft Sampling Plan). The Draft Sampling Plan incorporates and builds upon the sampling framework and objectives for initial post-ROD baseline sampling that the EPA shared with you in March. We believe this Draft Sampling Plan will provide the baseline and hot-spot data refinement that is necessary to establish benchmarks for the Portland Harbor In-Water Remedy.

EPA worked with the Portland Harbor Technical Coordination Team (TCT) to develop our Draft Sampling Plan. Specific elements of the Draft Sampling Plan include:

- Preliminary Remedial Design (RD) Characterization: Focus on delineating the horizontal and vertical extent of contamination associated with sediment management areas (SMAs) identified in the ROD, and evaluating the effectiveness of monitored natural recovery in some areas of the Site. This component is meant to initiate the RD process and gather information necessary for the PCI to finalize its allocation process.

- Baseline Monitoring: To update existing site-wide conditions and serve as the basis for comparison to data collected during the long-term monitoring program.

- Long-Term Monitoring: To compare Site conditions against baseline conditions and cleanup levels to assess the performance of remedial actions.

- Anadromous and Migratory Fish Tissue Monitoring (i.e., lamprey, salmon, and sturgeon): To evaluate the tribal fish consumption exposure scenario as part of the 5-year review process.

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Some elements are presented in more detail to foster discussion, however many aspects have been left for further development by respondents. For example, the draft preliminary RD characterization plan represents what EPA proposes would be needed for full RD. We understand that much surface and subsurface definition likely is not necessary to finalize the allocation; therefore, we are open to discussing your ideas of the scope of sediment sampling to meet that objective short of full design.

The Draft Sampling Plan does not describe the detailed sampling and analysis procedures necessary to implement the various characterization and monitoring programs, but is a guide for the development of detailed project plans, including those to implement the sampling programs. The performing parties will need to prepare investigation-specific planning documents including: work, field sampling and analysis plans; standard operating procedures; and quality assurance and health and safety plans to describe the sampling rationale, data quality objectives, sampling procedures, analytical methods, and data analysis approach. These plans will require EPA and partner review to ensure they meet the requirements ultimately outlined in a negotiated Administrative Order on Consent and Sampling Plan.

EPA's goal is to initiate sampling before the end of 2017. We are providing this Draft Sampling Plan for your review and consideration, and would like to arrange a meeting with you to discuss the June 6th proposal and EPA's Draft Sampling Plan within the next two weeks. During that meeting the parties can engage in greater detail on the rationale and interests upon which the proposed pre-remedial design and the Draft Sampling Plan are based. After that time, EPA will initiate a 60-day negotiation period on a draft Administrative Order on Consent, Statement of Work, and the Sampling Plan.

EPA looks forward to working with Portland Harbor PRPs on finalization of details and ultimate implementation of a pre-Remedial Design Sampling Plan for the Portland Harbor Superfund site. If you have questions or concerns prior to our meeting, please contact me or Sean Sheldrake of my staff at (206) 553-1220 or via email at Sheldrake.sean@epa.gov.

Sincerely,

Davis Zhen, Manager
Site Cleanup Unit 2

Cc:
Eva DeMaria, EPA *via email only*
Lori Cora, EPA
Stephanie Ebright, EPA
Laura Knudsen, EPA
Davis Zhen, EPA

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Portland Harbor Superfund Site

Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring

June 6, 2017

REVISED WORKING DRAFT

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Appendix A Statistical Basis for Sampling Approach

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LIST OF ACRONYMS

ARAR	applicable or relevant and appropriate requirement
ATSDR	Agency for Toxic Substances and Disease Registry
BERA	baseline ecological risk assessment
BMP	best management practice
cfs	cubic feet per second
cm	centimeter
COC	contaminant of concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CRD	Columbia River datum
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethene
DDT	dichlorodiphenyltrichloroethane
DDx	DDT+DDD+DDE
ENR	enhanced natural recovery
EPA	United States Environmental Protection Agency
FMD	future maintenance dredge
FS	feasibility study
ft^2	square feet
g	grams
HI	hazard index
HQ	hazard quotient
IC	institutional control
m^2	square meters
mm	millimeter
MNR	monitored natural recovery
NAPL	non-aqueous phase liquid
NRWQC	National Recommended Water Quality Criteria
ODHS	Oregon Department of Human Services
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PBDE	polybrominated biphenyl ether
PTW	principal threat waste
RAL	remedial action level
RAO	remedial action objective
RI	remedial investigation
RM	river mile
ROD	Record of Decision
SEA	Stiplin Environmental Associates
Site	Portland Harbor Superfund Site
SMA	sediment management area
SPMD	semipermeable membrane device
SVOC	semi-volatile organic compound
TBT	tributyltin

TOC	total organic carbon
TPH	total petroleum hydrocarbons
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WQS	water quality standard

1 Introduction

On January 3, 2017, the United States Environmental Protection Agency (EPA) issued the Record of Decision (ROD), which presents the Selected Remedy for the in-river portion of the Portland Harbor Superfund Site (Site) in Multnomah County, Oregon. Monitoring requirements for the Selected Remedy include baseline monitoring and remedial design data collection before construction; short-term monitoring during construction; and long-term monitoring of caps, dredge areas, and monitored natural recovery (MNR) areas after construction to evaluate long-term effectiveness and ensure the remedies function as designed.

1.1 Purpose and Scope

This document provides the objectives and sampling approach for preliminary remedial design characterization and baseline and long-term monitoring at the Site. The preliminary design characterization includes sampling of surface and subsurface sediments for the purpose of establishing the preliminary remedial footprint for dredging and capping, including establishing the preliminary depth of contamination. The baseline and long-term monitoring approach includes monitoring of surface sediment, biota tissue, surface water, and sediment traps for the purpose of establishing baseline conditions and monitoring the effectiveness of the remedy toward achieving the remedial action objectives (RAOs) established for the Site. Due to the different objectives and sampling approach, the preliminary remedial design characterization and baseline and long-term monitoring programs are envisioned as separate sampling efforts although coordination between the two efforts may be required. This document also includes the sampling approach for anadromous and migratory fish tissue monitoring that will be used in conjunction with resident fish tissue monitoring to support the evaluation of the tribal fish consumption exposure scenario through the 5-year review process. Specific elements addressed in this document are outlined below.

The sampling guidelines presented in this document represent an initial sampling approach to monitor various media in Portland Harbor relative to RAOs, media specific cleanup and target levels and other metrics. By necessity, this sampling approach will be modified based on the results of the baseline and long-term monitoring programs to ensure that progress is monitored in an effective manner.

Preliminary Remedial Design Characterization

Preliminary remedial design characterization will focus on delineating the horizontal and vertical extent of contamination associated with sediment management areas identified in the ROD, evaluating the effectiveness of MNR in areas targeted for enhanced natural recovery (ENR) through placement of a 12-inch thick sand cover, and initiating the remedial design process. The objectives, sampling boundaries, and sampling approach for preliminary remedial design characterization are provided in Section 3.

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Baseline Monitoring

Baseline monitoring will be conducted to identify existing conditions at the Site for bedded surface sediment, surface water, sediment traps, and biota tissue (i.e., smallmouth bass, carp, crayfish, clams, and osprey eggs) samples. These data will serve as the basis for comparison to data collected during the long-term monitoring program. The objectives, monitoring boundaries, and sampling approach for baseline monitoring are provided in Section 4.

Long-Term Monitoring

The long-term monitoring program will compare Site conditions against baseline conditions and cleanup levels to assess the performance of the remedial action. Long-term monitoring will include bedded surface sediment, surface water, sediment trap, and biota tissue samples from upstream, within, and/or downstream of the Site. The sampling design will be consistent with the baseline data collection effort to evaluate trends and remedy effectiveness over the long term. The objectives, monitoring boundaries, and sampling approach for long-term monitoring are provided in Section 5.

Anadromous and Migratory Fish Tissue Monitoring

Monitoring of anadromous and migratory fish tissue (i.e., lamprey, salmon, and sturgeon) will be conducted to evaluate the tribal fish consumption exposure scenario as part of the 5-year review process. Consistent with the remedial investigation (RI), exposures to tribal fishers will be evaluated assuming direct contact with contaminants in sediment and via fish consumption. The objectives, monitoring methods and temporal approach for anadromous and migratory fish tissue monitoring are provided in Section 6.

This document is to be used as a guide during the performing parties' development of characterization and monitoring plans. The performing parties are expected to prepare investigation-specific planning documents, including applicable work plans, field sampling and analysis plans, standard operating procedures, quality assurance project plans and health and safety plans. These plans will include the necessary details required to implement the sampling programs and will be prepared in accordance with applicable guidance to describe the sampling rationale, data quality objectives, sampling procedures, analytical methods, and data analysis approach. EPA and partners will review the performing parties' planning documents to ensure they meet the requirements for preliminary remedial design characterization, and baseline and long-term monitoring.

1.2 Activities Not Included in Sampling Plan

This document focuses on preliminary design characterization, and baseline and long-term monitoring and does not include detailed design level characterization and remedy performance monitoring. Detailed design level data represent the data necessary to design and implement the active remedial technologies within sediment management areas (SMAs). Additionally, the performance monitoring of the constructed components of the remedy are not included in this document. Specifically, this document does not include data collection requirements associated with upland source control monitoring; river bank, porewater, and groundwater characterization and monitoring; detailed remedial design; construction and post-construction performance monitoring; and other activities necessary to implement the Selected Remedy. Data collection requirements for these and other activities not discussed in this plan will be defined in the performing parties' planning documents reviewed by EPA

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and partners, as applicable, or in later phases of remedy implementation. **Table 1** provides examples of data collection and monitoring activities that are not included in this document.

2 Remedial Goal Decision Criteria

This section describes the RAOs and identifies decision criteria that will be used for monitoring the progress of the remedial action and determining if the RAOs have been achieved.

2.1 Remedial Action Objectives

The nine RAOs included in the ROD consist of media-specific goals for protecting human health and the environment. Achieving the RAOs relies on effectively implementing the Selected Remedy to meet the cleanup levels discussed in Section 2.2. The nine RAOs are provided below.

Human Health RAOs

- RAO 1 – Sediment: Reduce cancer and non-cancer risks to people from incidental ingestion of and dermal contact with contaminants of concern (COCs) in sediment and beaches to exposure levels that are acceptable for fishing, occupational, recreational, and ceremonial uses
- RAO 2 – Biota: Reduce cancer and non-cancer risks to acceptable exposure levels (direct and indirect) for human consumption of COCs in fish and shellfish
- RAO 3 – Surface Water: Reduce cancer and non-cancer risks to people from direct contact (ingestion, inhalation, and dermal contact) with COCs in surface water to exposure levels that are acceptable for fishing, occupational, recreational, and potential drinking water supply
- RAO 4 – Groundwater: Reduce migration of COCs in groundwater to sediment and surface water such that levels are acceptable in sediment and surface water for human exposure

Ecological RAOs

- RAO 5 – Sediment: Reduce risk to benthic organisms from ingestion of and direct contact with COCs in sediment to acceptable exposure levels
- RAO 6 – Biota (Predators): Reduce risks to ecological receptors that consume COCs in prey to acceptable exposure levels
- RAO 7 – Surface Water: Reduce risks to ecological receptors from ingestion of and direct contact with COCs in surface water to acceptable exposure levels
- RAO 8 – Groundwater: Reduce migration of COCs in groundwater to sediment and surface water such that levels are acceptable in sediment and surface water for ecological exposure

Human Health and Ecological RAO

- RAO 9 – River Banks: Reduce migration of COCs in river banks to sediment and surface water such that levels are acceptable in sediment and surface water for human health and ecological exposures

Data collected during construction and long-term monitoring will be used to evaluate effectiveness of the Selected Remedy to meet the RAOs

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2.2 Cleanup Levels

Cleanup levels are the long-term contaminant concentrations that need to be achieved by the Selected Remedy to meet RAOs. Site-specific cleanup levels were developed for each RAO for the following media: sediment (including beaches) and river bank soil, surface water, and groundwater. **ROD Table 17**, which summarizes the media-specific cleanup levels, is included in this document.

2.2.1 Human Health Risk-Based Cleanup Levels

Human health risk-based cleanup levels for sediment were calculated based on direct contact with beach and in-river sediment (RAO 1) and sediment concentrations to be protective of indirect exposure through consumption of fish and shellfish (RAO 2). The risk-based cleanup levels for RAOs 1 and 2 represent the lowest value in each medium (beach or in-river sediment) to be protective of all potential receptors and are applicable to sediment and river bank soils.

2.2.2 Human Health Fish Tissue Targets

Human health risk-based fish tissue targets are not cleanup levels but will be used to inform fish advisories, assess effectiveness of best management practices (BMPs), and monitor the progress of the Selected Remedy to reduce COCs in biota (RAO 2 and 6). Consistent with footnote (6) in **ROD Table 17** of the ROD, additional data will be collected during baseline and long-term monitoring to determine background fish tissue concentrations for polychlorinated biphenyls (PCBs) and other fish tissue COCs as appropriate.

2.2.3 Ecological Risk-Based Cleanup Levels

Ecological risk-based cleanup levels to meet RAOs 5 through 8 were developed for sediment, surface water, and groundwater/pore water. To be protective of all species, the lowest value for each COC was selected as the risk-based cleanup level for RAOs 5 and 6. COC-specific water concentrations from the baseline ecological risk assessment (BERA) that are protective of ecological receptors were selected as risk-based cleanup levels for RAOs 7 and 8, except for the manganese cleanup level, which was developed after the BERA.

2.2.4 ARAR-Based Cleanup Levels

As required by the Comprehensive Environmental Response, Compensation, and Liability Act, applicable or relevant and appropriate requirement (ARAR)-based cleanup levels were developed. The ARAR-based cleanup levels for RAOs 3 and 4 were selected from the lower of the federal National Recommended Water Quality Criteria (NRWQC) (organism + water) and Oregon water quality standards (WQSs) (organism + water), maximum contaminant levels, and non-zero maximum contaminant level goals. The cleanup levels for RAOs 7 and 8 are based on the lower of the NRWQC (chronic aquatic life) and Oregon WQS (chronic aquatic life) only when risk-based values are not available or are greater than ARARs. ARARs-based numbers are used for tributyltin for RAO 7 and for arsenic, chromium, and DDx (dichlorodiphenyltrichloroethane [DDT], dichlorodiphenyldichloroethane [DDD], and dichlorodiphenyldichloroethylene [DDE]) for RAO 8.

2.2.5 Background-Based Cleanup Levels

Sediment samples collected from areas not influenced by Site releases were used to develop background concentrations during the RI and feasibility study (FS). As shown on **ROD Table 17**, sediment and river bank soil cleanup levels for arsenic, PCBs, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and selected dioxins/furans were selected based on background concentrations. Insufficient

data are currently available to calculate defensible background concentrations for other media. Additional monitoring of surface water and biota tissue in the Upriver Reach is required to evaluate background concentrations for these media.

3 Preliminary Remedial Design SMA Delineation

This section describes the approach for performing preliminary remedial design characterization for delineating SMAs identified in the ROD for the Selected Remedy. As described in Section 1.1, preliminary remedial design characterization is focused on delineating the horizontal and vertical extent of contamination. More detailed design level data will be needed to complete design. SMAs identified in the ROD were delineated based on the remedial action levels (RALs) and/or principal threat waste (PTW) thresholds (whichever is the lower value) for the Selected Remedy and represent areas of sediment contamination where capping and/or dredging will be performed to reduce risk. Site-wide RALs, navigation channel RALs, and PTW thresholds are listed in the attached **ROD Table 21**. Navigation channel RALs only apply to the navigation channel, and Site-wide RALs apply to all other areas of the Site. Within the navigation channel, PTW thresholds are lower than the navigation channel RAL levels and thus could be applicable. The approximate lateral extent of the SMA for the Selected Remedy is shown in **ROD Figure 30**, included in this document. The SMA lateral extent was estimated based on sediment COC concentrations and is not contingent on property boundaries. The sampling approach for pre-remedial design characterization, baseline monitoring, long-term monitoring, and anadromous and migratory fish tissue monitoring is summarized on **Table 2**. A summary of the monitoring associated with each media, including the data use, reach, spatial scale, sample design, sample type, and sample parameters, is provided in **Table 3**.

3.1 Problem Definition

The SMA boundary for the Selected Remedy, as shown on **ROD Figure 30**, was estimated using RI data. Additional data are needed to further refine and delineate the current lateral and vertical extent of cap and/or dredge areas in accordance with the Selected Remedy. Obtaining new sediment data is needed to accurately delineate SMA boundaries and enable the entire Portland Harbor Site to move closer to completing the remedial design.

3.2 Pre-Remedial Design Sampling Objectives

Data shall be collected to delineate lateral and vertical extent of sediment exceeding the Site-wide RALs, navigation channel RALs, and/or PTW thresholds, as listed in the attached **ROD Table 21**. Contaminated sediment shall be delineated to the depth of the applicable RAL concentrations or PTW concentrations, whichever value is lower.

The objectives of pre-remedial design sampling include the following:

- Delineate the horizontal and vertical extent of contaminated sediment requiring remediation in accordance with the requirements specified in the ROD
- Collect preliminary sediment data that can be used to support remedial design activities
- Collect preliminary data for the purposes of applying the decision tree (**ROD Figure 28**) and supporting remedial design
- Evaluate the effectiveness of MNR in areas targeted for ENR in the ROD
- Characterize nature and extent of contaminated materials intended to be left in place

3.3 Pre-Remedial Design Sampling Boundaries

Current surface and subsurface sediment data are needed to delineate SMAs for each in-water region of the Site (Navigation Channel, Future Maintenance Dredge Areas, Intermediate Region, and Shallow Region). The characterization approach should be consistent with the Selected Remedy within each region, as described in Sections 3.3.1 through 3.3.4 below.

In each region, the horizontal and vertical extent of sediment contamination exceeding the RALs and/or PTW thresholds (whichever is the lower value) will be determined to identify the remedial footprint and the depth of contamination (DoC) required to be dredged. Characterization of sediment will require identification of PTW and be of sufficient depth to characterize material to be left in place to support cap design if required. Dredging and/or capping in each region shall be performed in accordance with the technology application decision tree provided in attached **ROD Figure 28**.

3.3.1 Navigation Channel

The Selected Remedy in the federally authorized navigation channel is restricted to dredging in order to avoid constructing a remedy (cap or residual layer) within the authorized dredge depth. Contaminated sediment will be dredged to the depth of the Navigation Channel RAL concentrations or PTW threshold concentrations specified in **ROD Table 21**, whichever value is lower.

3.3.2 Future Maintenance Dredge Areas

Future maintenance dredge (FMD) areas are those locations in the river that are periodically dredged to allow continued vessel activity such as shipping and docking. As presented in the technology application decision tree (attached **ROD Figure 28**), contaminated sediment shall be dredged to the depth of the Site-wide RAL concentrations, the depth of PTW, or the depth required to allow placement of a cap or backfill sufficient to be effective over the long term, whichever is deeper.

3.3.3 Intermediate Region

The intermediate region is defined as outside the horizontal limits of the navigation channel and FMD areas to the riverbed elevation of approximately -2 feet Columbia River Datum (CRD). In the intermediate region, contaminated sediment will be dredged to the depth required by the technology application decision tree (**ROD Figure 28**) to achieve Site-wide RALs and remove PTW or to allow placement of cap or backfill material sufficient to be effective over the long term.

3.3.4 Shallow Region

The shallow region is defined as shoreward of the riverbed elevation of approximately -2 feet CRD. Contaminated sediment in this area will be dredged to the depth required to remove all non-aqueous phase liquid (NAPL) or PTW that cannot be reliably contained unless it is present below the feasible depth limit of excavation technology in which case it will be dredged to a depth to accommodate a cap and then capped. Where NAPL/not reliably contained (NRC) PTW is not present but the depth of excavation to achieve RAL concentrations is greater than 5 feet, the area will be dredged to 5 feet with placement of a cap and backfilled to grade.

3.4 Preliminary Remedial Design Data Collection

Preliminary remedial design data collection will focus on sediment core sampling to delineate the lateral and vertical extent of contamination. **Table 2** summarizes the preliminary remedial design data collection activities and laboratory analyses for characterization of surface and subsurface sediment.

As shown on **Figure 1**, sediment cores will be advanced within the SMA footprints and spaced on a 150- by 150-foot grid. This grid spacing was selected to be consistent with the SMA characterization performed by the RM11E group. Additionally, a 150-foot buffer zone of sediment core "step out" locations will be advanced to delineate the extent of COCs above the applicable RAL and PTW thresholds. If COCs are above the applicable RAL and PTW thresholds at a step out location, then an additional core will be advanced no farther than 150 feet from the core location(s) with COCs above the RAL and PTW thresholds. This process will continue until the lateral extent of sediment above the applicable RAL and PTW thresholds is delineated and the vertical extent of COCs above the applicable RAL and PTW thresholds is delineated to the depth of feasible dredge limits or to characterize material to be capped consistent with the Selected Remedy.

Delineating the vertical extent of COCs may require characterization of subsurface sediment contamination to depths of up to 20 feet below mudline. The final core depth and sampling intervals will be determined based on the expected depth of contamination using existing data, the CSM (e.g., contaminant release mechanism and hydrodynamic setting), and the anticipated technology to be applied. Sediment will be collected with a Vibracore or similar method that allows penetration to the required depth, collects sediment samples over 30–centimeters (cm) (1-foot) sampling intervals, recovers 80 percent of the sampling interval, and establishes the vertical extent of contamination. The vertical extent of contamination will be considered delineated when two consecutive 30-cm sampling intervals are below the applicable RAL or PTW threshold. Specific details regarding the sampling program (e.g., sample location, depth, step out core installation procedures, archiving procedures) shall be presented in project plans and subject to EPA approval. Sediment samples will be analyzed for the parameters listed in **Tables 2 and 3**. It should be noted that the preliminary remedial design characterization described above may need to be supplemented with SMA-specific data collection and evaluations for the purpose of developing dredge prisms and/or sediment cap design.

4 Baseline Monitoring

Baseline monitoring will be used to establish baseline conditions prior to the commencement of remedial activities and evaluate the trajectory of natural recovery processes over time.

4.1 Problem Definition

The establishment of baseline conditions is required for evaluating progress toward achieving the RAOs for the Site during long-term monitoring.

Much of the RI data was collected approximately 10 years ago. Since that time, natural recovery processes have occurred and a series of upstream and source control cleanup actions have taken place. Updated contaminant concentrations are needed in surface sediment, biota tissue, surface water, and sediment being transported through the system to establish baseline conditions and for comparison to long-term monitoring results. In addition, updated biota tissue data are needed to support the development of updated fish consumption advisories.

Baseline data are needed within the Site, and for the Upriver and Downtown reaches to support the evaluation of remedy effectiveness. Background-based sediment cleanup levels were established for some COCs in the ROD. Surface sediment data collected in the Upriver and Downtown reaches will be used to evaluate recontamination potential and support the evaluation of remedy effectiveness. Background based surface water cleanup levels and fish tissue target levels were not established in the ROD due to the lack of data available to statistically estimate background concentrations for these media. Monitoring of surface water in the Upriver Reach is required to support the evaluation of whether surface water cleanup levels based on ARARs are achievable within a reasonable timeframe. Similarly, monitoring of biota tissue in the Upriver Reach is required to determine whether the fish tissue target levels are achievable within a reasonable timeframe.

4.2 Baseline Monitoring Objectives

The objectives of baseline monitoring include the following:

- Establish baseline conditions for evaluating remedy performance toward achieving RAOs
- Provide baseline data for evaluating the trend and effectiveness of natural recovery in MNR areas
- Provide baseline data for evaluating the effectiveness of source control measures
- Provide baseline data for evaluating downstream migration of Site COCs
- Evaluate contaminant transport into and from the Downtown Reach for evaluating remedy performance
- Support development of appropriate and effective institutional controls (ICs) for fish consumption
- Develop estimates of background biota tissue and surface water to support the evaluation of remedy performance

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- Support performance of a statistically valid equivalency evaluation and comparisons at the specified scales

4.3 Baseline Monitoring Boundaries

The boundaries of the study will extend from RM 28.4 (just upstream of Willamette Falls) to RM 1.9 just upstream of the confluence of the Willamette and Columbia Rivers. Sampling efforts are proposed in four areas:

- Site (RM 1.9 to 11.8). This area encompasses the Superfund site and includes the areas specified for active remediation or natural recovery.
- Downtown Reach (RM 11.8 to RM 16.6). This reach, directly upstream from the site, includes a series of ongoing and planned sediment and upland source remediation activities. It has a higher level of contamination than the Upriver Reach. and immediate proximity to the site.
- Upriver Reach (RM 16.6 to 28.4). This area is upstream of the Downtown Reach and extends to just upstream of Willamette Falls. The contaminant concentrations in this area more closely represent those areas not impacted by point sources undergoing remediation.
- Downstream Reach (RM 0 – 1.9). Downstream monitoring will focus on monitoring of surface water and sediment traps at RM 1.9 and the upper portion of Multnomah Channel and the collection of osprey eggs from nests downstream of the Site.

4.4 Baseline Monitoring Data Collection

This section describes data collection activities and analytical requirements for characterization of surface sediment, surface water, sediment traps, fish and shellfish tissue, and other biota. A summary of the baseline monitoring approach, including analytes, is shown on **Table 2**. Sample and/or transect locations for bedded sediment, surface water, and sediment traps are shown on **Figures 2, 3, and 4**, respectively. Sample locations for biota tissue are shown on **Figure 5.**

4.4.1 Surface Sediment

Surface sediment monitoring will be performed using sampling procedures consistent with those utilized during the RI (Integral 2004). Surface sediments will be collected from the 0- to 30- cm depth interval. The 0- to 30-cm surface sediment interval, or upper 12 inches, was used in the RI to represent an appropriate interval for monitoring surface sediments based on the expected depth physical and biological processes in the sediment bed. In the absence of site-specific information regarding the depth of the biotic zone, the depth of the biotic zone is expected to range between 15 and 35 cm in lotic environments (USEPA 2016). In addition, the 0- 30-cm depth interval is consistent with the majority of surface sediment data collected at the Site during the RI and used to support the baseline human health and ecological risk assessments. Each sediment sample submitted for analysis shall be comprised of a three-point composite to increase the statistical power of the baseline and long-term monitoring program.

Surface sediments will be collected with a Ponar grab Eckman dredge, power grab or similar sampling device and analyzed for sediment COCs specified in **ROD Table 17**. The required number of surface sediment samples was developed based on an evaluation of expected declines in surface sediment concentrations associated with the selected remedy, the variability in the existing surface sediment data set, and the spatial scale of the monitoring program (see **Appendix A**). Surface sediment transects will

be used to facilitate sampling locations. The transects are 0.2 miles apart between RM 1.9 to 11.8 and shown on **Figure 2.**

Eight samples will be collected from each transect, with the exception of Swan Island Lagoon where four samples will be collected from each transect. Two surface sediment samples each will be collected from the International Slip and Fire Boat Cove. For each transect in the Willamette River, three samples will be collected from the left bank sediment shelf, three samples will be collected from the right bank sediment shelf, and two samples will be collected from within the navigation channel. Sample locations depicted on **Figure 2** are for illustrative purposes only; specific sampling locations will be identified by the performing parties in the applicable sampling and work plans.

4.4.2 Surface Water

Consistent with RI sampling methods (Integral 2006), baseline surface water sampling will use hydrophobic polyaromatic resin (XAD) high volume samplers and a peristaltic pump for grab samples. As shown on **Figure 3** and **Table 2**, surface water samples will be collected at five transects:

- RM 16.5 between Upriver and Downtown reaches
- RM 11.8 between the Downtown Reach and the Site
- RM 6 near the mid-point of the Site
- RM 1.9 between the Site and the Downstream Reach
- Upper portion of Multnomah Channel

Each transect will have three sample locations: east-channel, mid-channel, and west-channel. At each sample location, single-point near bottom samples and single-point near surface samples will be collected using XAD high volume samplers and a peristaltic pump for grab samples.

Surface water samples will be monitored quarterly over a 12-month period, for a total of four rounds of samples during this period. One of the four events shall be representative of early fall low flow conditions, and one of the four sampling events shall be representative of winter high flow conditions. The sampling is not designed to capture extreme events but rather seasonal low flow (less than 10,000 cubic feet per second [cfs]) and high flow (greater than 50,000 cfs) conditions that occur on an annual basis.

Surface water will be analyzed for the surface water COCs specified in **ROD Table 17**. Surface water grab samples collected with a peristaltic pump will be analyzed for conventional analytes, total and dissolved metals, and semi-volatile organic compounds (SVOCs). XAD high-volume samples will be analyzed by high-resolution gas chromatography/high-resolution mass spectrometry for PCB congeners, polychlorinated dibenzo-p-dioxin/furans, organochlorine pesticides, phthalate esters, and polycyclic aromatic hydrocarbons (PAHs). Samples will include total and dissolved constituents. Detection limits must be sufficient to demonstrate compliance with the surface water cleanup levels specified in **ROD Table 17**.

Additionally, semipermeable membrane device (SPMD) samplers will be deployed at the RM 11.8, RM 6, and RM 1.9 transects during one quarterly monitoring event to provide time-integrated, freely dissolved water COC concentrations. These data will provide a second line of evidence and depict a longer term

COC concentration (instead of a single point in time). At the RM 11.8-, 6-, and 1.9-transects, SPMD samplers will be deployed in triplicate with the sediment trap samplers (two locations per transect as described below) for a total of 6 SMPDs per transect or 18 SPMDs total. The samplers will be deployed for approximately one month during the low-flow quarterly monitoring period. The SPMDs will be analyzed for pesticides, PCBs, PAHs, and dioxin/furans. Following each sampling event, SPMD monitoring results will be evaluated to determine whether the SPMD monitoring program should be adjusted.

4.4.3 Sediment Traps

Sediment traps will be deployed on an annual basis and monitored quarterly, using sampling procedures consistent with the RI (Anchor QEA 2006), to characterize baseline conditions of sediment movement into, within, and out of the Site. As shown on **Figure 4** and **Table 2**, sediment traps will be deployed at five transects:

- RM 16.5 between Upriver and Downtown reaches
- RM 11.8 between the Downtown Reach and the Site
- RM 6 near the mid-point of the Site
- RM 1.9 between the Site and the Downstream Reach
- Upper portion of Multnomah Channel

These transect locations are the same as those identified for surface water sampling. Each transect will have two sediment trap sampling locations: east-channel and west-channel.

Sediment traps will be deployed for 3-month intervals to collect quarterly data over a 12-month period. Collected sediment will be analyzed for sediment COCs specified in **ROD Table 17**, total organic carbon (TOC), and grain size.

Sediment traps will be constructed using polyvinyl chloride pipe or similar material and have sufficient sample capacity for the required laboratory analyses. The sediment trap inlet will be perpendicular to the sediment floor and approximately 3 feet above the mudline.

4.4.4 Biota Tissue

Biota tissue will be monitored using sampling procedures consistent with those utilized during the various tissue monitoring events conducted at the Portland Harbor Site as part of the RI, including Round 1, Round 3B, and the 2011/2012 RI (Striplin Environmental Associates [SEA] 2002a; SEA 2002b; Oregon Department of Human Services [ODHS], EPA, and Agency for Toxic Substances and Disease Registry [ATSDR] 2003; Integral 2007a; Integral 2007b; Windward Environmental 2007; U.S. Geological Survey [USGS] 2009; and GSI Environmental 2011). To be consistent with previous tissue sampling efforts, sampling will take place between August 1 and October 31.

Biota tissue monitoring will be used to evaluate progress toward achieving the target tissue levels specified in **ROD Table 17**. This will include PCB congeners, dioxins and furans, metals, PAHs, organochlorine pesticides, phenols, PBDEs, and SVOCs, as shown in **Table 3.** Because fish readily metabolize PAHs, only shellfish (clams and crayfish) will be analyzed for PAHs. Species to be monitored include smallmouth bass, carp, crayfish, clams, and osprey. These species were selected to monitor

progress toward achieving RAOs 2 and 6 on both a Site-wide and SDU/RM scale. These species were selected based on the results of the human health and ecological risk assessments and due to their likelihood of being consumed, relative abundance, ease of capture, contaminant levels, and biological characteristics (including home range).

4.4.4.1 Smallmouth Bass

Smallmouth bass (*Micropterus dolomieu*) is a key species for human health risk assessment and can act as a surrogate for other species. Methods similar to smallmouth bass sampling conducted by in 2011 and 2012 For smallmouth bass tissue, samples will be collected using a standard rod and reel or equivalent method. Fish will have a target size of 225 to 355 millimeters (mm) and may be of either sex. To obtain data that can be used to evaluate progress toward achieving RAOs 2 and 6, fillet and offal (the remainder of the carcass after filleting) will be analyzed. From those data, a whole body (reconstituted) value will be derived.

Smallmouth bass samples will be collected from the Upriver and Downtown reaches and within the Site, (see **Table 2**). Within the Site, individual smallmouth bass will be collected on a river mile basis from each river bank. Within the Downtown Reach, 15 fish will be collected from each side of the river bank. Within the Upriver Reach, fish would optimally be collected from locations throughout the reach to meet the needed number of samples. Each fish will comprise one sample (no compositing). As shown in **Table 2**, the number of samples from each reach should include:

- Upriver Reach – 20 samples collected throughout reach
- Downtown Reach – 30 samples (15 from each side)
- Site – 100 samples (15 samples from each side every 3.3 miles and 10 from Swan Island Lagoon)

Sample locations at the Site may correspond to those collected during the RI.

4.4.4.2 Carp

Carp are bottom feeder fish with a high lipid content. Carp represent a key species for the human health risk assessment and were found to contain the highest levels of PCBs of any species tested at the Site (USEPA 2016). Carp represent a second trophic level of fish to evaluate remedy effectiveness, attainment of RAOs, and the carp contaminant data will be used to inform the meal recommendations in a fish advisory. Carp will be collected using boat electrofishing, backpack electrofishing or angling. To be consistent with the RI data set, the target total length range for carp is 508 to 677 mm. To obtain data that can be used to evaluate progress toward achieving RAOs 2 and 6, fillet and offal (the remainder of the carcass after filleting) will be analyzed.

Since it is believed that carp have a relatively large home range, carp will be collected every 3.3 miles within the Site from both sides of the river (including Swan Island Lagoon) and from throughout the Upriver and Downtown reaches. Consistent with the RI sampling methods, five 3-fish composite carp samples will be collected from each reach. As shown in **Table 2**, the number of samples from each reach should include:

- Upriver Reach – 5 samples (Five 3-fish composites throughout reach)
- Downtown Reach – 5 samples (Five 3-fish composite samples throughout reach)

- Site – 15 samples (Five 3-fish composite samples every 3.3 miles, including from Swan Island Lagoon)

4.4.4.3 Crayfish

Crayfish were evaluated in the baseline human health risk assessment and are likely consumed by humans within Portland Harbor. Although there is no evidence that crayfish are currently harvested commercially, information from Oregon Department of Fish and Wildlife indicated that an average of 4,300 pounds of crayfish were harvested commercially from the portion of the Willamette River within Multnomah County each of the five years from 1997 to 2001 (Kennedy/Jenks Consultants 2013). Crayfish are also consumed by numerous fish wildlife species within Portland Harbor (Windward, 2013). Crayfish will be monitored to assess progress toward achieving RAOs 2 (human health crayfish consumption) and RAO 6 (ecological prey consumption).

Crayfish will be collected on a composite basis using crayfish traps. A minimum of 300 grams (g) will be targeted for each sample (approximately 12 individual crayfish per composite) with a minimum size of 100 mm for each individual. Crayfish will be collected only within the Site. Samples will be collected from approximately the same locations as they were sampled during the RI. Target sample locations are shown on **Figure 5**.

As shown on **Table 2**, composite crayfish samples will be collected within the Site reach only and should include:

- Fourteen west side of Site
- Thirteen east side of Site
- Two from Swan Island Lagoon

Composite crayfish samples will be analyzed for all fish tissue COCs presented in **ROD Table 17**.

4.4.4.4 Clams

Clams are an important component of the benthic invertebrate community and are consumed by humans (Kennedy/Jenks Consultants, 2013) and many fish and wildlife species (Windward Environmental, 2013). The widespread distribution and abundance of the Asiatic clam (*Corbicula fluminea*) in the Lower Willamette River makes it a useful species for environmental monitoring and investigations of environmental quality. Clams will be monitored to assess progress toward achieving RAOs 2 (human health clam consumption) and RAO 6 (ecological prey consumption). Clam tissue may also be compared to tissue residue values used in the baseline ecological risk assessment to evaluate progress toward achieving RAO 5 (reduce benthic risk).

Clam tissue samples will be collected only within the Site reach. Samples may be collected at approximately the same locations as the RI Round 1 and Round 3 sample locations, as shown on **Figure 5**. At each sampling station, clams will be collected from an area of up to 3,500 square meters (m^2) (approximately 37,600 square feet [ft^2]). Clam stations will be determined in consultation with EPA during a reconnaissance survey of potential clam habitat. All clams collected at a station will be composited into one tissue sample. A minimum of 50 g of soft tissue will be targeted for each station. Samples will be depurated prior to analysis. As shown on **Table 2**, composite clam samples are to be collected within the Site reach only and should include:

- Nineteen west side of Site
- Seventeen east side of Site
- Four from Swan Island Lagoon

Composite clam samples will be analyzed for all fish tissue COCs presented in **ROD Table 17**.

4.4.5 Osprey Eggs

The osprey is of interest because it occupies a unique ecological niche and has been observed nesting and foraging throughout the Willamette River and its tributaries. Osprey feed almost exclusively on fish and have relatively small home ranges while nesting. Osprey are present from March until September, with several breeding pairs nesting in or near the Site. The collection of osprey eggs is needed for predator/prey evaluation to assess if the remedy can achieve RAO 6.

As was done during the RI, osprey eggs likely will be collected by USGS and the U.S. Fish and Wildlife Service (USFWS). The number of osprey eggs to be collected for baseline monitoring includes:

- Upriver Reach – Five osprey eggs
- Site – Five osprey eggs
- Downstream of Site – Five osprey eggs

Actual sample locations will be determined following reconnaissance surveys of osprey nesting sites. To replicate sampling conducted during the RI, eggs representative of the Upriver Reach may be collected along the Willamette River near Salem. Per the sampling approach summarized on **Table 2**, osprey egg sample collection will be consistent with the RI sampling scheme. Osprey egg samples will be analyzed for pesticides, PBDEs, PCBs and dioxin/furans as shown on **Table 3**.

5 Long-Term Monitoring

Long-term monitoring will be used to monitor the progress of the remedy toward achieving the RAOs established in the ROD through comparison to cleanup levels and target tissue levels provided in **ROD Table 17**. Long-term sediment and fish tissue monitoring data will be evaluated statistically to estimate the decay rate and determine whether COC reductions are occurring as expected. Due to the smaller sample numbers, trends in surface water, sediment trap, and osprey egg data will be evaluated on a qualitative or semi-quantitative basis to evaluate long-term remedy effectiveness.

5.1 Problem Definition

Long-term monitoring is required to evaluate progress toward achieving RAOs established for the Site, the effectiveness of MNR, and the effectiveness of source control measures and to support the 5-year review process.

5.2 Long-Term Monitoring Objectives

The objectives of long-term monitoring include the following:

- Evaluate remedy performance toward achieving RAOs on a Site-wide and reach-specific basis
- Evaluate the effectiveness of MNR
- Evaluate the effectiveness of source control measures
- Evaluate the effectiveness of remedial measures in the Downtown Reach
- Support the 5-year review process
- Support fish consumption advisory program

5.3 Long-Term Monitoring Boundaries

Sample locations and monitoring boundaries selected for baseline monitoring will be utilized for long-term monitoring (see Section 4.3).

5.4 Long-Term Monitoring Data Collection

Long-term monitoring will focus on the characterization of surface sediment, surface water, sediment trap samples, fish and shellfish tissue, and other biota (i.e., osprey eggs). To the extent possible, data should be collected in a manner that is consistent with the baseline sampling effort and prior long-term sampling events, once performed, to ensure valid comparisons over time. A summary of the long-term monitoring approach, including analytes, is shown on **Table 2**.

The first long-term monitoring event will commence 2 years after the start of the initial baseline monitoring event to provide a second data set for Site-wide natural recovery monitoring prior to significant construction. The second long-term monitoring event will commence 5 years after the initial baseline monitoring event to provide a third data set needed for the 5-year review evaluation. Subsequent long-term monitoring events will continue every 5 years thereafter during construction. Following construction, samples will again be taken during the final year of construction, 2 years after; and 5 years after completion, before resuming sampling at 5 year intervals. Each long-term monitoring event will duplicate the activities conducted under the baseline monitoring event.

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5.4.1 Surface Sediment

Long-term monitoring of surface sediment will duplicate the surface sediment sampling and analysis efforts described for baseline monitoring such that samples will be collected along transects advanced every 0.2 mile from RM 1.9 to 11.8. Sample types, numbers, and analysis will be the same as described in Section 4.4.1. Sample location transects shown on **Figure 2** will be shifted 0.1 mile upstream for the first long-term monitoring event and then shifted back downstream 0.1 mile during the next long-term monitoring event. The shifting the sample location transects upstream or downstream 0.1 mile for each long-term monitoring event will more fully sample the Site and eliminate potential sampling bias from the initial sampling locations.

As described in Section 4.4.1, surface sediments will be collected from the 0- 30-cm depth interval and analyzed for sediment COCs specified in **ROD Table 17**. The required number of surface sediment samples was developed based on an evaluation of expected declines in surface sediment concentrations associated with the selected remedy, the variability in the existing surface sediment data set, and the spatial scale of the monitoring program (see Appendix A). Long-term monitoring data will be evaluated on a Site-wide, segment (3.3 miles), and river mile basis. A statistical evaluation will be performed to estimate the decline in COC sediment concentrations and to estimate the uncertainty in these estimates based the statistical power of the analysis relative to the sample numbers. The data will also be used to support the equivalency analysis described in Section 2.4.

5.4.2 Surface Water

Long-term monitoring of surface water will duplicate the surface water sampling and analysis efforts described for baseline monitoring. Sample types, numbers, locations and analysis will be the same as described in Section 4.4.2. As described in Section 4.4.2, surface water will be collected using XAD high volume samplers and grab samplers to monitor reductions of surface water concentrations and progress toward achieving RAOs 3 and 7 on a Site-wide and transect-specific basis. As further described in Section 4.4.2, SPMD samplers will be deployed at the RM 11.8, RM 6, and RM 1.9 transects during one quarter of each annual surface water monitoring event to provide time-integrated, freely dissolved water COC concentrations.

Similar to the baseline monitoring program, surface water samples will be monitored quarterly over a 12-month period, for a total of four rounds of samples during this period. One of the four events shall be representative of early fall low flow conditions, and one of the four sampling events shall be representative of winter high flow conditions. The sampling is not designed to capture extreme events but rather seasonal low flow (less than 10,000 cfs) and high flow (greater than 50,000 cfs) conditions that occur on an annual basis. In addition to regular surface water monitoring, an additional round (or rounds) of surface water sampling may be required in the event of an abnormally high flow event (e.g., 100-year flood event).

Surface water will be analyzed for the surface water COCs specified in **ROD Table 17**. Due to the limited number of surface water sample locations and the temporal component of the surface water monitoring program, surface water data collected during the long-term monitoring program will be used to evaluate progress toward achieving RAOs 3 and 4 on a qualitative or semi-quantitative basis.

5.4.3 Sediment Traps

Long-term monitoring of sediment traps will duplicate the sediment trap deployment and monitoring efforts described for baseline monitoring. Sample types, numbers, locations, and analysis will be the same as described in Section 4.4.3. As described in Section 4.4.3, sediment traps will be monitored quarterly over a 12-month period during each long-term monitoring event to assess changes in contaminated sediment load associated with implementation of the Portland Harbor Remedy on a Site-wide and transect-specific basis.

Due to the limited number of sediment trap locations and the temporal component of the sediment trap monitoring program, sediment trap data collected during the long-term monitoring program will be evaluated over time to assess spatial and temporal trends indicative of remedy effectiveness at decreasing contaminant load within and exiting the site.

5.4.4 Fish and Shellfish Tissue

Long-term fish tissue monitoring will duplicate the sampling and analysis efforts described for baseline monitoring. Sample types, numbers, locations, and analysis will be the same as described in Section 4.4.4. Fish and shellfish tissue will be collected to monitor reductions in tissue concentrations and progress toward achieving RAOs 2 and 6 on a Site-wide and reach-specific basis. Fish and shellfish tissue will be analyzed for the fish tissue COCs specified in **ROD Table 17**. This will include PCB congeners, dioxins and furans, metals, PAHs, organochlorine pesticides, phenols, PBDEs, and SVOCs, as shown in **Table 3.** Because fish readily metabolize PAHs, only shellfish (clams and crayfish) will be analyzed for PAHs. A statistical evaluation will be performed to estimate the decline in COC fish and shellfish tissue concentrations and to estimate the uncertainty in these estimates based on the statistical power of the analysis relative to the sample numbers.

5.4.5 Osprey Eggs

Long-term monitoring of osprey eggs will duplicate the sampling and analysis efforts described for baseline monitoring. Sample types, numbers, locations, and analysis will be the same as described in Section 4.4.5. Due to the limited number of osprey eggs collected during each long-term monitoring event, changes in osprey egg concentrations will be evaluated on a qualitative or semi-quantitative basis in the context of historical osprey egg data collected from the region.

5.5 Data Evaluation

Data collected during the long-term monitoring program will be evaluated on a Site-wide, segment (3.3 miles), and river mile basis as appropriate based on sampling media to assess progress towards attaining RAOs through a comparison to cleanup and target tissue levels specified in the Portland Harbor ROD.

Evaluation of long-term monitoring will be evaluated against baseline monitoring data using statistical procedures. These statistical procedures will take on the traditional null hypothesis framework that considers the statistical power of the analysis based on sample numbers. In addition, it is expected that long-term monitoring data for all media will be fit to first order decay functions to estimate post-remedial recovery rates.

Since areas upstream of the Site can have sediment concentrations that exceed risk-based cleanup levels and can be a source of COC contamination associated with incoming sediments, site data will also be compared with sediment, surface water, and biota data collected from areas upstream of the Site

using an equivalence analysis (McDonald and Erickson 1994). This type of evaluation assesses whether the Site data are statistically equivalent to upstream data. The purpose of the equivalency evaluation is to determine whether Site concentrations are approaching Upriver Reach or Downtown Reach levels and evaluate whether the remedy is functioning as intended.

After the Selected Remedy is implemented (and natural recovery occurs), Site and upstream concentrations are expected to converge and be similar (equivalent). This convergence will be evaluated by estimating the ratio of the Site geometric mean to the Upriver and Downtown reaches geometric mean. Equivalence will be established when the upper 90% confidence limit for this ratio is no more than 1.5. Data from the Upriver and Downtown reaches will be collected synoptically with Site data and evaluated against Site data on a Site-wide, segment (3.3 miles), and river mile basis. The equivalency evaluation will consider the statistical power of the analysis based on the sample numbers.

6 Anadromous and Migratory Fish Tissue Monitoring

Monitoring of anadromous and migratory fish tissue will be used in conjunction with resident fish tissue monitoring to support the evaluation of the tribal fish consumption exposure scenario. Monitoring of anadromous and migratory fish tissue will be conducted consistent with the previous multi-agency monitoring effort (ODHS, EPA, and ATSDR 2003).

6.1 Problem Definition

Lamprey, salmon, and sturgeon have traditionally represented a substantial portion of the fish diet of tribal members. Therefore, monitoring of these species is required to evaluate the tribal fish consumption exposure scenario as part of the 5-year review process. Consistent with the RI, exposures to tribal fishers will be evaluated, assuming direct contact with contaminants in sediment and via fish consumption.

Anadromous and migratory fish spend only a portion of their life cycles within the Site. Adult salmon use the Site primarily during migration, whereas sturgeon may spend more of their lives within the Site. Lamprey ammocoetes drift downstream after hatching during high flow events to areas of low velocity and fine substrates where they burrow, grow, and live as filter feeders for 3 to 7 years. Metamorphosis to the juvenile stage occurs over several months before the lamprey migrate to the ocean where they reside for 1 to 3 years (USFWS 2008). As a result, contaminant concentrations in these species may not solely reflect sediment concentrations within the Portland Harbor Site. However, tribal consumption rates of anadromous species account for approximately 50 percent of total intake, as determined during the RI. Therefore, fish consumption will be evaluated during the 5-year review process, assuming a multi-species diet consisting of anadromous and resident fish species on a Site-wide basis for consistency with the RI.

6.2 Monitoring Objectives

The objectives of anadromous and migratory fish tissue monitoring include the following:

- Monitor tissue levels in anadromous and migratory fish to develop a comprehensive characterization of harvested fish for the fish consumption advisory effort.
- Provide information to the community about the risks associated with consuming these species. Fish advisories will distinguish between anadromous species (e.g., lamprey, salmon, and sturgeon) and resident species (e.g., smallmouth bass and carp).
- Support the 5-year review process for assessment of remedy performance and protectiveness of the remedy.

6.3 Monitoring Methods

Previous sampling of anadromous and migratory fish was conducted under a cooperative effort between the Oregon Department of Human Services, Agency for Toxic Substances and Disease Registry, Oregon Department of Fish and Wildlife, the City of Portland, Tribes, and EPA. To the extent feasible, the previous sample locations and methods will be duplicated, as described below.

6.3.1 Chinook Salmon

Consistent with previous sampling, adult Chinook salmon (*Oncorhynchus tshawytscha*) will be collected from the Clackamas fish hatchery. Sample collection will target adult Chinook salmon greater than 24 inches in length to be consistent with fishing regulations. A total of 15 individual fish will be collected. Fillet with skin samples will be analyzed for pesticides, PBDEs, PCBs and dioxin/furans as shown on **Table 3**.

6.3.2 Pacific Lamprey

Consistent with previous sampling, adult Pacific lamprey (*Entosphenus tridentatus*) will be collected at Willamette Falls, in coordination with tribal fishing activities. A total of 10 individual fish will be collected. The target length for the lamprey individuals is 15 to 25 inches. Whole body samples will be analyzed for pesticides, PBDEs, PCBs and dioxin/furans as shown on **Table 3**.

6.3.3 White Sturgeon

Consistent with previous sampling, adult white sturgeon (*Acipenser transmontanus*) will be collected from the Site using a standard rod and reel or equivalent method. Five individual fish will be collected between RMs 3.5 and 9.2. The target length for fish collected should range from 42 to 60 inches to be consistent with the sturgeon collection effort conducted for the RI. Fillet samples without skin will be analyzed for pesticides, PBDEs, PCBs and dioxin/furans as shown on **Table 3**.

6.4 Temporal Approach

Monitoring of anadromous and migratory fish tissue will be conducted post-construction to evaluate if fish tissue concentrations have changed relative to data collected during the RI. Special consideration regarding the timing of the anadromous and migratory fish monitoring program will be based on the migratory habits of these species. The frequency for subsequent long-term monitoring of anadromous and migratory fish tissue will be determined following review of the post-construction and RI fish tissue data.

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Tables

ROD Table 17. Summary of Cleanup Levels or Targets by Media

	Surface Water (1)			Groundwater (2)			River Bank Soil/Sediment (3)			Fish Tissue (4)		
Contaminant	**Unit**	**Conc.**	**Basis**	**Unit**	**Conc.**	**Basis**	**Unit**	**Conc.**	**Basis**	**Unit**	**Conc.**	**Basis**
Aldrin	µg/L	0.00000077	A				µg/kg	2	R	µg/kg	0.06	R
Arsenic	µg/L	0.018	A	µg/L	0.018	A	mg/kg	3	B	mg/kg	0.001	R
Benzene				µg/L	0.44	A						
BEHP	µg/L	0.2	A				µg/kg	135	R	µg/kg	72	R
Cadmium				µg/L	0.091	A/R(5)	mg/kg	0.51	R			
Chlordanes	µg/L	0.000081	A				µg/kg	1.4	R	µg/kg	3	R
Chlorobenzene				µg/L	64	R						
Chromium	µg/L	100	A	µg/L	11	A						
Copper	µg/L	2.74	A	µg/L	2.74	A/R	mg/kg	359	R			
Cyanide				µg/L	4	A						
DDx	µg/L	0.01	R	µg/L	0.001	A	µg/kg	6.1	R	µg/kg	3	R
DDD	µg/L	0.000031	A	µg/L	0.000031	A	µg/kg	114	R			
DDE	µg/L	0.000018	A	µg/L	0.000018	A	µg/kg	226	R			
DDT	µg/L	0.000022	A	µg/L	0.000022	A	µg/kg	246	R			
1,1-Dichloroethene				µg/L	7	A						
cis-1,2-Dichloroethene				µg/L	9.9	A						
Dieldrin							µg/kg	0.07	R	µg/kg	0.06	R
2,4-Dichlorophenoxyacetic acid				µg/L	70	A						
Ethylbenzene	µg/L	7.3	R	µg/L	7.3	R						
Hexachlorobenzene	µg/L	0.000029	A				µg/kg			µg/kg	0.6	R
Lindane							µg/kg	5	R			
Lead				µg/L	0.54	A/R	mg/kg	196	R			
Manganese				µg/L	430	R						
MCPP	µg/L	16	R									
Mercury							mg/kg	0.085	R	mg/kg	0.031	A
Pentachlorophenol	µg/L	0.03	A	µg/L	0.03	A				µg/kg	2.5	R
Perchlorate				µg/L	15	A						
PBDEs										µg/kg	26	R
PCBs	µg/L	0.0000064	A	µg/L	0.014	A/R	µg/kg	9	B	µg/kg	0.25 (6)	R
PAHs							µg/kg	23000				
cPAHs (BaP eq)	µg/L	0.00012	A	µg/L	0.00012	A	µg/kg	12 (7)	B	µg/kg	7.1	R
Acenaphthene				µg/L	23	R						
Acenaphthylene												
Anthracene				µg/L	0.73	R						
Benzo(a)anthracene	µg/L	0.0012	A	µg/L	0.0012	A						
Benzo(a)pyrene	µg/L	0.00012	A	µg/L	0.00012	A						
Benzo(b)fluoranthene	µg/L	0.0012	A	µg/L	0.0012	A						
Benzo(g,h,i)perylene												
Benzo(k)fluoranthene	µg/L	0.0013	A	µg/L	0.0013	A						
Chrysene	µg/L	0.0013	A	µg/L	0.0013	A						
Dibenz(a,h)anthracene	µg/L	0.00012	A	µg/L	0.00012	A						
Fluoranthene												
Fluorene												
Indeno(1,2,3-c,d)pyrene	µg/L	0.0012	A	µg/L	0.0012	A						
2-Methylnaphthalene												
Naphthalene	µg/L	12	R									
Phenanthrene												
Pyrene												
Dioxins/Furans (2,3,7,8-TCDD eq)	µg/L	0.0000000005	A									
1,2,3,4,7,8-HxCDF							µg/kg	0.0004	B	µg/kg	0.00008	R
1,2,3,7,8-PeCDD							µg/kg	0.0002	B	µg/kg	0.000008	R
2,3,4,7,8-PeCDF							µg/kg	0.0003	B	µg/kg	0.00003	R
2,3,7,8-TCDF							µg/kg	0.00040658	R	µg/kg	0.00008	R
2,3,7,8-TCDD							µg/kg	0.0002	B	µg/kg	0.000008	R
Tetrachloroethene				µg/L	0.24	A						
Toluene				µg/L	9.8	R						
TPH-Diesel							mg/kg	91	R			
TPH-Diesel (C10-C12 Aliphatic)				µg/L	2.6	R						
Tributyltin	µg/L	0.063	A				µg/kg	3080	R			
Trichloroethene				µg/L	0.6	A						
2,4,5-Trichlorophenol				µg/L	50	A						
Vanadium				µg/L	20	R						
Vinyl Chloride				µg/L	0.022	A						
Xylenes				µg/L	13	R						
Zinc	µg/L	36.5	R	µg/L	36.5	R	mg/kg	459	R			

Notes:
(1) Surface Water Cleanup Levels - RAOs 3 and 7
(2) Groundwater Cleanup Levels - RAOs 4 and 8
(3) Sediment Cleanup Levels - RAOs 1 and 5
(4) Fish Tissue Targets - RAOs 2 and 6
(5) A/R indicates that the ARARs-based number and the risk-based number are the same.
(6) The tissue target is a risk-based number and does not represent background levels. Additional data will be collected to determine background fish tissue concentrations for PCBs during design and construction of the Selected Remedy.
(7) The cleanup level for cPAHs of 12 µg/kg is based on direct contact with sediment and is applicable to nearshore sediment. The cleanup level applicable to sediments in the navigation channel is 3,950 µg/kg and is based on human consumption of clams.

Abbreviations:
A- ARAR-based number
ARAR - applicable or relevant and appropriate requirement
B - Background-based number
BEHP - bis(2-ethylhexyl)phthalate
BaP eq - benzo(a)pyrene equivalent
C - carbon

ROD Table 17. Summary of Cleanup Levels or Targets by Media

Abbreviations (continued):
Conc - concentration
cPAH - carcinogenic polycyclic aromatic hydrocarbon
DDD - dichlorodiphenyldichloroethane
DDE - dichlorodiphenyldichloroethene
DDT - dichlorodiphenyltrichloroethane
DDx - DDD + DDE + DDT
HxCDF - 1,2,3,7,8,9-hexachlorodibenzofuran
MCPP - 2-(4-chloro-2-methylphenoxy)propanoic acid
mg/kg - milligram per kilogram
PAH - polycyclic aromatic hydrocarbon
PBDE - polybrominated diphenyl ether
PCB - polychlorinated biphenyl
PeCDD - pentachlorodibenzo-p-dioxin
PeCDF - pentachlorodibenzofuran
R - risk-based number
RAO - remedial action objective
TCDD - 2,3,7,8-tetrachlorodibenzo-p-dioxin
TCDF - tetrachlorodibenzofurans
TPH - total petroleum hydrocarbons
µg/kg - microgram per kilogram
µg/L - microgram per liter

ROD Table 21. Sediment RALs and PTW Thresholds for Selected Remedy

Contaminants	Site Wide RALs[1]	PTW Thresholds [2]	Navigation Channel RALs
Focused COCs			
PCBs	75	200	1,000
Total PAHs [4]	13,000	NA	170,000
2,3,7,8-TCDD	0.0006	0.01	0.002
1,2,3,7,8-PeCDD	0.0008	0.01	0.003
2,3,4,7,8-PeCDF	0.2	0.2	1
DDx	160	7,050	650
Additional Contaminants			
2,3,7,8-TCDF	NA	0.6	NA
1,2,3,4,6,7,8-HxCDF	NA	0.04	NA
cPAHs (BaP Eq)	NA	106,000	NA
Chlorobenzene	NA	>320	NA
Naphthalene	NA	>140,000	NA

Notes:
1 – Site wide includes all areas of the Site except the navigation channel. FMD areas are subject to these RALs.
2 – PTW thresholds are based on highly toxic PTW values (10^{-3} risk) except chlorobenzene and naphthalene, which are threshold values for not reliably contained PTW.

Abbreviations:
BaP Eq – benzo(a)pyrene equivalent
cPAH –carcinogenic polycyclic aromatic hydrocarbon
COC – Contaminant of concern
DDx – dichlorodiphenyldichloroethane + dichlorodiphenyldichloroethene + dichlorodiphenyltrichloroethane
FMD – future maintenance dredge
HxCDF - hexachlorodibenzofuran
NA – not applicable
PAH – polycyclic aromatic hydrocarbon
PCB – polychlorinated biphenyl
PeCDD – pentachlorodibenzo-p-dioxin
PeCDF – pentachlorodibenzofuran
PTW – principal threat waste
RAL – remedial action level
TCDD – tetrachlorodibenzo-p-dioxin
TCDF – tetrachlorodibenzofuran
µg/kg – microgram per kilogram
> – greater than

Table 1. Data Collection Activities Not Included in Document

Work Phase for Data Collection	Data Collection Examples	Regulatory and Programmatic Responsibility
Upland Source Control Program	Groundwater monitoring to design and evaluate the effectiveness of groundwater-based source control measures (e.g., COC concentration, groundwater discharge rate, contaminant flux)	Oregon DEQ Source Control
	Stormwater monitoring to design and evaluate the effectiveness of stormwater-based source control measures	
	River bank characterization (e.g., COC concentration, erodibility assessment)	
	Downtown Reach effectiveness characterization	
Design Phase Data Collection	Groundwater characterization to support cap design (e.g., COC concentrations in groundwater and/or pore water, groundwater discharge rate, hydrogeologic characteristics)	EPA Remedial Design
	Detailed characterization of sediment and river bank COC concentrations	
	Waste characterization for disposal purposes	
	Site bathymetry	
	Geotechnical and physical characterization of sediment to support cap and dredge design (e.g., water content, bulk density, Atterberg limits, grain size distribution, shear strength)	
	Elutriate testing	
	Debris and infrastructure surveys	
	Shoreline and bulkhead stability	
	Characterization of hydrodynamic conditions (e.g., currents, waves, tides), including seasonal variations for flood rise and flood storage	
Construction Phase Performance/BMP Short-Term Monitoring	Water quality monitoring to measure the effectiveness of remediation BMPs	EPA Construction Monitoring
	Post remediation bathymetry surveys	
	Post-remediation sediment confirmation sampling	
Post-Construction Performance Monitoring	Monitoring to assess whether onsite habitat mitigation measures are functioning as intended	EPA Performance Monitoring
	Monitoring to assess whether compensatory mitigation measures are functioning as intended	
	Physical inspection of sediment caps to monitor cap integrity (e.g., diver and bathymetric surveys)	
	Porewater monitoring to assess whether the cap is effectively isolating contamination	
	Benthic recolonization monitoring	

Table 2. Sampling Approach Summary

Phase	Media	Sampling Method	Parameters	Depth	Sample Detail	Locations (by Reach)	Total Station Locations	Frequency	Rationale Summary
Pre-Remedial Design SMA Delineation	Surface and Subsurface Sediment	Vibracore or equivalent	Focused COCs and additional contaminants listed in ROD Table 21, NAPL identification where appropriate, TOC, grain size, and additional geotechnical parameters, as appropriate.	Parties will install sediment cores to establish the depth of contamination exceeding the applicable RALs and PTW thresholds. Sediment cores will include characterization of material beneath the contaminated sediment to confirm that the RALs and PTW thresholds were achieved. Sediment samples shall be a composite of each 30-cm (1-foot) interval to be submitted for analyses. Depth of contamination shall be bound by two consecutive composite samples of 30-cm layers with focused COCs less than RALs and PTW thresholds. Maximum core depth based on clean sediment materials, bedrock, or the limits of technology. Where the selected remedy is capping, sediment cores will be installed to a depth sufficient to characterize the material to be capped.	Laterally, sediment cores should be advanced every 150 feet on a grid pattern. Step out sediment cores shall be advanced as necessary beyond the minimum core array to delineate remedial footprints. Surface sediment samples will be collected from 0 to 30 cm below mudline. Subsurface samples within the cores will be collected based on a maximum 30-cm sampling interval for defining exceedances of RAL and PTW thresholds and characterizing the material to be left behind.	See Figure 1 More density at specific locations may be needed for remedial design and will be specified by performing parties	Estimated 1,080 to 1,470 core locations Actual number of sediment samples to be determined	One event prior to remedial design. Additional characterization may be required during remedial design.	• RI/FS sediment cores are insufficient for design of dredging/capping due to the limited number of core samples available and the age of the data. • Accurate delineation of the extent of sediment contamination exceeding RAL and PTW thresholds on an SMA basis is necessary to develop preliminary remedial footprints. • Grid spacing based on existing SMA characterization performed by RM11E group. • Analytical parameters are based on focused COCs for which RALs have been established.

Table 2. Sampling Approach Summary

Phase	Media	Sampling Method	Parameters	Depth	Sample Detail	Locations (by Reach)	Total Station Locations	Frequency	Rationale Summary
Baseline and Long-Term Monitoring	Surface Sediment	Ponar, Eckman dredge, power grab, or equivalent	Full COC set based on ROD Table 17, plus TOC and grain size at Year 0[1]. With the exception of PCBs, pesticides, dioxins/furans and PAHs, the required analytical parameter list will be re-assessed based on previous monitoring results to determine the sampling requirements for subsequent long-term monitoring events.	Surface: 0–30 cm	Site reach transects advanced every 0.2 mile, starting at RM 1.9 of the Willamette River and ending at RM 11.8. Eight sediment samples per transect (three nearshore east, two navigation channel, and three nearshore west), except for Swan Island Lagoon; four samples per transect will be collected within Swan Island Lagoon. Downtown and Upriver reaches samples (60 each) are non-transect and located to ensure a representative spatial distribution and the presence of bedded sediment. Each sediment sample submitted for analysis shall be comprised of a three-point composite.	Site: 50 transects x 8 samples per transect = 400 samples Swan Island Lagoon: 5 transects x 4 samples per transect = 20 samples International Slip and Fire Boat Cove: 2 samples per area = 4 samples Site total = 424 Downtown Reach = 60 samples Upriver Reach = 60 samples	Total = 544 station locations	Years 0[1], 2, 5, 10, and every 5 years thereafter until cleanup levels are achieved. Year 2 provides a second data set prior to significant construction for natural recovery monitoring Site-wide and a third point for 5-year review evaluation. See Section 5.4. Following construction, samples will again be taken during the final year of construction, 2 years after; and 5 years after completion, before resuming sampling at 5 year intervals.	• Downtown Reach and Upriver Reach sampling included to support evaluation of remedy effectiveness by determining the equivalency of two sample populations (upstream vs. Site). • Downtown Reach and Upriver Reach will facilitate identification of ongoing sources of contamination upstream of the Site. • Site sediment data will be used to evaluate the long-term effectiveness of the remedy.

Table 2. Sampling Approach Summary

Phase	Media	Sampling Method	Parameters	Depth	Sample Detail	Locations (by Reach)	Total Station Locations	Frequency	Rationale Summary
Baseline and Long-Term Monitoring	Surface Water	XAD high volume sampling, and grab samples using a peristaltic pump, water pump, or equivalent SPMD samplers will be deployed at RM 11.8-, 6-, and 1.9-transects	Full COC set based on ROD Table 17, plus TOC and DOC at Year 0. With the exception of PCBs, pesticides, dioxins/furans and PAHs, the required analytical parameter list will be re-assessed based on previous monitoring results to determine the sampling requirements for subsequent long-term monitoring events.	Near bottom and near surface water column samples will be collected at each sample location.	Sample transects located at RM 1.9, RM 6, RM 11.8, RM 16.5, and Multnomah Channel. Three samples will be collected at each transect location. Transects will be monitored quarterly, including during fall low flow conditions and winter high flow conditions. At the RM 11.8-, 6-, and 1.9-transects, two SPMD samplers will be co-located with sediment trap samplers for comparison purposes. SPMD samplers will be deployed for approximately one month during the low-flow quarterly monitoring period. The SPMDs will be analyzed for pesticides, PCBs, PAHs, and dioxin/furans.	Boundary of Downstream and Site (RM 1.9) Multnomah Channel Mid-Site (RM 6) Boundary of Site and Downtown Reach (RM 11.8) Boundary of Downtown Reach and Upriver Reach (RM 16.5)	Three surface water sample locations per transect. Each sample location will include a near surface and a near bottom sample. Samples will include peristaltic pump and XAD high volume samplers (30 point samples total). Semipermeable membrane device (SPMD) samplers will be deployed at the RM 11.8, RM 6, and RM 1.9 transects to provide a second line of evidence that depicts a longer term COC concentration during one quarterly monitoring event. Two SPMD samples will be deployed in triplicate at the three transects (6 SMPDs per transect or 18 SPMDs total). Total = 48 samples	Year 0 - Quarterly sample events within the 1-year period. Repeated for long-term monitoring on Years 2, 5, and 10. See Section 5.4. Following construction, samples will again be taken during the final year of construction, 2 years after; and 5 years after completion, before resuming sampling at 5 year intervals.	• Surface water sampling is consistent with RI sampling scheme • Water column data will be used in conjunction with USGS flow estimates to develop COC loading estimate to evaluate changes in loading to the Site from upstream, within the Site, and from the Site to the Columbia River. • Used to compare to cleanup levels in the ROD. • Upriver and Downtown Reach transects will be used to determine if surface water quality criteria are achievable. • Evaluate changes in surface water concentrations on a Site-wide and transect-specific basis. • Downtown Reach and Upriver Reach transects will be used to support evaluation of remedy effectiveness by determining the equivalency of two sample populations (Upriver Reach and Downtown Reach vs. Site). • SPMD samples provide time-integrated, dissolved water COC concentration data for comparison to the point sampling data.

Table 2. Sampling Approach Summary

Phase	Media	Sampling Method	Parameters	Depth	Sample Detail	Locations (by Reach)	Total Station Locations	Frequency	Rationale Summary
Baseline and Long-Term Monitoring	Sediment Traps	Sediment trap capable of collecting enough sediment for sample analysis	Full COC set based on ROD Table 17, plus TOC and grain size at Year 0. With the exception of PCBs, pesticides, dioxins/furans and PAHs, the required analytical parameter list will be re-assessed based on previous monitoring results to determine the sampling requirements for subsequent long-term monitoring events.	The top of the sediment trap should be located no higher than 3 feet above the mudline.	Sediment traps shall be co-located with surface water transects. Sediment traps should be deployed for 3-month intervals to collect quarterly data over a 12-month period.	Collocated with surface water locations	5 transects with 2 sediment traps per transect Total = 10 samples	Year 0 - Deployed for 1 year. Monitored quarterly within the 1- year deployment period. Repeated for long-term monitoring on Year 2, 5, and 10. See Section 5.4. Following construction, samples will again be taken during the final year of construction, 2 years after; and 5 years after completion, before resuming sampling at 5 year intervals.	• Sediment trap data will support ROD metric for evaluation of contaminant flux and to understand the quality of the sediment moving through the Site. • Secondary line of evidence for MNR and recontamination. • Supports a semi-quantitative evaluation for increase/decrease trend. • Used to evaluate changes in sediment load associated with construction on a Site-wide basis.

Table 2. Sampling Approach Summary

Phase	Media	Sampling Method	Parameters	Depth	Sample Detail	Locations (by Reach)	Total Station Locations	Frequency	Rationale Summary
Baseline and Long-Term Monitoring	Biota	Rod/reel, trot or hand line, or similar method for fish; bass tissue processed via fillet and whole body minus filet (i.e., offal) Carp will be collected with electrofishing and/or angling	Fish tissue COCs listed on Table 17 on Year 0 and subsequent sampling events.	Not applicable	**Smallmouth Bass** Individual fish will be collected. Target approximately five fish per river mile per side based on being able to statistically determine a 10% decay rate. 15 fish every 3.3 miles per side Target size: 225–355 mm, either sex	Upriver Reach – 20 samples collected throughout reach Downtown Reach – 30 samples (15 from each side) Site – 100 samples (15 samples from each side every 3.3 miles and 10 from Swan Island Lagoon)	Total = 150 fish	Years 0, 2, 5, 10... Year 2 provides a second data set prior to significant construction for natural recovery monitoring Site-wide and a third point for 5-year review evaluation. See Section 5.4. Following construction, samples will again be taken during the final year of construction, 2 years after; and 5 years after completion, before resuming sampling at 5 year intervals. Aug 1-Oct 31 fish collection window.	• Stratification of sample locations based on exposure areas evaluated in the human health and ecological risk assessments. • Smallmouth bass is a key species for human health assessment and a surrogate for other resident species (e.g., crappie). • Carp is a key species for human health assessment and a surrogate for other resident species (e.g., bullhead). • Upriver and Downtown reaches are expected to be less variable, allowing for a reduction in the number of samples. • Fillet tissue data needed for human health risk evaluation. • Reconstructed whole body tissue data need for ecological risk evaluation, including comparison to tissue toxicity reference values and evaluation of wildlife.
					Carp Composite fish will be collected. Samples will be filleted, and separate composites will be prepared of the fillets and the remaining fish body. Target size: 508-677 mm, either sex	Upriver Reach – Five 3-fish composites throughout reach Downtown Reach – Five 3-fish composite samples throughout reach Site – 15 samples (five 3-fish composite samples every 3.3 miles, including from Swan Island Lagoon)	Total = 25 composite samples (three fish per composite)		

Table 2. Sampling Approach Summary

Phase	Media	Sampling Method	Parameters	Depth	Sample Detail	Locations (by Reach)	Total Station Locations	Frequency	Rationale Summary
Baseline and Long-Term Monitoring	Biota	Benthic sledge	Fish tissue COCs listed on Table 17 on Year 0 and subsequent sampling events, except for osprey eggs which will be analyzed for pesticides, PBDEs, PCBs and dioxin/furans.	Not applicable	**Clams** Reoccupy RI sampling locations. Clam station locations determined to be identified during Site reconnaissance in consultation with EPA. All clams collected at a station will be composited to generate sufficient sample mass for chemical analysis.	Site – Reoccupy RI Stations (19 west side, 17 east side, and 4 from Swan Island Lagoon	Total = 40 composite samples	Years 0, 2, 5, 10... Year 2 provides a second data set prior to significant construction for natural recovery monitoring Site-wide and a third point for 5-year review evaluation. See Section 5.4. Following construction, samples will again be taken during the final year of construction, 2 years after; and 5 years after completion, before resuming sampling at 5 year intervals.	• Evaluated on a river mile basis in the risk assessment. • Benthic invertebrate with small home range. • Clam tissue provides the basis for human health risk-based cPAH cleanup levels.
		Crayfish traps			**Crayfish** Reoccupy RI sampling locations. Crayfish station locations determined to be identified during Site reconnaissance in consultation with EPA. All clams collected at a station will be composited to generate sufficient sample mass for chemical analysis. Target size = greater than 100 mm.	Site – Reoccupy RI Stations (14 west side, 13 east side, and 2 from Swan Island Lagoon)	Total = 29 composite samples		• Benthic invertebrate with limited home range. • Evaluated in human health risk assessment on a station-specific basis. • Crayfish are consumed by humans and a variety of wildlife species.
		Single egg collected from selected nests			**Osprey** Site reconnaissance required to identify nests for egg collection.	Upriver – 5 eggs Site – 5 eggs Downstream – 5 eggs	Total = 15 eggs		• Sample collection consistent with RI sampling scheme • Needed for RAO 6 predator/prey evaluation

Table 2. Sampling Approach Summary

Phase	Media	Sampling Method	Parameters	Depth	Sample Detail	Locations (by Reach)	Total Station Locations	Frequency	Rationale Summary
Baseline and Long-Term Monitoring	Anadromous and Migratory Fish	Rod/reel for sturgeon. Salmon will be collected from the Clackamas fish hatchery using appropriate methods. Lamprey will be collected from Willamette Falls with tribal coordination.	Pesticides, PBDEs, PCBs and dioxin/furans	Not applicable	**Chinook Salmon** – 15 fish collected from the Clackamas fish hatchery. Fillet with skin samples Target size = greater than 24 inches **Pacific Lamprey** – 10 fish collected from Willamette Falls for whole body sample Target size = 15 – 25 inches **White Sturgeon** – 5 fish collected between RM 3.5 and 9.2 for fillet without skin samples Target size = 42 – 60 inches	Chinook Salmon: Clackamas Fish Hatchery Pacific Lamprey: Willamette Falls White Sturgeon: Site (RM 3.5–RM 9.2)	Total = 30 fish	Conducted post-construction to evaluate if fish tissue concentrations have changed relative to data collected during the RI. The frequency for subsequent long-term monitoring of anadromous and migratory fish tissue will be determined following review of the post-construction and RI fish tissue data.	• Consistent with 2003 RI sampling by ODHS • Used in the human health risk assessment to evaluate effectiveness of the remedy based on the tribal fish consumption scenario.

Note(s)
1 – Year 0 is considered the baseline sampling event.

Table 3. Monitoring Plan Sample Summary

Media	Data Use	Reach	Spatial Scale	Sample Design	Sample Type	Parameters
Surface and Subsurface Sediment	Preliminary remedial design sampling to delineate the horizontal and vertical extent of contamination.	Site (RM 1.9–11.8).	SMA basis.	Sediment cores on a 150-foot interval. Step-out cores as necessary. Depth of contamination determined by two consecutive sample intervals below applicable RAL/PTW threshold.	Sediment sample composited over a 30-cm sampling interval.	Pesticides, PAHs, PCBs, and dioxins/furans.
Surface Sediment	Baseline and long-term monitoring. Evaluate progress toward achieving RAOs 1, 2, 5, and 6.	Site (RM 1.9–11.8).	Site-wide, segment (3.3 miles, one side) and river mile (1 mile, each side) basis.	Eight surface sediment (0- to 30-cm) transects every 0.2 mile. Three nearshore each side and two in navigation channel.	Three sample surface sediment composites; 0- to 30-cm depth interval.	Metals, pesticides, SVOCs, PAHs, PCBs, dioxins/furans, total petroleum hydrocarbons (TPH), and tributyltin (TBT).
Surface Sediment	Baseline and long-term monitoring. Supports equivalency analysis.	Upriver (RM 16.5–28.4) and Downtown Reach (RM 11.8–16.5).	Reach-specific basis.	30 surface sediment (0- to 30-cm) within Downtown Reach, and 20 surface sediment samples within the Upriver Reach evenly distributed.	Three sample surface sediment composites; 0- to 30-cm depth interval.	Metals, pesticides, SVOCs, PAHs, PCBs, dioxins/furans, TPH, and TBT.

Table 3. Monitoring Plan Sample Summary

Media	Data Use	Reach	Spatial Scale	Sample Design	Sample Type	Parameters
Surface Water	Baseline and long-term monitoring. Evaluate progress toward achieving RAOs 3 and 7. Estimate contaminant load entering and exiting the Site.	Upriver (RM 16.5), Downtown (RM 11.8), and Site (RM 6, RM 1.9, and Multnomah Channel).	Not applicable.	Five transects (RM 16.5, RM 11.8, RM 6, RM 1.9, and Multnomah Chanel). Near bottom and near surface samples collected from each side and the center of the channel. Four quarters of monitoring. SPMD samples will be deployed at the RM 11.8, RM 6, and RM 1.9 transects during one quarterly monitoring event per year .	XAD high volume samples and peristaltic pump grab samples. Total and dissolved fractions. Two SPMD samples will be deployed in triplicate at the RM 11.8, RM 6, and RM 1.9 (6 SMPDs per transect; 18 total).	Metals, pesticides, PAHs, PCBs, SVOCs, dioxins/furans, and TBT for XAD and grab samples. Pesticides, PCB, PAHs and dioxins/furans for SPMD samples.

Table 3. Monitoring Plan Sample Summary

Media	Data Use	Reach	Spatial Scale	Sample Design	Sample Type	Parameters
Sediment Traps	Baseline and long-term monitoring. Estimate contaminant load entering and exiting the Site.	Upriver (RM 16.5), Downtown (RM 11.8), and Site (RM 6, RM 1.9, and Multnomah Channel).	Not applicable.	Sediment traps to be collocated with surface water transects. One sediment trap to be installed on each side of the channel. Sediment traps to be deployed for 1 year and monitored quarterly.	Sediment will be collected from each trap on a quarterly basis if sufficient sediment has accumulated.	Metals, pesticides, SVOCs, PAHs, PCBs, dioxins/furans, TPH, and TBT.
Smallmouth Bass Tissue	Baseline and long-term monitoring. Evaluate progress toward achieving RAOs 2 and 6.	Site (RM 1.9–11.8).	Site-wide, segment (3.3 miles, one side) and river mile (1 mile, one side) basis.	Five individual fish collected on a river mile basis, each side. Fish will be collected using hand lines. Target size range is 225–355 mm.	Individual fish. Fillet and whole body minus fillet (offal).	Metals, pesticides, polybrominated biphenyl ethers (PBDEs), phenols, SVOCs, PCBs, and dioxins/furans.

Table 3. Monitoring Plan Sample Summary

Media	Data Use	Reach	Spatial Scale	Sample Design	Sample Type	Parameters
Smallmouth Bass Tissue	Baseline and long-term monitoring. Supports equivalency analysis.	Upriver (RM 16.5–28.4) and Downtown Reach (RM 11.8–16.5).	Reach-specific basis.	Ten individual fish samples from each reach. Within the Downtown Reach, 5 individual fish will be collected from each side of the river. Fish will be collected using hand lines. Target size range is 225–355 mm.	Individual fish. Fillet and whole body minus fillet (offal).	Metals, pesticides, PBDEs, phenols, SVOCs, PCBs, and dioxins/furans.
Carp Tissue	Baseline and long-term monitoring. Evaluate progress toward achieving RAOs 2 and 6.	Site (RM 1.9–11.8).	Segment basis (3.3 miles).	Five fish tissue composites collected within each segment. Fish will be collected using hand lines. Target size range is 508–677 mm.	Five fish composite. Fillet and whole body minus fillet (offal).	Metals, pesticides, PBDEs, phenols, SVOCs, PCBs, and dioxins/furans.
Carp Tissue	Baseline and long-term monitoring. Supports equivalency analysis.	Upriver (RM 16.5–28.4) and Downtown Reach (RM 11.8–16.5).	Reach-specific basis.	Five fish tissue composites collected within each reach. Fish will be collected using hand lines. Target size range is 508–677 mm.	Five fish composite. Fillet and whole body minus fillet (offal).	Metals, pesticides, PBDEs, phenols, SVOCs, PCBs, and dioxins/furans.

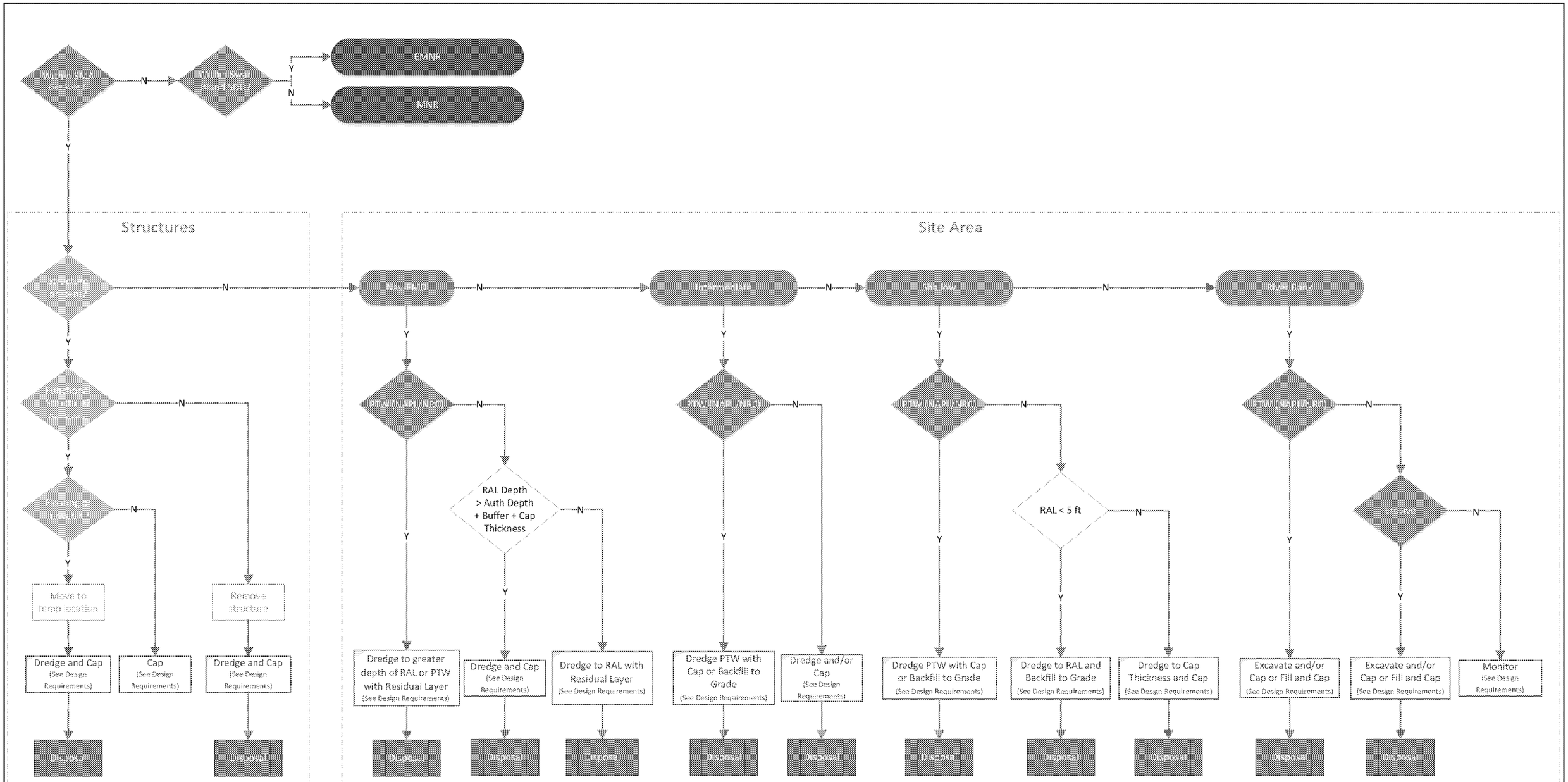
Table 3. Monitoring Plan Sample Summary

Media	Data Use	Reach	Spatial Scale	Sample Design	Sample Type	Parameters
Clam Tissue	Baseline and long-term monitoring. Evaluate progress toward achieving RAOs 2 and 6.	Site (RM 1.9–11.8).	Site-wide basis.	Reoccupy RI sample locations; 40 clam tissue composite sample locations will be targeted. Clam tissue samples will be collected using a benthic sledge. Target sample mass is 50 g from each location.	Depurated tissue composite samples without shell. The number of clams within each composite will be based on collecting sufficient tissue mass for chemical analysis.	Metals, pesticides, PBDEs, phenols, SVOCs, PAHs, PCBs, and dioxins/furans.
Crayfish Tissue	Baseline and long-term monitoring. Evaluate progress toward achieving RAOs 2 and 6.	Site (RM 1.9–11.8).	Site-wide basis.	Reoccupy RI sample locations; 29 crayfish tissue composite sample locations will be targeted. Crayfish will be collected using crayfish traps. Target size range is greater than 100 mm.	Whole body crayfish samples will be collected. The number of crayfish within each composite will be based on collecting sufficient tissue mass for chemical analysis.	Metals, pesticides, PBDEs, phenols, SVOCs, PAHs, PCBs, and dioxins/furans.
Osprey Tissue	Baseline and long-term monitoring. Evaluate progress toward achieving RAO 6.	Site (RM 1.9–11.8).	Site-wide basis.	One egg from 5 nests between RM 1.9 and 11.8. Attempt to reoccupy RI sample locations.	Whole egg.	Pesticides, PBDEs, PCBs, and dioxins/furans.

Table 3. Monitoring Plan Sample Summary

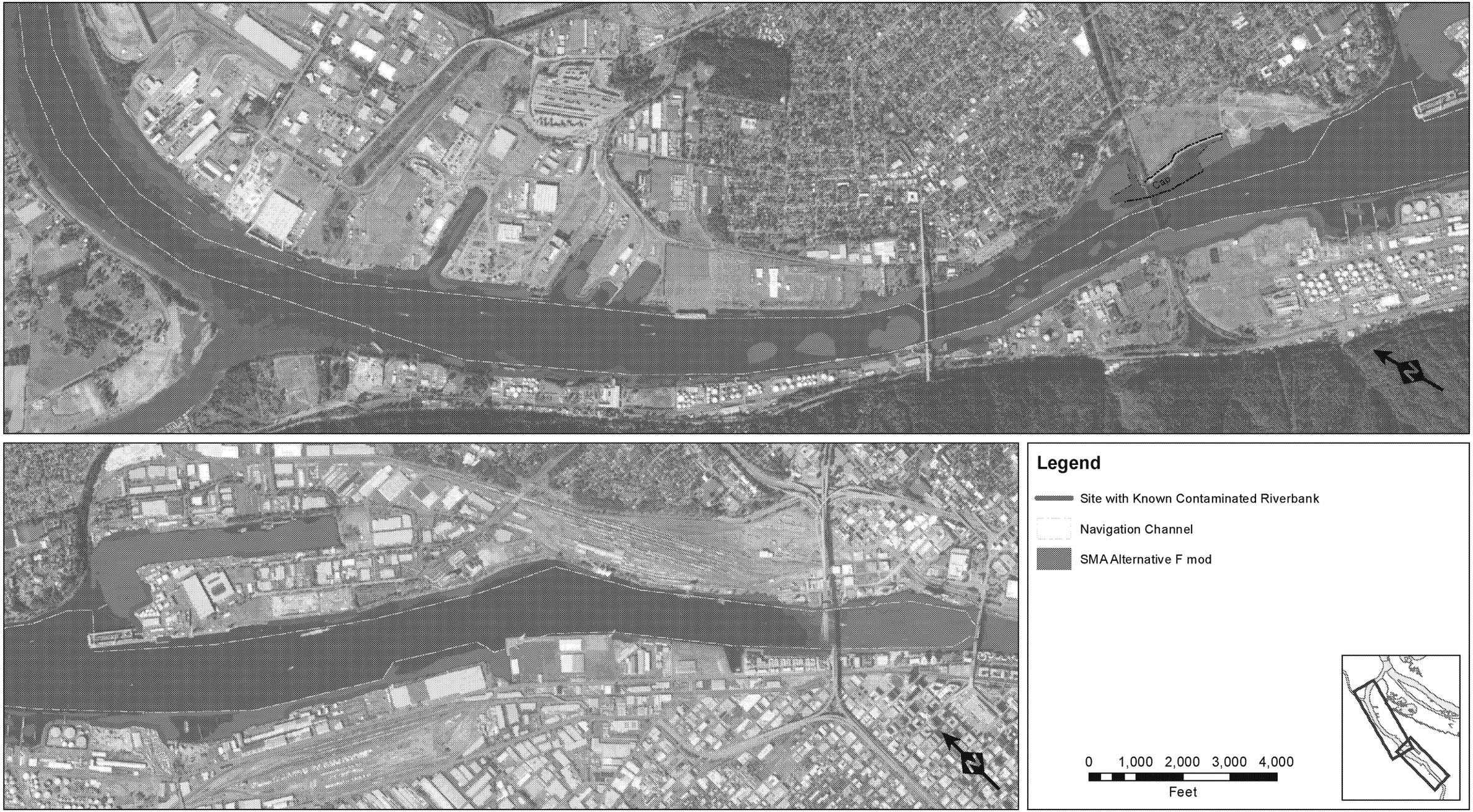
Media	Data Use	Reach	Spatial Scale	Sample Design	Sample Type	Parameters
Osprey Tissue	Baseline and long-term monitoring. Supports equivalency analysis.	Upstream and downtown stream areas.	Regional.	One egg from five nests upstream and five nests downstream of the Site.	Whole egg.	Pesticides, PBDEs, PCBs, and dioxins/furans.
Adult Pacific Lamprey Tissue	Long-term monitoring. Supports 5-year review process.	Upstream (Willamette Falls).	Regional	Collect 10 individuals from Willamette Falls; target size range is 15–25 inches.	Whole body tissue sample.	Pesticides, PBDEs, PCBs, and dioxins/furans.
Adult Chinook Salmon Tissue	Long-term monitoring. Supports 5-year review process.	Upstream (Clackamas River Fish Hatchery).	Regional.	Collect 15 individuals from Clackamas Fish Hatchery. Target size range is greater than 24 inches.	Fillet with skin samples will be analyzed.	Pesticides, PBDEs, PCBs, and dioxins/furans.
Pre-Breeding White Sturgeon Tissue	Long-term monitoring. Supports 5-year review process.	Site (RM 3.5–9.2).	Regional.	Collect five individuals. Target size range is 42–60 inches.	Fillet with skin samples will be analyzed.	Pesticides, PBDEs, PCBs, and dioxins/furans.

Figures



Notes:
(1) Contamination is defined in three dimensions.
(2) Currently operating or used to stabilize bank. Service life > 50 yrs.

ROD Figure 28. Technology Application Decision Tree
Portland Harbor Superfund Site



Source Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

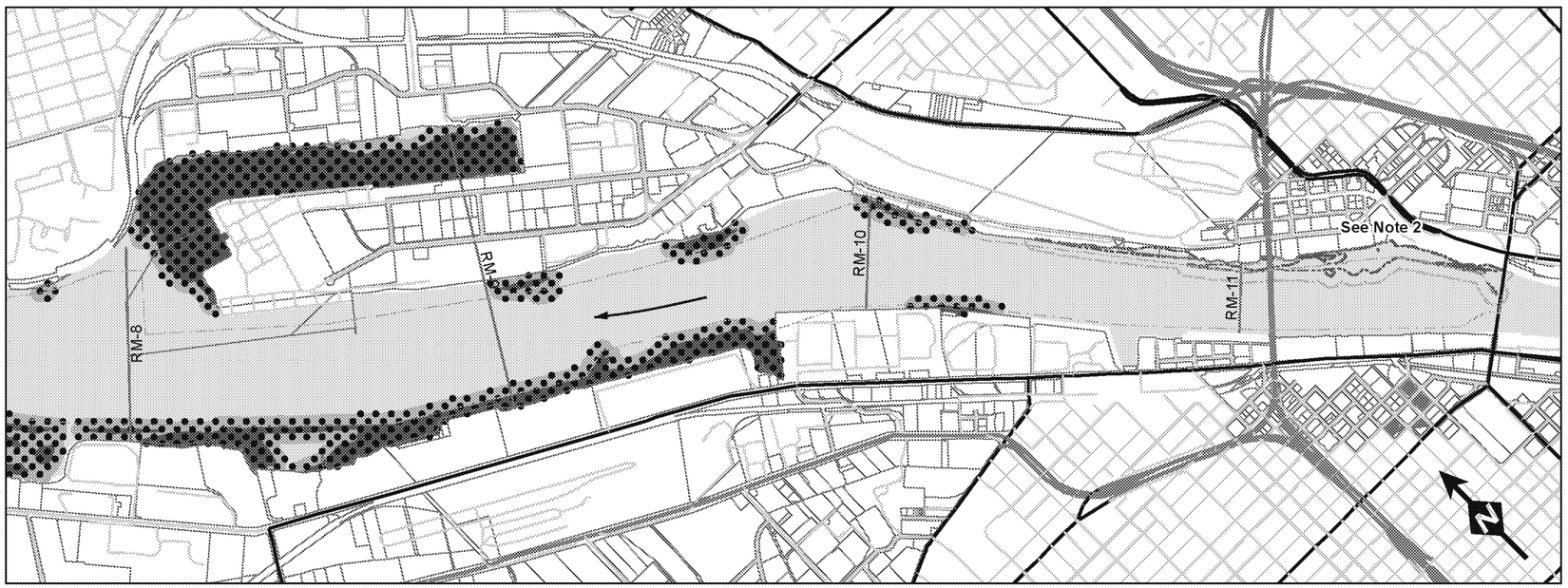
ROD Figure 30. Sediment Mangement Areas, Selected Remedy

Portland Harbor Superfund Site

Source: Portland Harbor Record of Decision, Figure 30

Path: E:_Projects\Portland Harbor\GIS\MapDocuments\Remedial Design\Figure-4-1_Selected-Remedy-Site-Wide.mxd, Created by: MLF

Date: 4/13/2017



Legend

- Proposed Core Sample Location
- SMA for Selected Remedy
- 150 ft Buffer around SMA for Selected Remedy
- River Flow
- Navigation Channel

Notes:
(1) Sediment cores will be advanced every 150 feet on a grid pattern, with step out sediment cores to be advanced as necessary to delineate remedial footprints per the sampling approach in Table 5.

(2) Cores in the early action AOC areas have been removed in recognition that these sites have additional data to delineate the horizontal and vertical extent of the SMA. AOC performing parties and, if different, performing parties for Baseline Sampling will need to determine the need and quantity for any additional cores to inform the allocation and/or data gaps during the design phase.

(3) Approximately 1,080 to 1,470 core locations. Actual number of cores to be determined during design.

0 1,000 2,000 3,000 4,000
Feet

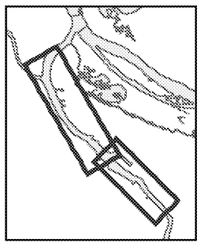


Figure 1. Conceptual Sediment Core Locations for Pre-Remedial Design Characterization
Portland Harbor Superfund Site

Path: E:_Projects\Portland Harbor\GIS\MapDocuments\Remedial Design Phase\Figure-1_Proposed-Core-Sample-Locations-Site-Wide.mxd, Created by: MLF

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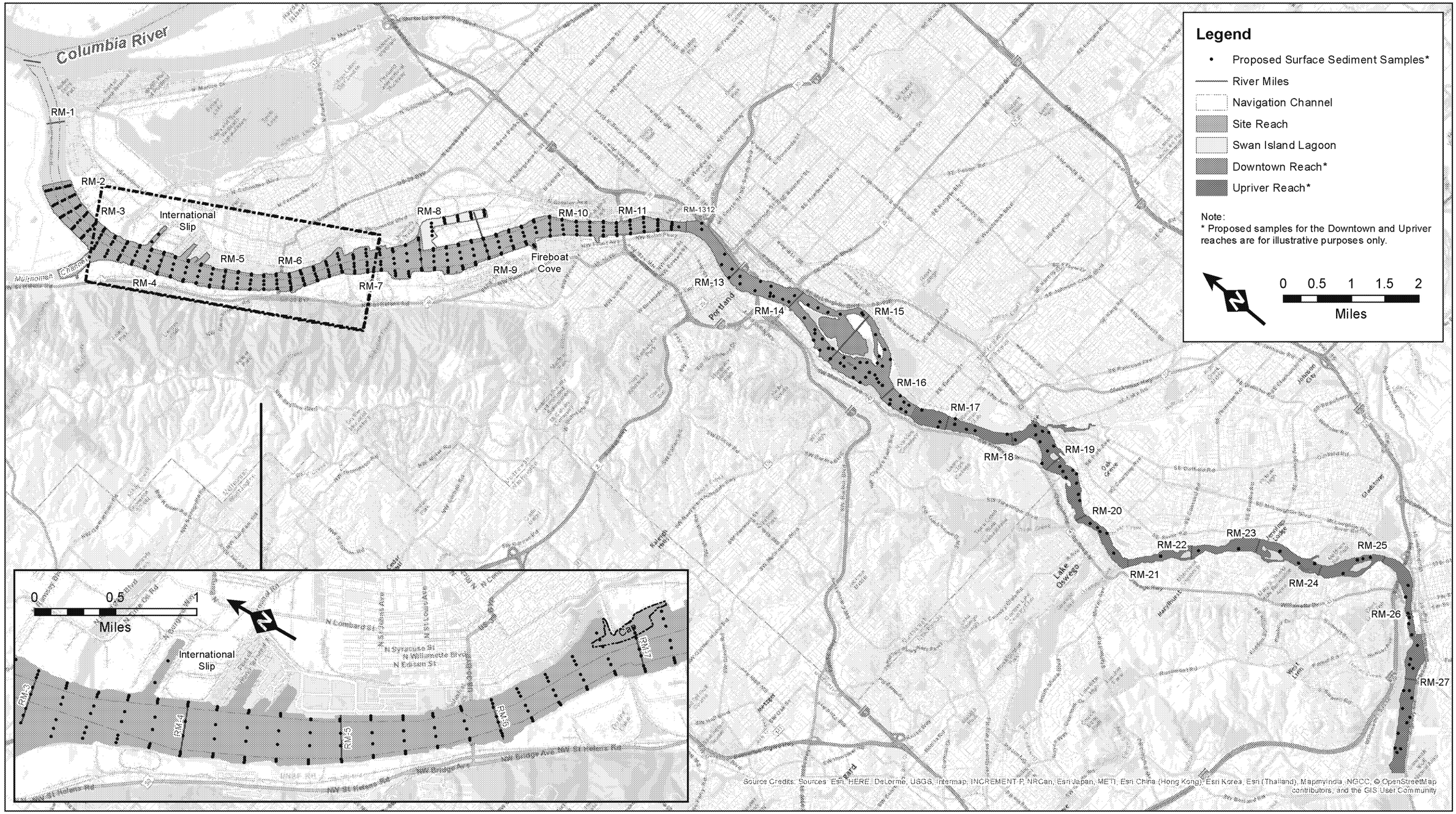

Figure 2. Surface Sediment Transect Locations for Baseline and Long-Term Monitoring

Portland Harbor Superfund Site

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Date: 5/31/2017

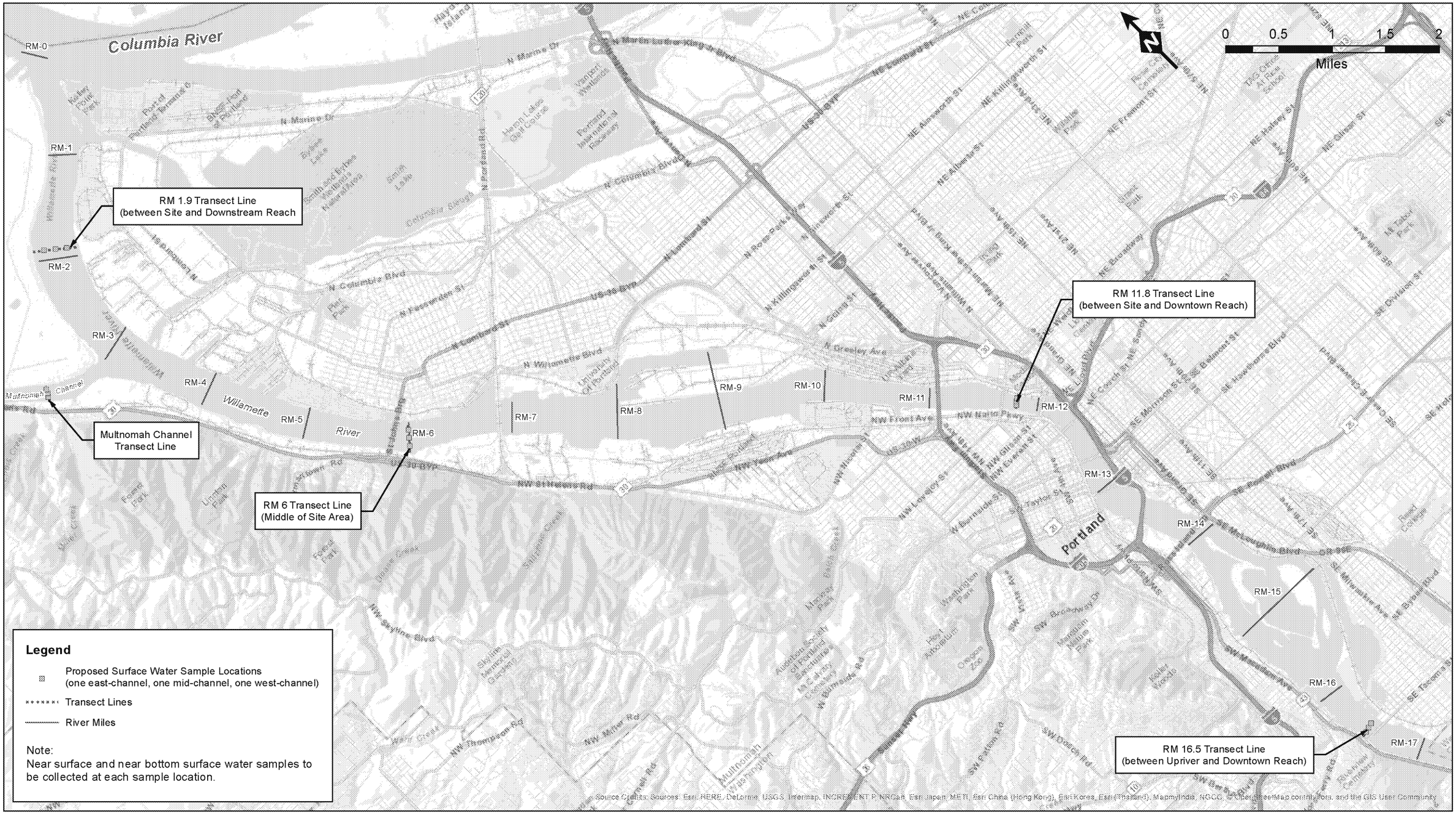

Figure 3. Surface Water Sample Transect Locations for Baseline and Long-Term Monitoring

Portland Harbor Superfund Site

Path: G:_Projects\Portland Harbor\GIS\MapDocuments\Remedial Design Phase\Figure 3_Proposed Surface Water Transects.mxd

Date: 4/19/2017

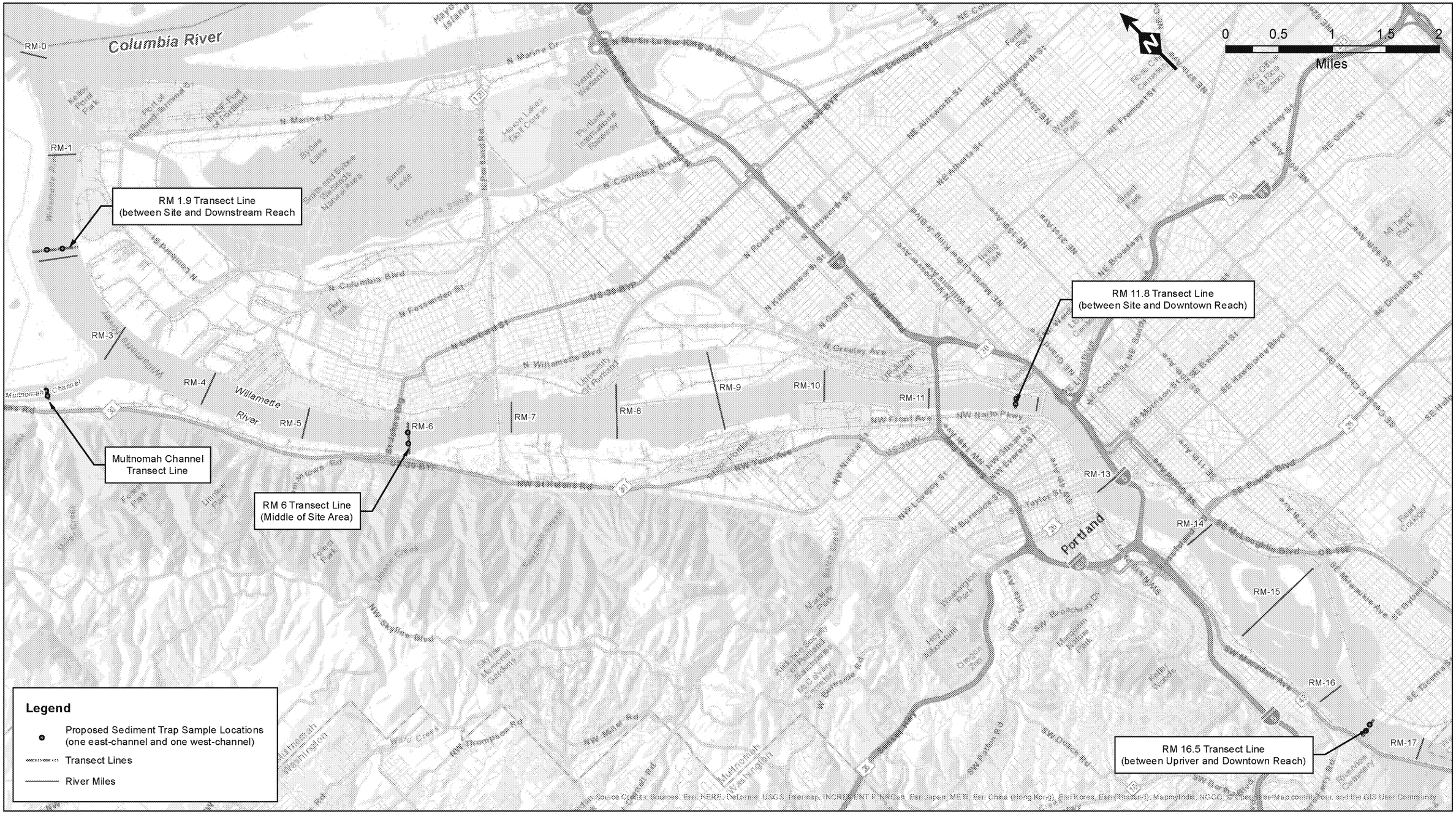

Figure 4. Sediment Trap Transect Locations for Baseline and Long-Term Monitoring

Portland Harbor Superfund Site

Date: 4/13/2017

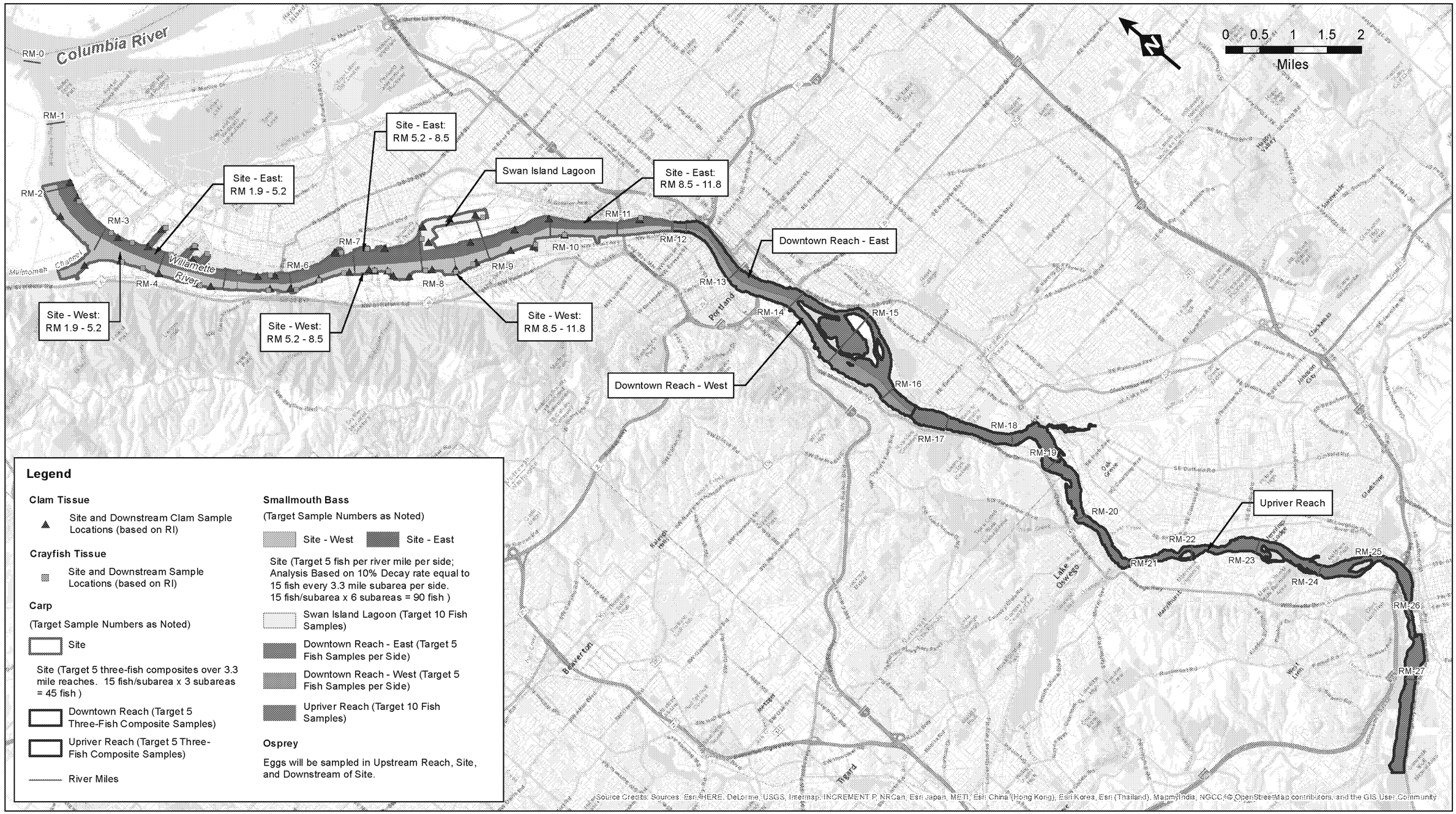

Figure 5. Biota Sampling Locations

Portland Harbor Superfund Site

Date: 5/18/2017

Appendix A

Statistical Basis for Sampling Approach

Appendix A

Statistical Basis for Sampling Approach

Introduction

Baseline and long term monitoring programs are intended to quantify remedial effectiveness and progress toward attaining remedial objectives. It is anticipated that statistical analyses will be used to evaluate monitoring data, and the number and frequency of measurements must be adequate to support reliable statistical estimation and hypothesis testing procedures needed for decision making. This appendix documents the basis for the number and frequency of sampling locations to meet monitoring objectives. **Attachment A1** to this appendix provides further discussion equivalency evaluations and explains the benefit of this approach for post-remediation monitoring.

The performance of statistical procedures is characterized by precision of estimates and power to reject tests of hypotheses. For unbiased sampling designs, statistical precision is the difference between a parameter estimate and the true population parameter. More precise parameter estimates have narrower confidence intervals and when estimation procedures are unbiased, precision also provides a measure of accuracy. Statistical power is the probability of correctly rejecting the null hypothesis when in fact the alternative hypothesis is true. Power and precision of statistical procedures are determined by the specific statistical procedure; the number and frequency of sampling events the natural variability of measurements and the magnitude of effects under study. The number and frequency of samples to be collected were determined to provide statistical basis to estimate confidence intervals with specified precision and to test hypotheses of temporal trends with adequate statistical power. Analyses and information necessary to select adequate sample sizes are summarized in the following sections.

Sample size determinations were conducted for fish and sediment sampling intended to support:

1) estimation of mean COC concentrations under pre-dredge baseline conditions,
2) tests of the null hypothesis of no change in COC concentrations,
3) estimation of post remedial recovery rates for fish and sediment at a range of scales, and
4) tests of hypotheses of equivalence between site and upstream reference area conditions.

Data Objectives

For each evaluation, a data objective was set so that a number of samples and an appropriate frequency of monitoring could be determined to meet power and precision objectives.

For comparison of post-remedial COC concentrations with baseline conditions the minimum number of samples was identified so that a 20% reduction in geometric mean (e.g. median of a lognormal distribution) concentration could be identified with at least 80% statistical power.

For temporal trend analysis, the number of samples per monitoring period were determined by identifying the number of samples necessary to detect an approximately 5% to 10% annualized rate of change over a 10-year period with approximately 80% statistical power.

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For equivalency analysis comparing site and background concentrations[1], the number of samples per monitoring time step and spatial group were determined so that the upper 90% confidence limit for the ratio of site to upstream geometric means was less than 1.5 when site data are equivalent to background (i.e. R=1.0).

Methods (Sample Size Determination)

A statistical simulation approach was used to develop relationships between sampling designs (i.e. number, frequency and compositing scheme) and precision or power of statistical procedures. Relationships between sample size and power or precision were plotted for selected design configurations and the numbers of samples and design specifications meeting power and precision data objectives were selected. The simulation method was selected because a broad range of statistical tests and sampling designs can be evaluated easily with a single robust framework. Development of the final sampling plan requires inspection of power curves for each media and the statistical tests of interest applied to the primary chemicals of interest. Final sample sizes should meet as many of the data objectives as possible for each media and chemical. It should also be noted that some compromises may be necessary in cases where projected sample size determinations may not be feasible for all combinations of objectives, media and chemicals—a balance of practicality and rigorously meeting data objectives is necessary.

Simulation of Power and Precision

The simulation procedure for developing relationships between statistical sampling design configurations and precision or power of analysis techniques proceeds through 7 steps:

1. Obtain pilot scale data suitable to understand the statistical distribution of data likely to be collected under the sampling program
   1.1. For temporal trend analysis site RI data were used for pilot data within river miles 1.9 to 12
   1.2. For equivalency analysis, data from upstream of river mile 15
2. Develop a model describing statistical distributions based on the pilot data
3. Modify statistical distributions as needed to represent null and alternative hypothesis situations
   3.1. For temporal trends this requires adjusting the mean to represent selected temporal decay rates
   3.2. For equivalency analysis this includes specification of the on-site and off-site concentration mean and variance
4. Select random samples of data from statistical model developed in step 3
   4.1. For temporal trends this includes sampling in a way that mimics the study design, including number and frequency of samples under consideration
   4.2. For equivalency analysis both site and off-site data were assumed to have the same distribution (i.e. populations assumed to be equivalent)
5. Apply anticipated statistical procedures to the synthetic data
   5.1. Estimate equivalency statistics
   5.2. Test for temporal trends
6. Repeat steps 4 and 5 many (N=1000) times to develop a distribution of test statistics

[1] Background data are representative of the distribution of contaminant concentrations representative of limiting conditions and levels of recontamination that may be expected to recontaminate the site post remedy.

7. Post process distributions
   7.1. The number of times the null hypothesis was correctly rejected divided by 1000 is an estimate of statistical power
   7.2. The half width of confidence intervals is an estimate of the precision of the sampling design for equivalency analysis

Data for Planning

Implementation of the steps described above requires an understanding of the statistical distributions that can be anticipated in future monitoring efforts. Generally, pilot data from existing studies are used to infer the likely nature of future data to be collected. The primary parameters needed to develop the power analysis are the general shape of the distributions, symmetric or skewed histograms, and estimates of mean and variance. For analyses reported herein, sample fish and sediment chemistry data collected as part of the remedial investigation (RI) were used to develop these necessary inputs.

For fish tissue power and sample size determinations, PCB concentrations in samples collected from 2002, 2007, 2011 and 2012 were used to develop distributional assumptions. Differing distributions were developed for areas on-site (River Miles 1.9 to 12) and areas upstream of River Mile 15, representing background areas. For sediment analyses chemistry data for total PAHs, PCBs and DDx from the site and upstream of River Mile 15 were used for background evaluations and data from on-site (River Miles 1.9 to 12) were used for other evaluations unrelated to background concentrations.

All power analyses assumed a lognormal distribution with log-mean and log-variance estimated from the RI data. Although environmental data are generally right skewed, frequently they are less skewed than expected under a log-normal distribution. If actual data are less skewed than assumed in this evaluation, one can expect the precision and power of statistical analyses to be better than planned. Using a log-normal approach represents an effort to plan for the worst and hope for the best.

Pre- and Post-Remedial Action Comparisons

Immediately after the remedy is completed, there is an expectation that sample media will exhibit lower contamination concentrations indicative of short term remedial performance. It is not expected that impacted media will attain cleanup levels at this point in time, as the selected remedy generally entails a combination of active remediation and natural recovery processes to reach long term cleanup goals. In the short-term it will be desirable to test for changes in COC concentrations in media immediately after remedy completion as an indicator that short term "step" change in COC levels through implementation of the remedy have taken place as expected.

The short-term effects of the remedy will be examined by testing the null hypothesis of no change in COC concentrations prior to and immediately after remedy completion. Although several tests of change could be considered, the two independent samples Wilcoxon rank sum test is evaluated here (For details see Hollander and Wolfe, 1999, or other standard nonparametric statistics texts). The power of the Wilcoxon Rank Sum test was evaluated using the simulation framework described above where the test was applied to independent simulated samples for a range of effect sizes and numbers of samples. The test compares median (e.g. geometric mean for log-normally distributed data) COC concentrations for samples collected before and after remediation, so the post remedial concentrations were simulated with median levels expressed as a multiplier of the pre-remedial concentrations. For example, an 80%

reduction in concentration was simulated by multiplying the median parameter by a factor of 0.20. Both samples were assumed to be log-normally distributed with log-mean and log-standard deviation estimated from existing fish or sediment data from within the site. Sample sizes under consideration varied from 5 to 200 and percentage reduction varied from 0 to 80% in increments of 20%.

Figure 1 shows power curves for PCB concentrations in fish tissue for the Wilcoxon rank sum test of the null hypothesis of equal medians for pre- and post-remedial concentrations. Percentage changes investigated ranged from no-change to 80% reduction. The vertical axis in each plot is the power (i.e. probability of rejecting the null hypothesis) and the horizontal axis represents the corresponding sample size. The black line represents the case of no change and should be approximately 0.05 indicating the Type I error rate (α) of the test. When there is no actual change in concentration the tests incorrectly reject the null with at most 5% probability. Power curves increase with sample size and with the magnitude of the change in concentration. Based on the power curve presented in Figure 1, approximately 10 samples are required to detect a 20% reduction in median concentration of PCBs in fish tissue after remediation.

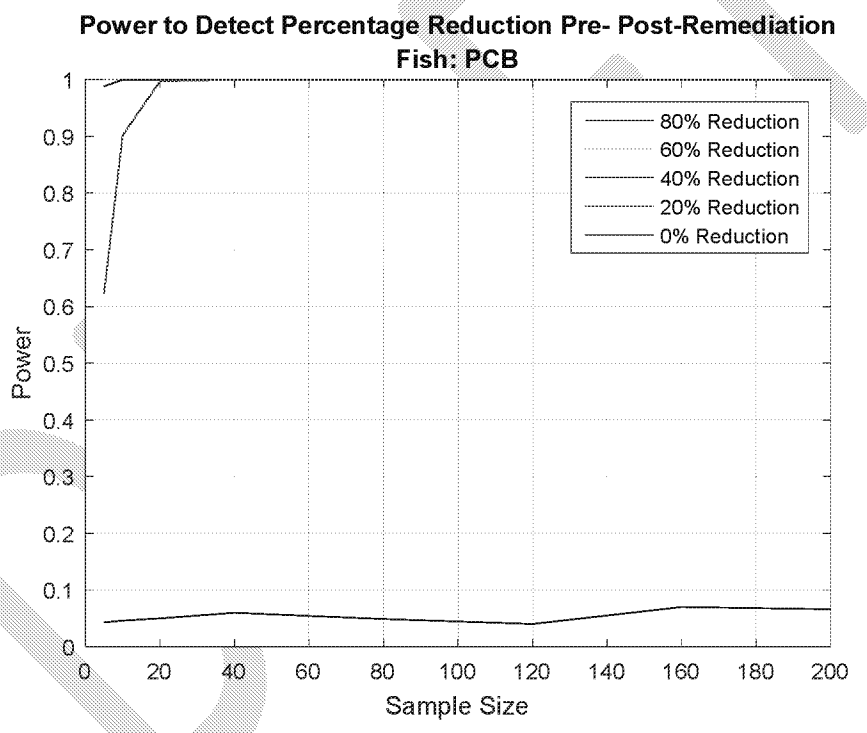

Figure 1. Power to detect a percentage reduction in concentration after completion of the remedy for total PCBs in whole body smallmouth bass tissue.

Figure 2 through Figure 4 summarize the simulated power curves for before after comparison of total PAH (PAH), total DDT, DDD and DDE (DDx) and total PCBs (PCB) in sediment. For PAH 20% reduction in concentration can be detected with at least 80% power for sample sizes of at least 30. For DDx, similar level of power would require over 200 samples, and for PCB, approximately 60 samples would be required. Generally, one would select the chemical with the worst-case scenario to determine sample size for each medium, however the DDx results would push the sampling design beyond what would be

expected to be practical, so it is anticipated that some compromise will be selected as a final sample size to be applied to spatial areas within which pre-post comparisons will be evaluated. Final selection of sample size will require consideration of the numbers needed to meet temporal decay data objectives and equivalency analyses.

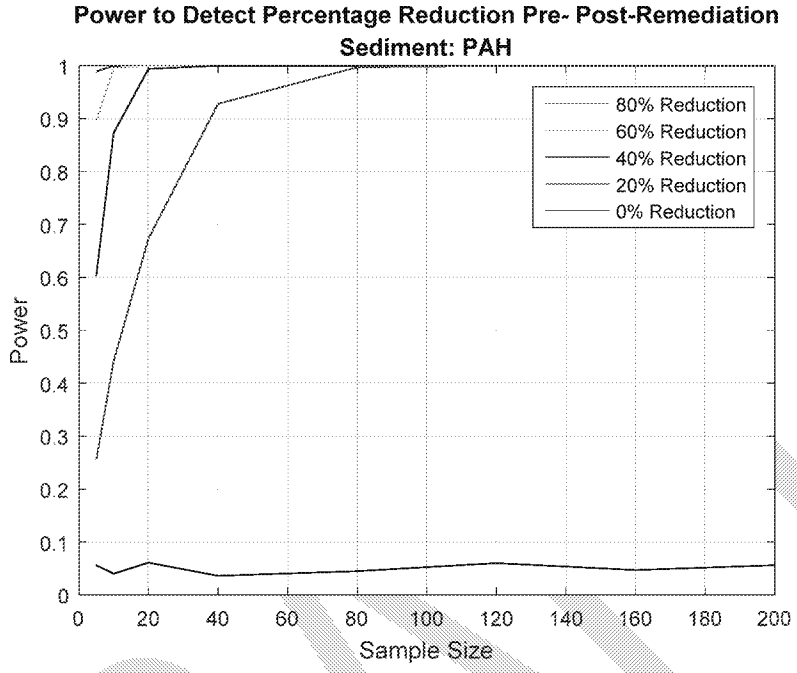

Figure 2. Power to detect a percentage reduction in concentration after completion of the remedy for total PAHs in sediment.

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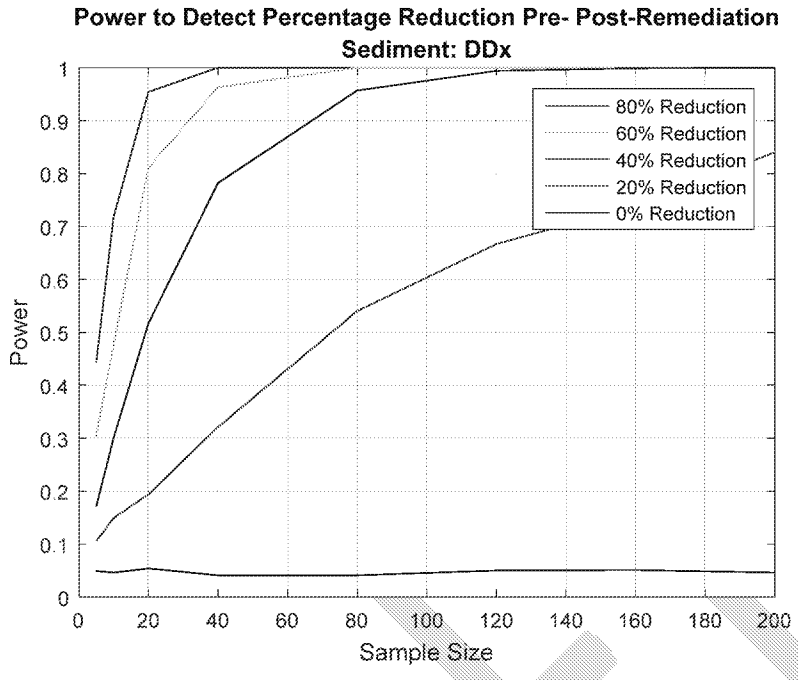

Figure 3. Power to detect a percentage reduction in concentration after completion of the remedy for total DDx in sediment.

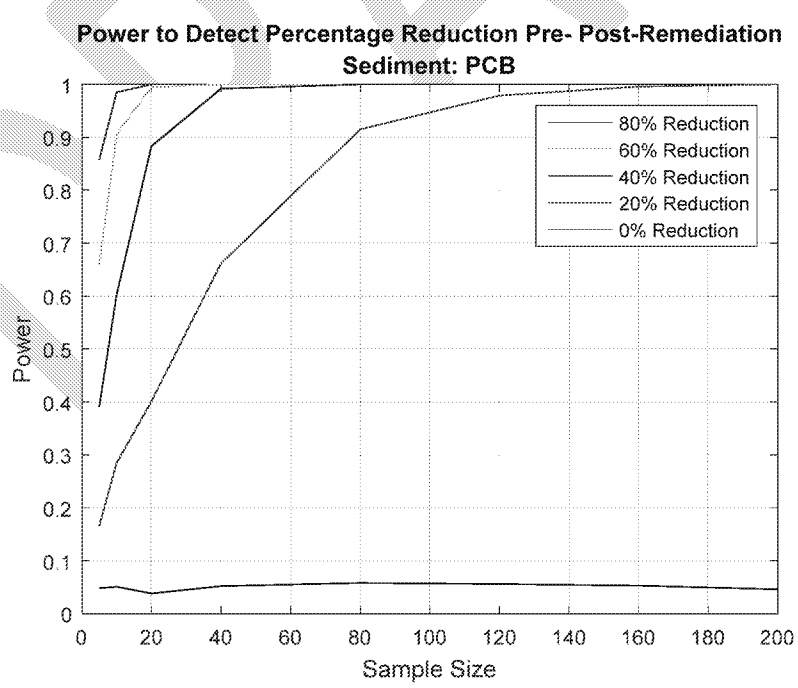

Figure 4. Power to detect a percentage reduction in concentration after completion of the remedy for total PCBs in sediment.

Temporal Trends

It is anticipated that temporal recovery rates will be estimated by fitting first order decay functions which assume concentrations are proportional to an exponential decay function:

$$C_f = C_0 e^{kt}$$

where C_f is the COC concentration in fish and k is the recovery rate which approximately represents the annualized recovery rate. For example, when k=0.05 the rate of recovery is approximately 5% per year. This decay, or recovery, rate represents the combined effects of source control, burial and dilution and other natural recovery processes. For study planning purposes, the number and frequency of samples was determined by identifying combinations of frequency and sample size that are expected to reject the null hypothesis H_0: k=0 in favor of the alternative H_a: k<0 when the actual recovery rate is in the range of 5% to 10%. Preliminary analysis of site smallmouth bass PCB data suggested that natural recovery may be functioning at approximately 10%, however this estimate should be treated cautiously due to limited temporal record. It will be better to plan for detecting a slower rate to insure adequate numbers of samples to accurately interpret long term monitoring data.

Power of statistical tests for specified combinations of number of samples and frequency of sampling was simulated using Monte Carlo techniques based on the assumption that future sample data will be distributed similarly to the RI data with the exception that log-mean concentrations will decline proportionally to time and that log-variance will remain constant. For a particular combination of sample size and frequency, statistical power was simulated by selecting a sample from the assumed distribution for each monitoring time step and the null hypothesis of no recovery was tested for the synthetic data based on the test statistic:

$$T = \frac{k - 0}{se(k)}.$$

Which is approximately distributed as a Student's T random variable. In the power simulation process, the null hypothesis was rejected when T was smaller than a Student's T with n-2 degrees of freedom, where n is the number of samples included in the analysis. Power was estimated by repeating this procedure 1000 times and counting the proportion of times out of 1000 that the null hypothesis was rejected. Statistical power was plotted against sample size and the resulting analysis was used to determine number of samples per year and frequency of monitoring time steps providing 80% power to detect a specified rate of natural recovery. Results are summarized in Table 1 for both 5% and 10% recovery rates to allow resource managers to make appropriate value judgements with respect to the final number of samples.

For detecting a 5% decay rate in PCB concentrations in smallmouth bass tissues with 80% power over 40 samples would be required. To detect a 10% recovery rate with similar 80% power approximately 12 individual fish would be necessary. Given the uncertainty in the actual decay rate that can be anticipated it is recommended that a compromise of approximately 20 fish be sampled in each spatially defined area wherein a temporal trend is to be estimated for fish.

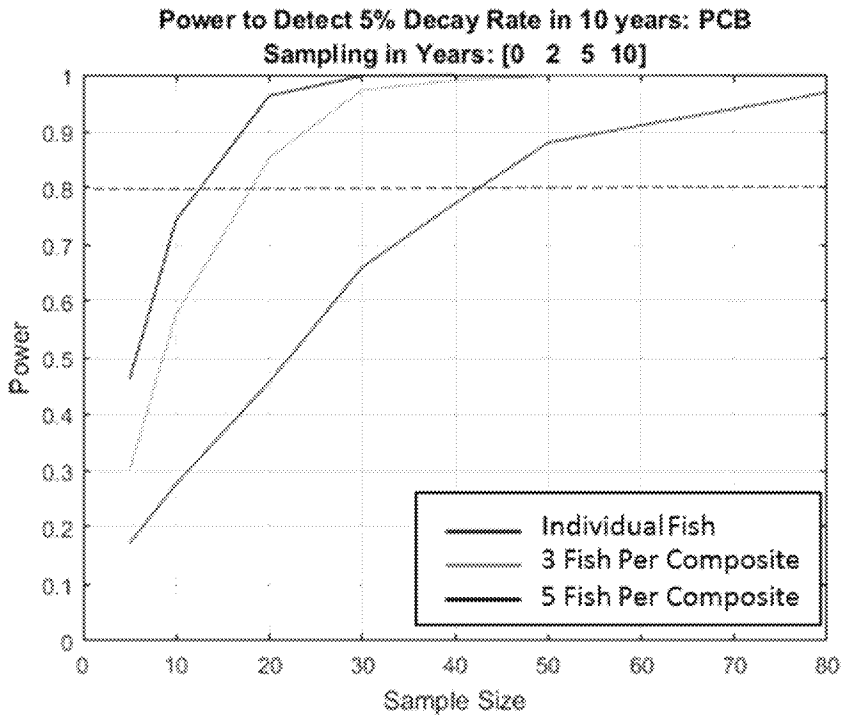

*Figure 5. Power to detect a 5% annualized recovery rate in **smallmouth bass** tissue by monitoring in year 0, 2, 5 and 10 for total PCBs.*

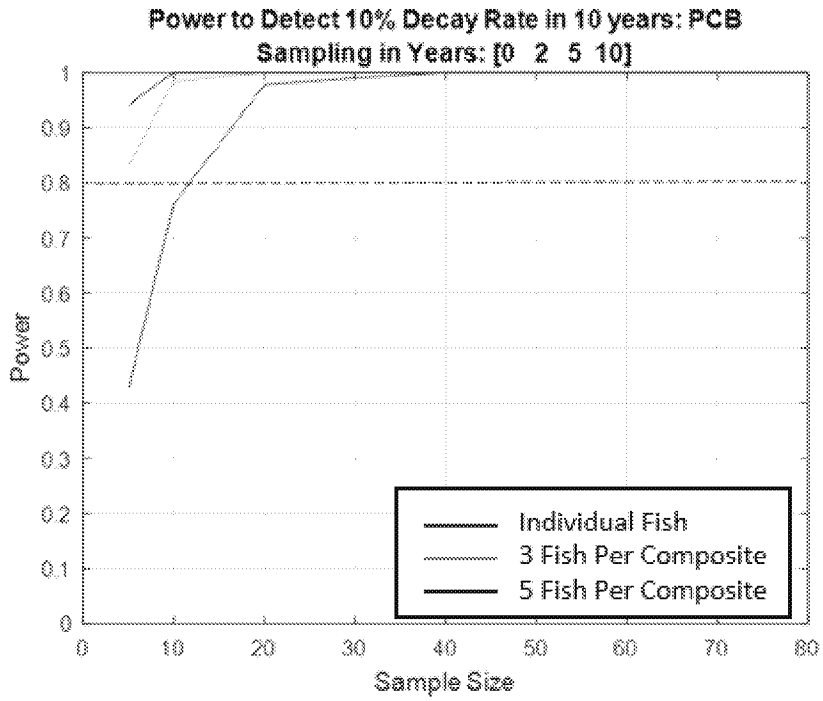

*Figure 6. Power to detect a 10% annualized recovery rate in **smallmouth bass** tissue by monitoring in year 0, 2, 5 and 10 for total PCBs.*

Figure 7 through Figure Figure 9 show power curves for detecting a 10% change in sediment COC levels which lead to approximate sample sizes of 65, 45 and 35 for PAH, DDx and PCB respectively. Although not included here, similar plots were also developed for 5% decay rates in sediment which resulted in sample sizes of more than 200, 160 and 130 for PAH, DDx and PCB respectively.

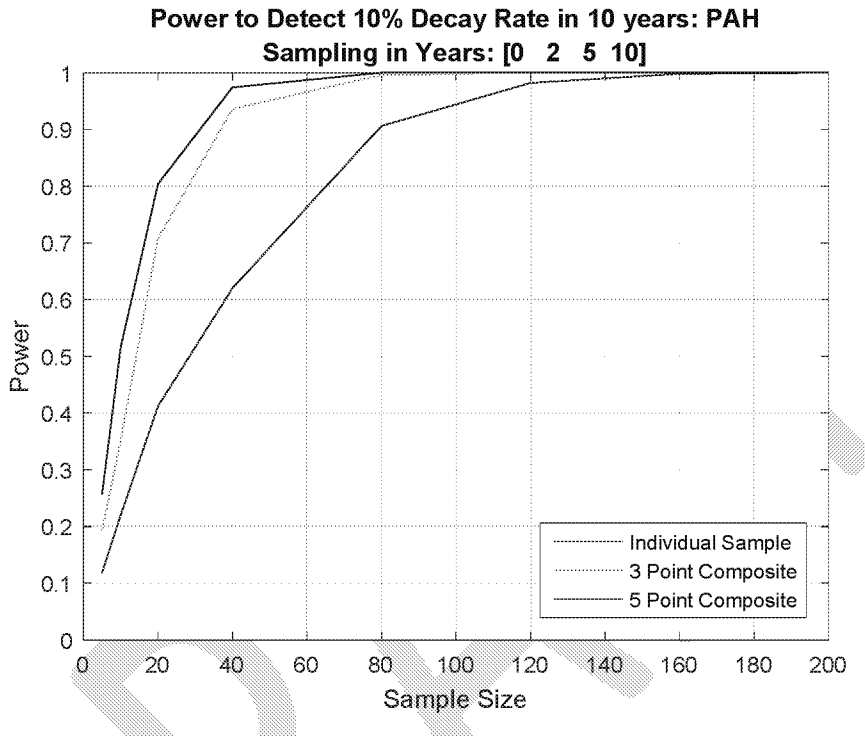

*Figure 7. Power to detect a 10% annualized recovery rate in **sediment** by monitoring in year 0, 2, 5 and 10 for total PAH.*

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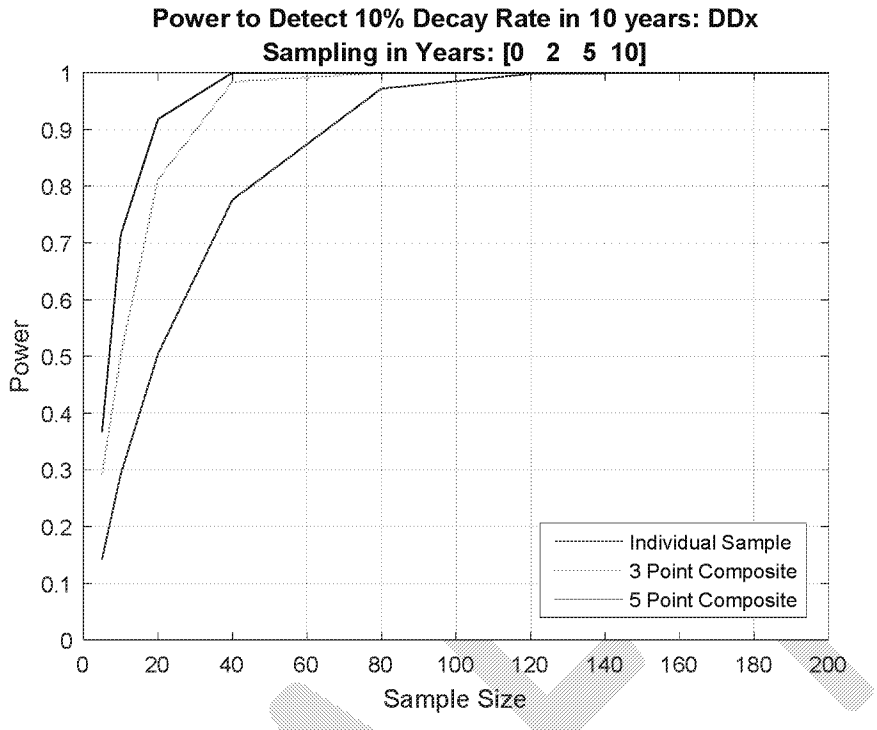

*Figure 8. Power to detect a 10% annualized recovery rate in **sediment** by monitoring in year 0, 2, 5 and 10 for total DDx.*

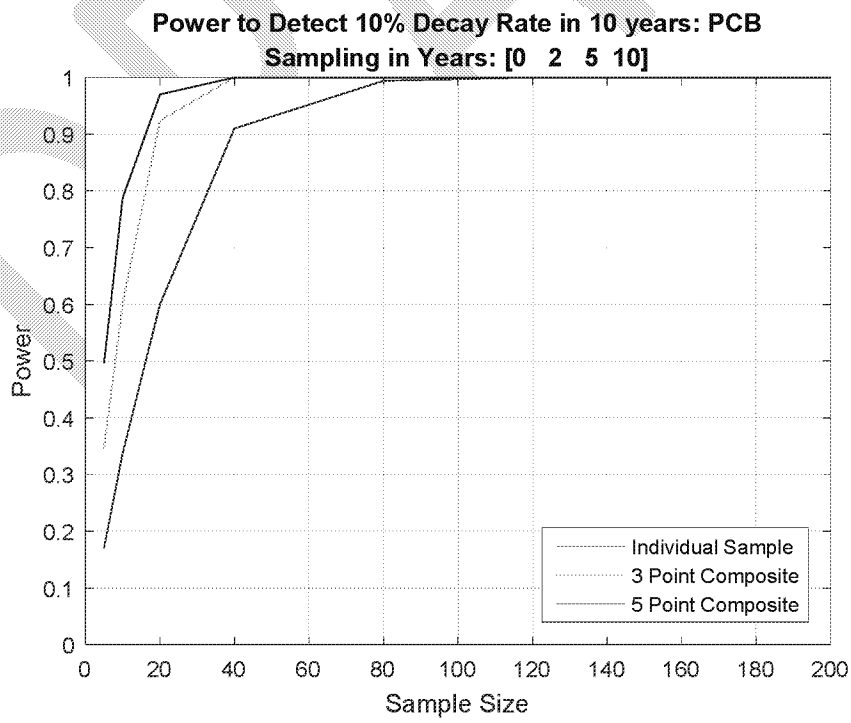

*Figure 9. Power to detect a 10% annualized recovery rate in **sediment** by monitoring in year 0, 2, 5 and 10 for total PCBs.*

Equivalence Evaluation

Attainment of RAOs occurs when sediment cleanup levels as specified in the ROD are attained. For PCBs this cleanup level is 9 ppb. For the purposes of evaluating remedy effectiveness and evaluating whether the remedy is functioning as intended, during the five-year review, site data will also be compared with fish and sediment data from areas upstream of the site using an equivalence analysis (McDonald and Erickson, 1994). This type of evaluation assesses whether the site data are statistically equivalent to upstream data representing background which may differ from 9 ppb in the future.

After site remediation and natural recovery, site and upstream concentrations are expected to converge and be similar (equivalent). This convergence will be evaluated by estimating the ratio of site geometric mean to upstream geometric mean. Geometric means are used in this situation because ratios of geometric means can be more precisely estimated than ratios of arithmetic means. Equivalence will be established when the upper 90% confidence limit for this ratio is no more than 1.5.

The number of samples necessary for equivalence analysis was developed using the simulation approach described above followed by identifying the number of samples necessary to achieve an upper confidence limit less than 1.5 based on the distribution of background COC data.

Rationale for Equivalence Test

Post remedial monitoring is intended to provide measures of remedial effectiveness and to provide site managers data suitable to determine when a site has met remedial goals. Ideally a remedial goal is achieved when data "demonstrate" that site conditions are equal or equivalent to conditions that would have been present absent the release. Prior to establishment of a need for remedial action the site is presumed to be un-contaminated or equivalent to reference condition and data are used to reject the classical null hypothesis of no difference between site and reference conditions. In this context the classical framework for hypothesis testing is appropriate—assumption of no difference unless and until data demonstrate otherwise with 95% confidence. This approach leads to development of tolerance limits based on background data which are generally used as points of compliance to identify areas that are or are not contaminated.

Conversely, when a release has been documented and there is known risk and a need for remediation, the null hypothesis of equivalence is no longer appropriate. The appropriate null hypothesis represents the current understanding of the site which is that contamination and risk have been established and one must assume the site to remain contaminated until data demonstrate with a high degree of confidence that the site is no longer contaminated. This suggests demonstration of remedial success by rejecting the reverse-null hypothesis:

$$H_o: \mu_{site} \geq \mu_{reference}$$

in favor of the alternative:

$$H_a: \mu_{site} < \mu_{reference}.$$

But in order to reject this reverse null it is necessary for the site mean to be lower than the reference condition, which is generally unachievable in practice. It would be unfair to require responsible parties to clean up to levels lower than background conditions.

Tests of bioequivalence (McDonald and Erickson, 1994) acknowledge this situation and provide a workable alternative that maintains the proper assumption of contaminated until data prove otherwise, without requiring cleanup to concentrations that are below background conditions. This is achieved by inserting a coefficient of equivalence ($R_0 > 1.0$) and testing the null hypothesis:

$$H_o: \mu_{site} \geq R_0 \times \mu_{reference}$$

against the alternative:

$$H_a: \mu_{site} < R_0 \times \mu_{reference}$$

where the equivalence coefficient is chosen to represent a scientifically meaningful value.

For example, at Portland Harbor the cleanup value for PCBs is 9 ppb and one could insure that the true site mean is less than 18 ppb by selecting R_0 to be 2.0. Site and reference means would be declared equivalent when an upper confidence limit for the sample ratio $\hat{R} = \frac{\hat{\mu}_{site}}{\hat{\mu}_{reference}}$ is less than 2.0.

Tests for equivalence are intuitive when expressed as confidence intervals for the ratio of site to reference means or when data are right skewed geometric means. Equivalence is established by rejecting the null hypothesis that the true Ratio is greater than a specified scientifically meaningful value which is equivalent to comparing the upper confidence limit to the specified value. When the UCL is less than the specified ratio (e.g. defining equivalence) equivalence is established.

This equivalence testing approach has several advantages relative to the test of classical null hypothesis:

1) For the traditional test of hypothesis where equal means (i.e. R=1.0) is the null hypothesis, remedial success is concluded when the null hypothesis is not rejected. Although common, this is an inappropriate conclusion as failure to reject the null simply means that the data and study design were inadequate to reject the null, which may or may not be true. Declaring remedy effectiveness in such a situation would be inappropriate because the true ratio could be substantially higher than the sample estimate as shown in the top panel of *Figure 10*. In this situation, the confidence interval for R captures 1.0 indicating that the classical null hypothesis would not be rejected (i.e. concluding successful remediation) when in fact the true ratio could be more than a factor of 2 greater than the reference area mean.
2) In the top panel of *Figure 10* the UCL exceeds the specified value of 2.0 which also leads to failure to reject the null hypothesis of non-bioequivalence and site managers would not change assumption that the site remains more contaminated than the reference site (i.e. site not proven to be equivalent to background). This is appropriate because the assumption that the site is contaminated should only change when statistically reliable evidence falsifies the assumed null condition.
3) The lower panel in *Figure 10* illustrates the desired outcome where the sample ratio and its' upper confidence limit is lower than the specified limit of 2.0 which leads to the rejection of the null hypothesis of non-equivalence in favor of the alternative hypothesis that site and reference data are "equivalent".

4) Equivalence tests provide direct and quantifiable evidence that two populations are similar with a level of confidence and an a priori definition of similarity (i.e. equivalence).
5) The plot in the lower panel of *Figure 10* also illustrates that the classical null hypothesis can result in data that are "too" precise. Note that the lower limit fails to capture 1.0 indicating that in this case the null hypothesis of "equality" would be rejected and one would conclude that the site had not been adequately remediated when the site mean was in fact just 4.5ppb greater than the 9 ppb cleanup level—a statistically significant difference lacking in biological meaning.

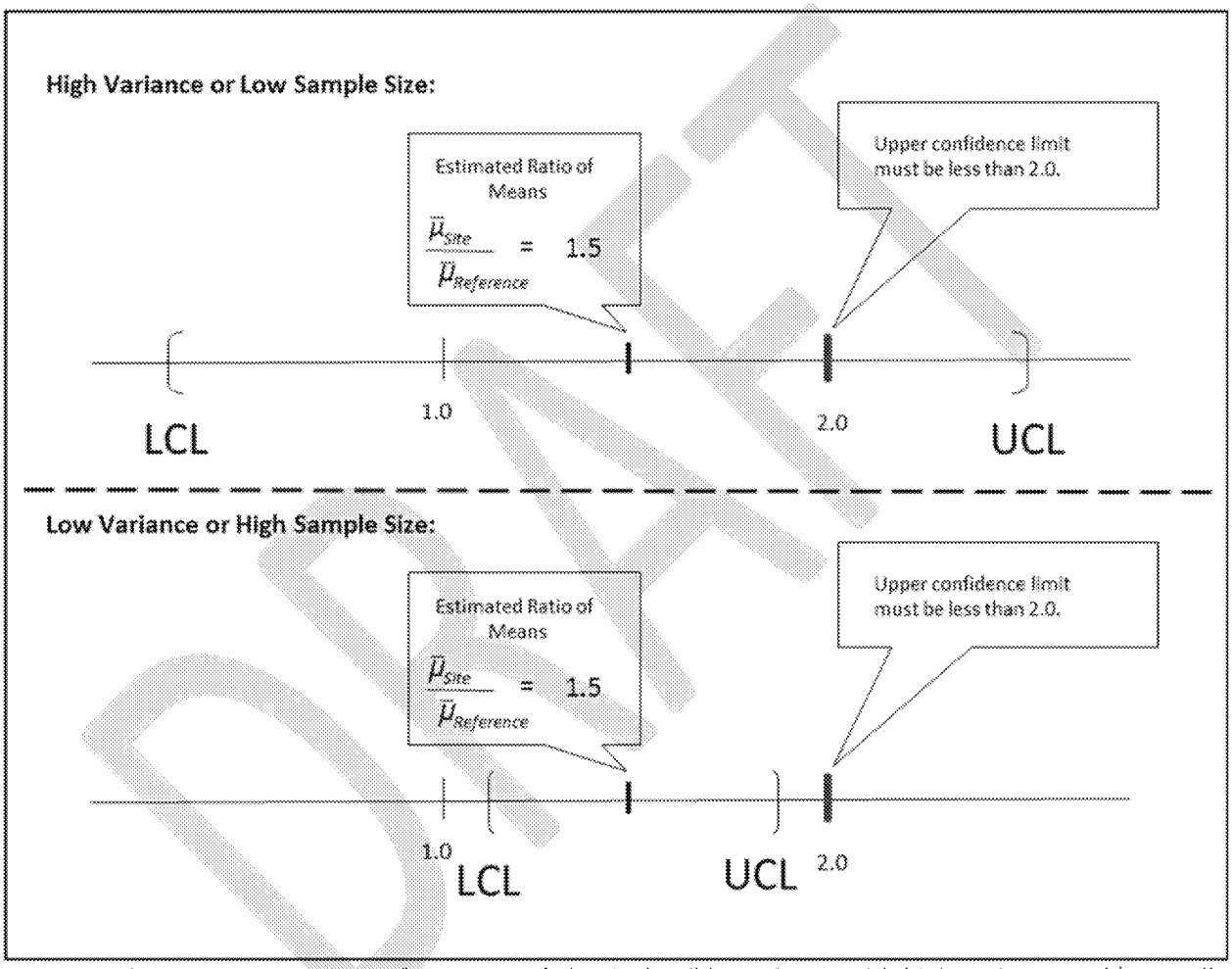

Figure 10. Comparison of reverse and classical null hypotheses with high variance and/or small sample size (top panel) and with low variance and/or large sample size (bottom panel)

Selection of Equivalence Coefficient and Sample Size

For equivalence testing it is necessary to identify a balance between a rigorous equivalence coefficient (R_0) and the number of samples necessary to reliably assure that when site and reference data are equivalent, (i.e. when $\hat{R} = 1.0$) there is high power to correctly reject the null hypothesis of non-equivalence. Using the simulation approach described above, the upper 95% UCLs from 1000 samples of

sizes 10 through 200 were plotted and compared with a trial equivalence coefficient of 1.5 and it can be seen that 100% of simulated sample sets had upper confidence limits below the 1.5 when 50 samples were selected in each of the reference and site data sets (N=100 total). Assuming a geometric mean of approximately 9 ppb in the reference area, bioequivalence would be established when the UCL is less than 13.5 ppb and importantly the sample geometric mean would, by necessity, be very close to 9 ppb as desired. Although at first blush it may sound like the agencies are defining the goal to be 50% higher than the cleanup levels, one must recognize that if the actual ratio is 1.5 the chances of rejecting the null hypothesis is just 5%, virtually impossible. Demonstration of equivalence requires the site conditions to be very close to background levels, high quality low variance data must be carefully collected, and the number of samples must be adequate to insure very narrow confidence limits on the ratio. Taken together the bioequivalence approach incentivizes a high quality and statistically rigorous study design.

Figure 11 through Figure 13 show that the UCL for the ratio of geometric mean COCs in sediment can be expected to fall below the target 1.5 level for 50, 25 and 50 samples for PAH, DDx and PCB respectively.

Demonstration of equivalence for PCB in smallmouth bass tissue approximately 25 to 30 individual fish samples (Figure 14).

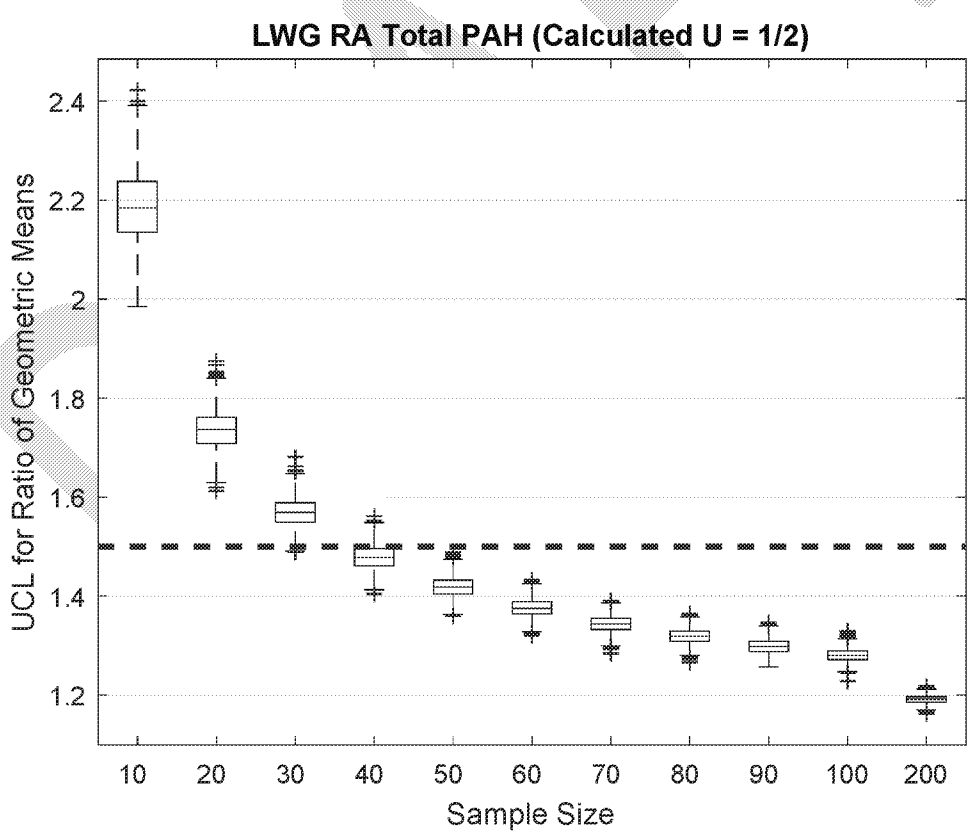

Figure 11. Upper 95% confidence limits for 1000 simulated samples when site and reference data are equivalent for Total PAH in sediment.

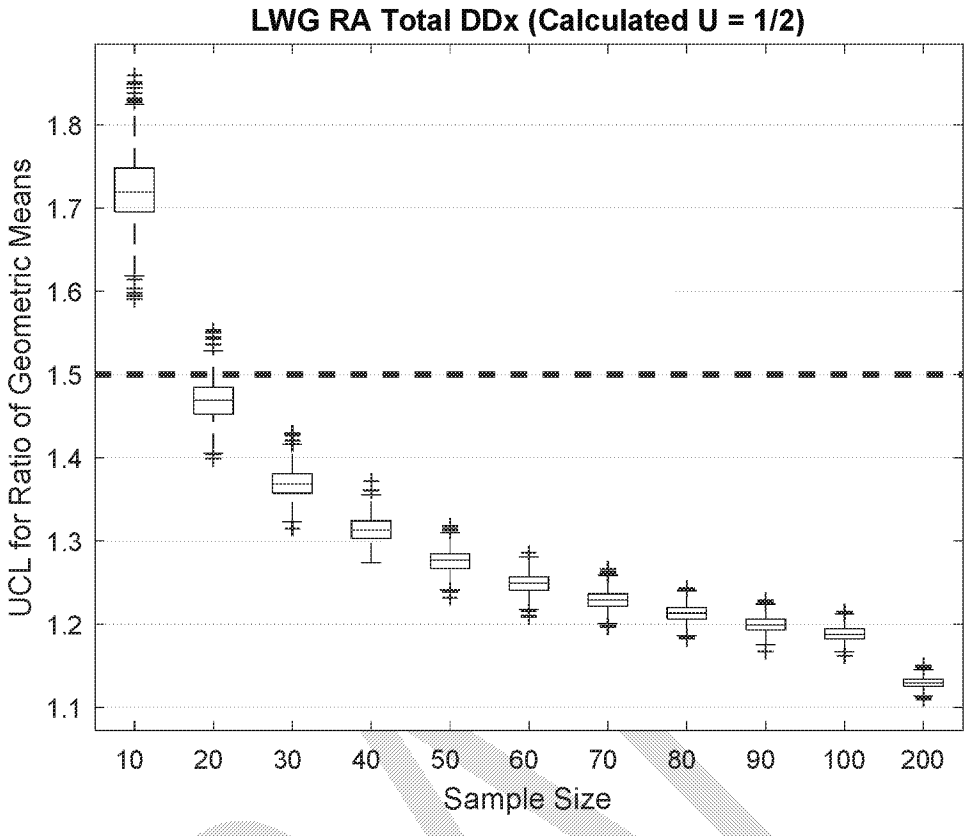

Figure 12. Upper 95% confidence limits for 1000 simulated samples when site and reference data are equivalent for Total DDx in sediment.

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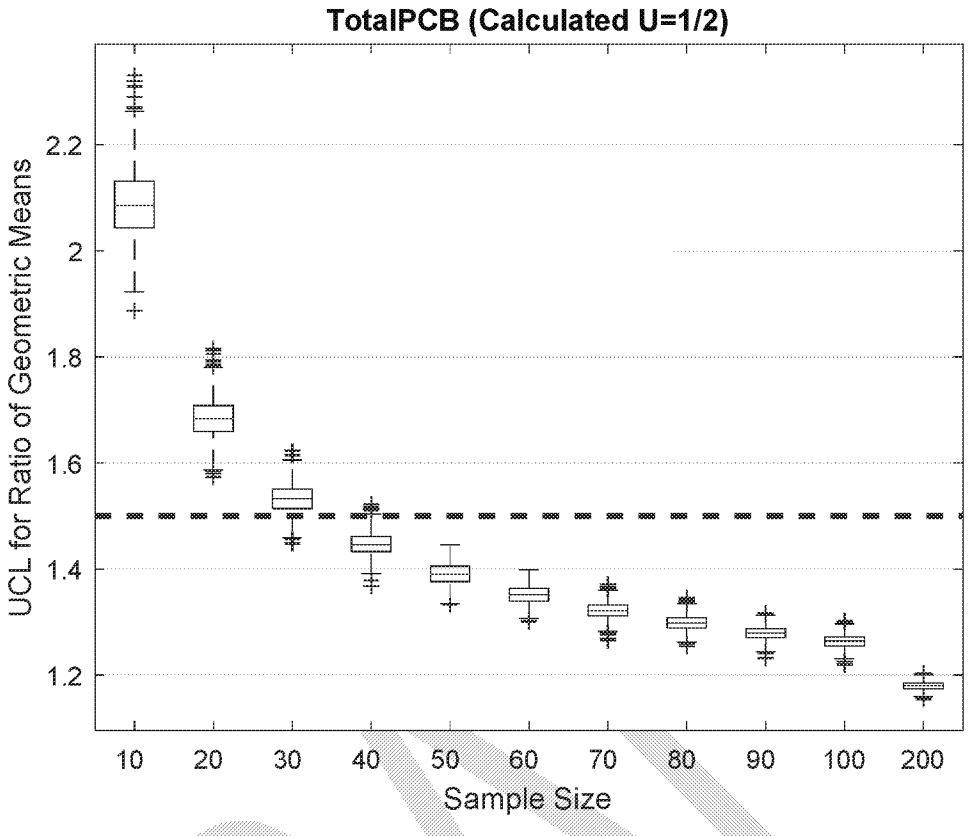

Figure 13. Upper 95% confidence limits for 1000 simulated samples when site and reference data are equivalent for Total PCBs in sediment.

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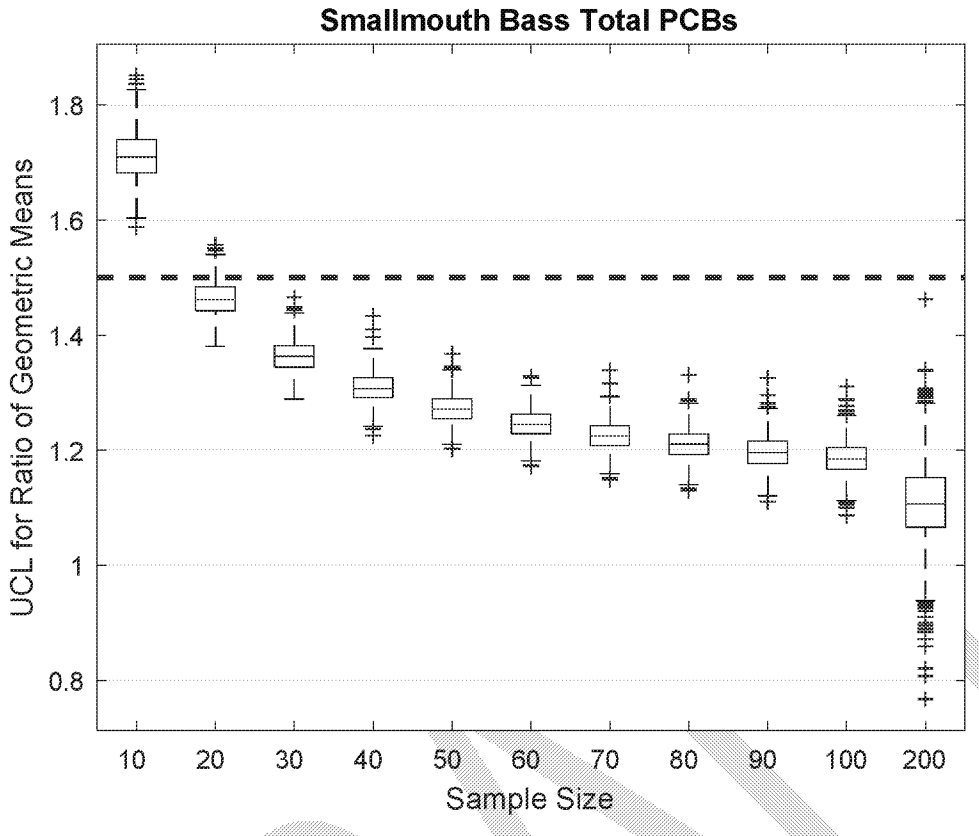

Figure 14. Upper 95% confidence limits for 1000 simulated samples when site and reference data are equivalent for Total PCBs in whole body smallmouth bass..

Summary

Sample size results for each combination of media chemical and statistical analysis of interest are summarized in Table A-1 below. It is anticipated that site managers will utilize this table to develop final numbers of samples as the basis for the baseline and long term monitoring programs. In the simplest way one would identify the maximum number needed across all fish tissue evaluations which would lead to approximately 45 fish per group. Similarly, because all sediment concentrations are based on the same samples one could identify the maximum number per each statistical evaluation across chemicals (row) followed by identifying the maximum within this row-wise calculation which would lead to over 200 sediment samples within each analysis group.

The power analysis developed in this appendix represents only the mathematical and statistical aspects of study design. Final implementation of these results in developing a sampling plan must also incorporate other non-statistical factors such as practical concerns related to implementation, cost and the relative importance of each combination of media and chemicals. The results here provide a guide to final selection of sampling numbers and frequency by site managers.

It should also be noted that the results summarized here are approximate, based on simulations derived from site data that may be imperfect representatives of future conditions. In general, one can expect

future data distributions to recover in absolute concentration, but also it can be anticipated that with declining mean values will also come declining variability. Generally, analyses provided in this report can be considered somewhat pessimistic, so balancing perfection with practicality is fully acceptable and even expected when planning a monitoring program. With this in mind, on the order of 20 to 45 fish and 65 to 130 may be considered reasonable target sample sizes for groups of interest. These include a total of 8 groups as currently envisioned; upstream and downtown reaches and 6 groups within the site—left right and mid channel subdivided into approximately 3 mile subsections. Additional power and precision could be achieved with potentially increased power by considering compositing or by increasing the size of analysis groups--equivalently defining fewer groups.

Table A-1. Sample sizes adequate to support baseline and long term monitoring objectives in fish and sediment at the Lower Willamette River Superfund Site.

	Smallmouth Bass	Sediment		
Hypothesis (Effect Size)	PCBs	PAH	DDx	PCBs
Pre-Post Comparison (20% Reduction at 80% Power)	10	30	>200	60
Temporal Trend (5% Decay Rate at 80% Power)	45	>200	160	130
Temporal Trend (10% Decay Rate at 80% Power)	15	65	45	35
Equivalence (Defined by ratio of 1.5 and confidence level of 90%)	25	50	25	50

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References

McDonald, L.L. and W.P. Erickson, 1994. Testing for bioequivalence in field studies: Has a disturbed site been adequately reclaimed? In *Statistics in Ecology and Environmental Monitoring,* ed. D.J. Fletcher and B.F.J. Manly, 183-197. Dunedin, New Zealand: University of Otago Press.

Hollander, M., and D. A. Wolfe. 1999. Nonparametric Statistical Methods. Hoboken, NJ: John Wiley & Sons, Inc.

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Attachment 1

Direction of the Null Hypothesis for Demonstrating Remedial Success

Attachment A1

Direction of the Null Hypothesis for Demonstrating Remedial Success

Objective: The objective of post remediation monitoring is to collect data adequate to demonstrate to regulatory agencies and the public with a strong level of confidence that selected remedial actions have been successful. In this context, the default position of the public and the regulatory agencies is to assume that the site remains un-remediated until new post remedial data demonstrate reliably that site conditions have changed in response to natural process and implementation of the remedial action. Success and completion of the remedy is demonstrated when site conditions have met stipulated cleanup goals and/or equivalence with reference conditions expected to prevail at the site over the long term using a test of bioequivalence.

Null Hypothesis for Traditional Research Questions: Traditional statistics and hypothesis testing is generally geared toward evaluations comparing treatments with controls, where the treatment is assumed to be ineffective until experimental data demonstrate convincingly that it is superior to the control group. In this context, the null hypothesis is defined such that control and treatment means are equal

$$H_0: \mu_{treatment} = \mu_{control}$$

and rejection of this null hypothesis at 5% level of significance demonstrates with 95% confidence that the treatment differs from the control.

Using the traditional test of equal means for demonstrating remedial effectiveness would suggest concluding the site had been effectively remediated when the null hypothesis was accepted. This approach is inappropriate because statistical tests cannot prove the null hypothesis. When the null hypothesis is not rejected, it is impossible to distinguish the following two conditions;

1) The null hypothesis is false, but data were insufficient to distinguish treatment and control groups relative to the variation in the measurements; or
2) The null hypothesis is indeed true.

To rectify this situation, some experimenters have imposed statistical power conditions which would preclude the un-detected difference in means from exceeding some magnitude at a selected probability level. However, to ensure such a constraint, the regulatory agency is required to effectively impose sample size requirements on the responsible parties, which may be difficult many responsible parties and stakeholders must all come to agreement.

Bioequivalence Test: Test of bioequivalence effectively reverse the null hypothesis from one of equality of means to one of inequality, assuming that the site remains contaminated until data can be used to nullify this default position.

Why is this an appropriate position for the agencies to take?

After responsible parties have implemented the remedy, they are essentially asking the agencies to agree that the overall process of risk assessment, remedial investigation and feasibility studies and remedial design and implementation have culminated in an effective remedy. The agencies are

effectively being asked to endorse the outcome with a clean bill of health. It is then incumbent on the agencies to minimize the risk that the remedy may have been unsuccessful. In this context, it is correct for the agencies to assume the remedy was unsuccessful until data demonstrate otherwise. Rejection of the null hypothesis of inequality in favor of the alternative of equivalence at a specified level of significance (equivalently high confidence) provides the agencies and the public with a demonstration that the responsible parties' claim of success are in fact reliable. Unfortunately, simply reversing the null hypothesis is not enough to develop a fair and appropriate decision approach, because rejecting the null hypothesis of equality vs the alternative that the site has lower concentrations than reference would be unfair in that cleanup levels would necessarily be lower than natural or anthropogenic background conditions. A "reasonably" attainable and scientifically meaningful level of similarity is required to define equivalence. Tests for equivalence then test the null hypothesis that site concentrations are greater than reference conditions by a pre-set and agreed to amount defined as "equivalent". Rejection of the null hypothesis of non-equivalence at the 5% level of significance provides the agencies with assurance that the site mean is less than the specified threshold with 95% level of confidence. Setting the equivalence threshold at a biologically meaningful difference insures that the remediation will be declared successful only when there is strong evidence that the true site mean concentration is within biologically meaningful margin of error of the reference condition—the site is statistically equivalent to reference.

Comparison of Approaches

Four red horizontal lines are plotted in Figure 1 representing confidence intervals for 4 hypothetical situations that may result from monitoring data. The solid vertical line at 0.0 represents the null hypothesis of no difference and the traditional null hypothesis would be accepted when intervals include this line representing no difference. The dashed vertical line represents a hypothetical value deemed to represent equivalence, and the hypothesis of non-equivalence is rejected when the upper confidence limit is less than this value. The remedy is declared successful when the null hypothesis is accepted under the traditional framework, whereas rejection of the null hypothesis demonstrates success under the equivalence framework.

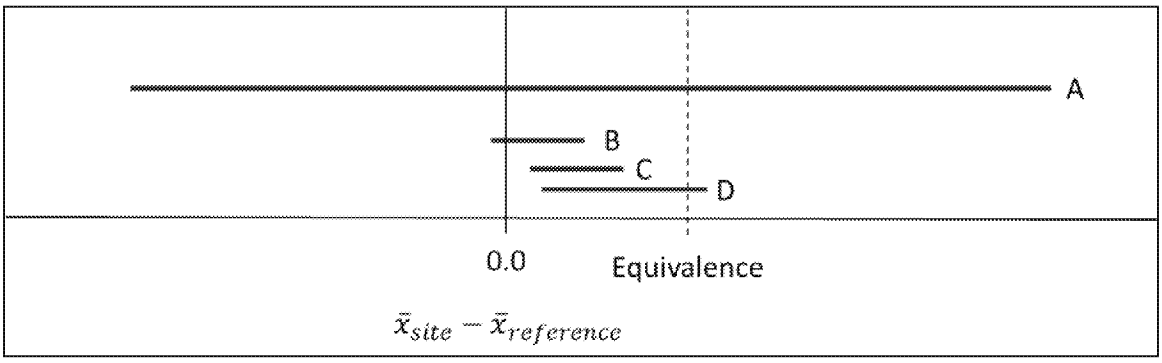

Figure 1. Hypothetical confidence intervals (red lines) for the difference in control and reference concentrations and comparison of traditional and equivalence tests under four different situations (A through D).

Situation A is the primary reason for which the traditional null hypothesis is understood to be inappropriate. In this case a wide confidence interval does not precisely bound the true mean, which

could be considerably higher than the reference mean, yet the remedy would be declared successful. Wide intervals are indicative of small sample sizes, high variance and/or poor laboratory practices. Under the traditional approach there is incentive for responsible parties to negotiate for small sample sizes to improve chances for the wide interval most likely result in accepting the traditional null hypothesis—declaring success. Conversely because the wide interval also captures the equivalence threshold, the remedy would not be declared successful at this point in time under the equivalence testing framework. This could lead to any number of response actions, including continue monitoring in the future, or collecting more data contemporaneously to refine the imprecise confidence interval to better understand the situation.

Situation B shows the case where both frameworks would result in the same outcome, that the site was not statistically different from background condition and that any differences that may exist are less than pre-specified definition of equivalence—the remedy would be declared successful at this time.

Situation C is an ironic condition where under the classical null framework, too much precision can be a problem in that the mean for the site is statistically greater than that for the reference area, but the difference is biologically indifferent. In this case the remedy would be declared successful under bioequivalence and unsuccessful under the traditional no-difference null framework. This situation illustrates that the traditional null framework incentivizes small sample sizes, and high variance to insure against an unlucky outcome due to a too-narrow confidence interval. The test of equivalence avoids this situation entirely in that narrow intervals are required to demonstrate success and these are the result of a well implemented powerful study. High quality science is incentivized by correctly stating the null hypothesis with a pre-defined biologically meaningful threshold for equivalence.

Situation D may be the most common outcome early in a monitoring program where the data suggest that the true mean may be within the equivalence region, but the interval is too wide to demonstrate equivalence statistically. In this situation it may be to the responsible parties advantage to simply collect more data in efforts to narrow the confidence interval in hopes of achieving statistical evidence of equivalence. This opens the door for an adaptive monitoring approach where smaller sample sizes could be considered early in the monitoring program until evidence suggests that site conditions may be approaching equivalence, at which time it would be up to responsible parties to increase the power of the design with more sampling effort to develop statistically significant evidence of success.

Summary

The discussion above provides general rationale for selection of the direction of the null hypothesis for demonstrating similarity to reference condition. The EPA is recommending the equivalence testing approach because it eliminates the need for inappropriate interpretation of nonsignificant statistical tests, stimulates discussion of what will be considered a biologically meaningful difference before sampling and analysis, and because the method incentivizes sound high quality science with powerful statistical testing methods.

Within the monitoring program, other analyses will be conducted that are unrelated to reference area comparisons. These will take on more familiar statistical frameworks and are not described in detail here. It is expected that for all media first order decay functions will be fit to samples to estimate post-remedial recovery rates. It is also expected that for each medium, baseline and post-remedial data will be compared to demonstrate the short-term effects of the remedy, immediately after completion.

Statistical procedures for evaluating the effectiveness of the remedy will take on the traditional null hypothesis framework because the questions are naturally and appropriately framed with a null hypothesis of no change (equality of metrics) with rejection of the traditional null signifying remedial effectiveness.

Message

From: Kirsten Djadoo [kirsten.djadoo@castlelake.com]
Sent: 4/13/2017 2:15:50 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Automatic reply: Follow Up on Mississippi Phosphates

I will be out of the office April 12-14 with limited access to email. If you have any immediate needs, please contact Hannah Patzer at hannah.patzer@castlelake.com, otherwise I will respond when I am back in the office on Monday, April 17.

Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/25/2017 8:53:10 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Dimitri.Karakitsos@hklaw.com
Subject: Fwd: Cancellation of Friday 6/23 meeting
Attachments: image001.png; image002.png; image003.png; image004.png; image002.png; image005.png; image001.png; image002.png; image003.png; image006.png; image007.png; image008.png; image009.png; image007.png; image010.png

Region calling everyone together to explain the Agency's position needing 8 years and $100mm of data gathering.

From: "Ebright, Stephanie" <EBRIGHT.STEPHANIE@EPA.GOV<mailto:EBRIGHT.STEPHANIE@EPA.GOV>>
Date: June 25, 2017 at 3:32:50 PM CDT
To: "David C. Weber" <DWeber@bdlaw.com<mailto:DWeber@bdlaw.com>>, "Cora, Lori" <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>, "Sheldrake, Sean" <sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>>
Cc: Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>, "' (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>)'" <deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>>, 'Hans Feige' <hfeige@feige.us<mailto:hfeige@feige.us>>, "'Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>)'" <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>, Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>, "Gustavson, Karl" <Gustavson.Karl@epa.gov<mailto:Gustavson.Karl@epa.gov>>, "Fred WOLF" <frederick.wolf@total.com<mailto:frederick.wolf@total.com>>, Annie Von Burg <Annie.VonBurg@portlandoregon.gov<mailto:Annie.VonBurg@portlandoregon.gov>>, "Jim Mckenna (jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>)" <jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>>, "myron.burr@siltronic.com<mailto:myron.burr@siltronic.com>" <myron.burr@siltronic.com<mailto:myron.burr@siltronic.com>>, "rjw@nwnatural.com<mailto:rjw@nwnatural.com>" <rjw@nwnatural.com<mailto:rjw@nwnatural.com>>, "max.miller@tonkon.com<mailto:max.miller@tonkon.com>" <max.miller@tonkon.com<mailto:max.miller@tonkon.com>>, "Laura.J.S.Brown@usdoj.gov<mailto:Laura.J.S.Brown@usdoj.gov>" <Laura.J.S.Brown@usdoj.gov<mailto:Laura.J.S.Brown@usdoj.gov>>, "Loren R. Dunn" <LDunn@bdlaw.com<mailto:LDunn@bdlaw.com>>, "'Anne Fitzpatrick'" <AFitzpatrick@Geosyntec.com<mailto:AFitzpatrick@Geosyntec.com>>, "Emerson J. Hilton" <EHilton@bdlaw.com<mailto:EHilton@bdlaw.com>>, "Augustus E. Winkes" <AWinkes@bdlaw.com<mailto:AWinkes@bdlaw.com>>
Subject: RE: Cancellation of Friday 6/23 meeting

Hi all.

For Monday's meeting, having heard no objections to a noon start time, the meeting will be from 12-4 pacific. For those in Portland, the meeting will be at the EPA Oregon Operations Office building at Fox Tower, 805 SW Broadway, Portland. The meeting will be in the building's 20th Floor conference room.

For those unable to attend in person, please see web conferencing information below.

Thank you and look forward to our discussion tomorrow.

Technical Discussion of Pre-RD Sampling
Instructions for web conference participation.
For the audio portion, please dial 1-719-457-1414 Passcode 934632#
For the video portion, please click the following link and follow the steps described below:
https://cdmsmith.globalmeet.com/SCOTTCOFFEY<https://urldefense.proofpoint.com/v2/url?u=https-3A__cdmsmith.globalmeet.com_SCOTTCOFFEY&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=R_JAMGzOz5rh2FyvZsSe_nfifHTdl-lVvXTL1nqT-rE&e=>
Step 1 - A window will open prompting you to enter name and email address. Enter this information so you can be identified in the meeting room.
Step 2 - The next window will open and ask for a Password. Ignore this and choose at lower right " Continue as Guest"

Step 3 – The global meet window will begin to open and a pop-up will show asking to connect audio via computer, or call-in. PLEASE CLOSE THIS WINDOW as you've already entered the audio through the manual line/passcode listed above.

Meeting Agenda:

* Introductions
* Overview of EPA's sampling Plan including the purpose of developing and presenting the Long-Term monitoring plan with the Baseline effort

* Discussion/Questions

* Overview of statistics that support EPA's approach to trend monitoring and necessary zones/exposure units for ROD RAOs/metrics/targets.

* Discussion/Questions

* Action Items/Next Steps

Stephanie Ebright, Assistant Regional Counsel
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, ORC-113
Seattle, WA 98101
206.553.0774 (phone)
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From: Ebright, Stephanie
Sent: Friday, June 23, 2017 10:09 AM
To: 'David C. Weber' <DWeber@bdlaw.com<mailto:DWeber@bdlaw.com>>; Cora, Lori <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>; Sheldrake, Sean <sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>>
Cc: Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>; '(deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>)' <deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>>; 'Hans Feige' <hfeige@feige.us<mailto:hfeige@feige.us>>; 'Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>)' <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>; Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>; Gustavson, Karl <Gustavson.Karl@epa.gov<mailto:Gustavson.Karl@epa.gov>>; Fred WOLF <frederick.wolf@total.com<mailto:frederick.wolf@total.com>>; Annie Von Burg <Annie.VonBurg@portlandoregon.gov<mailto:Annie.VonBurg@portlandoregon.gov>>; Jim Mckenna (jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>) <jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>>; myron.burr@siltronic.com<mailto:myron.burr@siltronic.com>; rjw@nwnatural.com<mailto:rjw@nwnatural.com>; max.miller@tonkon.com<mailto:max.miller@tonkon.com>; Laura.J.S.Brown@usdoj.gov<mailto:Laura.J.S.Brown@usdoj.gov>; Loren R. Dunn <LDunn@bdlaw.com<mailto:LDunn@bdlaw.com>>; 'Anne Fitzpatrick' <AFitzpatrick@Geosyntec.com<mailto:AFitzpatrick@Geosyntec.com>>; Emerson J. Hilton <EHilton@bdlaw.com<mailto:EHilton@bdlaw.com>>; Augustus E. Winkes <AWinkes@bdlaw.com<mailto:AWinkes@bdlaw.com>>
Subject: RE: Cancellation of Friday 6/23 meeting

Thanks David. For the agenda Monday, EPA is agreeable to discussing the statistics that support EPA's approach to monitoring and sampling. We will have our technical experts there for the discussion. Following that discussion, we are interested in talking about next steps to moving the sampling effort forward.

I will plan on attending the meeting as counsel for several parties will be present.

In terms of logistics, it sounds like the reserved conference room is only available until 4. EPA is available to start the meeting at noon in order to allow more time for discussion. Please let me know if meeting from 12-4 pacific time works for everyone and if so, we can update the invite.

Thanks and we look forward to our meeting Monday.

Stephanie Ebright, Assistant Regional Counsel
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1200 Sixth Avenue, ORC-113
Seattle, WA 98101
206.553.0774 (phone)
206.553.1762 (fax)

From: David C. Weber [mailto:DWeber@bdlaw.com]
Sent: Friday, June 23, 2017 8:41 AM

To: Ebright, Stephanie <EBRIGHT.STEPHANIE@EPA.GOV<mailto:EBRIGHT.STEPHANIE@EPA.GOV>>; Cora, Lori <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>; Sheldrake, Sean <sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>>
Cc: Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>; ' (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>)' <deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>>; 'Hans Feige' <hfeige@feige.us<mailto:hfeige@feige.us>>; 'Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>)' <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>; Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>; Gustavson, Karl <Gustavson.Karl@epa.gov<mailto:Gustavson.Karl@epa.gov>>; Fred WOLF <frederick.wolf@total.com<mailto:frederick.wolf@total.com>>; Annie Von Burg <Annie.VonBurg@portlandoregon.gov<mailto:Annie.VonBurg@portlandoregon.gov>>; Jim Mckenna (jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>) <jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>>; myron.burr@siltronic.com<mailto:myron.burr@siltronic.com>; rjw@nwnatural.com<mailto:rjw@nwnatural.com>; max.miller@tonkon.com<mailto:max.miller@tonkon.com>; Laura.J.S.Brown@usdoj.gov<mailto:Laura.J.S.Brown@usdoj.gov>; Loren R. Dunn <LDunn@bdlaw.com<mailto:LDunn@bdlaw.com>>; 'Anne Fitzpatrick' <AFitzpatrick@Geosyntec.com<mailto:AFitzpatrick@Geosyntec.com>>; Emerson J. Hilton <EHilton@bdlaw.com<mailto:EHilton@bdlaw.com>>; Augustus E. Winkes <AWinkes@bdlaw.com<mailto:AWinkes@bdlaw.com>>
Subject: RE: Cancellation of Friday 6/23 meeting

Stephanie –

I'm writing to follow-up on our discussion from yesterday afternoon.

As discussed, the pre-RD group is prepared to meet with EPA and the City/State/NWN/Fed group at 1:00 pm on Monday, June 26, at EPA's Oregon Operations Office to learn more about EPA Region 10's plan, including the technical underpinnings of EPA's approach to monitoring and sampling. We think it is important that both technical and legal representatives be present at this meeting. We also look forward to discussing with EPA ideas about how to coordinate the different investigation efforts under separate work plans. However, at this time, the pre-RD group is not prepared to meet with EPA and the City/State/NWN/Fed group for purposes of negotiating and discussing the terms and scope of our proposal.

To be clear, the pre-RD group remains prepared to meet with EPA only to negotiate and discuss the terms and scope of our proposal. We respectfully request that such negotiations and discussions be conducted in confidential sessions pursuant to FRE 408. Our request is consistent with EPA policy and will help facilitate meaningful and efficient discussions. The pre-RD group remains committed to moving forward with our proposal. Time is of the essence, and we are intent on delivering high quality data in a 2-year time period.

Please let us know if EPA willing to go forward with the Monday meeting under the conditions described above.

Regards,
David

David C. Weber
Principal

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From: Ebright, Stephanie [mailto:EBRIGHT.STEPHANIE@EPA.GOV]
Sent: Thursday, June 22, 2017 9:35 AM
To: David C. Weber; Cora, Lori; Sheldrake, Sean
Cc: Scott Coffey; ' (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>)'; 'Hans Feige'; 'Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>)'; Scott Coffey; Gustavson, Karl; Fred WOLF; Annie Von Burg; Jim Mckenna (jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>); myron.burr@siltronic.com<mailto:myron.burr@siltronic.com>; rjw@nwnatural.com<mailto:rjw@nwnatural.com>; max.miller@tonkon.com<mailto:max.miller@tonkon.com>; Laura.J.S.Brown@usdoj.gov<mailto:Laura.J.S.Brown@usdoj.gov>; Loren R. Dunn; 'Anne Fitzpatrick'; Emerson J. Hilton; Augustus E. Winkes
Subject: RE: Cancellation of Friday 6/23 meeting

Hi David,

Thanks for your email. EPA is available for a meeting with the pre-RD group and the City/State/NWN/Fed group on Monday, June 26, in Portland starting at 1:00 pm. We are prepared to meet until 5 pm to assure time to get through everyone's questions.

In terms of agenda for the Monday meeting, we are anticipating the same technical discussion that we planned to have on June 23rd, which was to discuss the similarities and differences between the EPA plan and the pre-RD group plan and the City/State/NWN plan; obtain a better understanding of the pre-RD group's proposed SMA delineation; and discuss the statistics that support EPA's approach to trend monitoring and necessary zones/exposure units for our RAOs/metrics/targets. We will have EPA's experts available for a robust exchange on the plans. We question the need for legal counsel for this meeting but if parties insist that their lawyers are there, we will have EPA counsel there too.

We are encouraged to have all interested parties at the table and, at this time, do not believe a second pre-RD group only meeting on Tuesday is necessary.

Those attending the Monday meeting for EPA are:

Sean Sheldrake
Scott Coffey
Eric Blischke
John Kern
Karl Gustavson
Stephanie Ebright
Eva DeMaria
Becky Chu

We can host the meeting at the EPA Oregon Operations Office building located at the Fox Tower, 805 SW Broadway, Portland. The meeting will be in the building's 20th Floor conference room. We can set up a conference line for those not able to attend the meeting in person.

Thanks again for the discussion last week and we look forward to continuing the discussion next Monday.

Best,
Stephanie

Stephanie Ebright, Assistant Regional Counsel
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From: David C. Weber [mailto:DWeber@bdlaw.com]
Sent: Wednesday, June 21, 2017 1:57 PM
To: Cora, Lori <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>; Sheldrake, Sean <sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>>; Ebright, Stephanie <EBRIGHT.STEPHANIE@EPA.GOV<mailto:EBRIGHT.STEPHANIE@EPA.GOV>>
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Subject: RE: Cancellation of Friday 6/23 meeting

Lori –

You're welcome. In terms of schedule, the pre-RD group's call with the City/State/NWN/Fed group is scheduled for Thursday, June 22.

Consistent with your request, the pre-RD group is agreeable to meet with EPA and the City/State/NWN/Fed group on Monday, June 26, in Portland. We would prefer a Noon or 1:00 pm start-time in order to accommodate out-of-town travel schedules.

Finally, we would like to reschedule our meeting that had been planned for June 23 between the pre-RD group and EPA only to Tuesday, June 27, in Portland.

Regards,

David

David C. Weber
Principal

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From: Cora, Lori [mailto:Cora.Lori@epa.gov]
Sent: Tuesday, June 20, 2017 3:52 PM
To: David C. Weber; Sheldrake, Sean; Ebright, Stephanie
Cc: Scott Coffey; ' (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>)'; 'Hans Feige'; 'Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>)'; Scott Coffey; Gustavson, Karl; Fred WOLF; Annie Von Burg; Jim Mckenna (jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>); myron.burr@siltronic.com<mailto:myron.burr@siltronic.com>; rjw@nwnatural.com<mailto:rjw@nwnatural.com>; max.miller@tonkon.com<mailto:max.miller@tonkon.com>; Laura.J.S.Brown@usdoj.gov<mailto:Laura.J.S.Brown@usdoj.gov>; Loren R. Dunn; 'Anne Fitzpatrick'; Emerson J. Hilton; Augustus E. Winkes
Subject: RE: Cancellation of Friday 6/23 meeting

Hello, David. Thanks for your message and your group's cooperation to meet and coordinate with all parties interested in performing sampling. On alternative meeting dates, Sean's message provided EPA's availability to meet in Portland next week excerpted below:

"EPA is available to meet in Portland the week of June 26th on Monday, Tuesday, Thursday afternoon, or Friday with everyone (We can host the meeting at the Oregon Operations Office/Fox tower on Monday or Friday). This will allow EPA to discuss matters with a broader group interested in conducting the sampling work together, and also ensure attendance of our statistician and be able to review GIS data from the Pre-Remedial Design Group."

Sean's message specifically asked to hear from everyone which day would work for a meeting on the two plans. We can host Monday or Friday, but if another day works better for everyone, someone else will need to supply the space. I understand from Sean that John Kern, our statistician, is available to meet in person Monday and Tuesday. But EPA can meet Thursday afternoon or Friday as well just likely without the benefit of Mr. Kern. I also wish to reiterate that we are waiting for the GIS data referenced by Exxon Mobil representatives. We have yet to receive that.

Please let us know when you can meet next week.

Lori Houck Cora | Assistant Regional Counsel
U.S. Environmental Protection Agency | Region 10
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From: David C. Weber [mailto:DWeber@bdlaw.com]
Sent: Tuesday, June 20, 2017 3:35 PM
To: Sheldrake, Sean <sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>>; Ebright, Stephanie <EBRIGHT.STEPHANIE@EPA.GOV<mailto:EBRIGHT.STEPHANIE@EPA.GOV>>; Cora, Lori <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>
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Subject: RE: Cancellation of Friday 6/23 meeting

Lori and Sean –

At your request, the pre-RD group has offered to meet this week with the City/State/NWN group via conference call, likely on Thursday, June 22. Meeting in person on short notice is not feasible since our group members are not all local.

We were disappointed by the cancellation of our next meeting on June 23 to further discuss our group's proposal. As we discussed, time is of the essence. We propose to be in the field in 2017, and are intent on delivering high quality data in a 2-year time period.

Therefore, please let us know your earliest date for a second meeting between the pre-RD group and EPA on our group's proposed scope of work. If possible, we would still very much like to meet on June 23 as originally planned, or on a date next week that is mutually convenient.

We look forward to hearing from you.

Regards,
David

David C. Weber
Principal

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From: Sheldrake, Sean [mailto:sheldrake.sean@epa.gov]
Sent: Monday, June 19, 2017 1:05 PM
To: 'Anne Fitzpatrick'; David C. Weber
Cc: Scott Coffey; ' (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>)'; 'Hans Feige'; 'Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>)'; Scott Coffey; Gustavson, Karl; Cora, Lori; Fred WOLF; Annie Von Burg; Jim Mckenna (jim.j.mckenna@oregon.gov<mailto:jim.j.mckenna@oregon.gov>); myron.burr@siltronic.com<mailto:myron.burr@siltronic.com>; rjw@nwnatural.com<mailto:rjw@nwnatural.com>; max.miller@tonkon.com<mailto:max.miller@tonkon.com>; Laura.J.S.Brown@usdoj.gov<mailto:Laura.J.S.Brown@usdoj.gov>; Ebright, Stephanie
Subject: Cancellation of Friday 6/23 meeting

Hello everyone,

We are writing to inform you that EPA is cancelling the meeting scheduled for this Friday to discuss the differences between EPA's proposed sampling plan and the Pre-RD Group's proposal. We are cancelling Friday's meeting for a few of reasons.

First, we want to provide more time for the Pre-RD Group to meet with the other interested parties who also want to participate in the first post-ROD sampling efforts before further discussing the two plans. We are aware that a meeting of all interested parties was being put off to prepare for Friday's meeting and we do not want that result. EPA wants all interested parties to meet about the sampling effort to assure an efficient and successful negotiation. EPA too wants to discuss a cohesive sampling plan that meets all critical objectives in a forum that will allow everyone to hear the same messages. Therefore, EPA wants the next meeting about the two plans to include all interested parties. To facilitate all interested parties to meet, EPA will defer beginning negotiations for 2 additional weeks (to the week of July 3) to provide all interested parties time to coordinate and meet with each other as much as needed, and to meet jointly with EPA at least once before beginning negotiations. Second, EPA's statistician was not available to meet until next week. Thirdly, EPA has not received the GIS data Exxon Mobil mentioned was used in the group's data gaps analysis. EPA needs time to review such data to further evaluate the Pre-Remedial Design Group's proposal.

EPA is available to meet in Portland the week of June 26th on Monday, Tuesday, Thursday afternoon, or Friday with everyone (We can host the meeting at the Oregon Operations Office/Fox tower on Monday or Friday). This will allow EPA to discuss matters with a broader group interested in conducting the sampling work together, and also ensure attendance of our statistician and be able to review GIS data from the Pre-Remedial Design Group.

Please forward this message to the whole group, as I don't have contacts for all participants. Lastly, please let me know what days would work for each of your groups.

Thank you for your attention to this matter.

S

Sean Sheldrake, Unit Diving Officer, RPM
EPA Region 10, 1200 Sixth Ave., Suite 900; Mailstop DOC-01

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[FB icon]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.facebook.com_EPADivers&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=4PDe-MOOSD-aOGMlbQdPn15XgzKfBWCB3KCkIz_8qDM&e=>[scidive_round]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.epa.gov_scientific-2Ddiving&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=3VAKIOTEfcvqtpjHGBq_CpxPH3gzcxPdyVDjXg_Bqpw&e=>[flickr icon for signature block]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.flickr.com_photos_usepagov_sets_72157629017469667_with_14530254926_&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=tNnl0vbdNdZIHojBZu2ABsJmUCIQc9ohuWG9wauPozE&e=>
Over 47 years of scientific diving in support of EPA's mission

From: Sheldrake, Sean
Sent: Friday, June 16, 2017 3:07 PM
To: Anne Fitzpatrick <AFitzpatrick@Geosyntec.com<mailto:AFitzpatrick@Geosyntec.com>>
Cc: Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>; (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>) <deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>>; Hans Feige <hfeige@feige.us<mailto:hfeige@feige.us>>; Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>) <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>; David C. Weber <DWeber@bdlaw.com<mailto:DWeber@bdlaw.com>>; coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>; Gustavson, Karl <Gustavson.Karl@epa.gov<mailto:Gustavson.Karl@epa.gov>>; Cora, Lori <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>
Subject: RE: Exxon data--evaluating SMA delineation

Anne, David, Please see the attached table we discussed this past Wednesday that would be helpful to generate a specific agenda for this coming Friday. Let me know if you have any questions.

Thank you.

S

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[FB icon]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.facebook.com_EPADivers&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=4PDe-MOOSD-aOGMlbQdPn15XgzKfBWCB3KCkIz_8qDM&e=>[scidive_round]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.epa.gov_scientific-2Ddiving&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=3VAKIOTEfcvqtpjHGBq_CpxPH3gzcxPdyVDjXg_Bqpw&e=>[flickr icon for signature block]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.flickr.com_photos_usepagov_sets_72157629017469667_with_14530254926_&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=tNnl0vbdNdZIHojBZu2ABsJmUCIQc9ohuWG9wauPozE&e=>
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From: Sheldrake, Sean
Sent: Friday, June 16, 2017 10:59 AM
To: 'Anne Fitzpatrick' <AFitzpatrick@Geosyntec.com<mailto:AFitzpatrick@Geosyntec.com>>
Cc: Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>; (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>) <deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>>; Hans Feige <hfeige@feige.us<mailto:hfeige@feige.us>>; Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>) <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>; David C. Weber <DWeber@bdlaw.com<mailto:DWeber@bdlaw.com>>
Subject: RE: Exxon data--evaluating SMA delineation

Hi Anne,

Unfortunately our stats person isn't available next Friday in terms of going over say our MNR recovery rate DQOs, but I think we do have a quorum to go over SMA delineation/data gap questions next Friday which I agree would be a good discussion, if we get the additional data in time to look it over in some detail. We are almost ready to convey our differences table as well—hopefully we could use that to further generate an agenda for next week. I think it would also be useful to schedule a call or meeting on Monday or (better) Tuesday the following week if we can confirm availability for key team members for items we can't get through Friday due to time or availability.

Thank you.

S

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Ex. 6 - Personal Privacy cell
http://yosemite.epa.gov/r10/cleanup.nsf/sites/ptldharbor<https://urldefense.proofpoint.com/v2/url?u=http-3A__yosemite.epa.gov_r10_cleanup.nsf_sites_ptldharbor&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=6J42u9VTAGQNVi-4vHm8BK4x9L1NDMzdFXHWxQ2bcFI&e=>
[FB icon]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.facebook.com_EPADivers&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=4PDe-MOOSD-aOGMlbQdPn15XgzKfBWCB3KCkIz_8qDM&e=>[scidive_round]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.epa.gov_scientific-2Ddiving&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=3VAKIOTEfcvqtpjHGBq_CpxPH3gzcxPdyVDjXg_Bqpw&e=>[flickr icon for signature block]<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.flickr.com_photos_usepagov_sets_72157629017469667_with_14530254926_&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=tNnl0vbdNdZIHojBZu2ABsJmUCIQc9ohuWG9wauPozE&e=>
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From: Anne Fitzpatrick [mailto:AFitzpatrick@Geosyntec.com]
Sent: Friday, June 16, 2017 9:39 AM
To: Sheldrake, Sean <sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>>
Cc: Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>; (deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>) <deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>>; Hans Feige <hfeige@feige.us<mailto:hfeige@feige.us>>; Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>) <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>
Subject: RE: Exxon data--evaluating SMA delineation

Hi Sean,
I agree it was a productive discussion. Elizabeth is working on your request this morning for coring data collected by NewFields from RM 5 to 6.

Would you still like to discuss the geostats next Friday and how we derived our sample counts, and the steps we used? I think it would still be a worthwhile discussion.

Regards,
Anne

Anne Fitzpatrick, LHG
Geosyntec Consultants
520 Pike Street, Suite 1375
Seattle, WA 98101
Direct: Ex. 6 - Personal Privacy
Office: 206-496-1450
Cell: Ex. 6 - Personal Privacy
Email afitzpatrick@geosyntec.com<mailto:afitzpatrick@geosyntec.com>

PRIVILEGED AND CONFIDENTIAL / JOINT DEFENSE COMMUNICATION / ATTORNEY CLIENT WORK PRODUCT

From: Sheldrake, Sean [mailto:sheldrake.sean@epa.gov]
Sent: Friday, June 16, 2017 9:02 AM
To: Anne Fitzpatrick <AFitzpatrick@Geosyntec.com<mailto:AFitzpatrick@Geosyntec.com>>
Cc: Scott Coffey <coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>>
Subject: FW: Exxon data--evaluating SMA delineation

Hello Anne, Thanks again for your presentation this past Wednesday and a productive discussion. For next week, would there be a way you could transmit the GIS layers to us? Unfortunately, we don't have

our statistician available next Friday, but we would like to get into some details on the SMA delineation if we have a chance to go through the dataset you used.

Thank you.

S

Sean Sheldrake, Unit Diving Officer, RPM
EPA Region 10, 1200 Sixth Ave., Suite 900; Mailstop DOC-01
Seattle, WA 98101
206.553.1220 desk
Ex. 6 - Personal Privacy cell
http://yosemite.epa.gov/r10/cleanup.nsf/sites/ptldharbor<https://urldefense.proofpoint.com/v2/url?u=https-3A__na01.safelinks.protection.outlook.com_-3Furl-3Dhttp-253A-252F-252Fyosemite.epa.gov-252Fr10-252Fcleanup.nsf-252Fsites-252Fptldharbor-26data-3D02-257C01-257CAFitzpatrick-2540geosyntec.com-257C14015f52441b4ca6aa2b08d4b4d1101c-257C7125495671b047f48977c4c17bc205cb-257C1-257C0-257C636332257412965713-26sdata-3D-252BbTP-252B0-252FMkMsODi8iv-252BWXuCHekQGICO-252F3AR8UtRfCB2I-253D-26reserved-3D0&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=cyYIV2OGd4V14zXBvVmhDUtadswFJZJ2xtzCFk0AcgE&e=>
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From: Sheldrake, Sean
Sent: Thursday, June 15, 2017 12:12 PM
To: 'elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>' <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>
Cc: coffeyse@cdmsmith.com<mailto:coffeyse@cdmsmith.com>; Cora, Lori <Cora.Lori@epa.gov<mailto:Cora.Lori@epa.gov>>
Subject: Exxon data--evaluating SMA delineation

Hello Elizabeth,

It was good to talk to everyone yesterday. As one follow up, is there a way you could send us the data you referenced? It's also in our file, but I'm hoping you could find a way to email or FTP the information most quickly so we may get into analyzing it. It sounds like the MS Access format with a key or legend that explains all the fields is all we need to get into things in detail.

Thank you.

S

Sean Sheldrake, Unit Diving Officer, RPM
EPA Region 10, 1200 Sixth Ave., Suite 900; Mailstop DOC-01
Seattle, WA 98101
206.553.1220 desk
Ex. 6 - Personal Privacy cell
http://yosemite.epa.gov/r10/cleanup.nsf/sites/ptldharbor<https://urldefense.proofpoint.com/v2/url?u=https-3A__na01.safelinks.protection.outlook.com_-3Furl-3Dhttp-253A-252F-252Fyosemite.epa.gov-252Fr10-252Fcleanup.nsf-252Fsites-252Fptldharbor-26data-3D02-257C01-257CAFitzpatrick-2540geosyntec.com-257C14015f52441b4ca6aa2b08d4b4d1101c-257C7125495671b047f48977c4c17bc205cb-257C1-257C0-257C636332257412965713-26sdata-3D-252BbTP-252B0-252FMkMsODi8iv-252BWXuCHekQGICO-252F3AR8UtRfCB2I-253D-26reserved-3D0&d=DwMF-g&c=14jPbF-1hWnYXveJ5rixtS_Fo3DRrpL7HUwJDAc4HIc&r=btZnmVqpKvZ54gR2K_YWJbZCIGosedlog4oqxBYgW7g&m=c_w2IL9YGbdf1jyK0LL2HcU0cCO0P-q1GCV9-YcT92w&s=cyYIV2OGd4V14zXBvVmhDUtadswFJZJ2xtzCFk0AcgE&e=>
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Message

From: Timothy Charters [tcharters@noia.org]
Sent: 6/19/2017 2:23:23 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Hey....

Hey, I just landed a new gig. Wanted to see how you were doing these days!

Tim Charters
Senior Director, Governmental and Political Affairs
National Ocean Industries Association
Ex. 6 - Personal Privacy

Message

From: Todd D Young [TDYoung@uss.com]
Sent: 5/25/2017 10:49:03 AM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Checking back

Byron,
I hope your week is going well.
Administrator Pruitt's remarks to the joint steel association meeting on Tuesday were well received.
I'm checking back on the January 18 EPA letter that I shared as there is an approaching court deadline next Weds.
Thank you,
Todd

Ex. 6 - Personal Privacy

Sent from my BlackBerry 10 smartphone on the Verizon Wireless 4G LTE network.

Message

From: Kastner, Kenneth M. [ken.kastner@hoganlovells.com]
Sent: 3/24/2017 10:11:50 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
CC: Shawn Soderberg (Shawn.soderberg@bloomenergy.com) [Shawn.soderberg@bloomenergy.com]; Paul Wilkins (Paul.Wilkins@bloomenergy.com) (Paul.Wilkins@bloomenergy.com) [Paul.Wilkins@bloomenergy.com]; T.A. Hawks (TAHawks@monumentpolicy.com) [TAHawks@monumentpolicy.com]
Subject: Meeting Today
Attachments: DOC039.pdf

Hi Byron,

Many thanks to you and your colleague for taking the time to meet with Bloom Energy today. Per your request, attached is the 1990 RCRA Hotline Summary that Barnes Johnson relies on in his October 3, 2016 memo that we shared with you today. I will call you towards the end of next week. What is the best number for you?

Best regards,
Ken

Kenneth Kastner
Partner

Hogan Lovells US LLP
Columbia Square
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Washington, DC 20004

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Direct: +1 Ex. 6 - Personal Privacy
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9441.1990(13a)

RCRA/Superfund/OUST Hotline Monthly Report Question

May 1990

5. 40 CFR Section 261.4(c) Hazardous Wastes Which Are Exempted From Certain Regulations

   A petroleum refining facility, which generates more than 1000 kilograms of hazardous waste per month, operates a heat exchanger as part of the refining process. A sludge forms inside the heat exchanger. Periodically this sludge is cleaned out of the heat exchanger and managed as listed hazardous waste K050. According to 40 CFR Section 261.4(c) a hazardous waste generated in a manufacturing process unit is exempt from regulation until the waste exits the unit, or the waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing purposes. If the refining facility disconnects the heat exchanger and ships it off-site for cleaning within 90 days, would the exemption in Section 261.4(c) apply?

No, the 40 CFR 261.4(c) exemption is not available in this situation. Although the exemption is available for hazardous waste in transport vehicles or vessels, which may be moved to a central facility for cleaning (see 45 FR 72026, October 30, 1980), EPA does not interpret the exemption as applying to manufacturing process units, associated non-waste treatment units, or product/raw material storage tanks (that are stationary during operation) if those units are disassembled for cleaning off-site. As stated in the October 30, 1980, Federal Register (45 FR 72025), the incentive to maintain the unit's integrity to prevent leaks or unintended releases of products is substantially reduced when the unit is taken out of operation. Likewise, there would be loss of the unit's structural integrity if it were to be disassembled for off-site shipment, with a potential for hazardous waste releases. Thus the 40 CFR 261.4(c) exclusion is not available to manufacturing units, associated non-waste treatment units, and product/raw material storage tanks that are to be shipped off-site for cleaning.

Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 7/17/2017 2:27:08 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: RE: Meeting with Orange County Water District Executives.

Or 10 or 11

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
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rich.gold@hklaw.com | www.hklaw.com

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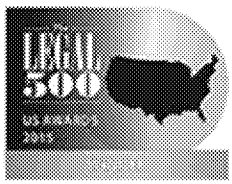

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From: Gold, Richard (WAS - X77143)
Sent: Friday, July 14, 2017 6:58 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Re: Meeting with Orange County Water District Executives.

How's first thing at 9?

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100
Washington, D.C. 20006
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com | @HK_PPR

On Jul 14, 2017, at 5:53 PM, Brown, Byron <brown.byron@epa.gov> wrote:

Thursday, July 27 looks pretty open. Will some time that day work?

-----Original Message-----
From: rich.gold@hklaw.com [mailto:rich.gold@hklaw.com]
Sent: Friday, July 14, 2017 10:10 AM
To: Brown, Byron <brown.byron@epa.gov>

Subject: Re: Meeting with Orange County Water District Executives.

Just circling back. Thx

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006 T
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com> | @HK_PPR

On Jul 12, 2017, at 2:34 PM, Gold, Richard (WAS - X77143)
<rich.gold@hklaw.com<mailto:rich.gold@hklaw.com>> wrote:

Hey Byron, executives from the Orange County, CA Water District will be in DC the week of the 24th and wanted to meet with the Administrator's office on the proposed listing of their groundwater site on the NPL and issues related to the Clean Water SRF. Thought you would be good to cover both. Attendees will be:

Denis Bilodeau, Board President
Mike Markus, General Manager

Purpose: Make clear the District's support for listing the ground water contamination site in Orange County on the Superfund National Priorities List and discuss the coalition OCWD is putting together to boost funding for the EPA Clean Water and Drinking Water SRF's and modernize the funding formula.

They are here Monday, July 24th through Wednesday the 27th. Let me know if you have 30 minutes.

Thx

Rich Gold | Holland & Knight
Practice Group Leader
Public Policy & Regulation Group
800 17th Street, N.W., Suite 1100<x-apple-data-detectors://0/1>
Washington, D.C<x-apple-data-detectors://0/1>. 20006 T
Ex. 6 - Personal Privacy
Rich.Gold@hklaw.com<mailto:Rich.Gold@hklaw.com> | @HK_PPR

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preserve the attorney-client or work product privilege that may be available to protect confidentiality.

Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 3/9/2017 7:13:53 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Re: Not sure where RJ is but I'm here

We have some info based on discussion yesterday - is there a good time to talk so we can give you a quick update?

Sent from my iPhone

On Mar 8, 2017, at 4:30 PM, Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>> wrote:

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Message

From: Nick Goldstein [ngoldstein@artba.org]
Sent: 9/26/2017 9:17:06 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; David Bauer [dbauer@artba.org]
Subject: RE: infrastructure examples

Hello Byron,

I am in the process of reaching out to our state chapter affiliates on your request and will report back with any information.

Thanks,

Nick

Nick Goldstein
Vice President of Regulatory Affairs & Assistant General Counsel
American Road & Transportation Builders Association
250 E Street, SW
Suite 900
Washington, DC 20024
Phone: Ex. 6 - Personal Privacy
www.artba.org

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, September 26, 2017 4:00 PM
To: David Bauer; Nick Goldstein
Subject: infrastructure examples

Hi David and Nick -- I have been coordinating EPA's contributions to the White House's infrastructure initiative, and I wanted to see if you could help me track down some information. I am looking for specific examples of infrastructure projects that are "shovel ready" but lack funding – lack of direct funding as well as lack of a revenue stream. I know some associations have already compiled lists and put them forward to the White House or Congress, so hopefully this would be an easy ask. The examples could include project categories that are under the purview of other agencies such as bridges, transportation hubs, or harbor projects. I am not looking for anything formal, just a couple of examples with basic information describing the type of project, location, project status, and expected cost. Thanks, and let me know if I can answer any questions. - Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Butland, Celine [Celine.Butland@wilmerhale.com]
Sent: 5/12/2017 3:49:29 PM
To: Donald K. Shandy [don.shandy@crowedunlevy.com]
CC: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Washington, Valerie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9d031c02ce3a416dad0d421ee998d5a3-VWASHING]; Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]; Lehman, Rob [Rob.Lehman@wilmerhale.com]
Subject: RE: Fitzgerald Trucking

Rob has a standing client meeting that he cannot miss, but does not want to stand in the way of this call. Thank you.

From: Donald K. Shandy [mailto:don.shandy@crowedunlevy.com]
Sent: Friday, May 12, 2017 10:35 AM
To: Butland, Celine <Celine.Butland@wilmerhale.com>
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Washington, Valerie <Washington.Valerie@epa.gov>; Brown, Byron <brown.byron@epa.gov>; Lehman, Rob <Rob.Lehman@wilmerhale.com>
Subject: Re: Fitzgerald Trucking

All
I suggest we keep the time on Tuesday at 10 eastern since Joe DePew from Fitzgerald can also join at that time.
Thanks
Don

Sent from my iPhone

On May 12, 2017, at 9:24 AM, Butland, Celine <Celine.Butland@wilmerhale.com> wrote:

> Ugh! I am so sorry. Rob is not available at 10:00 am on Tuesday. He is available today up until 2:30 pm and after 3:30 pm; he could do Monday at 10:00 am and Tuesday 11:30 am – 3:00 pm and after 5:00 pm.
>
> ---
>
> **From:** Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
> **Sent:** Thursday, May 11, 2017 4:47 PM
> **To:** Butland, Celine <Celine.Butland@wilmerhale.com>; Washington, Valerie <Washington.Valerie@epa.gov>
> **Cc:** Donald K. Shandy <don.shandy@crowedunlevy.com>; Brown, Byron <brown.byron@epa.gov>; Lehman, Rob <Rob.Lehman@wilmerhale.com>
> **Subject:** Re: Fitzgerald Trucking
>
> Great- let's plan for 10 am on Tuesday. Valerie, can you add this to the calendar and email around dial-in info?
>
> Thanks,
> Mandy
>
> Sent from my iPhone

On May 11, 2017, at 3:15 PM, Butland, Celine <Celine.Butland@wilmerhale.com> wrote:

Rob is available for a call on Tuesday at 10:00 am, as well. Thanks

---

From: Donald K. Shandy [mailto:don.shandy@crowedunlevy.com]
Sent: Thursday, May 11, 2017 3:05 PM
To: 'Gunasekara, Mandy' <Gunasekara.Mandy@epa.gov>; Brown, Byron <brown.byron@epa.gov>; Lehman, Rob <Rob.Lehman@wilmerhale.com>
Subject: RE: Fitzgerald Trucking

Hi Mandy,
The best time for me would be Tuesday morning at 10 eastern time.
If that works, we can use my dial –in number:

Ex. 6 - Personal Privacy

Thanks!
Don

<image001.gif> **Donald K. Shandy**
Attorney at Law
Ex. 6 - Personal Privacy

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From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Thursday, May 11, 2017 2:01 PM
To: Brown, Byron; Rob.Lehman@wilmerhale.com; Donald K. Shandy
Subject: RE: Fitzgerald Trucking

Thank you, Byron.

Rob and Don – nice to e-meet you. I have a meeting with some of our program folks regarding the heavy-duty truck issues on Thursday the 18th. Ideally, I would like to touch base with you and get your perspective before that meeting. Do you have any availability for a call between now and then? I'm free tomorrow afternoon (any time after 1:30 pm); Also Monday and Tuesday at 10 am.

I look forward to touching base soon.
Best,
Mandy

From: Brown, Byron
Sent: Thursday, May 11, 2017 2:43 PM
To: Rob.Lehman@wilmerhale.com; don.shandy@crowedunlevy.com
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Fitzgerald Trucking

Hi Rob and Don – I spoke with Mandy this morning about your issue. I am sending an email copying her to facilitate scheduling a follow up meeting. - Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Todd D Young [TDYoung@uss.com]
Sent: 6/5/2017 6:45:08 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Checking back

Byron, I'm checking back on whether there was information available on the petitions denials or refusal to mediate. Best regards, Todd

United States Steel Corporation

Todd D. Young
Managing Director - Federal Governmental Affairs

901 K Street, NW
Suite 1250
Washington, DC 20001
Ex. 6 - Personal Privacy office
mobile
tdyoung@uss.com

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Message

From: rich.gold@hklaw.com [rich.gold@hklaw.com]
Sent: 6/10/2017 11:19:04 AM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: Fwd: Pre-RD Scoping Memo - sent to EPA
Attachments: Draft Pre-RD Group Scoping Memo-sent EPA; ATT00001.htm; ATT00002.htm; PH Pre-RD_ Scoping Memo_sentEPA_06.07.17.docx; ATT00003.htm

Portland details delivered to region.

To: Hans Feige <hfeige@feige.us<mailto:hfeige@feige.us>>; Ruffle, Betsy <betsy.ruffle@aecom.com<mailto:betsy.ruffle@aecom.com>>; Fred WOLF <frederick.wolf@total.com<mailto:frederick.wolf@total.com>>; Karen Traeger (karen.traeger@total.com<mailto:karen.traeger@total.com>) <karen.traeger@total.com<mailto:karen.traeger@total.com>>; Blomgren, Nathan F <nathan.blomgren@chevron.com<mailto:nathan.blomgren@chevron.com>>; Marquez, Christy <ChristyMarquez@chevron.com<mailto:ChristyMarquez@chevron.com>>; Nathanson, Kirsten L. <KNathanson@crowell.com<mailto:KNathanson@crowell.com>>; Debbie Deetz Silva <Debbie.Deetz.Silva@evrazna.com<mailto:Debbie.Deetz.Silva@evrazna.com>>; Drew Gilpin <Drew.Gilpin@evrazna.com<mailto:Drew.Gilpin@evrazna.com>>; Eileen Tierney (Eileen.Tierney@evrazna.com<mailto:Eileen.Tierney@evrazna.com>) <Eileen.Tierney@evrazna.com<mailto:Eileen.Tierney@evrazna.com>>; David C. Weber <DWeber@bdlaw.com<mailto:DWeber@bdlaw.com>>; Racioppi, Len M <len.m.racioppi@exxonmobil.com<mailto:len.m.racioppi@exxonmobil.com>>; Edwards, Deborah A <deborah.a.edwards@exxonmobil.com<mailto:deborah.a.edwards@exxonmobil.com>>; Vaughan, Kevin J <kevin.j.vaughan@exxonmobil.com<mailto:kevin.j.vaughan@exxonmobil.com>>; Weaver, Elizabeth M. <elizabeth.weaver@nortonrosefulbright.com<mailto:elizabeth.weaver@nortonrosefulbright.com>>; DAVE_DEMAXIMIS.COM /EXT <DAVE@DEMAXIMIS.COM<mailto:DAVE@DEMAXIMIS.COM>>; Linda Baker (lbaker@integral-corp.com<mailto:lbaker@integral-corp.com>) <lbaker@integral-corp.com<mailto:lbaker@integral-corp.com>>; jack.isselmann@gbrx.com<mailto:jack.isselmann@gbrx.com>; Max Miller <max.miller@tonkon.com<mailto:max.miller@tonkon.com>>; chris@cascadiaassociates.com<mailto:chris@cascadiaassociates.com>; Christine L. Hein <CHein@ringbenderlaw.com<mailto:CHein@ringbenderlaw.com>>; jwring@ringbenderlaw.com<mailto:jwring@ringbenderlaw.com>; mstrandberg@ringbenderlaw.com<mailto:mstrandberg@ringbenderlaw.com>; Howard Cumberland <hcumberland@Geosyntec.com<mailto:hcumberland@Geosyntec.com>>; christopher.bozzini@pgn.com<mailto:christopher.bozzini@pgn.com>; Mat Cusma <mcusma@schn.com<mailto:mcusma@schn.com>>; Peter Saba <psaba@schn.com<mailto:psaba@schn.com>>; jim.dragna@morganlewis.com<mailto:jim.dragna@morganlewis.com>; greg.christianson@morganlewis.com<mailto:greg.christianson@morganlewis.com>; denise.fellers@morganlewis.com<mailto:denise.fellers@morganlewis.com>; Chris Reive (Chris.Reive@jordanramis.com<mailto:Chris.Reive@jordanramis.com>) <Chris.Reive@jordanramis.com<mailto:Chris.Reive@jordanramis.com>>; David Rabbino <David.Rabbino@jordanramis.com<mailto:David.Rabbino@jordanramis.com>>; mmurray@maulfoster.com<mailto:mmurray@maulfoster.com>; Phil Wiescher <pwiescher@maulfoster.com<mailto:pwiescher@maulfoster.com>>; Ilene M. Munk <imunk@foleymansfield.com<mailto:imunk@foleymansfield.com>>; Burr, Myron <Myron.Burr@siltronic.com<mailto:Myron.Burr@siltronic.com>>; Scott Rowlands <srowlands@Geosyntec.com<mailto:srowlands@Geosyntec.com>>
Cc: Loren R. Dunn <LDunn@bdlaw.com<mailto:LDunn@bdlaw.com>>; Jason Conder <JConder@Geosyntec.com<mailto:JConder@Geosyntec.com>>; Pretare, Jennifer (jennifer.pretare@aecom.com<mailto:jennifer.pretare@aecom.com>) <jennifer.pretare@aecom.com<mailto:jennifer.pretare@aecom.com>>
Subject: Pre-RD Scoping Memo - sent to EPA

PRIVILEGED AND CONFIDENTIAL / JOINT DEFENSE COMMUNICATION / ATTORNEY CLIENT WORK PRODUCT

Hi folks,
The scoping memo has been delivered to EPA. The PDF (sent) is attached along with the MSword source file for your reference.

Thanks to Len and Betsy for final review last night and catching a few editorial fixes.
Regards,
Anne

Anne Fitzpatrick, LHG
Geosyntec Consultants
520 Pike Street, Suite 1375

Seattle, WA 98101
Direct: Ex. 6 - Personal Privacy
Office: 206-496-1450
Cell: Ex. 6 - Personal Privacy
Email afitzpatrick@geosyntec.com<mailto:afitzpatrick@geosyntec.com>

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Message

From: Anne Fitzpatrick [AFitzpatrick@Geosyntec.com]
Sent: 6/7/2017 2:39:35 PM
To: Sheldrake, Sean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d16e2780a4094bba82daaa5283a71572-Sheldrake, Sean]; Cora, Lori [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c8850941bf1540c796559dce75c2f5ee-Cora, Lori]; Ebright, Stephanie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6fe08cfbe17940aabd4d999a19eada04-Ebright, Stephanie T.]
CC: Loren R. Dunn [LDunn@bdlaw.com]; Elizabeth Weaver (elizabeth.weaver@nortonrosefulbright.com) [elizabeth.weaver@nortonrosefulbright.com]; Hans Feige [hfeige@feige.us]
Subject: Draft Pre-RD Group Scoping Memo-sent EPA
Attachments: PH Pre-RD_ Scoping Memo_sentEPA_06.07.17.pdf

Confidential: For Purposes of Settlement Negotiations Only

Dear Sean, Lori, and Stephanie,

On behalf of the Pre-Remedial Design Group (Pre-RD group), attached is a draft scoping memorandum describing our proposed Pre-RD scope of work activities. The Pre-RD group, consisting of 9 industrial parties, is aiming to expedite eight field and analysis activities in the next two years to understand current conditions, refine the remedial footprint, and assist with allocation. The studies are closely aligned with EPA's pre-design sampling objectives. With your help, our goal is to complete them by June 2019.

We look forward to discussing the proposed scope of work with you on June 14 from 10 am to 3 pm at the office of FOX ROTHSCHILD (1001 Fourth Avenue, Suite 4500). We'll set up a WebEx and have a powerpoint presentation to assist our discussions.

If you have any questions before June 14, please direct them to Loren Dunn and/or Elizabeth Weaver.

Regards,
Anne

Anne Fitzpatrick, LHG
Geosyntec Consultants
520 Pike Street, Suite 1375
Seattle, WA 98101
Direct: Ex. 6 - Personal Privacy
Office: 206-496-1450
Cell: Ex. 6 - Personal Privacy
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Geosyntec consultants

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Scoping Memorandum

Date: 6 June 2017

To: Sean Sheldrake, Lori Cora, Stephanie Ebright – USEPA Region 10 and the Portland Harbor Pre-Remedial Design Group

From: Anne Fitzpatrick, Geosyntec Consultants
Jason Conder, Geosyntec Consultants
Betsy Ruffle, AECOM

Subject: Overview of Proposed AOC Scope Pre-Remedial Design Investigation Studies – *For Discussion Purposes*
Geosyntec Project Number: PNG-0767

This scoping memorandum, prepared by Geosyntec Consultants, Inc. (Geosyntec) and AECOM Technical Services (AECOM), provides a conceptual overview of studies proposed for pre-remedial design at the Portland Harbor Superfund Site (PHSS or Site) located in Portland, Oregon. The strategy and scope of work is sponsored by a group of nine industrial parties called the Pre-Remedial Design (Pre-RD) Group. In the ROD, the selected remedy, Alternative F Modified (Alt F Mod) identified 396 acres of active remediation within the Site that extends from river mile (RM) 1.9 to 11.8 of the Lower Willamette River. The ROD also described a post-ROD sampling effort to delineate and better refine the sediment management area (SMA) footprints, refine the Conceptual Site Model (CSM), and support remedial design.

The proposed pre-remedial design investigation studies described in this memo are intended to meet these objectives and to support the allocation of the ROD. This Pre-RD scope of work focuses on site-wide studies that will re-baseline the river and assess current conditions, support the refinement of SMA footprints for allocation, support an initial discussion of Institutional Controls (ICs), and reduce the uncertainty and risk associated with implementation of the active remedy components. The scope does not include SMA-specific design-level sampling, nor source control evaluations, which could be conducted during later remedial design.

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PROJECT GOALS

The synoptic data collected during this study (sediment, fish tissue, surface water) will be used to re-establish baseline conditions as of 2018, revisit the active remedial footprint (for remedy and allocation), and refine the conceptual site model (CSM). The upstream background concentrations will be used to evaluate remedy effectiveness targets. This proposed sampling program provides the best balance of (i) near-term initiation of field work; (ii) prioritizing field data collection of studies that provide informative updates to the Site baseline; and (iii) supporting the PCI allocation team's need to reduce remedy uncertainty.

The Pre-RD group proposes to conduct a comprehensive 2018 synoptic sampling program of surface sediment, fish tissue, surface water, select sediment cores, upstream porewater, and bathymetry/fish tracking studies. These proposed investigation activities are focused on achieving the following five goals:

1. Refine the active remedial footprints with new data to support allocation by reducing the uncertainty in remedy scope (specify depths, extent, and remedial technologies within SMA footprints);
2. Define the current baseline conditions by collecting synoptic 2017/2018 surface sediment, fish tissue, and surface water data;
3. Evaluate recovery trends (surface weighted average sediment concentrations [SWACs], points, trends, human health risk) to refine the remedial footprint for allocation, estimate recovery rates, and establish a point of reference for future long-term monitoring;
4. Refine the background/upstream dataset with new synoptic data to evaluate current conditions, and establish a benchmark for evaluating future recovery potential and progress towards remedial action objectives (RAOs); and
5. Evaluate calibration of the food web model (FWM) using new 2018 data to validate model predictions.

Table 1 lists the data that will be collected to achieve these goals. The 2018/2018 data will be used to determine current SWACs, human health risks, and background concentrations associated with both upstream and Site conditions.

The schedule includes time for development of focused work plans in 2017 for completing field investigation activities (planning and execution), data analysis, and reporting in two years (Figure 1). It is anticipated that the Pre-RD sampling and analysis activities will commence following a scoping meeting with United States Environmental Protection Agency (EPA) in June 2017 and

completion of Administrative Order on Consent (AOC) negotiations (expected in mid-2017). The goal is to complete the AOC Pre-RD scope of work in two years, by June 2019.

PRE-DESIGN INVESTIGATION FIELD STUDIES

To achieve the goals listed above, the scope of work includes the following eight investigation field studies:

- Bathymetry survey;
- Surface sediment grab sampling (site-wide and upriver);
- Fish tissue sampling (site-wide and upriver);
- Surface water sampling (site-wide and upriver);
- Subsurface sediment coring;
- Fish acoustic tracking pilot study, with potential expansion to full study;
- Camera survey of anglers; and
- Porewater sampling in upstream areas.

In addition, although not currently part of our proposed AOC scope of work, we would like to engage EPA in discussions regarding a follow-up approach for composited/gridded surface sediment sampling of the Site to establish baseline for long-term monitoring and remedy performance evaluations.

All investigation field work will be completed by end of 2018. An interpretive data report(s) will be completed by second quarter 2019 (June 2019). Each study is briefly summarized below. Many of the field data will serve multiple data use objectives (DUOs), as shown in Table 2. Table 3 presents a summary of the Pre-RD investigation studies including media, sample counts, and analyses. Figure 1 presents the proposed project schedule.

Bathymetry Survey

A bank-to-bank, site-wide bathymetry survey is proposed to assess changes in elevation/sedimentation over the past 15 years and to evaluate mudline elevations relative to the remedial technology assignment requirements (per the ROD decision tree). The site-wide multi-beam bathymetry survey will be supplemented with lead-line measurements along the shoreline banks and difficult-to-access areas for better coverage than provided by multi-beam alone. Results

may also serve as a line of evidence relative to the evaluation of riverbank slope conditions, natural recovery, and bed stability (e.g., erosional vs. depositional areas). The last bank-to-bank survey was performed in 2002. The new bathymetry data will also be used to help identify target areas for surface sediment sampling, refine the elevation clearances for capping and dredging, and adjust the dredge volumes (to reduce uncertainty for allocation associated with the extent of the active remedial footprint and remedial technologies assigned to them). The anticipated schedule for the bathymetry survey is the third quarter of 2017.

Surface Sediment Sampling

Many of the surface sediment data are over 10 years old. The goals of new surface sediment data collection include: re-baseline the river to establish current conditions and SWACs, refine the active remedial SMA footprints, and evaluate natural recovery trends. Because Portland Harbor is part of a dynamic river system, current concentrations for focused constituents of concern (COCs) are expected to be different than the data set used in EPA's RI. The focused COCs include polychlorinated biphenyls (PCBs), dioxins/furans, DDx, and polycyclic aromatic hydrocarbons (PAHs). The scope includes synoptic surface sediment sampling (0 to 30 centimeters [cm]), as well as fish tissue and surface water samples (discussed below), to provide an empirical and statistically valid[1] dataset for re-baselining the river and evaluating the CSM.

Several stratified/random/equal allocation methods of statistical analysis were used to estimate the appropriate sample size within the Site needed to satisfy the DUOs described above. A summary of the geostatistical analysis, approach, and findings is summarized in Attachment A. Previous analyses (Wolf, 2015a; Wolf, 2015b; Toll et al., 2015) found that the river is spatially and chemically stratified into four river segments, each about 2 to 3 miles long. These four segments include: RM 1.9 to 5 (Segment 4); 5 to 7.5 (Segment 3); 7.5 to 9 (Segment 2); and 9 to 11.8 (Segment 1). Based on physical and chemical signatures, Swan Island Lagoon may be separated as a fifth segment. A key use of the new data (along with the fish tracking results and determination of smallmouth bass [SMB] home ranges) will be to confirm the representativeness of these segment delineations, then estimate SWACs site-wide, within each segment, and potentially at smaller spatial scales.

Site Area. As detailed in Attachment A, the sample count was determined by considering the number of discrete surface sediment samples needed in each segment to statistically detect

[1] This pertains to the number and location of proposed sediment samples. Details regarding sampling collection methodology, analysis, and associated quality control are expected to be developed in accordance with EPA guidance and standard operating procedures (SOPs) aligned as practicable with past EPA-approved sampling investigations.

differences ($p<.05$) between 2004 SWACs and current SWAC estimates with 95% confidence. An estimated 300 to 500 discrete surface sediment samples are needed to yield a statistically-robust new data set for calculating SWACs. We expect this new dataset to replace older RI/FS data for the purposes of refining the SMA footprints and technology selections.

Upstream/Background. An additional 30 to 40 discrete samples will be collected from upstream background areas with grain size and organic carbon content similar to the Site. A minimum of 30 samples are needed for statistical purposes.

Adjustments to the sample count and analytical program may be necessary after further discussions with EPA. Surface sediment grab samples will be collected as discrete samples from 0- to 30-cm depth using the RI data collection protocols. Samples will be analyzed for focused COCs (PCBs, dioxins/furans, DDx, PAHs) as well as total organic carbon (TOC), and grain size. The anticipated schedule for the surface sediment sampling is the beginning of the fourth quarter of 2017 through the first quarter of 2018.

Fish Tissue Sampling

The primary objectives of the fish tissue chemistry study include collecting the data needed to:

- Characterize current levels of selected COCs in resident fish tissue (SMB) on a site-wide basis and smaller spatial scale (pending results of the fish tracking study);
- Characterize upriver background concentrations in resident fish tissue (SMB);
- Update statistically-based evaluations of PCB trends in fish tissue; and
- Evaluate the bioaccumulation model used to relate sediment and tissue concentrations (input new SWACs, fish tissue, and surface water concentrations into the model).

The proposed study includes collection of synoptic SMB data to re-baseline resident fish tissue concentrations in the river, evaluate monitored natural recovery (MNR) trends, refine or recalibrate the FWM, and update human health fish consumption risks. The scope includes 95 whole body discrete samples, plus 10 upstream background discrete fish tissue samples, which is consistent with the 2012 SMB sample design (Figure 2). The sample design targets 20 to 30 samples in each of the four segments (described previously), including 5 samples in Swan Island Lagoon. A statistical analysis of the 2012 SMB data indicates that replicating the 2012 program sample size would allow detections of statistically significant ($p<.05$) trends for PCBs in SMB. A summary of the statistical power analysis performed for fish tissue sample size is provided in Attachment B.

Analytes will include PCBs and a subset for dioxins/furans and DDx (assume 33% of total sample size based on the more localized contribution of these contaminants to Site risk). Collection methods will include hook and line with electroshock back-up if needed. The anticipated schedule for the fish tissue sampling is summer of 2018.

Surface Water Sampling

The objective of surface water sampling is to re-baseline river conditions with synoptic data (sediment, fish tissue, surface water), evaluate surface water current conditions and trends, and provide current 2018 input data for the FWM to calculate current risks. Surface water data will be collected using a peristaltic pump, consistent with RI/FS approaches and methods. Surface water will be collected from 9 transect locations over three sampling rounds (high flow, low flow, and storm) with five transects located within the Site – one from each of the four main channel river segments, one in Swan Island lagoon – plus two transects at the boundary conditions, and two upstream transects. The proposed transects are located at approximately RM 1.8, Multnomah channel entrance near RM 3, RM 4, RM 7, Swan Island Lagoon, RM 8.8, RM 11.6, RM 16.2, and RM 26, to characterize the flow and quality of surface water passing through the river's cross section at each location. These locations were targeted to provide spatial coverage and physical changes in the river dynamics.

Three vertically-averaged composite samples will be collected per transect (similar to the RI/FS approach), except Swan Island Lagoon will have one composite sample.[2] Each sample will be analyzed for suspended solids in the water column (total suspended solids [TSS]), particle size distribution, and chemical testing for PCBs, DDx, PAHs, and dioxins/furans (total and dissolved). The anticipated schedule for the surface water sampling will start in the winter 2017 through summer 2018. The RI sampling events previously targeted November, March, and July for sampling. A total of 50 water samples (25 total and 25 dissolved) will be analyzed per event, for a total of 150 samples.

The synoptic TSS and particle size distribution data could be used in the future for hydrodynamic and sediment transport (STM) model refinement and calibration (these data are needed based on our review). The chemistry data would be needed, and could be used, for future fate and transport model refinement.

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[2] Vertically-integrated sample collected from 0.3 meters below the water surface to within 1 meter of the river bottom by lowering and raising the sample tube intake while pumping water at a pre-determined rate. The Round 2A RI study composited the three samples into one transect-composite sample. We propose three samples per transect for testing.

Subsurface Sediment Coring

Subsurface sediment sampling will be conducted in targeted areas within or along the boundaries of SMAs that have limited data coverage to refine the active footprint boundaries of the Alt F Mod SMA footprints. The goal of this study is to refine the horizontal and vertical extent of contamination at concentrations greater than the RALs at depth, to confirm the CSM, and to refine the dredge volumes. A total of 50 to 90 core locations are proposed based on visual distribution of subsurface contamination, using 250- to 300-foot distance as a general guide to the next nearest coring location. In some cases, stations will be reoccupied to determine the vertical extent of contamination where previous cores did not "tag bottom" and in other cases, a new core will be collected in an active footprint area where none previously existed.

Cores will be collected using a vibracore and visually logged using American Society of Testing Materials (ASTM) and RI procedures, then subsampled into 2-foot increments unless stratigraphy indicates otherwise. Proposed coring locations may be adjusted after the SMA footprints have been revised based on 2018 surface sediment sampling results. Subsurface sediment samples will be analyzed for focused COCs, or a subset of selected COCs and depths depending on the SMA.

Fish Acoustic Tracking Study

An acoustic fish tracking study may be conducted to capture fine-scale temporal and spatial movement of SMB at the Site, pending pilot study results. A pilot study is planned for June 2017 and the study will provide data on the range and reception of fish tracking equipment in two different acoustic environments (more quiescent and more active). The results of the fish tracking pilot study will be used to assess the value of conducting a full-scale study.

If the pilot study provides valuable data, a full-scale study will be conducted over a one-year period to capture seasonal home range patterns. Using a more refined acoustic telemetry approach than the historical (2000-2003) radiotracking study, the results will re-evaluate where and to what extent SMB stay within the 1-mile exposure areas assumed in the FWM.

This study is being designed to use more refined technology and provide more robust data than the previous radiotelemetry study (Friesen 2005); we expect these results to replace previous findings if different. These results will be used to refine or recalibrate the FWM and reduce uncertainty about remedy effectiveness for fish tissue recovery. The anticipated schedule for the full-scale fish tracking study, if conducted, is fourth quarter 2017 through 2018. The work will be performed in collaboration with Karl Gustavson, EPA Office of Superfund Remediation and Technology Innovation (formerly United States Army Corps of Engineers [USACE]) and experienced staff from USACE Engineer Research and Development Center (ERDC).

Camera Survey of Anglers

A camera study is proposed to collect data on the location and frequency of people fishing along the river. The results will provide an empirical line of evidence on frequency and duration of angler trips over a year-long period that can be used to support the development of institutional controls (e.g., targeted locations and seasons for messaging).

The camera survey program will consist of photographic documentation of human activity using a network of cameras in the Site. The scope assumes installation of 12 stationary cameras at select locations that are known or suspected to be used by anglers or are popular points of access to the river based on prior studies and angler knowledge. Cameras will be pre-set to take photos at 30-minute intervals during daylight hours.

The survey will be conducted over a one-year period to account for seasonal variation in use. Photographs will be uploaded monthly to digital photographic software for visual review and tagging with descriptors (e.g., date, location, time, number of individuals), and stored in a project database. A similar camera study recently performed at the Berry's Creek Superfund Site in New Jersey provided data on human use of the Site for fishing, crabbing, boating, etc., and can help support the development of institutional controls.

The anticipated schedule for the camera survey is fourth quarter 2017 through 2018.

Porewater Sampling in Upstream Areas

The EPA conceptual sampling framework for pre-design sampling (17 March 2017) identified the collection of background (upstream) porewater samples as a baseline monitoring element. Background metals concentrations in porewater were not defined during the RI and the focus of a background porewater characterization would be naturally occurring metals. Background metals porewater concentrations should be developed and cleanup levels adjusted accordingly. The scope of the Pre-RD study is to place passive porewater samplers, or a similar device to collect porewater, at eight upstream locations co-located with bulk sediment grab stations. The samplers will be equilibrated for a 2- to 4-week period then retrieved. Porewater samples will be analyzed for freely-dissolved COC metals. Porewater results from passive samplers could be compared to laboratory-derived porewater samples from the upstream bulk sediment surface grab locations.

Gridded Composite Surface Sediment Sampling – for Long-term Monitoring

A composite sediment sampling approach is appropriate for evaluating future post-remedy long-term monitoring conditions. We would like to collaboratively explore a draft protocol with EPA

for evaluating post-remedy SWACs and remedy effectiveness. A stratified random, gridded, composite sampling approach could be implemented later during remedial design under a separate AOC. A composite sampling program is not currently proposed as part of this AOC scope of work.

The gridded composite samples would establish baseline conditions for comparing with future post-remedy data and SWACs. As discrete samples, a monitoring dataset is subject to outliers, and a lot of variance. To minimize these effects, composite sampling would be incorporated into a future long-term sampling program. Project examples are presented in Attachment C. We propose that a similar approach be discussed for the Portland Harbor Superfund Site in collaboration with EPA.

DATA ANALYSES

Data collected from the AOC scope pre-design investigation field studies will be summarized and analyzed to meet several DUOs (see Table 2). Field work will be completed by the end of 2018; data analyses will be completed by the first quarter of 2019 and include the following elements:

- Evaluation of current sediment conditions and refinement of the active remedy footprint;
- Use of bathymetry data to refine the elevation requirements of the active remedy footprint, especially in the riverbank areas;
- Refinement of the CSM and understanding of current conditions;
- Refinement of sediment recovery curves based on empirical data trends (and confirm RALs);
- Re-calculation of site-wide and segment-wide surface sediment SWACs using new data, may also consider other spatial scales;
- Evaluation of fish tracking results to refine the extent and segmenting of the river (for calculation of SWACs) and assess fish home ranges used in the FWM;
- Update the trend analyses of validated 2017/2018 surface sediment, fish tissue, and surface water data;
- Assessment of new bathymetry for bed stability and fish/sediment data for monitored natural recovery potential;
- Evaluation of current (2017/2018) upstream background concentrations; and
- Use of new data to refine or recalibrate the FWM and update calculations of baseline fish consumption risks.

Deliverables will include data summary tables, data graphics such as box-and-whisker plots, maps depicting the spatial distribution of sediment chemistry for selected analytical parameters, a comparison of site conditions to the active Alt F Mod remedial footprint, trend analyses, and new SMA boundary maps. Draft deliverables will be provided to EPA at milestone endpoints of particular tasks. The 2017/2018 sampling program will be statistically robust to support calculation of site-wide SWACs and assess spatial patterns without reliance on older data. The older RI/FS data will only be used for trend analysis.

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Table 1. Project Goals for Pre-Remedial Investigation Design Scope of Work

#	Project Goals	Spatial Scale	Media	Questions to Answer
1	Obtain SMA baseline characterization data adequate to refine the remedial footprint for allocation purposes	SMA specific	Discrete sediment grabs (0 to 30 cm), bathymetry, sediment cores	• Have the active remedial footprints changed since the FS? Can we refine the footprints and reduce uncertainty? • Have the elevations changed since the FS, hence the footprint changes through the ROD technology decision tree? • What are the extent of footprints above RALs?
2	Establish current baseline conditions (SWACs, human health risk) to evaluate future remedy performance and progress towards RAOs	Site-wide, segments	Surface sediment, fish tissue (SMB), surface water	• What are concentrations of COCs prior to remedial activities? • Do results support refinement of the remedial footprint? • What are current baseline risks? • *Note: ideally, sediment composites would be used as baseline for long-term monitoring*
3	Evaluate recovery trends within the Site to estimate recovery rates and refine the remedial footprint	Site-wide, segments	Surface sediment, fish tissue (SMB), surface water	• Are Site conditions improving? • Are there improvements that lead to a different remedial footprint? • Can a recovery rate be calculated?
4	Update background dataset	Upstream RM 11.8 to 28	Surface sediment, fish tissue (SMB), surface water; porewater	• What are background concentrations of select COCs in sediment and fish tissue, and have they changed since the FS? • What are background concentrations of metals COCs in porewater? • How could new data inform future evaluation of remedy performance?
5	Update FWM calibration for evaluating progress towards RAOs	Site-wide, segments	Surface sediment, fish tissue (SMB), surface water, SMB home range	• Can we confirm relationships and assumptions used in the model? • How should fish tissue (SMB) data be evaluated for monitoring remedy effectiveness?

Notes:
(1) Data collected for each project goal may serve multiple data use objectives (DUOs).
(2) This scope of work proposes to collect discrete surface sediment samples because of multiple DUOs. Ideally, the baseline sediment dataset to be used as a starting point for comparing future long-term, monitoring data, would be based on a stratified random, composite sampling approach.
(3) COCs = chemicals of concern; FWM = food web model; FS = feasibility study; RAL = remedial action level; ROD = Record of Decision; SWAC = surface weighted average concentrations; SMB = small mouth bass

Table 2. Data Use Objectives for Pre-RD Investigation Studies

Proposed Scope Item			Data Use Objective (DUO)									
#	Task	Purpose	CSM	Update SWAC	Recovery Trend	Model Calibration	Risk Update	Institutional Controls	Active Footprint/ RAL	Remedial Technology	Allocation	Future Compliance
Pre-Design Field Investigation Studies												
1	Site-wide bathymetry survey	footprint	X		X	X			X	X	X	
2	Surface sediment sampling (discrete)	recovery/bkgrd	X	X	X	X	X		X	X	X	X
2	Fish tissue sampling	recovery/bkgrd	X		X	X	X	X				X
4	Surface water sampling	recovery/bkgrd	X		X	X	X					
5	Sediment cores	footprint	X		X				X	X	X	X
6	Fish acoustic tracking study (USACE)	fish home range	X	X		X	X					X
7	Camera survey of anglers	risk/IC	X				X	X				
8	Porewater sampling	bkgrd	X				X		X	X	X	X
Technical Analyses / Reporting												
A	Focused work plan for AOC	scope	X									
B	Evaluate current conditions and recovery trends	footprint/ recovery	X	X	X	X	X		X	X	X	X
C	Evaluate background levels	recovery	X		X		X					
D	Refine active footprint	footprint	X	X					X	X	X	X
E	Refine food web model and human health consumption risks	recovery/risk	X	X	X	X	X	X	X		X	X
G	Data Interpretation Report	footprint/ recovery/bkgrd/ risk	X	X	X	X	X	X	X	X	X	X

Table 3. Summary of Pre-RD Study Media, Sample Counts, Analyses

Media	Location	Approximate Sample Count	Analyses
Surface Sediment	Site	300 to 500 (discrete grabs)	Focused-COCs (PCBs, dioxins, DDx, PAHs), plus TOC, grain size
	Upstream	30 to 40	
Fish Tissue (SMB)	Site	95 (whole body)	PCBs and a subset for dioxins/furans, DDx
	Upstream	10 (whole body)	
Surface water	Site / Upstream	9 transects, 3 vertically-composited samples/ per transect 75 samples (total) 75 samples (dissolved)	Total and dissolved for focused-COCs plus grain size, TSS
Sediment Cores	Site	50 to 90 cores 2 to 8 samples/ per core	Focused-COCs (PCBs, dioxins, DDx, PAHs) plus TOC, grain size
Porewater	Upstream	8 samples	Dissolved metals

Notes:
(1) Total sample counts will be increased for QA/QC samples (5 to 10%).
(2) The proposed surface water transects are located at approximately RM 1.8, Multnomah channel entrance near RM 3, RM 4, RM 7, Swan Island Lagoon, RM 8.8, RM 11.6, RM 16.2, and RM 26. Swan Island Lagoon transect may be composited into one sample for chemical testing per event.
(3) The four Site segments include: RM 1.9 to 5 (Segment 4); 5 to 7.5 (Segment 3); 7.5 to 9 (Segment 2); and 9 to 11.8 (Segment 1). Based on physical and chemical signatures, Swan Island Lagoon may be separated into a fifth segment.
(4) Sampling and analysis methods capable of low-level concentration detection may be included for selected surface water transects.
(5) PCBs = PCB congeners; SMB = smallmouth bass; TOC = total organic carbon; TSS = total suspended solids

Figure 1 – Proposed Project Schedule – Draft

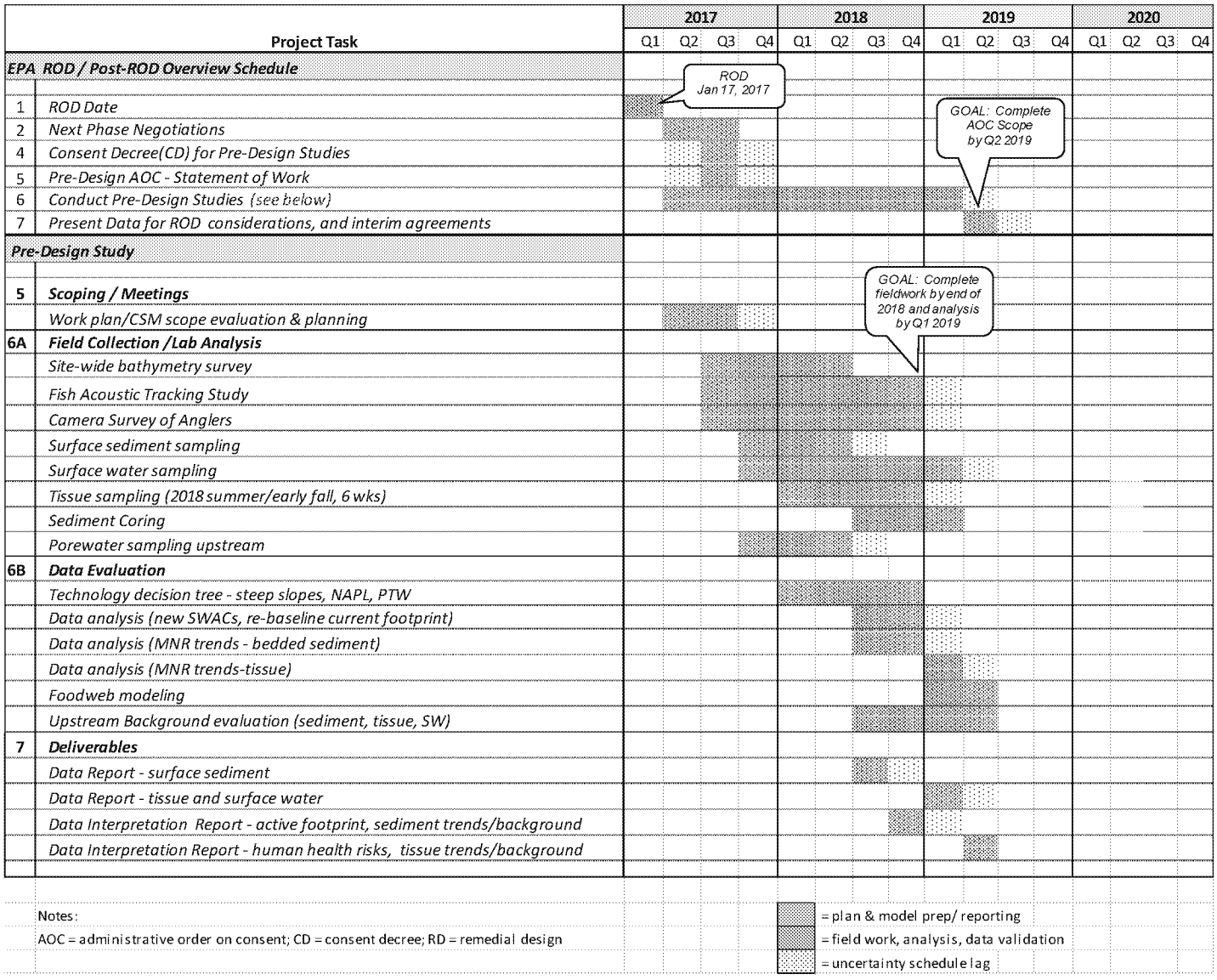
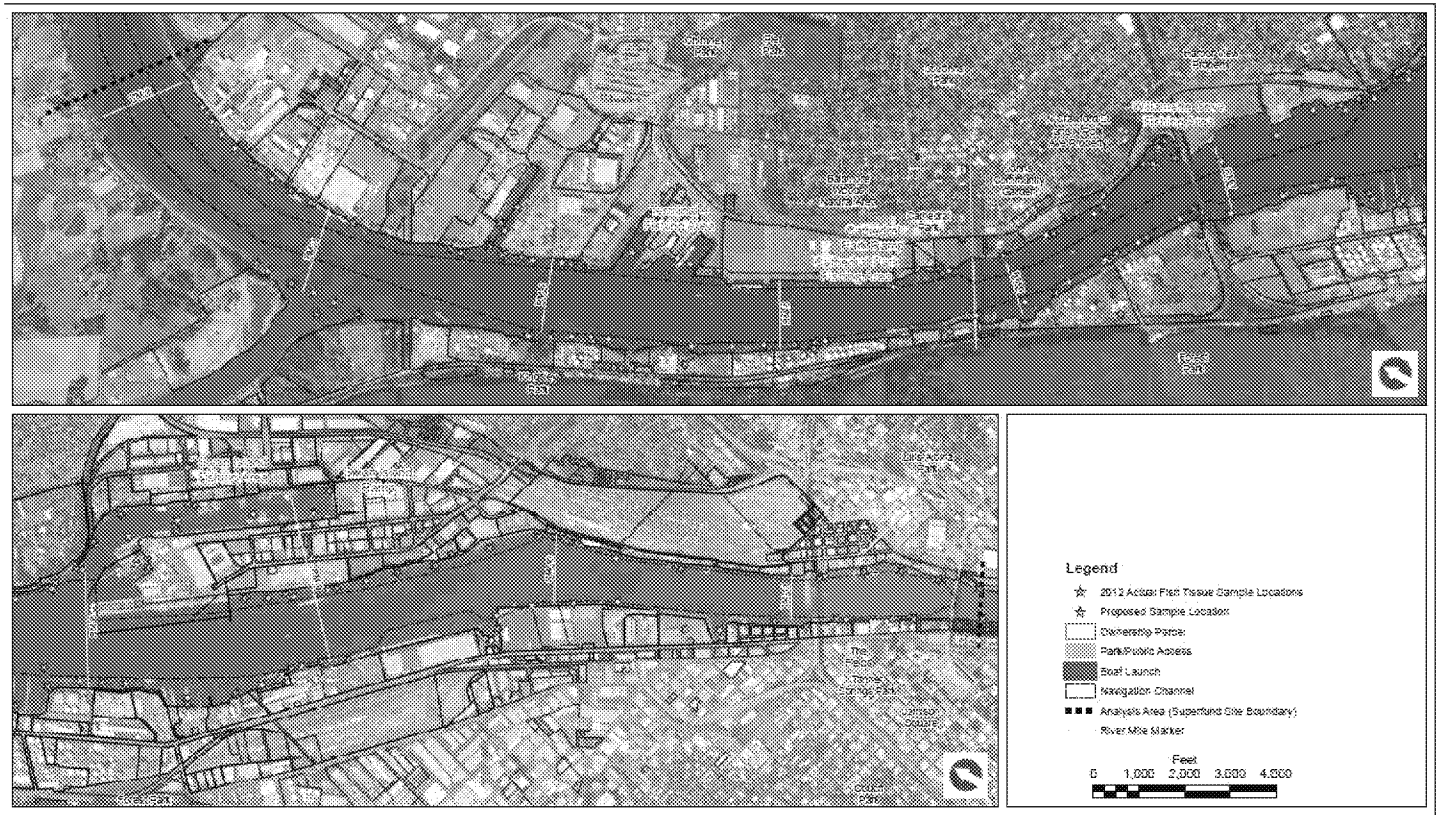


Figure 2 – Proposed Fish Tissue Locations in the Site (2A) and Upstream (2B)



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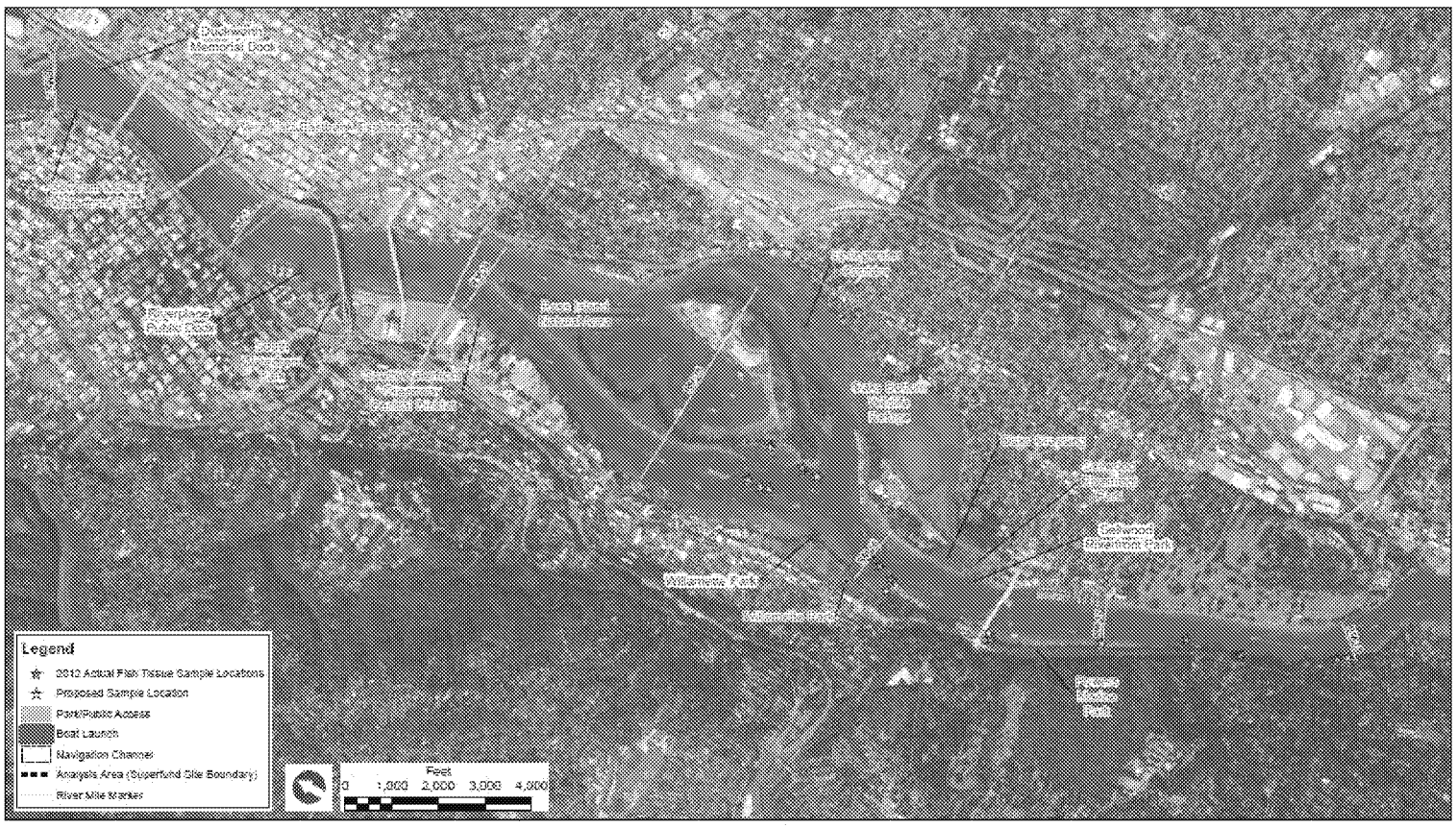
NOTES:
1. Proposed fish tissue sampling locations are consistent with 2012 smallmouth bass sampling program with the exception that two samples from RM2E and RM3E were re-located to the Terminal 4 area.

Figure 8
Public Access and Proposed Fish Tissue Sample Locations
Portland Harbor Superfund Site



NOTES:

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Figure 9
Public Access and Proposed Fish Tissue Sample Locations RM 13 to 18
Portland Harbor Superfund Site

ATTACHMENT A

Sample Plan Objectives and Geostatistical Approach for Sampling of Surface Sediment Portland Harbor Superfund Site, Pre-Remedial Investigation Design Re-Baseline Study

Prepared by Geosyntec

This attachment details a proposed approach for identifying a re-baselining sampling approach for 2018 surface sediment and a geostatistical analysis of discrete surface sediment samples.

DATA OBJECTIVES

The 2018 baseline sediment sampling program has five primary objectives for collection of surface sediment samples at discrete locations within the Site (river miles 1.9 to 11.8):

- **Objective 1: Natural Recovery.** A key objective is to assess natural recovery between the period of 2004 to 2018, and to quantify the rate of natural recovery. There are several robust and statistically-valid approaches for evaluating the data needed to evaluate natural recovery, and these are likely to be fully utilized following data collection in 2018. The simplest approach would be to compare site-wide and segment-by-segment surface weighted average sediment concentrations (SWAC) estimates and 95% Confidence Intervals (SWACs) for 2004 and 2018, looking for statistically significant differences at a level of at least $p<.05$. Additionally, stations sampled in both 2004 and 2018 could also serve as the basis by which to conduct paired evaluations or univariate and multivariate regression procedures with temporal and/or spatial data (GSI Environmental, Inc., 2014; Kleinfelder, 2015; Geosyntec Consultants, Inc., 2016; Newfields, 2016).[3]
- **Objective 2: SMA Delineation.** Delineating the sediment management areas (SMAs) is also a key objective of the 2018 data. The 2018 sampling plan will provide an optimized dataset for significantly refining the current SMAs. This will enable initial remedial design calculations and allow for the planning of additional high-resolution delineation of SMAs that will be needed for engineering purposes during remedial design.
- **Objective 3: Risk Evaluation.** Similar to Objective 1, a key use of the 2018 data will be to compare risk levels in 2018 to 2004. For example, it is anticipated that 2004 SWAC and 2018 SWAC estimates (or upper 95% confidence limits on the SWACs) on a site-wide and segment-by-segment basis would be input into risk assessment algorithms to evaluate the

[3] To achieve this objective, the sampling program may include some stratified sampling based on chemical distributions and spatial considerations such as erosional, stable, and depositional areas identified as part of the RI/FS.

expected decrease in risk that has likely occurred since 2004. The 2018 risk estimates may also be compared to background risk levels.

- **Objective 4: Remedy Success.** Data collected in 2018 will serve as a robust and precise baseline measurement for comparison of future post-remedy data to the remedy goals (or asymptote of a curve). In addition to comparing post-remedy sediment data to risk-based and remedial criteria, the post-remedy results must be able to be demonstrated to be significantly lower than the baseline 2018 results. Again, there are several approaches to the use of this data, but the simplest approach would be to compare site-wide and segment-by-segment SWAC estimates, or smaller stratified scales from actively remediated areas, or composite samples, and 95% Confidence Intervals (SWACs) developed in 2018 to those developed in post-remedy events at levels of significance of $p<.05$ or better.
- **Objective 5: Background Comparisons.** In addition to the sampling plan for the Site, discrete samples of surface sediment will be collected from background areas upstream of river mile 11.8 to provide a robust measure of concentrations of focused COCs in upstream areas. Future comparisons of SWACs on a site-wide and segment-by-segment basis would be made to statistics developed from the background dataset developed in 2018.

SAMPLE PLAN DEVELOPMENT

The basis for sampling within the Site boundaries (river miles 1.9 to 11.8) was devised according to the following steps:

- **Step 1: Initial Sample Count.** A variability reduction analysis was applied to evaluate the variability of the site-wide and segment-wide SWAC using the 2004 data set for total PCBs. This approach found that approximately 100 to 200 samples could be removed from the 2004 data without significantly increasing the variability of the SWAC estimate. Based on this analysis, an initial sample size of 200 was identified.
- **Step 2: Initial Sample Distribution.** In Step 2, the 200 samples identified in Step 1 were distributed among the Site and assigned discrete locations. 80 samples were placed at stations previously-sampled in 2004 (reoccupied sample stations). An even distribution among low and high areas of chemical concentrations was obtained by selecting locations among four groups of samples indicating concentrations of total PCBs (in 2004): the lowest quartile (0 to 25th percentile), lower-middle quartile (25th to 50th percentile), upper-middle quartile (50th to 75th percentile), and highest quartile (75th to 100th percentile). Additionally, proposed locations were placed with even distribution among the entire reach, achieving a relatively uniform sampling density.

- **Step 3: Additional SMA Sample Delineation.** Recognizing that increased sampling density will be required to identify and delineate SMAs for preliminary design purposes, an increased sampling density was applied in bounding areas identified in the Alt F Mod footprint. Sample placement simultaneously considered (i) higher sampling densities in hotspot areas with higher variance/low certainty;[4] (ii) reoccupation of select 2004 sample locations not already identified in Step 2; (iii) relatively even sample spacing to ensure compact Thiessen polygons; and (iv) potential chemical concentration gradients (for all the focused COCs), and (v) physical and hydrodynamic features. Based on the various assumptions and considerations, this Step added approximately 100 to 300 samples to the design.

These three steps lead to a final sample design in the range of 300 to 500 samples within the Site. The sample count will produce a statistically valid surface sediment baseline dataset for calculating SWACs with the ability to detect significant differences between events with 95% confidence at $p<.05$.

ASSESSMENT APPROACH

A procedure for the quantitative evaluation of this sampling plan has been developed and indicates that the variation around the SWAC estimates is likely to be sufficient to enable the basic comparisons described above. For example, the 2004 PCB SWAC and the SWAC that would have been obtained in 2013-2016 (if the proposed sampling plan had been applied with the sample sizes noted) would be statistically distinct. Thus, assuming the natural recovery trend indicated in the 2013-2016 data, the future results that could be developed using the proposed sampling plan are likely to be able to indicate significant changes in SWACs since 2004 (e.g., the two SWACs are significantly different with 95% confidence at $p<.05$). However, statistically robust changes may still be concluded using less stringent hypothesis test statistics (e.g., lower confidence or power).

In addition, a power analysis (Champely, 2017) of the expected upstream sampling plan (40 additional discreet samples) indicates acceptable levels of precision for future comparisons of the Site to background conditions. It is expected that the sample plan itself, the approach for evaluating the sampling plan, and the sampling plan evaluation results will be presented in detail to EPA and stakeholders in subsequent communications.

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[4] For reference, recent investigations at River Mile 11E Site used a sample density of 1 sample per every 100 to 200 feet.

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ATTACHMENT B
Power Analysis for Fish Tissue Sample Size
Portland Harbor Superfund Site, Pre-Remedial Investigation Design Re-Baseline Study

Prepared by AECOM

A statistical analysis was performed using the 2012 smallmouth bass (SMB) tissue data set for the Portland Harbor Superfund Site (Kennedy/Jenks Consultants, 2013) to estimate sample sizes for re-baselining fish tissue chemistry. Prior analyses of 2002, 2007, and 2012 data for polychlorinated biphenyls (PCBs) in SMB indicate fish tissue concentrations have declined over time. The primary focus of this analysis was to estimate the number of SMB samples needed to determine with statistical significance whether PCB concentrations have continued to decline since 2012. Comparison of historical and new means and 95% confidence intervals, as well as trend analysis, provide robust and statistically-valid approaches for evaluating the data to evaluate natural recovery, and are likely to be used following data collection in 2018.

An important aspect of monitoring design is power analysis, which was performed to estimate the difference that can be detected between the 2012 and re-baselining fish tissue data sets. This was illustrated by calculating the effect size (d) or the standardized difference between two means that could be detected (Cohen, 1988); and the minimum detectable difference (MDD) as a function of sample size and variance. The MDD is the difference between two means that must exist to detect a statistically significant effect/difference. The MDD is a commonly employed technique to indicate the potential significant difference at a given sample size in fish tissue monitoring (e.g., United States Environmental Protection Agency [EPA], 2000).

METHODS AND RESULTS

Two scenarios were evaluated: (i) assuming sample size equivalent to the 2012 smallmouth bass data set (n=83 Study Area, n= 9 upriver background); and (ii) assuming sample size equivalent to the targets set forth in the 2012 work plan (n=95 Study Area, n=10 upriver background) (Windward Environmental, 2012). The sample size calculations were performed considering two spatial scales: (i) site-wide; and (ii) four 2 to 3-mile segments.[5] Both spatial scales are relevant to evaluation of SMB in the risk assessment and bioaccumulation modeling.[6] Sample size estimation

[5] The segmentation is based on prior analysis of the available data (Wolf, 2015).
[6] A spatial scale of 2 to 3 mile segments may better reflect the home range of SMB which ranges from 0.5 to 5.5 miles (Scott and Crossman, 1998). Based on a radio-tracking study of predator species in the Lower Willamette River, the median total distance traveled (upstream and downstream) by SMB was 4.3 kilometers (km) (2.7 miles), with 25th and 75th percentiles of 0.8 km and 8.0 km (Friesen, 2005).

to support statistical analysis of trend/natural recovery on an individual river mile (RM) basis is not a data use objective; large sample sizes would be needed to detect trends with adequate power. The power analysis was performed using the following assumptions:

- Confidence = 95% (alpha [α] = 0.05);
- Power = 80% (1-ß = 0.80); and
- PCB data lognormally distributed.

The assumption that PCB concentrations in the 2012 whole body SMB data set are lognormally distributed is based on distribution testing performed using @Risk v.6 (Palisades, 2012). Table 1 presents summary statistics for the 2012 SMB data set. PCB fish tissue concentrations were log (base 10) transformed for the power analyses. The assumptions of 95% confidence ($\alpha = 0.05$) and power of 80% are used by convention to support statistically significant results (e.g., EPA, 2000). However, statistically robust changes may still be concluded using less stringent hypothesis test statistics (e.g., lower confidence or power).

The calculation of effect size (Cohen's d) was performed using the pwr package (Champely, 2017) in the R statistical computing (R Core Team, 2015). The calculation of the minimum detectable difference (MDD) as a function of the sample size and variance in the 2012 data was performed using the following formula and expressed as a percentage of the 2012 mean[7] (Harcum and Dressing, 2015):

$$MDD = \sqrt{[(4\sigma 2\ (Z(1-(\alpha/2)) + Z(1-\beta))\ 2) \div N]}$$

where:

N = total sample size (number of samples in 2012 and new baseline)
σ = standard deviation (assumed equal to 2012 sample populations)
$Z(1-(\alpha/2)) = 1.96$
$Z(1-\beta) = 0.84$
MDD = minimum detectable difference between 2012 and new baseline means

The effect size analysis indicates that replicating the 2012 sample sizes (actual or target sample sizes) will allow for moderate differences between the means to be detected on a site-wide basis

[7] While log transforming the data results in the power analysis being on the population geometric mean, results using the techniques described here are considered to be adequate practical approximations for the purpose of this analysis.

(Cohen's d of ~0.4). For the four segments, the 2012 sample sizes will allow for large differences between the means to be detected (Cohen's d of ~0.8).[8]

Results of the MDD analysis are summarized in Table 2 for the full Site (RM 2-12), each of the four segments, and the upriver background area. The MDD analysis was also performed excluding Segment 1 (RM 9-12), which has the highest mean and variance; eight of the ten highest 2012 PCB SMB samples were from Segment 1, which includes the RM11 area. Table 2 includes MDD results for combined Segments 2, 3, and 4 (RM 2-9).

As shown in Table 2, sample sizes consistent with the 2012 program (actual or target) result in a MDD of about 30% on a site-wide basis. The MDD improves slightly (about 1%) when the 2012 target sample size is used (increase of 12 samples site-wide). When the area with high variance is removed (Segment 1), the MDD is about 23% for the remainder of the Site.

On a river segment basis, sample sizes of 20 to 23 result in MDDs of about 28% to 40% in Segments 2, 3, and 4. In Segment 1 (RM 9-12) where variance is highest, sample sizes of 22 to 28 result in a MDD of about 60%. For upriver background, a sample size of 9 to 10 results in an MDD of about 60%. For upriver background, the means for the 2002 (n=6 composite samples) and 2012 (n=9 discrete samples) SMB data sets are similar (170 micrograms per kilogram [µg/kg] and 230 µg/kg, respectively).

Based on prior trend analysis indicating a decline of about 4% per year (Nielsen, 2015), the maximum change that could be expected in the new baseline data would be approximately 24% in 2018 from the 2012 site-wide mean assuming a linear response (declines may become asymptotic over time as conditions reach equilibrium). Based on the MDD values calculated in this analysis, sample sizes consistent with the 2012 program should be sufficient to detect a change of this magnitude on a site-wide basis (excluding Segment 1/RM11 area) with a high degree of statistical significance.

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Table 1
Summary Statistics for 2012 Smallmouth Bass Data Set
Portland Harbor Superfund Site
Pre-Remedial Design Baseline Study

		2012 SMB Data (a)					
Domain	River Miles	n	Minimum (ug/kg)	Maximum (ug/kg)	Mean (ug/kg)	SD (ug/kg)	CV
Site-wide	2-12	83	92.4	6470	648.7	1185.9	1.8
Segment 1	9-12	22	134	6470	1531.6	2057.7	1.3
Segment 2	7.5-9 & SIL	23	118	1060	331.3	203.7	0.6
Segment 3	5-7.5	19	92.4	440	225.1	85.4	0.4
Segment 4	2-5	19	148	1280	434.2	299.8	0.7
Upriver Background	15-18	9	50.7	634	234.0	187.5	0.8

Notes
(a) PCB wet weight data from 2012 Smallmouth Bass Tissue Study (whole body). Kennedy/Jenks 2013.
n = sample size
CV = coefficient of variation
SD = standard deviation
SMB = smallmouth bass

Table 2
Summary of Power Analysis for Smallmouth Bass Sample Size
Portland Harbor Superfund Site
Pre-Remedial Design Baseline Study

		2012 SMB Data (a)				Sample Size Equals 2012 Actual Catch		Sample Size Equals 2012 Targets			Increase in MDD due to attaining targets
Domain	River Miles	n	Mean log10 PCB (ug/kg)	SD log10PCB (ug/kg)	Geometric Mean (ug/kg)	MDD log PCB (ug/kg)	MDD (%)	n	MDD log PCB (ug/kg)	MDD (%)	
Site-wide	2-12	83	2.56	0.38	364	0.17	31.6%	95	0.16	30.7%	0.9%
Segments 2, 3 & 4 (b)	2-9	61	2.45	0.23	282	0.12	23.9%	67	0.12	23.4%	0.5%
Segment 1	9-12	22	2.87	0.52	745	0.44	63.5%	28	0.41	61.2%	2.4%
Segment 2	7.5-9 & SIL	23	2.46	0.22	290	0.18	33.8%	23	0.18	33.8%	0.0%
Segment 3	5-7.5	19	2.32	0.16	211	0.14	28.3%	21	0.14	27.6%	0.6%
Segment 4	2-5	19	2.56	0.27	359	0.24	42.8%	23	0.23	41.2%	1.6%
Upriver Background	15-18	9	2.26	0.33	180	0.44	63.8%	10	0.43	62.8%	1.0%

Notes
(a) PCB data from 2012 Smallmouth Bass Tissue Study. Kennedy/Jenks 2013.
(b) Site-wide domain after exclusion of Segment 1 (highest 2012 SMB PCB levels were observed in RM11 area).
Analyses performed using alpha of 0.05 and power of 0.80.
n = sample size
MDD = Minimum Detectable Difference
SD = standard deviation of the log base 10 transformed mean
SMB = smallmouth bass

ATTACHMENT C
Project Examples of Composite Sampling for Long-term Monitoring

Several recent sediment cleanup projects have designed a composite sampling approach for sediments to evaluate post-remedy long-term monitoring conditions, post-remedy SWACs, and remedy effectiveness. Project examples include:

- **PSNS Superfund Site, Bremerton, Washington**: The long-term monitoring program at the 400-acre shipyard area (Operable Unit B Marine) of the Puget Sound Naval Shipyard was modified after 10 years to a gridded, composite sampling approach. Starting in 2003, the area was monitored using a rectangular grid of 71 500-foot by 500-foot cells (sample size N=71). Three random grab surface sediment samples were collected for each grid cell and composited to yield one sample from each grid cell for analysis. All grid cells were given equal weight when computing sample statistics using an area-weighted geometric mean. Adoption of a vigorous mechanical compositing method for mixing was introduced to reduce large intra-sample variability. For the outer portion of the study area (the monitored natural remediation [MNR] area) a 1,500-foot by 1,500-foot composite sampling grid was developed and approved by EPA (Vita, 2007).
- **Fox River Superfund Site, Wisconsin:** Long-term monitoring is focusing on site-wide surface water and fish tissue trends, and surface sediment trends in MNR areas. Surface water samples are collected along transects and averaged over the cross-section of flow, in accordance with United States Geological Survey (USGS) "quarter point" sampling procedures. For MNR sediment sampling, a five-point composite sample is collected from each monitoring area (AnchorQEA et al., 2009; Foth, 2007; EPA, 2008).
- **Head of Hylebos Waterway Superfund Site, Washington**: The 2005 project cleanup goal was to dredge to a clean surface. The confirmation sampling approach divided the Site into 400 construction dredge management areas (CDMAs) sized to 5,000 square feet grids each. A total of four to six randomized discrete samples were collected within each CDMA and composited for testing. A surface weighting criteria was applied to verify whether the dredging had achieved a clean remediated sediment surface (Wolf and Parkinson, 2015). In 2012, the surface sediment sampling program replicated the same compositing approach used in 2004/2006 to establish current sediment chemical concentrations for future comparisons of long-term monitoring data, and to revise the Operations, Maintenance, and Monitoring Program (OMMP) for the Site (DOF, 2012).

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Scoping Memorandum

Date: 6 June 2017

To: Sean Sheldrake, Lori Cora, Stephanie Ebright – USEPA Region 10 and the Portland Harbor Pre-Remedial Design Group

From: Anne Fitzpatrick, Geosyntec Consultants
Jason Conder, Geosyntec Consultants
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Subject: Overview of Proposed AOC Scope Pre-Remedial Design Investigation Studies – *For Discussion Purposes*
Geosyntec Project Number: PNG-0767

This scoping memorandum, prepared by Geosyntec Consultants, Inc. (Geosyntec) and AECOM Technical Services (AECOM), provides a conceptual overview of studies proposed for pre-remedial design at the Portland Harbor Superfund Site (PHSS or Site) located in Portland, Oregon. The strategy and scope of work is sponsored by a group of nine industrial parties called the Pre-Remedial Design (Pre-RD) Group. In the ROD, the selected remedy, Alternative F Modified (Alt F Mod) identified 396 acres of active remediation within the Site that extends from river mile (RM) 1.9 to 11.8 of the Lower Willamette River. The ROD also described a post-ROD sampling effort to delineate and better refine the sediment management area (SMA) footprints, refine the Conceptual Site Model (CSM), and support remedial design.

The proposed pre-remedial design investigation studies described in this memo are intended to meet these objectives and to support the allocation of the ROD. This Pre-RD scope of work focuses on site-wide studies that will re-baseline the river and assess current conditions, support the refinement of SMA footprints for allocation, support an initial discussion of Institutional Controls (ICs), and reduce the uncertainty and risk associated with implementation of the active remedy components. The scope does not include SMA-specific design-level sampling, nor source control evaluations, which could be conducted during later remedial design.

PROJECT GOALS

The synoptic data collected during this study (sediment, fish tissue, surface water) will be used to re-establish baseline conditions as of 2018, revisit the active remedial footprint (for remedy and allocation), and refine the conceptual site model (CSM). The upstream background concentrations will be used to evaluate remedy effectiveness targets. This proposed sampling program provides the best balance of (i) near-term initiation of field work; (ii) prioritizing field data collection of studies that provide informative updates to the Site baseline; and (iii) supporting the PCI allocation team's need to reduce remedy uncertainty.

The Pre-RD group proposes to conduct a comprehensive 2018 synoptic sampling program of surface sediment, fish tissue, surface water, select sediment cores, upstream porewater, and bathymetry/fish tracking studies. These proposed investigation activities are focused on achieving the following five goals:

1. Refine the active remedial footprints with new data to support allocation by reducing the uncertainty in remedy scope (specify depths, extent, and remedial technologies within SMA footprints);
2. Define the current baseline conditions by collecting synoptic 2017/2018 surface sediment, fish tissue, and surface water data;
3. Evaluate recovery trends (surface weighted average sediment concentrations [SWACs], points, trends, human health risk) to refine the remedial footprint for allocation, estimate recovery rates, and establish a point of reference for future long-term monitoring;
4. Refine the background/upstream dataset with new synoptic data to evaluate current conditions, and establish a benchmark for evaluating future recovery potential and progress towards remedial action objectives (RAOs); and
5. Evaluate calibration of the food web model (FWM) using new 2018 data to validate model predictions.

Table 1 lists the data that will be collected to achieve these goals. The 2018/2018 data will be used to determine current SWACs, human health risks, and background concentrations associated with both upstream and Site conditions.

The schedule includes time for development of focused work plans in 2017 for completing field investigation activities (planning and execution), data analysis, and reporting in two years (Figure 1). It is anticipated that the Pre-RD sampling and analysis activities will commence following a scoping meeting with United States Environmental Protection Agency (EPA) in June 2017 and

completion of Administrative Order on Consent (AOC) negotiations (expected in mid-2017). The goal is to complete the AOC Pre-RD scope of work in two years, by June 2019.

PRE-DESIGN INVESTIGATION FIELD STUDIES

To achieve the goals listed above, the scope of work includes the following eight investigation field studies:

- Bathymetry survey;
- Surface sediment grab sampling (site-wide and upriver);
- Fish tissue sampling (site-wide and upriver);
- Surface water sampling (site-wide and upriver);
- Subsurface sediment coring;
- Fish acoustic tracking pilot study, with potential expansion to full study;
- Camera survey of anglers; and
- Porewater sampling in upstream areas.

In addition, although not currently part of our proposed AOC scope of work, we would like to engage EPA in discussions regarding a follow-up approach for composited/gridded surface sediment sampling of the Site to establish baseline for long-term monitoring and remedy performance evaluations.

All investigation field work will be completed by end of 2018. An interpretive data report(s) will be completed by second quarter 2019 (June 2019). Each study is briefly summarized below. Many of the field data will serve multiple data use objectives (DUOs), as shown in Table 2. Table 3 presents a summary of the Pre-RD investigation studies including media, sample counts, and analyses. Figure 1 presents the proposed project schedule.

Bathymetry Survey

A bank-to-bank, site-wide bathymetry survey is proposed to assess changes in elevation/sedimentation over the past 15 years and to evaluate mudline elevations relative to the remedial technology assignment requirements (per the ROD decision tree). The site-wide multi-beam bathymetry survey will be supplemented with lead-line measurements along the shoreline banks and difficult-to-access areas for better coverage than provided by multi-beam alone. Results

may also serve as a line of evidence relative to the evaluation of riverbank slope conditions, natural recovery, and bed stability (e.g., erosional vs. depositional areas). The last bank-to-bank survey was performed in 2002. The new bathymetry data will also be used to help identify target areas for surface sediment sampling, refine the elevation clearances for capping and dredging, and adjust the dredge volumes (to reduce uncertainty for allocation associated with the extent of the active remedial footprint and remedial technologies assigned to them). The anticipated schedule for the bathymetry survey is the third quarter of 2017.

Surface Sediment Sampling

Many of the surface sediment data are over 10 years old. The goals of new surface sediment data collection include: re-baseline the river to establish current conditions and SWACs, refine the active remedial SMA footprints, and evaluate natural recovery trends. Because Portland Harbor is part of a dynamic river system, current concentrations for focused constituents of concern (COCs) are expected to be different than the data set used in EPA's RI. The focused COCs include polychlorinated biphenyls (PCBs), dioxins/furans, DDx, and polycyclic aromatic hydrocarbons (PAHs). The scope includes synoptic surface sediment sampling (0 to 30 centimeters [cm]), as well as fish tissue and surface water samples (discussed below), to provide an empirical and statistically valid[1] dataset for re-baselining the river and evaluating the CSM.

Several stratified/random/equal allocation methods of statistical analysis were used to estimate the appropriate sample size within the Site needed to satisfy the DUOs described above. A summary of the geostatistical analysis, approach, and findings is summarized in Attachment A. Previous analyses (Wolf, 2015a; Wolf, 2015b; Toll et al., 2015) found that the river is spatially and chemically stratified into four river segments, each about 2 to 3 miles long. These four segments include: RM 1.9 to 5 (Segment 4); 5 to 7.5 (Segment 3); 7.5 to 9 (Segment 2); and 9 to 11.8 (Segment 1). Based on physical and chemical signatures, Swan Island Lagoon may be separated as a fifth segment. A key use of the new data (along with the fish tracking results and determination of smallmouth bass [SMB] home ranges) will be to confirm the representativeness of these segment delineations, then estimate SWACs site-wide, within each segment, and potentially at smaller spatial scales.

Site Area. As detailed in Attachment A, the sample count was determined by considering the number of discrete surface sediment samples needed in each segment to statistically detect

[1] This pertains to the number and location of proposed sediment samples. Details regarding sampling collection methodology, analysis, and associated quality control are expected to be developed in accordance with EPA guidance and standard operating procedures (SOPs) aligned as practicable with past EPA-approved sampling investigations.

differences ($p<.05$) between 2004 SWACs and current SWAC estimates with 95% confidence. An estimated 300 to 500 discrete surface sediment samples are needed to yield a statistically-robust new data set for calculating SWACs. We expect this new dataset to replace older RI/FS data for the purposes of refining the SMA footprints and technology selections.

Upstream/Background. An additional 30 to 40 discrete samples will be collected from upstream background areas with grain size and organic carbon content similar to the Site. A minimum of 30 samples are needed for statistical purposes.

Adjustments to the sample count and analytical program may be necessary after further discussions with EPA. Surface sediment grab samples will be collected as discrete samples from 0- to 30-cm depth using the RI data collection protocols. Samples will be analyzed for focused COCs (PCBs, dioxins/furans, DDx, PAHs) as well as total organic carbon (TOC), and grain size. The anticipated schedule for the surface sediment sampling is the beginning of the fourth quarter of 2017 through the first quarter of 2018.

Fish Tissue Sampling

The primary objectives of the fish tissue chemistry study include collecting the data needed to:

- Characterize current levels of selected COCs in resident fish tissue (SMB) on a site-wide basis and smaller spatial scale (pending results of the fish tracking study);
- Characterize upriver background concentrations in resident fish tissue (SMB);
- Update statistically-based evaluations of PCB trends in fish tissue; and
- Evaluate the bioaccumulation model used to relate sediment and tissue concentrations (input new SWACs, fish tissue, and surface water concentrations into the model).

The proposed study includes collection of synoptic SMB data to re-baseline resident fish tissue concentrations in the river, evaluate monitored natural recovery (MNR) trends, refine or recalibrate the FWM, and update human health fish consumption risks. The scope includes 95 whole body discrete samples, plus 10 upstream background discrete fish tissue samples, which is consistent with the 2012 SMB sample design (Figure 2). The sample design targets 20 to 30 samples in each of the four segments (described previously), including 5 samples in Swan Island Lagoon. A statistical analysis of the 2012 SMB data indicates that replicating the 2012 program sample size would allow detections of statistically significant ($p<.05$) trends for PCBs in SMB. A summary of the statistical power analysis performed for fish tissue sample size is provided in Attachment B.

Analytes will include PCBs and a subset for dioxins/furans and DDx (assume 33% of total sample size based on the more localized contribution of these contaminants to Site risk). Collection methods will include hook and line with electroshock back-up if needed. The anticipated schedule for the fish tissue sampling is summer of 2018.

Surface Water Sampling

The objective of surface water sampling is to re-baseline river conditions with synoptic data (sediment, fish tissue, surface water), evaluate surface water current conditions and trends, and provide current 2018 input data for the FWM to calculate current risks. Surface water data will be collected using a peristaltic pump, consistent with RI/FS approaches and methods. Surface water will be collected from 9 transect locations over three sampling rounds (high flow, low flow, and storm) with five transects located within the Site – one from each of the four main channel river segments, one in Swan Island lagoon – plus two transects at the boundary conditions, and two upstream transects. The proposed transects are located at approximately RM 1.8, Multnomah channel entrance near RM 3, RM 4, RM 7, Swan Island Lagoon, RM 8.8, RM 11.6, RM 16.2, and RM 26, to characterize the flow and quality of surface water passing through the river's cross section at each location. These locations were targeted to provide spatial coverage and physical changes in the river dynamics.

Three vertically-averaged composite samples will be collected per transect (similar to the RI/FS approach), except Swan Island Lagoon will have one composite sample.[2] Each sample will be analyzed for suspended solids in the water column (total suspended solids [TSS]), particle size distribution, and chemical testing for PCBs, DDx, PAHs, and dioxins/furans (total and dissolved). The anticipated schedule for the surface water sampling will start in the winter 2017 through summer 2018. The RI sampling events previously targeted November, March, and July for sampling. A total of 50 water samples (25 total and 25 dissolved) will be analyzed per event, for a total of 150 samples.

The synoptic TSS and particle size distribution data could be used in the future for hydrodynamic and sediment transport (STM) model refinement and calibration (these data are needed based on our review). The chemistry data would be needed, and could be used, for future fate and transport model refinement.

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[2] Vertically-integrated sample collected from 0.3 meters below the water surface to within 1 meter of the river bottom by lowering and raising the sample tube intake while pumping water at a pre-determined rate. The Round 2A RI study composited the three samples into one transect-composite sample. We propose three samples per transect for testing.

Subsurface Sediment Coring

Subsurface sediment sampling will be conducted in targeted areas within or along the boundaries of SMAs that have limited data coverage to refine the active footprint boundaries of the Alt F Mod SMA footprints. The goal of this study is to refine the horizontal and vertical extent of contamination at concentrations greater than the RALs at depth, to confirm the CSM, and to refine the dredge volumes. A total of 50 to 90 core locations are proposed based on visual distribution of subsurface contamination, using 250- to 300-foot distance as a general guide to the next nearest coring location. In some cases, stations will be reoccupied to determine the vertical extent of contamination where previous cores did not "tag bottom" and in other cases, a new core will be collected in an active footprint area where none previously existed.

Cores will be collected using a vibracore and visually logged using American Society of Testing Materials (ASTM) and RI procedures, then subsampled into 2-foot increments unless stratigraphy indicates otherwise. Proposed coring locations may be adjusted after the SMA footprints have been revised based on 2018 surface sediment sampling results. Subsurface sediment samples will be analyzed for focused COCs, or a subset of selected COCs and depths depending on the SMA.

Fish Acoustic Tracking Study

An acoustic fish tracking study may be conducted to capture fine-scale temporal and spatial movement of SMB at the Site, pending pilot study results. A pilot study is planned for June 2017 and the study will provide data on the range and reception of fish tracking equipment in two different acoustic environments (more quiescent and more active). The results of the fish tracking pilot study will be used to assess the value of conducting a full-scale study.

If the pilot study provides valuable data, a full-scale study will be conducted over a one-year period to capture seasonal home range patterns. Using a more refined acoustic telemetry approach than the historical (2000-2003) radiotracking study, the results will re-evaluate where and to what extent SMB stay within the 1-mile exposure areas assumed in the FWM.

This study is being designed to use more refined technology and provide more robust data than the previous radiotelemetry study (Friesen 2005); we expect these results to replace previous findings if different. These results will be used to refine or recalibrate the FWM and reduce uncertainty about remedy effectiveness for fish tissue recovery. The anticipated schedule for the full-scale fish tracking study, if conducted, is fourth quarter 2017 through 2018. The work will be performed in collaboration with Karl Gustavson, EPA Office of Superfund Remediation and Technology Innovation (formerly United States Army Corps of Engineers [USACE]) and experienced staff from USACE Engineer Research and Development Center (ERDC).

Camera Survey of Anglers

A camera study is proposed to collect data on the location and frequency of people fishing along the river. The results will provide an empirical line of evidence on frequency and duration of angler trips over a year-long period that can be used to support the development of institutional controls (e.g., targeted locations and seasons for messaging).

The camera survey program will consist of photographic documentation of human activity using a network of cameras in the Site. The scope assumes installation of 12 stationary cameras at select locations that are known or suspected to be used by anglers or are popular points of access to the river based on prior studies and angler knowledge. Cameras will be pre-set to take photos at 30-minute intervals during daylight hours.

The survey will be conducted over a one-year period to account for seasonal variation in use. Photographs will be uploaded monthly to digital photographic software for visual review and tagging with descriptors (e.g., date, location, time, number of individuals), and stored in a project database. A similar camera study recently performed at the Berry's Creek Superfund Site in New Jersey provided data on human use of the Site for fishing, crabbing, boating, etc., and can help support the development of institutional controls.

The anticipated schedule for the camera survey is fourth quarter 2017 through 2018.

Porewater Sampling in Upstream Areas

The EPA conceptual sampling framework for pre-design sampling (17 March 2017) identified the collection of background (upstream) porewater samples as a baseline monitoring element. Background metals concentrations in porewater were not defined during the RI and the focus of a background porewater characterization would be naturally occurring metals. Background metals porewater concentrations should be developed and cleanup levels adjusted accordingly. The scope of the Pre-RD study is to place passive porewater samplers, or a similar device to collect porewater, at eight upstream locations co-located with bulk sediment grab stations. The samplers will be equilibrated for a 2- to 4-week period then retrieved. Porewater samples will be analyzed for freely-dissolved COC metals. Porewater results from passive samplers could be compared to laboratory-derived porewater samples from the upstream bulk sediment surface grab locations.

Gridded Composite Surface Sediment Sampling – for Long-term Monitoring

A composite sediment sampling approach is appropriate for evaluating future post-remedy long-term monitoring conditions. We would like to collaboratively explore a draft protocol with EPA

for evaluating post-remedy SWACs and remedy effectiveness. A stratified random, gridded, composite sampling approach could be implemented later during remedial design under a separate AOC. A composite sampling program is not currently proposed as part of this AOC scope of work.

The gridded composite samples would establish baseline conditions for comparing with future post-remedy data and SWACs. As discrete samples, a monitoring dataset is subject to outliers, and a lot of variance. To minimize these effects, composite sampling would be incorporated into a future long-term sampling program. Project examples are presented in Attachment C. We propose that a similar approach be discussed for the Portland Harbor Superfund Site in collaboration with EPA.

DATA ANALYSES

Data collected from the AOC scope pre-design investigation field studies will be summarized and analyzed to meet several DUOs (see Table 2). Field work will be completed by the end of 2018; data analyses will be completed by the first quarter of 2019 and include the following elements:

- Evaluation of current sediment conditions and refinement of the active remedy footprint;
- Use of bathymetry data to refine the elevation requirements of the active remedy footprint, especially in the riverbank areas;
- Refinement of the CSM and understanding of current conditions;
- Refinement of sediment recovery curves based on empirical data trends (and confirm RALs);
- Re-calculation of site-wide and segment-wide surface sediment SWACs using new data, may also consider other spatial scales;
- Evaluation of fish tracking results to refine the extent and segmenting of the river (for calculation of SWACs) and assess fish home ranges used in the FWM;
- Update the trend analyses of validated 2017/2018 surface sediment, fish tissue, and surface water data;
- Assessment of new bathymetry for bed stability and fish/sediment data for monitored natural recovery potential;
- Evaluation of current (2017/2018) upstream background concentrations; and
- Use of new data to refine or recalibrate the FWM and update calculations of baseline fish consumption risks.

Deliverables will include data summary tables, data graphics such as box-and-whisker plots, maps depicting the spatial distribution of sediment chemistry for selected analytical parameters, a comparison of site conditions to the active Alt F Mod remedial footprint, trend analyses, and new SMA boundary maps. Draft deliverables will be provided to EPA at milestone endpoints of particular tasks. The 2017/2018 sampling program will be statistically robust to support calculation of site-wide SWACs and assess spatial patterns without reliance on older data. The older RI/FS data will only be used for trend analysis.

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LIST OF TABLES AND FIGURES

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Table 2. Data Use Objectives for Pre-RD Investigation Studies

Table 3. Summary of Pre-RD Study Media, Sample Counts, Analyses

Figure 1. Proposed Project Schedule (Gannt chart)

Figure 2. Proposed Fish Tissue Locations in the Site (2A) and Upstream (2B)

ATTACHMENTS

Attachment A. Sample Plan Objectives and Geostatistical Approach for Sampling of Surface Sediment

Attachment B. Power Analysis for Fish Tissue Sample Size

Attachment C. Project Examples of Composite Sampling for Long-term Monitoring

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Table 1. Project Goals for Pre-Remedial Investigation Design Scope of Work

#	Project Goals	Spatial Scale	Media	Questions to Answer
1	Obtain SMA baseline characterization data adequate to refine the remedial footprint for allocation purposes	SMA specific	Discrete sediment grabs (0 to 30 cm), bathymetry, sediment cores	• Have the active remedial footprints changed since the FS? Can we refine the footprints and reduce uncertainty? • Have the elevations changed since the FS, hence the footprint changes through the ROD technology decision tree? • What are the extent of footprints above RALs?
2	Establish current baseline conditions (SWACs, human health risk) to evaluate future remedy performance and progress towards RAOs	Site-wide, segments	Surface sediment, fish tissue (SMB), surface water	• What are concentrations of COCs prior to remedial activities? • Do results support refinement of the remedial footprint? • What are current baseline risks? • *Note: ideally, sediment composites would be used as baseline for long-term monitoring*
3	Evaluate recovery trends within the Site to estimate recovery rates and refine the remedial footprint	Site-wide, segments	Surface sediment, fish tissue (SMB), surface water	• Are Site conditions improving? • Are there improvements that lead to a different remedial footprint? • Can a recovery rate be calculated?
4	Update background dataset	Upstream RM 11.8 to 28	Surface sediment, fish tissue (SMB), surface water; porewater	• What are background concentrations of select COCs in sediment and fish tissue, and have they changed since the FS? • What are background concentrations of metals COCs in porewater? • How could new data inform future evaluation of remedy performance?
5	Update FWM calibration for evaluating progress towards RAOs	Site-wide, segments	Surface sediment, fish tissue (SMB), surface water, SMB home range	• Can we confirm relationships and assumptions used in the model? • How should fish tissue (SMB) data be evaluated for monitoring remedy effectiveness?

Notes:
(1) Data collected for each project goal may serve multiple data use objectives (DUOs).
(2) This scope of work proposes to collect discrete surface sediment samples because of multiple DUOs. Ideally, the baseline sediment dataset to be used as a starting point for comparing future long-term, monitoring data, would be based on a stratified random, composite sampling approach.
(3) COCs = chemicals of concern; FWM = food web model; FS = feasibility study; RAL = remedial action level; ROD = Record of Decision; SWAC = surface weighted average concentrations; SMB = small mouth bass

Table 2. Data Use Objectives for Pre-RD Investigation Studies

Proposed Scope Item			Data Use Objective (DUO)									
#	Task	Purpose	CSM	Update SWAC	Recovery Trend	Model Calibration	Risk Update	Institutional Controls	Active Footprint/ RAL	Remedial Technology	Allocation	Future Compliance
Pre-Design Field Investigation Studies												
1	Site-wide bathymetry survey	footprint	X		X	X			X	X	X	
2	Surface sediment sampling (discrete)	recovery/bkgrd	X	X	X	X	X		X	X	X	X
2	Fish tissue sampling	recovery/bkgrd	X		X	X	X	X				X
4	Surface water sampling	recovery/bkgrd	X		X	X	X					
5	Sediment cores	footprint	X		X				X	X	X	X
6	Fish acoustic tracking study (USACE)	fish home range	X	X		X	X					X
7	Camera survey of anglers	risk/IC	X				X	X				
8	Porewater sampling	bkgrd	X				X		X	X	X	X
Technical Analyses / Reporting												
A	Focused work plan for AOC	scope	X									
B	Evaluate current conditions and recovery trends	footprint/ recovery	X	X	X	X	X		X	X	X	X
C	Evaluate background levels	recovery	X		X		X					
D	Refine active footprint	footprint	X	X					X	X	X	X
E	Refine food web model and human health consumption risks	recovery/risk	X	X	X	X	X	X	X		X	X
G	Data Interpretation Report	footprint/ recovery/bkgrd/ risk	X	X	X	X	X	X	X	X	X	X

Table 3. Summary of Pre-RD Study Media, Sample Counts, Analyses

Media	Location	Approximate Sample Count	Analyses
Surface Sediment	Site	300 to 500 (discrete grabs)	Focused-COCs (PCBs, dioxins, DDx, PAHs), plus TOC, grain size
	Upstream	30 to 40	
Fish Tissue (SMB)	Site	95 (whole body)	PCBs and a subset for dioxins/furans, DDx
	Upstream	10 (whole body)	
Surface water	Site / Upstream	9 transects, 3 vertically-composited samples/ per transect 75 samples (total) 75 samples (dissolved)	Total and dissolved for focused-COCs plus grain size, TSS
Sediment Cores	Site	50 to 90 cores 2 to 8 samples/ per core	Focused-COCs (PCBs, dioxins, DDx, PAHs) plus TOC, grain size
Porewater	Upstream	8 samples	Dissolved metals

Notes:

(1) Total sample counts will be increased for QA/QC samples (5 to 10%).
(2) The proposed surface water transects are located at approximately RM 1.8, Multnomah channel entrance near RM 3, RM 4, RM 7, Swan Island Lagoon, RM 8.8, RM 11.6, RM 16.2, and RM 26. Swan Island Lagoon transect may be composited into one sample for chemical testing per event.
(3) The four Site segments include: RM 1.9 to 5 (Segment 4); 5 to 7.5 (Segment 3); 7.5 to 9 (Segment 2); and 9 to 11.8 (Segment 1). Based on physical and chemical signatures, Swan Island Lagoon may be separated into a fifth segment.
(4) Sampling and analysis methods capable of low-level concentration detection may be included for selected surface water transects.
(5) PCBs = PCB congeners; SMB = smallmouth bass; TOC = total organic carbon; TSS = total suspended solids

Figure 1 – Proposed Project Schedule – Draft

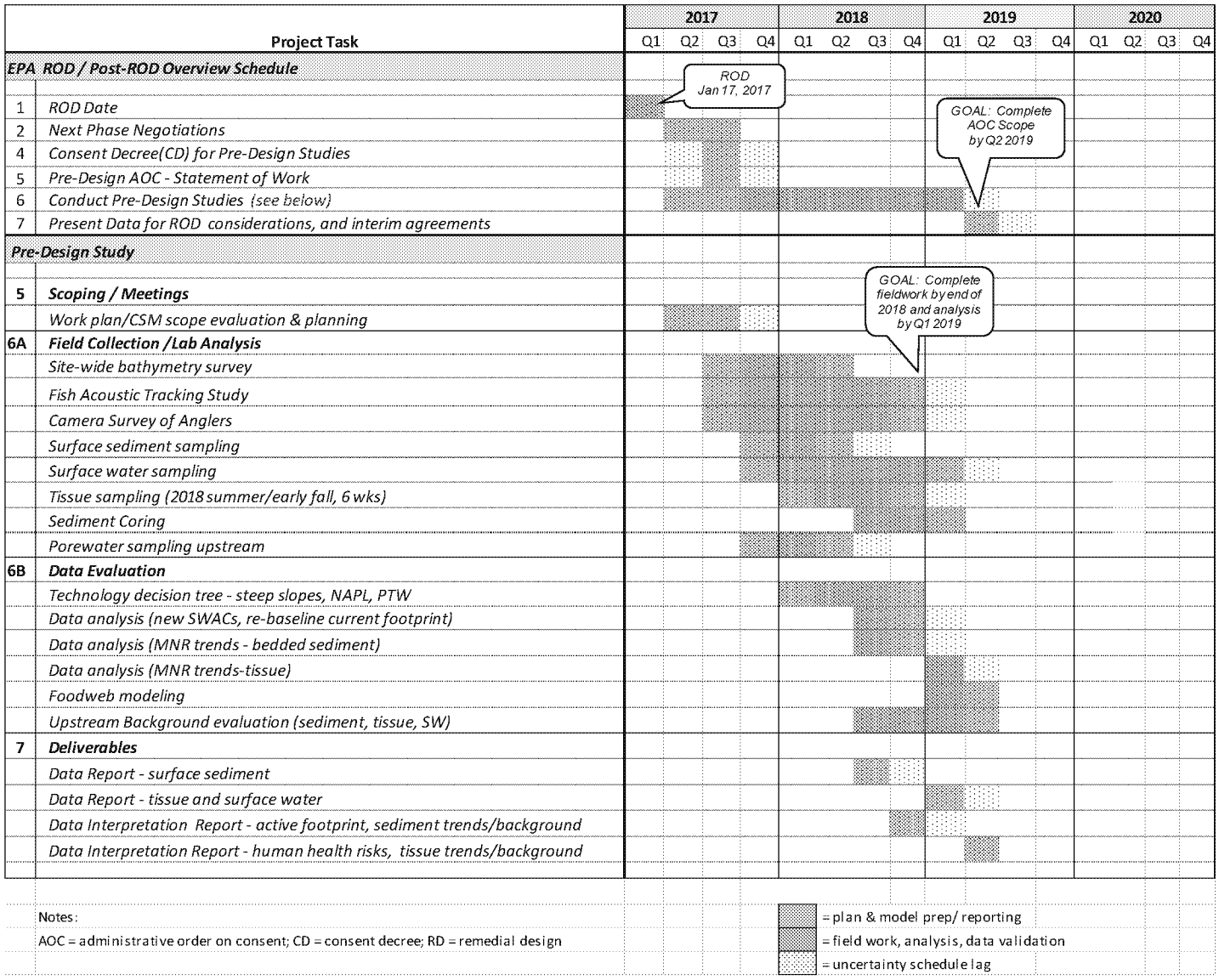
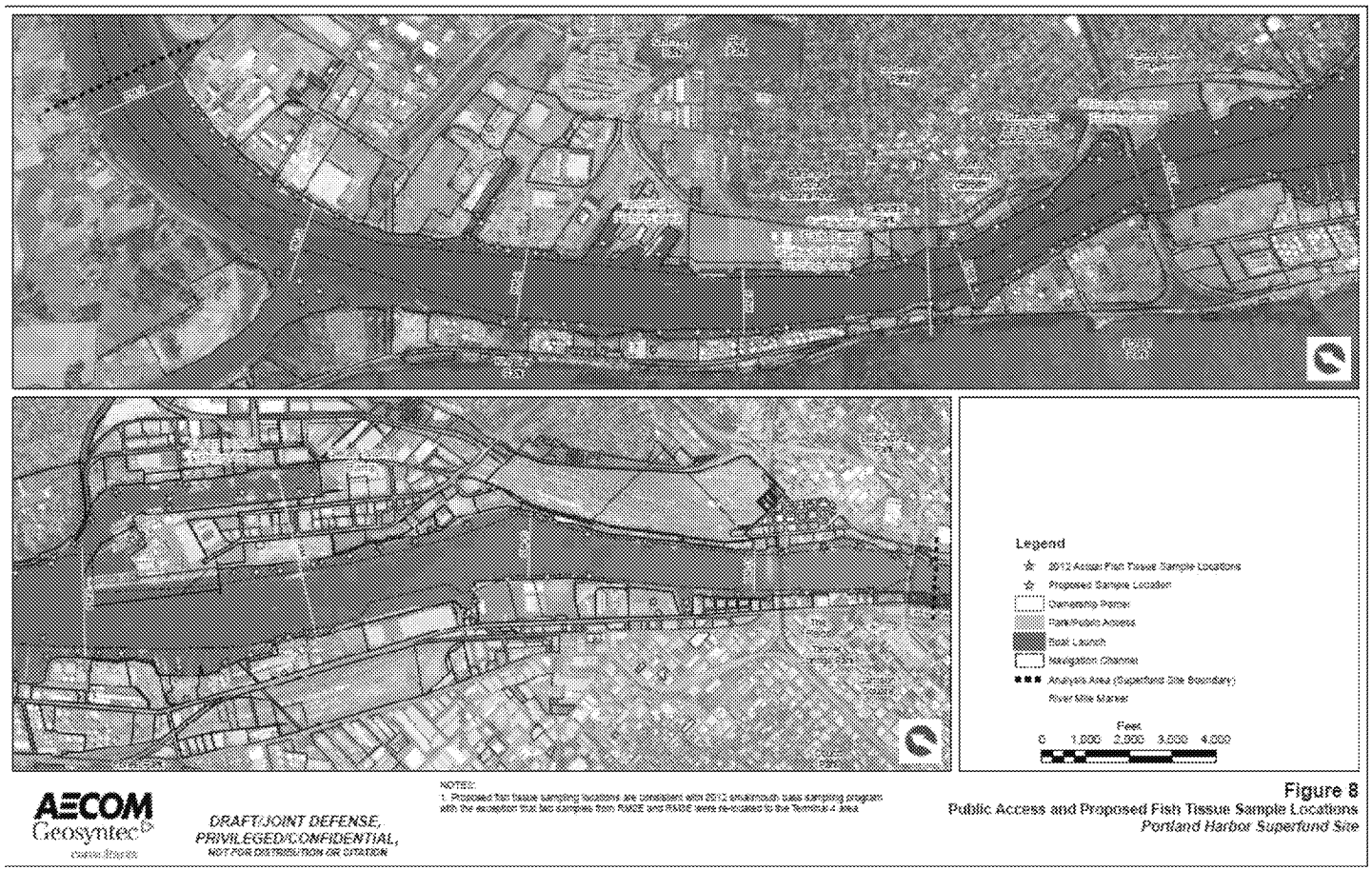
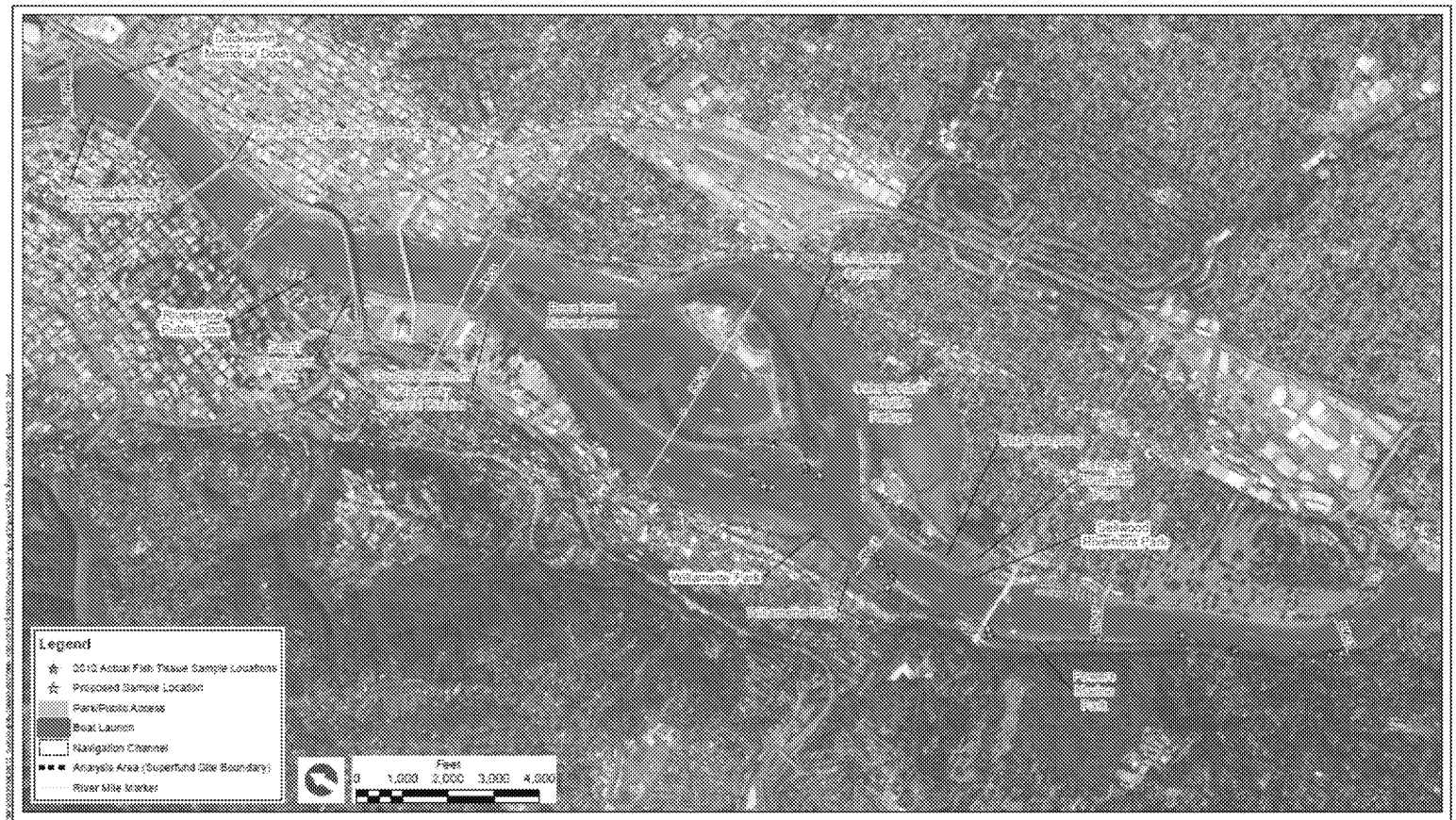


Figure 2 – Proposed Fish Tissue Locations in the Site (2A) and Upstream (2B)





NOTES:

AECOM Geosyntec consultants

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Figure 9
Public Access and Proposed Fish Tissue Sample Locations RM 13 to 18
Portland Harbor Superfund Site

ATTACHMENT A

Sample Plan Objectives and Geostatistical Approach for Sampling of Surface Sediment Portland Harbor Superfund Site, Pre-Remedial Investigation Design Re-Baseline Study

Prepared by Geosyntec

This attachment details a proposed approach for identifying a re-baselining sampling approach for 2018 surface sediment and a geostatistical analysis of discrete surface sediment samples.

DATA OBJECTIVES

The 2018 baseline sediment sampling program has five primary objectives for collection of surface sediment samples at discrete locations within the Site (river miles 1.9 to 11.8):

- **Objective 1: Natural Recovery.** A key objective is to assess natural recovery between the period of 2004 to 2018, and to quantify the rate of natural recovery. There are several robust and statistically-valid approaches for evaluating the data needed to evaluate natural recovery, and these are likely to be fully utilized following data collection in 2018. The simplest approach would be to compare site-wide and segment-by-segment surface weighted average sediment concentrations (SWAC) estimates and 95% Confidence Intervals (SWACs) for 2004 and 2018, looking for statistically significant differences at a level of at least $p<.05$. Additionally, stations sampled in both 2004 and 2018 could also serve as the basis by which to conduct paired evaluations or univariate and multivariate regression procedures with temporal and/or spatial data (GSI Environmental, Inc., 2014; Kleinfelder, 2015; Geosyntec Consultants, Inc., 2016; Newfields, 2016).[3]
- **Objective 2: SMA Delineation.** Delineating the sediment management areas (SMAs) is also a key objective of the 2018 data. The 2018 sampling plan will provide an optimized dataset for significantly refining the current SMAs. This will enable initial remedial design calculations and allow for the planning of additional high-resolution delineation of SMAs that will be needed for engineering purposes during remedial design.
- **Objective 3: Risk Evaluation.** Similar to Objective 1, a key use of the 2018 data will be to compare risk levels in 2018 to 2004. For example, it is anticipated that 2004 SWAC and 2018 SWAC estimates (or upper 95% confidence limits on the SWACs) on a site-wide and segment-by-segment basis would be input into risk assessment algorithms to evaluate the

[3] To achieve this objective, the sampling program may include some stratified sampling based on chemical distributions and spatial considerations such as erosional, stable, and depositional areas identified as part of the RI/FS.

expected decrease in risk that has likely occurred since 2004. The 2018 risk estimates may also be compared to background risk levels.

- **Objective 4: Remedy Success.** Data collected in 2018 will serve as a robust and precise baseline measurement for comparison of future post-remedy data to the remedy goals (or asymptote of a curve). In addition to comparing post-remedy sediment data to risk-based and remedial criteria, the post-remedy results must be able to be demonstrated to be significantly lower than the baseline 2018 results. Again, there are several approaches to the use of this data, but the simplest approach would be to compare site-wide and segment-by-segment SWAC estimates, or smaller stratified scales from actively remediated areas, or composite samples, and 95% Confidence Intervals (SWACs) developed in 2018 to those developed in post-remedy events at levels of significance of $p<.05$ or better.
- **Objective 5: Background Comparisons.** In addition to the sampling plan for the Site, discrete samples of surface sediment will be collected from background areas upstream of river mile 11.8 to provide a robust measure of concentrations of focused COCs in upstream areas. Future comparisons of SWACs on a site-wide and segment-by-segment basis would be made to statistics developed from the background dataset developed in 2018.

SAMPLE PLAN DEVELOPMENT

The basis for sampling within the Site boundaries (river miles 1.9 to 11.8) was devised according to the following steps:

- **Step 1: Initial Sample Count.** A variability reduction analysis was applied to evaluate the variability of the site-wide and segment-wide SWAC using the 2004 data set for total PCBs. This approach found that approximately 100 to 200 samples could be removed from the 2004 data without significantly increasing the variability of the SWAC estimate. Based on this analysis, an initial sample size of 200 was identified.
- **Step 2: Initial Sample Distribution.** In Step 2, the 200 samples identified in Step 1 were distributed among the Site and assigned discrete locations. 80 samples were placed at stations previously-sampled in 2004 (reoccupied sample stations). An even distribution among low and high areas of chemical concentrations was obtained by selecting locations among four groups of samples indicating concentrations of total PCBs (in 2004): the lowest quartile (0 to 25th percentile), lower-middle quartile (25th to 50th percentile), upper-middle quartile (50th to 75th percentile), and highest quartile (75th to 100th percentile). Additionally, proposed locations were placed with even distribution among the entire reach, achieving a relatively uniform sampling density.

- **Step 3: Additional SMA Sample Delineation.** Recognizing that increased sampling density will be required to identify and delineate SMAs for preliminary design purposes, an increased sampling density was applied in bounding areas identified in the Alt F Mod footprint. Sample placement simultaneously considered (i) higher sampling densities in hotspot areas with higher variance/low certainty;[4] (ii) reoccupation of select 2004 sample locations not already identified in Step 2; (iii) relatively even sample spacing to ensure compact Thiessen polygons; and (iv) potential chemical concentration gradients (for all the focused COCs), and (v) physical and hydrodynamic features. Based on the various assumptions and considerations, this Step added approximately 100 to 300 samples to the design.

These three steps lead to a final sample design in the range of 300 to 500 samples within the Site. The sample count will produce a statistically valid surface sediment baseline dataset for calculating SWACs with the ability to detect significant differences between events with 95% confidence at $p<.05$.

ASSESSMENT APPROACH

A procedure for the quantitative evaluation of this sampling plan has been developed and indicates that the variation around the SWAC estimates is likely to be sufficient to enable the basic comparisons described above. For example, the 2004 PCB SWAC and the SWAC that would have been obtained in 2013-2016 (if the proposed sampling plan had been applied with the sample sizes noted) would be statistically distinct. Thus, assuming the natural recovery trend indicated in the 2013-2016 data, the future results that could be developed using the proposed sampling plan are likely to be able to indicate significant changes in SWACs since 2004 (e.g., the two SWACs are significantly different with 95% confidence at $p<.05$). However, statistically robust changes may still be concluded using less stringent hypothesis test statistics (e.g., lower confidence or power).

In addition, a power analysis (Champely, 2017) of the expected upstream sampling plan (40 additional discreet samples) indicates acceptable levels of precision for future comparisons of the Site to background conditions. It is expected that the sample plan itself, the approach for evaluating the sampling plan, and the sampling plan evaluation results will be presented in detail to EPA and stakeholders in subsequent communications.

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[4] For reference, recent investigations at River Mile 11E Site used a sample density of 1 sample per every 100 to 200 feet.

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ATTACHMENT B
Power Analysis for Fish Tissue Sample Size
Portland Harbor Superfund Site, Pre-Remedial Investigation Design Re-Baseline Study

Prepared by AECOM

A statistical analysis was performed using the 2012 smallmouth bass (SMB) tissue data set for the Portland Harbor Superfund Site (Kennedy/Jenks Consultants, 2013) to estimate sample sizes for re-baselining fish tissue chemistry. Prior analyses of 2002, 2007, and 2012 data for polychlorinated biphenyls (PCBs) in SMB indicate fish tissue concentrations have declined over time. The primary focus of this analysis was to estimate the number of SMB samples needed to determine with statistical significance whether PCB concentrations have continued to decline since 2012. Comparison of historical and new means and 95% confidence intervals, as well as trend analysis, provide robust and statistically-valid approaches for evaluating the data to evaluate natural recovery, and are likely to be used following data collection in 2018.

An important aspect of monitoring design is power analysis, which was performed to estimate the difference that can be detected between the 2012 and re-baselining fish tissue data sets. This was illustrated by calculating the effect size (d) or the standardized difference between two means that could be detected (Cohen, 1988); and the minimum detectable difference (MDD) as a function of sample size and variance. The MDD is the difference between two means that must exist to detect a statistically significant effect/difference. The MDD is a commonly employed technique to indicate the potential significant difference at a given sample size in fish tissue monitoring (e.g., United States Environmental Protection Agency [EPA], 2000).

METHODS AND RESULTS

Two scenarios were evaluated: (i) assuming sample size equivalent to the 2012 smallmouth bass data set (n=83 Study Area, n= 9 upriver background); and (ii) assuming sample size equivalent to the targets set forth in the 2012 work plan (n=95 Study Area, n=10 upriver background) (Windward Environmental, 2012). The sample size calculations were performed considering two spatial scales: (i) site-wide; and (ii) four 2 to 3-mile segments.[5] Both spatial scales are relevant to evaluation of SMB in the risk assessment and bioaccumulation modeling.[6] Sample size estimation

[5] The segmentation is based on prior analysis of the available data (Wolf, 2015).
[6] A spatial scale of 2 to 3 mile segments may better reflect the home range of SMB which ranges from 0.5 to 5.5 miles (Scott and Crossman, 1998). Based on a radio-tracking study of predator species in the Lower Willamette River, the median total distance traveled (upstream and downstream) by SMB was 4.3 kilometers (km) (2.7 miles), with 25th and 75th percentiles of 0.8 km and 8.0 km (Friesen, 2005).

to support statistical analysis of trend/natural recovery on an individual river mile (RM) basis is not a data use objective; large sample sizes would be needed to detect trends with adequate power. The power analysis was performed using the following assumptions:

- Confidence = 95% (alpha [α] = 0.05);
- Power = 80% (1-ß = 0.80); and
- PCB data lognormally distributed.

The assumption that PCB concentrations in the 2012 whole body SMB data set are lognormally distributed is based on distribution testing performed using @Risk v.6 (Palisades, 2012). Table 1 presents summary statistics for the 2012 SMB data set. PCB fish tissue concentrations were log (base 10) transformed for the power analyses. The assumptions of 95% confidence ($\alpha = 0.05$) and power of 80% are used by convention to support statistically significant results (e.g., EPA, 2000). However, statistically robust changes may still be concluded using less stringent hypothesis test statistics (e.g., lower confidence or power).

The calculation of effect size (Cohen's d) was performed using the pwr package (Champely, 2017) in the R statistical computing (R Core Team, 2015). The calculation of the minimum detectable difference (MDD) as a function of the sample size and variance in the 2012 data was performed using the following formula and expressed as a percentage of the 2012 mean[7] (Harcum and Dressing, 2015):

$$MDD = \sqrt{[(4\sigma 2\ (Z(1-(\alpha/2)) + Z(1-\beta))\ 2) \div N]}$$

where:

N = total sample size (number of samples in 2012 and new baseline)
σ = standard deviation (assumed equal to 2012 sample populations)
$Z(1-(\alpha/2)) = 1.96$
$Z(1-\beta) = 0.84$
MDD = minimum detectable difference between 2012 and new baseline means

The effect size analysis indicates that replicating the 2012 sample sizes (actual or target sample sizes) will allow for moderate differences between the means to be detected on a site-wide basis

[7] While log transforming the data results in the power analysis being on the population geometric mean, results using the techniques described here are considered to be adequate practical approximations for the purpose of this analysis.

(Cohen's d of ~0.4). For the four segments, the 2012 sample sizes will allow for large differences between the means to be detected (Cohen's d of ~0.8).[8]

Results of the MDD analysis are summarized in Table 2 for the full Site (RM 2-12), each of the four segments, and the upriver background area. The MDD analysis was also performed excluding Segment 1 (RM 9-12), which has the highest mean and variance; eight of the ten highest 2012 PCB SMB samples were from Segment 1, which includes the RM11 area. Table 2 includes MDD results for combined Segments 2, 3, and 4 (RM 2-9).

As shown in Table 2, sample sizes consistent with the 2012 program (actual or target) result in a MDD of about 30% on a site-wide basis. The MDD improves slightly (about 1%) when the 2012 target sample size is used (increase of 12 samples site-wide). When the area with high variance is removed (Segment 1), the MDD is about 23% for the remainder of the Site.

On a river segment basis, sample sizes of 20 to 23 result in MDDs of about 28% to 40% in Segments 2, 3, and 4. In Segment 1 (RM 9-12) where variance is highest, sample sizes of 22 to 28 result in a MDD of about 60%. For upriver background, a sample size of 9 to 10 results in an MDD of about 60%. For upriver background, the means for the 2002 (n=6 composite samples) and 2012 (n=9 discrete samples) SMB data sets are similar (170 micrograms per kilogram [µg/kg] and 230 µg/kg, respectively).

Based on prior trend analysis indicating a decline of about 4% per year (Nielsen, 2015), the maximum change that could be expected in the new baseline data would be approximately 24% in 2018 from the 2012 site-wide mean assuming a linear response (declines may become asymptotic over time as conditions reach equilibrium). Based on the MDD values calculated in this analysis, sample sizes consistent with the 2012 program should be sufficient to detect a change of this magnitude on a site-wide basis (excluding Segment 1/RM11 area) with a high degree of statistical significance.

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[8] The Cohen's d statistic is a standardized measure of the size of the effect that can be observed between two means, with smaller values indicating smaller differences can be observed. Per Cohen (1977): 0.2 = small effect; 0.5 = moderate effect; and 0.8 = large effect.

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Table 1
Summary Statistics for 2012 Smallmouth Bass Data Set
Portland Harbor Superfund Site
Pre-Remedial Design Baseline Study

		2012 SMB Data (a)					
Domain	River Miles	n	Minimum (ug/kg)	Maximum (ug/kg)	Mean (ug/kg)	SD (ug/kg)	CV
Site-wide	2-12	83	92.4	6470	648.7	1185.9	1.8
Segment 1	9-12	22	134	6470	1531.6	2057.7	1.3
Segment 2	7.5-9 & SIL	23	118	1060	331.3	203.7	0.6
Segment 3	5-7.5	19	92.4	440	225.1	85.4	0.4
Segment 4	2-5	19	148	1280	434.2	299.8	0.7
Upriver Background	15-18	9	50.7	634	234.0	187.5	0.8

Notes
(a) PCB wet weight data from 2012 Smallmouth Bass Tissue Study (whole body). Kennedy/Jenks 2013.
n = sample size
CV = coefficient of variation
SD = standard deviation
SMB = smallmouth bass

Table 2
Summary of Power Analysis for Smallmouth Bass Sample Size
Portland Harbor Superfund Site
Pre-Remedial Design Baseline Study

		2012 SMB Data (a)				Sample Size Equals 2012 Actual Catch		Sample Size Equals 2012 Targets			Increase in MDD due to attaining targets
Domain	River Miles	n	Mean log10 PCB (ug/kg)	SD log10PCB (ug/kg)	Geometric Mean (ug/kg)	MDD log PCB (ug/kg)	MDD (%)	n	MDD log PCB (ug/kg)	MDD (%)	
Site-wide	2-12	83	2.56	0.38	364	0.17	31.6%	95	0.16	30.7%	0.9%
Segments 2, 3 & 4 (b)	2-9	61	2.45	0.23	282	0.12	23.9%	67	0.12	23.4%	0.5%
Segment 1	9-12	22	2.87	0.52	745	0.44	63.5%	28	0.41	61.2%	2.4%
Segment 2	7.5-9 & SIL	23	2.46	0.22	290	0.18	33.8%	23	0.18	33.8%	0.0%
Segment 3	5-7.5	19	2.32	0.16	211	0.14	28.3%	21	0.14	27.6%	0.6%
Segment 4	2-5	19	2.56	0.27	359	0.24	42.8%	23	0.23	41.2%	1.6%
Upriver Background	15-18	9	2.26	0.33	180	0.44	63.8%	10	0.43	62.8%	1.0%

Notes
(a) PCB data from 2012 Smallmouth Bass Tissue Study. Kennedy/Jenks 2013.
(b) Site-wide domain after exclusion of Segment 1 (highest 2012 SMB PCB levels were observed in RM11 area).
Analyses performed using alpha of 0.05 and power of 0.80.
n = sample size
MDD = Minimum Detectable Difference
SD = standard deviation of the log base 10 transformed mean
SMB = smallmouth bass

ATTACHMENT C
Project Examples of Composite Sampling for Long-term Monitoring

Several recent sediment cleanup projects have designed a composite sampling approach for sediments to evaluate post-remedy long-term monitoring conditions, post-remedy SWACs, and remedy effectiveness. Project examples include:

- **PSNS Superfund Site, Bremerton, Washington**: The long-term monitoring program at the 400-acre shipyard area (Operable Unit B Marine) of the Puget Sound Naval Shipyard was modified after 10 years to a gridded, composite sampling approach. Starting in 2003, the area was monitored using a rectangular grid of 71 500-foot by 500-foot cells (sample size N=71). Three random grab surface sediment samples were collected for each grid cell and composited to yield one sample from each grid cell for analysis. All grid cells were given equal weight when computing sample statistics using an area-weighted geometric mean. Adoption of a vigorous mechanical compositing method for mixing was introduced to reduce large intra-sample variability. For the outer portion of the study area (the monitored natural remediation [MNR] area) a 1,500-foot by 1,500-foot composite sampling grid was developed and approved by EPA (Vita, 2007).
- **Fox River Superfund Site, Wisconsin:** Long-term monitoring is focusing on site-wide surface water and fish tissue trends, and surface sediment trends in MNR areas. Surface water samples are collected along transects and averaged over the cross-section of flow, in accordance with United States Geological Survey (USGS) "quarter point" sampling procedures. For MNR sediment sampling, a five-point composite sample is collected from each monitoring area (AnchorQEA et al., 2009; Foth, 2007; EPA, 2008).
- **Head of Hylebos Waterway Superfund Site, Washington**: The 2005 project cleanup goal was to dredge to a clean surface. The confirmation sampling approach divided the Site into 400 construction dredge management areas (CDMAs) sized to 5,000 square feet grids each. A total of four to six randomized discrete samples were collected within each CDMA and composited for testing. A surface weighting criteria was applied to verify whether the dredging had achieved a clean remediated sediment surface (Wolf and Parkinson, 2015). In 2012, the surface sediment sampling program replicated the same compositing approach used in 2004/2006 to establish current sediment chemical concentrations for future comparisons of long-term monitoring data, and to revise the Operations, Maintenance, and Monitoring Program (OMMP) for the Site (DOF, 2012).

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Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 5/23/2017 3:01:11 PM
To: Brown, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9242d85c7df343d287659f840d730e65-Brown, Byro]
Subject: FYI - Superfund Tax Reinstatement Resolution
Attachments: City of Portland Superfund Tax Reinstatement Act Resolution 5 22 2017.docx

Byron,

Just wanted to pass this along, believe this is just in the works.

Also if there is a good time to catch up on Indiana – assuming there are any potential updates – just let me know when.

Thanks,

Dimitri

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

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Resolution No.

Submitted by:

The Honorable Ted Wheeler
Mayor of Portland, Oregon

SUPPORTING THE REINSTATEMENT OF THE SUPERFUND TAX

WHEREAS, "Superfund" is the name given to the environmental program established to address hazardous waste sites, and is also the name of the fund established by the Comprehensive Environmental Response, Compensation and Liability Act of 1980; and,

WHEREAS, nearly 70 million Americans—10 million of whom are children – live within four miles of a Superfund site, and are consequently may be exposed to toxic waste such as arsenic, benzene, polychlorinated biphenyls (PCBs), pesticides, mercury and a range of solvents, and potentially contaminated groundwater; and,

WHEREAS, the Environmental Protection Agency (EPA), the agency responsible for listing and guiding the cleanup process for Superfund sites, states that many sites exist in economically distressed communities.

WHEREAS, the Superfund cleanup process is complex, as it involves the steps taken to assess sites, place them on the National Priorities List, and establish and implement appropriate cleanup plans; and,

WHEREAS, the Superfund cleanup program was largely financed through a "polluter pays" excise tax to ensure that parties who benefit from the manufacture or sale of substances that commonly cause environmental problems at hazardous waste sites, and not taxpayers, help bear the cost of cleanup when responsible parties cannot be identified; and,

WHEREAS, the Superfund "polluter pays" taxes expired on December 31, 1995, and since the expiration of the taxes, Superfund program funding has been largely financed from General Revenue transfers to the Superfund Trust Fund as well as from municipal general and utility funds, thus burdening the taxpayer with the costs of cleaning up abandoned hazardous waste sites, and creating lengthy, burdensome and expensive legal proceedings; and,

WHEREAS, the re-enactment of the Superfund tax will expedite the cleanup of Superfund sites across the country, thereby reducing risk to humans and the environment;

NOW, THEREFORE BE IT RESOLVED that the United States Conference of Mayors urges the passage and enactment of legislation to reinstate the Superfund excise tax.

Projected Cost: Unknown

Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 1/17/2018 2:51:21 PM
To: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
Subject: RE:

Tomorrow at 2 pm should work. Thanks.

From: Cutler, Aaron S. [mailto:aaron.cutler@hoganlovells.com]
Sent: Wednesday, January 17, 2018 9:02 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject:

Can we do 3 or 4PM today instead of tomorrow at 10:30? Same place. My will signing was moved to tomorrow at 10 so my whole morning got screwed up. I could also do 2 or 2:30 tomorrow.

Aaron Cutler
Partner

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004

Tel: +1 202 637 5600
Direct: +1 Ex. 6
Fax: +1 202 637 5910
Email: aaron.cutler@hoganlovells.com
www.hoganlovells.com

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Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 9/26/2017 8:30:12 PM
To: Mortimer, Edward [EMortimer@USChamber.com]
Subject: RE: Treasury Study on Unfunded Infrastrcture Projects

Thanks. Appreciate the quick response. – Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

From: Mortimer, Edward [mailto:EMortimer@USChamber.com]
Sent: Tuesday, September 26, 2017 4:28 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Treasury Study on Unfunded Infrastrcture Projects

Byron,
Good talking with you. The link below has the Treasury study. Let me know if you have any other questions.
https://www.treasury.gov/connect/blog/Documents/final-infrastructure-report.pdf

Ed

Ed Mortimer
Executive Director, Transportation Infrastructure
United States Chamber of Commerce
Executive Director, Americans for Transportation Mobility
1615 H. Street, NW
Washington, DC 20062
Ex. 6
Twitter: @chambermoves
@atmcoalition

Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 6/22/2017 2:47:02 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: RE: Bissell

Yes, folks in OPP and OGC have been reviewing and should have an update soon. Patrick has the lead, so you may hear from him directly.

From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Thursday, June 22, 2017 10:41 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Bissell

Any updates or need anything on our end? I think last we all spoke you were going to follow up with your program folks in DC?

Dimitrios Karakitsos | Holland & Knight
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Message

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Sent: 12/6/2017 2:52:26 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: RE: Checking in

Confirming our lunch appointment ... do you think we could meet up at 12 noon instead of 12:15? If not, that's OK.

-----Original Message-----
From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Tuesday, November 28, 2017 12:55 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Checking in

Sometimes people rebel against their upbringing... Always safer to ask.

Reservation is made, see you next week.

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
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dimitri.karakitsos@hklaw.com | www.hklaw.com

-----Original Message-----
From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, November 28, 2017 12:45 PM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: RE: Checking in

I'm from coastal New England so I kind of have to like seafood. Tadich Grill works. See you there.

-----Original Message-----
From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Tuesday, November 28, 2017 12:43 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Checking in

Tadich Grill? Unless you hate seafood then we should do Del Frisco maybe.

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800 17th Street N.W., Suite 1100 | Washington DC 20006 Phone Ex. 6 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

-----Original Message-----
From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, November 28, 2017 12:35 PM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: RE: Checking in

Sure, 12:15 works. I rarely leave the building so have no idea what places are near EPA besides Del Frisco and Elephant & Castle, so just pick a place and I'll meet you there.

-----Original Message-----
From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Tuesday, November 28, 2017 12:12 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Checking in

Time and place? I'm happy to come close to your office. 12:30 work? Or maybe 12:15?

Dimitrios Karakitsos | Holland & Knight
Partner
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800 17th Street N.W., Suite 1100 | Washington DC 20006 Phone Ex. 6 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

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

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, November 28, 2017 12:03 PM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: RE: Checking in

Yes, I am available next Wednesday (12/6) for lunch.

-----Original Message-----
From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Tuesday, November 28, 2017 11:41 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Checking in

Any chance next Wednesday would work?

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington DC 20006 Phone 202.469.5132 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com -----Original Message-----
From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, November 28, 2017 9:57 AM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: RE: Checking in

Circling back on lunch. I should have time the next couple of weeks if you are around.

-----Original Message-----
From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Wednesday, November 8, 2017 2:20 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Checking in

How did Wheeler do? Any update on contracting or lunch?

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington DC 20006 Phone Ex. 6 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

-----Original Message-----
From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Thursday, November 02, 2017 3:00 PM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: RE: Checking in

Thanks, I am back in the office. I am trying to track down info but do not have anything to report yet. Would be interested in taking you up on offer to grab lunch, perhaps next week if you're around.

-----Original Message-----
From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Thursday, November 2, 2017 2:11 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Checking in

Byron - sorry to bug you and hope things are as good as they can be on the family.

Just wanted to ping you and see if you had heard anything about the energy star issue we talked about? Happy to discuss over the phone and happy to grab lunch or a beverage one of these days to chat.

Thanks,

Dimitri

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From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 10/12/2017 8:44:13 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: Re: You around?

Leaving now. Where do you want to meet?

Sent from my iPhone

> On Oct 12, 2017, at 2:35 PM, "Dimitri.Karakitsos@hklaw.com" <Dimitri.Karakitsos@hklaw.com> wrote:
>
> Maybe I can run down and meet you then briefly? Let me know when you are walking out of ceq?
>
> Sent from my iPhone
>
> On Oct 12, 2017, at 2:32 PM, Brown, Byron <brown.byron@epa.gov<mailto:brown.byron@epa.gov>> wrote:
>
> I'm at a different meeting and won't be back free until 3. My CEQ mtg ends around 4:30 and will be over near H&K.
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> Sent from my iPhone
>
> On Oct 12, 2017, at 2:30 PM, "Dimitri.Karakitsos@hklaw.com<mailto:Dimitri.Karakitsos@hklaw.com>" <Dimitri.Karakitsos@hklaw.com<mailto:Dimitri.Karakitsos@hklaw.com>> wrote:
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> Coming to meet with Mandy & Bolen but wanted to say hello and quickly mention something maybe between 3:30 and 4ish?
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Sent: 10/12/2017 6:35:31 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: Re: You around?

Ok.

Sent from my iPhone

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Sent: 10/12/2017 6:32:11 PM
To: Dimitri.Karakitsos@hklaw.com
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Sent from my iPhone

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Sent: 10/12/2017 6:26:39 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: Re: You around?

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Sent from my iPhone

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Sent: 9/25/2017 6:20:13 PM
To: Rozsa, Gabe [Gabe.Rozsa@prime-policy.com]
CC: Davis, Patrick [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7fca02d1ec544fbbbd6fb2e7674e06b2-Davis, Patr]; Deanna Krupa [DeannaKrupa@ipc.org]
Subject: RE: Call with IPC CEO

I do not know if Patrick plans to participate but I have invited Nancy Beck, the Deputy AA for the chemical program working this issue.

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Monday, September 25, 2017 2:18 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Byron,

Will you have others on the call or would you prefer just you and John ?

Gabe

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Monday, September 25, 2017 1:53 PM
To: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

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

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Monday, September 25, 2017 12:50 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Byron,

This is one of the issues we raised with the Administrator relating to language in the Lautenberg TSCA reform bill on manufacturing byproducts that are sent for recycling and what type of relief EPA may be able to offer from the burdensome reporting requirements as provided for under the language in Section 8(a)(6) of TSCA as amended by the Lautenberg bill. See the language at the bottom of first page of the attached text. We are nearing the end of the negotiated rulemaking process and EPA will need to decide what to do to implement the language if consensus with all stakeholders is not achieved.

Gabe

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Monday, September 25, 2017 11:38 AM
To: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Can you provide additional information on the topic you want to discuss?

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Monday, September 25, 2017 8:16 AM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>; Deanna Krupa <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Byron,

Let me know if you plan on having anyone else on the call and we need to set up a bridge. If not, what number should we call. John is in Chicago but if we want additional staff from EPA or IPC on the call, I can offer a dial in number.

Gabe

From: Rozsa, Gabe
Sent: Friday, September 22, 2017 9:31 AM
To: 'Brown, Byron' <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>; 'Deanna Krupa' <DeannaKrupa@ipc.org>
Subject: RE: Call with IPC CEO

Byron,

Let's go with 11:30. I am copying John's assistant Deanna to facilitate the logistics. Let us know what number he should call.

Gabe

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Thursday, September 21, 2017 5:25 PM
To: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>
Cc: Davis, Patrick <davis.patrick@epa.gov>
Subject: RE: Call with IPC CEO

Tuesday at either 11:30 or 12 noon should work.

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Thursday, September 21, 2017 3:27 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>
Subject: Call with IPC CEO

Dear Byron,

We met during an electronics industry meeting with the Administrator on May 2nd. During that meeting, our client IPC, which is a global trade association representing large and small companies in the electronics industry, described issues of concern under various EPA programs affecting the industry and our desire to find solutions that advance environmental stewardship while also minimizing or eliminating unnecessary or overly burdensome reporting/regulation. Per my discussion yesterday with Patrick Davis, I was hoping to set up a call next week between you and the CEO of IPC, John Mitchell, to update you on one of the issues we raised in that meeting. Would you have time either on Monday between 3 and 4:30 or Tuesday at either 11:30 or 12 for a short call?

Thank you,

Gabe

Gabe Rozsa
Managing Director
1110 Vermont Avenue, NW | Suite 1000 | Washington, DC 20005
Office: Ex. 6 Fax: 202 530 4800 | Cell: Ex. 6
www.prime-policy.com

A WPP Group Company: www.wpp.com

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Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 9/25/2017 5:52:40 PM
To: Rozsa, Gabe [Gabe.Rozsa@prime-policy.com]
CC: Davis, Patrick [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7fca02d1ec544fbbbd6fb2e7674e06b2-Davis, Patr]; Deanna Krupa [DeannaKrupa@ipc.org]
Subject: RE: Call with IPC CEO

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Sent: Monday, September 25, 2017 12:50 PM
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To: Brown, Byron <brown.byron@epa.gov>
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Message

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Sent: 6/13/2017 10:50:51 PM
To: rich.gold@hklaw.com
CC: Dimitri.Karakitsos@hklaw.com
Subject: RE: Portland Harbor -- EPA's Draft Sampling Plan

Will you also be discussing the alternative developed by the PRPs that would focus on identifying the hot spots, etc. so cleanup can begin more quickly?

From: rich.gold@hklaw.com [mailto:rich.gold@hklaw.com]
Sent: Tuesday, June 13, 2017 6:38 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Dimitri.Karakitsos@hklaw.com
Subject: FW: Portland Harbor -- EPA's Draft Sampling Plan
Importance: High

This is basically a plan asking the private parties to re-do the Remedial Investigation which will take At MINIMUM 5 years and cost more than $25-30 million at least. This is what they are presenting in the meeting tomorrow. This is presented as the EPA position on the sampling plan.

From: "Cora, Lori" <Cora.Lori@epa.gov>
Cc: "Ebright, Stephanie" <EBRIGHT.STEPHANIE@EPA.GOV>, "Sheldrake, Sean" <sheldrake.sean@epa.gov>, "Zhen, Davis" <Zhen.Davis@epa.gov>
Subject: Portland Harbor -- EPA's Draft Sampling Plan

Attached is the sampling plan that EPA and its government partners have been working on. I would appreciate if you would distribute to the Pre-Remedial Design Group. We are sending this to the State, City, NW Natural, and Federal PRPs as well. We look forward to meeting with the Pre-Remedial Design Group on all ideas about pre-remedial design sampling.

Lori Houck Cora | Assistant Regional Counsel
U.S. Environmental Protection Agency | Region 10
P: Ex. 6 | F: (206) 553.1762 | cora.lori@epa.gov

Follow @EPAnorthwest on Twitter! https://twitter.com/EPAnorthwest

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Sent: 9/25/2017 3:37:39 PM
To: Rozsa, Gabe [Gabe.Rozsa@prime-policy.com]
CC: Davis, Patrick [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7fca02d1ec544fbbbd6fb2e7674e06b2-Davis, Patr]; Deanna Krupa [DeannaKrupa@ipc.org]
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Cc: Davis, Patrick <davis.patrick@epa.gov>
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To: Brown, Byron <brown.byron@epa.gov>

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Sent: 6/13/2017 2:10:23 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: RE: Are you free at 12:30?

OK, we'll plan to call you then on your cell.

From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Tuesday, June 13, 2017 10:08 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Are you free at 12:30?

Yes – I can make myself available at 12:30. He can call my cell at Ex. 6 or I can call him at any number that is convenient.

Thanks

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

Add to address book | View professional biography

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, June 13, 2017 10:07 AM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: Are you free at 12:30?

I'd like to set up a call with the new OECA deputy, Patrick Traylor, and you to discuss the importation matter.

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

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Sent: 6/13/2017 2:06:33 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: Are you free at 12:30?

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Deputy Chief of Staff for Policy
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Message

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Sent: 5/17/2017 2:33:44 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: RE: Superfund Follow-up

I can do 2-2:30 pm but have a hard stop to leave for meetings off site the rest of the afternoon. We can speak by telephone if easier.

From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Wednesday, May 17, 2017 10:20 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Superfund Follow-up

Sorry to bug you – Rich is hounding me on this. Do you have a small window today? If not Rich might be able to go tomorrow at 4 without me.

Thanks sir

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

Add to address book | View professional biography

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Monday, May 15, 2017 9:46 PM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: Re: Superfund Follow-up

I have meetings that afternoon until 3:30. Maybe 4 pm?

Sent from my iPhone

On May 15, 2017, at 10:56 AM, "Dimitri.Karakitsos@hklaw.com" <Dimitri.Karakitsos@hklaw.com> wrote:

> Any chance you might have some time Thursday afternoon? Maybe around 1?
>
> Thanks
>
> **Dimitrios Karakitsos | Holland & Knight**
> Partner
> Holland & Knight LLP
> 800 17th Street N.W., Suite 1100 | Washington, DC 20006
> Phone Ex. 6 | Fax 202.955.5564
> dimitri.karakitsos@hklaw.com | www.hklaw.com

Add to address book | View professional biography

From: Karakitsos, Dimitrios J (WAS - X75132)
Sent: Wednesday, May 10, 2017 11:30 AM
To: 'Brown, Byron' <brown.byron@epa.gov>
Subject: Superfund Follow-up

Byron,

Wanted to follow-up with you about general superfund issues as well as the Indiana specific issue I previously mentioned. Attached is a brief filed last month that lays out the situation pretty well. If there is any chance we could come in and meet with you and your team next Thursday in the afternoon (anytime but 2 pm I think works) that would be great. If another time works better for you please let me know.

Thanks,

Dimitri

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Partner
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Sent: 6/2/2017 10:38:50 AM
To: Dimitri.Karakitsos@hklaw.com
Subject: Re: Call tomorrow not meeting

2:30 still works and don't recall seeing letter.

Sent from my iPhone

> On Jun 1, 2017, at 9:13 PM, "Dimitri.Karakitsos@hklaw.com" <Dimitri.Karakitsos@hklaw.com> wrote:
>
> So I was given bad info and folks can't come in they would like to do a call. They said either 2:30 or 3 works for them and they want me to join as well.
>
> Does call work for you? Also have you seen the letter they sent Ryan?
>
> Call in # is Ex. 6 Can do whatever time works best for you.
>
> Sent from my iPhone
>
> _____
>
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Sent: 5/10/2017 7:51:49 PM
To: Kirsten Djadoo [kirsten.djadoo@castlelake.com]; Brent de Jong [brent.dejong@castlelake.com]
Subject: RE: Florida Test

Thanks, let's plan on 5PM est/4pm cst.

From: Kirsten Djadoo [mailto:kirsten.djadoo@castlelake.com]
Sent: Wednesday, May 10, 2017 3:47 PM
To: Brown, Byron <brown.byron@epa.gov>; Brent de Jong <brent.dejong@castlelake.com>
Subject: RE: Florida Test

Byron,

Brent would be available to do a call Monday afternoon at 4 or 4:30 CST (I understand you were likely referring to EST). Would that work for you?

Please let me know and, if so, I will send through an invite.

Thank you!

Kirsten Djadoo | Castlelake
Tel: Ex. 6 | Fax: 612-851-3090
kirsten.djadoo@castlelake.com

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Wednesday, May 10, 2017 2:44 PM
To: Brent de Jong
Cc: Kirsten Djadoo
Subject: RE: Florida Test

Hi Brent – Would 4 or 4:30 on Monday work for you? - Byron

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Tuesday, May 9, 2017 1:06 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Fotouhi, David <fotouhi.david@epa.gov>; Kirsten Djadoo <kirsten.djadoo@castlelake.com>
Subject: RE: Florida Test

Byron,

I have a board meeting next week. We will have a discussion on strategy and priority. Is it worthwhile jumping on the phone on Friday morning or Monday afternoon?

Thanks,

Brent

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Monday, April 17, 2017 2:00 PM
To: Brent de Jong
Cc: Mackey, Cyndy; Fotouhi, David
Subject: Florida Test

Hi Brent – Thanks for sending the link to the Florida information. - Byron

http://www.fipr.state.fl.us/about-us/phosphate-primer/phosphogypsum-and-the-epa-ban/

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 3/22/2017 4:45:20 PM
To: John Ward [wardo@wardo.com]
Subject: RE: American Coal Ash Association

Thanks. Good to hear from you and thanks for the update.

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

From: John Ward [mailto:wardo@wardo.com]
Sent: Wednesday, March 22, 2017 12:24 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: American Coal Ash Association

Hello Byron,

Congratulations on your new position! I'm sure you are swamped, but I wanted to make sure you are aware of a couple of things.

I understand that you met last week with the Administrator and Rep. David McKinley, and that the Congressman raised the possibility of restoring (in some form) the Coal Combustion Products Partnership. Please let me know if you would like me to provide you with any additional background or information about this idea.

American Coal Ash Association Executive Director Tom Adams and I are scheduled to meet next Wednesday, March 29, at 2:00 p.m. with EPA Office of Resource Conservation and Recovery head Barnes Johnson and some of his staff. We will be updating them on a number of items from the coal ash beneficial use world and will likely mention our support for reinstatement of C2P2, as well.

Best regards,
--wardo

John N. Ward
wardo@wardo.com
Ex. 6
Twitter: WorldWideWardo

Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 6/1/2017 12:08:46 AM
To: Dimitri.Karakitsos@hklaw.com
Subject: RE: Checking in

Just left you a voicemail.

From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Tuesday, May 30, 2017 12:03 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: RE: Checking in

Ok – if you have a few min for a call in the next couple days feel free to let me know or call anytime.

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone Ex. 6 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

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From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, May 30, 2017 10:26 AM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Subject: RE: Checking in

I am getting briefed on NPL litigation, and have received some background info on the Bissel issue as well.

From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Tuesday, May 30, 2017 10:12 AM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Checking in

Byron – hope you had some time to enjoy the holiday weekend. Wanted to circle back with you on two things. First to see if you had any opportunity to look into the Indiana situation and might have any updates. Second, I mentioned the Bissel issue to you previously, they wanted to know if they could have a brief meeting this week if possible. From my understanding towards the end of last week the region (who had consistently been the problem) seemed open to a flexible solution and then came back and said HQ had vetoed the option.

Happy to be flexible and work with you on time for a possible meeting or call to discuss – whatever works best just let me know.

Thanks

Dimitrios Karakitsos | Holland & Knight
Partner

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800 17th Street N.W., Suite 1100 | Washington, DC 20006
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Message

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Sent: 4/13/2017 7:17:48 PM
To: Brent de Jong [brent.dejong@castlelake.com]; Kirsten Djadoo [kirsten.djadoo@castlelake.com]
CC: Starfield, Lawrence [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8a89d6cd217d4254a5879abecb3f314e-Starfield, Lawrence]
Subject: RE: Follow Up on Mississippi Phosphates

Sorry I sent a message to Kirsten this morning but got an out of office message for her. Let me check.

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Thursday, April 13, 2017 3:16 PM
To: Kirsten Djadoo <kirsten.djadoo@castlelake.com>; Brown, Byron <brown.byron@epa.gov>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>
Subject: RE: Follow Up on Mississippi Phosphates

Byron,

I didn't hear back from you. I still have an opening at 10:45 am tomorrow if that works for you.

Best,

Brent

From: Kirsten Djadoo <kirsten.djadoo@castlelake.com>
Date: April 11, 2017 at 5:29:48 PM EDT
To: 'Brown, Byron' <brown.byron@epa.gov>, Brent de Jong <brent.dejong@castlelake.com>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>
Subject: RE: Follow Up on Mississippi Phosphates

Mr. Brown,

Brent will be in DC the end of this week and has availability Thursday afternoon for a 4:15 EST meeting or Friday morning.

Please let me know if either of those times will work for you.

Thank you!

Kirsten Djadoo | **Castlelake**
Tel [Ex. 6] | Fax: 612-851-3090
kirsten.djadoo@castlelake.com

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, April 11, 2017 4:21 PM
To: Brent de Jong; Kirsten Djadoo

Cc: Starfield, Lawrence
Subject: Follow Up on Mississippi Phosphates

Mr. De Jong – We wanted to follow up on our recent discussion about the Mississippi Phosphates site. We would like to report back on the questions we discussed. You indicated you might be in DC later this week, but we could talk by phone if that is more convenient. Let me know your availability. Thanks. - Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 4/13/2017 2:15:45 PM
To: Kirsten Djadoo [kirsten.djadoo@castlelake.com]
Subject: RE: Follow Up on Mississippi Phosphates

Hi Kirsten -- Sorry for the delay. My assistant is out of the office. Would Mr. de Jong still be available Friday morning? We are free at 10 am if that works. Otherwise we can do a phone call next week. - Byron

---

From: Kirsten Djadoo [mailto:kirsten.djadoo@castlelake.com]
Sent: Tuesday, April 11, 2017 5:30 PM
To: Brown, Byron <brown.byron@epa.gov>; Brent de Jong <brent.dejong@castlelake.com>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>
Subject: RE: Follow Up on Mississippi Phosphates

Mr. Brown,

Brent will be in DC the end of this week and has availability Thursday afternoon for a 4:15 EST meeting or Friday morning.

Please let me know if either of those times will work for you.

Thank you!

Kirsten Djadoo | Castlelake
Tel: Ex. 6 Fax: 612-851-3090
kirsten.djadoo@castlelake.com

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Tuesday, April 11, 2017 4:21 PM
To: Brent de Jong; Kirsten Djadoo
Cc: Starfield, Lawrence
Subject: Follow Up on Mississippi Phosphates

Mr. De Jong – We wanted to follow up on our recent discussion about the Mississippi Phosphates site. We would like to report back on the questions we discussed. You indicated you might be in DC later this week, but we could talk by phone if that is more convenient. Let me know your availability. Thanks. - Byron

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Sent: 4/11/2017 8:46:30 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: RE: Tomorrow

Just checking on timing. I gave RJ a heads up.

From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Monday, April 10, 2017 4:47 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Tomorrow

Would it work if we stopped by tomorrow around 4:30 or 5 for a few min?

Dimitrios Karakitsos | Holland & Knight
Partner
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Sent: 4/26/2017 9:51:53 PM
To: Cutler, Aaron S. [aaron.cutler@hoganlovells.com]
Subject: meeting

Aaron – let me know if you have any material you want me to read in advance. Also, my assistant has been out of the office and not sure if she will be in tomorrow so best to just send me an email upon your arrival and I'll come down to meet you.

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 4/10/2017 9:06:35 PM
To: Dimitri.Karakitsos@hklaw.com
Subject: RE: Tomorrow

Yes, either of those times works.

From: Dimitri.Karakitsos@hklaw.com [mailto:Dimitri.Karakitsos@hklaw.com]
Sent: Monday, April 10, 2017 4:47 PM
To: Brown, Byron <brown.byron@epa.gov>
Subject: Tomorrow

Would it work if we stopped by tomorrow around 4:30 or 5 for a few min?

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Sent: 4/4/2017 2:53:31 PM
To: brent.dejong@castlelake.com
CC: Kirsten Djadoo [kirsten.djadoo@castlelake.com]
Subject: Conference call

Hi Brent – just wanted to see if we are still doing the call to discuss Miss. Phosphates. The conference call line is open.

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

Message

From: Brown, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9242D85C7DF343D287659F840D730E65-BROWN, BYRO]
Sent: 3/30/2017 10:02:33 PM
To: Brent de Jong [brent.dejong@castlelake.com]
CC: Starfield, Lawrence [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8a89d6cd217d4254a5879abecb3f314e-Starfield, Lawrence]; Kirsten Djadoo [kirsten.djadoo@castlelake.com]
Subject: RE: Mississippi Phosphates

Let's shoot for Tuesday. Larry Starfield is traveling tomorrow. I will ask my assistant Veronica to follow up. Thank you. – Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency

From: Brent de Jong [mailto:brent.dejong@castlelake.com]
Sent: Thursday, March 30, 2017 1:16 PM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Starfield, Lawrence <Starfield.Lawrence@epa.gov>; Kirsten Djadoo <kirsten.djadoo@castlelake.com>
Subject: RE: Mississippi Phosphates

Mr. Brown,

Nice to meet you by email. I will be back in the US tomorrow and can make myself available at your convenience. I also have flexibility on Tuesday (April 4th) in the morning DC time.

Best,

Brent de Jong | Castlelake
Partner
4600 Wells Fargo Center | 90 South 7th Street | Minneapolis, MN 55402
Tel: Ex. 6 | Mobile: Ex. 6
brent.dejong@castlelake.com
www.castlelake.com

From: Brown, Byron [mailto:brown.byron@epa.gov]
Sent: Thursday, March 30, 2017 11:40 AM
To: Brent de Jong
Cc: Starfield, Lawrence
Subject: Mississippi Phosphates

Dear Mr. de Jong – I am writing in response to your recent email requesting a meeting with EPA Administrator Pruitt to discuss your interest in the Mississippi Phosphates site. As you may know, Administrator Pruitt has made EPA's land cleanup programs one of his priorities, and I have been asked to follow up and get more information. I would like to set

up a call in advance of scheduling a meeting with the Administrator to better understand the issues surrounding the site from your perspective. I have copied Larry Starfield, the acting Assistant Administrator for the EPA Office of Enforcement and Compliance Assurance, who has familiarity with the previous negotiations. Please let me know some potential dates and times for a call. Thanks. -- Byron

Byron R. Brown
Deputy Chief of Staff for Policy
Office of the Administrator
U.S. Environmental Protection Agency