

ILLINOIS POLLUTION CONTROL BOARD

CONOCOPHILLIPS COMPANY,)
)
 Petitioner,)
)
 v.)
)
 ILLINOIS ENVIRONMENTAL)
 PROTECTION AGENCY,)
)
 Respondent.)

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STATE OF ILLINOIS
Pollution Control Board

PCB 12-101
(Permit Appeal - NPDES)

TRANSCRIPT OF PROCEEDINGS

October 3, 2012

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A P P E A R A N C E S

Hearing Officer Carol Webb

Much Shelist For Petitioner
By: David Rieser, Esq.

Phillips 66
By: Donna Carvalho, Atty. For Petitioner

Office of the Attorney General, For Respondent
State of Illinois
By: Rachel Medina, Atty.

Illinois Environmental Protection For Respondent
Agency, Division of Legal Counsel
By: Deborah Williams, Atty.
Chad Kruse, Esq.

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1 HEARING OFFICER: Okay. We'll begin.
2 Good morning. My name is Carol Webb. This is the
3 hearing for PCB 12-101, ConocoPhillips Company versus
4 IEPA. It is October 3rd, 2012, and we are beginning
5 at 10:00 AM. I'll note for the record that there are
6 one or two members of the public present. Members of
7 the public are allowed to provide public comment if
8 they so choose. At issue in this case is the revised
9 NPDES permit for petitioner's petroleum refinery in
10 Roxana, Madison County.

11 The decision deadline in this case is
12 February 21st, 2013. The Pollution Control Board
13 members will make the final decision in this case. My
14 purpose is to conduct the hearing in a neutral and
15 orderly manner so that we have a clear record of the
16 proceedings.

17 This hearing was noticed pursuant to the
18 Act and the Board's rules and will be conducted
19 pursuant to Sections 101.600 through 101.632 of the
20 Board's procedural rules. At this time I will ask the
21 parties to please make their appearances on the
22 record.

23 MR. RIESER: Good morning, Madam Hearing
24 Officer. This is David Reiser from the law firm of

1 Much -- M-U-C-H -- Shelist -- S-H-E-L-L-I-S-T -- and
2 I'm here for the petitioner, currently called
3 ConocoPhillips, although we'll talk about that.

4 MS. MEDINA: Rachel Medina here from the
5 Illinois Attorney General's Office representing the
6 Illinois Environmental Protection Agency, the
7 respondent in this matter.

8 HEARING OFFICER: Thank you. Are there
9 any preliminary matters to discuss on the record?

10 MR. RIESER: Yes, briefly. The petition
11 addressed four separate items, and we have been able
12 through our discussions to resolve three of those
13 items so that the hearing today and the Board's
14 decision will only be focused on the issue of mercury,
15 but the issues relating to dissolved oxygen, Smith
16 Lake, and fecal coliform have been resolved. We have
17 language within a agreed motion and stipulation that
18 addresses the resolution for Smith Lake dissolved
19 oxygen in terms of what the revised permit will state,
20 and we don't have that language yet for fecal
21 coliform, but we will provide it shortly -- within a
22 week or so.

23 The other matter that I have as
24 preliminary is a -- an agreed motion to change the

1 name of the petitioner in the caption. When this was
2 originally filed, the company was known as
3 ConocoPhillips Company. Since then there's been a
4 corporate reorganization, so now the operator and the
5 permit-holder of this particular permit is known as
6 Phillips 66 Company, so we need the caption revised to
7 reflect that change, and I've discussed that with Ms.
8 Medina, and she has no objection to that modification.
9 So I have an agreed motion and stipulation, which I'm
10 going to hand to you now.

11 HEARING OFFICER: Okay. Thank you. Are
12 there any other preliminary matters to discuss before
13 we begin? Okay. Mr. Rieser, would you like to make
14 an opening statement?

15 MR. RIESER: Yes, just a very brief one.
16 As I said, my name is David Rieser with the law firm
17 of Much Shelist, and I represent Phillips 66 in this
18 matter. As I indicated per stipulation, this was
19 originally filed by ConocoPhillips, and so the record
20 is designed around a company or discusses a company
21 called ConocoPhillips. The witnesses talk about an
22 organization called ConocoPhillips or Phillips or the
23 Wood River refinery, so I just want the record to be
24 clear that all of that refers to the same entity for

1 our purposes here, which is the Phillips 66 Company,
2 so to the extent there's any confusion, there
3 shouldn't be. It's all -- for our purposes, it's all
4 the same entity.

5 As I also said, the petition was
6 originally filed to address four separate items --
7 mercury discharges to Smith Lake, dissolved oxygen,
8 and fecal coliform. Three of those issues have been
9 resolved, so the focus of the hearing today will be
10 solely on the issue of the mercury. And the point of
11 this hearing is to provide testimony as to why
12 Phillips believes that the Agency's determination was
13 contrary to the law, arbitrary, and capricious, and
14 it's a condition not necessary to accomplish the
15 purposes of the Illinois Environmental Protection Act.
16 So we will present the following witnesses.

17 Jay Churchill, who is the plant manager,
18 is going to testify about the economic impact of the
19 operation, their recent expansion, some of their
20 environmental compliance efforts, and the importance
21 to the company of changing the Agency's decision here.

22 Ron Green, who's the manager of the
23 wastewater part of the facility, will describe the
24 wastewater treatment plant process, and we'll use an

1 exhibit walking through a schematic of that process.

2 Mike Bechtol, who's the head of the
3 environmental health and safety for the plant, will
4 describe the permitting background, because it's not
5 the usual clear-cut, "Here's a permit. Now we're
6 going to appeal." There's some history to that, so
7 he's going to describe that history.

8 Jeff Allen of the firm of Brown --
9 engineering firm of Brown and Caldwell will describe
10 the work that they did to evaluate the treatment
11 options that Phillips had (inaudible) for treating
12 mercury and the cost of those options and whether
13 those options would at the end of the day actually
14 achieve the levels that are called for in the permit.

15 And finally, Jim Huff will testify as a
16 long-time expert in the industrial permitting area in
17 Illinois as to why the Agency's decision here is a
18 departure from the Agency's past practices and
19 procedures and what some of the issues are with
20 respect to the decision itself, and that will conclude
21 our presentation. I'll have the witnesses available
22 after the State concludes to bring back for any
23 additional rebuttal.

24 HEARING OFFICER: Okay. Ms. Medina,

1 would you like to make an opening statement?

2 MS. MEDINA: I'll reserve my statement
3 for our portion of the case.

4 HEARING OFFICER: Okay. Mr. Rieser, you
5 may call your first witness.

6 MR. RIESER: Okay. My first witness will
7 be Jay Churchill.

8 MR. CHURCHILL: Right here?

9 HEARING OFFICER: Yes.

10 [Mr. Churchill duly sworn by the
11 court reporter.]

12 QUESTIONS BY MR. RIESER:

13 Q. Jay, could you proceed with your
14 testimony?

15 A. Yes. Good morning. My name is Jay
16 Churchill, and I am the plant manager of the Wood
17 River refinery. I have been in this position since
18 February 2011. Previously, I held refinery manager
19 positions at Phillips 66 refineries in Los Angeles,
20 California, and Billings, Montana, and I have been a
21 proud employee of this company and its predecessors
22 for my entire career.

23 I'd likely -- to briefly describe our
24 company and the economic importance of this refinery

1 to the area. Phillips 66 is one of the largest
2 refiners in the United States, with crude oil
3 processing capacity of 1.8 million barrels per day and
4 2.2 million barrels per day globally. It also has a
5 large marketing network, with more than 8,300
6 marketer-owned outlets in the United States and 1,700
7 in Europe.

8 Phillips 66 was formed as a result of a
9 reorganization of the ConocoPhillips Company into two
10 separate publicly-traded companies, one focused on
11 exploration and production, and the other, Phillips
12 66, focused on refining and marketing of petroleum and
13 chemical products. As a result, Phillips 66 now
14 operates the Wood River refinery which is the subject
15 of this hearing.

16 The refinery is one of the largest
17 economic engines in Madison County. We employ
18 approximately 800 full-time employees, including about
19 500 union-represented employees. Several years ago,
20 we decided to invest nearly \$4 billion in this
21 facility by embarking on an expansion project to
22 increase our capability to process heavy crude oils
23 from Canada. An economic study documented that this
24 expansion should increase regional income by \$48

1 million.

2 In November of 2011, we commissioned the
3 new refinery delayed coking unit, the centerpiece of
4 the expansion project, and we are looking forward to
5 being able to utilize the larger and broader capacity
6 of the facility to improve the economic condition of
7 the area.

8 Over the last decade, we have spent over
9 a billion dollars on projects which have directly
10 reduced emissions both from the Wood River refinery
11 and for the vehicles in the region. As a result, in
12 Madison County, our facility nitrous oxide emissions
13 have been reduced by 36 percent, some 1,700 tons per
14 year reduction, and our sulfur dioxide emissions have
15 been reduced by 86 percent, an 11,000 ton per year
16 reduction over the last 10 years.

17 We take our commitment to protect the
18 environment extremely seriously. As such, we have
19 demonstrated that we are committed to spending our
20 fair share of investment to meet regulations to reduce
21 our environmental footprint in the region; however, we
22 believe that it is in the best interest of the Wood
23 River refinery, the local community, and our country
24 that we spend this capital on projects which have a

1 justified and meaningful impact on improving the
2 environment.

3 And that brings us to the topic of this
4 hearing. We strongly urge the Illinois Pollution
5 Control Board to consider, in addition to the legal
6 issues, the economic and social cost of upholding the
7 Agency's unsupported decision to establish
8 unprecedented and unrealistic effluent standards in
9 our most recent NPDES permit.

10 As other witnesses will discuss, no other
11 refinery in the country has been required to meet such
12 standards, and there is very little proof that these
13 standards can actually be achieved consistently. Not
14 even BP's refining in Whiting, Indiana, has been
15 subject to such standards, despite the high level of
16 scrutiny and controversy surrounding its permit to
17 discharge into Lake Michigan.

18 These standards must be applied fairly to
19 all sources such that we are allowed a level playing
20 field with our competitors. We urge the Board to
21 require the EPA to follow the Board's regulations in
22 adopting discharge standards and to evaluate properly
23 the known science regarding treatment technologies.
24 As always, we appreciate the opportunity to present

1 this information. I want to thank the Board in
2 advance for its attention to this matter and its
3 consideration of our testimony here today.

4 HEARING OFFICER: We have nothing --
5 okay.

6 MR. RIESER: With his testimony, I have
7 nothing further.

8 QUESTIONS BY MS. MEDINA:

9 Q. Mr. Churchill, you stated that in
10 November of 2011, you commissioned a new refinery
11 delayed coking unit. Are you aware of how much this
12 increased mercury levels in your effluent?

13 MR. RIESER: If at all?

14 A. I am not.

15 Q. (By Ms. Medina) Are you aware of how
16 much mercury levels will increase at the completion of
17 the expansion project?

18 A. I am not.

19 Q. Are you -- you stated that BP's refinery
20 in Whiting, Indiana, has been subject to -- has not
21 been subject to such standards. What standards are
22 you referring to?

23 A. I guess I would like to defer to our
24 testimony on those questions, or our experts.

1 Q. So you're not aware of whether BP Whiting
2 has a mixing zone for mercury?

3 A. I'm not personally, no.

4 MS. MEDINA: Okay. Thank you. That's
5 all.

6 MR. RIESER: I don't have anything.

7 HEARING OFFICER: Okay. Thank you.

8 MR. RIESER: All right. Our next witness
9 is going to be Ron Green.

10 Mr. Green has brought with him a
11 demonstrative exhibit that is a schematic. I guess we
12 should have this marked as Exhibit One.

13 HEARING OFFICER: Yes.

14 [Petitioner's Exhibit One marked for
15 identification.]

16 MR. RIESER: Thank you. Ron, before you
17 get started, I want to show you what's been marked as
18 Petitioner's Exhibit One and ask you --

19 HEARING OFFICER: Can we swear in the
20 witness first?

21 MR. RIESER: Oh, I'm sorry.

22 [Mr. Green duly sworn by the
23 court reporter.]

24 QUESTIONS BY MR. RIESER:

1 Q. Mr. Green, before we get started with you
2 your testimony -- you've brought a diagram that's been
3 marked as Petitioner's Exhibit One. Can you describe
4 what this is?

5 A. This is just the overall layout of the
6 current wastewater treatment plan at the Phillips 66
7 Wood River refinery.

8 Q. So it's laid out in schematic fashion
9 rather than overview or something like that?

10 A. That is correct.

11 Q. And this accurately reflects the scheme
12 of the wastewater treatment system?

13 A. Yes, it does.

14 Q. Okay. Proceed with your testimony,
15 please.

16 A. Thank you. Good morning. My name is Ron
17 Green, and I'm an environmental engineer with Phillips
18 66 Wood River refinery. My responsibilities include
19 wastewater and spill prevention control and
20 countermeasure compliance. I started with the Wood
21 River refinery in January of 2012.

22 Prior to coming to Wood River, I was with
23 the Village of Sauget wastewater treatment plant and
24 the American Bottoms regional wastewater treatment

1 plant facility for 15 years. Both facilities are
2 located in Sauget, Illinois. My responsibilities
3 included project management, operation and maintenance
4 management, and compliance assurance. I received my
5 Bachelor's degree in civil engineering from the
6 University of Missouri Columbia in 1994, and I also
7 became a Class One wastewater operator in the State of
8 Illinois in 2006.

9 I am testifying to educate you on the
10 wastewater treatment plant at the Wood River refinery.
11 The refinery is located in Madison, Illinois and is a
12 fully-integrated petroleum refinery. The refinery
13 processes a mix of both light, low-sulfur and heavy,
14 high-sulfur crude oil. It receives domestic and
15 foreign crude oil by various pipelines and produces a
16 product including petrochemical feedstocks and
17 asphalt.

18 The refinery generates an average of 8.5
19 million gallons per day that must be treated in the
20 wastewater treatment plant before discharging to the
21 Mississippi River. Our NPDES permit IL 0000205 covers
22 these discharges. The wastewater treatment facility
23 consists of a main lift station followed by bar
24 screens, a two-stage neutralization basin, eight

1 corrugated plate interceptors, otherwise known as a
2 CPI, oil-water separators, two dissolved nitrogen
3 flotation units, an equalization tank, which is
4 referred to as A-149, two scrubber solids clarifier
5 systems, an activated sludge unit, Pond Two, three
6 flocculating secondary clarification units and
7 biosolid recirculation. Flow --

8 Q. Mr. Green, I hate to interrupt you. Can
9 you go through that sentence again --

10 A. Okay.

11 Q. -- pointing to -- on your diagram,
12 Exhibit One --

13 A. Yes.

14 Q. -- where each of those items are,
15 describing them so that somebody reading the
16 transcript can visualize what you're doing?

17 A. Okay.

18 Q. Thanks.

19 A. All right. The wastewater treatment
20 plant consists of a main lift station, which is
21 located to the left -- far left of Drawing B-35427 --
22 Two, a two-stage neutralization basin, which is
23 adjacent to the right of the main lift station and the
24 bar screen, and eight corrugated plate interceptor

1 oil-water separators, which are located just to the
2 right of the neutralization basin on the drawing.

3 Q. So that's the thing that the box is
4 marked "CPI oil separators"?

5 A. "Oil sep" -- that is correct.

6 Q. Okay.

7 A. Two -- or two dissolved nitrogen
8 flotation units, which is adjacent to the CPI
9 oil-water -- oil separators on the drawing. Tank
10 A-149, which is located to the right of the dissolved
11 nitrogen flotation units, two scrubber solid clarifier
12 systems, which is located at the middle bottom of the
13 drawing, an activated sludge unit, which is located
14 right of the Tank A-149 on the drawing, Pond Two,
15 which is located to the right of the activated sludge
16 unit, three flocculating secondary clarification
17 units, which follow -- or to the right of Pond Two,
18 and biosolid recirculation, which is indicated by the
19 RAS line on the Drawing B-35427.

20 Flows from the principal effluent
21 treating units are discharged through the Rand Avenue
22 lift station, which is at -- which is right of the
23 secondary clarifiers, M-57, M-58, and M-74, to the
24 final effluent polishing lagoons and out to the

1 Mississippi River. Drawing B-35427 is attached to
2 show the treatment steps.

3 Q. And that drawing is the same thing that
4 you've got here as Petitioner's Exhibit One; is that
5 correct?

6 A. That is correct.

7 Q. Okay. Go ahead.

8 A. As Jeff Allen will testify later, the
9 wastewater treatment plant is designed to meet or
10 exceed all requirements of the 40 CFR 419 dash
11 Petroleum Refining Point Source Category, and the Wood
12 River refinery is subject to Subpart B, Cracking
13 Subcategory, and is considered the best available
14 technology economically achievable.

15 The wastewater treatment plant units at
16 the wastewater treatment have the following functions:
17 The main lift station receives wastewater from the
18 refinery's main process sewer and pumps the wastewater
19 to the treatment process. Bar screens serve to remove
20 debris from the wastewater. The two-stage
21 neutralization basin is for pH control. Desalter
22 brines also enter the wastewater treatment plant at
23 the neutralization basin. This is -- the neutraliz --
24 the desalter brines are located -- are the arrows

1 coming into the neutralization basin on Drawing
2 B-35427.

3 Q. And that's Petitioner's Exhibit One?

4 A. Yes.

5 Q. Okay.

6 A. Spent caustic can also be added for
7 neutralization. The eight CPI units arranged in two
8 four-bay trains achieve initial free oil and oils --
9 oily solids removal. Two DNFs operate in parallel and
10 achieve further oil solids removal by providing
11 emulsified oil and solids treatment.

12 Oil and solids generated from the CPIs
13 and DNFs are dewatered by centrifuges. The
14 centrifuges are located in the bottom left corner of
15 the drawing. The oil that is generated is sent back
16 to the refinery for reuse, and the majority of the
17 solids are reused in the coker operation. The
18 remaining solids are disposed of as a hazardous waste.

19 Tank A-149 achieves both flow and
20 influent concentration equalization. The SSC systems
21 for pretreatment of the refinery's three wet gas
22 scrubbers purge water for removal of the catalyst
23 fines. The ASU serves as a first-stage aerobic
24 biological treatment unit. The system is designed to

1 remove organic COD, five-day biochemical oxygen
2 demand, inorganic COD, TKN, and chemical oxidation of
3 sulfite from the SSCs. Spent caustic can also be
4 added at this location for pH control.

5 Pond Two serves as a secondary -- a
6 second-stage biological treatment and utilizes 14
7 floating surface mechanical aerators. The system
8 continues aerobic treatment from the ASU, but also has
9 an anaerobic zone for denitrification.

10 A ferric chloride storage and feed system
11 is used for phosphorus precipitation of the secondary
12 clarifier influent. The three flocculating secondary
13 clarifiers serve to clarifier -- clarify the
14 biological treated effluents and recycle the activated
15 sludge back to the ASU -- the final effluent lagoons
16 that achieve effluent stabilization before discharge
17 to the Mississippi River for polishing.

18 Competents of the wastewater treatment
19 are covered and vented to a volatile organic
20 compound -- VOC -- emissions recovery systems to
21 comply with the B -- or Benzene Waste Operation --
22 NESHAP -- 40 CFR, Part 61, Subpart FF. The units
23 controlled by the system are the lift station, bar
24 screens, two neutralization unit, CPI separators, DNF

1 units, DNF effluent sump, gas disengagement section,
2 spent caustic tank, slop oil tank, and high total
3 organic carbon tanks located inside the wastewater
4 treatment plant. The centrifuge dewatering system
5 also vents to the emission recovery system.

6 The wastewater treatment plant has
7 recently been upgraded for the coker refinery
8 expansion project, otherwise known as CORE. The
9 components that were added are the SSC clarifiers, the
10 ASU, the denitrification treatment in Pond Two, the
11 ferric chloride addition for phosphorus removal, and
12 the third final clarifier. Approximately \$100 million
13 was spent on the CORE upgrades to the wastewater
14 treatment plant.

15 MR. RIESER: I have nothing further.
16 Thank you very much.

17 [Discussion off the record.]

18 QUESTIONS BY MS. MEDINA:

19 Q. You stated there's final effluent lagoons
20 that achieve effluent stabilization before final
21 discharge to the Mississippi River for polishing. Can
22 you describe the approximate age and condition of the
23 sewer main that that discharge takes place?

24 A. The sewer main -- we call it the Rand

1 Avenue sewer, and it is a wood stave sewer. The age
2 of it is un -- I do not know the exact age of it, but
3 it is a very old sewer line.

4 Q. More than 25 years old?

5 A. Yes.

6 Q. More than 50 years old?

7 A. That I can't answer.

8 Q. You stated approximately \$100 million was
9 spent on the CORE upgrades for the wastewater
10 treatment plant. Are you aware of how much the
11 original estimate for those upgrades was?

12 A. No, I'm not.

13 Q. The coker refinery expansion project --
14 the CORE project -- is that expansion fully
15 implemented and online?

16 A. Yes, it is.

17 Q. Approximately when was the
18 implementation -- full implementation date?

19 A. Late in 2008.

20 Q. Have you documented any increase in
21 mercury levels as a result of the expansion?

22 A. We have not.

23 Q. Have you measured your influent and
24 effluent of mercury on a regular basis since the

1 implementation in late 2008?

2 A. No, we have not.

3 MS. MEDINA: Thank you. That's all.

4 QUESTIONS BY MR. RIESER:

5 Q. Mr. Green, just --

6 HEARING OFFICER: Okay.

7 Q. (By Mr. Rieser) -- just a question for
8 clarification. You were asked a question about
9 whether the CORE project was completed, and you said
10 that -- I believe you said that it was. Is there a
11 difference between the CORE project and the wastewater
12 treatment plant project that was associated with the
13 CORE project?

14 A. Yes. I was referring to the wastewater
15 treatment plant project -- section of that project.

16 Q. So the CORE project which refers to the
17 entire upgrade of the facility -- that has not yet
18 been completed?

19 A. That is correct.

20 MR. RIESER: Okay. Thank you.

21 HEARING OFFICER: Thank you.

22 MR. RIESER: Thanks very much. Next
23 witness is -- leave that up there, Mr. Green. Next
24 witness is Mike Bechtol.

1 HEARING OFFICER: Would the court
2 reporter swear in the witness, please?

3 [Mr. Bechtol duly sworn by the
4 court reporter.]

5 MR. RIESER: Mike, before you be -- Mr.
6 Bechtol, before you begin with your testimony, let me
7 walk through some of the exhibits which you've
8 attached to it. And I don't know how we want to
9 identify these. I guess Two -- they are identified as
10 Exhibit One, Two, and Three in his testimony, but if
11 we mark them separately, they'll then become Exhibit
12 Two, Three, and Four. Or we can call them Bechtol
13 Exhibit One, Two, and Three.

14 HEARING OFFICER: Why don't we call them
15 Two, Three, and Four, if that's all right with you?

16 MR. RIESER: That's fine.

17 HEARING OFFICER: Okay.

18 MR. RIESER: Okay. So yes. Mike will
19 correct his testimony accordingly as he reads it, but
20 let me walk through each of the exhibits, and we'll
21 have them marked. Have for marking Petitioner's
22 Exhibit Two, which is identified as the ConocoPhillips
23 Wood River refinery mercury compliance, and it is
24 dated November 13th, 2008. So that's Petitioner's

1 Exhibit Two.

2 [Petitioner's Exhibit Two marked for
3 identification.]

4 MR. RIESER: Okay. We might as well mark
5 all of these at the same time. Petitioner's Exhibit
6 Three is a document dated July 20th, 2011. It's a
7 letter to Mr. Sanjay Sofat -- S-O-F-A-T -- manager,
8 Division of Water Pollution Control, IEPA, from
9 myself. So let's mark that as Petitioner's Exhibit
10 Three, please.

11 [Petitioner's Exhibit Three marked for
12 identification.]

13 MR. RIESER: And then Petitioner's
14 Exhibit Four is another letter from --

15 MR. BECHTOL: Should be April 29th
16 letter.

17 MR. RIESER: Is --

18 MR. BECHTOL: Three is the April 29th
19 letter.

20 MR. RIESER: I'm sorry. The exhibit that
21 you marked as Exhibit Three should be Exhibit Four.
22 If we can make that change.

23 [Petitioner's Exhibit Three re-marked for
24 identification as Petitioner's Exhibit

1 Four.]

2 MR. RIESER: Thank you. And so
3 Petitioner Exhibit Three will be a letter dated April
4 29th, 2011, to Mr. Sanjay Sofat from myself.

5 [Petitioner's Exhibit Three marked for
6 identification.]

7 QUESTIONS BY MR. RIESER:

8 Q. All right. Mr. Bechtol, I'm going to
9 show you what have been marked as Petitioner's Exhibit
10 Three -- Two, Three, and Four, and ask you to identify
11 each of them in turn.

12 A. Identify them just by saying I recognize
13 these, or --

14 Q. Just say what each -- Petitioner's
15 Exhibit --

16 A. Okay. Okay.

17 Q. What is Petitioner's Exhibit Two?

18 A. Petitioner's Exhibit Two would be the
19 ConocoPhillips Wood River refinery mercury compliance
20 dated November 13th, 2008.

21 Q. And the best of your knowledge, this is a
22 document that was submitted to the IEPA around the
23 time, November 2008, and is included in the Agency's
24 record?

1 A. Yes. To my knowledge, that this document
2 was submitted to the Agency on or around November
3 13th, 2008, and is included in the record.

4 Q. And then Exhibit -- I -- Petitioner's
5 Exhibit Three?

6 A. Uh-huh.

7 Q. Can you identify what that is?

8 A. Petitioner's Exhibit Three is a letter
9 dated April 29th, 2011, which was a letter to Sanjay
10 Sofat written by David Rieser, and -- is there
11 anything else?

12 Q. And it's your understanding that this was
13 also included in the Agency's record?

14 A. Yes. My understanding -- this was also
15 included in the Agency's record.

16 Q. And then Exhibit Four --

17 A. And Petitioner's Exhibit Four is a letter
18 dated July 20 of 2011, also to Sanjay Sofat from David
19 Rieser, and that was -- my understanding was that is
20 also included in the Agency's record.

21 Q. Okay. Proceed with your testimony,
22 please.

23 A. Okay. Thank you. Good morning. My name
24 is Mike Bechtol, and I am the environmental director

1 for the Wood River refinery. I'm responsible for
2 assuring environmental compliance at the facility and
3 oversee a group of six environmental professionals,
4 including Ron Green, who has provided testimony today.
5 I've been in this position since October of 2010 and
6 have been an employee of Phillips 66 and its
7 predecessor companies since March of 1999.

8 I hold a Bachelor of Science degree in
9 chemical engineering from the University of
10 Washington, hold professional engineering licenses in
11 both Washington State and Colorado, and have 21 years
12 experience in the oil industry. In addition to my
13 current position, I have worked at four different oil
14 refineries throughout the country, with the majority
15 of my experience being in process engineering and
16 operations management.

17 I am testifying to clarify the unique
18 permitting process which got us to this point. In May
19 2006, Phillips 66, then ConocoPhillips, submitted an
20 application to the IEPA to revise the NPDES permit
21 which had been issued to Phillips 66 in 2004. The
22 modifications included changes to the wastewater
23 treatment process necessitated by the coker refinery
24 expansion project, otherwise known as CORE, as well as

1 changes needed to address the higher sulfur content of
2 the wastewater due to the installation of wet gas
3 scrubbers required by a consent decree entered into
4 with the State of Illinois.

5 On November 3rd, 2006, the Agency issued
6 a draft permit, and held public hearings on May 8th,
7 2007. The initial draft permit contained no
8 requirement to either monitor or treat mercury, and as
9 the administrative records show, the Agency's initial
10 internal documentation did not identify any mercury
11 requirements. The Agency did not begin discussing
12 mercury limits with us until after the public comment
13 period.

14 In spring of 2008, the Agency began
15 discussing the insertion into the permit of the
16 mercury water quality standard of 12 nanograms per
17 liter to be met on an annual basis. The Agency stated
18 that it could not grant a mixing zone for mercury, and
19 originally proposed a compliance plan of only two
20 years. Between May and November of 2008, Phillips and
21 the IEPA met three times to discuss the mercury
22 issues.

23 While we continued to insist that the
24 Agency's position was legally invalid, we also

1 continued to negotiate the terms of the proposed
2 compliance plan. Since the company needed the NPDES
3 permit to operate its required scrubbers, it tried to
4 find a compromise it could live with on the mercury
5 issue.

6 The Agency refused to acknowledge the
7 difficult of finding a method to treat mercury until
8 we brought Jeff Allen and his folks to Springfield to
9 meet with the Agency in November of 2008. Jeff
10 explained the issues through a document prepared by
11 Phillips 66 dated November 13th, 2008, which is
12 attached as Exhibit Two. Only after that meeting did
13 the Agency agree to the five-year compliance plan
14 which appeared on the revised permit, which was issued
15 on February 5th, 2009.

16 This revised permit language, Special
17 Condition 28, set out a phased investigation of
18 treatment options and progress reports to the Agency
19 and required completion of the treatment system and
20 compliance with the standard 60 months after the
21 issuance of the permit, or by February 2014. As an
22 alternative, the permit allowed the company to seek an
23 adjusted standard if it could not identify an
24 appropriate treatment.

1 The 2009 permit was a modification of the
2 2004 permit, the latter of which was scheduled to
3 expire in 2010. Because of the upcoming 2010
4 expiration date, and independent of the permit
5 modification discussions, Phillips 66 submitted a
6 timely application to renew the 2004 permit in
7 September of 2008. The Agency issued a public notice
8 of the draft permit in December of 2010, but received
9 very few public comments.

10 In early 2011, we determined as a result
11 of the testing, and as Jeff Allen will testify in
12 greater detail, that a filtration system might be able
13 to achieve the stringent effluent limit for mercury.
14 Although there were many uncertainties about this
15 treatment, there was no question that the capital
16 price tag would be extremely high, initially estimated
17 to cost somewhere between \$9 and \$14 million.

18 To put the cost/benefit in perspective,
19 the estimated amount of mercury recovered per day by
20 the filter, if installed, is expected to be 0.00078
21 pounds per day. Over the 25 years that this capital
22 investment would be depreciated, we estimate this
23 project will remove roughly 5.2 pounds of mercury.
24 The simply cost of removal is \$2.7 million capital

1 invested per pound of mercury removed, which is
2 roughly 99 times the current price of gold.

3 Phillips 66 determined that it would seek
4 an adjusted standard as provided for in the permit,
5 but also determined that it needed to expedite the
6 process. In order to meet the 2014 deadline, the
7 company would need to commit significant resources to
8 planning, design, and construction by no later than
9 spring of 2012.

10 In order to initiate that process, in a
11 letter dated April 29th, 2011, and attached as Exhibit
12 Three, the company submitted material to the Agency
13 outlining their approach to an adjusted standard and
14 requested the Agency's cooperation in obtaining that
15 relief from the Board. At a meeting on June 29th,
16 2011, the parties realized that it would be difficult
17 to proceed to an adjusted standard without resolving a
18 legal issue of the Agency's refusal to grant a mixing
19 zone for mercury.

20 As a result, the Agency agreed to review
21 its mixing zone determination in the context of the
22 permit renewal process. It asked the company to
23 submit additional information, but in a letter dated
24 July 20th, 2014, attached as Exhibit Four, the company

1 responded that there was already sufficient
2 information in the administrative record of the 2009
3 permit.

4 Per the company's request, the Agency
5 agreed to incorporate the portions of the record from
6 the 2009 permit pertaining to the mercury issues, and
7 these portions are reflected in the administrative
8 record filed in this proceeding. The company
9 continued to hope that the Agency would change its
10 approach on the mixing zone, especially in light of
11 the information showing the cost of designing and
12 building treatment and the uncertainties inherent in
13 that treatment. Despite repeated requests, however,
14 the company was not advised of the Agency's position
15 until the 2011 permit was issued and did not learn the
16 basis for that decision until it reviewed the
17 administrative record after filing this appeal. This
18 concludes my prepared testimony.

19 MR. RIESER: And I have no further
20 questions. Oh, I'm sorry. And at this point --
21 excuse me -- I'd like to move for the admission of the
22 three exhibits.

23 HEARING OFFICER: Of just these Two,
24 Three, and Four, or One, Two, Three and Four?

1 MR. RIESER: Oh, One, Two, Three, and
2 Four. Thank you.

3 HEARING OFFICER: Ms. Medina --

4 MS. MEDINA: Yes.

5 HEARING OFFICER: -- do you have any
6 objection to the -- any of the exhibits being moved?

7 MS. MEDINA: Exhibits Two, Three, and
8 Four, no.

9 HEARING OFFICER: And One as well?

10 MR. BECHTOL: One is this.

11 MS. MEDINA: No objection.

12 HEARING OFFICER: Okay. Exhibits One,
13 Two, Three, and Four are admitted.

14 QUESTIONS BY MS. MEDINA:

15 Q. So you provided no additional information
16 following the June 29th, 2011, meeting to the Agency?

17 A. Correct.

18 Q. Isn't it true that you became aware of
19 additional -- potential additional costs due to design
20 engineering following that date and before the permit
21 was issued?

22 A. We had done numerous estimates to try to
23 develop the scope of the project, but our original
24 estimates are very rough estimates, so the numbers

1 that we've submitted are still numbers that are --
2 that indicate the cost of the project.

3 Q. So the \$9 to \$14 million is the most
4 accurate figure you could provide the Agency prior to
5 issuance of the permit?

6 A. I would say that's probably not the most
7 accurate because that's an initial estimate.

8 Q. Was your estimate revised at any time
9 between June -- the June 29th meeting and the time the
10 permit was issued?

11 A. Our estimates -- I would say our -- field
12 zero (ph) estimates still remain the same for that
13 project.

14 Q. You state that you made repeated requests
15 for the Agency's position. Did you document these
16 requests?

17 A. I believe they are documented.

18 MS. MEDINA: I have nothing further.

19 HEARING OFFICER: Mr. Rieser, anything
20 further from you?

21 MR. RIESER: I have nothing further.

22 HEARING OFFICER: Okay. Thank you.

23 [Petitioner's Exhibit Five marked for
24 identification.]

1 MR. RIESER: Could the witness be sworn,
2 please?

3 HEARING OFFICER: Yes.

4 [Mr. Allen duly sworn by the
5 court reporter.]

6 QUESTIONS BY MR. RIESER:

7 Q. Could you state your name and position
8 for the record, please?

9 A. My name is Jeffrey Allen. I'm a
10 supervising engineer with Brown and Caldwell.

11 Q. Mr. Allen, I'm going to hand you what's
12 been marked as Petitioner's Exhibit Five, which
13 purports to be a copy of your testimony. Could you
14 tell us what that is?

15 A. This is a copy of the written testimony
16 I've prepared for this hearing.

17 Q. And what you've got there is a true and
18 accurate copy of that testimony?

19 A. Yes.

20 MR. RIESER: Okay. At this point, I
21 would like to move for the admission of Exhibit Six
22 and have the testimony entered into the record as
23 read.

24 THE REPORTER: It's actually Five.

1 MR. RIESER: Five.

2 HEARING OFFICER: Exhibit Five? Exhibit
3 Five is admitted.

4 MR. RIESER: Okay. And it will be placed
5 in the record as if it were read here?

6 HEARING OFFICER: Yes.

7 MR. RIESER: Okay.

8 Q. (By Mr. Rieser) Mr. Allen, I'm going to
9 ask -- as soon as I get over there -- a couple of
10 additional questions based on some of the -- pardon
11 me -- yes. I'm sorry. Would you summarize your
12 testimony?

13 A. Good morning. My name is Jeffrey Allen,
14 and I am an environmental consultant with Brown and
15 Caldwell. I'm a chemical engineer with 22 years of
16 the experience working in the industrial wastewater
17 treatment field. A major portion of my work has been
18 wastewater projects for oil refineries.

19 I consulted to the Wood River refinery on
20 their Phase One sampling and Phase Two pilot testing
21 mercury studies that were required by their 2009
22 permit. Based on my knowledge of the industry, I'm
23 not aware of any oil refineries that have implemented
24 treatment technologies at full scale to specifically

1 reduce the mercury concentration in their discharge.

2 Mercury is currently not regulated in the
3 petroleum refining point source category by the USPA
4 (ph), nor are there plans to do so. The existing Wood
5 River refinery wastewater treatment plant provides
6 the -- provides end-of-pipe treatment that is
7 equivalent to the best available technology
8 economically achievable as defined by U.S. EPA.

9 The permit limit of 7.8 times 10 to the
10 minus fourth pounds per day on a mass floating basis
11 equates to 8.5 nanograms per liter on a concentration
12 basis at the 10.97 million gallons per day average
13 daily flow. Because of variations in effluent quality
14 from wastewater treatment plants, design effluent
15 values are selected below the permit values.

16 Following a statistical evaluation, I selected an
17 average design value of five nanograms per liter to
18 maintain reliable compliance with the 8.5 nanograms
19 per liter annual average value.

20 During the Phase One sampling study, the
21 measured mercury values at the compliance buoy, which
22 is Outfall 001, were consistently greater than the 12
23 nanograms per liter concentration unit and the 7.8
24 times 10 to the minus fourth pounds per day mass

1 permit limits. On average, the measured values were
2 20 percent greater than the limits.

3 The sampling data also indicated that 98
4 percent removal of mercury was achieved across the
5 wastewater treatment plant. From the Phase One study
6 information, it was concluded that the implementation
7 of mercury control and/or treatment measures would be
8 required to reliably comply with the permit limits.
9 Conventional wastewater filtration, which could be
10 granular media filtration or rotating disc filtration
11 in the 11 micron range, was identified as a candidate
12 approach for end-of-pipe tertiary treatment
13 technology. No viable candidates were identified for
14 source control and/or treatment.

15 Phase Two pilot testing of granular media
16 filtration indicated that this could -- technology
17 could achieve the five nanogram per liter design
18 target. A design concept was developed for full-scale
19 granular media filtration system. The estimated
20 capital cost was \$18.5 million as of October 2011.

21 Successful compliance following the
22 implementation of a full-scale filter system will be
23 subject to certain risks and uncertainties. The first
24 factor is an increase in the soluble mercury and/or

1 the mercury content of the effluent TSS versus the
2 values observed during the Phase Two pilot testing.

3 These concentrations could change over
4 time due to changes in the mercury content of the
5 crude, changes in the refining processes, changes in
6 the refining operating conditions, and/or changes in
7 the wastewater operating conditions. We don't know
8 how mercury behaves within the refinery and this
9 wastewater treatment plant, so we cannot predict
10 future conditions.

11 The second factor is the undefined
12 impacts and/or cost of managing the mercury-containing
13 dirty backwash water that will be generated from the
14 wastewater from the filter system. The last factor is
15 the uniqueness of the granular media filtration
16 solution to the Wood River refinery, although the
17 refineries are proceeding more costly membrane
18 filtration for mercury compliance.

19 Q. Thank you. I'd like to follow up with a
20 couple of questions based on some of the comments the
21 Agency had regarding its discussion in the -- well,
22 not this discussion, but the discussion that was
23 presented to them that was included in the record.
24 One of those discussions is that the task that

1 Phillips faced was to bring the level of mercury from
2 14 nanograms per liter to 12 nanograms per liter. Is
3 12 nanograms per liter the appropriate target?

4 A. From a permit compliance standpoint, the
5 mass limit is going to be controlling the fa -- the
6 controlling factor, so when you adjust things -- when
7 you derive a concentration limit based on the mass
8 limit, that's the 8.5 nanogram per liter. So that's
9 the controlling limit, is the mass limit.

10 Q. That's the mass limit that's in the 2011
11 permit?

12 A. Yes.

13 Q. And would -- given that, would 8.5 be
14 your appropriate target, or would you -- in doing --
15 performing an engineering evaluation, would you select
16 another target?

17 A. So for an engineering design, you're not
18 going to design to comply with the average. For
19 conservatism and reliability, you're going to design
20 for something below the actual permit limit, and
21 that's where I -- that's why I drew out the five
22 nanogram per liter as a design type.

23 Q. The Agency also questions within its
24 notes in the records whether it was feasible to treat

1 only half of the flow, and I would like to ask you
2 whether it is or if it isn't.

3 A. It would certainly be feasible to do it.
4 I would not recommend it from an engineering
5 standpoint or a compliance standpoint. It's just too
6 much risk and uncertainty associated with having a
7 portion of your flow not go through your mercury
8 control device, if you will, so you just wouldn't --
9 the amount that you would not have to treat would
10 change over time, so if -- and I think there would be
11 circumstances where there wouldn't be any eff -- there
12 wouldn't be any of the flow that you could bypass
13 through the filters -- bypass the filter -- so I would
14 not advise my -- I would not advise that that be done,
15 no.

16 Q. And would treating half the flow
17 significantly reduce the cost that you estimated?

18 A. So it would not be a one-to-one factor
19 for sure, so if we only treated half the flow, we
20 would not reduce our design cost by 50 percent. It
21 would be something somewhat less than that.

22 Q. So also part of your design, as I
23 understand it, to construct a main that would -- to
24 discharge material -- excuse me -- in such a way that

1 it would bypass the existing lagoons. Why is it
2 designed that way?

3 A. It's designed that way because there
4 again, there's risk and uncertainty if we would allow
5 the treated effluent to pass through the lagoon. If a
6 granular media filter system was installed, that would
7 essentially replace the function of the polishing --
8 existing polishing lagoon, so those would no longer
9 provide any treatment function.

10 So to skip past your fully-treated
11 effluent through that pond would just subject it to
12 potential cross-contamination. And especially when
13 we're doing something -- when we're dealing with
14 something like mercury that's so pervasive throughout
15 the environment and we're dealing with such low
16 levels, I wouldn't want to risk that exposure of going
17 through the lagoon.

18 Q. And following up on your discussion about
19 the sources of risk and uncertainty, the concern -- I
20 think you, well, said this in your summary, but just
21 to follow up -- the potential is not just the
22 increa -- the potential for increase in the amount of
23 mercury in the crude oil coming into the facility; is
24 that correct?

1 A. It's not the -- the amount of crude --
2 the amount of mercury coming in the crude could be one
3 factor, but as much as that is going to be the
4 processing conditions within the refinery and the
5 operating conditions within the wastewater treatment
6 plant -- we just don't have a way to predict or model
7 the fate of mercury through the refinery or the
8 wastewater treatment plant or to know what we can
9 expect in the effluent from the biological treatment
10 system.

11 Q. So you designed the system to address
12 mercury that was attached to particles; correct?

13 A. Correct. During our sampling and pilot
14 testing, we observed that the majority of the mercury
15 in the effluent was associated with a particulate
16 material. That's what made filtration an obvious
17 choice, so that technology selection is predicated on
18 if you fill out -- if you remove the major portion of
19 the TSS, then that's going to be -- there's going to
20 be -- the soluble mercury will be low enough, and the
21 amount of mercury on the particulates that didn't pass
22 through the filter are low enough that you'll be in
23 compliance.

24 Q. And it's your concern that the amount of

1 mercury that attaches to a particle and the amount of
2 mercury that is soluble might change over -- would
3 change over time?

4 A. Correct. It's the amount of soluble
5 mercury might change over time, the amount of mercury
6 on the particulates, and the amount of particulates
7 that pass through the filter might change over time.

8 Q. And that would be types of drivers for
9 that type of change?

10 A. It's really not possible to predict.
11 It's just the mercury is a very complex pollutant to
12 try to target, so we're really just looking at
13 empirical ways of treating it as an end-of-pipe
14 treatment technology.

15 MR. RIESER: That's all my questions.
16 I'll -- I might ask questions in response to any
17 cross-examination.

18 HEARING OFFICER: Okay.

19 QUESTIONS BY MS. MEDINA:

20 Q. You said it was feasible to treat half
21 the flow. What would the cost be of treating half the
22 flow?

23 A. I have not developed that cost estimate.

24 Q. Would it at least be less than the

1 figures -- the estimates you provided on treating the
2 entire flow?

3 A. Correct.

4 Q. In your written testimony, you comment
5 that you reviewed and compiled data for a total of
6 approximately 550 sample results collected at 36
7 locations. Isn't it true this information was not
8 provided to the Agency for review?

9 A. I'm not aware of what was provided to the
10 Agency.

11 Q. Would those sample results have been
12 helpful in determining whether a waste stream --
13 whether a segregated waste stream could be treated for
14 mercury?

15 A. I did make that evaluation, and my
16 engineering judgment was that that was not a feasible
17 means of providing reliable compliance.

18 Q. Did you substantiate your engineering
19 judgment by providing a report on the sampling that
20 you collected at these various locations?

21 A. I did not.

22 Q. Isn't it true that your analysis on Page
23 Five in your written testimony concerning the average
24 mercury removals across the wastewater treatment plant

1 was conducted after the permit was issued?

2 A. The data existed and the knowledge was
3 understood. I believe that was -- information was
4 developed in response to information that -- in
5 response to questions asked by the Agency.

6 Q. During settlement negotiations?

7 A. Recently.

8 Q. After the permit was issued?

9 A. Correct.

10 Q. On Page Six and Seven of your written
11 testimony, you outline detail to support the
12 preliminary design and budgetary cost. Isn't it true
13 this detail was never provided to the Agency?

14 A. I'm not aware of what was provided to the
15 Agency.

16 Q. Was this level of detail provided to
17 Phillips 66?

18 A. It was provided to their capital projects
19 group.

20 Q. Prior to issuance of the permit -- the
21 renewal permit?

22 A. Correct.

23 Q. You conducted further design engineering
24 between August and October of 2011. At what point did

1 you provide that information concerning that design
2 engineering to Phillips 66?

3 A. October 2011.

4 Q. On Page Nine of your written statement,
5 you discuss a backwash water treatment handling system
6 that would potentially result in an additional capital
7 cost. Was that information provided to Phillips 66
8 prior to the issuance of the renewal permit in
9 December 2011?

10 A. Could you clarify your question?

11 Q. Your estimate of a -- your estimate of
12 the cost of an add-on system to handle the filter
13 solids.

14 A. Uh-huh.

15 Q. Was that estimate provided to Phillips 66
16 prior to the issuance of the renewal permit in
17 December 2011?

18 A. A system to handle -- to further treat
19 the dirty backwash water is not in -- was not included
20 in the engineering scope. It's a contingency or it's
21 a risk and uncertainty, that we don't know whether
22 that will be needed or not. Currently the design
23 assumption was that it will not be needed.

24 Q. What is the basis for your assumption?

1 A. Engineering judgment based on my
2 experience. It would be something that could be added
3 at a later date if needed.

4 Q. But your judgment is that it is not
5 needed?

6 A. Correct.

7 Q. Thank you. Did you provide an analysis
8 of the -- of any case studies suggested on Page Nine
9 in your written testimony, such as BP Whiting and
10 Suncor Denver, to Phillips 66 prior to the issuance of
11 the renewal permit in December 2011?

12 A. Are you referring to the case studies of
13 the other two refineries? Or can you clarify your
14 question?

15 Q. You refer to case studies of BP Whiting
16 and Suncor Denver. Do you provide any opinion,
17 analysis, or study of these refineries to Phillips 66
18 prior to the issuance of the permit in December 2011?

19 A. No.

20 Q. You said you used the mass limit as a
21 design target in order to meet the 12 nanograms per
22 liter annual average. In the absence of a mass limit,
23 what would you use as a design target?

24 A. I haven't done that evaluation.

1 Q. On Page One of your written testimony,
2 you state that you're not aware of any oil refineries
3 that have implemented treatment technologies at full
4 scale to reduce mercury concentration in their
5 effluent discharge. Can you explain your statement?

6 A. I'm not aware of any refineries that have
7 installed a treatment technology specifically to
8 comply with a mercury limit.

9 Q. Are you aware of any less-than-full-scale
10 implementation of technologies to treat mercury?

11 A. I'm aware of studies that have been done
12 by refineries to evaluate technologies.

13 Q. To treat mercury?

14 A. Yes.

15 MS. MEDINA: That's all I have.

16 MR. RIESER: Just give me a couple of
17 minutes.

18 QUESTIONS BY MR. RIESER:

19 Q. Mr. Allen, you were asked a question
20 about treating half of the flow, and you said you
21 hadn't estimated what the cost would be to treat the
22 half flow -- it would be 1e -- it said it would be
23 less than the estimated cost here. I believe you
24 answered to a question that I raised -- you said it

1 wouldn't be 50 percent less, half less. So why would
2 any smaller system still cost more than half as much?

3 A. There are -- a significant portion of the
4 upgrades that would be needed aren't necessarily that
5 sensitive to the hydraulic reading. The filter itself
6 would be, but the cost of piping and other things
7 aren't necessarily -- the cost differential isn't
8 necessarily linear with flow or linear at all.

9 Q. So there would still be engineering
10 design construction and costs that wouldn't be
11 associated with the fact that it was a half smaller
12 filter system?

13 A. Certainly all of the engineering and
14 project management and those types of cost would be
15 fixed regardless of the size of the system.

16 Q. You were asked a question about 550
17 samples and tying that into the source separation.
18 What samples were they that were discussed?

19 A. So they were -- during the Phase One
20 testing, they were sampling around the wastewater
21 treatment plant, and it was also what you could
22 categorize as source sampling, with two different
23 objectives -- one to determine how to treat that
24 wastewater, and the second objective to identify

1 sources that might be able to be controlled.

2 Q. So in doing that sampling, among the
3 things you were looking for was to find whether there
4 was a specific source of mercury within the various
5 functions of the refinery that -- if that source could
6 be segregated, then it would be easier to treat? Is
7 that correct?

8 A. The objective would be to do source
9 control or treatment so you wouldn't have to do
10 end-of-pipe treatment.

11 Q. And your ultimate decision was that
12 source treatment was not appropriate; is that correct?

13 A. Correct. The decision was end-of-pipe
14 treatment was going to be necessary regardless, so you
15 wouldn't need -- you wouldn't get necessarily much,
16 if any, advantage of source control or treatment.

17 Q. And that decision was -- the decision
18 that you just described was based at least in part on
19 the samples that you took?

20 A. Correct.

21 Q. In what way?

22 A. So what we found from the source sampling
23 is a very high variability at different locations, and
24 we found mercury at the majority of locations, so

1 there wasn't an obvious opportunity to, say, treat one
2 waste stream and that would eliminate enough mercury
3 going to the wastewater treatment plant that you
4 wouldn't have to do an end-of-pipe treatment
5 technology.

6 Q. You were asked another question about the
7 discussion about the removal across the current system
8 and your conclusion that across the current wastewater
9 treatment system, there's 98 percent removal of
10 mercury; correct?

11 A. Correct.

12 Q. When you said that the -- I believe you
13 said that the data was available before the permit was
14 issued -- what data are you referring to?

15 A. The Phase One sampling study.

16 Q. The Phase One sampling study that
17 indicated what the amounts of mercury influent into
18 the treatment plant were and then effluent from the
19 treatment plant?

20 A. Correct.

21 Q. So the only issue in the reduction that
22 you did was essentially the math of looking at that?

23 A. Correct.

24 Q. I believe you state in your testimony

1 that the BP Whiting facility has been given a mercury
2 variance. Is that correct?

3 A. That is correct.

4 Q. Do you know when that variance was
5 issued?

6 A. I don't know off the top of my head.

7 Q. Was it within the last year?

8 A. I believe it was in the last year or two.

9 MR. RIESER: Okay. Thank you. I have no
10 further questions.

11 HEARING OFFICER: Anything else?

12 MS. MEDINA: (Shaking head "no.")

13 HEARING OFFICER: No? Okay.

14 MR. RIESER: And his exhibit, Exhibit
15 Five, has been admitted?

16 HEARING OFFICER: Yes. Yes. We -- you
17 moved to admit -- I think Exhibit Five was admitted.
18 Yes, sir.

19 MR. RIESER: Just making sure.

20 HEARING OFFICER: I know.

21 MR. RIESER: All right. I'll call my
22 next and last witness, which is Jim Huff.

23 [Discussion off the record.]

24 HEARING OFFICER: You can swear in our

1 next witness.

2 [Mr. Huff duly sworn by the
3 court reporter.]

4 MR. RIESER: Can we go off the record
5 briefly?

6 [Discussion off the record.]

7 HEARING OFFICER: Okay. We're sworn in?

8 MR. RIESER: We're sworn in.

9 HEARING OFFICER: Okay. Go ahead.

10 MR. RIESER: Thank you.

11 QUESTIONS BY MR. RIESER:

12 Q. Mr. Huff, you prepared a written
13 testimony to deliver at this hearing; correct?

14 A. Yes.

15 Q. And to that testimony you've appended a
16 number of exhibits; is that correct?

17 A. Yes.

18 MR. RIESER: And I'd like to run through
19 the exhibits -- and we're having them admitted
20 separately; is that correct? Or do we want just one
21 group exhibit?

22 HEARING OFFICER: What are they?

23 MR. RIESER: The exhibits are -- well,
24 Exhibit One is a copy of Mr. Huff's CV. Exhibit Two

1 is a memo dated June 12, 2008, from Bob Mosher to
2 Jaime "Robins" -- "Raybins" -- excuse me --
3 R-A-B-I-N-S.

4 HEARING OFFICER: I mean, I guess we can
5 submit it -- there's a whole stack of -- I mean, there
6 would be a lot to submit separately; correct?

7 MR. RIESER: Correct.

8 HEARING OFFICER: Okay. Maybe -- let's
9 do it -- do you have -- Ms. --

10 MS. MEDINA: We have an objection to
11 Exhibit Number Seven as irrel -- well, I don't know if
12 that's still your Exhibit Seven.

13 MR. RIESER: That is my Exhibit Seven.

14 MS. MEDINA: As irrelevant.

15 HEARING OFFICER: Is that in this group,
16 or is that in this stack?

17 MR. RIESER: That is -- where is Exhibit
18 Seven?

19 MR. HUFF: It would be the last one.

20 MR. RIESER: Yes. Right down here. Oh,
21 it's right here.

22 HEARING OFFICER: I mean, could we take
23 all of them as a group, except we'll separate the one
24 that's --

1 MR. RIESER: Yes.

2 HEARING OFFICER: -- being objected to?

3 MR. RIESER: That's fine. And I don't
4 have a problem with that. And then we have --

5 MR. BECHTOL: Is that Eight -- Exhibit
6 Eight? Is that --

7 MR. RIESER: And then Exhibit Two is this
8 monster.

9 HEARING OFFICER: Is that the testimony,
10 or is that --

11 MR. RIESER: No. This is his
12 antidegradation report, which is already in the
13 record.

14 HEARING OFFICER: Okay. So that's
15 already in the record? We can still mark it as --
16 we're on? Okay. So that would be eight?

17 MR. RIESER: No. This is Exhibit Two.

18 HEARING OFFICER: Oh, this is all --

19 MR. RIESER: It's just not typed -- it's
20 not stapled in.

21 HEARING OFFICER: I see. I -- okay.

22 MR. RIESER: So why don't we admit as
23 Petitioner's Group Exhibit --

24 THE REPORTER: Six. Six.

1 MR. RIESER: -- Six --

2 MS. MEDINA: I think it would be easier
3 just to do them separately, just to keep it clear.

4 HEARING OFFICER: Okay. I mean, it's --
5 yes. I mean -- I guess how many pieces would there be
6 if we do them separately?

7 MR. RIESER: Well, there's -- there are
8 six pieces. Well, seven pieces including the
9 testimony, and then eight including the Exhibit Seven.

10 HEARING OFFICER: I mean, if it's getting
11 confusing, maybe we should do it separately.

12 MS. MEDINA: Well, if --

13 MS. WILLIAMS: Yes.

14 MS. MEDINA: We haven't been grouping
15 them all along, so doing them separately might make
16 sense.

17 HEARING OFFICER: No. Yes. Yes,
18 maybe -- it might just be easier to do them
19 separately. That way, if the Board wants to refer to
20 a particular -- they don't --

21 MS. MEDINA: Have to --

22 HEARING OFFICER: Yes. They --

23 MR. HUFF: Except the written testimony
24 references Exhibit One through Seven.

1 HEARING OFFICER: Well, that's okay, as
2 long as you call it --

3 MR. HUFF: Well, now they're going to
4 have different exhibit numbers than --

5 HEARING OFFICER: Well, you can call it
6 by the name of the document.

7 MR. RIESER: I -- okay. All right. So
8 the decision is we're going to introduce each of them
9 separately?

10 HEARING OFFICER: If that's okay. I
11 mean, there's only six; right?

12 MR. RIESER: I'm sorry. Can we go off
13 the record? There isn't really --

14 HEARING OFFICER: Yes, we can go off the
15 record.

16 [Discussion off the record.]

17 HEARING OFFICER: We'll go back on the
18 record. We just had an off-the-record discussion
19 about how we're going to number exhibits, and having
20 decided, Mr. Rieser, go ahead and --

21 MR. RIESER: Okay. We're going to -- I'm
22 going to hand to the court reporter what needs to be
23 marked as Group -- Petitioner's Group Exhibit --

24 THE REPORTER: Six.

1 MR. RIESER: -- Six.

2 [Petitioner's Exhibit Six marked for
3 identification.]

4 MR. RIESER: For the record, Petitioner's
5 Group Exhibit Six consists of Mr. Huff's testimony, as
6 well as the exhibits appended to his testimony, which
7 are Exhibits One through Six, and we'll -- and there's
8 also, for the record, an Exhibit Seven that's going to
9 be marked.

10 [Petitioner's Exhibit Seven marked for
11 identification.]

12 MR. RIESER: And Exhibit Seven is also an
13 exhibit to Mr. Huff's testimony. We've marked it
14 separately because off the record it's my
15 understanding that there may be an objection to
16 Exhibit Seven, so we've segregated it just in case the
17 Board wants to deal with that objection. The rest --
18 as I understand it, the admission of the rest of his
19 testimony and the other exhibits is not objectionable,
20 the State does not have any objection to it. Is that
21 correct?

22 MS. MEDINA: We have a limited objection
23 to his testimony -- that which follows the heading
24 "2007 NPDES Permit Mercury Limits," and which includes

1 comments on the exhibit which we have objected to as
2 argumentative and improper opinion testimony.

3 MR. RIESER: I'd like to move the
4 admission of --

5 Q. (By Mr. Rieser) Well, first of all, Mr.
6 Huff, would you look at what's been marked as Group
7 Exhibit Six and tell me if that's your written
8 testimony and the first six of your exhibits?

9 A. Yes, it is.

10 MR. RIESER: At this point, I would move
11 for the admission of Group Exhibit Six.

12 HEARING OFFICER: And you are objecting
13 to which portion?

14 MS. MEDINA: Objecting to that portion of
15 his testimony which follows the subheading "2011 NPDES
16 Permit Mercury Limits" and includes a discussion of
17 the exhibit attached to his testimony, which we also
18 objected to.

19 HEARING OFFICER: Can I see it?

20 MR. RIESER: And the exhibit -- I'm
21 sorry. The exhibit is Exhibit Seven, so let me go
22 through the --

23 HEARING OFFICER: Can you find me the
24 page that she's referring to?

1 A. Yes, ma'am. This section here.

2 HEARING OFFICER: And your objection is
3 argumentative? Or what are you -- what's the grounds
4 of your objection?

5 MS. MEDINA: Yes. It's summarizing
6 testimony of other witnesses, which would be more
7 properly done by David in a closing argument or brief,
8 and it also summarizes -- speaks to information on the
9 exhibit which we objected to as being irrelevant.

10 HEARING OFFICER: And what's your
11 response to that?

12 MR. RIESER: Well, my first response is
13 to at least have him identify the exhibit which is
14 i -- objection -- to which there is an objection first
15 and then move for the admission of that --

16 HEARING OFFICER: Okay.

17 MR. RIESER: -- and then address both of
18 those two things together.

19 HEARING OFFICER: All right. Let -- if I
20 can -- let me just read these two pages really quick.

21 MR. RIESER: Yes. But the basic response
22 is this is a Pollution Control Board hearing. Jim
23 Huff has testified -- is a witness who has testified
24 as an expert before the Board many, many, many times.

1 He has a vast realm of knowledge in this area. The
2 information he is -- to which he is testifying is
3 information which is, as he states within it,
4 information which he -- on which he typically relies
5 as an expert, and certainly the Board is in a position
6 where it can discern when Mr. Huff is being
7 argumentative.

8 HEARING OFFICER: Okay. So we want --
9 you want to wait and do it now, or you want to --

10 MR. RIESER: Well, let me --

11 HEARING OFFICER: You want to have him
12 testify --

13 MR. RIESER: -- let me ask him to
14 identify his exhibit.

15 HEARING OFFICER: Okay. Has he been
16 sworn in?

17 MR. RIESER: Yes.

18 HEARING OFFICER: Sorry.

19 THE REPORTER: A while ago.

20 HEARING OFFICER: Can't remember. Okay.
21 I'm sorry. Go ahead.

22 A. Exhibit Seven is entitled "Technologies
23 for Control and Measurement of Mercury Emissions from
24 Coal-Fired Power Plants in the United States -- a 2010

1 Status Report."

2 Q. (By Mr. Rieser) And this is also an
3 exhibit which you discuss in your testimony which is
4 part of Group Exhibit Six?

5 A. Also referenced as Exhibit Seven in my
6 testimony. Correct.

7 MR. RIESER: Okay. And I admit -- move
8 for the admission of Exhibit Seven.

9 HEARING OFFICER: Can I see Exhibit
10 Seven?

11 MS. MEDINA: And we would object that it
12 is irrelevant and not part of the record.

13 HEARING OFFICER: This is not part of the
14 record?

15 MR. RIESER: It is admittedly not part of
16 the record. It's introduced for the purpose of Mr.
17 Huff's discussion of comparing the cost of mercury
18 treatment at a wastewater facility with the cost of
19 treatment of mercury emitted from coal-fired power
20 plants, which was the subject of an extended Board
21 rule-making already, so it's something the Board is
22 familiar with. But admittedly, this is not a docu --

23 HEARING OFFICER: But is it being used to
24 refute something in the record?

1 MR. RIESER: It is not being used to
2 refute something in the record. It is being used to
3 discuss and put some context to the costs and
4 discussion of whether the costs mean that this
5 treatment system that would be required under the
6 Agency's permit does not -- is not best degree of
7 treatment; that it's economically unreasonable.

8 MS. MEDINA: So --

9 MR. RIESER: That's what it goes to.

10 MS. MEDINA: So the --

11 HEARING OFFICER: Well -- I'm sorry. Go
12 ahead.

13 MS. MEDINA: So the argument is that it
14 is refuting the Agency's decision on economic
15 reasonableness. It's offered to refute that.

16 HEARING OFFICER: Okay.

17 MS. MEDINA: And this -- we would argue
18 that technologies for treating mercury emissions are
19 not relevant to the cost of treating mercury in
20 wastewater discharge.

21 HEARING OFFICER: The Board policy has
22 been that documents that existed before the Agency
23 made its determination that are being used to refute
24 something in the record are admissible. That's what

1 the Board has held in the past. That's why I asked if
2 it was being used to refute something in the record.
3 So you're saying it possibly could be?

4 MR. RIESER: It certainly goes to the
5 question of whether the technology that would be
6 required to meet the permit is economically
7 reasonable, and the Agency did make a decision that
8 the technology was economically reasonable, so to the
9 extent that it talks about the costs of other mercury
10 removal technologies in other media for the purpose of
11 giving the example of how out of line the costs of
12 this particular treatment are, yes, it does go to that
13 issue.

14 HEARING OFFICER: I'm going to go ahead
15 and admit it, then. So Petitioner's Exhibit Seven is
16 admitted.

17 MR. RIESER: Thank you. As well as the
18 portions of Exhibit Six that were --

19 HEARING OFFICER: The opinion testimony?

20 MR. RIESER: Yes.

21 MS. MEDINA: I'm going to admit that as
22 well. It's consistent with other opinion testimony
23 I've seen in the past, so I don't think it's anything
24 terribly unusual, so I will admit that as well.

1 MR. RIESER: Thank you very much.

2 Q. (By Mr. Rieser) Mr. Huff, would you
3 briefly summarize your testimony?

4 A. Yes, I will. Good morning. My name is
5 James Huff. I'm senior vice-president and part-owner
6 of an environmental consulting firm, Huff and Huff,
7 Incorporated, that was founded in 1979. I've
8 practiced full-time in the environmental field since
9 1971. I have a Bachelor's of Science in chemical
10 engineering from Purdue and a Master's of Science in
11 engineering from the environmental engineering
12 department at Purdue as well.

13 My work experience includes two years
14 with the Mobil Oil refinery, starting up the Joliet
15 refinery. I spent three years at IIT Research
16 Institute doing advanced wastewater treatment work,
17 including refinery wastewater. I spent four years
18 with Akzo Nobel -- A-K-Z-O -- as manager of
19 environmental affairs responsible for eight plants in
20 the U.S. and one in Canada for all environmental
21 matters.

22 For the last 32 years at Huff and Huff,
23 Incorporated, I've been involved with environmental
24 impact studies associated with wastewater discharges

1 on receiving streams, antidegradation treatment,
2 wastewater treatment designs, and NPDES negotiations.

3 I was retained by ConocoPhillips
4 Company's Wood River refinery in 2006 to prepare the
5 antidegradation analysis for the plant expansion and
6 the associated expansion in the wastewater treatment
7 plant. That expansion included taking the capacity of
8 the refinery from 323,000 barrels per day to 385,000
9 barrels per day, which is basically a 19 percent
10 increase in production, as well as the installation of
11 three wet gas scrubbers to remove sulfur dioxide. The
12 wastewater treatment facility prior to the expansion
13 had a design average flow of 7.93 million gallons per
14 day, and that -- to handle the expansion, that was to
15 be raised to 10.97 million gallons per day.

16 I conducted a mixing zone study in
17 addition to the antidegradation assessment, and as
18 part of that mixing zone study, we also did a mussel
19 survey within the existing mixing zone and discovered
20 a mussel bed immediately beneath the Wood River
21 refinery Outfall 001, so we expanded the mussel study
22 and found that the mussels were primarily located
23 closer to shore and recommended that the outfall be
24 extended out into the Mississippi River.

1 We developed a preliminary design work
2 for that, did the modeling, and -- for extending that
3 outfall line 120 feet from the shoreline and angle it
4 30 degrees to the vertical to maximize mixing. The
5 cost for that outfall extension exceeded \$1 million.
6 The result of the outfall modification resulted in an
7 86-to-one dilution being achieved within the first 137
8 feet downstream of the outfall with a small 21-foot
9 lateral spread from the center line.

10 I also worked with the Wood River
11 refinery to document compliance with the Board's
12 antidegradation assessment, and as part of that
13 efforts, we did a close analysis of the existing
14 treatment plant, the proposed treatment plants, and as
15 part of the antidegradation assessment, the Wood River
16 refinery agreed to no increase in permitted loadings
17 for a number of pollutants, including biochemical
18 oxygen demand, total suspended solids, ammonia,
19 chemical oxygen demand, oil and grease, phenols, total
20 chromium, and sulfite.

21 In addition, with the application of a
22 phosphorous control, the refinery committed to a
23 reduction a 6,200-pound per year in its discharge of
24 ammonia -- or phosphorous. I'm sorry. And all this

1 was done with the 19 percent increase in production.

2 As part of the antidegradation
3 assessment, at the request of the Agency, samples of
4 the effluent were collected using a low-level
5 detection level for mercury, and a total of 14 samples
6 were collected. They had a mean concentration of
7 those samples -- 14 samples of 12.5 nanograms per
8 liter -- and then applying the U.S. EPA statistical
9 protocol, the 95th percent confidence level of the
10 mean was computed as 17.6 nanograms per liter.

11 And it's interesting -- that statistical
12 approach is appropriate. The work that Jeff Allen
13 referred to -- they collected 23 additional samples on
14 the effluent, and they found a mean concentration of
15 14.4 nanograms per liter, higher than the mean that we
16 had, but within the statistical range that had been
17 predicted using standard statistical practices.

18 Based on the incremental flow that's
19 going to be added, which is 2.57 million gallons per
20 day, that equates to adding a point -- 0.11 pounds per
21 day of mercury to the Mississippi River. Based on the
22 upstream Mississippi River mercury concentration, no
23 measurable change in concentration at the edge of the
24 mixing zone was predicted. And then at the request of

1 the Agency, we went back and evaluated treatment
2 technologies for metals in the antidegradation
3 assessment, and we evaluated the cost for reverse
4 osmosis, activated carbon, and ion exchange, and
5 determined that all of these technologies were
6 technically impracticable.

7 The 2009 permit limits. The initial
8 antidegradation assessment was submitted in April 25th
9 of 2008, including the results of the 14 effluent
10 samples from mercury. On May 15th, 2008, I had a
11 telephone conversation with Bob Mosher of the planning
12 section at the Illinois EPA, and Mr. Mosher informed
13 me that the Agency management had determined that no
14 mixing zone would be allowed for mercury and that the
15 effluent limit would be set at the water quality human
16 health criteria, which is 12 nanograms per liter,
17 based on an annual average.

18 The Agency completed its own water
19 quality-based effluent limit analysis on June 12th,
20 2008, and that's my Exhibit Four, and in that
21 document, the evaluation concluded -- quote -- "no
22 reasonable potential to exceed the mercury standard at
23 the end of pipe," but footnotes -- quote -- "The
24 mercury standard for human health, 0.000012 milligrams

1 per liter, is not evaluated."

2 In addition, the Agency included an
3 annual mercury load limit based on an average
4 concentration of the 14 samples, 12.5 nanograms per
5 liter, instead of the statistically-derived 17.6
6 nanograms per liter, and then they also used a
7 preexpansion flow not of 7.93, but of 7.49 million
8 gallons per day.

9 The result of that is that the higher
10 flow at the -- post-expansion, the mercury mass limit
11 establishes an equivalent to discharge only 8.5
12 nanograms per liter of mercury due to the increase in
13 flow from the refinery processes. The mercury
14 effluent limits were established by the Agency without
15 addressing the technical impracticability of these
16 limits.

17 For the Wood River refinery permit, the
18 Agency refused to consider a mixing zone for mercury,
19 although the Board rules specifically provide for one
20 for discharge outside of the Lake Michigan basin. The
21 Agency also refused to follow its own practices in
22 setting load limit for mercury. The mercury here --
23 has set the mercury effluent -- a mass limit that
24 effectively limits the annual average mercury

1 concentration to 8.5 nanograms per liter in a way
2 entirely different than the effluent limit it set for
3 all the other parameters in the 2009 permit.

4 2011 NPDES permit mercury limits. I had
5 an opportunity to review the record and the 2011
6 permit. I was not directly involved with that. The
7 review notes by the permit-writer cited the Board's
8 mixing zone rule at Section 304.102 of the Board's
9 regulation, which require best degree of treatment for
10 wastewater consistent with technological feasibility,
11 economic reasonableness, and sound engineering
12 judgment. The permit-writer concluded that the
13 proposed treatment option for mercury, granular media
14 filtration, at a then cost of \$9.4 to \$14.1 million,
15 is the best degree of treatment for mercury for the
16 removal for -- on the order of 0.2 pounds per year.

17 This decision conflicts what the U.S.
18 EPA's best available treatment's determination of the
19 categorical treatment standards for refineries, which
20 requires no mercury control. The Agency in this
21 instance has apparently determined the best degree of
22 treatment is more stringent standard than the best
23 available treatment as defined under the Clean Water
24 Act, a position that I have never experienced before.

1 Jeffrey Allen testified to the Wood River
2 refinery already removing 98 percent of the mercury in
3 its wastewater through its existing treatment
4 facility, and that high degree of removal should have
5 been considered in the best degree of treatment
6 analysis.

7 Mr. Allen further testified that the
8 updated capital cost is between \$18.5 mill -- is \$18.5
9 million in 2011 dollars, and so if you go back and
10 compute that on a cost per pound of mercury it
11 removes, it equates to \$6.9 million per pound of
12 mercury removed by a system that's already removing 98
13 percent of the mercury from the wastewater. Even if
14 treatment technology could be deemed technically
15 feasible, it cannot be deemed economically reasonable.

16 And so for context and scale, just to put
17 that in a perspective, a typical coal-fired power
18 plant emits two orders of magnitude more mercury into
19 the environment than what the Wood River refinery
20 discharges to the Mississippi River, and for a
21 coal-fired boiler, the cost for removal range from
22 \$6,000 to \$67,000 per pound, or to two to three orders
23 of magnitude lower than what is being asked of the
24 Wood River refinery. Clearly there are more

1 cost-effective measures that can be taken to reduce
2 mercury releases into the environment.

3 In closing, the Illinois EPA issued an
4 NPDES permit for the Wood River refinery in 2009 and
5 again in 2011 that contained mercury limits, both
6 concentration and mass-based, that were inconsistent
7 with the Board's regulation as well as inconsistent
8 with the U.S. EPA's technical support document which
9 is routinely followed when establishing effluent
10 limits.

11 The Agency applied its best professional
12 judgment that the best degree of treatment for mercury
13 involves a technology not demonstrated and never
14 applied at any refinery in the world and ignores the
15 98 percent mercury reduction already achieved. The
16 incremental cost for this permit requirement is on the
17 order of \$6.9 million per pound of mercury removed,
18 and in my professional judgment, that is not
19 economically reasonable. That concludes my --

20 MR. RIESER: I have no questions.

21 MS. MEDINA: Are those extra copies of
22 the antidegradation study there?

23 MR. RIESER: Yes, they are.

24 QUESTIONS BY MS. MEDINA:

1 Q. Turning to the antidegradation analysis,
2 which is part of Petitioner's group exhibit -- is that
3 correct?

4 HEARING OFFICER: Six.

5 MR. RIESER: That's correct. It's
6 Exhibit Two to his testimony.

7 Q. (By Ms. Medina) Showing you Page 69 of
8 your Exhibit Two to your testimony. Can you describe
9 what this analysis is?

10 A. It's entitled "Predicted Water Quality at
11 the Edge of the Zone of Initial Dilution." The zone
12 of initial dilution is a relatively small area where
13 you are allowed to exceed acute toxicity numbers.

14 Q. Did you evaluate mercury in this
15 analysis?

16 A. Yes, I did.

17 Q. Did you compare mercury -- the
18 concentration that you determined for the zone of
19 initial dilution for mercury -- is it compared against
20 the human health standard in this analysis?

21 A. It is not, no.

22 Q. Thank you. Turning to Page 70 of the
23 same Exhibit Two of your written testimony, can you
24 state what the title of this analysis is?

1 A. So this is entitled "Predicted Water
2 Quality at the Edge of the Mixing Zone." So here we
3 analyzed a predict -- or computed what the predicted
4 concentrations would be at the edge of the completed
5 mixing zone.

6 Q. Did you evaluate mercury in this
7 analysis?

8 A. Yes, ma'am.

9 Q. Did you compare mercury against -- the
10 mercury concentration at the edge of the mixing zone
11 to the human health standard for mercury?

12 A. No. It was compared to the chronic water
13 quality standards.

14 Q. Thank you. Showing you Page 43 of your
15 Exhibit Two to your testimony. Can you describe what
16 this document is?

17 A. Yes. This was the available mercury
18 water quality data in the Mississippi River below
19 Grafton, Illinois, so these are water quality samples.

20 Q. Looking at the sample which appears to be
21 for December 2002, the first sample result listed --
22 what is the result?

23 A. It was non-detect, and the method that
24 was used in 2002 is a less sensitive method than what

1 is used today. It was less than 0.00002 milligrams
2 per liter.

3 Q. Is that detection limit more than the
4 human health standard for mercury?

5 A. So I need to just clarify one point. The
6 human health standard.

7 Q. Could you --

8 MS. MEDINA: Objection. Non-responsive.

9 A. Well, but -- may I finish? It's --

10 HEARING OFFICER: Well, I don't know what
11 you were saying, so go ahead.

12 Q. (By Ms. Medina) Is --

13 A. So the human health standard is an annual
14 average, and you -- just like the last two tables
15 where you looked at the instantaneous or daily
16 samples, this is a daily sample, but the result, if
17 you want it in nanograms per liter, is 20 -- is less
18 than 20 nanograms per liter, versus a human health
19 standard of 12 nanograms per liter.

20 Q. So the detection limit is greater than
21 the human health standard for mercury?

22 A. That is correct.

23 Q. Thank you. Have you ever been involved
24 in consulting on a matter where a mixing zone for

1 mercury was at issue?

2 A. No.

3 MS. MEDINA: Thank you. That's all I
4 have.

5 QUESTIONS BY MR. RIESER:

6 Q. With respect to the last question, are
7 you aware of whether the State of Illinois EPA has
8 ever issued a effluent standard for mercury which
9 would require the consideration of a mixing zone?

10 A. An effluent standard -- the -- I don't
11 believe there's an effluent standard in Illinois under
12 the Board's regs.

13 Q. Or that they've issued a permit which
14 requires a water quality-based effluent limit from
15 your current (ph) that would require consideration in
16 this case?

17 A. They have -- the Agency has issued
18 permits that contain a mercury effluent limit in
19 there, yes.

20 MR. RIESER: I've got nothing further.

21 HEARING OFFICER: Anything? Anything
22 else?

23 MS. MEDINA: (Shaking head "no.")

24 HEARING OFFICER: No? Okay. Thank you

1 very much. Do you have anything further?

2 MR. RIESER: I have nothing further.

3 Obviously I reserve the right to recall witnesses in
4 rebuttal, but --

5 HEARING OFFICER: All right. Well, why
6 don't we take a short break, go off the record?

7 [A recess was taken.]

8 HEARING OFFICER: Okay. We are back on
9 the record, and we will begin with -- the Agency may
10 call its first witness.

11 MS. MEDINA: Okay. I did reserve to make
12 my opening now, so if I could just make a --

13 HEARING OFFICER: Oh, oh. Yes, yes. Go
14 ahead. Go ahead.

15 MS. MEDINA: -- just a few brief
16 comments. The Agency will show that they conducted to
17 the best of their ability an analysis as to whether
18 the granular media filtration option for treating
19 mercury at the Phillips 66 Wood River refinery was
20 technically feasible, of sound engineering judgment,
21 and economically reasonable. The Agency will show
22 that this decision was made to the best of their
23 ability given the data that Phillips 66 was willing to
24 provide at the time of the decision, and that their

1 decision was certainly not arbitrary or capricious.

2 We have two witnesses, Bob Mosher and
3 Jaime Rabins. Bob Mosher is expected to testify
4 concerning the basis for the original denial of the
5 mixing zone in the modified permit in 2009 and what
6 input he provided concerning the best degree of
7 treatment analysis that was conducted to determine
8 whether a mixing zone would be granted in the most
9 recent renewal permit, which is the subject of this
10 appeal hearing.

11 He will also comment on whether or not
12 the antidegradation analysis is sufficient to
13 determine whether the human health standard for
14 mercury can be met at the edge of the mixing zone if
15 one were to be granted or what would be the basis of
16 such a decision given the information provided in that
17 antidegradation assessment.

18 Jaime Rabins will testify concerning his
19 part in establishing the mass limit for mercury. He
20 will also comment on what analysis took place
21 concerning whether the treatment technology proposed
22 by Phillips 66 was the best degree of treatment or
23 not. So we'll start with Bob.

24 HEARING OFFICER: Would the court

1 reporter please swear in the witness?

2 [Mr. Mosher duly sworn by the
3 court reporter.]

4 MS. MEDINA: I guess before we start, we
5 should just clarify how our exhibits will be handled
6 so that we're clear.

7 HEARING OFFICER: Okay.

8 MS. MEDINA: I have marked my exhibits,
9 although I will admit there are a couple that are out
10 of order, so I assume you're going to start with
11 renumbering them with the court reporter?

12 HEARING OFFICER: We don't have to. I
13 mean, we can -- the -- you mean just the -- in terms
14 of changing the letters to numbers, or in terms of
15 reordering them?

16 MS. MEDINA: Right. You want to use the
17 numbers I have on my exhibits?

18 HEARING OFFICER: I think so. I mean,
19 yours are all part of the record; is that correct?

20 MS. MEDINA: With the exception of A that
21 Bob has prepared.

22 HEARING OFFICER: I'm inclined to just
23 leave it the way it is unless you --

24 MS. MEDINA: Okay.

1 HEARING OFFICER: -- have any problems,
2 concerns.

3 MR. RIESER: I don't have any -- no, I
4 don't have any objection. We can leave it the way it
5 is.

6 HEARING OFFICER: Okay. Let's just do
7 that.

8 MR. RIESER: Yes.

9 MS. MEDINA: Okay. All right. We'll get
10 started, then.

11 QUESTIONS BY MS. MEDINA:

12 Q. Bob, can you state your name for the
13 record?

14 A. It's Robert Mosher.

15 Q. And can you provide us some details
16 regarding your educational background?

17 A. Yes. I have a Master of Science in
18 zoology from Eastern Illinois University.

19 Q. And can you provide us some details
20 concerning your current position at the Illinois EPA?

21 A. Yes. I've been with Illinois EPA almost
22 27 years. Most of that time and currently I am the
23 manager of the Water Quality Standards Section in the
24 Division of Water Pollution Control, Bureau of Water.

1 Q. With respect to mixing zones for mercury,
2 is this -- is the subject of this appeal hearing, this
3 matter, the first time you've ever dealt with
4 analyzing whether a mixing zone would apply for a
5 facility for mercury?

6 A. Yes, it is.

7 Q. To your knowledge, is it the first time
8 the Agency has dealt with such an issue?

9 A. Yes.

10 Q. You're familiar with the NPDES permit
11 issued on December 22nd, 2011, which is the subject of
12 this appeal hearing?

13 A. Yes.

14 Q. And you're also familiar with the permit
15 that was issued February 5th, 2009, for the Wood River
16 facility?

17 A. Yes.

18 Q. To your knowledge, is the -- I'll refer
19 to the 2009 permit as the modified permit and the one
20 issued in 2011 as the renewal permit for purposes of
21 clarity. With respect to the modified permit, to your
22 knowledge, was that the first time mercury was limited
23 or -- a mercury limit was included in an NPDES permit
24 for the Wood River facility?

1 A. It was the first time, yes.

2 Q. And were you involved in the Agency's
3 decision to limit mercury in the modified permit?

4 A. Yes.

5 Q. I'd like to start with Respondent's
6 Exhibit H. Again, I apologize. These are out of
7 order. Showing you Respondent's Exhibit H, which is
8 Document Number --

9 MR. KRUSE: 83.

10 Q. (By Ms. Medina) -- 83 of the record.
11 Do you recognize this document?

12 A. Yes, I do.

13 Q. Can you explain what this document is?

14 A. It's a listing of effluent data collected
15 at Outfall 001 of the facility in November and
16 December -- well, actually, August through December
17 2007.

18 Q. And you recall this as information you
19 received for purposes of analyzing mercury at this
20 facility in the context of the modified permit?

21 A. Yes.

22 MS. MEDINA: I would move to admit this
23 as Respondent's Exhibit H.

24 HEARING OFFICER: Respondent's Exhibit H

1 is admitted.

2 MR. RIESER: No objection.

3 MS. MEDINA: Okay.

4 Q. (By Ms. Medina) Bob, looking at that
5 data, is this the data you were provided pursuant to a
6 request you made to the facility -- the Wood River
7 facility?

8 A. Yes. We needed mercury data from the
9 effluent using the low-level U.S. EPA 1631 lab method,
10 and I believe we did ask them to do that sampling --
11 do that monitoring.

12 Q. I'd like to turn your attention to
13 another document, Respondent's Exhibit A, which is
14 Document 93 of the record. Do you recognize this
15 document?

16 A. Yes, I do.

17 Q. Can you describe what this document is?

18 A. This is a memo I wrote to Jaime Rabins.
19 It's dated June 12th, 2008, and it's my water
20 quality-based effluent limit evaluation for the
21 refinery.

22 Q. And this was a document that you created
23 to document your water quality analysis?

24 A. Yes. It's -- the document contains a

1 reasonable potential analysis for the effluent to
2 exceed a number of chemical parameters -- water
3 quality standards for those chemical parameters.

4 MS. MEDINA: I would move to admit Doc --
5 Respondent's Exhibit A.

6 HEARING OFFICER: Respondent's Exhibit A
7 is admitted.

8 MR. RIESER: No objection.

9 Q. (By Ms. Medina) Pursuant to your
10 analysis of the data that you received, can you
11 explain what your conclusion was as to mercury?

12 A. Yes. I concluded that the acute and
13 chronic water quality standards for mercury, which, of
14 course, deal with aquatic life toxicity, were not
15 going to be exceeded by the effluent at end of pipe,
16 but I also concluded that the human health water
17 quality standard for mercury would not be met at the
18 end of pipe.

19 Q. Given that analysis, did you recommend to
20 grant a mixing zone for mercury?

21 A. No, I did not. I in fact recommended the
22 opposite, that no mixing zone would be granted for
23 mercury.

24 Q. Can you explain why you did not recommend

1 a mixing zone for mercury for the modified permit?

2 A. Well, we have at Illinois EPA never then
3 and up to the present granted a mixing zone for
4 mercury, and through some discussion with my
5 supervisors, I was instructed that Illinois EPA would
6 not be granting any mixing zones for mercury.

7 Q. Turning to the renewal permit -- were you
8 involved in the Agency's decision to limit mercury in
9 the renewal permit that was issued in 2011?

10 A. Yes.

11 Q. I'd like to draw your attention to
12 Respondent's Exhibit B. You'll note there's an e-mail
13 and an attachment. Can you describe what this
14 document is?

15 A. Yes. This is from Deb Williams, an
16 attorney at Illinois EPA, and it's a memo to my
17 supervisor, Sanjay Sofat, and it's a discussion of the
18 mercury mixing zone and whether we had sufficient
19 evidence or basis to grant a mercury mixing zone.

20 Q. Did you -- were you provided with a copy
21 of this memo?

22 A. Yes.

23 Q. And you read it at the time it was
24 provided to you?

1 A. Yes.

2 Q. Did you agree with the conclusions that a
3 best degree of treatment analysis would need to be
4 addressed prior to making a decision on whether to
5 grant a mixing zone?

6 A. Yes.

7 MS. MEDINA: I'd move to admit
8 Respondent's Exhibit B.

9 MR. RIESER: No objection.

10 HEARING OFFICER: Exhibit B is admitted.

11 MS. MEDINA: Should I be handing these to
12 you?

13 THE REPORTER: I guess they go to you.

14 HEARING OFFICER: I'll file them with the
15 clerk. He doesn't need --

16 MS. MEDINA: Okay.

17 THE REPORTER: So I guess they go to you;
18 right?

19 MS. MEDINA: Okay.

20 HEARING OFFICER: Yes.

21 Q. (By Ms. Medina) Turning to Respondent's
22 Exhibit C. Could you describe what this document is?

23 A. This is information regarding the
24 treatability study for mercury at the refinery.

1 Q. Were you able to review what appears to
2 be a Powerpoint at the time this was provided to the
3 Agency?

4 A. Yes.

5 Q. What was your understanding as to the
6 feasibility of the technologies they presented, based
7 on the presentation?

8 A. That there was one type of treatment that
9 would achieve good results in removing mercury from
10 the effluent.

11 Q. And what type of treatment was that?

12 A. The granular media filtration.

13 Q. Do you recall why they stated that
14 treatment methodology would work?

15 A. Well, there was a pilot study, and some
16 of the results were significant mercury reduction
17 using that method.

18 Q. Turning to Respondent's Exhibit D. Can
19 you also describe what this document is here? Let me
20 rephrase that. Do you recognize this as an additional
21 Powerpoint summary provided by Phillips 66 to the
22 Agency?

23 A. Yes.

24 Q. Did you review this Powerpoint at the

1 time it was provided as well?

2 A. Yes.

3 Q. On or about the time it was provided?

4 A. Yes.

5 Q. Turning to Pa -- the second page of that
6 document. Based on the information they provided,
7 what did you understand their average mercury
8 concentrations were at the end of the pipe at that
9 time?

10 A. I think that's the third page of the
11 document.

12 Q. I'm --

13 A. And this is some additional mercury data
14 from the 001 outfall, and in addition to what we saw
15 from late 2007, and as I understand it, this -- the
16 001 data was their end-of-pipe mercury concentration
17 during this period of time.

18 Q. And their -- the average concentration
19 that they stated was?

20 A. 14.8 nanograms per liter.

21 Q. So in your opinion, did they -- given
22 their study results, did they still need controls for
23 mercury?

24 A. Well, it --

1 MR. RIESER: I'm sorry. Could you read
2 that back, please?

3 [The pending question was read by the
4 reporter.]

5 MR. RIESER: Thank you.

6 A. The average result of 14.8 nanograms per
7 liter is higher than the water quality standard for
8 mercury human health, and therefore they weren't
9 meeting that standard at end of pipe; therefore, in my
10 opinion, they -- since they had not justified a mixing
11 zone, they needed further treatment.

12 MS. MEDINA: Okay. I'd move to admit
13 Exhibits C and D.

14 MR. RIESER: No objection.

15 HEARING OFFICER: Exhibits C and D are
16 admitted.

17 Q. (By Ms. Medina) I'd like to turn your
18 attention to Exhibit -- Respondent's Exhibit E. It's
19 Document 39 of the record. Could you describe -- and
20 take a moment to review the first and the following
21 pages there -- what this information relates?

22 A. This appears to be some conclusions from
23 the pilot study of the filtration method of treatment
24 for mercury, and it gives some cost estimates for that

1 treatment.

2 Q. And what was the cost estimate that
3 Phillips 66 shared with the Agency in this Powerpoint?

4 A. Full-scale filtration project cost at
5 \$9,400,000, possibly as high as \$14,100,000.

6 Q. At the front of this Powerpoint is a list
7 as in a meeting attendance list at the time this
8 Powerpoint was presented. Do you know that you were
9 at attendance at that meeting on June 29th, 2011?

10 A. I -- yes, I see my name on the list.

11 Q. Do you recall requesting any additional
12 information at this meeting, besides this summary
13 total of \$9.4 to \$14.1 million cost for treating
14 mercury?

15 A. I do remember -- I believe it was after
16 the meeting in the hallway or in the atrium of the
17 Agency. I remember talking to Jay Rankin and asking
18 him why all the effluent had to be filtered, because
19 it would seem that they would meet compliant
20 concentrations with the water quality standard if they
21 only partially filtered, and I asked him, "Wouldn't
22 that be less expensive? Why can't you do that?"

23 Q. What was your op -- how much did Phillips
24 66 have to reduce their effluent by in order to meet

1 the human health standard?

2 A. Well, the human health standard is 12
3 nanograms per liter. They were reporting an average
4 of 14.8, so there was a need to reduce by 2.8
5 nanograms per liter. There's also an issue -- it's
6 been brought up today -- that load limits for mercury
7 in the permit would have required a lower
8 concentration, which I believe is 8.5 nanograms per
9 liter, but either way, it seemed to me that just
10 filtering part of the effluent at a possibly lower
11 cost would meet either of those limits.

12 MS. MEDINA: Okay. I would move to admit
13 Exhibit E.

14 MR. RIESER: No objection.

15 HEARING OFFICER: Exhibit E is admitted.

16 Q. (By Ms. Medina) I'd like to call your
17 attention to Respondent's Exhibit F. Do you recognize
18 this e-mail?

19 A. Yes, I do.

20 Q. Is this an e-mail you sent?

21 A. Yes. I sent this to -- on June 29th,
22 2011, to several co-workers at Illinois EPA.

23 Q. And this would have been following the
24 meeting with Phillips 66 on that same date?

1 A. Yes.

2 Q. Can you describe what information or
3 requests you were sharing with your co-workers
4 concerning that meeting or Phillips 66?

5 A. Yes. I had one point to make that there
6 is a U.S. EPA guidance document available that allows
7 facilities to do an economic affordability analysis.
8 I mention this because the information we had got
9 giving the cost was not presented in a way to know
10 whether it's affordable or not. It was just a simple
11 dollar amount.

12 And by using this U.S. EPA guidance
13 document, there is a worksheet and there is a way to
14 know if a given amount is affordable for the
15 discharger. I also brought up my concern that we were
16 being presented with costs for 100 percent effluent
17 filtration and that given that a lesser amount of
18 effluent filtered possibly would bring down the cost
19 and still meet the limits.

20 Q. And if you turn to the second page of the
21 e-mail, was there any other concerns you relay to your
22 co-workers?

23 A. Yes -- I wondered about the Phillips
24 assertion that putting filtered effluent into the

1 current lagoon system would really lead to more
2 mercury being added to the effluent from the
3 atmosphere, and that was -- that comment was made
4 because Phillips said they would have to bore a new
5 outfall pipe opening through the levee, and I was just
6 questioning do they really need to do that to be able
7 to meet the limits after filtration.

8 Q. Do you recall whether you relayed any of
9 these needs for information to Phillips 66 either
10 during that meeting, immediately after?

11 A. Well, I mentioned my conversation with
12 Jay Rankin. I don't honestly recall if I mentioned to
13 Phillips about the U.S. EPA guidance for the
14 affordability study.

15 MS. MEDINA: Okay. Moving to admit
16 Respondent's Exhibit F.

17 MR. RIESER: No objection.

18 HEARING OFFICER: Exhibit F is admitted.

19 Q. (By Ms. Medina) Did you prepare anything
20 to aid you in your testimony today, Bob?

21 A. Yes, I did.

22 Q. I'd like to look at Respondent's Exhibit
23 I, I think. You have a copy. You've commented that
24 the reduction in the mercury effluent would have been

1 from 14.8 to the human health standard of 12 -- that
2 that was the amount to be achieved by compliance with
3 a treatment methodology. Is that amount of mercury in
4 Phillips 66 effluent a significant amount, in your
5 opinion?

6 MR. RIESER: I object to the use of the
7 word "significant." We don't know what that means in
8 this context.

9 HEARING OFFICER: Would you care to
10 elaborate?

11 MS. MEDINA: I would like simply for Bob
12 to describe his opinion as to the impact of that
13 amount.

14 HEARING OFFICER: Go ahead.

15 A. Well, there's a reason there's a water
16 quality standard for human health of 12 nanograms per
17 liter, and that is that mercury is extremely
18 bioaccumulative, which means it can go from water into
19 the flesh of organisms, particularly fish. And the
20 standard is set so very low, 12 nanograms per liter,
21 in order to protect fish from accumulating excess body
22 burdens of mercury such that those fish would be
23 harmful to humans when humans consume the fish.

24 The concentration of mercury in a fish is

1 set at 0.06 milligrams per kilogram as the first
2 threshold of advisory in Illinois, so when we find
3 fish that exceed that body burden, an advisory against
4 the consumption of the fish is placed on that body of
5 water, and that's an extremely low amount.

6 So to -- it can't be minimalized that
7 mercury, if discharged into water, will -- some of it
8 at least will leave that water and enter into fish,
9 and when you get down to the -- some of our
10 conversation today has been in pounds -- pounds per
11 day or whatever of mercury -- and the pounds are
12 extremely low. admittedly, but given this quality of
13 mercury to bioaccumulate, we're talking about as
14 little as 20 to 30 micrograms of mercury being able to
15 contaminate a one-pound fish to the point where we
16 would have to issue an advisory against eating too
17 much of that fi -- fish with that concentration.

18 So again, although the pounds loading of
19 mercury from this effluent seems very low on a daily
20 basis or even a yearly basis, the difference between
21 14.8 nanograms per liter of mercury in the effluent
22 and 12 nanograms per liter of mercury in that effluent
23 means that there would be several thousand fish -- if
24 all of that mercury went from the water into the fish

1 in the Mississippi River, several thousand fish per
2 day would be contaminated such that we'd have to
3 advise people to limit their consumption of those
4 fish. So mercury -- the water quality standard in
5 human health for mercury is fairly unique, but that's
6 the reason for it, and that's why we need to look very
7 carefully at mixing zones for mercury.

8 Q. (By Ms. Medina) Thank you. Are you
9 aware of whether the receiving water for the Wood
10 River refinery was impaired for fish consumption --
11 mercury --

12 A. Yes.

13 Q. -- (inaudible) renewal permit?

14 A. The Mississippi River is listed in our
15 Illinois Integrated Water Quality Report, also known
16 as the 305(b) and 303(d) list. The use impaired is
17 for fish consumption, and mercury is listed as a cause
18 of that use impairment for fish consumption.

19 Q. Thank you. I'd like to turn to
20 Respondent's Exhibit G, which is Record Number 101 --
21 Record Document Number 101, the antidegradation report
22 prepared by Huff and Huff. Do you recall reviewing
23 this document?

24 A. Yes, I did.

1 Q. In what context did you review it?

2 A. In one context, it provided data to do
3 water quality-based effluent limit analysis such as we
4 covered in the memo that I had written and is our
5 Exhibit -- A?

6 Q. A, I think. Uh-huh.

7 A. This document also contains analysis for
8 antidegradation.

9 MS. MEDINA: Okay. I'd move to admit
10 Respondent's Exhibit G.

11 MR. RIESER: No objection.

12 HEARING OFFICER: Exhibit G is admitted.
13 If you have one with an original tag, I'd take that
14 one.

15 Q. (By Ms. Medina) Bob, I'd like you to
16 turn your attention to Pages 69 and 70 of that report.
17 Can you explain your understanding of the analysis
18 that is printed on Page 69?

19 A. Yes. This is an analysis for several
20 metals as to whether at the edge of a zone of initial
21 dilution, the acute water quality standard applicable
22 in the Mississippi River would be met.

23 Q. What was the analysis as to the
24 concentration of mercury at the edge of the zone of

1 initial pollution?

2 A. Well --

3 Q. Let me rephrase that. What comparison is
4 done between the predicted concentration of mercury at
5 the edge of the zone of initial dilution and the acute
6 water quality standard?

7 A. Yes. The acute water quality standard is
8 listed, and that's 0.0026 milligrams per liter, and
9 the predicted concentration of mercury at the edge of
10 a zone of initial dilution is much lower than that
11 concentration, so therefore it's concluded that there
12 is no exceedance of the acute water quality standard
13 for mercury at the edge of the zone of initial
14 dilution.

15 Q. Turning to Page 70 -- could you describe
16 the analysis that takes place for mercury on that
17 page?

18 A. Yes. This is the analysis to predict the
19 concentration of mercury at the edge of the mixing
20 zone and then compare that to the chronic water
21 quality standard for mercury.

22 Q. And what is the conclusion that's made in
23 the report?

24 A. Well, the chronic water quality standard

1 for mercury is 0.0013 milligrams per liter, and the
2 conclusion is that at the edge of the mixing zone,
3 mercury will be much less concentration than that,
4 so --

5 Q. In either Page 69 or 70, does the report
6 provide analysis of the predicted concentrations of
7 mercury against the human health standard?

8 A. No.

9 Q. In your opinion, should an analysis have
10 been done of those predicted concentrations of mercury
11 against the human health standard?

12 A. If someone wanted a mixing zone for the
13 mercury human health standard, yes, I would think that
14 they would want to do some prediction or mass balance
15 analysis of some kind.

16 Q. If we compare the concentrations -- the
17 predicted concentrations at the edge of the zone of
18 initial dilution and at the edge of the mixing zone
19 that are provided in this report against the human
20 health standard, what would -- what is the result of
21 that analysis?

22 A. Well, the problem here is that the
23 upstream concentration of mercury, which must be known
24 in this analysis to know if there's any mixing

1 existing at all for 12 nanograms per liter human
2 health standard -- the mercury values given are not
3 sensitive enough. They -- it already says here that
4 the Mississippi River doesn't meet the 12 nanogram per
5 liter human health water quality standard, so given
6 that, there's nowhere to go with mixing. There's no
7 assimilative capacity if we're to believe the upstream
8 average concentration values given in the table.

9 Q. So if you could turn to Page 43 of the
10 report. Could you describe for me what information is
11 being provided on that page?

12 A Okay. This is some water quality data
13 for mercury in the Mississippi River at Grafton. It's
14 showing that most of the results are below detection,
15 and it's obvious to me that the older mercury
16 laboratory method is being used here because the
17 detection limit is not what it should be, not what
18 U.S. EPA Method 1631 would provide, and there's not a
19 whole lot you can do with data like this. We don't
20 look at mercury data from the old method at Illinois
21 EPA anymore because of this and other problems with
22 it.

23 Q. So is it fair to say that the data for
24 mercury on Page 43 is outdated?

1 A. Yes. It's not only outdated, but it's
2 insufficient for purposes of trying to evaluate
3 whether the human health water quality standard for
4 mercury is being met or not. You just can't tell.

5 Q. So is the assessment valid? Is the
6 assessment of whether mercury -- whether there would
7 be an impact -- excuse me. Let me rephrase. From
8 this antidegradation report, can you determine whether
9 the human health standard for mercury would be met at
10 the edge of the mixing zone?

11 A. No, you can't tell, and the reason you
12 can't tell is you don't really know what the upstream
13 mercury concentration is.

14 Q. So what information would the Agency need
15 now in order to make a mixing zone determination?

16 A. We need monitoring data from the
17 Mississippi River upstream of this outfall using U.S.
18 EPA Method 1631, and we would need enough samples to
19 be taken over time to come up with an average with
20 some statistical meaning. In other words, you would
21 want more than just a few mercury samples to be taken.

22 MS. MEDINA: I'd like to just go back for
23 a moment and determine whether we have all my exhibits
24 thus far admitted. I believe we do, but --

1 HEARING OFFICER: I don't think we
2 have --

3 MS. MEDINA: Anything --

4 HEARING OFFICER: -- G, I, J, and K.

5 MS. MEDINA: Okay. So at this time, I'd
6 like to move to admit Exhibit G.

7 MR. RIESER: No objection.

8 HEARING OFFICER: Exhibit G's admitted.

9 MS. MEDINA: And I'd like to move to
10 admit Exhibit I.

11 MR. RIESER: I'd like to voir dire that,
12 if I may --

13 HEARING OFFICER: Okay.

14 MR. RIESER: -- before I decide whether
15 I've got an objection.

16 HEARING OFFICER: Okay.

17 QUESTIONS BY MR. RIESER:

18 Q. Mr. Mosher, it's correct that Exhibit I
19 is a document that does not appear in the record? Is
20 that correct?

21 A. What's Exhibit I?

22 HEARING OFFICER: Oh.

23 MS. MEDINA: Your demonstrative exhibit
24 for aiding your testimony.

1 A. Oh. To my knowledge, I'm unaware if it's
2 in the record or not.

3 Q. (By Mr. Rieser) Is this a document that
4 you prepared?

5 A. Yes, it is.

6 Q. And when did you prepare it?

7 A. Probably two to four months ago.

8 Q. And the purpose of preparing it was to
9 gather information for the purpose of your testifying
10 here today?

11 A. Yes.

12 Q. Was this information conveyed in any way
13 to ConocoPhillips during the permitting process for
14 either the modified permit or the renewal permit?

15 A. No, it wasn't.

16 MR. RIESER: I'd object, because it's not
17 a part of the record.

18 MS. MEDINA: I'd like to respond to that
19 objection.

20 HEARING OFFICER: Okay.

21 MS. MEDINA: The information that this is
22 based on is all information that is in the record.
23 Similar to some other information we've talked about
24 today, this is simply Bob conducting some math on

1 information that exists in the record.

2 HEARING OFFICER: I'm going to admit
3 Respondent's Exhibit I.

4 MR. RIESER: Thank you.

5 QUESTIONS BY MS. MEDINA:

6 Q. Okay. Bob, I'd like to just turn your
7 attention back to a discussion we didn't quite finish.
8 On the information that you were providing to your
9 colleagues about additional information that you felt
10 would be beneficial in making a decision on best
11 degree of treatment, your -- the Respondent's Exhibit
12 I, your e-mail -- did you receive for review any
13 additional information beyond what was presented
14 during the June 2011 meeting from Phillips 66?

15 A. I believe that's Exhibit F. Am I looking
16 at the right one?

17 Q. Oh, I'm sorry. F. Yes. Excuse me.

18 A. Okay. I did not receive any of the
19 information that I brought up in this memo from
20 Phillips, no.

21 Q. Given the information that you did review
22 and that was provided, did you have an opinion or
23 conclusion as to the economic reasonableness of the
24 granular media filtration technology for treating

1 mercury at the Phillips 66 Wood River facility?

2 A. Having no information to the contrary --
3 in other words, no other information of whether it was
4 affordable or not -- I had no reason to assume
5 anything than this was affordable.

6 Q. And is it your --

7 MR. RIESER: Excuse me. Excuse me. Can
8 I just hear the answer read back?

9 [The requested portion of the transcript
10 was read by the reporter.]

11 MR. RIESER: Thank you.

12 Q. (By Ms. Medina) In comparing the
13 environmental impact of the mercury that exists in the
14 Phillips 66 effluent to the cost of the granular media
15 filtration treatment, do you have an opinion as to
16 whether that treatment is economically reasonable?

17 A. Can you read it back to me?

18 [The pending question was read by the
19 reporter.]

20 A. Well, that's hard for me to answer. I do
21 believe that since almost all of our waters have fish
22 advisories for mercury, that mercury is an important
23 problem and a problem that we need to address, and
24 this is one way we can reduce mercury in our waters.

1 I'm still -- it's still hard for me to make a judgment
2 on affordability when I don't have any facts in front
3 of me or our Agency doesn't have facts in front of
4 them on affordability.

5 Q. So just to be clear, the only information
6 you receive from Phillips 66 concerning the cost of
7 the granular media filtration is what is -- is what
8 was provided in the Powerpoint slides that we've
9 reviewed during your testimony today?

10 A. That's correct.

11 MS. MEDINA: Thank you.

12 HEARING OFFICER: Is --

13 MS. MEDINA: I believe that's it. We've
14 admitted A through I?

15 HEARING OFFICER: Yes. Yes.

16 MS. MEDINA: Okay.

17 MR. RIESER: Can I take a five-minute
18 break before we start up?

19 HEARING OFFICER: Sure. Yes.

20 MR. RIESER: Thank you very much.

21 [A brief recess was taken.]

22 HEARING OFFICER: Okay. We'll go back on
23 the record. Mr. Mosher, you are still under oath. We
24 will begin with Mr. Rieser's cross-exam.

1 QUESTIONS BY MR. RIESER:

2 Q. Mr. Mosher, my name is David Rieser and
3 I'm here representing Phillips 66. You testified that
4 the Agency has a policy of not granting mixing zones
5 with respect to mercury. Is that policy still in
6 effect?

7 A. No.

8 Q. At what point was it not -- was it
9 lifted?

10 A. We at the Agency proposed a general
11 rule-making almost two years ago, and as part of our
12 stakeholder outreach before we filed that rule-making
13 with the Board, we had meetings with stakeholders, and
14 in that rule-making at the time in the draft proposal
15 that we had as a working document, we had propo -- we
16 were going to propose to the Board to explicitly
17 prohibit mixing for bioaccumulative substances, and
18 that followed the policy that my boss had previously
19 given me, so we decided, "Let's do that in a
20 rule-making for -- before the Board."

21 We got comments on that issue of no
22 mixing for bioaccumulative substances, and those
23 comments really in our estimation would have possibly
24 derailed the rule-making, which had other things that

1 we thought were important. We wanted to push that
2 rule-making along and file it with the Board. So we
3 withdrew that part of that rule-making. We never
4 submitted that to the Board, and we stated, "Well,
5 until we are ready to go to the Board with that
6 prohibition, let the Board adopt a regulation that
7 prohibits mixing for bioaccumulative substances." We
8 were going to not have that policy anymore. We would
9 therefore be willing to consider mixing for mercury or
10 other bioaccumulative substances.

11 Q. The policy that you described as being in
12 place and being advised by your management was in
13 place -- when was that policy instituted?

14 A. I believe that came into being when we
15 received the mercury effluent data from ConocoPhillips
16 that indicated that they were not able to meet the 12
17 nanogram per liter human health mercury standard at
18 end of pipe.

19 Q. Did the Agency communi -- I'm sorry --
20 strike that. Let me start over. So that would have
21 been the 2007 results that you had among your
22 exhibits?

23 A. Yes.

24 Q. Was that policy ever communicated to

1 ConocoPhillips?

2 A. Well, yes, I think it was. It appears in
3 my memo.

4 Q. It appears in your --

5 A. My memo that's Exhibit A.

6 Q. So the statement on the bottom of Page
7 Two of Exhibit A -- do you have a copy in front of
8 you?

9 A. Yes.

10 Q. The statement that appears at the bottom
11 of Page Two of Exhibit A that -- quote -- "no mixing
12 zone is granted for mercury" -- unquote -- that's the
13 statement of the Agency policy?

14 A. Yes.

15 Q. Was the -- what was the date the policy
16 was rescinded? Oh, I'm sorry. Excuse me. Was the
17 policy ever communicated to the public?

18 A. I've had conversations with the public --
19 I mean, if you mean in a very broad and general way, I
20 don't believe it was, but certainly I've had
21 conversations when that policy was in effect with
22 different people and relayed that information to them.

23 Q. So the -- kind of obviously the policy
24 wasn't subject to any notice and comment rule (ph)?

1 A. That's correct.

2 Q. At what point -- you testified generally
3 about when the policy was rescinded, but do you have a
4 better -- can you testify to a better date than you
5 have so far?

6 A. That's very difficult. I know that these
7 stakeholder meetings were being held -- let's see. We
8 filed that rule-making in December 2010. Stakeholder
9 meetings were being held sometime during 2010.

10 Q. So would it have been before or after the
11 meeting held at the Agency to which you testified June
12 28th, 2010?

13 MS. MEDINA: Objection. That misstates
14 facts.

15 HEARING OFFICER: Pardon me?

16 MS. MEDINA: The meeting was in 2011.

17 HEARING OFFICER: The meeting with --

18 MR. RIESER: 2011. I'm sorry. You're
19 right. Strike that.

20 Q. (By Mr. Rieser) So it would have been
21 before the meeting in 2011?

22 A. Yes.

23 Q. Thank you. And has the Agency
24 communicated its current policy on this issue to the

1 public?

2 A. Well, certainly everyone at the
3 stakeholder meeting would have been aware of this
4 change, I believe, at least to the fact that we were
5 withdrawing it from the previous draft of our proposed
6 rule-making, but if you're talking about a general
7 announcement of some type, then I don't think it was
8 on our website or anything like that, no.

9 Q. You testified regarding the
10 antidegradation study and testified with respect to
11 the mercury data from the Mississippi River that's on
12 Page 43. Who is responsible for doing the sampling?

13 A. I can give you my best guess at who's
14 responsible for that. I believe this is an Agency
15 water quality monitoring station, so unless it was one
16 of our contractors that did it, Agency personnel would
17 have taken these samples.

18 Q. So this is Illinois Environmental
19 Protection Agency personnel?

20 A. Yes.

21 Q. And as part of your position with the
22 Agency relating to water quality, is that an issue
23 that's under your supervision?

24 A. No.

1 Q. Whose supervision is that under?

2 A. Gregg Good.

3 Q. Do you know whether the samples are
4 continuing to be taken at this particular station?

5 A. I do not know.

6 Q. Do you know whether the methodology for
7 sampling water quality in the Mississippi by the IEPA
8 has been changed?

9 A. If you are asking do we still collect
10 mercury data, the answer is no.

11 Q. You don't collect mercury data?

12 A. Not on a regular basis.

13 Q. Why not?

14 A. Our lab can't do the U.S. EPA Method 1631
15 procedure.

16 Q. There are other certified labs in the
17 state with whom the IEPA could contract; correct?

18 A. There's one that I know of, and we have
19 done that on a limited basis, but it is not part of
20 our ambient water quality monitoring network routine.

21 Q. Tell me your title and job
22 responsibilities again, please.

23 A. I'm the manager of the Water Quality
24 Standards Section, Division of Water Pollution

1 Control, Bureau of Water. My responsibilities are to
2 develop updated water quality standards and present
3 those to the Illinois Pollution Control Board for
4 adoption as Illinois regulations. My other main
5 responsibility is to help with the implementation of
6 those water quality standards and NPDES permits and
7 401 water quality certifications.

8 Q. And your background, if I'm correct, is
9 in zoology? I think that's what you said you had an
10 MS in.

11 A. That's my degree. My background's in
12 aquatic ecology.

13 Q. But you don't have a background in
14 engineering or in the designing of treatment plants;
15 correct?

16 A. That's correct.

17 Q. Is it your job within the permitting
18 process that the IEPA has to provide an opinion
19 regarding the efficacy or appropriate cost of
20 treatment?

21 A. There's a water quality standard titled
22 "Mixing Zones -- Zones of Initial Dilution and Allowed
23 Mixing" or something to that effect where there is a
24 requirement that in order for the Agency to grant

1 mixing, we have to make a determination whether best
2 degree of treatment is being provided, so in that
3 regard, I am part of a team more or less that would
4 look at the economic reasonableness of treatment.

5 Q. And does it also look -- is it also your
6 task within that team to provide opinions regarding
7 whether the cost of treatment is appropriate or the
8 type or extent of treatment is appropriate in
9 achieving the standard that's set in the permit?

10 A. Again, in regard to mixing zones, yes.
11 That's what I have to do. That's why I recommend that
12 people use that U.S. EPA guidance that attempts to get
13 at the affordability or economic reasonableness of
14 treatment.

15 Q. So following up on that guidance -- that
16 guidance is directed at affordability; correct?

17 A. That's my understanding, yes.

18 Q. And is it the Agency's position that
19 affordability is the same thing as economic
20 reasonableness?

21 A. That is my understanding, yes.

22 Q. So with a company like Phillips -- say a
23 large company -- any treatment that the Agency sees
24 fit to require is automatically economically

1 reasonable because they have the ability to afford it?

2 A. I think that's a case-by-case
3 determination, and in the case of Phillips, we've
4 made -- we've granted mixing for several parameters,
5 so we have agreed that they're meeting all those
6 provisions of mixing zones. The one on mercury, we
7 have not.

8 Q. And with respect to those other
9 parameters, is there a document which contain -- with
10 respect to those other parameters, did you evaluate
11 the best degree of treatment for each and every one of
12 those parameters?

13 A. Somebody at the Agency I believe did.
14 Some of those have been in that permit for quite a
15 while. Some were recently added. But in order for us
16 to follow the mixing zone regulation, we must do that.

17 Q. Is there a document within the record
18 that you're -- with which you are familiar which
19 contains a determination by the Agency with respect to
20 the Conoco -- that Phillips is providing the best
21 degree of treatment for each of these other
22 parameters?

23 A. Not that I'm aware of.

24 Q. The determination if there was one with

1 respect to the best degree of treatment for these
2 other parameters would have been based on the
3 antidegradation report prepared by Mr. Huff which was
4 included in your -- as your Exhibit -- or portions of
5 it were included in your Exhibit G; correct?

6 A. I'm not sure I caught that. Could you
7 repeat it?

8 Q. I could. The information which the
9 Agency would have reviewed for making a best degree of
10 treatment was the information that was contained in
11 Jim Huff's August 2008 antidegradation study; correct?

12 A. For which parameter?

13 Q. For all of the parameters.

14 A. Well, since we had granted mixing for
15 some of those parameters long ago, no, I don't think
16 we relied on anything in antide -- the antidegradation
17 document for those.

18 Q. So the Agency's assessment of best degree
19 of treatment doesn't require any review of the current
20 technology available?

21 A. Those parameters have been granted mixing
22 zones in the past. I believe the engineers at our
23 Agency have made the analysis what types of treatment
24 constitute best degree of treatment in different

1 situations. That analysis had never been made for
2 mercury because no one ever asked us for a mixing zone
3 for mercury before.

4 Q. Did you previously impose a limit for
5 mercury in the facility which could not meet that
6 limit at the end of a pipe -- at end of pipe?

7 A. Yes.

8 Q. What facility was that?

9 A. There are several municipal facilities
10 that have limits for mercury, and the decision to put
11 that limit in their permit is based on the reasonable
12 potential analysis that we do based on their effluent
13 quality. There's one other industrial permit that we
14 have a mercury limit established.

15 Q. And in each of those permits, was the
16 information provided by the discharger such that it
17 indicated that the 12 nanogram per liter human health
18 standard couldn't be met at the end of the pipe?

19 A. That's correct.

20 Q. Are these facilities providing treatment?

21 A. Specifically for mercury?

22 Q. Yes.

23 A. I don't know.

24 Q. Is the Agency contemplating any

1 enforcement actions with respect to these facilities
2 if they are not meeting their permit limit and aren't
3 providing treatment for mercury?

4 MS. MEDINA: I would object to that line
5 of questioning. Bob is not part of the Division of
6 Legal Counsel and will not have information as to
7 the --

8 HEARING OFFICER: Let --

9 MR. RIESER: To the extent you know.

10 HEARING OFFICER: You can answer to the
11 extent that you know.

12 A. I'm aware that when dischargers don't
13 meet their permit limits that we do issue violation
14 notices, and I don't know why we wouldn't do that for
15 mercury like we do everything else.

16 Q. (By Mr. Rieser) Let me turn to the
17 impairment issue. The basis for the Agency to make a
18 determination that a stream segment is prepared
19 under -- is impaired under 303(d) is the finding of
20 one fish with mercury greater than -- is it .06
21 milligrams per liter in the industry --

22 A. It's a weight, so it would be 0.06
23 milligrams per kilogram contamination in fish flesh.

24 Q. So once -- so all you need for each

1 treatment segment is one fish; correct?

2 A. I don't know how -- what considerations
3 those folks at the Illinois EPA take to make that
4 decision.

5 Q. And that -- 303(d) is not a part of
6 your --

7 A. I look at the 303(d) list. I read it. I
8 note what things are impaired and what segments of
9 rivers.

10 Q. But you don't know how the IEPA makes a
11 decision as to whether -- as to how streams are
12 determined to be impaired from mercury?

13 A. Not as specifically as you asked that
14 question. I don't know if it's one fish or if it's
15 more than one. I just know that they have a -- that
16 threshold concentration, and that's what gets segments
17 listed food for fish consumption impairment.

18 Q. And so you wouldn't know for the reach of
19 the Mississippi on which this facility is located how
20 that determination was made; correct?

21 A. Correct.

22 Q. There is a fish advisory statewide for
23 consumption of fish with relation to mercury; correct?

24 A. I believe you're right.

1 Q. Do you know whether that's a source in
2 and of itself of impairment? I'm sorry. Do you know
3 if that's a source in and of itself of the Agency
4 determination that a stream segment is impaired?

5 A. I think you're wanting to know are all
6 stream segments in Illinois listed as impaired for
7 fish consumption due to mercury because of the
8 statewide advisory.

9 Q. That's a fair way to ask that.

10 A. And I don't know if that -- that that
11 would be true or not, sir.

12 Q. The human health standard for mercury of
13 12 nanograms per liter -- that was adopted by the
14 Board in the mid-1990s; is that correct?

15 A. That's correct.

16 Q. And at the -- at one of the hearings at
17 which that was considered, you actually testified in
18 support of the Agency's decision on that; correct?

19 A. I'm sure I did.

20 Q. And that testimon -- in that testimony,
21 you state the basis for the 12 nanogram per liter
22 standard was to take account of the possibility of
23 fish consumption?

24 A. Yes. I mean, the -- it is a human health

1 standard, and we're protecting fish from accumulating
2 high concentrations that would harm human health.

3 Q. So if the 12 nanogram per liter water
4 quality standard is met, then that is sufficiently
5 protective of human health; correct?

6 A. If that value for the standard is
7 actually doing what was thought to be necessary at
8 that time, yes. If all our water's in that 12
9 nanograms per liter, then we wouldn't have any undue
10 body burden in fish for mercury.

11 Q. I'm not -- could you explain the first
12 part of that answer? If it -- what I heard was if it
13 was doing what it was supposed to do, and I'm not sure
14 I understand what you're saying.

15 A. Well, that was almost 20 years ago, and
16 I'm not so convinced that 12 is the right value any
17 longer, given what we've learned in the intervening
18 years. But at the time, yes, it was thought if you
19 maintain that concentration of 12 nanograms per liter
20 in the rivers, then the fish won't bioaccumulate too
21 much mercury.

22 Q. But the Agency hasn't proposed to the
23 Pollution Control Board that that number should be
24 modified; correct?

1 A. No.

2 Q. And in fact, when the Agency proposed to
3 include in refinery regulations its own internal and
4 unannounced policy that mixing zones shouldn't be
5 granted for mercury based on the response it got from
6 the stakeholders with whom it shared that information,
7 it decided not to do that at that time; correct?
8 There's a lot there. Let me rephrase that.

9 MS. MEDINA: I'm going to object. This
10 is asked and answered.

11 MR. RIESER: Fair enough.

12 Q. (By Mr. Rieser) The Agen -- you
13 testified that the Agency proposed to its water
14 quality stakeholders that it adopt its policy of no
15 mixing zones for mercury, but decided -- this response
16 to the reaction from the stakeholders -- that it
17 wouldn't proceed with that proposal?

18 A. Correct.

19 Q. And that proposal is what's now before
20 the Board as the most recent triennial water quality
21 review; correct?

22 A. Correct.

23 Q. So there's no direct correlation between
24 the impaired -- impairment determination under 303(d)

1 and whether or not the water quality standard -- human
2 health water quality standard is achieved; correct?

3 A. That's correct.

4 Q. Excuse me just a minute. With respect to
5 the discussion on water quality sampling in the
6 Mississippi, were any of these concerns conveyed to
7 ConocoPhillips during any of the discussions regarding
8 either permit?

9 A. I don't believe they were for mercury.

10 Q. The two thousand and -- the draft
11 permit -- draft modified permit, as we're calling
12 it -- was issued in 2005; correct? It went out for
13 public notice around then?

14 A. Correct.

15 Q. And the draft permit didn't -- did not
16 contain any limit on mercury; right?

17 MS. MEDINA: I would object to that.
18 That misstates facts.

19 HEARING OFFICER: Pardon me?

20 MS. MEDINA: That misstates facts.

21 HEARING OFFICER: It misstates facts?

22 MR. RIESER: Then you can say I'm wrong.

23 MS. MEDINA: Are you aware of the actual
24 date --

1 A. No.

2 MS. MEDINA: -- the draft -- on that
3 issue -- that --

4 HEARING OFFICER: Does that answer your
5 question?

6 MR. RIESER: I think we're a question
7 behind. Let me start over --

8 HEARING OFFICER: Okay.

9 MR. RIESER: -- just so the record's
10 clear.

11 Q. (By Mr. Rieser) Would you agree that the
12 draft modified permit went out for public notice in
13 2005?

14 A. That's the permit we went to hearing on?

15 Q. Yes.

16 A. I don't believe there was anything
17 limiting mercury in that permit, no.

18 Q. What was the basis for requesting mercury
19 data from ConocoPhillips to which you testified in
20 2007?

21 A. I'm not sure, but I think there were some
22 questions about mercury at that hearing, if I'm not
23 mistaken, but that's -- my memory on that's a little
24 rough, so --

1 Q. Was there any additional data available
2 that the Agency received after that hearing which
3 suggested that there were water quality issues with
4 mercury as a result of the Phillips discharge?

5 A. We came out of that hearing with some
6 reasons to ask what the concentration of mercury was
7 in the effluent, and I believe we conveyed the need
8 for data to Phillips.

9 Q. You were asked questions regarding the
10 presentation that ConocoPhillips made to the Agency in
11 June of 2011 that's shown in -- presented as exhibits
12 several Powerpoints?

13 A. Yes.

14 Q. Yes. And I think you testified it was on
15 the basis of the information provided at those
16 meetings, which included these Powerpoints, that you
17 believed that ConocoPhillips -- Phillips could use the
18 technology to achieve the standard. Correct?

19 A. Correct.

20 Q. Those -- what basis did you have for
21 discounting the concerns expressed in those slides
22 regarding whether that treatment could be achieved on
23 a consistent basis?

24 A. My -- the extent of my review of that was

1 to see that very low levels of mercury were being
2 produced by that process. I'm not an engineer. I
3 didn't take it any farther than that. I didn't
4 investigate consistency or anything.

5 MR. RIESER: Thank you. That's it.

6 HEARING OFFICER: Do you have anything
7 further, Ms. Medina?

8 MS. MEDINA: I have a few questions.

9 QUESTIONS BY MS. MEDINA:

10 Q. Going back to the antidegradation
11 report -- August 2008 report by Huff and Huff that we
12 discussed during your testimony. You talked about the
13 mercury background concentration data as being data
14 collected by the Agency. That data is now outdated;
15 correct?

16 A. Correct.

17 Q. Was that data outdated at the time of the
18 issuance of the renewal permit in 2011?

19 A. That data became outdated as soon as the
20 Agency adopted a human health mercury standard of 12
21 nanograms per liter. It no longer suited our needs
22 because it has an inadequate detection level. It
23 doesn't help us -- doesn't tell us whether we're going
24 to meet that 12 nanogram per liter standard in the

1 river.

2 Q. If the information was outdated, what
3 information -- if the information on mercury on
4 background concentrations was outdated, what
5 information -- alternative information could Phillips
6 66 have used in conducting their antidegradation
7 assessment?

8 A. They could have gone to the river,
9 collected samples, had them analyzed using U.S. EPA
10 Method 1631.

11 Q. Is the impairment for fish consumption of
12 mercury nevertheless a factor in granting -- in
13 determining whether a mixing zone could be granted?

14 A. Yes, I believe that's something else we'd
15 have to look at, because in the sense that we know the
16 fish are contaminated with mercury -- you asked the
17 question, "Is there assimilative capacity in the river
18 to accept mercury and dilute it?" And I think that's
19 one of the tough questions in this -- I can see how
20 some could argue that you shouldn't have a mixing zone
21 for mercury if fish are contaminated with mercury.

22 Q. Do you believe additional information
23 from Phillips 66 would have helped make the mixing
24 zone determination and conduct the best degree of

1 treatment analysis for the renewal permit?

2 A. Well, I think we've covered three
3 problems or issues with granting a mixing zone for
4 mercury. One is the one we just talked about. The
5 fish are contaminated. Is there assimilative capacity
6 in the river to allow mixing for mercury? That's
7 Number One.

8 Number Two, in order to grant a mixing
9 zone, we have to know what the concentration of
10 mercury is in the river upstream of the discharge.
11 That's a basic component of the mass balance equation
12 that is always done to know if we are able to grant
13 mixing.

14 Number Three, we have to answer the
15 question, "Has the applicant provided best degree of
16 treatment according to the mixing zone water quality
17 standard?" So those three issues exist. Any one of
18 them could be a -- constitute a prohibition against a
19 mixing zone for mercury.

20 MS. MEDINA: Thank you. That's all I
21 have.

22 QUESTIONS BY MR. RIESER:

23 Q. Excuse me. You testified that the water
24 quality data from the Mississippi was outdated as soon

1 as -- I think you said the Agency -- that obviously,
2 it was the Board -- adopted the human health standard;
3 correct?

4 A. Yes.

5 Q. So subject to your checking, that was in
6 May 16th, nine -- it was on May 16th, 1996 --
7 Proceeding 94-1A. Does that sound about right?

8 A. Sounds right.

9 Q. So despite your belief that the
10 information was outdated, the Agency continued to
11 sample using the -- what you considered to be an
12 outdated methodology for at least 10 more years;
13 correct?

14 A. That sounds about right.

15 Q. And what efforts did you make to get that
16 sampling methodology changed?

17 A. I went to those involved with the
18 sampling program and the laboratory program and
19 explained many times that what we were doing no longer
20 made sense; there's other problems with the method
21 that was being used besides its inadequate detection
22 limit.

23 For I think reasons of funding, we -- the
24 Agency wasn't able to take my advice. We eventual --

1 probably not just myself, but it -- the realization of
2 it eventually came that -- myself and others
3 persuading that, "We're wasting our money doing the
4 old method, so let's not do anything at all." So
5 again, I'll stand by that. It's -- that method wasn't
6 giving any useful information, and I would have liked
7 to have seen it stopped before it was actually
8 stopped.

9 Q. So the response to the outdated
10 methodology was to actually cease doing any further
11 water quality sampling in the Mississippi River?

12 A. That's correct.

13 Q. Is that statewide, or is that just the
14 Mississippi?

15 A. Statewide.

16 Q. There were three items that you
17 identified as being additional information that would
18 have made a difference in the mixing zone decision.
19 I'm assuming this is for the renewal permit of 2011,
20 not the 2009 one. And one was the assimilative
21 capacity of the river, and the second was to --
22 needing to know the upstream mercury concentration.
23 Were either of these two compo -- these two questions
24 conveyed to Phillips?

1 A. I don't believe we conveyed the concept
2 of the contaminated fish precluding a mercury mixing
3 zone, but Mr. Huff has done mixing calculations, as
4 you've pointed out, for a long time, and I believe he
5 knows that you need to know what the upstream
6 concentration is of the substance you want to have
7 mixing. I don't think that's any revelation that he
8 didn't already know.

9 Q. The Agency commented several times on Mr.
10 Huff's antidegradation study and several different
11 revisions were submitted to the Agency; correct?

12 A. I believe so.

13 Q. In any of those comments for which a
14 revision was submitted, was this issue of needing to
15 know the upstream mercury concentration identified?

16 A. I can't recall.

17 MR. RIESER: Okay. That's what I've got.
18 Thank you.

19 HEARING OFFICER: Ms. Medina, anything
20 further?

21 MS. MEDINA: Yes, just one question.

22 QUESTIONS BY MS. MEDINA:

23 Q. In your opinion, has Phillips 66
24 demonstrated that they can meet the human health

1 standard at the edge of the mixing zone?

2 A. No. As I said, to be able to do that,
3 you need to know what the upstream concentration is in
4 the river.

5 MS. MEDINA: Thank you.

6 MR. RIESER: Nothing further.

7 HEARING OFFICER: Okay. Thank you, Mr.
8 Mosher. You may call your next --

9 MS. MEDINA: Can we have five?

10 HEARING OFFICER: Oh, you want to take
11 five minutes?

12 MS. MEDINA: Five-minute bathroom break?

13 HEARING OFFICER: Sure.

14 [A brief recess was taken.]

15 HEARING OFFICER: Okay. We'll go back on
16 the record. The Agency may call its next witness.

17 MS. MEDINA: I would like to call Jaime
18 Rabins.

19 HEARING OFFICER: Okay. The court
20 reporter will swear you in.

21 [Mr. Rabins duly sworn by the
22 court reporter.]

23 QUESTIONS BY MS. MEDINA:

24 Q. Hi, Jaime. Could you state your name for

1 the record, please?

2 A. Jaime Rabins.

3 Q. And could --

4 THE REPORTER: Could you spell that for
5 me?

6 A. It's J-A-I-M-E, R-A-B-I-N-S.

7 THE REPORTER: Thanks.

8 Q. (By Mr. Rieser) Could you tell us about
9 your education?

10 A. I have a Bachelor's of Science in
11 electrical engineering from Southern Illinois
12 University and a Master's in Business Administration
13 from the University of Illinois.

14 Q. Could you tell us what your position is
15 at the Illinois EPA?

16 A. I am an environmental protection engineer,
17 Level Three.

18 Q. Do you have any professional
19 registrations or certifications?

20 A. Yes. I'm a registered professional
21 engineer in the State of Illinois.

22 Q. And you're familiar with the Phillips 66
23 NPDES permit which was issued in December of 2011
24 which is the subject of this appeal hearing?

1 A. Yes.

2 Q. And you're also familiar with the permit
3 issued -- the NPDES permit issued in February 2009 --

4 A. Yes.

5 Q. -- to the same facility? To your
6 knowledge, was the modified permit, the one issued in
7 2009, the first time a mercury limit was included in
8 the NPDES permit for this facility?

9 A. To my knowledge, yes.

10 Q. Were you involved in the Agency's
11 decision to include a mass limit for mercury in
12 this -- in the modified permit?

13 A. Yes.

14 Q. How so?

15 A. I computed the mass limit for the
16 discharge.

17 Q. I'd like to show you what's been marked
18 as Respondent's Exhibit J. Do you recognize this
19 document?

20 A. Yes.

21 Q. And can you describe what it is?

22 A. They're my 30-day review notes for the
23 modified permit.

24 MS. MEDINA: Move to admit Respondent's

1 Exhibit J.

2 MR. RIESER: No objection.

3 HEARING OFFICER: Exhibit J is admitted.

4 MR. RIESER: No objection.

5 Q. (By Ms. Medina) Can you explain how you
6 calculated the mass limit for mercury? And feel free
7 to refer to the document I've just provided you if you
8 need that to refresh your recollection.

9 A. We obtained data from ConocoPhillips
10 indicating that the concentration of mercury in their
11 effluent was 12.5 nanograms per liter. We then
12 converted that to a mass by multiplying it by the flow
13 times the conversion factor.

14 Q. And where did you obtain the flow figures
15 from? Let me rephrase. Do you recall where you
16 received the flow figures from?

17 A. It should have been the permitted flow at
18 the -- the permitted flow prior to the CORE project,
19 the DAF, so what would be the permitted flow.

20 Q. Can you explain why a mass limit was
21 needed?

22 A. There's a few reasons. Federal
23 regulations require that mass -- that all pollutants
24 be limited in mass, with a few exceptions for pH and

1 others that don't -- that can't be converted to a
2 mass. State regulations also require that. A third
3 reason was ConocoPhillips agreed to maintain existing
4 levels -- existing discharge levels for all pollutants
5 prior to the CORE expansion in exchange for not having
6 reduced VOD and TSS limits, so by putting -- by using
7 a maximum that we could hold them to those existing
8 levels -- because a concentration limit is not going
9 to limit the pollution; it only limits the mass per
10 volume.

11 Q. So determine -- so in order to determine
12 what their existing levels of mercury were in their
13 effluent, you used the average concentration provided
14 to you by Phillips 66?

15 A. It was their data. Correct.

16 Q. Were you involved in the Agency's -- I'm
17 sorry. Let me back up.

18 MS. MEDINA: Did -- we already moved to
19 admit this J; right?

20 HEARING OFFICER: Yes.

21 MS. MEDINA: Okay.

22 Q. (By Ms. Medina) Moving on to the renewal
23 permit -- were you involved in the Agency's decision
24 to limit mercury in the renewal permit?

1 A. Yes.

2 Q. I'd like to point your attention to
3 Respondent's Exhibit B, which has already been
4 admitted. It's an e-mail with an attached memo.
5 Could you explain what this is and tell me if you
6 recognize it?

7 A. I do recognize it. It is a e-mail from
8 Deborah Williams at the Agency to me and several other
9 employees.

10 Q. Do you recall the substance of the memo?

11 A. Yes. It's her review of the permit and
12 providing suggestions of issues before we were to
13 finalize the permit.

14 Q. If I could just point your attention to
15 the third page of this document, the paragraph
16 entitled "Best Degree of Treatment Factors." Could
17 you review that paragraph there and tell me if you
18 recall reviewing it at the time you received this memo
19 and if you agree with what's stated there?

20 A. Yes, I recall reviewing it, and yes, I
21 agreed with what was stated.

22 Q. So what assessment was needed before the
23 Agency could grant or deny a mixing zone?

24 A. The Agency needed to determine if the

1 best degree of treatment was being applied.

2 Q. I'd like to turn your attention to
3 Respondent's Exhibit E, which has already been
4 admitted. Do you recognize this document?

5 A. Yes.

6 Q. Could you describe what it is?

7 A. On the cover is a attendance sheet for a
8 meeting held on June 29th, 2011, between Phillips 66
9 representatives and the Agency.

10 Q. Did you attend that meeting?

11 A. Yes.

12 Q. Did you review the Powerpoint information
13 that was provided at that meeting that is part of this
14 exhibit?

15 A. Yes.

16 Q. Did you request any additional
17 information from the company at the time of that
18 meeting to help you in your assessment of whether the
19 tech -- proposed technology was the best degree of
20 treatment?

21 A. I don't recall personally asking, but I
22 recall hearing at the meeting that we asked them for a
23 affordability analysis so that we could determine if
24 the best degree of treatment was applied, and

1 ConocoPhillips responded that they have sufficient
2 material in the record. They weren't going to give us
3 anything more.

4 Q. Can you summarize what information you
5 received to review and make a determination as to
6 whether the treatment technology was best degree of
7 treatment?

8 A. We received pilot testing data that
9 showed that granular media filtration technology would
10 achieve the -- would allow the discharge to meet the
11 12 nanogram per liter limit, and we received the
12 minimal cost data just showing the overall project
13 cost of \$9.4 to \$14.1 million.

14 Q. At any time between the June 29th, 2011,
15 meeting, and the time the permit was issued in
16 December of 2011, did you receive any additional
17 information from Phillips 66 regarding the cost of the
18 granular media filtration technology?

19 A. No.

20 Q. Did you receive any detailed line item
21 proposals for implementing such a technology at the
22 Wood River facility?

23 A. No.

24 Q. Did you ever receive any sort of

1 breakdown as to what the \$9 to \$14 million would
2 include?

3 A. No.

4 Q. I'd like to turn your attention to
5 Respondent's Exhibit K. Can you describe what this
6 is?

7 A. These are my 30-day review notes for the
8 reissue permit.

9 Q. These are notes that you prepared?

10 A. Correct.

11 MS. MEDINA: I'd like to admit this
12 document as Respondent's Exhibit K.

13 HEARING OFFICER: Exhibit K is admitted.

14 Q. (By Ms. Medina) Turning your attention
15 to Pages Two and Three, approximately. Can you
16 please, using this to refresh your memory if
17 necessary, summarize how you concluded that the
18 granular media filtration would be best degree of
19 treatment? Let me rephrase that. I'm sorry. Can you
20 please summarize the results of your best degree of
21 treatment analysis?

22 A. Yes. I note that Section 304.102
23 requires that discharger provide the best degree of
24 treatment of wastewater consistent with technological

1 feasibility, economic reasonableness, and sound
2 engineering judgment.

3 I noted that the discharger studied
4 mercury in the wastewater and concluded that it was
5 bound in solids, that they proposed by removing the
6 solids from the wastewater, mercury concentrations
7 could be reduced to comply with the water quality
8 standards, that they pilot-tested two technologies,
9 granular media filtration and cloth drum filtration,
10 and that in the April 29th, twenty -- 2011 letter to
11 Sanjay, David Reiser at McGuireWoods states that, "To
12 date, one technology, GMF, has produced mercury
13 results that are below the proposed permit limits.
14 GMF has averaged in the two to three nanogram per
15 liter range." Thus the discharger acknowledges that
16 compliance with the mercury water quality standard is
17 technologically feasible.

18 I then go on to note that ConocoPhillips
19 claims that it's not economically reasonable due to
20 its high capital cost of \$9.4 to \$14.1 million and
21 annual operation and maintenance costs of \$380,000,
22 and was able to determine on -- as of September 6th,
23 2011, at 12:22 PM Eastern Time, ConocoPhillips had a
24 market capitalization of \$89.43 billion, and they

1 reported on a Form 10-Q on August 21st, 2011, that net
2 income attributable to ConocoPhillips was
3 \$6,430,000,000 for the six months ended June 30th,
4 twenty -- June 30th, 2011.

5 I noted that an interim economic guidance
6 for water quality standards for evaluation is
7 necessary. I noted that they should have explored
8 less-expensive treatment options based on the findings
9 that the \$14.1 million treatment will allow
10 compliance. This option treats the entire effluent,
11 removing mercury from 14.8 nanograms per liter to 12
12 nanograms per liter -- is all that is necessary. For
13 example, what would be the cost of a system that only
14 filtered one half the effluent? They should perform
15 interim economic guidance for water quality standards
16 affordability evaluation on any less-expensive partial
17 filtration options they identify.

18 ConocoPhillips should support -- should
19 provide support for their assertion that putting
20 filtered effluent into the current lagoon system would
21 possibly lead to acquisition of mercury into the final
22 effluent before discharge. They must justify why it
23 is necessary to bore through the levee to accommodate
24 the filtered effluent discharge pipe, not simply

1 discharge filtered effluent into the lagoons.

2 I noted we asked him for that
3 affordability analysis on June 29, 2011, in a meeting,
4 and again, they maintained that the documents
5 submitted thus far adequately demonstrate that it is
6 economically unreasonable to comply with the mercury
7 limits.

8 Based on what we had since the dischar --
9 since Conoc -- or Phillips 66 shown that they have a
10 technology that demonstrates that achieving a mercury
11 water quality standard is technologically feasible and
12 the discharger has not submitted an affordability
13 analysis in accordance with the interim economic
14 guidance for water quality standards demonstrating
15 that complying with the mercury limits is economically
16 unreasonable, that the Agency concludes that the
17 discharger is not providing the best degree of
18 treatment of wastewater consistent with technological
19 feasibility, economic reasonableness, and sound
20 engineering judgment, and that the discharger is not
21 eligible for allowed mixing for mercury, and mercury
22 will remain limited in the permit at the water quality
23 standard.

24 Q. Did Phillips 66 ever provide you with

1 detailed sampling data and analysis to show whether a
2 waste stream could be segregated at the facility?

3 A. No.

4 Q. So you're not aware of -- you were not
5 able to complete an analysis as to whether a lesser
6 treatment option would be available due to such
7 sampling?

8 A. Correct.

9 Q. Did Phillips 66 ever provide any
10 estimation of how much mercury might increase in the
11 effluent as a result of their poor refinery expansion?

12 A. No.

13 Q. Is there any other information that would
14 have proved helpful in making the best degree of
15 treatment analysis, in your opinion?

16 A. Yes. We needed additional information to
17 determine if it was economically reasonable, and that
18 information could have been provided by submitting an
19 affordability analysis in accordance with the interim
20 economic guidance for water quality standards. It's
21 EPA 823 B 95002.

22 Q. Would additional cost data -- would
23 additional detailed cost data as to the system they
24 were proposing be also -- be helpful to you as well?

1 A. Yes.

2 MS. MEDINA: That's all I have.

3 QUESTIONS BY MR. RIESER:

4 Q. Mr. Rabins, my name is David Rieser from
5 the law firm of Much Shelist. I'm going to ask you
6 some questions about your testimony. First of all, is
7 the purpose of the 30-day notice review note that
8 we've got here as Respondent's Exhibit K -- that this
9 is intended to include all of the comments that the
10 Agency has -- I'm sorry. Let me start over. Is the
11 30-day notice review note intended to serve as
12 something of a responsiveness summary for the Agency
13 to provide all the information they have in responding
14 to the comments that have been raised by others with
15 respect to a -- permit?

16 A. Can you rephrase?

17 Q. I will. What's the purpose of a 30-day
18 notice review note?

19 A. They are to provide comments prior to
20 final issuance of the permit, so we're going to go
21 over issues raised during public notice and consider
22 them before -- what our consideration was prior to
23 issuing the permit.

24 Q. And so it's important in doing that that

1 you put all of the issues raised and all of the
2 Agency's bases for making its decisions within this
3 30-day notice review note; correct?

4 A. I can only put in there as to what I
5 know. I can't put in there as to what other people at
6 the Agency might consider.

7 Q. So this is -- this document, Exhibit K,
8 is personal to the information that you have and the
9 issues that you are raising with respect to a permit;
10 is that correct?

11 A. Correct.

12 Q. In discussing the mass limit, you stated
13 that the information came from -- you stated that the
14 information came from the -- this is in Exhibit J?
15 Yes. That this was based on the information provided
16 by Phillips; correct?

17 A. Correct.

18 Q. So turning to Page Four of Five, you have
19 the formula you use for deriving a load limit for
20 mercury; correct?

21 A. Correct.

22 Q. What was the basis for the use of the
23 7.49 MGD number for flow?

24 A. It is my understanding that that was the

1 permitted flow prior to the CORE expansion.

2 Q. And when you say that the numbers were
3 provided for mercury -- in terms of mercury values in
4 the effluent -- you were provided with I think 14
5 separate values reflecting samples taken at different
6 times; correct?

7 A. Sounds reasonable, but I don't have it in
8 front of me.

9 Q. So you don't know exactly 14, but you
10 were provided with samples taken at different times;
11 is that correct?

12 A. Yes.

13 Q. And you have -- you did the math to
14 average those samples to the 12.5 nanograms per liter
15 value that you used in this equation?

16 A. I don't believe that I did.

17 Q. Do you know where that came from?

18 A. I believe that was from the water
19 quality-based effluent limit analysis memo.

20 Q. Did you -- were you aware that Phillips
21 had raised the issue of the use of the technical
22 support document with respect to averaging those
23 values?

24 A. Can you clarify?

1 Q. Were you aware that Phillips argued that
2 a statistical evaluation needed to be applied to the
3 sampling values that it provided to the Agency to --
4 rather than an average?

5 A. Yes.

6 Q. And in the water quality-based effluent
7 limit that you just referenced, that's actually done?
8 If you look at Respondent's Exhibit A, there's a 95
9 potential -- 95 potential number?

10 A. I don't have Respondent's Exhibit A in
11 front of me.

12 Q. I'm showing you what's been marked as
13 Respondent's Exhibit A.

14 A. Okay.

15 Q. In the column that's headed "95 percent,"
16 does that represent a statistical evaluation of the
17 value supplied by the discharger that went into making
18 the anal -- this assessment?

19 A. I'm not sure of your question.

20 Q. Okay. What does the 95 percent column
21 represent, in your mind?

22 A. It doesn't represent anything. I don't
23 do the -- this is a memo from Bob Mosher to me.

24 Q. So you don't know what the 95 percent

1 means?

2 A. No, I'm not certain what it means.

3 Q. Were you involved in the discussion to
4 evaluate Phillips' argument that a statistical factor
5 needed to be applied to the mercury values it supplied
6 rather than averaging them?

7 A. Yes.

8 Q. What was the basis for rejecting that
9 argument?

10 A. Honestly, I don't recall.

11 Q. Do you know whether the basis for
12 rejecting that argument is in the record that the
13 Agency filed in this proceeding?

14 A. No, I don't have knowledge if it's in the
15 record.

16 Q. Is that a decision that you would have
17 been charged with making rather than Bob Mosher?

18 A. It's not a question of normal because
19 it's an abnormal situation, so I can't say that this
20 would be typically done that way.

21 Q. Does Bob Mosher -- strike that. What is
22 abnormal about the situation with respect to the
23 calculation of the mass loading limit?

24 A. We normally don't compute a mass limit

1 based on what the average concentration is in a
2 discharge of effluent. We would base it on a standard
3 in the rules, so instead of basing it on 12.5, we
4 would normally base it on 12.

5 Q. Why was the decision made here to base it
6 on 12.5?

7 A. To establish what the load of mercury was
8 prior to the CORE expansion. ConocoPhillips agreed to
9 maintain existing levels for all pollutants.

10 Q. So that 12.5 number is intended to
11 represent the amount of mercury being discharged by
12 ConocoPhillips on a constant basis; is that correct?

13 A. No, that's not correct. It's to
14 represent the concentration discharged by Conoco prior
15 to the expansion.

16 Q. Thank you. Given a small set of -- I'm
17 sorry. Strike that. Given a 14 -- given 14 sampling
18 events, is it the Agency's practice to average that
19 number to arrive at a determination of the load value
20 rather than apply a statistical assessment to those 14
21 values?

22 A. As I said, since this is an atypical
23 approach, I'm not aware of what is the typical Agency
24 policy regarding that.

1 Q. Is it your belief that the 12.5 number
2 used for calculating the loading was representative of
3 the concentration of mercury from ConocoPhillips -- in
4 Phillips' discharge?

5 A. At the time they were submitted?

6 Q. At any time.

7 A. If you took 14 samples within a
8 reasonable amount of time, yes, I believe that would
9 represent the concentration discharge.

10 Q. That the average of those samples would
11 represent the concentration discharge?

12 A. It would represent the average of the
13 mercury discharged.

14 Q. Would it be representative of the amount
15 of mercury in that discharge?

16 A. No. Concentration is not equal to
17 amount.

18 Q. It was your testimony that Phillips
19 agreed to maintain the existing limits for all
20 constituents; is that correct?

21 A. That is correct.

22 Q. And is that -- how are you aware of that
23 agreement?

24 A. I was informed by my supervisors

1 initially.

2 Q. And after they informed you, did you
3 become aware from seeing a document or discussion at a
4 later point?

5 A. I do not recall if there's a document out
6 there.

7 Q. You don't recall?

8 A. I don't recall.

9 Q. Was this an issue that was addressed --
10 is it your understanding that this issue was addressed
11 in the August 2008 Huff antidegradation report?

12 A. What issue?

13 Q. The issue of the agreement regarding the
14 existing limits for constituents.

15 A. I don't recall if he did address any
16 agreement in the antidegradation report -- if that is
17 referenced or not.

18 Q. So your knowledge as to an agreement
19 regarding the Con -- Phillips' agreement to maintain
20 existing limits for all constituents -- the basis for
21 that statement is what you were told by your
22 supervisors; is that correct?

23 A. Correct.

24 Q. And you have no other knowledge of that

1 agreement other than what you were told; is that
2 correct?

3 A. That is correct.

4 Q. Ms. Medina asked a series of questions
5 about other information that Con -- that Phillips
6 could have provided but didn't, including cost data,
7 additional information regarding cost, detailed line
8 items proposals, a breakdown of costs that made up the
9 \$9 million to \$14 million. Do you remember those
10 questions?

11 A. Yes.

12 Q. Did you ask for any of that information?

13 A. We asked for the economic analysis and
14 told that the record was complete.

15 Q. But did you ask for the specific
16 information that she asked you about?

17 A. I didn't ask them item by item, no.
18 Personally did not ask them.

19 Q. Other than the affordability assessment,
20 do you know whether ConocoPhillips was asked for any
21 other information after the June 2011 meeting?

22 A. We asked them on numerous occasions where
23 they were upon start-up -- what units were operating
24 and what were not. They refused each and every time

1 to inform us. We wanted to know what units were
2 operating so we could look at the wastewater data and
3 compare that, but they wouldn't provide it.

4 Q. Did that -- did those questions relate in
5 any way to the best deter -- EDT (ph) determination
6 for mercury?

7 A. Yes, they can attest to whether the
8 technology is currently in place or whether they need
9 additional treatment options.

10 Q. I'm sorry. I don't understand what you
11 mean, "whether the technology is currently in place."

12 A. Well, if everything's up and running and
13 your mercury's lower, you may not need to install any
14 additional technology, but if you don't know it's
15 operating, you don't know if more mercury will be
16 discharged -- maybe it will need more treatment or
17 less treatment.

18 Q. Was it your ex -- the equipment that
19 you're talking about is additional refinery process
20 equipment that was part of the CORE project? Is that
21 what you're talking about?

22 A. Wastewater equipment, or when I asked
23 them if --

24 Q. When you -- I'm sorry. When you said

1 that you asked for information regarding whether
2 technology was up and running, what technology are you
3 referring to?

4 A. We asked were they -- were all the
5 process units running? Were they receiving Canadian
6 crude?

7 Q. Was it your expectation that as more
8 process units came online, that there would be less
9 mercury?

10 A. No, that's not an expectation.

11 Q. So in what way does that information tie
12 into the determination of best degree of treatment for
13 mercury?

14 A. Because in order to assess the
15 technology, you have to have a reasonable expectation
16 of what the pollutant loading is going to be.

17 Q. Were those requests documented at all?

18 A. I documented them in my 30-day review
19 notes.

20 Q. Can you point in your 30-day review notes
21 to where that's documented? That's Exhibit K.

22 A. Let me see. I only note in my notes that
23 we asked them for the affordability analysis at the
24 meeting. It's on Page Three, the third paragraph.

1 Q. And there's nothing in there about
2 requesting information regarding when other technology
3 came online; correct?

4 A. There's no notes, but several of the
5 people that were present at the meetings are present
6 here.

7 Q. Did you make an independent -- I'm sorry.
8 You were present at the June 29th, 2011, meeting at
9 which the technology -- the mercury treatment
10 technology was discussed; correct?

11 A. Correct.

12 Q. And it would have been your job at the
13 Agency to review the technical information that was
14 presented at that meeting that you've included in your
15 exhibits here; correct?

16 A. I would have been part of a group to
17 review it, yes.

18 Q. What basis did you, or to the extent that
19 you know, the group have to discount the concerns and
20 risk factors identified by Phillips with respect to
21 the ability to continue to meet the mercury standard
22 consistently with this technology?

23 A. We didn't discount any concerns. We
24 considered every concern, and they provided a

1 treatment system which met the mercury standard. They
2 submitted data to show the GMF would meet the mercury
3 standard.

4 Q. And that was for a pilot test; correct?

5 A. Correct.

6 Q. And within the information presented --
7 and I'm looking at Exhibit E. Did you have -- do you
8 have that in front of you? Respondent's Exhibit E.

9 A. Yes.

10 Q. On the second page, which is the first
11 Powerpoint slide, it says -- describes the many
12 project uncertainties. Do you see that?

13 A. Yes, I see that.

14 Q. What basis did you have for determining
15 that these uncertainties were invalid?

16 A. I don't recall ever making a
17 determination that they were invalid.

18 Q. What basis did you have to determine that
19 this pilot test meant that the facility would
20 consistently meet the mercury limit when put in full
21 production over time?

22 A. If the pilot test showed they could meet
23 it, then that's what the data shows. If it's not --
24 if it's not in a -- if it's not built to full scale,

1 then it won't be known until it is built, but they did
2 do a pilot test, and that showed that they could meet
3 the limit.

4 Q. You were here today to hear Jeff Allen's
5 testimony this morning?

6 A. Yes, I heard his testimony this morning.

7 Q. And you heard his discussion of the
8 uncertainty with respect to whether the mercury in a
9 soluble state would increase or change over time?

10 A. Yes, I heard that.

11 Q. Is it your engineering judgment that that
12 discussion is incorrect and invalid?

13 A. I haven't had enough time and -- to
14 research that specific topic.

15 Q. Did you research that topic at the time
16 of the June 29th meeting?

17 A. Not at the meeting, no.

18 Q. Did you research it after the meeting
19 before the permit was issued?

20 A. Not that I can recall.

21 Q. Did you make an independent judgment that
22 the proposed mercury treatment system did not provide
23 the best degree of treatment?

24 A. No, I did not make an independent

1 judgment.

2 Q. And when you say that, is that because
3 you were a part of a team that made a judgment?

4 A. Correct.

5 Q. And who was on that team?

6 A. Myself, Darin LeCrone, Al Keller, and
7 there's probably a few others which I don't have off
8 the top of my head.

9 Q. Are you the only registered PE on that
10 team?

11 A. No.

12 Q. Who else is a registered PE?

13 A. Darin LeCrone is. Alan -- Al Keller is.

14 Q. Did you as a registered PE evaluate
15 whether the treatment system -- strike that. To the
16 extent that you had any concerns regarding the
17 engineering of the treatment system, would that have
18 been reflected in your 30-day review notes?

19 A. Can you clarify the question?

20 MR. RIESER: Read it back, please.

21 [The pending question was read by the
22 reporter.]

23 MR. RIESER: I'm sorry. What part of
24 that don't you understand?

1 A. It may have been re -- it may have been
2 reflected. It doesn't mean it necessarily will always
3 be reflected.

4 Q. (By Mr. Rieser) Are the -- are your --
5 were your engineering concerns -- I'm sorry. Let me
6 start over. If you had engineering concerns regarding
7 this project, would they have been reflected in
8 Exhib -- I'm sorry -- were they reflected in Exhibit
9 K?

10 A. Could you please -- what specific
11 engineering concern are you referring to?

12 Q. If you had concerns that based on the
13 design of the system -- let me -- I'm going to get at
14 this another way. On Page Three of Exhibit K, the
15 first full paragraph, you have a discussion regarding
16 what I assume is the EDT assessment made by the
17 Agency -- the paragraph that begins, "Now
18 ConocoPhillips has argued." You see that?

19 A. Yes, I see that the paragraph.

20 Q. And you agree with me that that paragraph
21 is the -- well, that paragraph and the one after it --
22 I'm sorry. I'm -- strike that. In that paragraph,
23 there is a discussion about what ConocoPhillips should
24 do, that it should explore less-expensive treatment

1 options, that it should provide support for the
2 assertion that putting filtered effluent in the
3 current lagoon could possibly lead to the acquisition
4 of mercury. Are these comments that you put into this
5 report?

6 A. Yes, I did strike the keys on the
7 keyboard and enter them into the report.

8 Q. Were -- did they reflect your engineering
9 judgment?

10 A. They aren't my original ideas. I don't
11 think I'm the one that originated them. But yes, I
12 agree that other options obviously should be
13 considered.

14 Q. What other options did you think should
15 be considered?

16 A. Well, I think they should have considered
17 filtering half the effluent. Again, I don't think
18 they supported the assertion that putting in -- that
19 running the effluent through the lagoons would result
20 in higher mercury levels. I didn't believe they
21 justified why it was necessary to bore through the
22 levee.

23 Q. Were those questions asked of Phillips?

24 A. We did ask them -- well, at what time?

1 Q. At any time.

2 A. Yes, they were at one -- asked.

3 Q. When?

4 A. I don't know when they -- when it was
5 originally asked, but I am certain that we talked
6 about why it was necessary to bore through the levee
7 and about -- where they said -- I don't know if they
8 added any more information, but they did talk about
9 mercury -- if they discharged the filtered effluent
10 through the lagoon, that it might pick up mercury. I
11 remember them restating that, but I don't know if they
12 added anything new. This was a -- I think a
13 presettlement meeting prior to this hearing. I don't
14 recall the date.

15 Q. So that would have been a meeting after
16 the permit was already issued; correct?

17 A. It was brought up at that point, yes.

18 Q. At that meeting after the permit was
19 issued?

20 A. I didn't say initially, but it was
21 brought up at that point.

22 Q. When initially was it brought up?

23 A. I'm not certain.

24 Q. Is it -- is -- were those questions

1 reflected at all in the record, other than in your
2 30-day notice? I'm sorry. Was it reflected in the
3 record that Phillips was asked these questions?

4 A. I can't say.

5 MR. RIESER: That's all I have.

6 QUESTIONS BY MS. MEDINA:

7 Q. Jaime, you were asked whether or not you
8 conducted your own engineering analysis concerning
9 certain concerns brought up in the Powerpoint
10 slides -- variation of mercury levels, uncertainty of
11 soluble mercury. Were you provided enough information
12 by Phillips 66 in order to conduct such an engineering
13 assessment on these concerns and topics?

14 A. You're referring to the ones mentioned in
15 Exhibit E?

16 Q. Yes.

17 A. No.

18 Q. Did Phillips 66 ever provide an
19 engineering report -- detailed engineering report for
20 you to review?

21 A. No, I don't recall ever seeing one.

22 MR. RIESER: I'm sorry. Detailed
23 engineering report involving what for him to review?

24 MS. MEDINA: Detailed engineering report

1 that addresses any of the concerns cited in Exhibit E.

2 MR. RIESER: Thank you.

3 A. No. Again, no, I did not see that report
4 or any such report.

5 MS. MEDINA: That's all I have.

6 MR. RIESER: That's all.

7 HEARING OFFICER: Okay.

8 MR. RIESER: That's all I've got.

9 HEARING OFFICER: Thank you. Ms. Medina,
10 do you have anything else you'd like to present as
11 part of your case?

12 MS. MEDINA: No. I'll reserve any
13 comments for our briefs.

14 HEARING OFFICER: Okay. Mr. Rieser, did
15 you --

16 MR. RIESER: I need -- I'd like to recall
17 Jim Huff for a brief rebuttal testimony, please.

18 HEARING OFFICER: Okay. Mr. Huff, I'll
19 remind you you're still under oath.

20 MR. HUFF: Yes, ma'am.

21 MR. RIESER: Per the request of the court
22 reporter, I'm going to move over here to --

23 THE REPORTER: Thank you.

24 MR. RIESER: -- so that he can hear.

1 QUESTIONS BY MR. RIESER:

2 Q. Mr. Huff, you've been present in our
3 hearing room all day, so you've heard the testimony of
4 the Agency that was provided this afternoon?

5 A. Yes, sir.

6 Q. With respect to an agreement with res --
7 regarding the pollutants that ConocoPhillips agreed to
8 limit -- and these were questions that I asked Jaime
9 Rabins -- you have more information on that issue?

10 A. I think I can bring clarity to that.

11 Q. Okay. Please.

12 A. The commitment made by Phillips was
13 formalized in the antidegradation assessment, and it's
14 on Page 19 that -- and 20 as to exactly what
15 parameters -- that Phillips agreed that there would be
16 no increase in the permitted mass.

17 Q. And what were those parameters?

18 A. I had these in my testimony. Biochemical
19 oxygen demand, total suspended solids, ammonia,
20 chemical oxygen demand, oil and grease, phenols, total
21 chromium, and sulfide.

22 Q. And so there wasn't -- so to clarify,
23 there wasn't an agreement to limit all constituents;
24 just the ones that you've identified?

1 A. That is correct.

2 Q. You were present in the hearing room to
3 hear the discussion about -- that I had with Mr.
4 Mosher regarding upstream mercury data; correct?

5 A. Yes.

6 Q. Do you have other -- more information
7 about discussions that you had with the Agency
8 regarding upstream mercury data?

9 A. Well, a little clarity, perhaps. The
10 existing data that Mr. Mosher referred to and that was
11 in the antidegradation assessment was more than
12 adequate to address the acute and chronic toxicity and
13 mercury -- the levels were more than sufficiently low
14 for that.

15 They're -- the Agency on at least two
16 occasions requested the mercury effluent testing.
17 They did -- never asked for upstream mercury testing.
18 We certainly would have done that. The human health
19 standard -- I just assumed that there really wasn't an
20 issue on the Mississippi River with that. I have
21 collected limited data on the Des Plaines River and
22 the Chicago Sanitary and Ship Canal that would lead me
23 to believe, trying to extrapolate that data, that on
24 an annual basis, the Mississippi River meets that 12

1 nanograms per liter, but I don't have any data on the
2 Mississippi River at this point.

3 Q. So you've sampled the water quality of
4 other rivers and you've sampled specifically for
5 mercury?

6 A. Yes.

7 Q. And what types of levels are you seeing
8 in those samples?

9 A. Well, highly variable --

10 MS. MEDINA: Objection. Relevance.

11 A. -- but an annual average less than the
12 nanograms per liter.

13 Q. (By Mr. Rieser) Turning again to your
14 antidegradation study -- there was a discussion about
15 your tables that you had that showed the mixing zone
16 and the zone of initial dilution, and there were
17 questions that Ms. Medina put to Mr. Mosher regarding
18 the meaning of those numbers. Do you recall that?

19 A. Yes, sir.

20 Q. Can you provide clarity on that as well?

21 A. Well, I think we're mixing apples and
22 oranges. Again, those were intended for the acute and
23 the chronic standards, which were based on the maximum
24 concentration that we found -- the highest -- and if

1 one really wanted to go through that exercise, you
2 would use the average annual basis, ideally with the
3 uncertainty and the statistical approach, so it would
4 be the 17-point-whatever nanograms per liter, and in
5 those tables, we used the 88 nanograms per liter,
6 which was the maximum. So you're trying to compare an
7 annual average limit to a maximum daily number, which
8 is inappropriate.

9 Q. And it's inappropriate because why?

10 A. Well, because the acute and the chronic
11 you're trying to meet on a not-to-exceed basis, as
12 opposed to an annual average with the human health
13 standard.

14 Q. So the acute and chronic values for water
15 quality values for mercury are maximum, so you look at
16 the maximum discharge that that facility has?

17 A. In the case of acute, that's correct.
18 For chronic, it's a four-sample running average -- the
19 highest of those.

20 Q. But human health average -- the human
21 health value is evaluated differently?

22 A. Yes. You would take all samples
23 collected over a year -- and I believe there's a
24 minimum of eight samples, as I recall -- and take the

1 mean of those.

2 Q. So the -- let me --

3 A. I think it will be in there -- there's no
4 tables in my version --

5 Q. What was it? What page was it? Page --

6 A. Oh, that's in the Agency's exhibit.
7 There's a page missing. There's about five pages
8 missing.

9 Q. No. What page --

10 A. Oh.

11 Q. Yes.

12 A. Sure.

13 Q. Please locate the table -- it's Table
14 C-1, C-2?

15 A. I think I have --

16 Q. Yes.

17 A. Table 4-1 is the concentrations at the
18 edge of the zone of initial dilution, and Table 4-2 is
19 at the edge of a mixing zone.

20 Q. And so -- and this is Page 69 and 70 of
21 the August 2008 antidegradation analysis which was
22 attached as Exhibit Two to your testimony, which was
23 Group Exhibit Six. So the issue with using these
24 tables to address the human health has to do with the

1 use of the highest concentration, which is the second
2 column in from the left; is that correct?

3 A. That's correct.

4 Q. So if you were looking at human health,
5 rather than using the highest concentration, you would
6 use an annual average concentration?

7 A. And then if you look, Column Three
8 includes the same uncertainty procedure, and so it's
9 not only the highest concentration; it's the
10 uncertainty added to that. And it would be the same
11 for the human health, but instead of taking the
12 maximum value, you'd take the average and apply the
13 uncertainty.

14 MR. RIESER: Okay. I have nothing
15 further.

16 HEARING OFFICER: Okay.

17 QUESTIONS BY MS. MEDINA:

18 Q. Mr. Huff, can you point to an analysis in
19 your report that it evaluates whether a human health
20 standard can be met at the edge of a mixing zone?

21 A. No, I can't. As the Agency has
22 testified, this was really the first time that
23 mercury -- this issue of mercury ever came up, and
24 frankly, I didn't -- had never before nor since have I

1 addressed the human health standard as part of an
2 antidegradation assessment.

3 MS. MEDINA: That's all I have. Thank
4 you.

5 QUESTIONS BY MR. RIESER:

6 Q. Based on your knowledge and what you've
7 described as your mercury sampling in other rivers, do
8 you have a basis to believe whether or not the human
9 health standard would be met at the edge of the mixing
10 zone?

11 A. Yes, if -- based on the levels that
12 they're discharging with the 86-to-one dilution and
13 the data I've seen on other streams, which I fully
14 recognize is limited data and on different waterways,
15 I would fully expect it would meet the human health
16 standard.

17 MR. RIESER: Thank you.

18 QUESTIONS BY MS. MEDINA:

19 Q. Mr. Huff, given the several uncertainties
20 with which mercury might exist in the crudes (ph) and
21 the expansion project, can you state with certainty
22 that the human health standard will be met at the edge
23 of the mixing zone --

24 A. What -- not --

1 Q. -- from expansion?

2 A. Not with certainty, again for the
3 caveat --

4 MS. MEDINA: That's all --

5 A. -- that I answered with respect to Mr.
6 Rieser's question, not so much the uncertainty on
7 what's in the effluent. Even if you take the
8 statistical uncertainty in the database that exists
9 now, they would still meet that human health standard,
10 is my belief, because it's an annual average limit.

11 MS. MEDINA: That's all I have. Thank
12 you.

13 MR. RIESER: Nothing further.

14 HEARING OFFICER: Thank you. Anything
15 further?

16 MR. RIESER: No.

17 HEARING OFFICER: Okay. Well --

18 MR. RIESER: That completes our
19 presentation.

20 HEARING OFFICER: That completes the
21 presentation for both parties. I'll just read the
22 briefing schedule into the record. The transcript is
23 due by October 15th and will be posted on the Board's
24 website. The public comment deadline is October 16th.

1 Any public comment must be filed in accordance with
2 Section 101.628 of the Board's procedural rules.

3 The parties have agreed to the following
4 briefing schedule. First, the deadline for the
5 stipulation on the fecal coliform will be filed by
6 October 17th. The petitioner's brief will be due by
7 November 15th and respondent's brief is due by
8 December 17th. Petitioner's reply will be due by
9 December 28th. Mr. Rieser, would you like to make any
10 closing argument?

11 MR. RIESER: No. I'll reserve that for
12 the brief.

13 HEARING OFFICER: Ms. Medina?

14 MS. MEDINA: Same.

15 HEARING OFFICER: Okay. We have one
16 member of the public here who has already indicated he
17 does not wish to make any statement on the record, so
18 if there's nothing further, at this time we will
19 conclude the proceedings. Thank you, everyone, for
20 your participation.

21 MR. RIESER: Thank you very much.

22 MS. MEDINA: Thank you.

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NOTARIAL CERTIFICATE

I, John Arndt, a Notary Public within and for the County of St. Clair, State of Illinois, do certify that pursuant to Notice there came before me at the Madison County Administration Building, 157 North Main Street, in the Village of Edwardsville, State of Illinois,

THE AFOREMENTIONED PARTICIPANTS,

whose words were taken in machine shorthand and later reduced to type-writing; and the transcript is now herewith returned.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 15th day of October A.D., 2012.

My commission expires June 6, 2014.

John Arndt
Notary Public



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