To: Clark, David[CLARKD@adeq.state.ar.us]; Mohr, Ashley[Mohr.Ashley@epa.gov]
Cc: McCorkle, Mark[MAC@adeq.state.ar.us]; Donaldson, Guy[Donaldson.Guy@epa.gov]
Sent: Wed 11/30/2016 4:11:59 PM
Subject: RE: ADEQ ADJ_U* Sensitivity Analysis - Independence County AR

I just heard that the App. W will probably get finalized in the next week to two weeks. OAQPS is going to be extremely focused on finishing App. W, so doubt we will be able to get their attention until they are finished with App.W.

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Wednesday, November 30, 2016 9:30 AM
To: Mohr, Ashley <Mohr.Ashley@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>
Cc: McCorkle, Mark <MAC@adeq.state.ar.us>
Subject: RE: ADEQ ADJ_U* Sensitivity Analysis - Independence County AR

Hello Ashley,

Any updates for us?

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

Fax: 501 682-0753

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From: Clark, David
Sent: Thursday, November 10, 2016 8:17 AM
To: 'Mohr, Ashley'; Snyder, Erik
Cc: McCorkle, Mark
Subject: RE: ADEQ ADJ_U* Sensitivity Analysis - Independence County AR

Thank you Ashley.

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

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From: Mohr, Ashley [mailto:Mohr.Ashley@epa.gov]
Sent: Thursday, November 10, 2016 8:14 AM
To: Clark, David; Snyder, Erik
Cc: McCorkle, Mark
Subject: RE: ADEQ ADJ_U* Sensitivity Analysis - Independence County AR

David,

Thanks for following up. I had planned to send you an update today since Erik and I will be out on travel next week. We spoke with OAQPS earlier this week regarding availability for a call to discuss pending Model Clearinghouse requests, including the one for Independence County. They have indicated that they do not have any availability until after next week's RSL Modelers' Workshop because of workload associated with Appendix W and workshop prep. We have started looking at the request and do not have any specific questions at the moment. Initially, it appears that the additional information has attempted to address the questions and concerns we had based on the initial MCH request. We will try to touch base with HQs next week since we will have some face time while at the workshop and let you know if anything comes up or if we have any questions/requests. We will also keep you updated on any information we receive regarding the final revisions to Appendix W.

We appreciate you staying on top of this with us, and we will continue our review and push for some time with OAQPS to discuss.

Thanks,

Ashley

THE POSITIONS or VIEWS CONTAINED IN THIS EMAIL DO NOT REPRESENT OFFICIAL EPA POLICY.

From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Thursday, November 10, 2016 7:25 AM
To: Mohr, Ashley <Mohr.Ashley@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>
Cc: McCorkle, Mark <MAC@adeq.state.ar.us>
Subject: ADEQ ADJ_U* Sensitivity Analysis - Independence County AR

Hello Ashley & Erik,

We just wanted to check on the status of our SO_2 R6/MCH ADJ_U* sensitivity analysis submission for Independence County and see if you had any updates. If the modeling files or any other information is needed, as always feel free to reach out to us.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

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To: Bates, Rita, NMENV[Rita.Bates@state.nm.us]; Sufi Mustafa[Sufi.Mustafa@state.nm.us]; Eric Peters[eric.peters@state.nm.us]
Cc: Hollenberg, Cindy, NMENV[Cindy.Hollenberg@state.nm.us]; Heath, David, NMENV[david.heath@state.nm.us]; Donaldson, Guy[Donaldson.Guy@epa.gov]; Imhoff, Robert[imhoff.robert@epa.gov]
Subject: RE: SO2 Data Requirements Rule Source Modeling Protocol

Hi,

We had our new modeler working on review. Overall it looked good and we only have a couple of comments/questions on the protocol.

Region 6 has reviewed the DRR modeling protocol for the San Juan Generating Station attainment demonstration for the 2010 SO2 standard. In general, the modeling protocol adheres to the DRR Modeling TAD with the following features:

Summary of San Juan Generating Station attainment demonstration:

Approach:

- Modeling with AERMOD, full regulatory options and processing
- Rural dispersion option
- Both Simple and Complex terrain options used, depending on receptor location.

Met data (2013-2015)

- Surface: local NMAQ Bureau station + NWS data from Four Corners Regional airport
- Upper Air: Albuquerque Airport

Source Data:

•□□□□□□□□ CEMS SO2 data for San Juan units, with building downwash

•□□□□□□□□ All other SO2 sources (21) within 25km – allowable permit emissions, including Four Corners Electric Generating Station

Receptors:

Nested grid

•□□□□□□□□ 50m – fenceline

•□□□□□□□□ 100m – to 2.5km

•□□□□□□□□ 1000m – to 20km

•□□□□□□□□ Will this regular grid cover the highest elevation points? The terrain has some extremely sharp relief and some significant elevations to the north (where San Juan and Four Corners line up). Rather than using the exact DEM data for receptors 1km apart could use highest elevation within 500m? This would allow coverage of the highest terrain without adding to the number of receptors.

Because each source is unique we have the following requests for clarification and refinement:

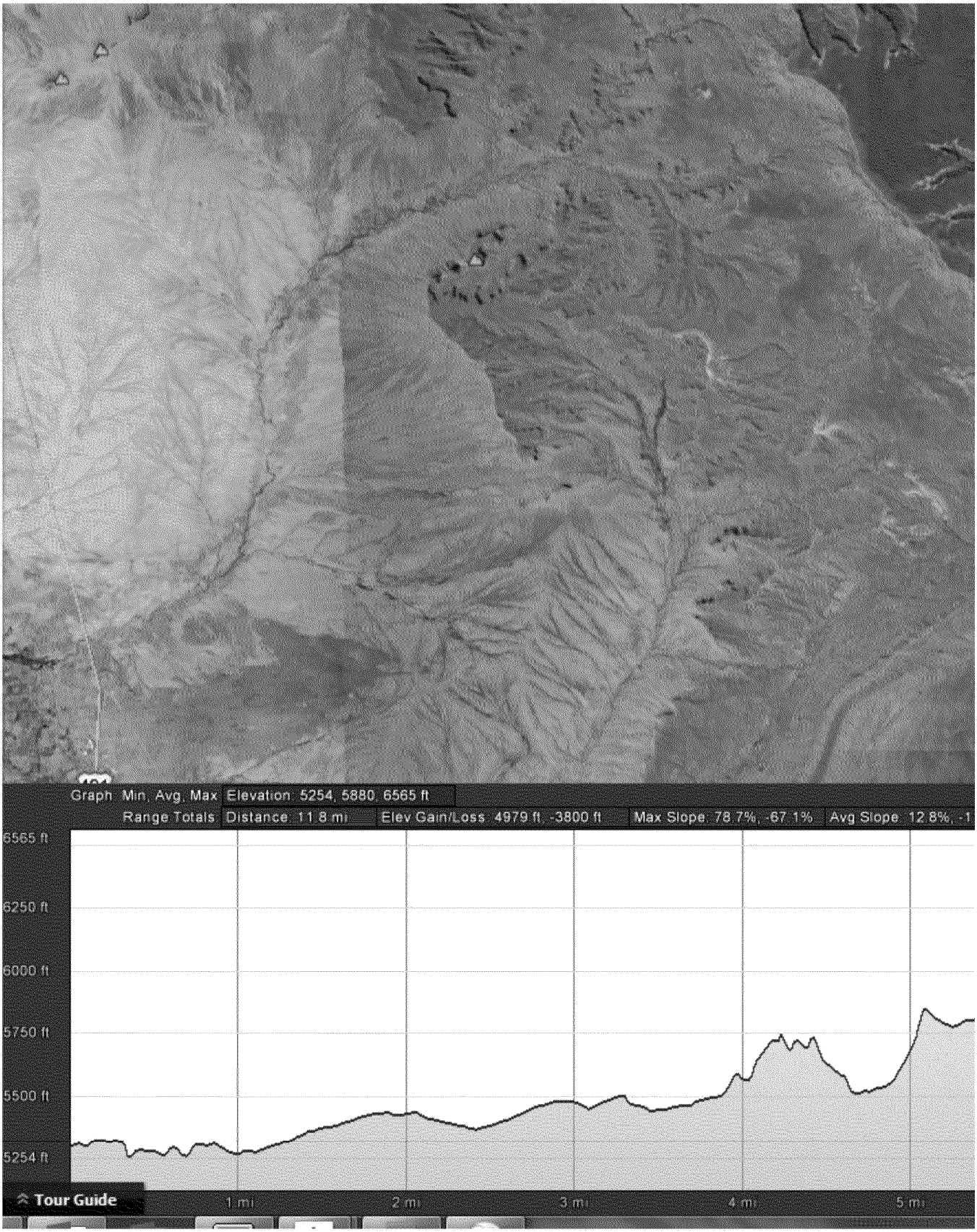
(1) The surface meteorology will use a combination of the NMAQ Bureau station and the NWS data from the Four Corners Regional Airport. Please elaborate on how this will be accomplished.

(2) If available, we recommend the use of varying stack temperatures and velocities as well as SO2 for the San Juan stacks. If these are not available a review of the steady stack temperature and velocity to be used should be conducted and documented. In the past we've seen poorly documented parameters used from old permits that were not accurate for current emissions.

(3) The Four Corners Electric Generating station will also be undergoing DRR attainment modeling. We recommend contacting Region 9 to obtain the hourly emission rate and, if available, the stack parameters to be used for their modeling. This will increase the realism of the simulation for San Juan and make sure that the two proximate sources are treated in a consistent way.

(4) The terrain to the north of the source has features with very sharp relief which may not be captured by a regular Cartesian grid at 1km resolution. We recommend placing discrete receptors on these features.

(5)


Graph Min, Avg, Max
Elevation: 5254, 5880, 6565 ft
Range Totals
Distance: 11.8 mi
Elev Gain/Loss: 4979 ft, -3800 ft
Max Slope: 78.7%, -67.1%
Avg Slope: 12.8%, -1
6565 ft
6250 ft
6000 ft
5750 ft
5500 ft
5254 ft
Tour Guide
1 mi
2 mi
3 mi
4 mi
5 mi

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Bates, Rita, NMENV [mailto:Rita.Bates@state.nm.us]
Sent: Thursday, August 18, 2016 3:49 PM
To: Snyder, Erik <snyder.erik@epa.gov>; Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Hollenberg, Cindy, NMENV <Cindy.Hollenberg@state.nm.us>; Heath, David, NMENV <david.heath@state.nm.us>
Subject: SO2 Data Requirements Rule Source Modeling Protocol

Hi Erik & Guy,

We submitted the source modeling protocol for San Juan Generating Station to EPA Region 6 in June. We haven't heard anything from you so are assuming our protocol is sufficient. Unless I hear differently from you, we are planning to finalize the modeling and prepare the report within the next few weeks.

Let me know if this sounds okay. Thanks!

Rita

Rita Bates

Planning Section Chief

Air Quality Bureau – New Mexico Environment Department

525 Camino de los Marquez, Suite 1

Santa Fe, New Mexico 87505

Phone: 505-476-4304

Fax: 505-476-4375

To: Milligan, Eric[Eric.Milligan@deq.ok.gov]
Sent: Wed 6/15/2016 10:09:34 PM
Subject: RE: SO2 DRR Modeling Protocol

asdf

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Milligan, Eric [mailto:Eric.Milligan@deq.ok.gov]
Sent: Wednesday, June 15, 2016 9:37 AM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: SO2 DRR Modeling Protocol

As you well know we are in the final stages of the DRR July 1, 2016 submittal.

As part of that, we are finalizing the modeling protocol.

I was hoping to get any input you may have concerning the modeling protocol.

Thanks.

To: Ron Thomas[Ron.Thomas@tceq.texas.gov]
Sent: Thur 1/7/2016 3:20:13 PM
Subject: RE: R6 Modeling workshop

asdf

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Ron Thomas [mailto:Ron.Thomas@tceq.texas.gov]
Sent: Wednesday, January 06, 2016 10:34 AM
To: Snyder, Erik
Cc: Daniel Menendez
Subject: RE: R6 Modeling workshop

Erik,

We've received approval to drive up on Tuesday and stay two nights.

Do you think you can reserve a block of rooms at the gov't rate and let us know what that is.

Also, please send us an updated agenda when you have one, since that goes with our travel justification.

We plan to bring 4 from AQD, and Daniel is bringing some from APD, and we plan to drive up on the 19th.

Daniel, do we want to try to reserve a van or two cars? Do you know how many from APD?

Thanks,

-Ron

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Tuesday, January 05, 2016 12:51 PM
To: Daniel Menendez; Daniel Jamieson; Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; vennetta.hayes@la.gov; Nguyen, Tien; Yvette Olmos; Smith, Jim; Clark, David; Mark McCorkle (MAC@adeq.state.ar.us)
Cc: Mohr, Ashley; Feldman, Michael; Donaldson, Guy
Subject: R6 Modeling workshop

Hi,

Wanted to confirm the dates of the 20th and 21st. We will be on the 12th floor and everyone will have to check in on 7th floor to get a temporary badge (same procedure as 2013 R/S/L). There is a marriott Springhill suites in the west end that people stayed at in 2013 that is about 4 blocks from the office (I have not reserved a block of rooms). Depending on when people will get into town we can either start around 8:30 on the 20th, or 10 if some people are traveling early morning. We will probably wrap at 3 or 4 on Thursday at the latest. Please send me topics areas you want to cover. I am working off the structure/topics of the R5 workshop as that seemed to go pretty well for them. I will adjust this agenda, but please provide input if there are areas you don't see that you want to cover, etc.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Snyder, Erik
Sent: Wednesday, December 16, 2015 2:28 PM
To: 'Daniel Menendez'; Daniel Jamieson (Daniel.Jamieson@tceq.state.tx.us); Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden;

Thomas Rheaume; 'vennetta.hayes@la.gov'; Nguyen, Tien; Yvette Olmos; Smith, Jim; 'Clark, David'; Mark McCorkle (MAC@adeq.state.ar.us)
Cc: Mohr, Ashley; Feldman, Michael
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Hi,

Making another run at this. I have locked down conference rooms here at the Region for January 20-21st to have a permit modeling workshop with most of the focus on SO2 modeling for CD and DRR sources. Looking at having James Thurman down from RTP and then some others by teleconference or video. Would be 1.5 to two days. I know we are getting towards the holidays but if you can let Ashley and I know if these dates would work by the end of this week, we can make sure James can get his travel done. I am going to be out of pocket for the rest of this week but please follow up with Ashley on any questions.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Daniel Menendez [mailto:daniel.menendez@tceq.texas.gov]
Sent: Tuesday, September 22, 2015 10:31 AM
To: Snyder, Erik
Cc: Ron Thomas
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Hi Erik,

Any updates on potential Region 6 modeling meeting?

Thanks,

Daniel

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Wednesday, August 19, 2015 11:16 AM
To: Daniel Menendez; Daniel Jamieson; Dominic Ruggeri; Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; vennetta.hayes@la.gov; Tien Nguyen; Yvette Olmos; Jim Smith
Cc: Mohr, Ashley; Feldman, Michael; Robinson, Jeffrey; Donaldson, Guy
Subject: Potential R6 Modeling workshop in Dallas in early November

Hi,

We haven't had a Region 6 modelers workshop in Dallas in a while. With the final DRR and proposed changes in App. W, thought it might be a good time to have a meeting here in Dallas. I am not planning on discussing photochemical issues other than maybe secondary pollutant analysis for permits. The main focus would be modeling for the SO2 sources as part of the SO2 Phase 3 and 4 designations process (either modeling directly or modeling for monitor locations around a facility). We could also discuss other issues if there is interest. I was thinking some discussion on ozone and PM2.5 impacts from single source for permitting might and what sources should be included in cumulative analysis are two topics that might also be beneficial. At this time I am targeting the first week in November (11/2-11/5) as possible date(s). Would only plan for 1 or two days within this period but we have locked meeting space for M-R currently. I think we will be able to get one or two people from OAQPS that week to come to Dallas (James Thurman and/or George Bridgers most likely). They are available for travel and this would be after the close of the proposed changes to App. W, so we could talk about any of the proposed changes.

Please let me know your interest and availability (if this week works and if M-T, T-W or W-R is best). Also any ideas for specific topics/issues.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Mon 5/8/2017 4:13:51 PM
Subject: RE: Cabot Ville Platte Modeling Report

Hi Vennetta,

We are finishing up the Technical Support Document for Louisiana Parishes SO2 designation for DRR Round 3 and we still need a little info.

Brame Energy Center

•□□□□□□□□ For the TSD we need the following information not given in the modeling report:

o AERSURFACE

▪· version used

▪· used data from [clearly refer to one of the NWS stations already mentioned or explain what other stations was used]

▪· used estimated values for [insert number] spatial sectors out to [insert number] km at a [monthly, seasonal, annual] temporal resolution for [dry, wet, average] conditions

o AERMINUTE

▪· was it used and if so

▪· the minimum wind speed threshold used.

•□□□□□□□□ The met file names in the AERMOD control file don't match the supplied met files. E.g. zip file MET168233_2013_2015_SHV.SFC while the control file has MET168233_2013_2015_SHREVE.SFC. Same for the profile filename. This means that we can't be sure that this is the correct/same file used for CLECO's runs and also that the model won't run with the incorrect name.

▪· Since we'll send your final submittal of modeling files for the FOIA it would be better if it included the files needed to run AERMOD without any changes. Could you update?

Cabot Ville Platte

•□□□□□□□□ We need the contour plot files (the .plt files as specified in the control file) They are not included in the transmittal. We are setting the boundaries of the area of nonattainment and right now all we have is an estimate made from the plot in the modeling report. 01H4GALL.PLT is the name of the file needed.

•□□□□□□□□ I'm wondering if you sent the wrong receptor file?

o The report gives contours that exclude the plant grounds and have fencerow receptors. The receptor file you sent does not exclude receptors inside the plant boundary. Maybe you also specified plant boundary receptors in the AERMOD setup so that those receptors would be excluded? If so could you send those?

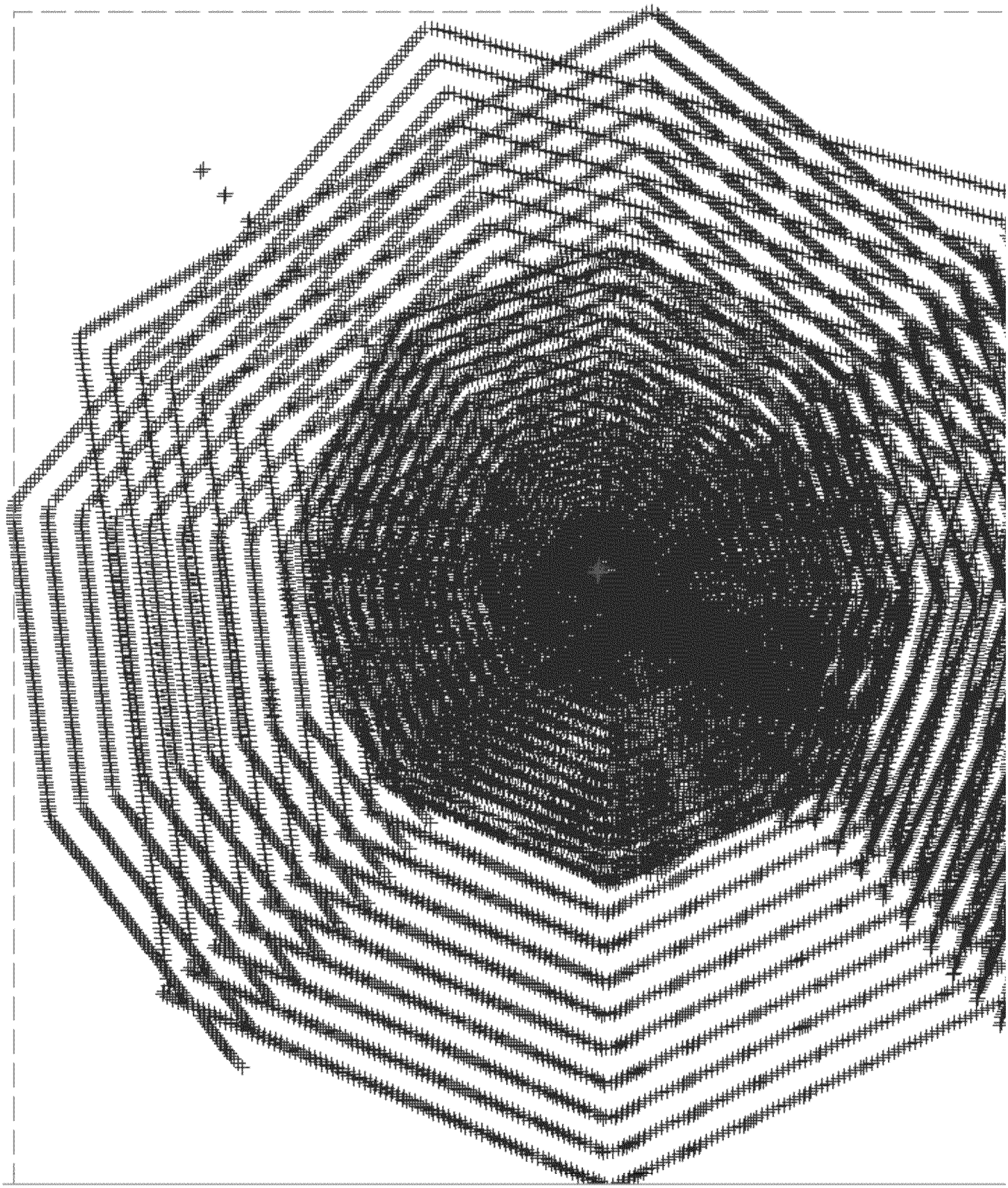
o Also, the modeling report states that:

4.2 Receptor Grid

The domain is centered on the Cabot facility and extends 10km in each direction to result in a 20 km grid.

▪· Receptors were placed at 100m spacing along the fenceline. Receptors were also placed with 100 m spacing extending 2km from the fence line of the facilities; spacing will be 500 m from 2-5km; and 1000 m interval from 5 to 10 km.

When we plot up the receptor grid you sent, it has 25,834 receptors that are laid out in what looks like four overlapping hexagonal grids. Does the figure below look correct?



Thanks for your help,

Bob

From: Imhoff, Robert
Sent: Thursday, March 23, 2017 8:25 AM
To: 'Vennetta Hayes' <Vennetta.Hayes@LA.GOV>
Subject: RE: Cabot Ville Platte Modeling Report

Vennetta,

To get our discussion rolling here's a quick summary of how AERMOD View organizes things.

A project can be but is not necessarily stand alone. It could depend on files that are not contained within the project directly. When you create a project, all the project files go into a named directory. Let's say we name our project "CVP" for example.

…/CVP will contain all of the project files.

The CVP directory after making an AERMOD run will always contain the following files:

CVP.ISC – the project file read by AERMOD VIEW

CVP.ADI – the control file generated by AERMOD VIEW which is used in the execution of AERMOD

CVP.ADO – the output file generated by AERMOD

CVP_AERMOD.log – the log file generated by AERMOD

There may be other files (such as data files) that you place in the project directory. Data files may also be located elsewhere on your hard drive. This is specified when you tell AERMOD VIEW where the files are in setting up your run. For example in setting up an AERMOD run I might elect to leave met data in some external directory and use them repeatedly in several projects rather than copying them into each project directory. The actual file locations used in any project are given in the CVP.ADI file. If these files are *not* in the project directory, then they have to be collected separately since zipping up the project directory will not include any external files. To find out if you have any external references, consult the CVP.ADI file.

There are subdirectories under the project directory. The defaults in AERMOD View are:

- CVP.ad – plot files, named as given in the CVP.ADI file. Could be .plt (as in your run) or .grf

- CVP.dat – data files generated by, and for the use of, AERMOD VIEW. Not used directly by AERMOD

- CVP.kml – files used if you export data for 3D viewing in GIS, e.g. Google Earth

Other directories could be generated as specified by you in the set up for the AERMOD run. They could contain input or output files as specified in the set up. The other directories could also be *outside* the project directory in which case you'll need to collect them separately.

I hope this helps, give me a call when you get in.

Best regards,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Thursday, March 23, 2017 7:56 AM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Subject: RE: Cabot Ville Platte Modeling Report

Bob I'm going to call you when I get in. I use the Lakes GUI and I really am not familiar with

all the file types. I just zip the whole project folder and send it to you. Hopefully you can talk me through getting you exactly what you need.

Sent via the Samsung Galaxy S® 5 ACTIVE™, an AT&T 4G LTE smartphone

-------- Original message --------
From: "Imhoff, Robert" <imhoff.robert@epa.gov>
Date: 3/23/17 7:37 AM (GMT-06:00)
To: Vennetta Hayes <Vennetta.Hayes@LA.GOV>
Cc: "Snyder, Erik" <snyder.erik@epa.gov>
Subject: RE: Cabot Ville Platte Modeling Report

Thanks Vennetta,

We really appreciate your attention to this. The Sierra Club has already given us a FOIA for modeling files relevant to the SO2 designations under the DRR – the scope I believe includes the Cabot Ville Platte modeling. Would you please be sure to check that the contour plot files (the .plt files as specified in the control file) are included in the transmittal? We are setting the boundaries of the area of nonattainment and right now all I have is a rough estimate from the plot in the modeling report.

It would be advisable for us to give some details about the Cabot consent decree in the Technical Support Document for the designation so that reviewers can see that significant reductions in emissions are on the way and hopefully reduce any concerns about future nonattainment status. Relevant details include Consent Decree identification, the effective date, and the emission limits imposed by the decree.

Best regards,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, March 22, 2017 1:30 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Cc: Snyder, Erik <snyder.erik@epa.gov>

Subject: RE: Cabot Ville Platte Modeling Report

I'll check but it's likely because I ran the modeling in Lakes software and then I changed the name and saved it to send to you all and it may have affected the file names. I'll try to send the files as they were originally named and see if that fixes the descrepancies.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Wednesday, March 22, 2017 1:13 PM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: RE: Cabot Ville Platte Modeling Report

Vennetta,

Would you please check that the correct folder was zipped for transmittal? I've noticed some discrepancies between the modeling files, the control file, and the report that indicate that this could be the case.

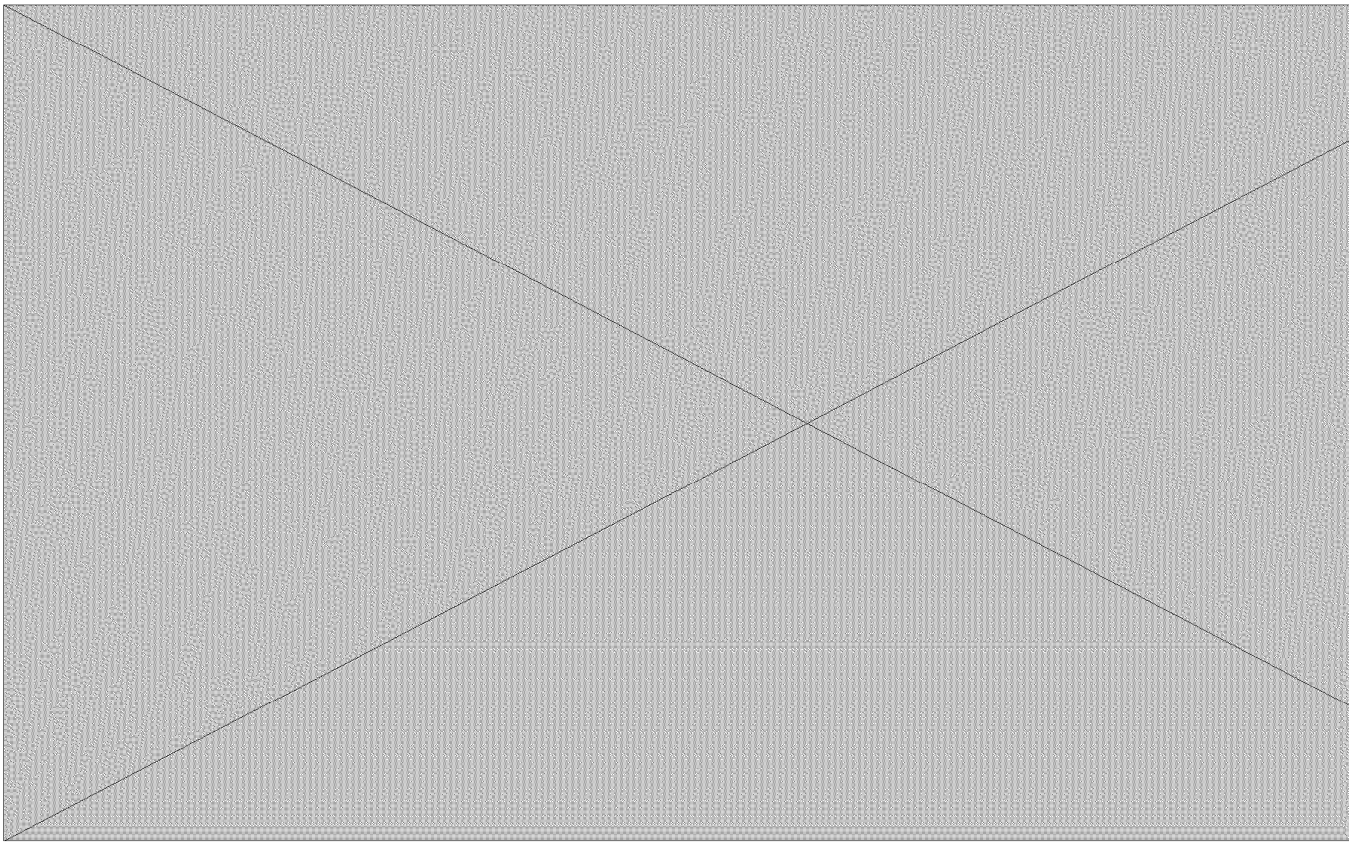
1. The hourly emissions file is missing in the zip archive

2. The surface and profile files included in the zip archive don't have the same name as given in the control file

3. The receptor file is missing in the zip archive

4. The report gives contours that exclude the plant grounds and have fencerow receptors. The receptor file you sent me this morning does not:

Fig. 4 Near-Field Impact Contour



Near field receptor plot from the receptor file sent this morning:

Since we are likely to get requests for the modeling files, I thought it best to check with you now.

Thanks,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, March 22, 2017 9:47 AM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Cc: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: Cabot Ville Platte Modeling Report

Here you go.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Wednesday, March 22, 2017 9:11 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: RE: Cabot Ville Platte Modeling Report

Vennetta,

In looking through the modeling files, I notice that the receptor file which is "INCLUDED" in the control file, seems to be missing from the zip file archive.

```
**************************************

** AERMOD Receptor Pathway

**************************************

**

**

RE STARTING

  INCLUDED "Cabot Ville Platte Final.rou"

RE FINISHED

**
```

Can you send me the receptor file via an email?

Thanks,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Friday, January 13, 2017 5:04 PM
To: Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Donald Trahan <Donald.Trahan@LA.GOV>; Vivian Aucoin <Vivian.Aucoin@LA.GOV>; Snyder, Erik <snyder.erik@epa.gov>; Imhoff, Robert <imhoff.robert@epa.gov>
Subject: Cabot Ville Platte Modeling Report

Good Evening,

Attached is the modeling report for the Cabot Ville Platte facility to fulfill the DRR requirements. The modeling files were submitted electronically.

Vennetta T. Hayes

LDEQ

225-219-3412

To: Snyder, Erik[snyder.erik@epa.gov]
From: Clark, David
Sent: Fri 5/5/2017 5:14:09 PM
Subject: RE: Call In Details - Prognostic Met Data (Thursday, April 6th @ 1:00 PM)

Ok, I'm checking that time on this end, but likely won't know till Monday.

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

Fax: 501 682-0753

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From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Friday, May 05, 2017 10:58 AM
To: Clark, David
Subject: RE: Call In Details - Prognostic Met Data (Thursday, April 6th @ 1:00 PM)

Thursday 2-3 works I think.

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6

Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Friday, May 05, 2017 10:51 AM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: Call In Details - Prognostic Met Data (Thursday, April 6th @ 1:00 PM)

Erik,

Tuesday afternoon no longer works for us. Does Thursday afternoon work for you guys? I'll have to check on Thursday afternoon with the consultants, but I won't hear back until Monday morning.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

Fax: 501 682-0753

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From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Friday, May 05, 2017 10:36 AM
To: Clark, David; Mohr, Ashley
Cc: McCorkle, Mark; Montgomery, William
Subject: RE: Call In Details - Prognostic Met Data (Thursday, April 6th @ 1:00 PM)

Does 2-3 on Tuesday work?

Erik Snyder

Lead Regional Air Quality Modeler
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Sent: Friday, May 05, 2017 10:08 AM
To: Snyder, Erik <snyder.erik@epa.gov>; Mohr, Ashley <Mohr.Ashley@epa.gov>
Cc: McCorkle, Mark <MAC@adeq.state.ar.us>; Montgomery, William <Montgomery@adeq.state.ar.us>
Subject: RE: Call In Details - Prognostic Met Data (Thursday, April 6th @ 1:00 PM)

Thank you Erik.

David W. Clark, M.S.

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Cc: Montgomery, William; McCorkle, Mark; Shelton, Travis
Subject: RE: Call In Details - Prognostic Met Data (Thursday, April 6th @ 1:00 PM)

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Thanks David. I will pass along to others and talk with you all later today.

Thanks,

Ashley

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Ex. 6 - Personal Privacy

Just let us know what you find out regarding the data fill amount and frequency information that I mentioned on the phone.

If you have any other questions let me know. Otherwise, talk to you all on Thursday!

Ashley

Ashley N.Q. Mohr
Environmental Scientist
Air Permits Section (6MM-AP)
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, TX 75202
(214) 665-7289
FAX (214) 665-6762
mohr.ashley@epa.gov

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To: Snyder, Erik[snyder.erik@epa.gov]
From: Clark, David
Sent: Fri 5/5/2017 3:50:52 PM
Subject: RE: Call In Details - Prognostic Met Data (Thursday, April 6th @ 1:00 PM)

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Dallas, TX 75202
(214) 665-7289

FAX (214) 665-6762
mohr.ashley@epa.gov

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To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
From: Imhoff, Robert
Sent: Thur 3/23/2017 1:24:49 PM
Subject: RE: Cabot Ville Platte Modeling Report

Vennetta,

To get our discussion rolling here's a quick summary of how AERMOD View organizes things.

A project can be but is not necessarily stand alone. It could depend on files that are not contained within the project directly. When you create a project, all the project files go into a named directory. Let's say we name our project "CVP" for example.

…/CVP will contain all of the project files.

The CVP directory after making an AERMOD run will always contain the following files:

CVP.ISC – the project file read by AERMOD VIEW

CVP.ADI – the control file generated by AERMOD VIEW which is used in the execution of AERMOD

CVP.ADO – the output file generated by AERMOD

CVP_AERMOD.log – the log file generated by AERMOD

There may be other files (such as data files) that you place in the project directory. Data files may also be located elsewhere on your hard drive. This is specified when you tell AERMOD VIEW where the files are in setting up your run. For example in setting up an AERMOD run I might elect to leave met data in some external directory and use them repeatedly in several projects rather than copying them into each project directory. The actual file locations used in any project are given in the CVP.ADI file. If these files are *not* in the project directory, then they have to be collected separately since zipping up the project directory will not include any external files. To find out if you have any external references, consult the CVP.ADI file.

There are subdirectories under the project directory. The defaults in AERMOD View are:

- CVP.ad – plot files, named as given in the CVP.ADI file. Could be .plt (as in your run) or .grf

- CVP.dat – data files generated by, and for the use of, AERMOD VIEW. Not used directly by AERMOD

- CVP.kml – files used if you export data for 3D viewing in GIS, e.g. Google Earth

Other directories could be generated as specified by you in the set up for the AERMOD run. They could contain input or output files as specified in the set up. The other directories could also be *outside* the project directory in which case you'll need to collect them separately.

I hope this helps, give me a call when you get in.

Best regards,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Thursday, March 23, 2017 7:56 AM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Subject: RE: Cabot Ville Platte Modeling Report

Bob I'm going to call you when I get in. I use the Lakes GUI and I really am not familiar with all the file types. I just zip the whole project folder and send it to you. Hopefully you can talk me through getting you exactly what you need.

Sent via the Samsung Galaxy S® 5 ACTIVE™, an AT&T 4G LTE smartphone

-------- Original message --------
From: "Imhoff, Robert" <imhoff.robert@epa.gov>
Date: 3/23/17 7:37 AM (GMT-06:00)
To: Vennetta Hayes <Vennetta.Hayes@LA.GOV>

Cc: "Snyder, Erik" <snyder.erik@epa.gov>
Subject: RE: Cabot Ville Platte Modeling Report

Thanks Vennetta,

We really appreciate your attention to this. The Sierra Club has already given us a FOIA for modeling files relevant to the SO2 designations under the DRR – the scope I believe includes the Cabot Ville Platte modeling. Would you please be sure to check that the contour plot files (the .plt files as specified in the control file) are included in the transmittal? We are setting the boundaries of the area of nonattainment and right now all I have is a rough estimate from the plot in the modeling report.

It would be advisable for us to give some details about the Cabot consent decree in the Technical Support Document for the designation so that reviewers can see that significant reductions in emissions are on the way and hopefully reduce any concerns about future nonattainment status. Relevant details include Consent Decree identification, the effective date, and the emission limits imposed by the decree.

Best regards,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, March 22, 2017 1:30 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Cc: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: Cabot Ville Platte Modeling Report

I'll check but it's likely because I ran the modeling in Lakes software and then I changed the name and saved it to send to you all and it may have affected the file names. I'll try to send the files as they were originally named and see if that fixes the descrepancies.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Wednesday, March 22, 2017 1:13 PM
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Cc: Snyder, Erik
Subject: RE: Cabot Ville Platte Modeling Report

Vennetta,

Would you please check that the correct folder was zipped for transmittal? I've noticed some discrepancies between the modeling files, the control file, and the report that indicate that this could be the case.

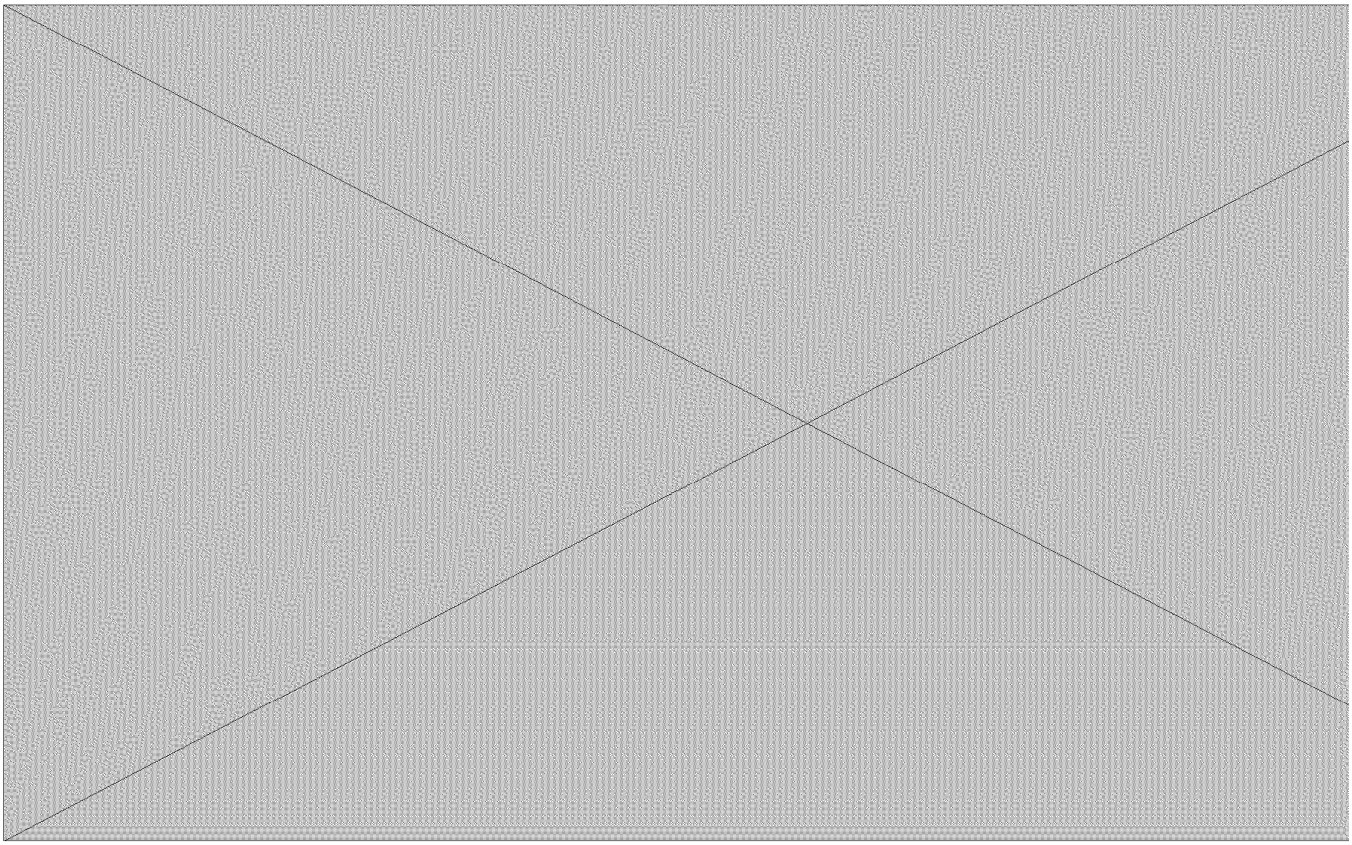
1. The hourly emissions file is missing in the zip archive

2. The surface and profile files included in the zip archive don't have the same name as given in the control file

3. The receptor file is missing in the zip archive

4. The report gives contours that exclude the plant grounds and have fencerow receptors. The receptor file you sent me this morning does not:

Fig. 4 Near-Field Impact Contour



Near field receptor plot from the receptor file sent this morning:

Since we are likely to get requests for the modeling files, I thought it best to check with you now.

Thanks,

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From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, March 22, 2017 9:47 AM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Cc: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: Cabot Ville Platte Modeling Report

Here you go.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Wednesday, March 22, 2017 9:11 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: RE: Cabot Ville Platte Modeling Report

Vennetta,

In looking through the modeling files, I notice that the receptor file which is "INCLUDED" in the control file, seems to be missing from the zip file archive.

```
************************************
** AERMOD Receptor Pathway
************************************
**
**
RE STARTING
  INCLUDED "Cabot Ville Platte Final.rou"
RE FINISHED
**
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Thanks,

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From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Friday, January 13, 2017 5:04 PM
To: Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Donald Trahan <Donald.Trahan@LA.GOV>; Vivian Aucoin <Vivian.Aucoin@LA.GOV>; Snyder, Erik <snyder.erik@epa.gov>; Imhoff, Robert <imhoff.robert@epa.gov>
Subject: Cabot Ville Platte Modeling Report

Good Evening,

Attached is the modeling report for the Cabot Ville Platte facility to fulfill the DRR requirements. The modeling files were submitted electronically.

Vennetta T. Hayes

LDEQ

225-219-3412

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Thur 3/23/2017 12:37:35 PM
Subject: RE: Cabot Ville Platte Modeling Report

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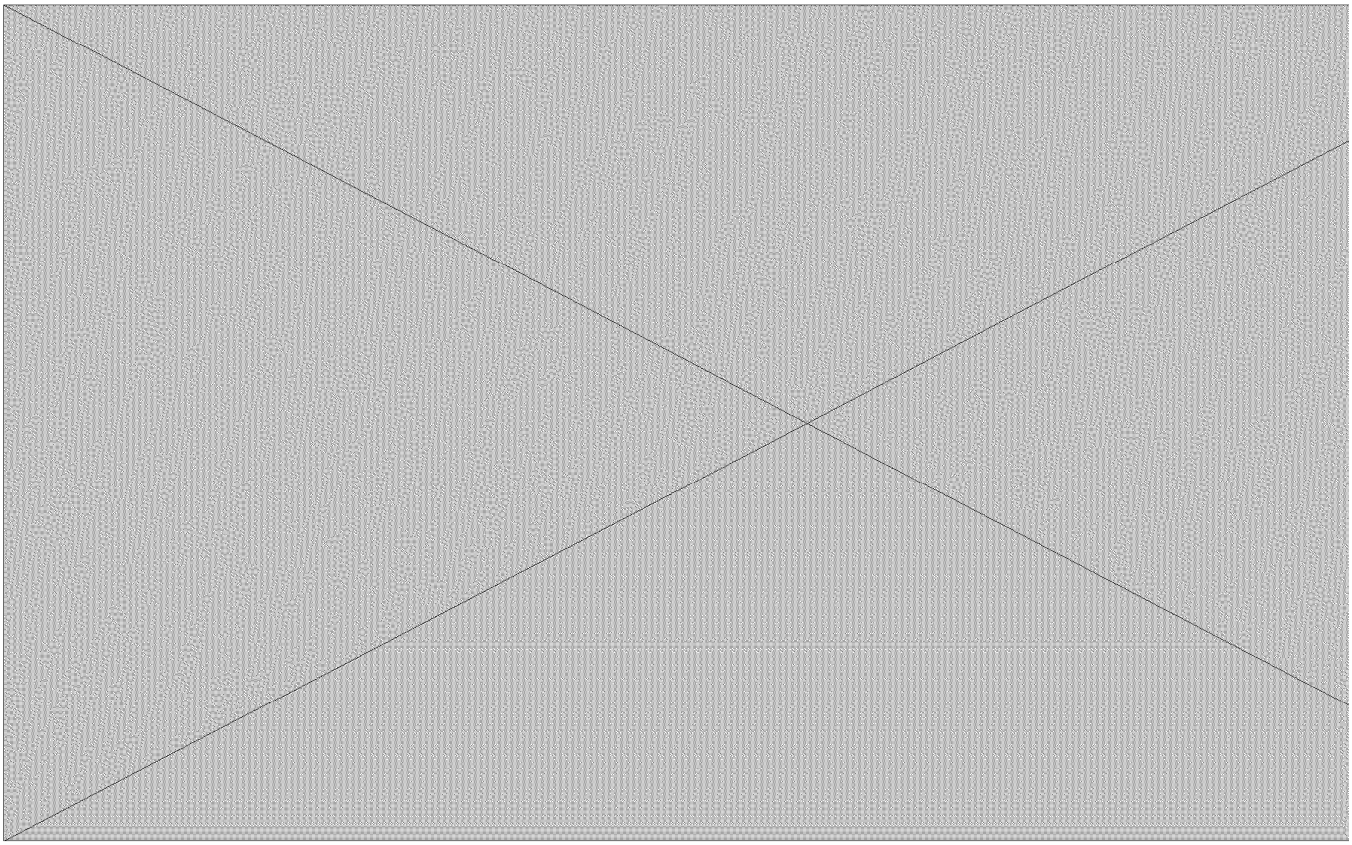

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To: Snyder, Erik[snyder.erik@epa.gov]
From: Clark, David
Sent: Thur 3/9/2017 9:53:36 PM
Subject: RE: Memorandum/Clarification on the AERMOD Modeling System Version for Use in SO2 Implementation Efforts and Other Regulatory Actions

Thank you Erik.

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

Fax: 501 682-0753

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From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, March 09, 2017 1:37 PM
To: Clark, David
Subject: FW: Memorandum/Clarification on the AERMOD Modeling System Version for Use in SO2 Implementation Efforts and Other Regulatory Actions

FYI – Memo from OAQPS on Adj_U* bug and moving forward.

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Donaldson, Guy
Sent: Thursday, March 09, 2017 1:15 PM
To: beverly.botchlet-smith@deq.state.ok.us; cheryl.bradley@deq.state.ok.us; dbrymer@tceq.state.tx.us; eddie.terrill@deq.state.ok.us; Fmacias@cabq.gov; Itavarez@cabq.gov; Nieto, Margaret E. <mnieto@cabq.gov>; rheaume@adeq.state.ar.us; richard.goodyear@state.nm.us; rita.bates@state.nm.us; Vivian Aucoin <Vivian.Aucoin@LA.GOV>; Spencer, Stuart <SPENCER@adeq.state.ar.us>; Montgomery, William <Montgomery@adeq.state.ar.us>; Donald Trahan <Donald.Trahan@LA.GOV>; vennetta.hayes@la.gov
Cc: Snyder, Erik <snyder.erik@epa.gov>; Feldman, Michael <Feldman.Michael@epa.gov>; Imhoff, Robert <imhoff.robert@epa.gov>; Mohr, Ashley <Mohr.Ashley@epa.gov>
Subject: FW: Memorandum/Clarification on the AERMOD Modeling System Version for Use in SO2 Implementation Efforts and Other Regulatory Actions

FYI

To: Snyder, Erik[snyder.erik@epa.gov]; Mustafa, Sufi A., NMENV[sufi.mustafa@state.nm.us]
From: Heath, David, NMENV
Sent: Mon 1/30/2017 5:33:33 PM
Subject: RE: SJGS modeling files

Erik,

Just checking if you did receive the modeling files for the SGJS SO2 attainment project.

David Heath

Modeling Scientist

NMED / AQB

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Friday, January 27, 2017 12:22 PM
To: Mustafa, Sufi A., NMENV <sufi.mustafa@state.nm.us>
Cc: Heath, David, NMENV <david.heath@state.nm.us>
Subject: RE: SJGS modeling files

Thanks Sufi and David. Sorry we are on a short timeline on our end right now.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Mustafa, Sufi A., NMENV [mailto:sufi.mustafa@state.nm.us]
Sent: Friday, January 27, 2017 1:18 PM
To: Snyder, Erik <snyder.erik@epa.gov>
Cc: Heath, David, NMENV <david.heath@state.nm.us>
Subject: RE: SJGS modeling files

Erik

I am requesting Dave to send you files. If we have difficulty posting files we will let you know.

Sufi A. Mustafa, Ph.D.

Manager Air Dispersion Modeling and Emission Inventory Section

New Mexico Environment Department's Air Quality Bureau

Phone: 505 476 4318

525 Camino de los Marquez

Suite 1

Santa Fe, New Mexico, 87505

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Friday, January 27, 2017 10:02 AM
To: Mustafa, Sufi A., NMENV <sufi.mustafa@state.nm.us>
Subject: SJGS modeling files

Hi Sufi,

Hope things are going okay. Called and left a voicemail on your work #. I was wanting to get a copy of your modeling files for SJGS. Let me know if you have a way for ftp or if I should set up a temporary google docs site or something.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

To: Snyder, Erik[snyder.erik@epa.gov]
Cc: Mustafa, Sufi A., NMENV[sufi.mustafa@state.nm.us]
From: Heath, David, NMENV
Sent: Fri 1/27/2017 8:15:11 PM
Subject: RE: SJGS modeling files

2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground.BST
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2.BND
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2.DTA
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2.GRF
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2.LST
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2.RUN
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2.SUM
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2_1-hr_ALL_MXDYBYYR.OUT
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2_1-hr_ALLNO6_MXDYBYYR.OUT
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2_1-hr_ALLNO6BG_MXDYBYYR.OUT
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2_1-hr_APS_MXDYBYYR.OUT
2013-15_SJGS_wOldVel and 4CPP_CIA_Full-Grid_wSub_AERSURF_MET_HourlyBackground_3yrs_SO2_1-hr_SJGS_MXDYBYYR.OUT
SJGS_Buildings.PIP
SJGS_Buildings.PRW
SJGS_Buildings.SO
SJGS_Buildings.SUM
SJGS_Buildings.TAB

Eric,

The first batch of files didn't make it thru. I'll try breaking it up into smaller pieces. Here're the model files.

Dave

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Friday, January 27, 2017 12:22 PM
To: Mustafa, Sufi A., NMENV <sufi.mustafa@state.nm.us>
Cc: Heath, David, NMENV <david.heath@state.nm.us>

Subject: RE: SJGS modeling files

Thanks Sufi and David. Sorry we are on a short timeline on our end right now.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Mustafa, Sufi A., NMENV [mailto:sufi.mustafa@state.nm.us]
Sent: Friday, January 27, 2017 1:18 PM
To: Snyder, Erik <snyder.erik@epa.gov>
Cc: Heath, David, NMENV <david.heath@state.nm.us>
Subject: RE: SJGS modeling files

Erik

I am requesting Dave to send you files. If we have difficulty posting files we will let you know.

Sufi A. Mustafa, Ph.D.

Manager Air Dispersion Modeling and Emission Inventory Section

New Mexico Environment Department's Air Quality Bureau

Phone: 505 476 4318

525 Camino de los Marquez

Suite 1

Santa Fe, New Mexico, 87505

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Friday, January 27, 2017 10:02 AM
To: Mustafa, Sufi A., NMENV <sufi.mustafa@state.nm.us>
Subject: SJGS modeling files

Hi Sufi,

Hope things are going okay. Called and left a voicemail on your work #. I was wanting to get a copy of your modeling files for SJGS. Let me know if you have a way for ftp or if I should set up a temporary google docs site or something.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

To: Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]; Spencer, Stuart[SPENCER@adeq.state.ar.us]; Montgomery, William[Montgomery@adeq.state.ar.us]; McCorkle, Mark[MAC@adeq.state.ar.us]
From: Clark, David
Sent: Mon 1/23/2017 2:00:51 PM
Subject: RE: SO2 NAAQS Area Attainment Designation Recommendation for Counties in the State of Arkansas

Guy,
Correct, no hard copy of this letter went out. The error was caught after my emailing it to you and Erik but before a hard copy went into the postal mail, so just ignore/delete the email. As soon as the Governor's office signs the appropriate letter I will email it and also put a hard copy in the postal mail along with DVDs that include the reports and modeling files.

Sorry again for the confusion and feel free to give Stuart or myself a call if you need,

David

David W. Clark, M.S.
Epidemiologist
Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR. 72118
U.S.A.
Voice: 501 682-0070
Fax: 501 682-0753

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-----Original Message-----
From: Donaldson, Guy [mailto:Donaldson.Guy@epa.gov]
Sent: Monday, January 23, 2017 7:56 AM
To: Clark, David
Cc: Snyder, Erik; Spencer, Stuart; Montgomery, William; McCorkle, Mark
Subject: RE: SO2 NAAQS Area Attainment Designation Recommendation for Counties in the State of Arkansas

I assume there isn't a hard copy of this letter that will get to the RA's office and our controlled correspondence folks. Right?

-----Original Message-----
From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Friday, January 20, 2017 9:40 AM
To: Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Snyder, Erik <snyder.erik@epa.gov>; Spencer, Stuart <SPENCER@adeq.state.ar.us>; Montgomery, William <Montgomery@adeq.state.ar.us>; McCorkle, Mark <MAC@adeq.state.ar.us>
Subject: FW: SO2 NAAQS Area Attainment Designation Recommendation for Counties in the State of Arkansas
Importance: High

Guy,
Attached is the follow-up Arkansas Governor's SO2 Designations letter that Stuart mentions below. I am

also putting a copy of this Governor's Letter and DVDs that contain the reports and modeling files in the postal mail to you.

David

David W. Clark, M.S.
Epidemiologist
Air Division – Planning & Air Quality Analysis Branch Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR. 72118
U.S.A.
Voice: 501 682-0070
Fax: 501 682-0753

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-----Original Message-----
From: Spencer, Stuart
Sent: Friday, January 13, 2017 2:12 PM
To: 'Donaldson, Guy (Donaldson.Guy@epa.gov)'
Cc: 'Stenger, Wren (stenger.wren@epa.gov)'; Keogh, Becky; Montgomery, William; McCorkle, Mark; 'Coleman.Sam@epa.gov'; 'gray.david@epa.gov'; Clark, David
Subject: SO2 NAAQS Area Attainment Designation Recommendation for Counties in the State of Arkansas
Importance: High

Guy,

I am pleased to attach for your review and consideration ADEQ's letter recommending an "unclassifiable/attainment" designation for Benton, Independence, and Mississippi Counties, as well as the accompanying modeling reports for the facilities in each of those counties with SO2 emissions greater than the EPA-determined threshold for review. I am attaching the reports for Plum Point and Flint Creek to this e-mail. I will send the Independence County report (Entergy Independence facility and FutureFuel Chemical Company) separately due to its size. An official Governor's letter will follow.

I appreciate our call on this issue earlier this week. Thank you, again, for your guidance and assistance.

Sincerely,

Stuart Spencer
Associate Director- Office of Air Quality Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118
Ph. # (501) 682-0750
Fax # (501) 682-0880
E-mail: SPENCER@adeq.state.ar.us
Web: http://www.adeq.state.ar.us

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immediately from your computer. Any other use, retention, dissemination, forwarding, printing or copying of this email is strictly prohibited.

To: Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]; Spencer, Stuart[SPENCER@adeq.state.ar.us]; Montgomery, William[Montgomery@adeq.state.ar.us]; McCorkle, Mark[MAC@adeq.state.ar.us]
From: Clark, David
Sent: Fri 1/20/2017 3:40:08 PM
Subject: FW: SO2 NAAQS Area Attainment Designation Recommendation for Counties in the State of Arkansas
Ron Curry, National Ambient Air Quality Standard.pdf

Guy,
Attached is the follow-up Arkansas Governor's SO2 Designations letter that Stuart mentions below. I am also putting a copy of this Governor's Letter and DVDs that contain the reports and modeling files in the postal mail to you.

David

David W. Clark, M.S.
Epidemiologist
Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR. 72118
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-----Original Message-----
From: Spencer, Stuart
Sent: Friday, January 13, 2017 2:12 PM
To: 'Donaldson, Guy (Donaldson.Guy@epa.gov)'
Cc: 'Stenger, Wren (stenger.wren@epa.gov)'; Keogh, Becky; Montgomery, William; McCorkle, Mark; 'Coleman.Sam@epa.gov'; 'gray.david@epa.gov'; Clark, David
Subject: SO2 NAAQS Area Attainment Designation Recommendation for Counties in the State of Arkansas
Importance: High

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Sincerely,

Stuart Spencer
Associate Director- Office of Air Quality Arkansas Department of Environmental Quality

5301 Northshore Drive
North Little Rock, AR 72118
Ph. # (501) 682-0750
Fax # (501) 682-0880
E-mail: SPENCER@adeq.state.ar.us
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To: Snyder, Erik[snyder.erik@epa.gov]
Cc: Donaldson, Guy[Donaldson.Guy@epa.gov]; Medina, Dayana[Medina.Dayana@epa.gov]; Grady, James[Grady.James@epa.gov]; Spencer, Stuart[SPENCER@adeq.state.ar.us]; Montgomery, William[Montgomery@adeq.state.ar.us]; McCorkle, Mark[MAC@adeq.state.ar.us]
From: Clark, David
Sent: Tue 1/17/2017 4:04:51 PM
Subject: RE: Plum Point & Flint Creek SO2 Reports

Erik,

We are working to send, via DVD and postal mail, the modeling files that are the basis of the three reports (Independence County, Plum Point and Flint Creek).

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

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From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Tuesday, January 17, 2017 9:58 AM
To: Clark, David
Cc: Donaldson, Guy; Medina, Dayana; Grady, James; Spencer, Stuart
Subject: RE: Plum Point & Flint Creek SO2 Reports

Hi David,

Wanted to confirm that we have the Plum Point and Flint Creek reports. Zipping them and then changing the extension worked. We also have 6 files for the Independence report that we will stitch back together on our end. We will also need to get the modeling files but will have to work something out other than email. Let me know if you all plan to set up ftp or send disks/dvds.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Tuesday, January 17, 2017 9:47 AM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: Plum Point & Flint Creek SO2 Reports

Erik,

Here are these two reports in the form of zipped files with the extensions renamed. Please confirm to Guy, Stuart Spencer and myself that you successfully received them.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

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To: Snyder, Erik[snyder.erik@epa.gov]
Cc: McCorkle, Mark[MAC@adeq.state.ar.us]
From: Clark, David
Sent: Fri 1/13/2017 2:37:28 PM
Subject: RE: ADEQ SO2 NAAQS Round 2 Follow-up Data Extension Request

Hello Erik,

Thank you for your inquiry. ADEQ does not have any SO2 sources being modeled as area sources for the SO2 NAAQS designations.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

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From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, January 12, 2017 2:55 PM
To: Clark, David
Subject: FW: ADEQ SO2 NAAQS Round 2 Follow-up Data Extension Request

Hi David,

Random Question, Can you check if there are any sources being modeled as area SO2 sources? OAQPS found a bug in the December AERMOD version that only impacts area sources. Doubt there are any significant area sources, but just thought I would check. Not sure where the project is at this point but if there are area sources OAQPS does have a corrected code I could get for you but the bug is only on area sources which are rare for SO2.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Donaldson, Guy
Sent: Wednesday, January 11, 2017 3:56 PM
To: Snyder, Erik <snyder.erik@epa.gov>; Imhoff, Robert <imhoff.robert@epa.gov>; Medina, Dayana <Medina.Dayana@epa.gov>; Grady, James <Grady.James@epa.gov>
Subject: FW: ADEQ SO2 NAAQS Round 2 Follow-up Data Extension Request

FYI,

Independence County modeling will be late.

Hopefully no more than a few weeks. Apparently had trouble getting contract rolling.

From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Wednesday, January 11, 2017 2:27 PM
To: Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Spencer, Stuart <SPENCER@adeq.state.ar.us>
Subject: ADEQ SO2 NAAQS Round 2 Follow-up Data Extension Request

Guy,

Please see the attached letter regarding our need for additional time to provide the follow-up data EPA requested for our Round 2 Independence County SO_2 NAAQS designation.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

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To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]; Feldman, Michael[Feldman.Michael@epa.gov]
From: Imhoff, Robert
Sent: Wed 12/28/2016 10:15:13 PM
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

Here's the relevant section from the memorandum **Additional Clarification Regarding Application of Appendix W Modeling**

Guidance for the 1-hour *NO2* ,National Ambient Air Quality Standard which also applies to 1-hour SO2.

In past guidance (EPA, 1988), EPA has indicated that the significant contribution

analysis should be based on a source's contribution to the modeled violation paired in time and

space. The form of the 1-hour NO_2 NAAQS complicates this analysis since the modeled

violation is based on a multiyear average of the annual distribution of daily maximum 1-hour

values, i.e., a particular modeled violation at a particular receptor represents an average based on

specific hours on specific days from each of the five years of meteorological data (for National

Weather Service (NWS) data). It is important to point out here that the significant contribution

analysis is not limited to analyzing the source's contribution associated only with the modeled

design value based on the 98th-percentile cumulative air quality impact at the receptor, but rather

must examine all cases where the cumulative impact exceeds the NAAQS at or below the 98th

percentile. In some cases a source's contribution to the 98th-percentile of the daily maximum 1-

hour values from the cumulative impact (i.e., the cumulative impact value or modeled design

value that is compared to the NAAQS) may be below the SIL, while the source's contribution to

cumulative impacts below the 98th-percentile but above the NAAQS could exceed the SIL.

Therefore, the significant contribution analysis should examine every multiyear average of daily

maximum 1-hour values, beginning with the 8th-highest (98th-percentile)2, continuing down the

ranked distribution until the cumulative impact is below the NAAQS. Since the form of the

standard is based on the annual distribution of daily maximum 1-hour values, the significant

contribution analysis should be limited to the distribution of daily maximum 1-hour values, i.e.,

the 2nd, 3rd, 4th-highest 1-hour values during the day, and so on, are not considered in this

analysis. In addition, for applications with more than one year of meteorological data, the

significant contribution analysis should only examine ranks paired across the years, i.e., the

multiyear average of the *N*th-highest values across each of the years processed. The recent update

to the AERMOD model (dated 11059) includes an option (the MAXDCONT keyword) to

automatically perform this contribution analysis (EPA, 2010b), examining the contribution from

project emissions to the cumulative impacts at each receptor across a user-specified range of

ranked values, paired in time and space, as an internal post-processor within the model. Other

options are available in the recent AERMOD update that identify the specific data periods

contributing to the cumulative modeled impacts at each receptor.

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, December 28, 2016 3:47 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Cc: Snyder, Erik <snyder.erik@epa.gov>; Feldman, Michael <Feldman.Michael@epa.gov>
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

Sure, I'll contact Beth.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Wednesday, December 28, 2016 3:46 PM
To: Vennetta Hayes
Cc: Snyder, Erik; Feldman, Michael
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

Vennetta,

I took a quick scan and do have one question up front. We may have more later, but thought that we could go ahead and get this one addressed.

In table 4-1, there is the following entry:

Maximum BCII

Contribution to

a NAAQS

Exceedance

7.763 (μg/m3)

(at 12th rank)

We are not sure what the note "at the 12th rank" refers to. Can you please get a description of the methodology they followed for determining the highest contribution by BCII to any modeled exceedance of the standard?

Thanks,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, December 28, 2016 2:48 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

The email I just sent was updated from what you saw before so this was my first time sending it to you. I didn't expect a response right away.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Wednesday, December 28, 2016 2:46 PM
To: Vennetta Hayes; Snyder, Erik
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

Vennetta,

I've been out till today and have not had time to look at it. Erik is on leave through next week. I should have some time tomorrow.

-Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]

Sent: Wednesday, December 28, 2016 2:43 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>
Subject: FW: Draft 1hr SO2 modeling results for Big Cajun II

Do you need any further clarification or additional information before they finalize this report?

From: Beth Barfield [mailto:Beth.Barfield@erm.com]
Sent: Thursday, December 22, 2016 4:06 PM
To: Vennetta Hayes
Cc: Gary.Ellender@nrg.com; Craig.Eckberg@nrg.com; Sid Rajmohan
Subject: 1hr SO2 modeling results for Big Cajun II

Hi Vennetta,

As you requested, I am sending you an unofficial copy of the modeling results report for the Louisiana Generating Big Cajun II Power Plant. Please let me know if you have any comment/changes that we should make before the final submittal.

Thank you and Merry Christmas!

Beth

Beth Barfield, QEP

Principal Consultant, Air Quality and Climate Change

The Raleigh office has a new address!

ERM

4140 Parklake Ave | Suite 110 |Raleigh NC 27612

Main 919.233.4501 | **Direct** 919.855.2273

E Beth.Barfield@erm.com | **W** www.erm.com

No change in email or phone contact

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To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]; Feldman, Michael[Feldman.Michael@epa.gov]
From: Imhoff, Robert
Sent: Wed 12/28/2016 9:46:01 PM
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

Vennetta,

I took a quick scan and do have one question up front. We may have more later, but thought that we could go ahead and get this one addressed.

In table 4-1, there is the following entry:

Maximum BCII

Contribution to

a NAAQS

Exceedance

7.763 ($\mu g/m^3$)

(at 12th rank)

We are not sure what the note "at the 12th rank" refers to. Can you please get a description of the methodology they followed for determining the highest contribution by BCII to any modeled exceedance of the standard?

Thanks,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, December 28, 2016 2:48 PM

To: Imhoff, Robert <imhoff.robert@epa.gov>
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

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From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Wednesday, December 28, 2016 2:46 PM
To: Vennetta Hayes; Snyder, Erik
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

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From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, December 28, 2016 2:43 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>
Subject: FW: Draft 1hr SO2 modeling results for Big Cajun II

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Beth Barfield, QEP

Principal Consultant, Air Quality and Climate Change

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To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]; Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Wed 12/28/2016 8:45:31 PM
Subject: RE: Draft 1hr SO2 modeling results for Big Cajun II

Vennetta,

I've been out till today and have not had time to look at it. Erik is on leave through next week. I should have some time tomorrow.

-Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, December 28, 2016 2:43 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>
Subject: FW: Draft 1hr SO2 modeling results for Big Cajun II

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To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Fri 12/16/2016 2:19:15 PM
Subject: RE: Request for status of SO2 Modeling Reports

Vennetta,

I am drafting our comments on the revised modeling proposal for BCII and should have it ready this morning. I do have a question which needs to be addressed prior to finalizing our review. I'm wondering if the exclusion of receptors from within the Georgia Pacific fenceline could be a typo?

Receptor locations will be reviewed and, in accordance with the 1-hour SO_2 Modeling TAD, receptors located over areas where monitors could not reasonably be sited will be excluded from the modeling, specifically those within the Georgia Pacific fence line.

Could you follow up with ERM and see if this is their intent? If so we may have to comment adversely.

Thanks,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Monday, December 12, 2016 10:08 AM
To: Imhoff, Robert <imhoff.robert@epa.gov>; Vivian Aucoin <Vivian.Aucoin@LA.GOV>
Cc: Snyder, Erik <snyder.erik@epa.gov>; Huser, Jennifer <Huser.Jennifer@epa.gov>; Donaldson, Guy <Donaldson.Guy@epa.gov>
Subject: RE: Request for status of SO2 Modeling Reports

Brame has provided the contour plot and update which I have attached. Big Cajun provided the updated protocol attached on Friday.

St. Mary Parish facilities are negotiating consent decrees and have not provided information with the exception of Cabot Canal which has limits that place them below the 2000 tpy by consent decree.

I am still working on refined modeling for Cabot Ville Platte, but so far do not have a model demonstrating attainment.

Vennetta T. Hayes
LDEQ Air Permits
219-3412

From: Imhoff, Robert [imhoff.robert@epa.gov]
Sent: Monday, December 12, 2016 9:49 AM
To: Vivian Aucoin; Vennetta Hayes
Cc: Snyder, Erik; Huser, Jennifer; Donaldson, Guy
Subject: Request for status of SO2 Modeling Reports

Hi Vennetta,

Since we are now only a little more than one month away from the deadline for modeling reports for the SO2 standard, it would be good to touch base on the status. The table below gives what I've got right now, let me know of any updates or changes that are needed. Note that these do not include the proposed modeling for Rain and Nelson in Calcasieu which is under discussion.

Best regards,

Bob

		Designation Modeling Protocol		Protocol Review			Modeling Report		Modeling Report Review		
State	Facility	Date Protocol Received / Expected	Received Yes/No	Date Review Completed / Expected	Reviewer Assigned	Comments / Problems	Status (Go / Revision Requested)	Date Received / Expected	Received Yes/No	Date Review Completed / Sent / Expected	Reviewer Assigned	Comments / Problems	Status (Go / Revisio Requir
LA	**St. Mary Parish Orion** Engineered Carbons LLC - Avanhoe Carbon Black Plant+	9/13/2016	Yes	REI	10/4/2016	10/4/2016 Requested more details. Recommended closer monitor for BKGD,	Revision	Need date					

	Columbia Chemicals Co. - North Bend Plant+ Cabot Corp. - Canal Plant				Alternate surface site, Extend receptors to 20km					
LA	Cabot Corp. - Ville Platte Plant	9/30/2016	Yes	REI	10/4/2016	10/4/2016	Recommended closer monitor for BKGD. Extend receptors to 20km	Revisions Needed date		
LA	CLECO Power LLC - Brame Energy Center	8/4/2016	Yes	REI	9/12/2016	9/12/2016	Brame indicated either designation or siting but undecided. LA indicated that they had already received modeling report from Brame that indicated attainment. We recommended receptor out to	(1) 9/15/2016 (2) 10/11/2016	Yes	(1) 10/11/2016 (2) 10/11/2016	(1) 9/15/2016 (2) 10/11/2016	First report no figures.	Revisio Needed (a) contour plot to 20km) (b) stateme that CEM follows 40 CFR Part 75 for all Quality Assura and data reportin

					20km Need to revise method adjusting emissions for U1. Recommend using a closer monitor.		
LA	Louisiana Generating LLC - Big Cajun II Power Plant	7/12/2016	Yes	REI	10/17/2016	10/17/2016	Revisions Need date

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: Vivian Aucoin[Vivian.Aucoin@LA.gov]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]; Huser, Jennifer[Huser.Jennifer@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
From: Imhoff, Robert
Sent: Mon 12/12/2016 3:49:11 PM
Subject: Request for status of SO2 Modeling Reports

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Best regards,

Bob

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State	**Facility**	**Date Protocol Received / Expected**	**Received Yes/No**	**Reviewer**	**Date Review Completed / Sent / Expected**	**Comments / Problems**	**Status (Go / Revisions Requested)**	**Date Received / Expected**	**Received Yes/No**	**Reviewer**	**Date Review Completed / Sent / Expected**	**Comments / Problems**	**Status (Go / Revisi Requir**
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Cajun II Power Plant		for U1. Recommend using a closer monitor.

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

STATE OF ARKANSAS
ASA HUTCHINSON
GOVERNOR

January 11, 2017

Mr. Ron Curry
Regional Administrator
U.S. Environmental Protection Agency, Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Round 3 submission of Sulfur Dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) Area Attainment Designation Recommendation for Counties in the State of Arkansas.

Dear Mr. Curry:

Section 107(d)(1) of the Federal Clean Air Act requires state governors to recommend attainment status designations after the promulgation of any new or revised NAAQS. On June 2, 2010, the federal Environmental Protection Agency (EPA) promulgated a new primary 1-hour NAAQS for SO_2 at 75 ppb for the 3-year average of the 99th percentiles of the maximum daily values per calendar year.

As reflected in the State's letter dated March 22, 2011, all monitored counties in Arkansas are then and now attaining the existing primary and secondary SO_2 standards. However, as part of the implementation of the new 1-hour SO_2 NAAQS, EPA has begun requiring, in addition to monitoring data, the use of dispersion modeling for areas with facilities emitting SO_2 in quantities greater than the threshold set by the EPA. For Round 3, the current round of designations, two counties in Arkansas (Benton and Mississippi) are subject to this requirement because they include facilities with SO_2 emissions greater than the EPA-determined threshold for review.

Benton and Mississippi counties are in compliance with the 2010 SO_2 NAAQS based on modeling analyses conducted by or for the Arkansas Department of Environmental Quality (ADEQ). Copies of the two Modeling Reports: 1) Southwestern Electric Power Company d/b/a Flint Creek Power Plant and 2) Plum Point Services Company, as well as two complete archives of AERMOD-associated modeling files are enclosed.

500 WOODLANE, SUITE 250 • LITTLE ROCK, AR 72201
TELEPHONE (501) 682-2345
www.governor.arkansas.gov

As a result of these two dispersion modeling evaluations, Arkansas recommends that the two counties (Benton and Mississippi) be designated "unclassifiable/attainment". In addition, the two counties with existing monitor sites, Pulaski and Union, continue to maintain the standard and should be designated as in "attainment". Jefferson County was already designated as "unclassifiable/attainment" by the EPA in Round 2. All other counties in Arkansas should be designated "unclassifiable."

For further information regarding these recommendations, please contact Stuart Spencer, Associate Director for the Office of Air Quality, Arkansas Department of Environmental Quality, by phone at 501-682-0750 or email at SPENCER@adeq.state.ar.us.

Sincerely,

Asa Hutchinson

Attachment: Table of Arkansas County Designation Recommendations

Enclosures:
1) SO_2 Air Dispersion Modeling Report and a complete archive of AERMOD-associated modeling files for Southwestern Electric Power Company d/b/a Flint Creek Power Plant
2) SO_2 Air Dispersion Modeling Report and a complete archive of AERMOD-associated modeling files for Plum Point Services Company, LLC

500 Woodlane Street • Little Rock, Ar 72201
Telephone (501) 682-2345
www.governor.arkansas.gov

Arkansas 1-Hour Sulfur Dioxide (SO_2) Designation Recommendations	
County	**Recommended Designation**
Arkansas	Unclassifiable
Ashley	Unclassifiable
Baxter	Unclassifiable
Benton	Unclassifiable/Attainment[1]
Boone	Unclassifiable
Bradley	Unclassifiable
Calhoun	Unclassifiable
Carroll	Unclassifiable
Chicot	Unclassifiable
Clark	Unclassifiable
Clay	Unclassifiable
Cleburne	Unclassifiable
Cleveland	Unclassifiable
Columbia	Unclassifiable
Conway	Unclassifiable
Craighead	Unclassifiable
Crawford	Unclassifiable
Crittenden	Unclassifiable
Cross	Unclassifiable
Dallas	Unclassifiable
Desha	Unclassifiable
Drew	Unclassifiable
Faulkner	Unclassifiable
Franklin	Unclassifiable
Fulton	Unclassifiable
Garland	Unclassifiable
Grant	Unclassifiable
Greene	Unclassifiable
Hempstead	Unclassifiable
Hot Spring	Unclassifiable
Howard	Unclassifiable

[1] Current Round 3 recommendation based on enclosed Southwestern Electric Power Company d/b/a Flint Creek Power Plant Modeling Report

Arkansas 1-Hour Sulfur Dioxide (SO_2) Designation Recommendations (cont.)	
County	**Recommended Designation**
Independence	Unclassifiable[2]
Izard	Unclassifiable
Jackson	Unclassifiable
Jefferson	Unclassifiable/Attainment[3]
Johnson	Unclassifiable
Lafayette	Unclassifiable
Lawrence	Unclassifiable
Lee	Unclassifiable
Lincoln	Unclassifiable
Little River	Unclassifiable
Logan	Unclassifiable
Lonoke	Unclassifiable
Madison	Unclassifiable
Marion	Unclassifiable
Miller	Unclassifiable
Mississippi	Unclassifiable/Attainment[4]
Monroe	Unclassifiable
Montgomery	Unclassifiable
Nevada	Unclassifiable
Newton	Unclassifiable
Ouachita	Unclassifiable
Perry	Unclassifiable
Phillips	Unclassifiable
Pike	Unclassifiable
Poinsett	Unclassifiable
Polk	Unclassifiable
Pope	Unclassifiable
Prairie	Unclassifiable

[2] Round 2 recommendation and EPA's June 30, 2016 designation
[3] Round 2 recommendation and EPA's June 30, 2016 designation
[4] Current Round 3 recommendation based on enclosed Plum Point Services Company, LLC Modeling Report

Arkansas 1-Hour Sulfur Dioxide (SO_2) Designation Recommendations (cont.)	
County	**Recommended Designation**
Pulaski	Attainment[5]
Randolph	Unclassifiable
St. Francis	Unclassifiable
Saline	Unclassifiable
Scott	Unclassifiable
Searcy	Unclassifiable
Sebastian	Unclassifiable
Sevier	Unclassifiable
Sharp	Unclassifiable
Stone	Unclassifiable
Union	Attainment[5]
Van Buren	Unclassifiable
Washington	Unclassifiable
White	Unclassifiable
Woodruff	Unclassifiable
Yell	Unclassifiable

[5] Based on monitor data

ADEQ

ARKANSAS

Department of Environmental Quality

2010 1-HOUR SO_2 NAAQS Air Dispersion Modeling Report:

Plum Point Services Company, LLC – Plum Point Energy Station
2732 South County Road 623
Osceola, Arkansas 72370

AFIN: 47-00461
FIPS: 0509300461
Mississippi County

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APPENDICES

Appendix 1: Electronic Modeling Archive

DRAFT

ED_001261_00111425

1.0 INTRODUCTION & BACKGROUND

On June 3, 2010, the U.S. Environmental Protection Agency (EPA) set a 1-Hour "Primary" National Ambient Air Quality Standard (NAAQS) for Sulfur Dioxide (SO_2) at 75 parts per billion (ppb). On August 21, 2015, the EPA promulgated the *Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard (NAAQS)* [1] (hereafter *2010 SO_2 DRR*) whereby states use predictive dispersion modeling or monitoring to evaluate specific contributors of SO_2 with annual emissions exceeding 2,000 tons per year (tpy). Because the EPA's view is that SO_2 is a "source-oriented" criteria pollutant that is relatively stable in the first few kilometers from the source, this rule directs agencies to focus on specific sources as the main contributors to SO_2 air quality impacts and to determine those potential source contributions through either dispersion modeling or source-oriented ambient air monitoring.

On January 8, 2016, the Arkansas Department of Environmental Quality (ADEQ) submitted a letter to EPA R6 identifying sources as required by the *2010 SO_2 DRR* that included Plum Point Services Company, LLC – Plum Point Energy Station (Plum Point) with actual emissions of 2,549.46 tpy (2014 reporting year). Here, the ADEQ, along with Plum Point, submits to the EPA an AERMOD-based SO_2 predictive dispersion Modeling Report that is accompanied by a complete archive of the electronic modeling files (Appendix A).

The 1-Hour SO_2 characterization modeling described in this Modeling Report adheres to the following guidance documents: the August 2016 *SO_2 NAAQS Designations Modeling Technical Assistance Document*[2] (*SO_2 Modeling TAD*) issued in draft form by the EPA, the August 2015 *2010 SO_2 DRR,* the March 2011 *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-Hour NO_2 National Ambient Air Quality Standard* [3] (*NO_2 Memorandum*) and any direction received from the EPA.

2.0 FACILITY LOCATION

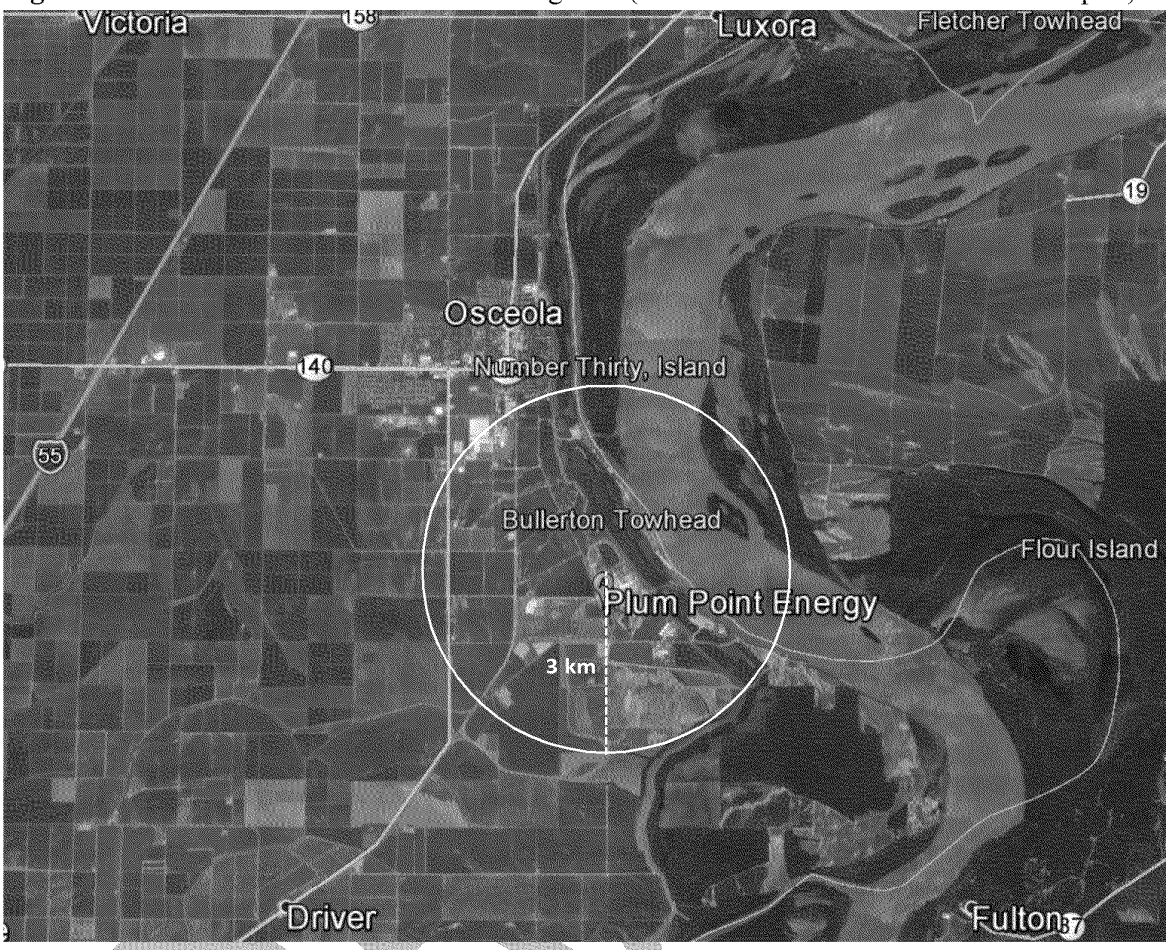
As shown in Figure 2, Plum Point is located in a rural area of the Arkansas River Valley, comprised mainly of agricultural land with flat terrain. Plum Point is located approximately 4.2 kilometers (km) south of Osceola in Mississippi County, Arkansas. Figure 1 provides an overview of the Plum Point and immediate surrounding area. The approximate central Universal Transverse Mercator (UTM) coordinates of the facility are 232,855 meters (m) east and 3,950,471 m north in Zone 16 [World Geodetic System 1984 (WGS 84)].

[1] https://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2013-0711-0125
[2] https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf
[3] https://www.epa.gov/sites/production/files/2015-07/documents/appwno2_2.pdf

ED_001261_00111425

Figure 1: Plum Point and immediate surrounding area

Figure 2: Plum Point and broader surrounding area (Osceola and Plum Point are 4.2 km apart)



3.0 DISPERSION MODELING ANALYSIS

This section describes the input data and modeling methodology that was used in this SO_2 NAAQS modeling demonstration. The modeling methodology conforms to the *SO_2 Modeling TAD* and other relevant documents.

3.1 Model Selection

The latest version of USEPA's AERMOD model (v.15181) was used for predicting ambient impacts for 1-Hour SO_2 and regulatory default options were used in the analysis.

3.2 Source Description

The modeled sources (Unit #1 Boiler [SN-01] and Auxiliary Boiler [SN-05]) account for 99.9% of the permitted allowable SO_2 emissions from the facility (Table 1). It should be noted that although the Unit #1 Boiler and Auxiliary Boiler are capable of operating simultaneously, since the Auxiliary Boiler's commission the Auxiliary Boiler has only been operated for testing

purposes and the Auxiliary Boiler is limited to 500 hours of operation annually per Permit #: 1995-AOP-R8 (Issued October 31, 2016; p. 47). Therefore, simulating 1) the permitted allowable emissions, and 2) modeling both sources simultaneously and constantly throughout the 2013-2015 period (26,280 hours) made this modeling simulation an extremely conservative analysis.

Table 1: Facility SO_2-emitting sources (Permit #: 1995-AOP-R8; Issued October 31, 2016)

Source Number	Source Description	Permitted Allowable SO_2 Emission Rate lb/hr (tpy)	Included in / Excluded from Model
SN-01	Unit #1 Boiler	1069.0 (4684)	Included
SN-05	Auxiliary Boiler	0.5 (0.2)	Included
SN-06	Emergency Diesel Generator #1	0.5 (0.2)	Excluded
SN-07	Emergency Diesel Fire Pump #1	0.2 (0.1)	Excluded
SN-47	Emergency Diesel Fire Booster Pump #1	0.1 (0.1)	Excluded

Per Section 5.5 of the *SO_2 Modeling TAD* and the *NO_2 Memorandum* regarding intermittent emergency sources such as an emergency diesel-fired generator and fire water pump engines, all SO_2 emitting sources at Plum Point will be modeled except for three very small intermittent emergency SO_2 sources (Emergency Generator #1 [SN-06], Emergency Diesel Generator #1 [SN-07], and Emergency Diesel Fire Booster Pump #1 [SN-47]) with a combined allowable total SO_2 emissions of 0.8 lb/hr (0.4 tpy):

> "*Given the implications of the probabilistic form of the 1-Hour NO_2 NAAQS discussed above, we are concerned that assuming continuous operations for intermittent emissions would effectively impose an additional level of stringency beyond that intended by the level of the standard itself. As a result, we feel that it would be inappropriate to implement the 1-Hour NO_2 standard in such a manner and recommend that compliance demonstrations for the 1-Hour NO_2 NAAQS be based on emission scenarios that can logically be assumed to be relatively continuous or which occur frequently enough to contribute significantly to the annual distribution of daily maximum 1-Hour concentrations. EPA believes that existing modeling guidelines provide sufficient discretion for reviewing authorities to exclude certain types of intermittent emissions from compliance demonstrations for the 1-Hour NO_2 standard under these circumstances.*"[4]

[4] https://www3.epa.gov/ttn/scram/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf (Page 9)

DRAFT

In addition, these three intermittent emergency sources are limited to not exceeding 500 hours of operation each in a 12-month period by Permit: 1995-AOP-R8 (Issued October 31, 2016; p. 69).

3.3 Modeled Emission Rates

As described in Section 5.4 the *SO_2 Modeling TAD*[5], we used the worst-case more conservative measure of permitted allowable SO_2 emissions (Unit #1 Boiler [4,684 tpy; 1,069 lb/hr] and Auxiliary Boiler [0.2 tpy; 0.5 lb/hr]) per the current active permit (Permit Number: 1995-AOP-R8; Issued October 31, 2016; p. 8)[6] for the period of 2013-2015. The use of permitted allowable emissions in this modeling simulation allows Plum Point to be removed from further examination under the DRR based on the requirements in 40 CFR 51.1205(c).

> "*It also remains acceptable to use allowable emissions instead of actuals for designations purposes because allowable emissions would provide a more conservative estimate.*"[5]

3.4 Stack Parameters

Source stack parameters (Table 2) that were input into the model were obtained from the EPA's Emissions Inventory System (EIS) Gateway.

Table 2: Model-input source stack parameters

Source Number	Source Description	Stack Height (m)	Exit Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
SN-01	Unit #1 Boiler	144.78	352.59	25.85	7.32
SN-05	Auxiliary Boiler	57.91	619.26	22.40	1.83

3.5 Good Engineering Practice & Stack Height

Per the *SO_2 Modeling TAD,* because we used allowable emissions, we also employed the Good Engineering Practice (GEP) stack height policy:

> "*If modeling with allowable emissions as discussed in Section 5.4, however, the GEP stack height policy should be used in the model. For those stacks that are above the GEP stack height, the GEP height should be used. For stacks below the GEP stack height, the actual stack height is used. The reasoning for following the GEP stack height policy when using allowable emissions is that since those emissions limits were set with GEP heights, the GEP height policy should be followed even for designations.*"[7]

[5] https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf (Section 5.4)
[6] https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/Air/1995-AOP-R8.pdf
[7] https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf (Section 6.1)

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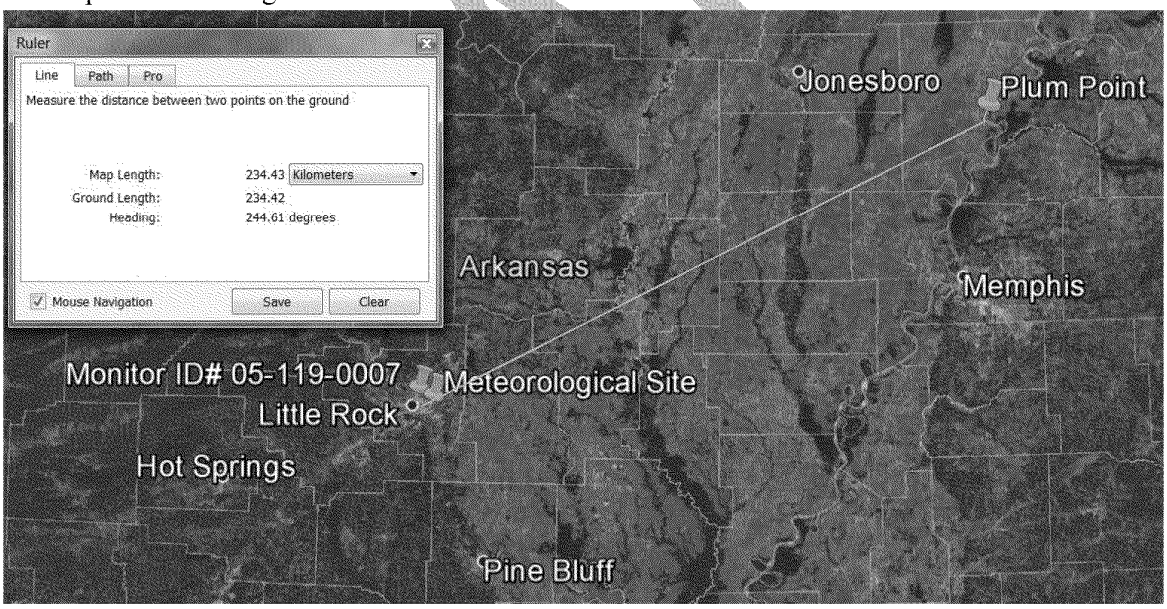
3.6 Building Downwash

This modeling exercise used allowable emissions and therefore, also followed the GEP stack height policy, using the BPIPPRIME program [8] to input building parameters for building downwash.

3.7 Ambient SO_2 Background Concentrations

Ambient background data from the closest Arkansas SO_2 monitor (Figure 3), located in North Little Rock, Arkansas (Monitor ID# 05-119-0007), was used to represent background concentrations of SO_2. EPA Guidance allows the inclusion of background values that vary by season and hour of day that could simulate a lower value than the 99th percentile design value from the monitor. The modeled concentrations will be paired with a set of 2013-2015 seasonal diurnal values that was developed using methodology described in Section 8.1 of the *SO_2 Modeling TAD* and the *NO_2 Memorandum*, which addresses NO_2 modeling and is applicable for developing seasonal diurnal background values for SO_2. Table 3 includes the seasonal diurnal values that were used in the model inputs.

Figure 3: Relative locations of Plum Point, North Little Rock SO_2 Monitor ID# 05-119-0007 and airport meteorological site



[8] U.S. EPA, 2004d: User's Guide to the Building Profile Input Program. EPA-454/R-93-038. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

Table 3: 2013-2015 Seasonal Diurnal SO_2 Concentrations ($\mu g/m^3$) at North Little Rock Monitor (Monitor ID# 05-119-0007)

Hour[1]	Winter	Spring	Summer	Fall
1	8.5	6.6	6.6	13.1
2	9.3	6.7	7.6	16.1
3	9.2	7.4	7.7	18.7
4	9.3	7.0	7.2	20.8
5	9.4	5.4	7.6	20.2
6	10.1	5.9	7.9	22.3
7	9.7	7.3	7.2	25.9
8	9.6	6.4	8.5	26.8
9	9.0	7.6	9.3	21.0
10	9.5	8.3	8.6	16.6
11	10.4	8.6	10.4	14.0
12	11.8	12.1	9.0	12.3
13	9.3	10.1	10.6	15.1
14	10.5	10.2	9.3	13.1
15	10.9	9.0	13.4	12.2
16	10.2	9.7	9.0	12.0
17	8.2	10.1	10.7	10.7
18	7.8	8.9	10.6	10.3
19	10.3	6.0	12.3	8.2
20	11.3	7.1	10.2	7.4
21	9.3	7.2	7.6	7.6
22	7.0	6.8	6.9	7.7
23	7.6	6.8	6.9	10.1
24	8.6	8.0	7.3	11.9

[1]Hours in AERMOD defined as hour-ending. (i.e., Hour 1 is midnight through 1 AM)

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3.8 Meteorological Data

Since on-site data was not available for Plum Point, meteorological data available from the National Weather Service (NWS) was used in this analysis. Three years (2013-2015) of NWS data from the Adams Field Airport in Little Rock, AR (WBAN No. 13963) was prepared using the latest version of the EPA's AERMET meteorological processing utility (version 15181). In addition to surface meteorological data, concurrent upper air data from North Little Rock Municipal Airport in North Little Rock, AR (WBAN No. 03952) was also processed with the most recent version of AERMET (version 15181) along with the two pre-processors to AERMET: AERSURFACE (version 13016) and AERMINUTE (version 14337). As AERMET requires specification of site characteristics including surface roughness (z_o), albedo (r), and Bowen ratio (B_o), these parameters were developed according to the guidance provided by EPA in the AERMOD Implementation Guide (AIG)[9] using AERSURFACE. In addition, the following seasonal distribution will be used: December, January, and February were categorized as winter with no snow, March, April, and May as spring, June, July, and August as summer, and September, October, and November as fall. The precipitation was assumed to be average over the 3-year period. Data completeness for Adams Field Airport in Little Rock, AR (WBAN No. 13963) for 2013-2015 was 99.62%.

3.9 Receptor Grid

As described in Section 4.2 of the *SO_2 Modeling TAD,* this analysis used a comprehensive Cartesian receptor grid extending out 20 kilometers (km) from Plum Point to assess maximum ground level 1-Hour SO_2 concentrations. The near-field (within 5 kilometers) and far-field (out to 20 km) receptor grids are shown in Figure 4 and Figure 5, respectively. The *SO_2 Modeling TAD* states that the receptor grid must be sufficient to determine ambient air quality in the vicinity of the source being studied. The Cartesian receptor grid consisted of the following receptor spacing:

- 50 m spacing along the Plum Point fenceline;
- 100 m spacing extending from the Plum Point emission points to 5 km;
- 500 m spacing extending from 5 km to 10 km; and
- 1,000 m spacing extending from 10 km to 20 km.

Although the *SO_2 Modeling TAD* allows for excluding or ignoring receptors from over bodies of water[10] and the Mississippi River occurs immediately to the east of Plum Point (Figure 2), no receptors were excluded or ignored in this analysis. Terrain elevations from the United States Geological Survey's (USGS) National Elevation Data (*NED*) were processed using the most recent version of AERMAP (v.11103) to develop the receptor terrain elevations required by AERMOD.

[9] https://www3.epa.gov/ttn/scram/7thconf/aermod/aermod_implmtn_guide_3August2015.pdf
[10] https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf (Section 4.2)

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Figure 4: Near-field (within 5 kilometers) Model Receptors

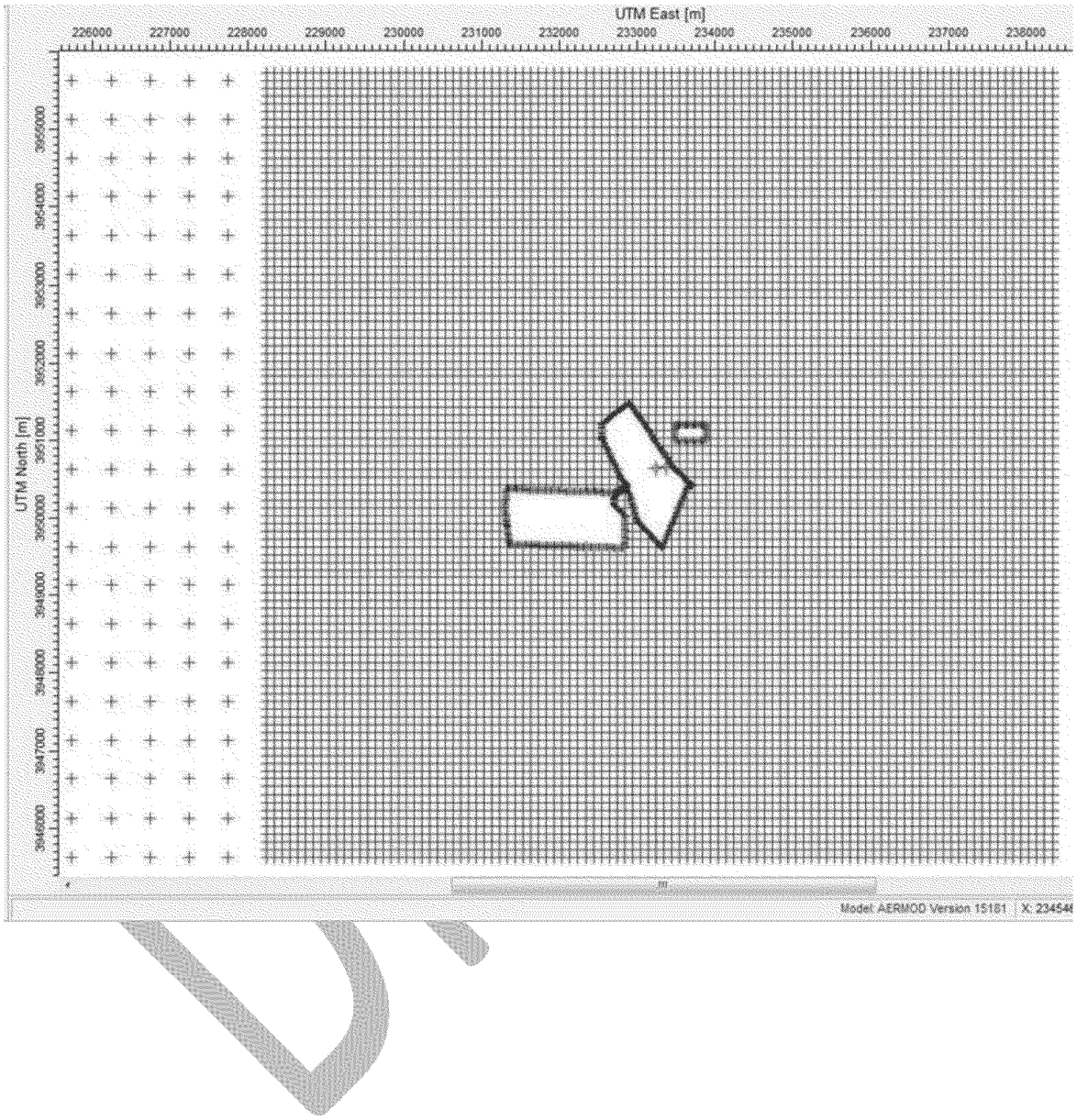
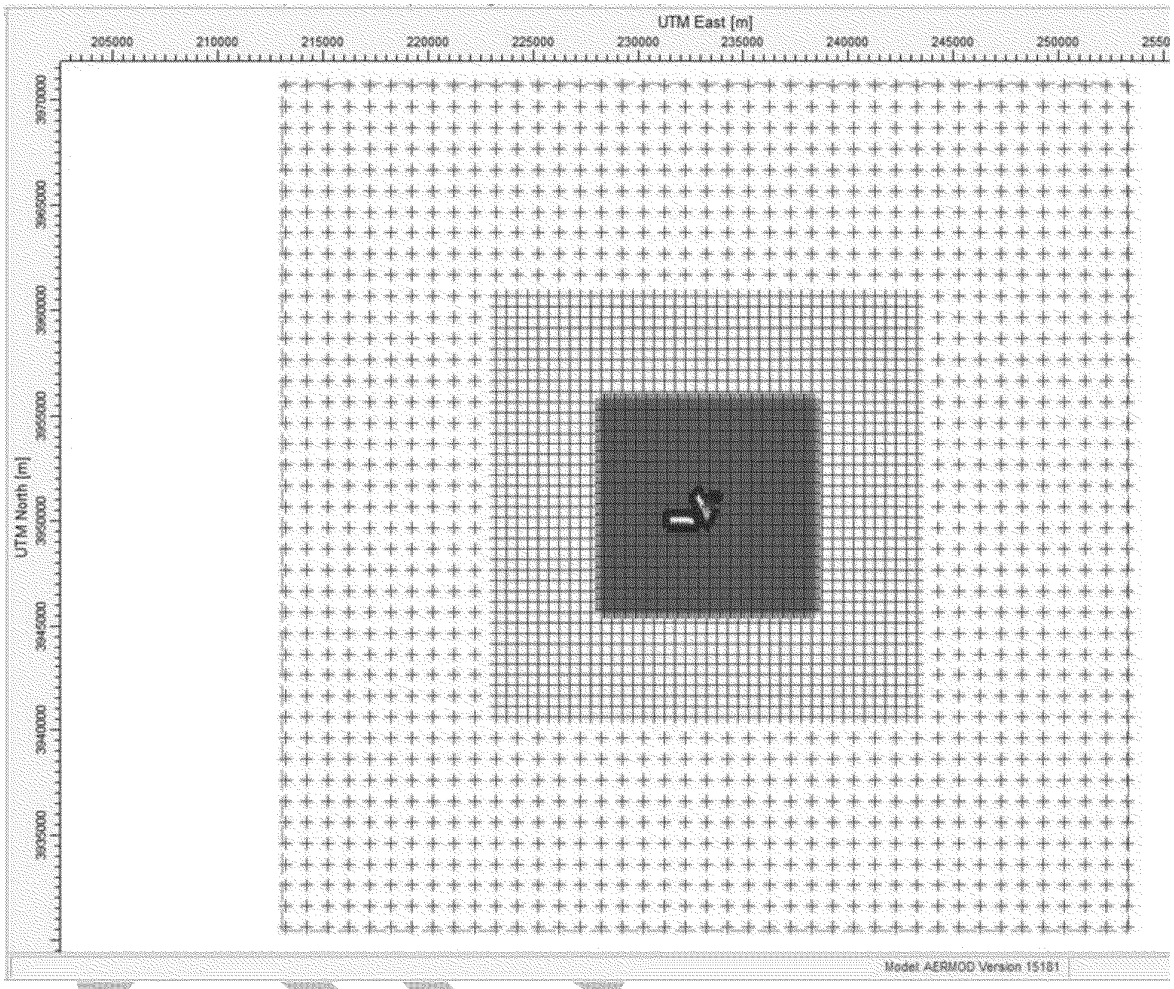


Figure 5: Far-field (out to 20 kilometers) Model Receptors



4.0 MODELING RESULTS & CONCLUSION

The modeling results are shown in Table 4 and the contours of the predicted impacts, including the location of the maximum predicted impact, are shown in Figure 6 (Near-field) and Figure 7 (Far-field). Table 4 shows that model-predicted impacts from Plum Point, when simulated using the very conservative approach of permitted allowable emissions, as well as modeling both sources simultaneously and constantly throughout the 2013-2015 period are below the 1-Hour SO_2 NAAQS.

The air dispersion modeling performed as described in this Modeling Report illustrates that the maximum predicted impact of 38.96 $\mu g/m^3$ of SO_2 from Plum Point is below the 1-Hour SO_2 National Ambient Air Quality Standard. Therefore, a SO_2 NAAQS Attainment designation for Mississippi County is warranted.

Table 4: 1-Hour SO_2 Modeling Results ($\mu g/m^3$) for Plum Point

Facility	Facility Emissions Only	Background Only	Facility and Background Combined	1-Hour NAAQS Limit	Below NAAQS Limit	Percent of NAAQS
Plum Point Energy Station	19.44	19.52	38.96	196.5	Yes	19.8

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Figure 6: Plum Point 1-Hour SO_2 Impact Contours (Near-field)

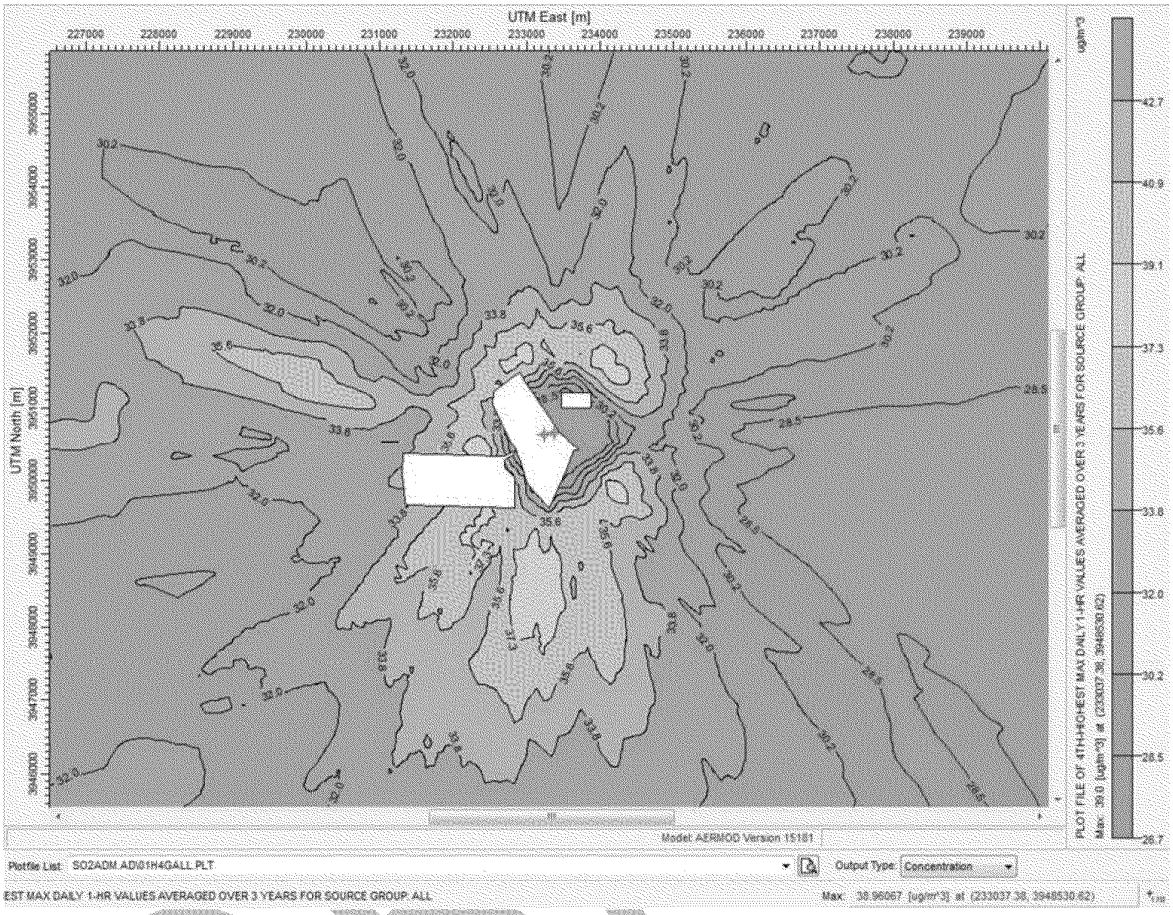
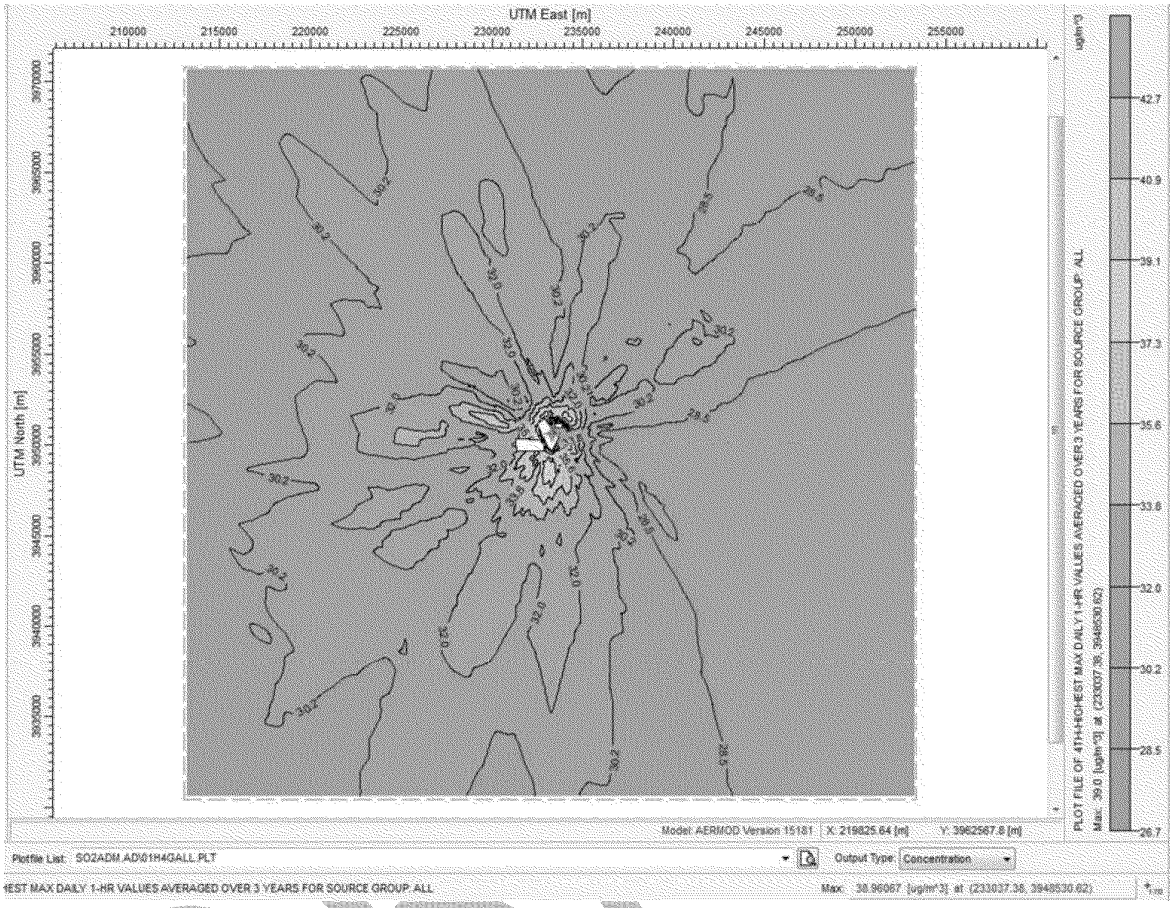


Figure 7: Plum Point 1-Hour SO_2 Impact Contours (Far-field)



To: Snyder, Erik[snyder.erik@epa.gov]
From: Hurt, Charles
Sent: Thur 10/20/2016 1:40:13 PM
Subject: RE: AERMOD v16216 Questions

I understand. Thank you.

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, October 20, 2016 8:25 AM
To: Hurt, Charles; Clark, David
Cc: Mohr, Ashley; Imhoff, Robert; Feldman, Michael
Subject: RE: AERMOD v16216 Questions

Hi Charles and David,

Would like to help you but the new version and MCB have not been released. Since the Draft Final FR package (Response to Comments, other documents, etc.) for the App. W changes includes references to the AERMOD version being released with App. W final package they locked in a date version since they don't know the exact date when the FR will be signed and the updated AERMOD released but they have to include the version in the materials. We have not seen the MCB or AERMOD version at the Regions and doubt we will see anything before the official release of the model on SCRAM.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Hurt, Charles [mailto:HURT@adeq.state.ar.us]
Sent: Thursday, October 20, 2016 8:18 AM
To: Snyder, Erik <snyder.erik@epa.gov>

Subject: AERMOD v16216 Questions

Erik,

David Clark and I furthered our discussion on SO2 modeling. This agenda for the R/S/L workshop shows one of the presentations will touch on AERMOD v16216. The version would mean a date of Aug. 3. I have not seen any announcement on SCRAM stating that version is available.

Is there any chance you can let me get my hands on a copy of the model change bulletin and/or v16216?

Charles Hurt, P.E.

Engineer, Air Division

Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR 72118

PHONE: (501) 682-0804

FAX: (501) 682-0753

EMAIL: hurt@adeq.state.ar.us

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, September 01, 2016 3:12 PM
To: Hurt, Charles

Cc: Imhoff, Robert
Subject: RE: SO2 Area Desgination Including Background Concentrations in AERMOD Input files

Hi Charles,

Bob helped confirm my memory on this issue and pulled this summary together. Hope this summary on the topic helps.

In AQS an hour is defined as hour beginning and the time zone is local standard time.

From https://aqs.epa.gov/aqsweb/documents/AQS_Format.html

"

12 Start Time The time of day that sampling began on a 24-hour clock in Local Standard Time.

"

However, background is characterized as a source in AERMOD. According to

https://www.epa.gov/sites/production/files/2016-06/documents/so2modelingtad.pdf

"…any input emissions to AERMOD are input as hour-ending. If the input emissions are hour-beginning, the hour should be adjusted to hour-ending."

Also,

8.2 Time reporting methodologies

The conventions regarding reporting time differ between ambient air quality monitoring, where the observation time is based on the hour-beginning convention, and meteorological monitoring, where the observation is based on the hour-ending time. Thus, ambient monitoring data reported for hour 00 should be paired with meteorological data for hour 01, etc. This is important when incorporating time-varying background concentrations in the AERMOD calculations, which AERMOD allows.

The first value in the background file should be for hour ending 0100. As a check, this is also consistent with how the Lakes AERMOD View software handles input of time varying background concentrations..

Let us know if you have any follow-up questions.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Hurt, Charles [mailto:HURT@adeq.state.ar.us]
Sent: Monday, August 29, 2016 3:52 PM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: SO2 Area Desgination Including Background Concentrations in AERMOD Input files

Erik,

I've got a quick question. I have been working with David Clark on the SO2 NAAQS designations for Arkansas. Some of the modeling protocols include background concentrations by season hour of day. Below is from an AERMOD input file.

** Winter

BACKGRND SEASHR 6.89 7.85 7.33 6.89 8.55 9.6

BACKGRND SEASHR 9.6 8.99 7.5 8.38 9.16 10.73

BACKGRND SEASHR 9.69 10.56 10.03 9.42 7.15 7.5

BACKGRND SEASHR 9.25 12.3 9.07 6.11 6.46 7.24

Of the 24 values above, does the highlighted (the first value) correspond with the hours "0:00" (Local Time) that are in the monitor data files at the AQS website (http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html) ?

Similarly, does the highlighted (the very last value) correspond with the hours "23:00" (Local Time)?

If you can confirm I got it right or clarify what is correct I would be much appreciative.

Thanks.

Charles Hurt, P.E.

Engineer, Air Division

Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR 72118

PHONE: (501) 682-0804

FAX: (501) 682-0753

EMAIL: hurt@adeq.state.ar.us

To: Snyder, Erik[snyder.erik@epa.gov]
From: Hurt, Charles
Sent: Thur 10/20/2016 1:18:14 PM
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Sent: Thursday, September 01, 2016 3:12 PM
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Lead Regional Air Quality Modeler
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From: Hurt, Charles [mailto:HURT@adeq.state.ar.us]
Sent: Monday, August 29, 2016 3:52 PM
To: Snyder, Erik <snyder.erik@epa.gov>
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If you can confirm I got it right or clarify what is correct I would be much appreciative.

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Charles Hurt, P.E.

Engineer, Air Division

Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR 72118

PHONE: (501) 682-0804

FAX: (501) 682-0753

EMAIL: hurt@adeq.state.ar.us

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
From: Imhoff, Robert
Sent: Tue 10/11/2016 7:52:43 PM
Subject: RE: EPA Region 6 Review of SO2 attainment designation modeling protocol for Cleco Brame Energy Center

Vennetta,

Sorry I didn't get a chance to see you while at DEQ last week but hope you had a good visit in Little Rock. The email you sent didn't have an attachment, can you please send the complete version of the modeling report?

Thanks,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Thursday, September 15, 2016 3:11 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>; Vivian Aucoin <Vivian.Aucoin@LA.GOV>
Cc: Donaldson, Guy <Donaldson.Guy@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>; Feldman, Michael <Feldman.Michael@epa.gov>
Subject: RE: EPA Region 6 Review of SO2 attainment designation modeling protocol for Cleco Brame Energy Center

I'm sorry they sent me two versions of the report. I've attached the one with the figures. I will contact them about adding the statement and I will ask for a plot of concentrations.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Thursday, September 15, 2016 2:46 PM
To: Vennetta Hayes; Vivian Aucoin
Cc: Donaldson, Guy; Snyder, Erik; Feldman, Michael
Subject: RE: EPA Region 6 Review of SO2 attainment designation modeling protocol for Cleco Brame Energy Center

Vennetta,

The initial Region 6 comments on the content of the report follow. Region 6 finds the report to be incomplete; we will review the technical merits when the report is complete.

The report references the following figures, none of which are included:

Figure 1-1 Locations of SO_2 Emission Sources in Brame Energy Center

Figure 1-2 Area Surrounding Brame Energy Center

Figure 1-3 CLECO Brame Energy Center Property Boundary

Figure 1-4 SO_2 Emission Sources in Rapides Parish

Figure 1-5 SO_2 Emission Sources Within 20 km from Brame Energy Center

Figure 2-1 Receptor Network for 1-Hour SO_2 Modeling

Figure 2-2 Restricted Access Property Line for Brame Energy Center

Figure 2-3 5-yr Composite Windrose from Shreveport Meteorological Station

Figure 2-4 Buildings and Structure for Building Downwash Analysis

Figure 2-5 Landuse Within 3 Km of Brame Energy Center

Since the modeling grid only went out to 10 km and the sources at BEC have stacks up to 450 feet with significant buoyancy, a plot of the design value concentrations must be included in the updated report so that we can determine if concentrations are declining. If they are not determined to be declining Region 6 would require remodeling to 20km. Optionally, CLECO can redo the modeling to 20km prior to resubmitting the report.

As well, since CLECO used the CEM emission rate, flow, and temperature data for the units for which they are available we request that a statement be included that the CEM system at Dolet Hills follows the requirements of 40 CFR Part 75 for all Quality Assurance and data reporting. (75.10 (a)(1), 75.11(a).

Best regards,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, September 14, 2016 11:19 AM
To: Imhoff, Robert <imhoff.robert@epa.gov>; Vivian Aucoin <Vivian.Aucoin@LA.GOV>
Cc: Donaldson, Guy <Donaldson.Guy@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: EPA Region 6 Review of SO2 attainment designation modeling protocol for Cleco Brame Energy Center

Cleco had already completed modeling before your comments on the protocol. They have not modeled out to 20 km, but I will forward their modeling results for your review. I've attached the report to this email and I will send a file pickup to you for the appendices.

From: Imhoff, Robert [mailto:imhoff.robert@epa.gov]
Sent: Monday, September 12, 2016 1:56 PM
To: Vivian Aucoin; Vennetta Hayes
Cc: Donaldson, Guy; Snyder, Erik
Subject: EPA Region 6 Review of SO2 attainment designation modeling protocol for Cleco Brame Energy Center

Vivian and Vennetta,

Please find below EPA Region 6's review of the SO2 designation modeling for Brame Energy Center.

Best regards,

Bob

Cleco BEC - Brame Energy Center – Rapides Parish

The protocol states that *if* they were to conduct modeling it would be done according to the protocol. The protocol itself does not commit to modeling, so we assume that there will be a separate transmittal of their intent.

The protocol follows the Modeling TAD. We do have some comments on the details of the protocol's implementation.

Model Options

The latest version of AERMOD with the regulatory default parameters will be used.

Meteorology

2013-2015 data from Shreveport for both upper air and surface data. There is no mention of the specific treatment of missing data or calms; Region 6 recommends following the guidance of the modeling TAD and Appendix W.

Emissions

- Uses hourly emissions rates, flows and temperatures where available (flows not available for Nesbitt 1, 2006 stack test data to be used).

- Missing CEM data will be filled in according to the acid rain program procedure if the unit is operating or with zero emissions if it is down.

- Uses building downwash

- Since 99.5%+ of emissions from Brame within 20 km (no other >50 tpy sources are within 70km), no other sources will be modeled.

- There is no mention of treatment of intermittent or emergency sources at Brame. Any Brame sources excluded should be documented in the report.

Background SO2

- Uses Shreveport, LA monitor data

- Proposes the use of Tier 2 Seasonal-hourly or "Tier 3" Monthly-hourly SO2 background. The memorandum "Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 Ambient Air Quality Standard", which is also the reference for background determination for SO2, requires the use of the maximum concentration for the design value for more detailed background determinations such as for a monthly-hourly background determination.

Receptors

Lake Rodemacher and all unrestricted access roadways, waterways, and railways will be considered as ambient air.

- Along property line – receptors spaced 100 meters (m) apart
- From property line to 1 km – receptors spaced 100 m apart
- From 1 km to 10 km – receptors spaced 1000 m apart

EPA Region 6 recommends including receptors out to 20 km from sources with tall stacks such as BEC.

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: Hansen, Mark[Hansen.Mark@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Donald Trahan[Donald.Trahan@LA.GOV]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]
From: Vivian Aucoin
Sent: Fri 7/1/2016 4:28:17 PM
Subject: Data Requirements Rule Submittal (email #4) emission limits and permit rescissions
9833596.pdf

;;
Greetings!

The Louisiana Department of Environmental Quality hereby submits for each listed source the approach it will use to characterized the air quality in order to make final recommendations of attainment and nonattainment for the 2010 Sulfur Dioxide NAAQS, Data Requirements Rule. A hard copy of this document has been mailed to Administrator Curry today.

Because this submittal is quite large, it will come in 4 sequentially numbered emails; this is the fourth of 4 emails.

Please confirm once you have received all 4 emails.

Vivian H. Aucoin

Environmental Scientist, Senior

Air Permits Division, State Implementation Plan

225-219-3482

vivian.aucoin@la.gov

Experience is something you don't get until just after you need it….Steven Wright

To: Hansen, Mark[Hansen.Mark@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Donald Trahan[Donald.Trahan@LA.GOV]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]
From: Vivian Aucoin
Sent: Fri 7/1/2016 4:21:32 PM
Subject: Data Requirements Rule Submittal (email 2) Modeling protocols
Cabot and St. Mary.pdf
CLECO BEC - 1-hour SO2 NAAQS Modeling Protocol_06 30 2016_Final_with Figures.pdf
Lousiana Generating Modeling Protocol 24063Hrpt.pdf

;;
Greetings!

The Louisiana Department of Environmental Quality hereby submits for each listed source the approach it will use to characterized the air quality in order to make final recommendations of attainment and nonattainment for the 2010 Sulfur Dioxide NAAQS, Data Requirements Rule. A hard copy of this document has been mailed to Administrator Curry today.

Because this submittal is quite large, it will come in 4 sequentially numbered emails; this is the second of 4 emails.

Please confirm once you have received all 4 emails.

Vivian H. Aucoin

Environmental Scientist, Senior

Air Permits Division, State Implementation Plan

225-219-3482

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225-219-3482

vivian.aucoin@la.gov

Experience is something you don't get until just after you need it….Steven Wright

To: Hansen, Mark[Hansen.Mark@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Donald Trahan[Donald.Trahan@LA.GOV]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]
From: Vivian Aucoin
Sent: Fri 7/1/2016 4:24:15 PM
Subject: Data Requirements Rule Submittal (email 3) Monitor siting model protocols
1039-001-002NG Calcasieu Monitor Siting Protocol.pdf
1039-002-002NG RREA Monitor Siting Protocol.pdf
CLECO BEC - Site Selection for 1-hour SO2 Monitoring_Rev 1_CC_06 17 2016.pdf
Greater Baton Rouge Monitor Siting Protocol.pdf

;;
Greetings!

The Louisiana Department of Environmental Quality hereby submits for each listed source the approach it will use to characterized the air quality in order to make final recommendations of attainment and nonattainment for the 2010 Sulfur Dioxide NAAQS, Data Requirements Rule. A hard copy of this document has been mailed to Administrator Curry today.

Because this submittal is quite large, it will come in 4 sequentially numbered emails; this is the third of 4 emails.

Please confirm once you have received all 4 emails.

Vivian H. Aucoin

Environmental Scientist, Senior

Air Permits Division, State Implementation Plan

225-219-3482

vivian.aucoin@la.gov

Experience is something you don't get until just after you need it….Steven Wright

To: Hansen, Mark[Hansen.Mark@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Donald Trahan[Donald.Trahan@LA.GOV]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]
From: Vivian Aucoin
Sent: Fri 7/1/2016 4:19:03 PM
Subject: Data Requirments Rule submittal (email 1)
Appendix A.pdf
transmittal letter to EPA.pdf

;;
Greetings!

The Louisiana Department of Environmental Quality hereby submits for each listed source the approach it will use to characterized the air quality in order to make final recommendations of attainment and nonattainment for the 2010 Sulfur Dioxide NAAQS, Data Requirements Rule. A hard copy of this document has been mailed to Administrator Curry today.

Because this submittal is quite large, it will come in 4 sequentially numbered emails; this is the first of 4 emails.

Please confirm once you have received all 4 emails.

Vivian H. Aucoin

Environmental Scientist, Senior

Air Permits Division, State Implementation Plan

225-219-3482

vivian.aucoin@la.gov

Experience is something you don't get until just after you need it….Steven Wright

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]; Vivian Aucoin[Vivian.Aucoin@LA.GOV]
Cc: Snyder, Erik[snyder.erik@epa.gov]; Feldman, Michael[Feldman.Michael@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
From: Imhoff, Robert
Sent: Thur 9/15/2016 8:06:13 PM
Subject: EPA Region 6 review of SO2 attainment modeling protocol for Big Cajun II

Vivian and Vennetta,

Please find below Region 6's review of the attainment modeling protocols for Big Cajun II.

Best regards,

Bob

Louisiana Generating - Big Cajun II – Pointe Coupee Parish

In general the protocol adheres to the Modeling TAD with the following notes and concerns:

- Proposes to use 2012-2014 instead of most recent available years, 2013-2015. It would be better to use the more recent dataset since it is now available.

- Past emissions modified to reflect current rates (current permitted plant-wide SO2 annual rate = 18,950 tons, about ½ of 2011)

  - U1 DSI installed in 2015

  - U2 only natural gas starting in 2015

  - U3 conservative assumption that maxes out plant-wide emissions to permitted 18,950 tons on annual basis

- Will use building downwash

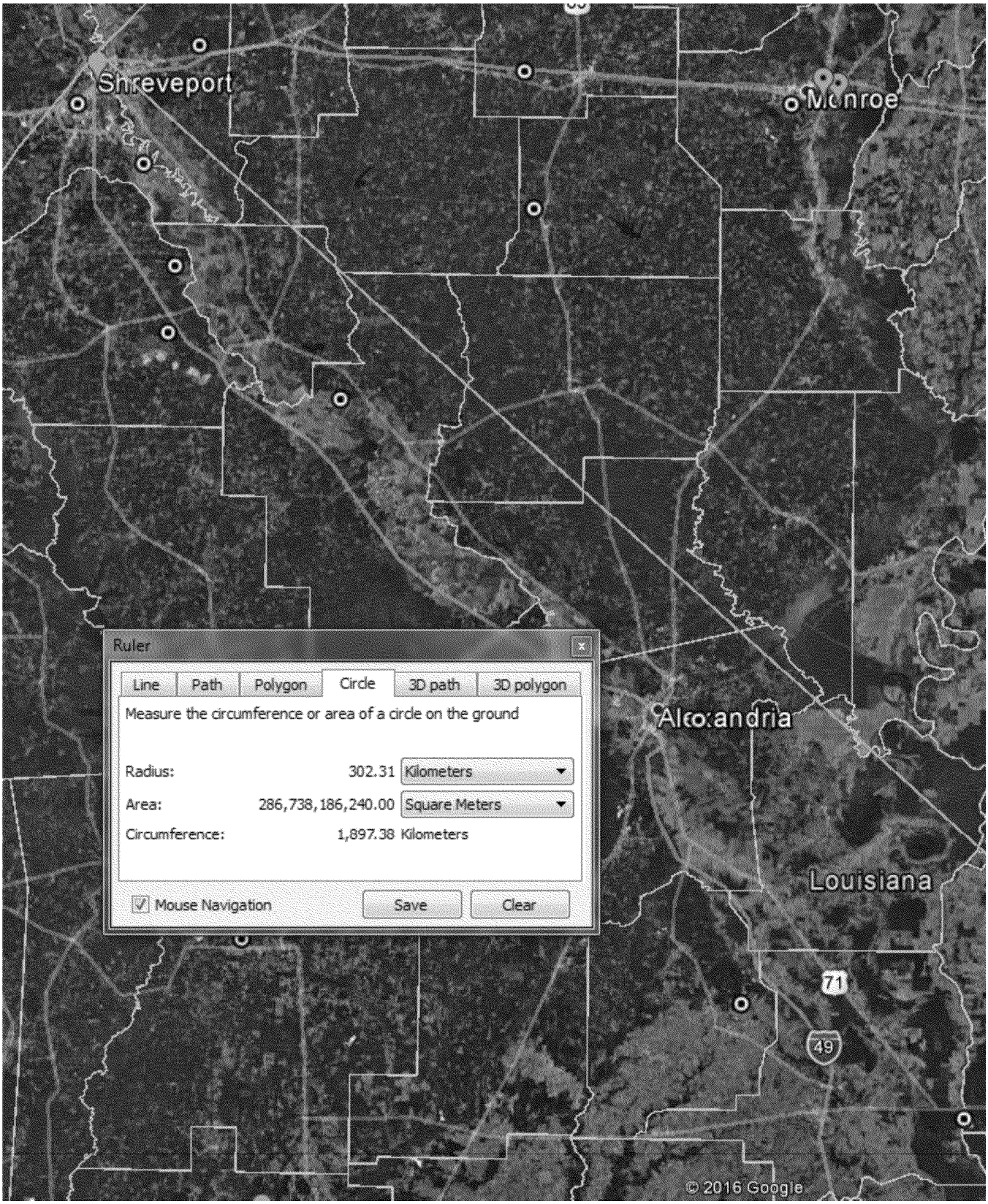
- Includes 2 other contributing sources within 20 km, but excludes others within 45km (only those in bold would be modeled), All data from 2011 NEI

EIS_ID	SO2 Site (tons)	County	Site Name	Facility Type	Tribal Name	City Code	Zip	NAICS Code	NAICS Description	FIPS	Street Address	Latitude	Lon Dis
80207	**38603.89**	**LA Pointe Coupee**	**Louisiana Generating LLC - Big Cajun II Power Plant**	**Electricity Generation via Combustion**		**New Roads**	**70760**	**2011 F**	**Fossil Fuel Electric Power Generation**	**22077**	**9951 Cajun 2 Rd (Hwy 981)**	**30.72 - 91.36**	**0**

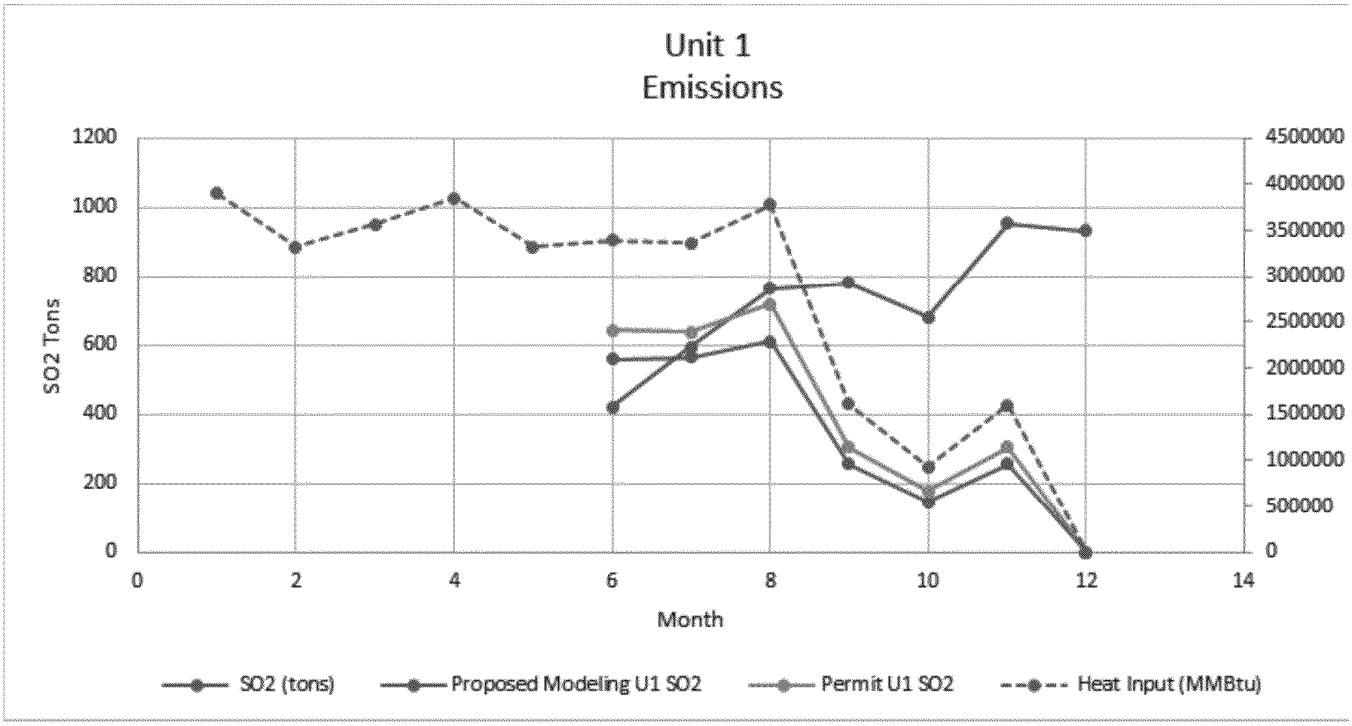
8214811	**744.29**	**East Baton Rouge**	**Georgia-Pacific Consumer Operations LLC - Port Hudson Operations**	**Pulp and Paper Plant**	**Zachary**	**70791**	**Paper (except Newsprint) Mills**	**22033**	**1000 W Mount Pleasant Rd**	**30.65 -10.9 91.28**
7229541	**1132.48**	**East Baton Rouge**	**Oxbow Calcining LLC - Baton Rouge Calcined Coke Plant**	**Calcined Pet Coke Plant**	**Baton Rouge**	**70807**	**All Other Petroleum and Coal Products Manufacturing**	**22033**	**2200 Brooklawn Dr**	**30.58 -19.3 91.24**
8215341	110.23	East Baton Rouge	Rhodia Inc	Chemical Plant	Baton Rouge	70805	Other Basic Inorganic Chemical Manufacturing	22033	1375 Airline Hwy	30.5 -29.9 91.18
7226642	111.49	East Baton Rouge	ExxonMobil Corp - Baton Rouge Chemical Plant	Chemical Plant	Baton Rouge	70805	Petrochemical Manufacturing	22033	4999 Scenic Hwy	30.49 -31.3 91.17
8467249	117.79	East Baton Rouge	ExxonMobil Baton Rouge Refinery	Petroleum Refinery	Baton Rouge	70805	Petroleum Refineries	22033	4045 Scenic Hwy	30.48 -32.3 91.17
8240401	107.77	St. Landry	Alon Refining Krotz Springs Inc	Petroleum Refinery	Krotz Springs	70750	Petroleum Refineries	22097	Hwy 105 S	30.52 42.0 91.74
7206328	189.6	West Baton Rouge	Sid Richardson Carbon Co - Addis Plant	Carbon Black Plant	Addis	70710	Other Basic Inorganic Chemical Manufacturing	22121	5221 Sid Richardson Rd	30.32 45.3 91.27

•□□□□□□□□ Uses the Shreveport SO2 monitor for background instead of nearer Port Allen monitor – due to local source influence on Port Allen (its design value ~ ½ standard). The use of this monitor, over 300 km distant, for background means that the potential contributions of the excluded plants above will not be captured either though the background SO2 or through the modeling. EPA recommends that either the Baton Rouge Port Allen monitor (only 29 km away and located to the south in the direction of prevailing winds) be used for the background determination or that at least the Rhodia Inc source be included in the modeling for attainment for Big Cajun II. Inclusion of Rhodia would be consistent with previous attainment modeling practice where contributing sources within about 30km with greater than 1000 tons/yr emissions of SO2 are included in the modeling.

•□□□□□□□□


Shreveport
Monroe
Alexandria
Louisiana
71
49
© 2016 Google
Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the circumference or area of a circle on the ground
Radius: 302.31 Kilometers
Area: 286,738,186,240.00 Square Meters
Circumference: 1,897.38 Kilometers
Mouse Navigation
Save
Clear

We appreciate that due to the changes in the plant configuration that have occurred that estimates must be used for the emission rates for Units 1 and 2. Regarding the proposed SO2 emission rate for Unit 1, a brief analysis shows that the proposed rate is not always conservative relative to the permitted emission rate. During the last 6 months of 2015, when the DSI was in operation, the proposed model rate would have been less than the actual rate for one month and the permit emission rate for two months.



The permit emission rate is much better estimate of the actual rate for the unit on a monthly basis. A conservative approach, required for the designation modeling, is to use the heat rate that actually occurred for Unit 1 during the modeling period and to use an adjustment of the permit rate to allow for short term variability - since the permit heat rate is on a rolling 30-day period. 1–hour average SO2 designations based on long-term emission rates have already been challenged by 3rd parties. An adjustment is consistent with prior practice for certain other designation modeling demonstrations. The adjustment can differ according to the measured hourly variability of the actual NOx rate in lb/MMBTU. Typically an upward adjustment of at least 15-20% would be required to estimate the emissions for Unit 1 modeling resulting in a NOx emission rate for use in designation modeling of about 0.45 lb/MMBTU.

Best regards.

Bob

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: Snyder, Erik[snyder.erik@epa.gov]
From: Hurt, Charles
Sent: Thur 9/1/2016 8:36:46 PM
Subject: RE: SO2 Area Desgination Including Background Concentrations in AERMOD Input files

Thank you.

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, September 01, 2016 3:12 PM
To: Hurt, Charles
Cc: Imhoff, Robert
Subject: RE: SO2 Area Desgination Including Background Concentrations in AERMOD Input files

Hi Charles,

Bob helped confirm my memory on this issue and pulled this summary together. Hope this summary on the topic helps.

In AQS an hour is defined as hour beginning and the time zone is local standard time.

From https://aqs.epa.gov/aqsweb/documents/AQS_Format.html

"

12	Start Time	The time of day that sampling began on a 24-hour clock in Local Standard Time.

"

However, background is characterized as a source in AERMOD. According to

https://www.epa.gov/sites/production/files/2016-06/documents/so2modelingtad.pdf

"…any input emissions to AERMOD are input as hour-ending. If the input emissions are hour-beginning, the hour should be adjusted to hour-ending."

Also,

8.2 Time reporting methodologies

The conventions regarding reporting time differ between ambient air quality monitoring, where the observation time is based on the hour-beginning convention, and meteorological monitoring, where the observation is based on the hour-ending time. Thus, ambient monitoring data reported for hour 00 should be paired with meteorological data for hour 01, etc. This is important when incorporating time-varying background concentrations in the AERMOD calculations, which AERMOD allows.

The first value in the background file should be for hour ending 0100. As a check, this is also consistent with how the Lakes AERMOD View software handles input of time varying background concentrations..

Let us know if you have any follow-up questions.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Hurt, Charles [mailto:HURT@adeq.state.ar.us]
Sent: Monday, August 29, 2016 3:52 PM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: SO2 Area Desgination Including Background Concentrations in AERMOD Input files

Erik,

I've got a quick question. I have been working with David Clark on the SO2 NAAQS

designations for Arkansas. Some of the modeling protocols include background concentrations by season hour of day. Below is from an AERMOD input file.

** Winter

BACKGRND SEASHR 6.89 7.85 7.33 6.89 8.55 9.6

BACKGRND SEASHR 9.6 8.99 7.5 8.38 9.16 10.73

BACKGRND SEASHR 9.69 10.56 10.03 9.42 7.15 7.5

BACKGRND SEASHR 9.25 12.3 9.07 6.11 6.46 7.24

Of the 24 values above, does the highlighted (the first value) correspond with the hours "0:00" (Local Time) that are in the monitor data files at the AQS website (http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html) ?

Similarly, does the highlighted (the very last value) correspond with the hours "23:00" (Local Time)?

If you can confirm I got it right or clarify what is correct I would be much appreciative.

Thanks.

Charles Hurt, P.E.

Engineer, Air Division

Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR 72118

PHONE: (501) 682-0804

FAX: (501) 682-0753

EMAIL: hurt@adeq.state.ar.us

To: Snyder, Erik[snyder.erik@epa.gov]
From: Hurt, Charles
Sent: Mon 8/29/2016 8:51:58 PM
Subject: SO2 Area Desgination Including Background Concentrations in AERMOD Input files

Erik,

I've got a quick question. I have been working with David Clark on the SO2 NAAQS designations for Arkansas. Some of the modeling protocols include background concentrations by season hour of day. Below is from an AERMOD input file.

** Winter

BACKGRND SEASHR 6.89 7.85 7.33 6.89 8.55 9.6

BACKGRND SEASHR 9.6 8.99 7.5 8.38 9.16 10.73

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BACKGRND SEASHR 9.25 12.3 9.07 6.11 6.46 7.24

Of the 24 values above, does the highlighted (the first value) correspond with the hours "0:00" (Local Time) that are in the monitor data files at the AQS website (http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html) ?

Similarly, does the highlighted (the very last value) correspond with the hours "23:00" (Local Time)?

If you can confirm I got it right or clarify what is correct I would be much appreciative.

Thanks.

Charles Hurt, P.E.

Engineer, Air Division

Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR 72118

PHONE: (501) 682-0804

FAX: (501) 682-0753

EMAIL: hurt@adeq.state.ar.us

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Vivian Aucoin[Vivian.Aucoin@LA.GOV]; Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Mon 8/29/2016 5:58:02 PM
Subject: RE: Verify wind speed units at Chalmette Vista site
Comparison of Chalmette Vista Meteorological Data to Louis Armstrong International Airport.docx

Thanks for the information, I'm just tying up some loose ends. For your information, I've attached a write up of the comparison of the Chalmette Vista on-site met data to the New Orleans International Airport surface data (we use the NO Airport data for the AERMOD modeling). The difference in wind speeds is striking and I can't think of a physical reason why this should be the case.

As far as source attribution goes, one last thing we could look at are the Vista SO2 data for any other periods when the calciner was not operating. If you believe that you have all the information that you need to proceed, I won't pursue getting that information.

Best regards,
Bob
-----Original Message-----
From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Monday, August 29, 2016 12:25 PM
To: Imhoff, Robert <imhoff.robert@epa.gov>
Cc: Vivian Aucoin <Vivian.Aucoin@LA.GOV>; Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: Verify wind speed units at Chalmette Vista site

I did verify with the monitoring group that those were the correct units.
I thought you were finished with your analysis or I would have replied sooner.

From: Imhoff, Robert [imhoff.robert@epa.gov]
Sent: Monday, August 29, 2016 12:18 PM
To: Vennetta Hayes
Cc: Vivian Aucoin; Snyder, Erik
Subject: RE: Verify wind speed units at Chalmette Vista site

Hi Vennetta,
Just checking in to see if you've had a chance to check the units for the wind speed measurement at the Vista site? The web page lists it as MPH but the speeds seem about ½ what they should be if those units are correct.
Thanks,
Bob

From: Imhoff, Robert
Sent: Tuesday, August 16, 2016 2:41 PM
To: 'Vennetta Hayes' <vennetta.hayes@la.gov>
Cc: Vivian Aucoin <Vivian.Aucoin@LA.GOV>; Erik Snyder (snyder.erik@epa.gov) <snyder.erik@epa.gov>
Subject: Verify wind speed units at Chalmette Vista site

Vennetta,
I hope things are improving for you - our thoughts are with you, your coworkers and neighbors.

I am trying to understand why AERMOD seems to be underestimating the concentrations at the Chalmette Vista monitor. When you get a chance, can you please check the units for the wind speeds at Chalmette? Your web site lists it as MPH.
[cid:image002.png@01D201EF.7CE7E730]

But when I compare to the hourly wind speeds at the New Orleans airport (the comparison is done knots to knots), on the average they are only about ½ as fast. Since wind speed is a critical input to the dispersion equation, if this relationship is in fact correct, this could be a major factor in AERMOD underpredicting the concentrations. We are using the New Orleans surface winds for the AERMOD modeling.

Turner's workbook equation 3.3 gives the ground-level centerline concentration of a plume as

[cid:image003.png@01D201EF.7CE7E730]
Where u is the wind speed. All else being equal (it isn't really since plume height, H, will be inversely related to wind speed) the plume centerline concentration is inversely proportional to the wind speed. Using too high a wind speed would tend to cause AERMOD to underestimate concentrations.

I suspect that the wind speeds from Chalmette could be mislabeled as MPH and that they are in fact reported in meters per second. If this is true the average speed at Chalmette Vista would be much closer to those measured at the airport.

Thanks for your help,
Bob

[EPA logo tiny]
Robert Imhoff
Environmental Engineer
U.S. EPA Region 6
1445 Ross Ave
Dallas TX 75202

Ph: (214) 665 7262
Email: Imhoff.Robert@epa.gov<mailto:Imhoff.Robert@epa.gov>

To: Snyder, Erik[snyder.erik@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Hollenberg, Cindy, NMENV[Cindy.Hollenberg@state.nm.us]; Heath, David, NMENV[david.heath@state.nm.us]; Mustafa, Sufi A., NMENV[sufi.mustafa@state.nm.us]
From: Bates, Rita, NMENV
Sent: Mon 8/22/2016 4:47:12 PM
Subject: RE: SO2 Data Requirements Rule Source Modeling Protocol

Thanks, Erik. We will look forward to hearing from you soon.

Rita

Rita Bates

Planning Section Chief

Air Quality Bureau – New Mexico Environment Department

525 Camino de los Marquez, Suite 1

Santa Fe, New Mexico 87505

Phone: 505-476-4304

Fax: 505-476-4375

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Monday, August 22, 2016 9:14 AM
To: Bates, Rita, NMENV <Rita.Bates@state.nm.us>; Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Hollenberg, Cindy, NMENV <Cindy.Hollenberg@state.nm.us>; Heath, David, NMENV <david.heath@state.nm.us>; Mustafa, Sufi A., NMENV <sufi.mustafa@state.nm.us>
Subject: RE: SO2 Data Requirements Rule Source Modeling Protocol

Hi,

We have been swamped with things but are almost done with review of your protocol. We should be sending our comments later today (not many so far) and we can follow-up with a call with Sufi and others to discuss.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Bates, Rita, NMENV [mailto:Rita.Bates@state.nm.us]
Sent: Thursday, August 18, 2016 3:49 PM
To: Snyder, Erik <snyder.erik@epa.gov>; Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Hollenberg, Cindy, NMENV <Cindy.Hollenberg@state.nm.us>; Heath, David, NMENV <david.heath@state.nm.us>
Subject: SO2 Data Requirements Rule Source Modeling Protocol

Hi Erik & Guy,

We submitted the source modeling protocol for San Juan Generating Station to EPA Region 6 in June. We haven't heard anything from you so are assuming our protocol is sufficient. Unless I hear differently from you, we are planning to finalize the modeling and prepare the report within the next few weeks.

Let me know if this sounds okay. Thanks!

Rita

Rita Bates

Planning Section Chief

Air Quality Bureau – New Mexico Environment Department

525 Camino de los Marquez, Suite 1

Santa Fe, New Mexico 87505

Phone: 505-476-4304

Fax: 505-476-4375

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Thur 7/28/2016 5:17:19 PM
Subject: RE: SO2 roses for Chalmette/St. Bernard
7_4_16 Chalmette.xls
7_7_16 Chalmette.xls

Vennetta,

Please find attached the spreadsheets for the 5-minute data for 7/4 and 7/7 with the parameters in columns.

Best regards,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, July 27, 2016 9:14 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Cc: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: SO2 roses for Chalmette/St. Bernard

The files have all the data but somehow the labels are missing and the only way you can tell it has changed to a different parameter is by looking at the times repeating. I'll try to pull the report again after our call.

From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Wednesday, July 27, 2016 8:55 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

Thank you so much for resending the 5-minute data for 7/4 and 7/7, I know you're really busy right now. There still seems to be a problem with including the met and the H2S data in the

worksheets. Could you check and see if those data are available in addition to the SO2?

I'm doing some further checking on the waste heat / baghouse stack location relative to Building 31 in the AERMOD inputs, I'll get back to you later (it may be next week) on the result.

Best regards,

Bob

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Tuesday, July 26, 2016 2:22 PM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Subject: RE: SO2 roses for Chalmette/St. Bernard

The locations that I sent from the email from Rain are the correct locations for the stacks. I know that sometimes the conversions can be off depending on which datum is used. Could that be the difference. I've done so many iterations of the model with one stack or the other that I will have to go back and make sure that the correct stack is used in each run. Some runs were the hot stack only and some were cold stack only and some both.

From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Monday, July 25, 2016 8:45 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

I'd like to request some more information to help with the Rain CII Chalmette analysis.

- The Excel files you sent me for 7/4 and 7/7/16 had only the SO2 data and no meteorology or H2S. Can you send me the 5-minute data including these parameters?

- I'd like to request on-site 5-minute met data and Rain CII Chalmette emissions data for 1/26-1-28/16. EPA operated a mobile van recording SO2 and other data in the Chalmette area during 1/26 – 1/28/16. I'd very much like to get the on-site met and emissions data for those days to help interpret the concentrations recorded. I'll share the mobile data with you as soon as I get the researcher's OK – I'd love to get your take. Since the mobile data are labeled as "SO2_Raw", they may need to do some more work to get calibrated SO2 concentrations.

- I want to be sure that I've got the correct current stack location and emission parameters for the baghouse (cold) stack. The stack parameters and max emission rate for the Pyroscrubber cold stack (Waste Heat Boiler/Baghouse) in the modeling files you submitted in April 2016, located in the zip file NewFullModel.zip in the AERMOD input file, NewFullModel.DTA:

** Waste Heat Boiler/Baghouse

SO LOCATION 199 POINT 212682.8 3315309.8 2.37

SO SRCPARAM 199 100.79830444325 60.6552 455.37 17.6784 2.7432

I notice that, the only source included in the SRCGROUP RAIN is 199. The emission point (shown by the yellow pin below located at 29°56'06.0257", -089°58'34.9692" when converted to Lat/Long) is actually close to the Pyroscrubber hot stack.

Is this the correct current location and stack parameters the baghouse stack? The red flag labeled "Waste Heat Stack" is based on "Chalmette Area.jpg" which you previously sent me which coincides with the location of a stack.

I see another location in **St. Bernard Parish SO2 Nonattainment Area Louisiana State Implementation Plan Revision, 4/1/2015.** The parameters for the source 199 are:

Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (ft)	Stack Height (ft)	Temperature (°F)	Exit Velocity (fps)	Stack Diam (ft)
199	Waste Heat Boiler/Baghouse	212794.45	3315253.96	12.66	199.00	360.00	58.00	9.00

Which when converted to metric and compared to the AERMOD SO input:

Source ID	Source Description	Easting (X)	Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	SO2
199	Waste Heat Boiler/Baghouse	212794.45	3315253.96	60.655	55.22	17.68	2.74	113.45	From the SIP
199.00	Waste Heat Boiler/Baghouse	212682.33	3315309.28	60.655	55.37	17.68	2.74	100.85	From the AERMOD input

The SIP UTM coordinate when converted to LAT/LONG is 29°56'04.3079", -089°58'30.7562", which seems to be in the refinery.

The correct stack location in relation to the building is important in the estimation of wake effects in BPIP, can you confirm the location of the cold stack and whether the relationship to the building seems correct in the modeling files?

Thanks,

Bob

From: Imhoff, Robert
Sent: Friday, July 15, 2016 9:48 AM
To: 'Vennetta Hayes' <Vennetta.Hayes@LA.GOV>
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

I've finally gotten a chance to look at the 5-minute data for 7/4 and 7/7. Can you send me the meteorological data and H2S in addition to the SO2 concentrations, like those you sent for 7/6?

Hour	H2S	SO2	WDIR	WSP
7/6/16 9:054		4.4	224	5
7/6/16 9:103		2.3	227	6
7/6/16 9:153		2.1	220	4
7/6/16 9:204		2.8	202	6
7/6/16 9:253		2.7	218	7
7/6/16 9:303		2.5	222	7
7/6/16 9:353		2.2	219	5
7/6/16 9:403		2.1	195	5

Thanks,

Bob

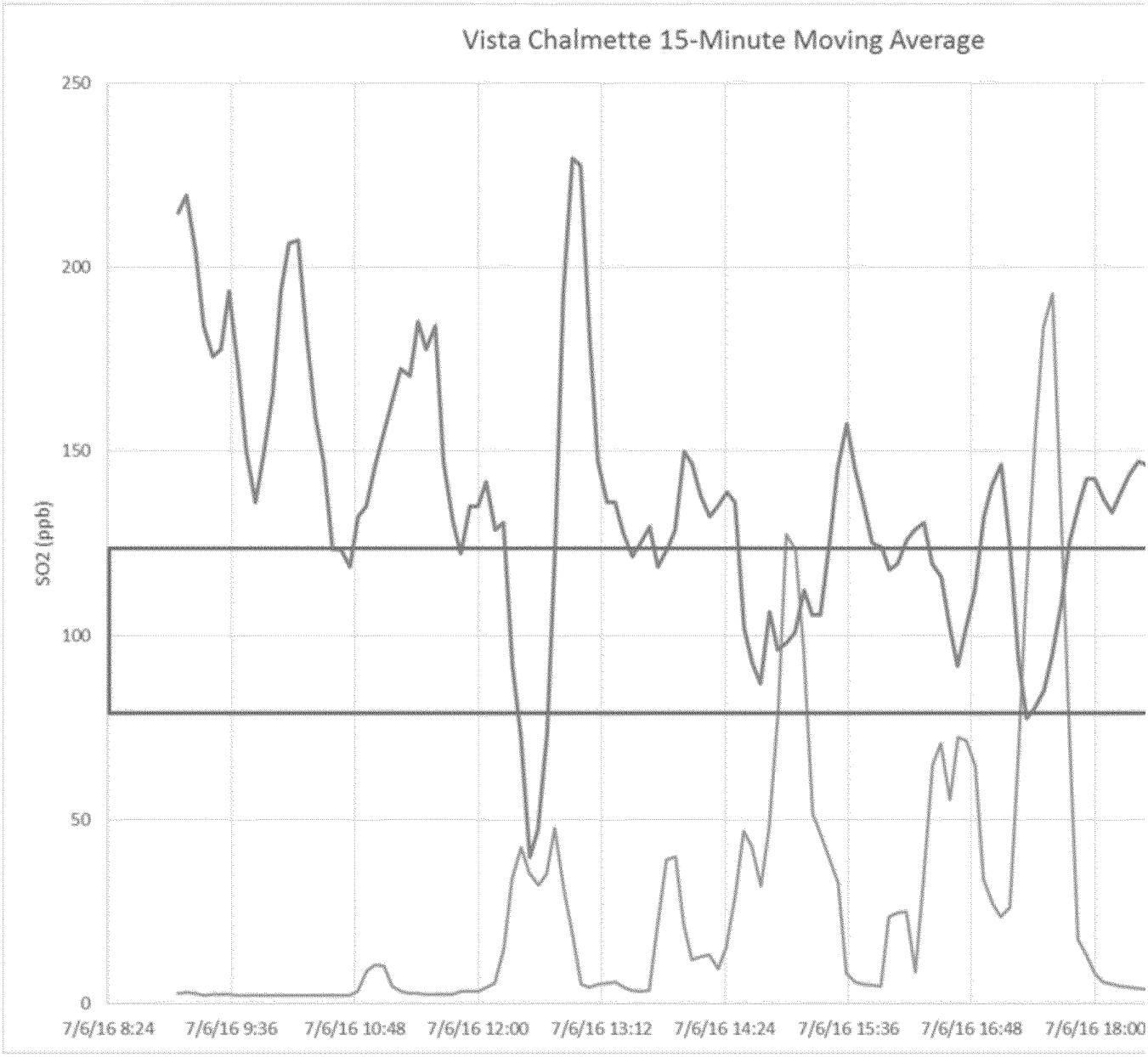
From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Tuesday, July 12, 2016 9:21 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Subject: RE: SO2 roses for Chalmette/St. Bernard

Here you go. I just got flow rate and temperature data from Rain from before the scrubber and after. Would that be useful to you?

From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Monday, July 11, 2016 8:24 AM
To: Vennetta Hayes
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

Would you be able to send be the 5-minute data for the 7/4 and 7/7 exceedances as well? I've looked at the 5-minute data for 7/6 that you sent, but it seemed to raise about as many questions as it answered. I plotted 15-minute moving average data to damp out some of the rapid fluctuations.



About the most I could say is that there is a range of wind directions for which elevated SO2 concentrations are observed – about from 178 to 195, with a centroid around 185. Anything outside that range starts trending back toward background.

I'm hoping that there may be some common patterns for the three days that will be helpful. One possible approach if the same trend for wind direction bears out for the other days we might start looking at estimating the horizontal extent of the plume (95% concentration) and comparing that to what would be expected from potential source under those meteorological conditions – including any potential building wake.

e.g. if it is Rain at a distance X and an angular range = 15 degrees the plume is N meters wide

if it is refinery flare at distance X2 and angular range = 15 degrees the plume N2 m wide.

The question would be: which of these would be the most agreement with calculated sigma Y from the potential sources? To make this worthwhile the pattern would need to repeat on other days. As well, I understand that there is some mobile monitoring data available that may give us a check on the horizontal extent of the plume derived from the stationary monitor data.

I looked in Google Earth at the location plotted for the coordinates given on your web site for the Vista monitor and it didn't seem to correspond to the location plotted on the street level map. I think the lat/longs may be rounded. Could you send me the precise locations of the Vista monitor and the two potential sources? Also, when do you think you will have time to post the revise AERMOD files?

Thank you for all your help,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Thursday, July 07, 2016 11:20 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Subject: RE: SO2 roses for Chalmette/St. Bernard

I've attached the 5 minute data from yesterday for you.

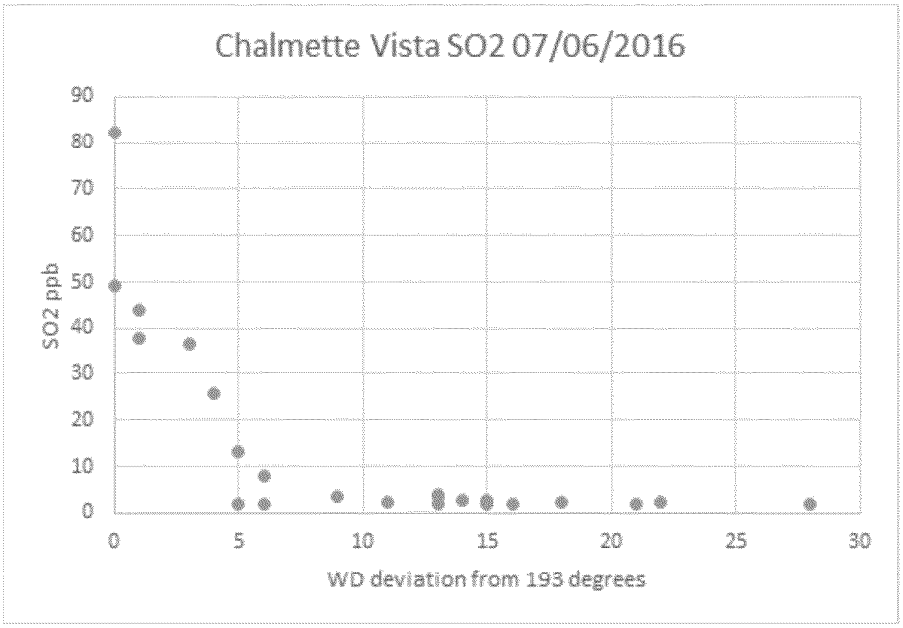
From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Thursday, July 07, 2016 10:45 AM
To: Vennetta Hayes
Subject: RE: SO2 roses for Chalmette/St. Bernard

Looks like we got another exceedance yesterday:

Site Monitoring Data at Chalmette Vista site on 7/6/2016

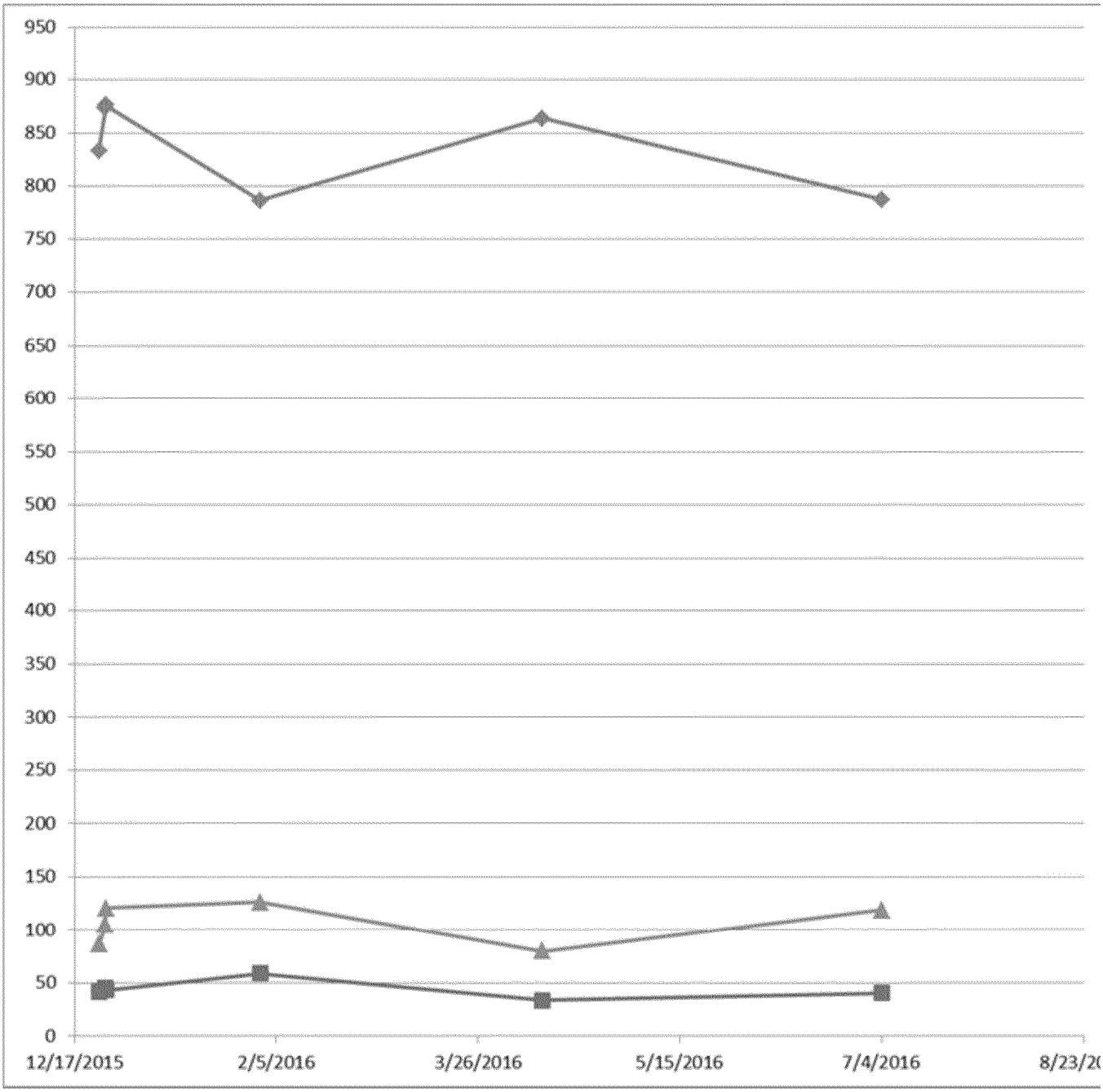
Time	SO2 (PPB)	WSP (MPH)	WDIR (DEG)
2:00 AM	2.3	5	211
3:00 AM	N/A	4	206
4:00 AM	2	4	214
5:00 AM	2.1	4	208
6:00 AM	2	4	199
7:00 AM	2	3	206
8:00 AM	2.1	4	198
9:00 AM	2	6	209
10:00 AM	2.1	7	221
11:00 AM	2.5	5	215
12:00 PM	3.9	5	206
1:00 PM	3.4	6	206
2:00 PM	25.7	5	197
3:00 PM	13.4	6	198
4:00 PM	37.7	6	192
5:00 PM	36.7	7	196
6:00 PM	49	6	193
7:00 PM	**82.4**	**5**	**193**
8:00 PM	8.1	5	199
9:00 PM	43.8	4	192
10:00 PM	3.6	6	202
11:00 PM	2.7	5	208
12:00 AM	2.6	5	207
1:00 AM	2.3	5	204

The hourly wind speed and direction were relatively constant for 2AM – 7PM but the concentration varied quite a bit. Here's a plot of the SO2 concentration vs the WD deviation from 193 degrees for the hours 2AM-midnight. Very small deviations seem to give quite sharp reductions in the SO2 concentration suggesting a source very near at about 193 degrees. The apparent sharp gradient of SO2 could be coincidental since we are just looking at a single case – for example the peak concentration could be associated with setting up an inversion, though 7PM seems early for this time of year. It would be good to look at additional cases and see if this kind of relationship holds.



From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Thursday, July 07, 2016 9:32 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Cc: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: SO2 roses for Chalmette/St. Bernard

I've talked to Rain and asked for temperature and flow information. Yesterday I plotted the exceedance levels against the reported CEMS from Rain and the SRU at Chalmette Refinery.

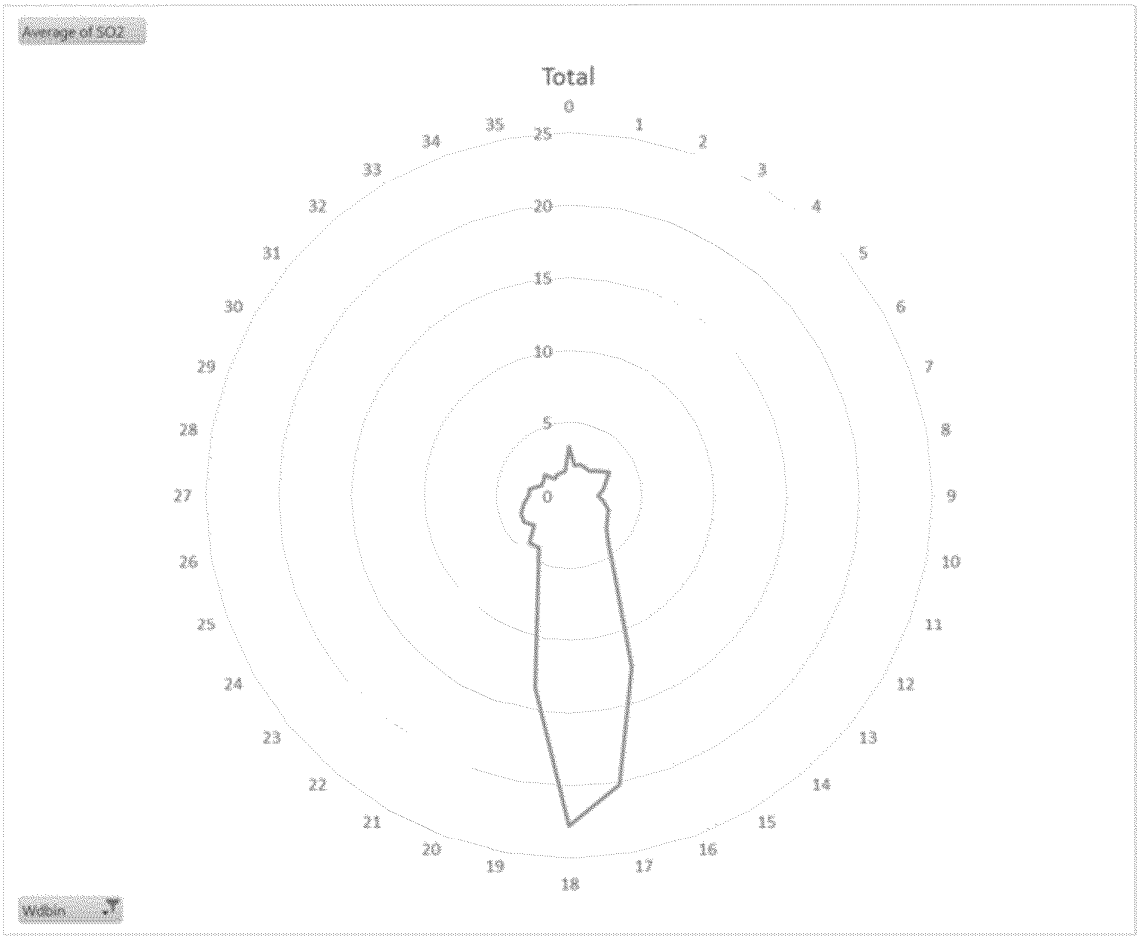


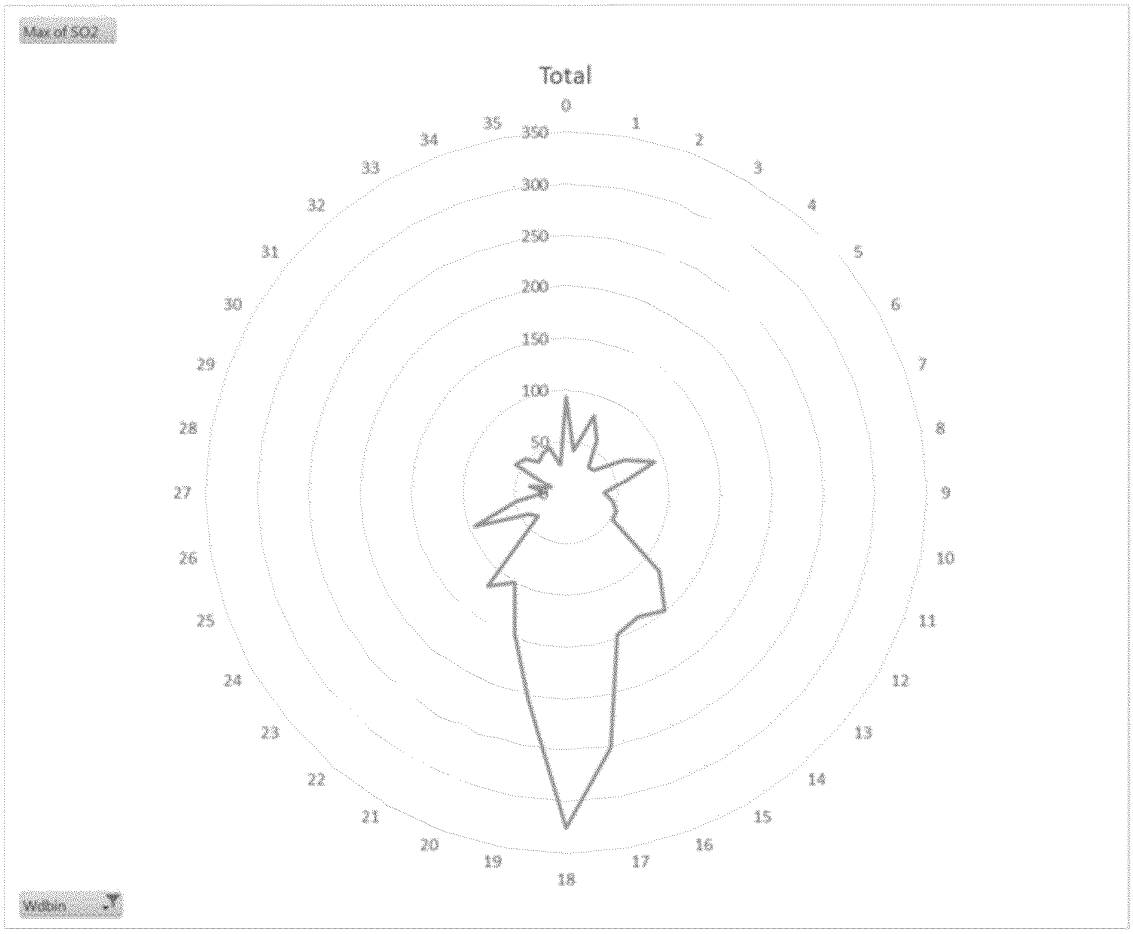
From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Thursday, July 07, 2016 7:12 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: SO2 roses for Chalmette/St. Bernard

Vennetta,

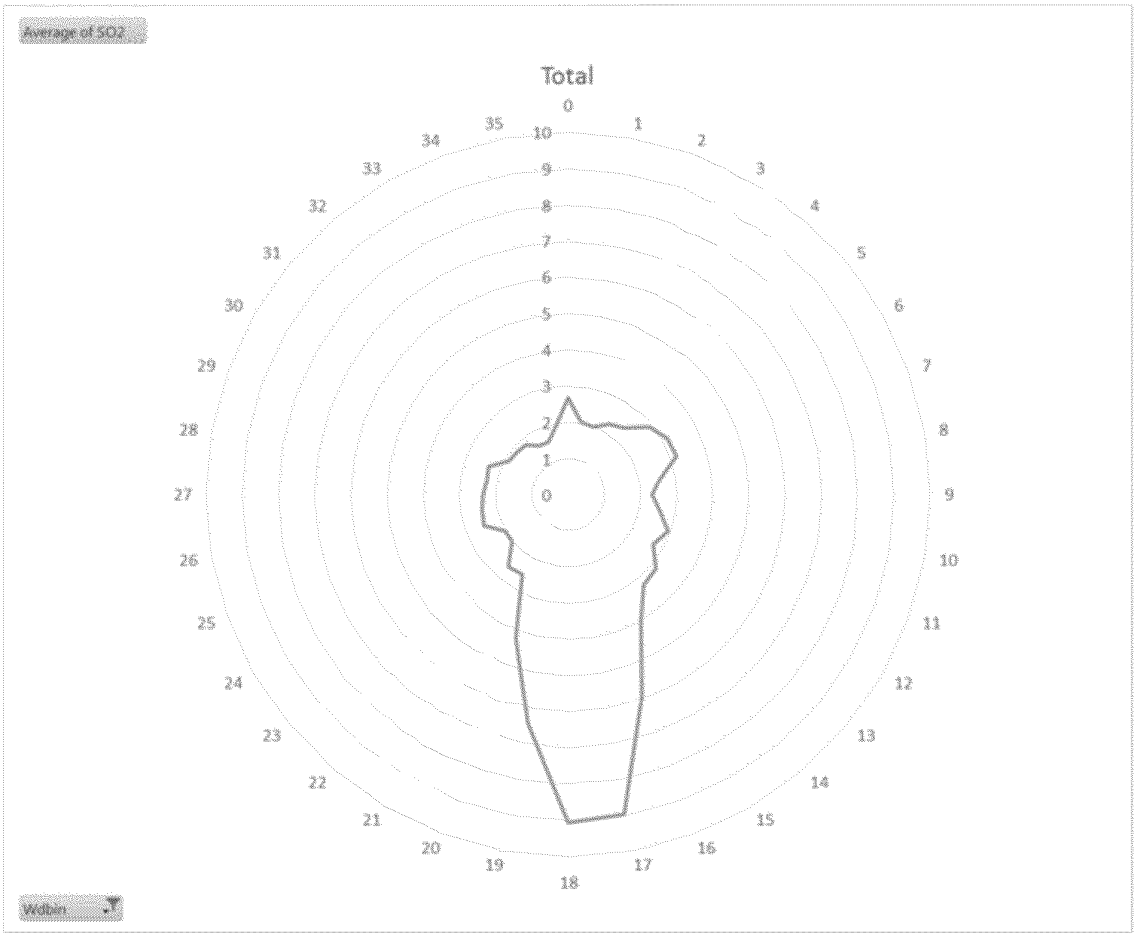
I enjoyed talking to you yesterday morning. I've attached SO2 roses based on hourly data (a) before tall stack (b) after tall stack but before scrubber and (c) after scrubber

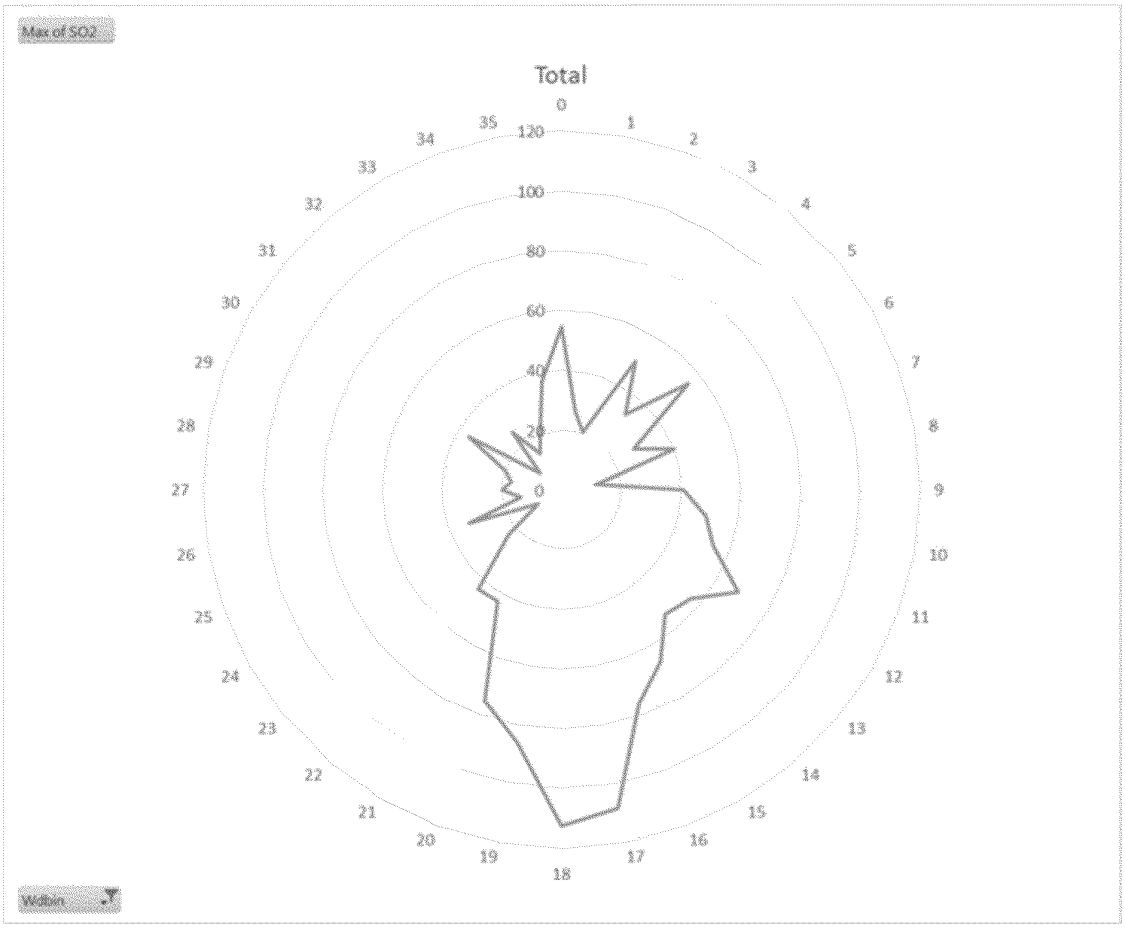
(a)Jan 2012 – Sept 2013 (Before Tall Stack)



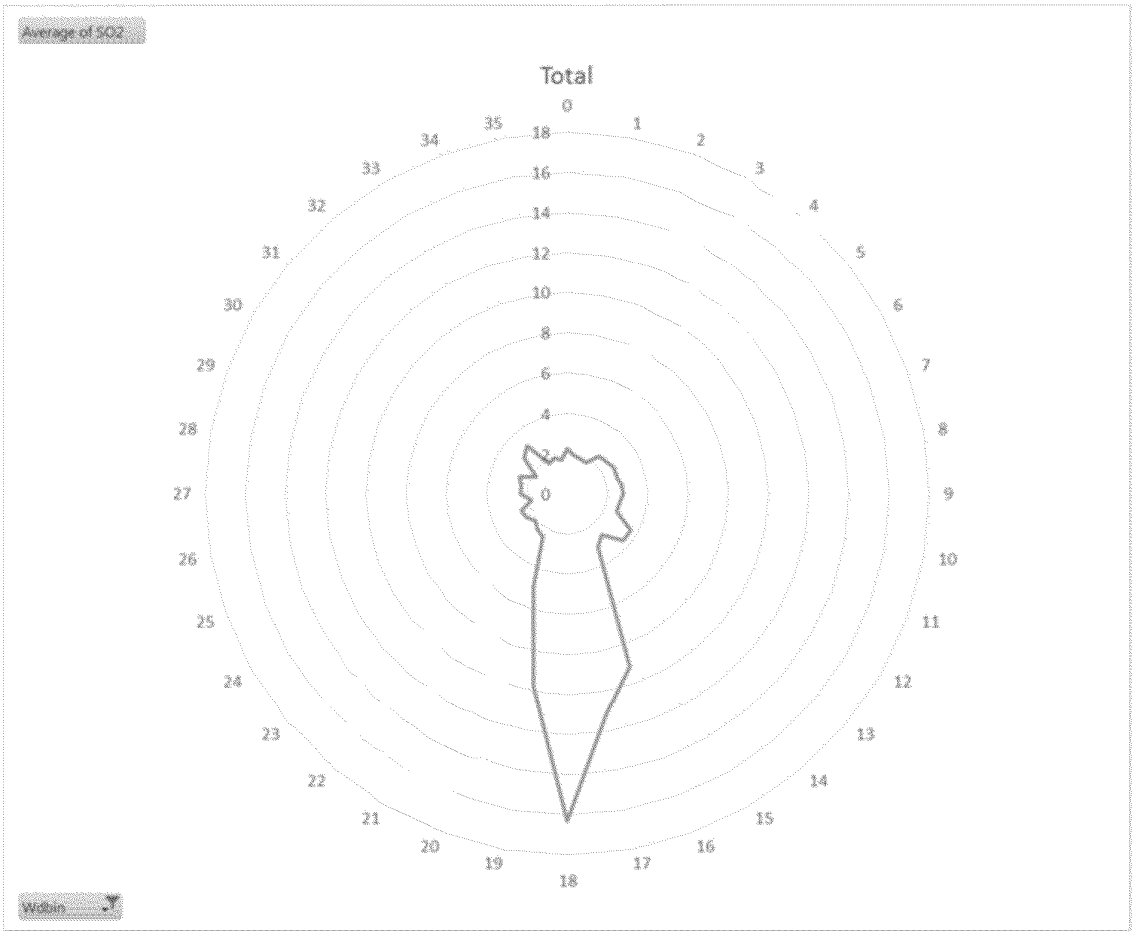


(b) Nov 2013 – September 2015 (After Tall Stack but Before Scrubber)


Average of SO2
Total
Wdbin



(c. Oct 2015 – Dec 2015 (After Scrubber)


Average of 502
Total
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
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25
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32
33
34
35
18
16
14
12
10
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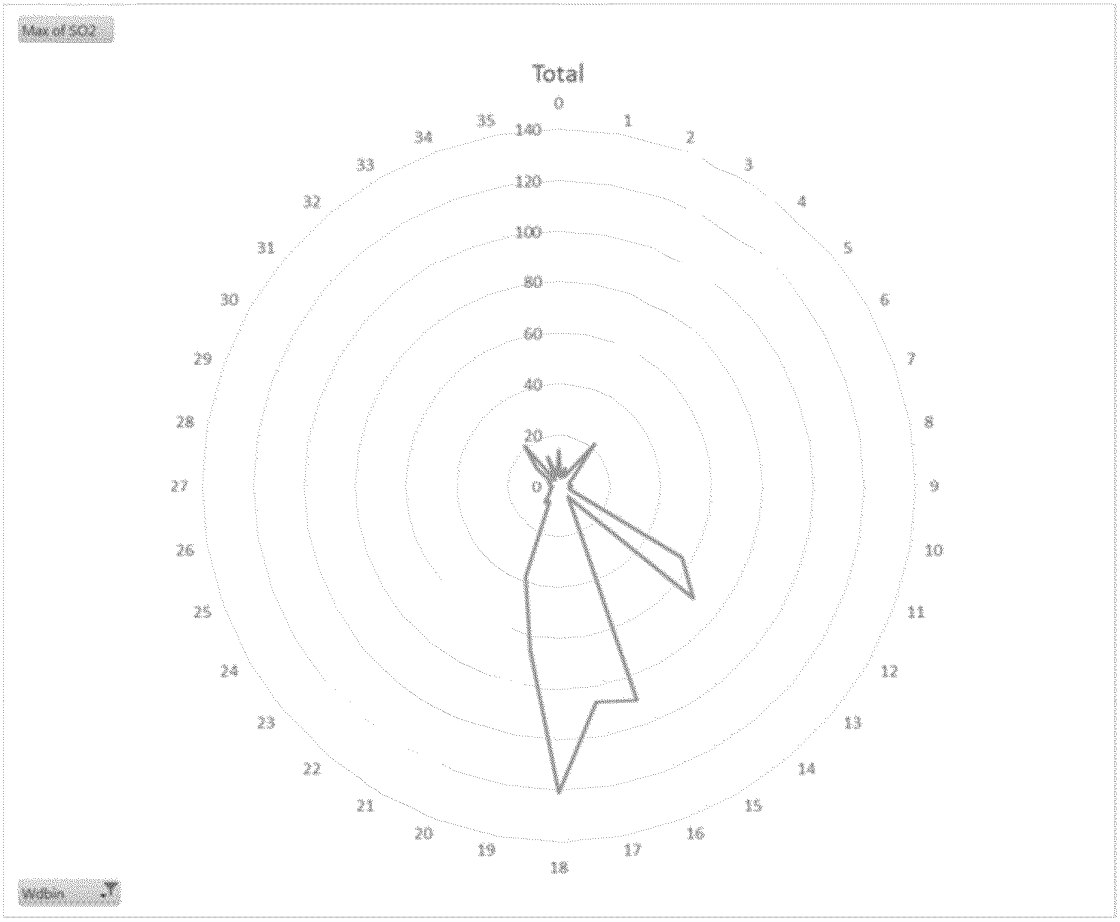
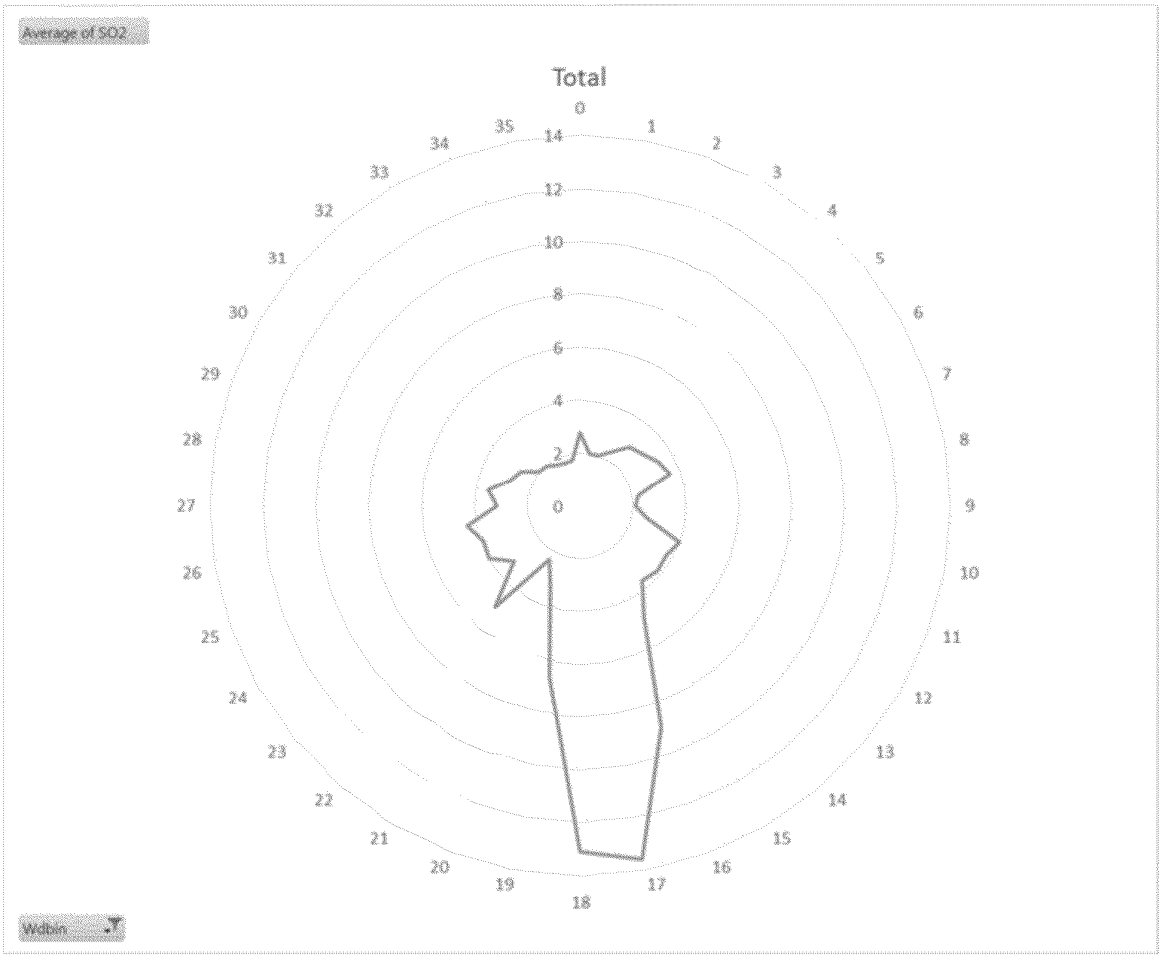
6
4
2
0
Within



There's no data available yet for 2016 on the aqs.epa.gov site and we only have 3 months for post scrubber (the met's available through April 2016). The impression from what we have now is that there was an increase in the average SO2 from the south when the scrubber went into operation. But to get a more apples-to-apples comparison below is the plot for the same 3 months for 2014 – before scrubber but with tall stack

Oct 2014 – Dec 2014 (Before Scrubber but for 4th Quarter only)


Average of SO2
Total
0
1
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3
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5
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7
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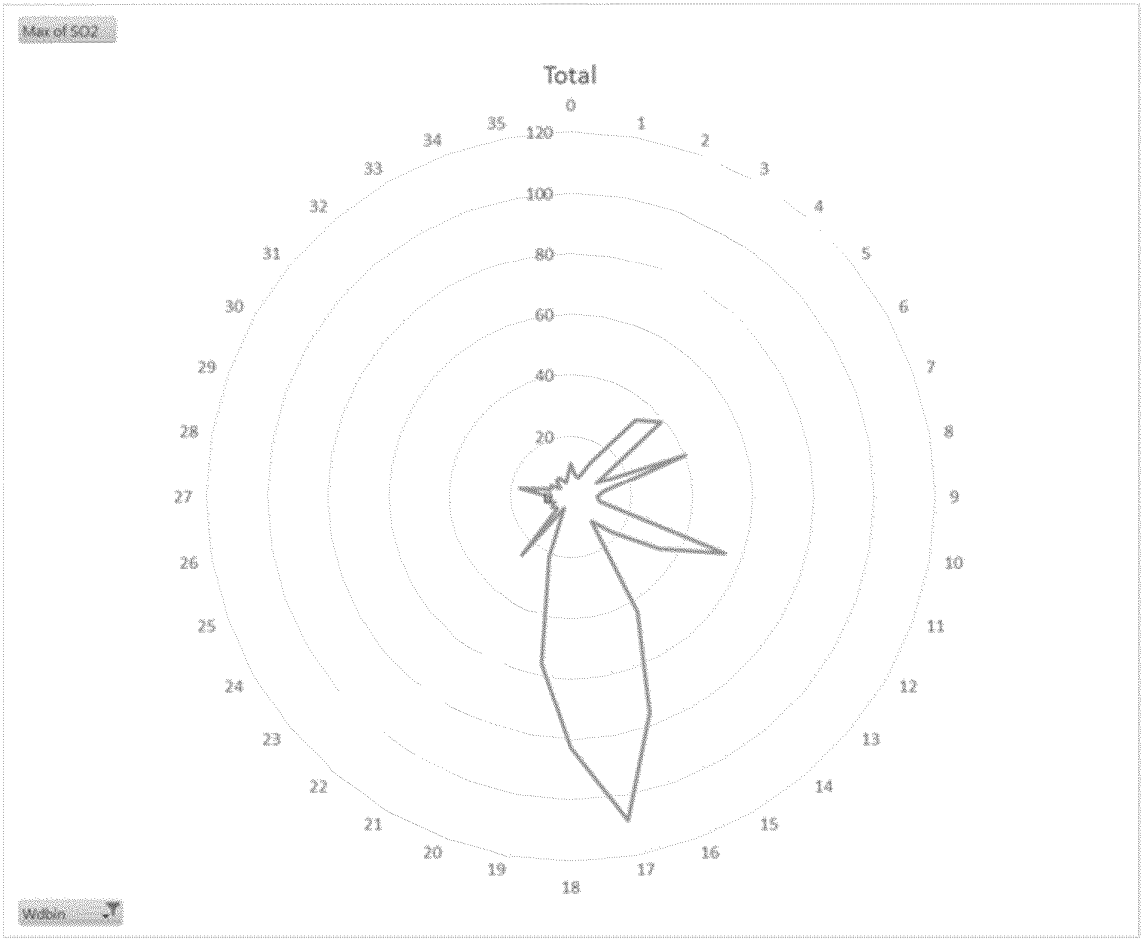
Wdbin



When we compare the same 3 months 2014 to 2015 the average and the max SO2 roses look similar even though there has been about a 50% reduction in the emissions from RAIN. Two theories for this are:

(1. Cooler exit temps could mean that the plume is getting entrained in the building wake, counteracting the reduction in emission rate. I haven't found a standalone version of PRIME, but we can test this by running AERMOD with the two sets of stack parameters for the same meteorology and emissions and looking at concentrations. We could do it in one run by putting in two sources with the same BPIP output for each.

a. Do we have good estimates of stack parameters for before and after scrubber installation? You'd mentioned they gave you a minimum temperature of 173 F post scrubber.

b. Where is the CEM located, after the heat recovery unit? If so are they measuring temperature as well as SO2? They need to get a volume flow rate at STP in order to calculate the SO2 emission rate from the SO2 concentration in the stack, so I assume that temperature is

measured as well as velocity. It would be really helpful to get stack temperature and velocity; having good temperature and velocities for the PRIME algorithm will be key to understanding the downwash effect on concentrations.

(2. It's another source entirely which has not altered its emissions

I downloaded but haven't looked at the 5-minute data. Have you done any analyses with the 5-minute data?

Best regards,

Bob

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Thur 7/28/2016 5:14:07 PM
Subject: Observations on SO2 concentrations at Chalmette Vista with operational changes at Rain CII Calciner

Vennetta,

I'll be out this afternoon and tomorrow – Monday. I wanted to send you a report of the results of the analysis of the hourly data.

I analyzed the hourly SO2 data from Jan 2012 – Dec 2015 to see how the distribution of SO2 concentrations changed with operational changes at Rain. We don't know that current exceedances are due to Rain at this point, but by observing any changes in SO2 patterns with changes in operations at Rain we may be able to gather some additional clues. You had said that it seems like the exceedances had about gone away after the taller stack was put in but before the scrubber. After the scrubber exceedances seemed to worse. I used the following dates for the changes in operations:

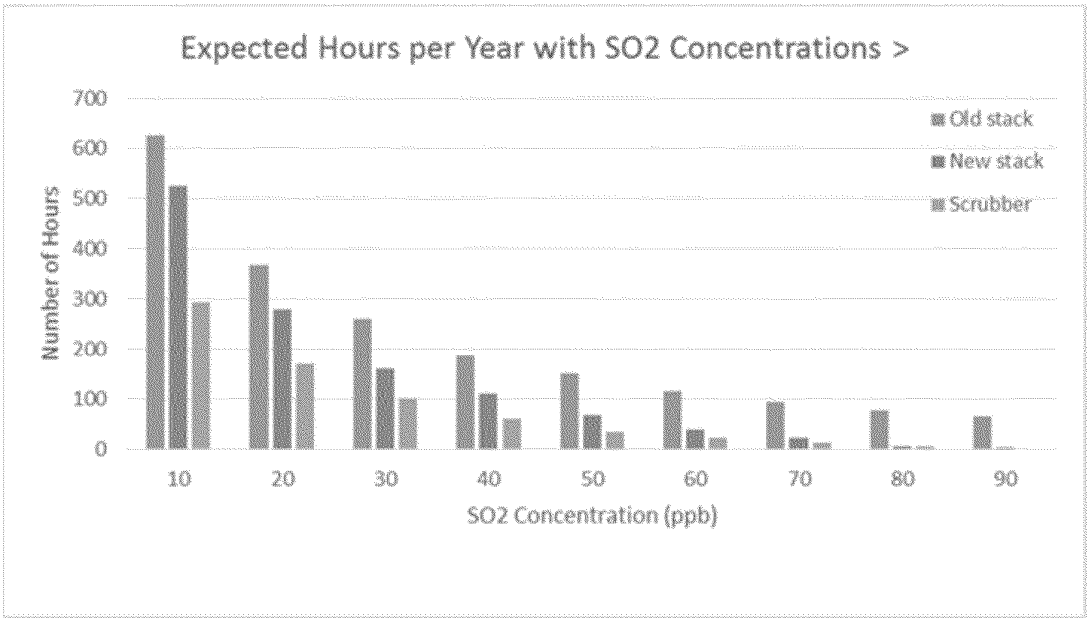
Status	Description	Start Date	comment
1	Old Stack	1/1/2012	Includes reduction from 2500 lb/hr to 1200 lb/hr permitted about June 2013 (if we have a date for the transition, we can analyze the before/after reduction data separately)
2	New Stack	12/1/2013	From St. Bernard air quality improving, DEQ says, citing Rain CII plant work | NOLA.com 12/17/13
3	Scrubber	Oct 15 2014	Conversation w Vennetta Hayes 7/6/2016

If any of these dates are in error please let me know.

SO2 concentration distributions

Analyzing the hourly SO2 data at Chalmette Vista using the dates above (through December

2015) demonstrates that a slight improvement in higher SO2 concentrations may have been experienced after the installation of the scrubber. The scrubber reduced the number of hours per year where concentrations would be expected to be 10 ppb or greater from 524 to 295. However, the expected number of hours per year where the monitored SO2 concentration would be above 80 ppb only declines from 7.3 to 6.8 per year with the operation of the scrubber. Clearly the taller stack seems to have had the most benefit on concentrations at or above 80 ppb reducing the incidence from 77 to 7.3.



	Cumulative Frequency			Number of Expected Hours per Year with Concentrations Greater Than Concentration		
Conc (ppb)	Old stack	New stack	Scrubber	Old stack	New stack	Scrubber
10	0.928518	0.94015	0.966349	626.1835	524.2893	294.7831
20	0.95801	0.968135	0.980549	367.828	279.1355	170.3949
30	0.970195	0.981712	0.988524	261.0922	160.1995	100.533
40	0.978568	0.987254	0.993095	187.7456	111.6542	60.49018
50	0.982567	0.992242	0.995915	152.7143	67.96342	35.78292
60	0.986878	0.995428	0.997471	114.9463	40.04988	22.15133
70	0.989315	0.997368	0.998541	93.5991	23.05902	12.77961
80	0.99119	0.999169	0.999222	77.17821	7.281796	6.815795
90	0.992564	0.999584	0.999708	65.13622	3.640898	2.555923
100	0.993752	0.999723	0.999903			

Since the SO2 emission rate from Rain has declined by about ½ since the installation of the scrubber, why would the concentrations at the Vista monitor not also decline in proportion across the entire range of concentrations? There are three theories that are suggested:

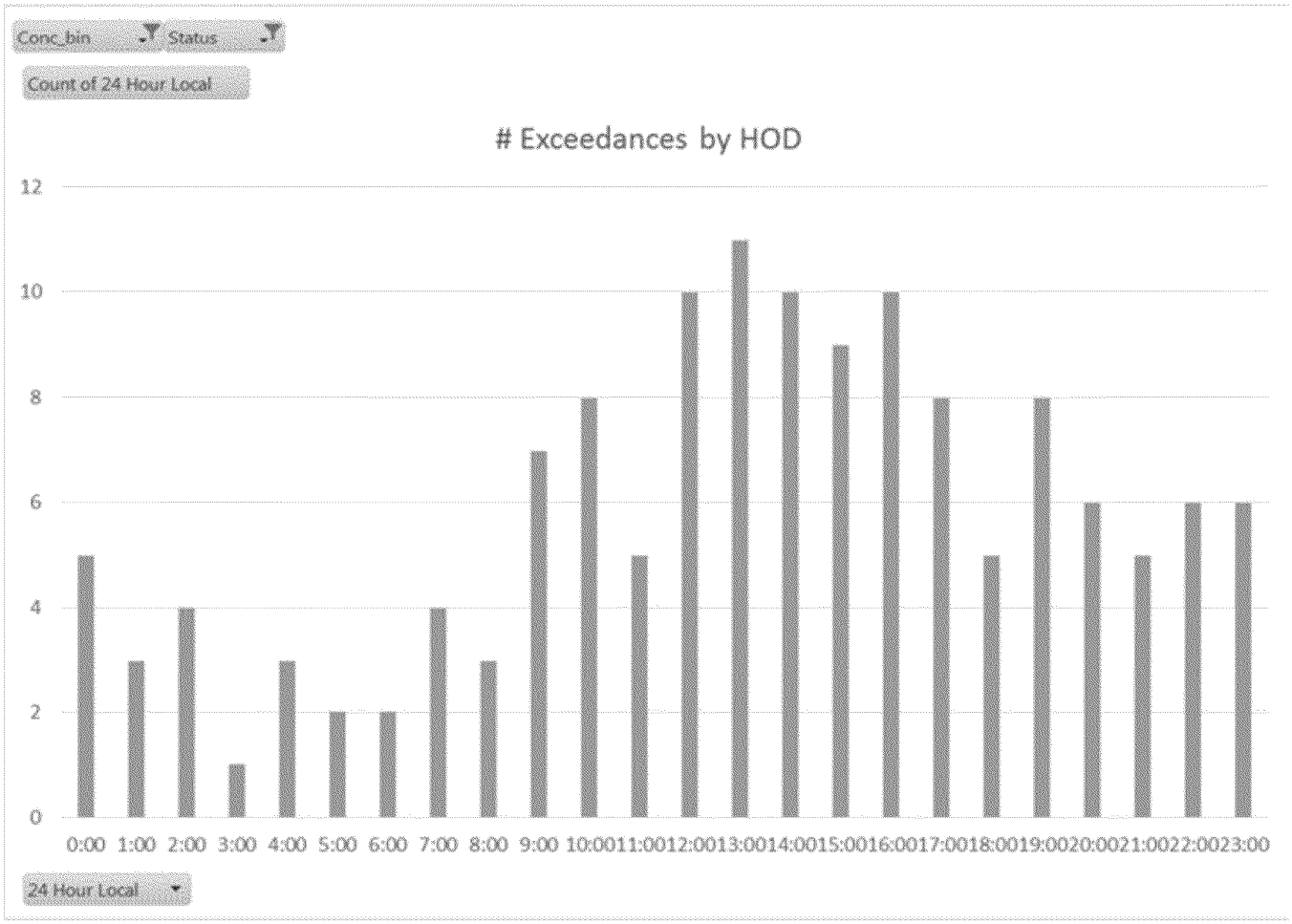
1. Changes in the emission parameters at Rain associated with the scrubber have caused a decrease in dispersion counteracting the emissions reduction during certain, worst-case meteorological conditions

2. Short-term variations in emission rate at Rain increase emissions during critical hours (even though meeting the permit rate over the permit interval)

3. An additional intermittent source is causing or contributing to the higher concentrations.

Examining meteorological conditions which cause the highest concentrations for the tall stack and the tall stack + scrubber

With the original 120-foot stack the occurrence of hourly concentrations > 80 ppb followed the trend by Hour of Day given below. The greatest number of exceedances occurred during the afternoon hours with a minimum in the predawn hours.



There are not enough cases to make a similar plot for the tall stack and tall stack + scrubber. However it can be noted that 10 of the 14 exceedances recorded for the tall stack and the tall stack + scrubber are during the hours of 1100-1800, with only four during the intervening 16 hours. In all cases, the Vista monitor experiences an increased incidence of exceedances during late-morning and afternoon hours when unstable conditions would be expected to prevail. For the short stack there is evidence of an increased incidence in the hours 0900-1000 possibly due to inversion breakup.

An analysis of the short stack data for the unstable hours shows that the highest concentration (250 ppb) occurred for a wind speed of 13 kt and that the highest concentrations recorded tend to decline with either increasing or decreasing wind speeds. Increasing wind speeds tend to dilute the plume by stretching it horizontally along the axis. Decreasing wind speeds can decrease concentrations by allowing the centerline of the plume to remain higher above the ground.

The following table lists the exceedances with the tall stack but without the scrubber. This analysis uses surface met data from N.O. airport which is the same station used for the AERMOD modeling. It would be better if the on-site met data were used.

Date Local	24 Hour Local	DateTime	SO2	WD	Wdbin	WS (kts)	Status	Conc_bin
12/5/2013	16:00	12/5/13 16:00	86	190	19	9	2	8
12/5/2013	17:00	12/5/13 17:00	75.1	190	19	11	2	7
12/5/2013	18:00	12/5/13 18:00	79.3	180	18	12	2	7
12/5/2013	20:00	12/5/13 20:00	112.2	180	18	9	2	11
12/6/2013	5:00	12/6/13 5:00	76	170	17	10	2	7
12/6/2013	9:00	12/6/13 9:00	90.1	170	17	12	2	9
12/21/2013	12:00	12/21/13 12:00	75.5	170	17	15	2	7
12/21/2013	13:00	12/21/13 13:00	86.8	170	17	15	2	8
5/26/2014	8:00	5/26/14 8:00	75.7	180	18	4	2	7
6/10/2014	5:00	6/10/14 5:00	78.8	170	17	11	2	7
6/17/2014	18:00	6/17/14 18:00	112.4	180	18	10	2	11
6/18/2014	16:00	6/18/14 16:00	75.8	160	16	8	2	7
10/13/2014	12:00	10/13/14 12:00	75.9	160	16	15	2	7
10/13/2014	14:00	10/13/14 14:00	82.7	180	18	23	2	8
10/13/2014	16:00	10/13/14 16:00	76.7	180	18	19	2	7

During afternoon hours when unstable conditions might be expected the exceedances occur during winds > 8 knots and up to 23 knots. In evening and morning exceedances the winds are lighter, 4-12 knots. These data are consistent with the plume in the afternoon either being mixed down into the building wake or having depressed plume rise because of higher wind speeds.

Below is the table for after the scrubber was installed.

Date Local	24 Hour Local	DateTime	SO2	WD	Wdbin	WS (kts)	Status	Conc_bin
11/16/2014	15:00	11/16/14 15:00	85.1	170	17	11	3	8

11/16/2014	16:00	11/16/14 16:00	108.3	170	17	14	3	10
2/1/2015	10:00	2/1/15 10:00	79.6	190	19	7	3	7
2/21/2015	13:00	2/21/15 13:00	75.1	190	19	18	3	7
9/2/2015	16:00	9/2/15 16:00	75.3	200	20	4	3	7
9/11/2015	11:00	9/11/15 11:00	81.9	180	18	10	3	8
11/29/2015	8:00	11/29/15 8:00	89	160	16	7	3	8
11/29/2015	9:00	11/29/15 9:00	89.7	160	16	6	3	8
12/23/2015	12:00	12/23/15 12:00	86.1	170	17	15	3	8
12/24/2015	13:00	12/24/15 13:00	104.7	180	18	15	3	10
12/24/2015	16:00	12/24/15 16:00	120.8	180	18	17	3	12

During late morning - afternoon hours when unstable conditions might be expected the exceedances occur during winds > 10 knots and up to 18 knots (with the exception of 9/2 which also had the only wind direction > 190). In morning exceedances the winds are lighter, 6-7 knots. These data are consistent with the plume in the afternoon either being mixed down into the building wake or having depressed rise because of higher wind speeds.

It can be noted that the meteorological conditions for exceedances seem to be similar between tall stack and tall stack + scrubber. In both cases during “stable” conditions a lower wind speed is required for an exceedance than for “unstable” conditions. During the unstable conditions a wind speed of at least 10 (with the exception of 9/2/15) knots (11.5 mph or 5 m/s) and up to 23 knots (26 mph or 12 m/s) If the scrubber was causing a change in the effective plume height either because of reduced plume rise or due to entrainment of the plume in the building wake at lower wind speeds, we’d expect to see exceedances occurring at lower wind speeds with the scrubber than without (since in either case the plume would be brought to the ground near the source at the lower wind speed).

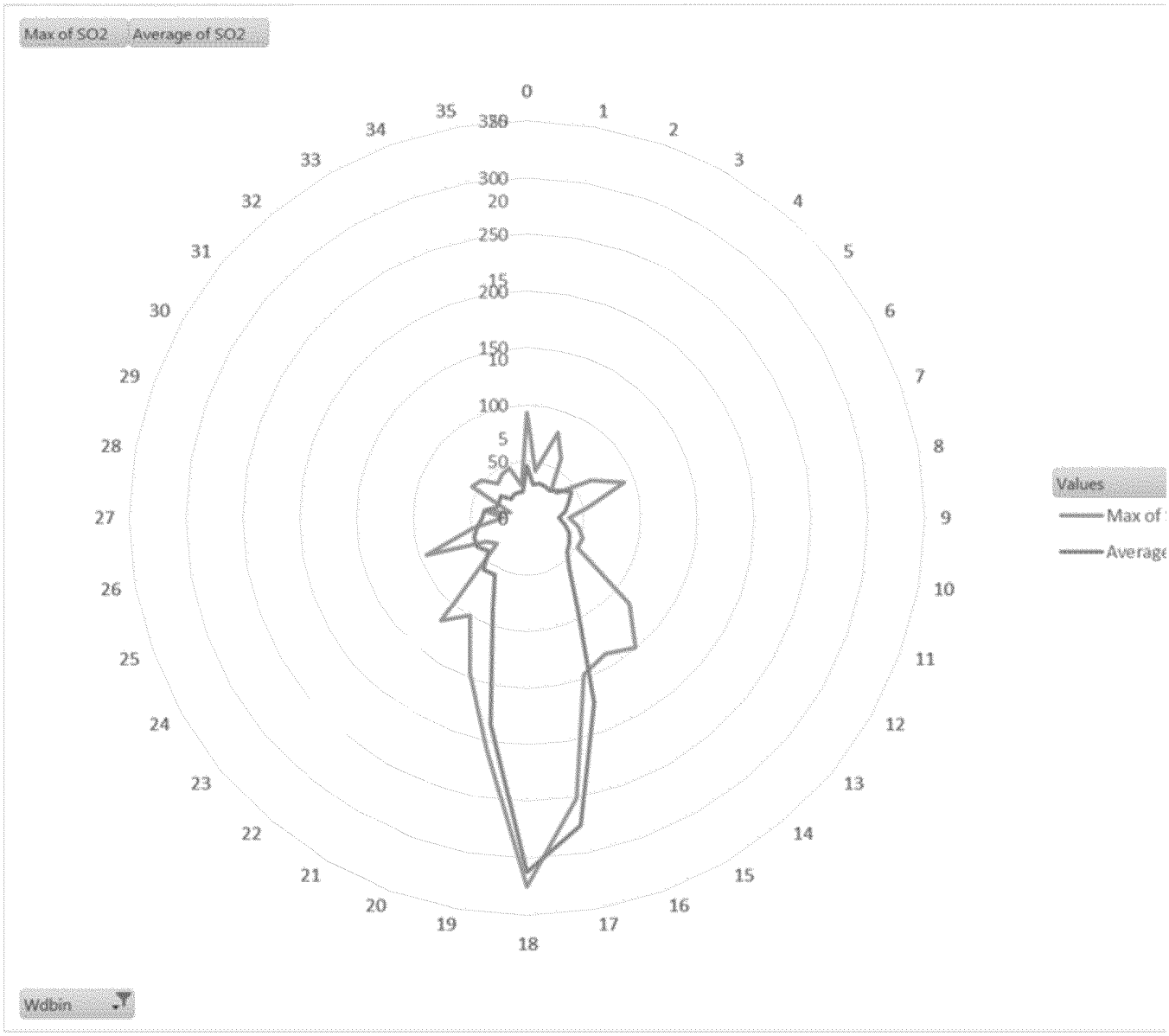
Because the dispersion equation includes a linear factor for increased dilution along the axis of the plume with increasing wind speed, we can calculate a normalized SO2 which is SO2/WS, which can to a degree account for WS as a variable. If we assume that all else is equal (emission rate, horizontal and vertical diffusion and plume centerline relative to the monitor) then we’d expect the normalized SO2 value to be about the same. By only looking at hours where we expect unstable conditions we are controlling to some extent for horizontal and vertical diffusion differences. Plume centerline alignment with the monitor will vary from case to case, but by looking at only those cases where the concentrations exceed that standard we can assume good

alignment and by looking at multiple cases we are sampling from a population – the higher the number of samples the better representation we will get. We expect that the emission rate will decline between tall stack and tall stack + scrubber by about 50% so we can look for a signal by comparing the normalized concentrations for the operational conditions. Looking at only the late morning and afternoon hours, the average values for the parameters for tall stack and tall stack + scrubber are given below:

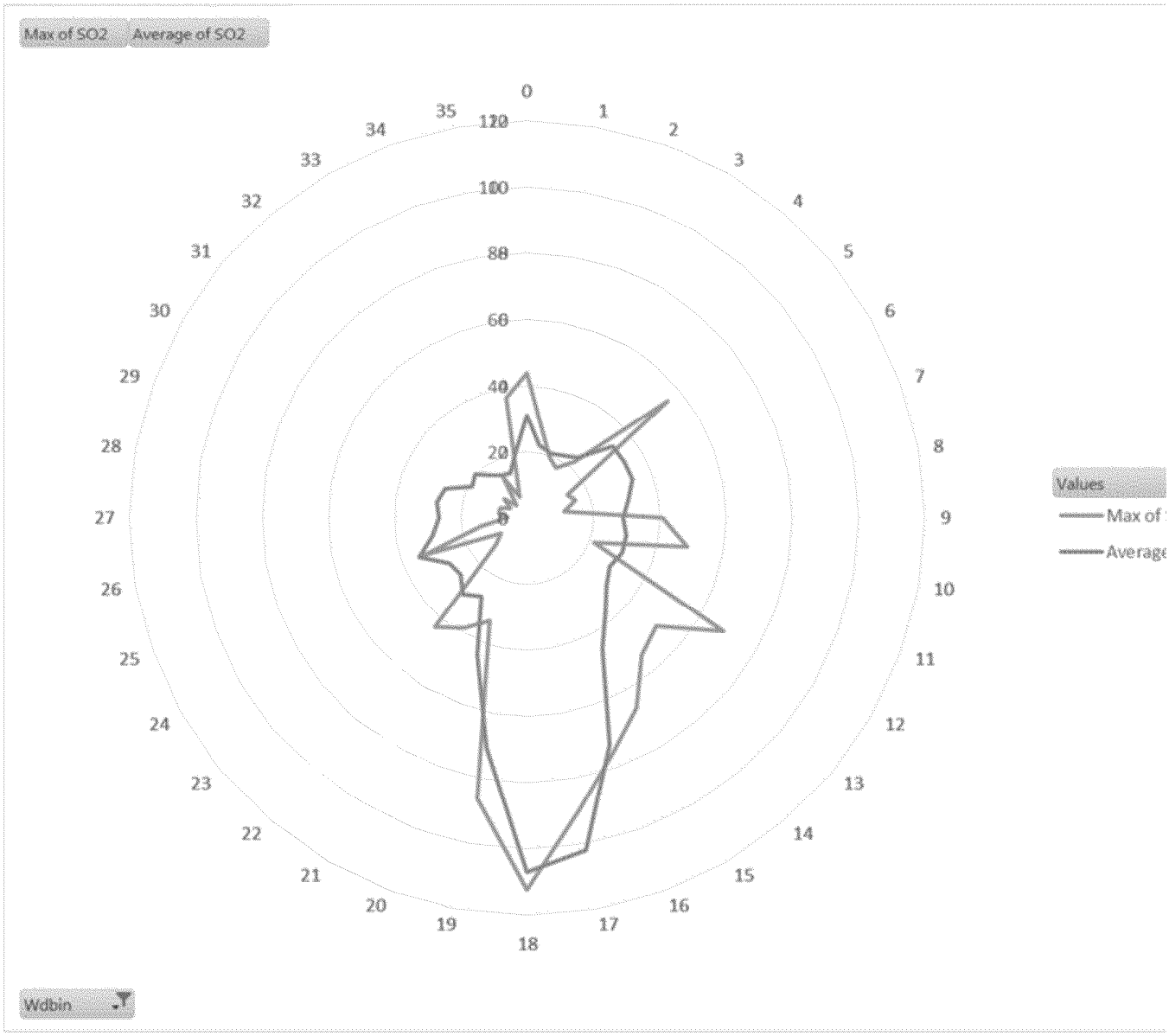
DateTime	SO2	WD	Wdbin	WS (kts)	Status	Norm SO2
Tall stack	85.30909	176.3636	17.63636	13.27273	2	7.24412
Tall stack + scrubber	90.76667	181.1111	18.11111	12.33333	3	8.650735

There does not seem to be a signal in the average normalized SO2 denoting a change in the emission rate.

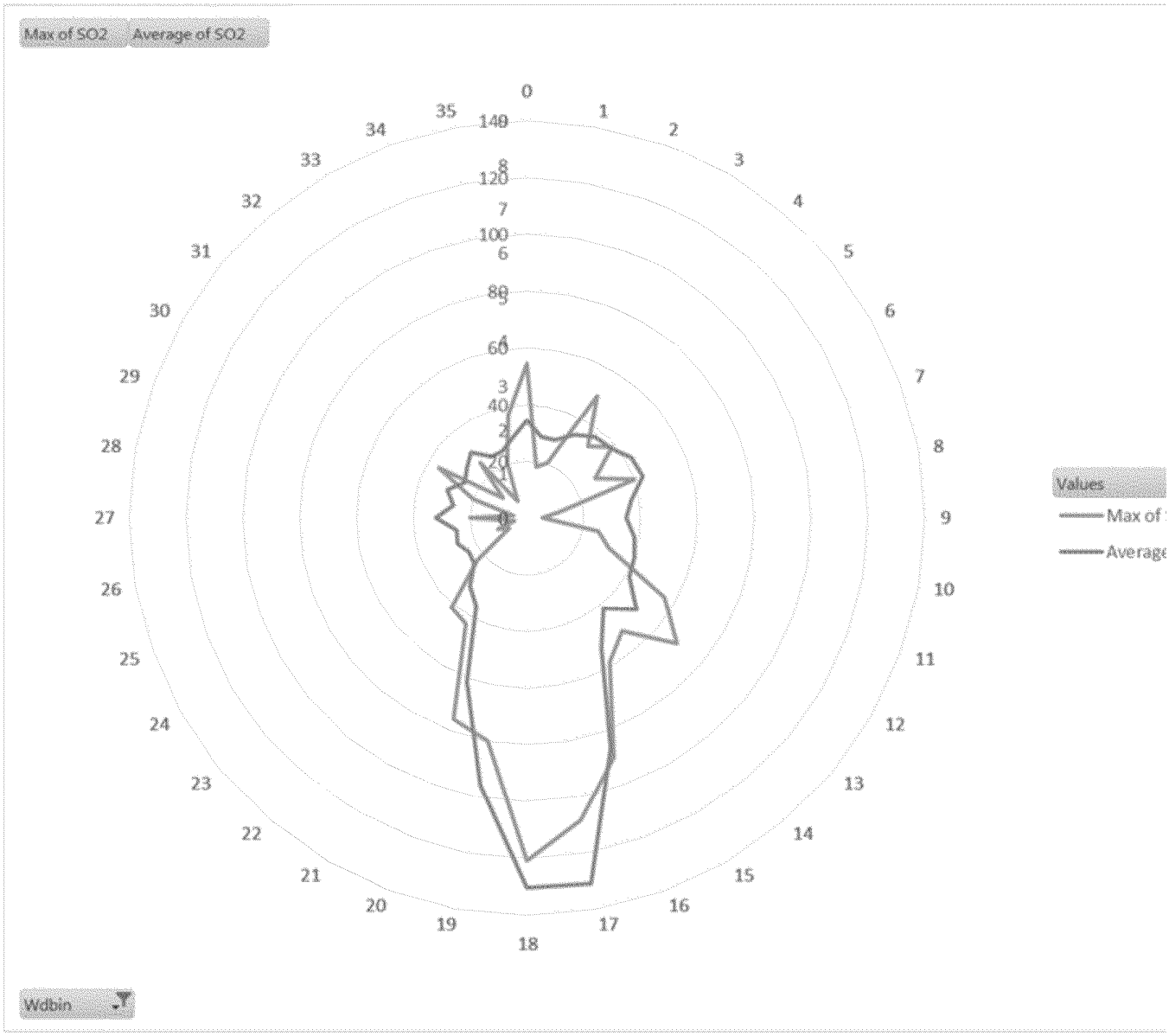
A SO2 rose plot for the maximum and average SO2 by direction for the short stack is given below. The peak to mean ratio is about 15.



The same plot for the tall stack (note that the secondary axis for the average SO2 for this plot is 1/10 of the primary axis.) The background concentrations are much more prominent since the direct source impact has been reduced, though their magnitude is still about the same (average 2-3 ppb). The peak to mean ratio for plume impact is about 11.



And for the tall stack plus scrubber. The peak to mean ratio is about 15.



The decline of the peak to mean ratio for the tall stack relative to the tall stack + scrubber is consistent with the observed frequency distribution where the tall stack was most effective in reducing the highest concentrations where the scrubber tended to reduce the concentrations across the board, but not much more effectively than the tall stack alone on the highest concentrations.

As expected, there remains a strong directional dependency of SO2 concentrations at the Vista monitor both for the average and maximum SO2 concentration. There are multiple possible sources to the south of the monitoring site.

Best regards,

Bob

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Wed 7/27/2016 6:34:41 PM
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

Using the information in your email I can reorganize the data into a regular worksheet with the data in individual columns. I've already done 7/7 and will work on the fourth next. I'll send you the resulting worksheets, I wanted to let you know quickly so you wouldn't spend any time working on pulling the report again.

Best regards,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Wednesday, July 27, 2016 9:14 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Cc: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: SO2 roses for Chalmette/St. Bernard

The files have all the data but somehow the labels are missing and the only way you can tell it has changed to a different parameter is by looking at the times repeating. I'll try to pull the report again after our call.

From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Wednesday, July 27, 2016 8:55 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

Thank you so much for resending the 5-minute data for 7/4 and 7/7, I know you're really busy right now. There still seems to be a problem with including the met and the H2S data in the

worksheets. Could you check and see if those data are available in addition to the SO2?

I'm doing some further checking on the waste heat / baghouse stack location relative to Building 31 in the AERMOD inputs, I'll get back to you later (it may be next week) on the result.

Best regards,

Bob

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From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Tuesday, July 26, 2016 2:22 PM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Subject: RE: SO2 roses for Chalmette/St. Bernard

The locations that I sent from the email from Rain are the correct locations for the stacks. I know that sometimes the conversions can be off depending on which datum is used. Could that be the difference. I've done so many iterations of the model with one stack or the other that I will have to go back and make sure that the correct stack is used in each run. Some runs were the hot stack only and some were cold stack only and some both.

From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Monday, July 25, 2016 8:45 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

I'd like to request some more information to help with the Rain CII Chalmette analysis.

- The Excel files you sent me for 7/4 and 7/7/16 had only the SO2 data and no meteorology or H2S. Can you send me the 5-minute data including these parameters?

- I'd like to request on-site 5-minute met data and Rain CII Chalmette emissions data for 1/26-1-28/16. EPA operated a mobile van recording SO2 and other data in the Chalmette area during 1/26 – 1/28/16. I'd very much like to get the on-site met and emissions data for those days to help interpret the concentrations recorded. I'll share the mobile data with you as soon as I get the researcher's OK – I'd love to get your take. Since the mobile data are labeled as "SO2_Raw", they may need to do some more work to get calibrated SO2 concentrations.

- I want to be sure that I've got the correct current stack location and emission parameters for the baghouse (cold) stack. The stack parameters and max emission rate for the Pyroscrubber cold stack (Waste Heat Boiler/Baghouse) in the modeling files you submitted in April 2016, located in the zip file NewFullModel.zip in the AERMOD input file, NewFullModel.DTA:

** Waste Heat Boiler/Baghouse

SO LOCATION 199 POINT 212682.8 3315309.8 2.37

SO SRCPARAM 199 100.79830444325 60.6552 455.37 17.6784 2.7432

I notice that, the only source included in the SRCGROUP RAIN is 199. The emission point (shown by the yellow pin below located at 29°56'06.0257", -089°58'34.9692" when converted to Lat/Long) is actually close to the Pyroscrubber hot stack.

Is this the correct current location and stack parameters the baghouse stack? The red flag labeled "Waste Heat Stack" is based on "Chalmette Area.jpg" which you previously sent me which coincides with the location of a stack.

I see another location in **St. Bernard Parish SO2 Nonattainment Area Louisiana State Implementation Plan Revision, 4/1/2015.** The parameters for the source 199 are:

Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (ft)	Stack Height (ft)	Temperature (°F)	Exit Velocity (fps)	Stack Diam (ft)
199	Waste Heat Boiler/Baghouse	212794.45	3315253.96	12.66	199.00	360.00	58.00	9.00

Which when converted to metric and compared to the AERMOD SO input:

Source ID	Source Description	Easting (X)	Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	SO2
199	Waste Heat Boiler/Baghouse	212794.45	3315253.96	60.655	55.22	17.68	2.74	113.45	From the SIP
199.00	Waste Heat Boiler/Baghouse	212682.33	3315309.28	60.655	55.37	17.68	2.74	100.85	From the AERMOD input

The SIP UTM coordinate when converted to LAT/LONG is 29°56'04.3079", -089°58'30.7562", which seems to be in the refinery.

The correct stack location in relation to the building is important in the estimation of wake effects in BPIP, can you confirm the location of the cold stack and whether the relationship to the building seems correct in the modeling files?

Thanks,

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Subject: RE: SO2 roses for Chalmette/St. Bernard

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Hour	H2S	SO2	WDIR	WSP
7/6/16 9:05	4	4.4	224	5
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7/6/16 9:15	3	2.1	220	4
7/6/16 9:20	4	2.8	202	6
7/6/16 9:25	3	2.7	218	7
7/6/16 9:30	3	2.5	222	7
7/6/16 9:35	3	2.2	219	5
7/6/16 9:40	3	2.1	195	5

Thanks,

Bob

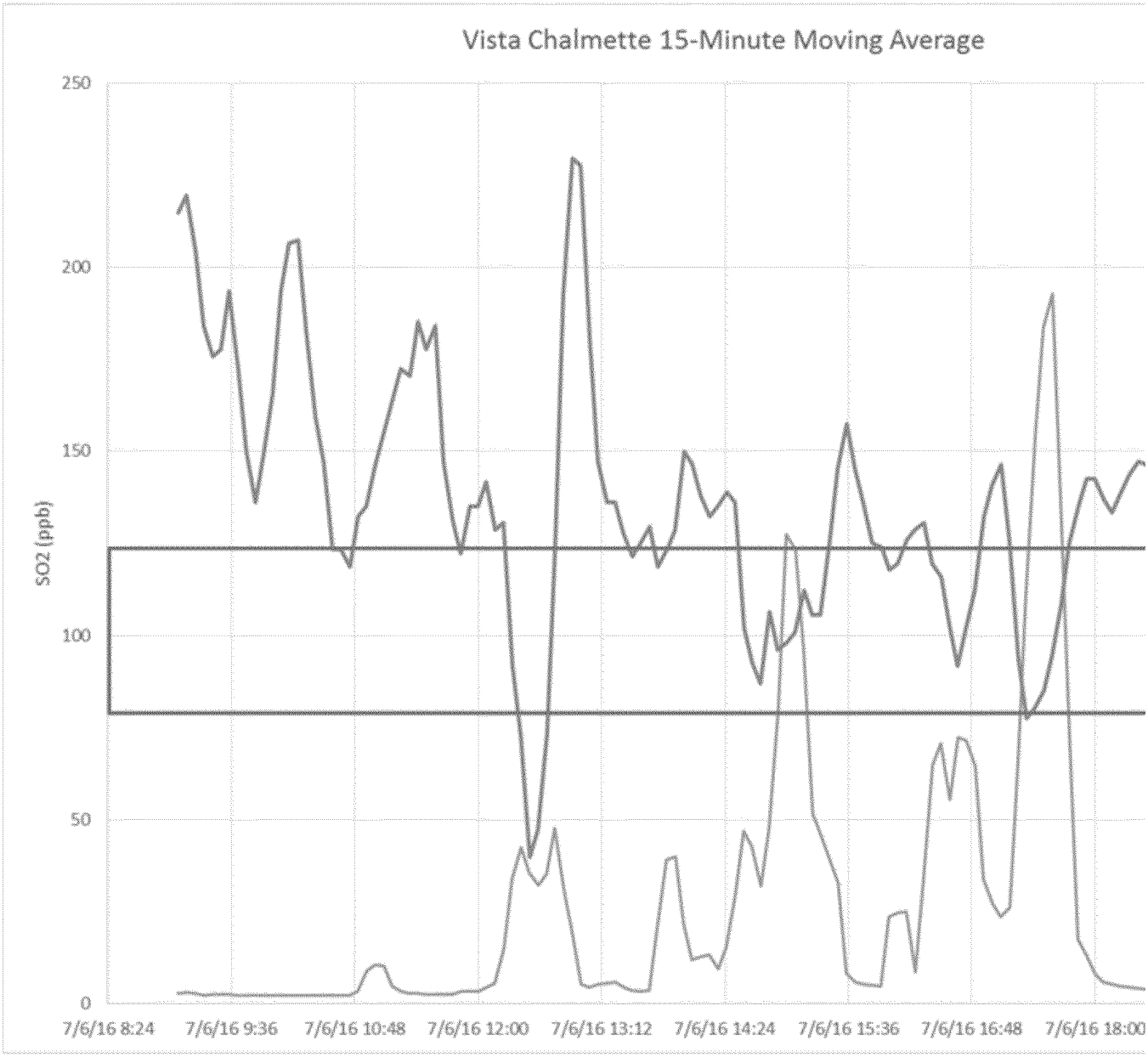
From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Tuesday, July 12, 2016 9:21 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Subject: RE: SO2 roses for Chalmette/St. Bernard

Here you go. I just got flow rate and temperature data from Rain from before the scrubber and after. Would that be useful to you?

From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Monday, July 11, 2016 8:24 AM
To: Vennetta Hayes
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

Would you be able to send be the 5-minute data for the 7/4 and 7/7 exceedances as well? I've looked at the 5-minute data for 7/6 that you sent, but it seemed to raise about as many questions as it answered. I plotted 15-minute moving average data to damp out some of the rapid fluctuations.



About the most I could say is that there is a range of wind directions for which elevated SO2 concentrations are observed – about from 178 to 195, with a centroid around 185. Anything outside that range starts trending back toward background.

I'm hoping that there may be some common patterns for the three days that will be helpful. One possible approach if the same trend for wind direction bears out for the other days we might start looking at estimating the horizontal extent of the plume (95% concentration) and comparing that to what would be expected from potential source under those meteorological conditions – including any potential building wake.

e.g. if it is Rain at a distance X and an angular range = 15 degrees the plume is N meters wide

if it is refinery flare at distance X2 and angular range = 15 degrees the plume N2 m wide.

The question would be: which of these would be the most agreement with calculated sigma Y from the potential sources? To make this worthwhile the pattern would need to repeat on other days. As well, I understand that there is some mobile monitoring data available that may give us a check on the horizontal extent of the plume derived from the stationary monitor data.

I looked in Google Earth at the location plotted for the coordinates given on your web site for the Vista monitor and it didn't seem to correspond to the location plotted on the street level map. I think the lat/longs may be rounded. Could you send me the precise locations of the Vista monitor and the two potential sources? Also, when do you think you will have time to post the revise AERMOD files?

Thank you for all your help,

Bob

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Thursday, July 07, 2016 11:20 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Subject: RE: SO2 roses for Chalmette/St. Bernard

I've attached the 5 minute data from yesterday for you.

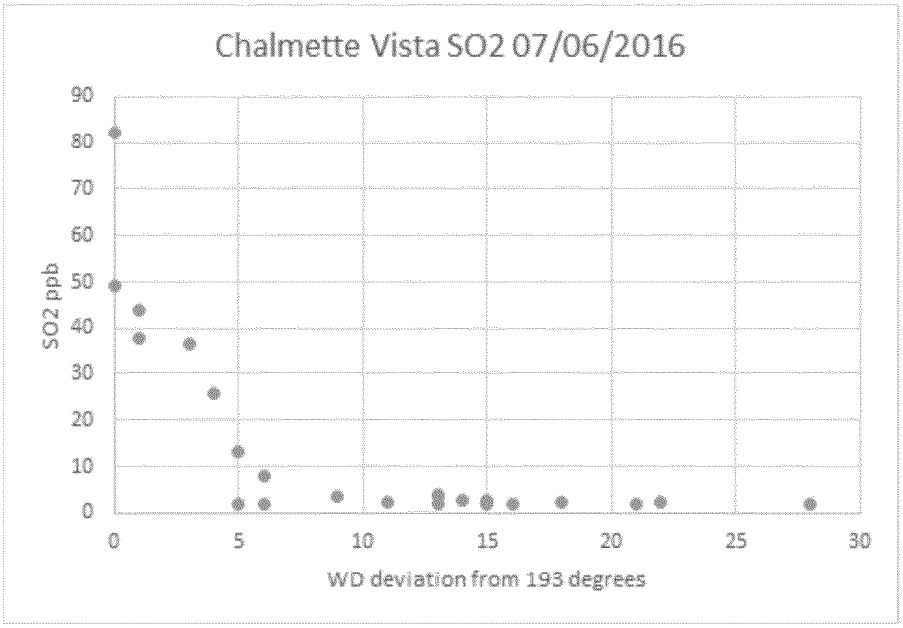
From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Thursday, July 07, 2016 10:45 AM
To: Vennetta Hayes
Subject: RE: SO2 roses for Chalmette/St. Bernard

Looks like we got another exceedance yesterday:

Site Monitoring Data at Chalmette Vista site on 7/6/2016

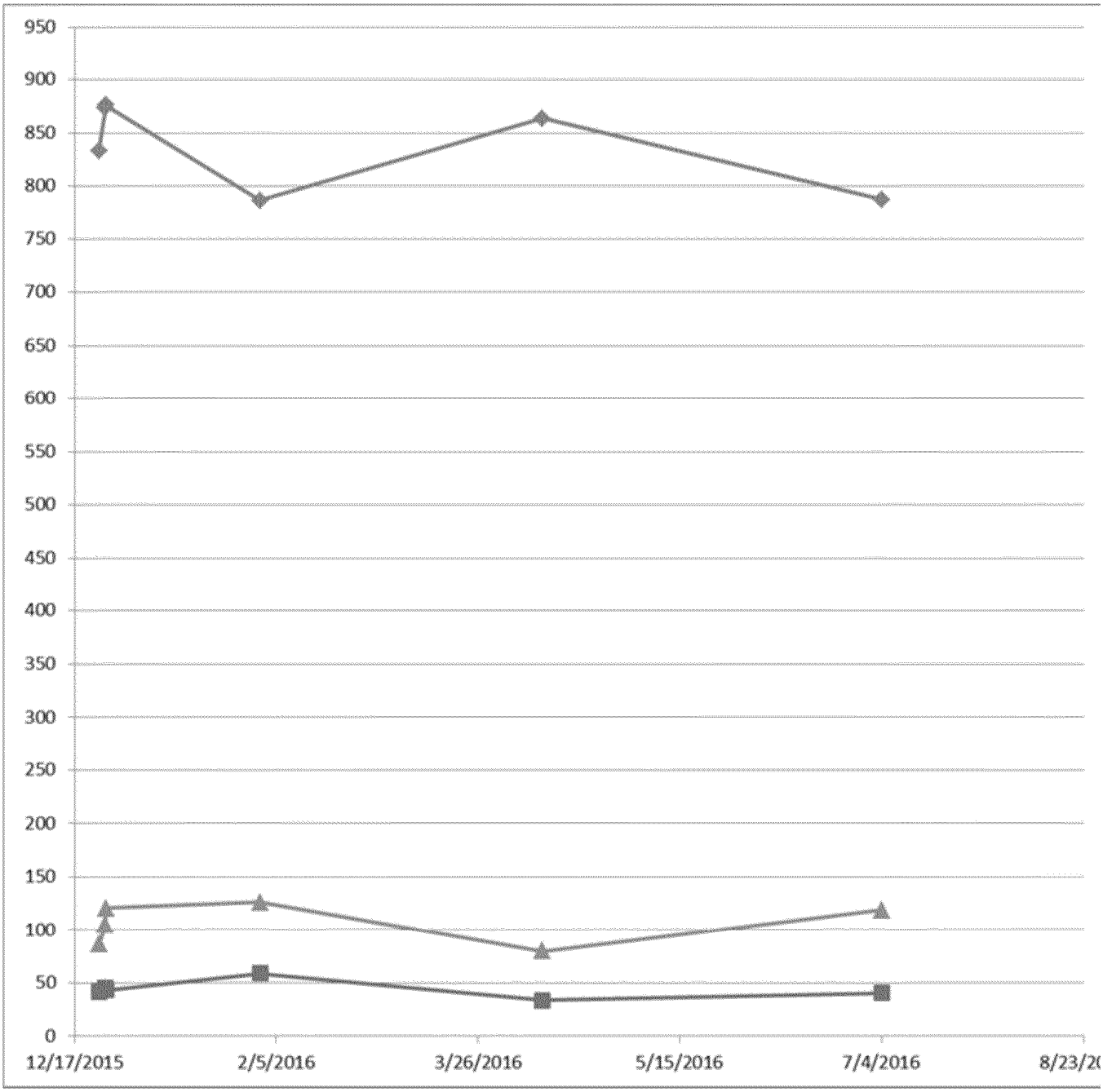
Time	SO2 (PPB)	WSP (MPH)	WDIR (DEG)
2:00 AM	2.3	5	211
3:00 AM	N/A	4	206
4:00 AM	2	4	214
5:00 AM	2.1	4	208
6:00 AM	2	4	199
7:00 AM	2	3	206
8:00 AM	2.1	4	198
9:00 AM	2	6	209
10:00 AM	2.1	7	221
11:00 AM	2.5	5	215
12:00 PM	3.9	5	206
1:00 PM	3.4	6	206
2:00 PM	25.7	5	197
3:00 PM	13.4	6	198
4:00 PM	37.7	6	192
5:00 PM	36.7	7	196
6:00 PM	49	6	193
7:00 PM	**82.4**	**5**	**193**
8:00 PM	8.1	5	199
9:00 PM	43.8	4	192
10:00 PM	3.6	6	202
11:00 PM	2.7	5	208
12:00 AM	2.6	5	207
1:00 AM	2.3	5	204

The hourly wind speed and direction were relatively constant for 2AM – 7PM but the concentration varied quite a bit. Here's a plot of the SO2 concentration vs the WD deviation from 193 degrees for the hours 2AM-midnight. Very small deviations seem to give quite sharp reductions in the SO2 concentration suggesting a source very near at about 193 degrees. The apparent sharp gradient of SO2 could be coincidental since we are just looking at a single case – for example the peak concentration could be associated with setting up an inversion, though 7PM seems early for this time of year. It would be good to look at additional cases and see if this kind of relationship holds.



From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Thursday, July 07, 2016 9:32 AM
To: Imhoff, Robert <imhoff.robert@usepa.onmicrosoft.com>
Cc: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: SO2 roses for Chalmette/St. Bernard

I've talked to Rain and asked for temperature and flow information. Yesterday I plotted the exceedance levels against the reported CEMS from Rain and the SRU at Chalmette Refinery.

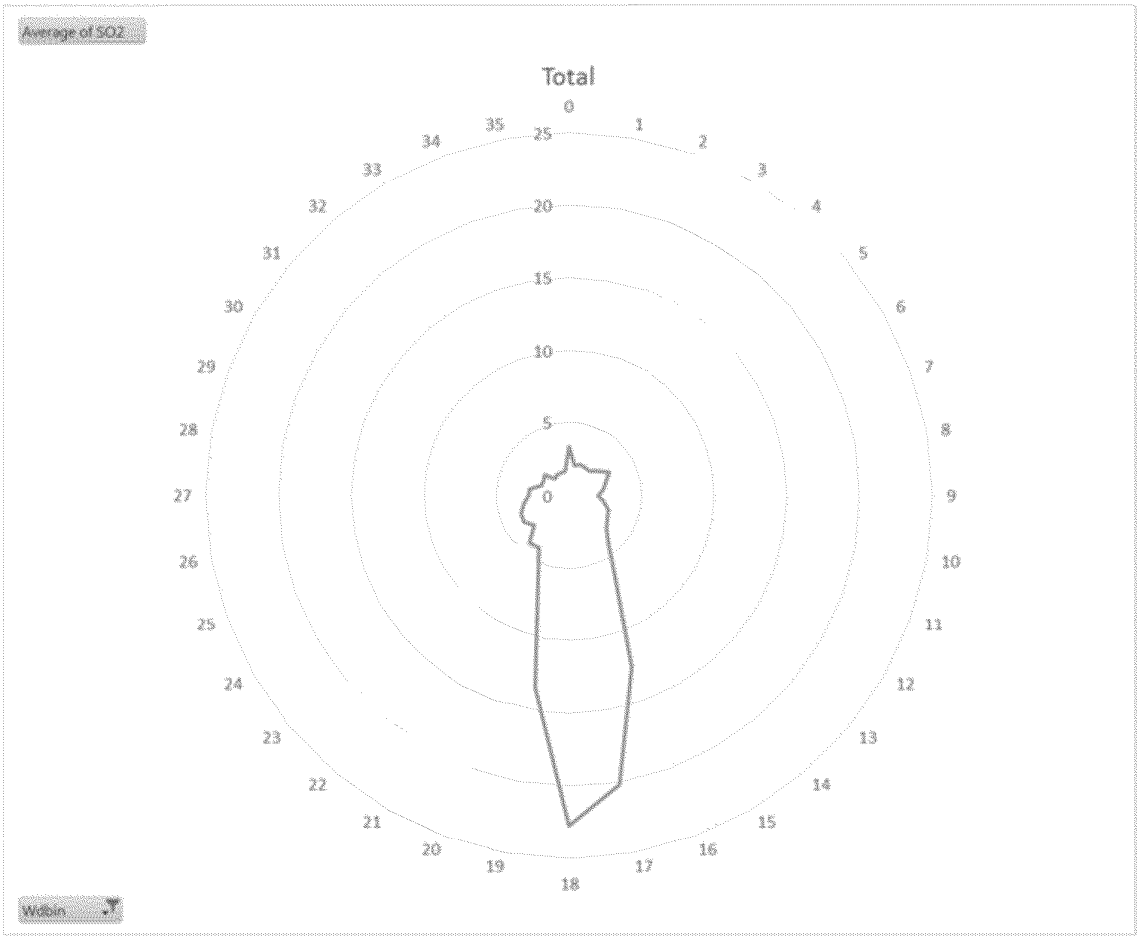


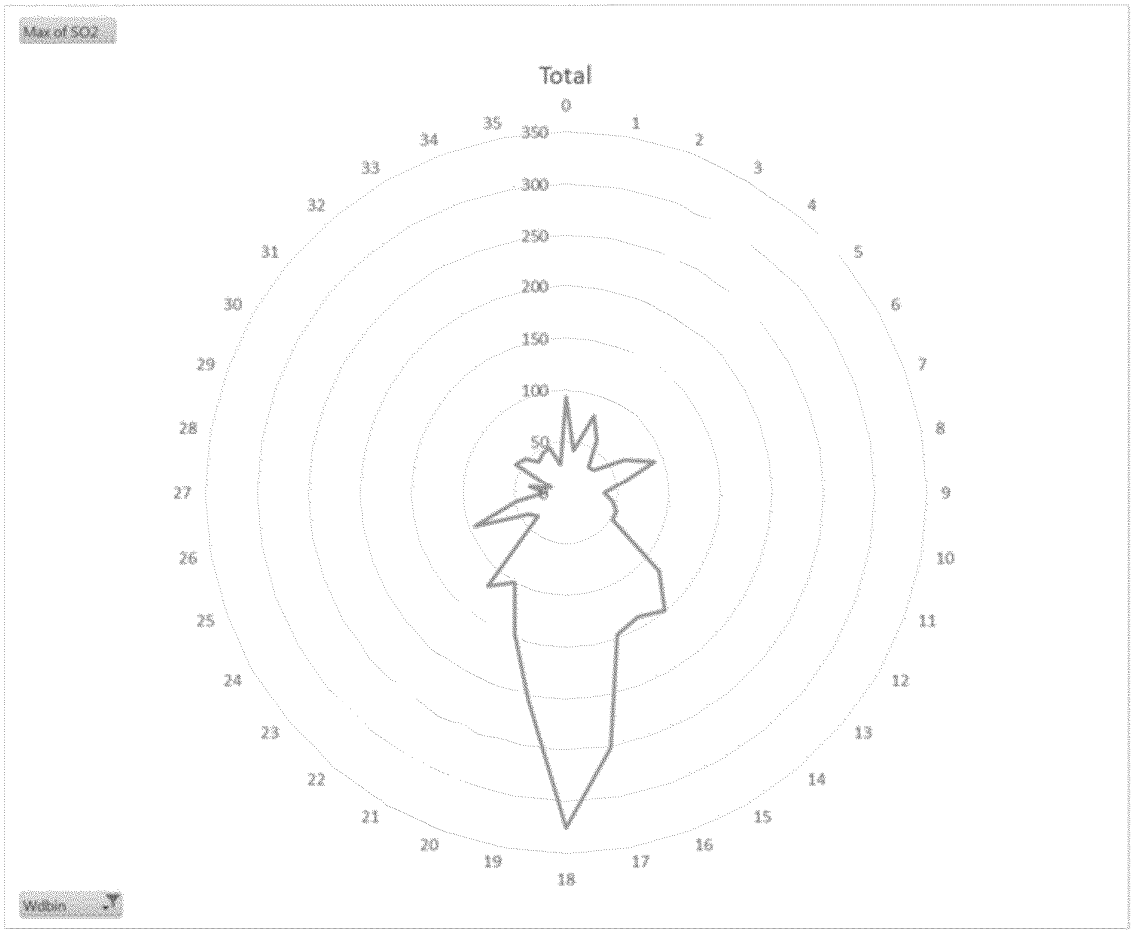
From: Imhoff, Robert [mailto:imhoff.robert@usepa.onmicrosoft.com]
Sent: Thursday, July 07, 2016 7:12 AM
To: Vennetta Hayes
Cc: Snyder, Erik
Subject: SO2 roses for Chalmette/St. Bernard

Vennetta,

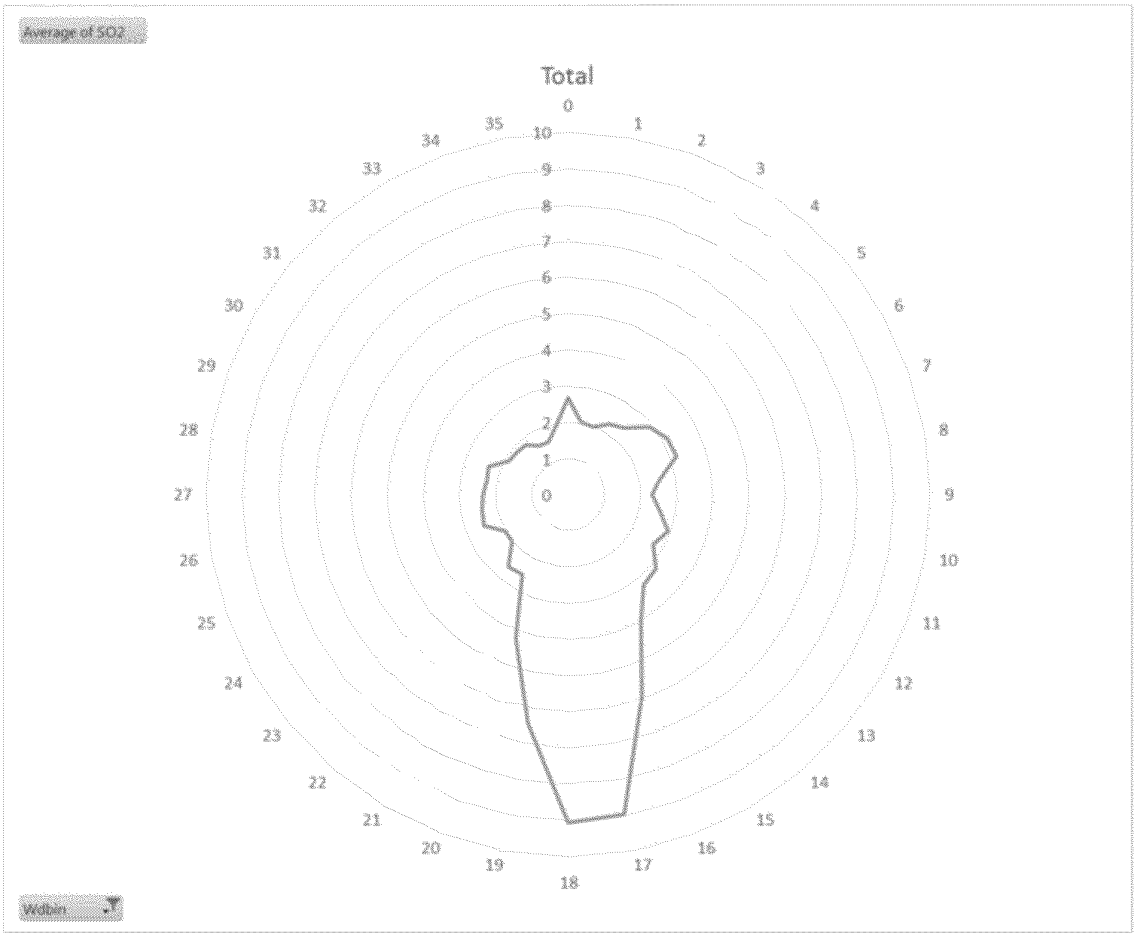
I enjoyed talking to you yesterday morning. I've attached SO2 roses based on hourly data (a) before tall stack (b) after tall stack but before scrubber and (c) after scrubber

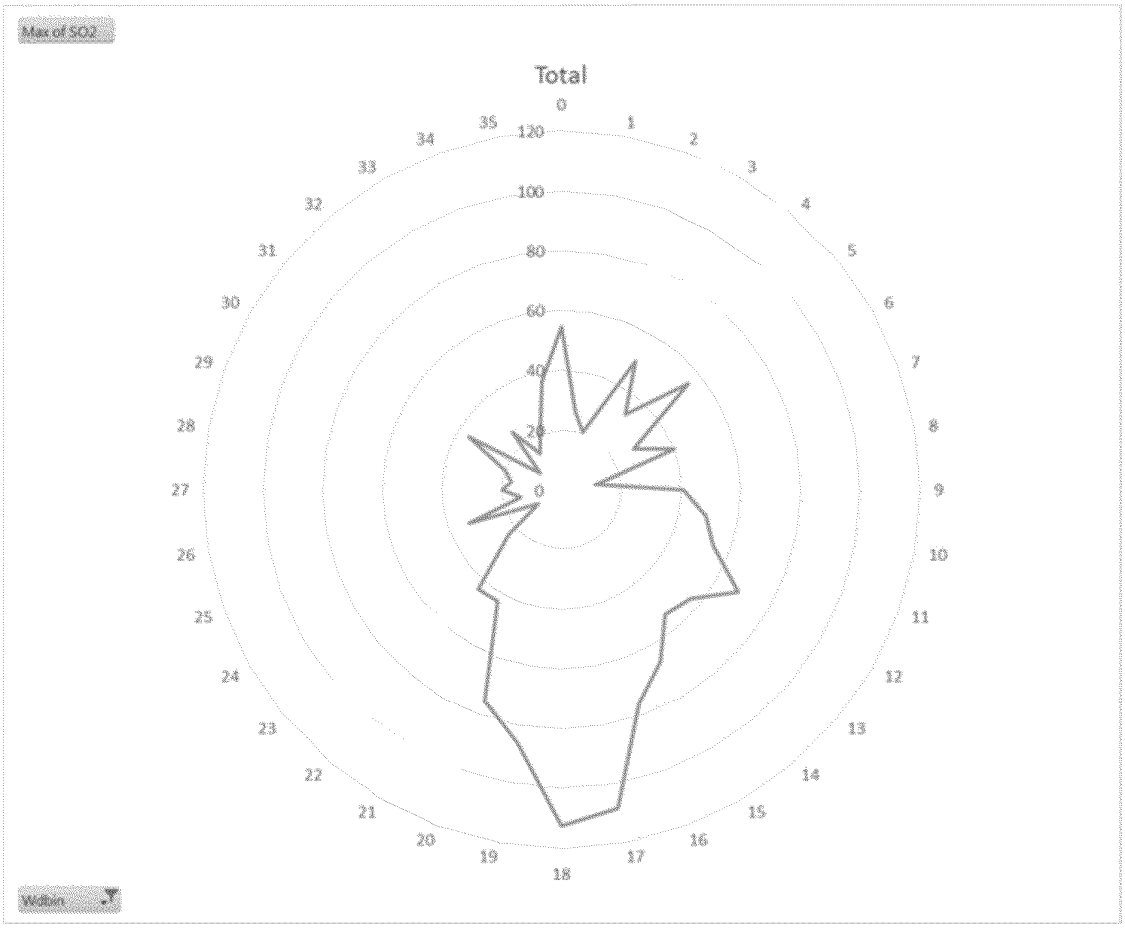
(a)Jan 2012 – Sept 2013 (Before Tall Stack)



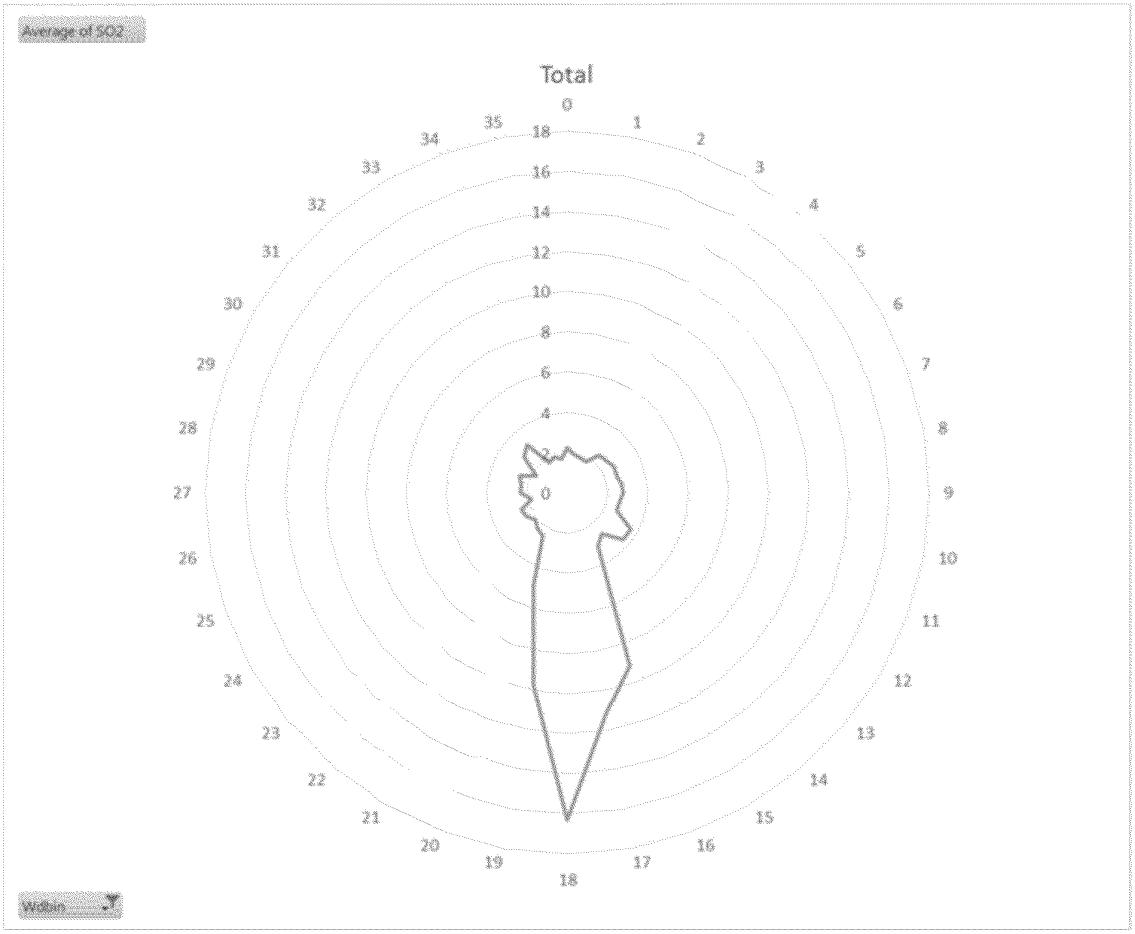


(b) Nov 2013 – September 2015 (After Tall Stack but Before Scrubber)


Average of SO2
Total
Wdbin



(c. Oct 2015 – Dec 2015 (After Scrubber)


Average of 502
Total
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
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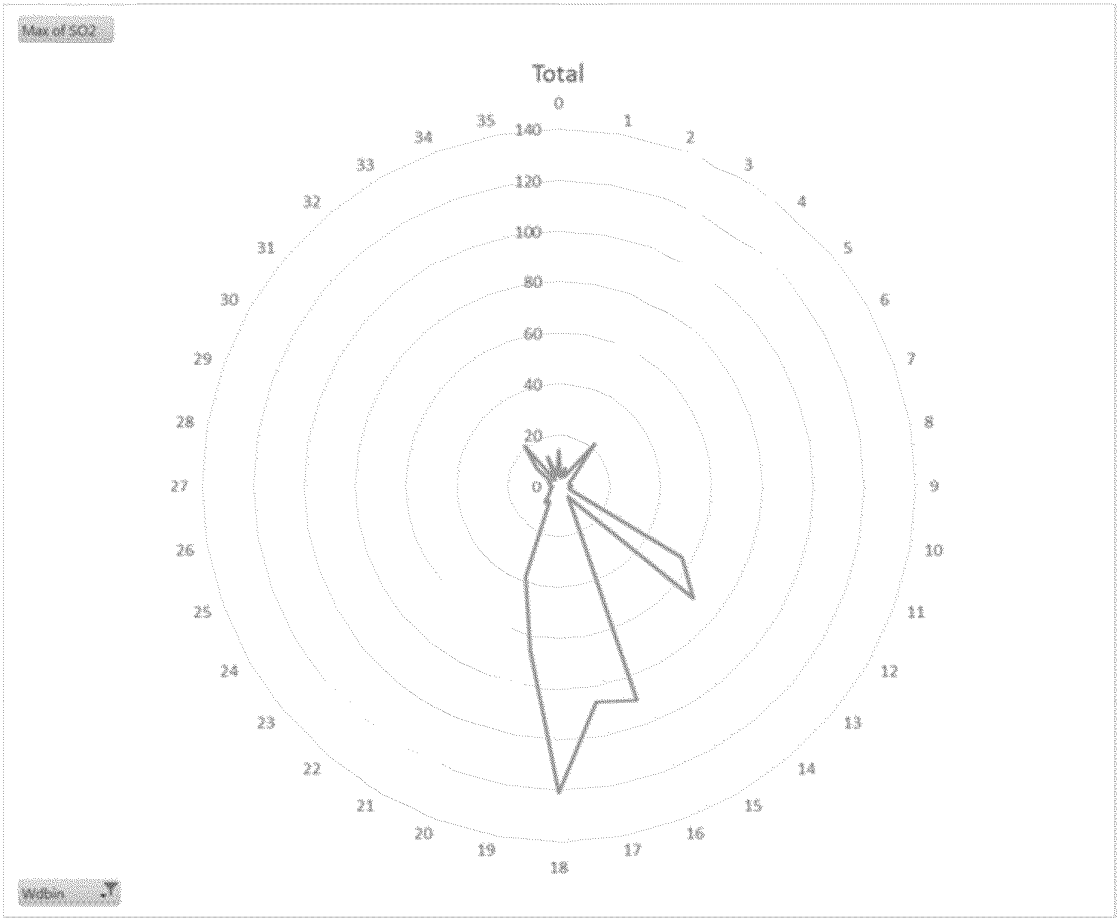
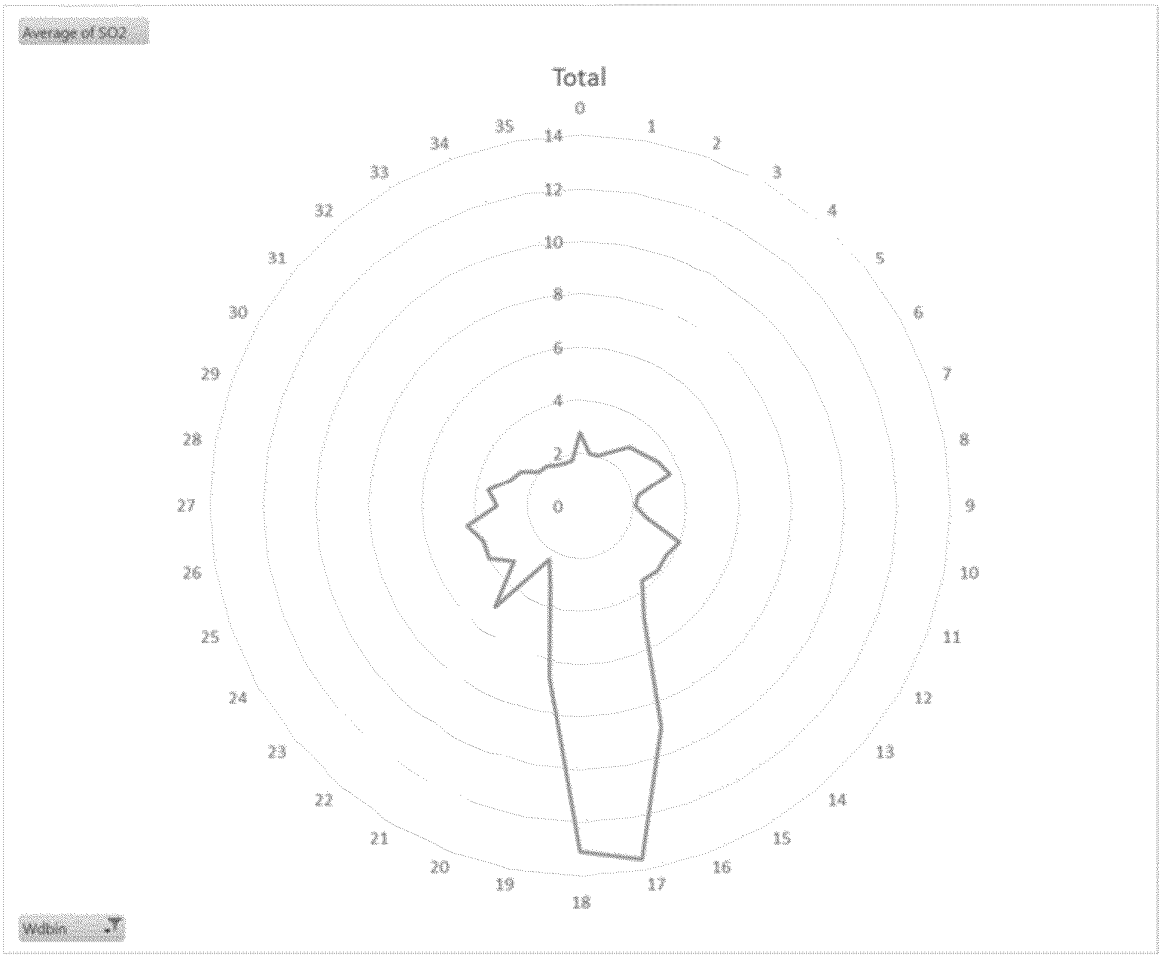
31
32
33
34
35
18
16
14
12
10
8
6
4
2
0
Within



There's no data available yet for 2016 on the aqs.epa.gov site and we only have 3 months for post scrubber (the met's available through April 2016). The impression from what we have now is that there was an increase in the average SO2 from the south when the scrubber went into operation. But to get a more apples-to-apples comparison below is the plot for the same 3 months for 2014 – before scrubber but with tall stack

Oct 2014 – Dec 2014 (Before Scrubber but for 4th Quarter only)


Average of SO2
Total
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
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14
12
10
8
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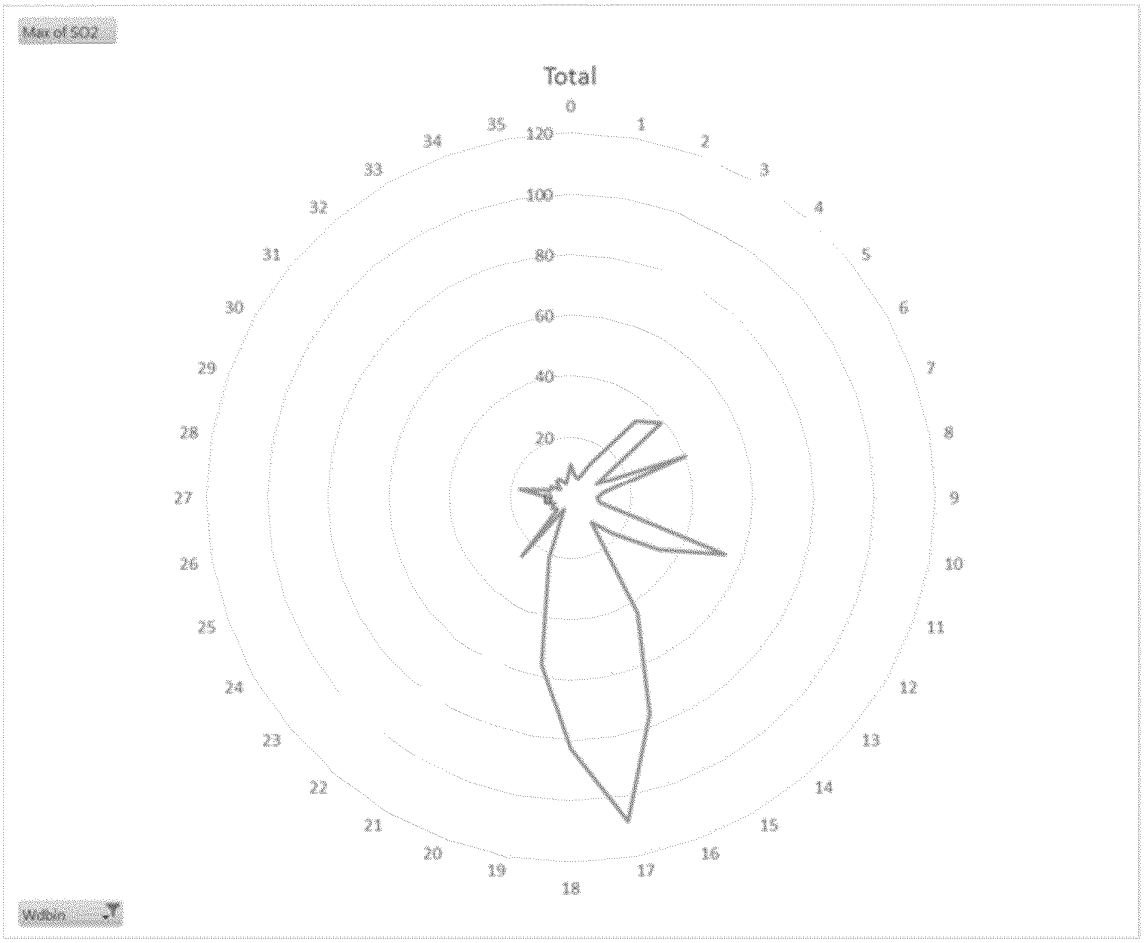
4
2
0
Wdbin



When we compare the same 3 months 2014 to 2015 the average and the max SO2 roses look similar even though there has been about a 50% reduction in the emissions from RAIN. Two theories for this are:

(1. Cooler exit temps could mean that the plume is getting entrained in the building wake, counteracting the reduction in emission rate. I haven't found a standalone version of PRIME, but we can test this by running AERMOD with the two sets of stack parameters for the same meteorology and emissions and looking at concentrations. We could do it in one run by putting in two sources with the same BPIP output for each.

a. Do we have good estimates of stack parameters for before and after scrubber installation? You'd mentioned they gave you a minimum temperature of 173 F post scrubber.

b. Where is the CEM located, after the heat recovery unit? If so are they measuring temperature as well as SO2? They need to get a volume flow rate at STP in order to calculate the SO2 emission rate from the SO2 concentration in the stack, so I assume that temperature is

measured as well as velocity. It would be really helpful to get stack temperature and velocity; having good temperature and velocities for the PRIME algorithm will be key to understanding the downwash effect on concentrations.

(2. It's another source entirely which has not altered its emissions

I downloaded but haven't looked at the 5-minute data. Have you done any analyses with the 5-minute data?

Best regards,

Bob

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Wed 7/27/2016 1:54:30 PM
Subject: RE: SO2 roses for Chalmette/St. Bernard

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** Waste Heat Boiler/Baghouse

SO LOCATION 199 POINT 212682.8 3315309.8 2.37

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I notice that, the only source included in the SRCGROUP RAIN is 199. The emission point (shown by the yellow pin below located at 29°56'06.0257", -089°58'34.9692" when converted to Lat/Long) is actually close to the Pyroscrubber hot stack.

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I see another location in **St. Bernard Parish SO2 Nonattainment Area Louisiana State Implementation Plan Revision, 4/1/2015.** The parameters for the source 199 are:

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		(m)	(m)	(ft)	(ft)	(°F)	(fps)	(ft)
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Which when converted to metric and compared to the AERMOD SO input:

Source ID	Source Description	Easting (X)	Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	SO2
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The SIP UTM coordinate when converted to LAT/LONG is 29°56'04.3079", -089°58'30.7562", which seems to be in the refinery.

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7/6/16 9:25	3	2.7	218	7
7/6/16 9:30	3	2.5	222	7
7/6/16 9:35	3	2.2	219	5
7/6/16 9:40	3	2.1	195	5

Thanks,

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Subject: RE: SO2 roses for Chalmette/St. Bernard

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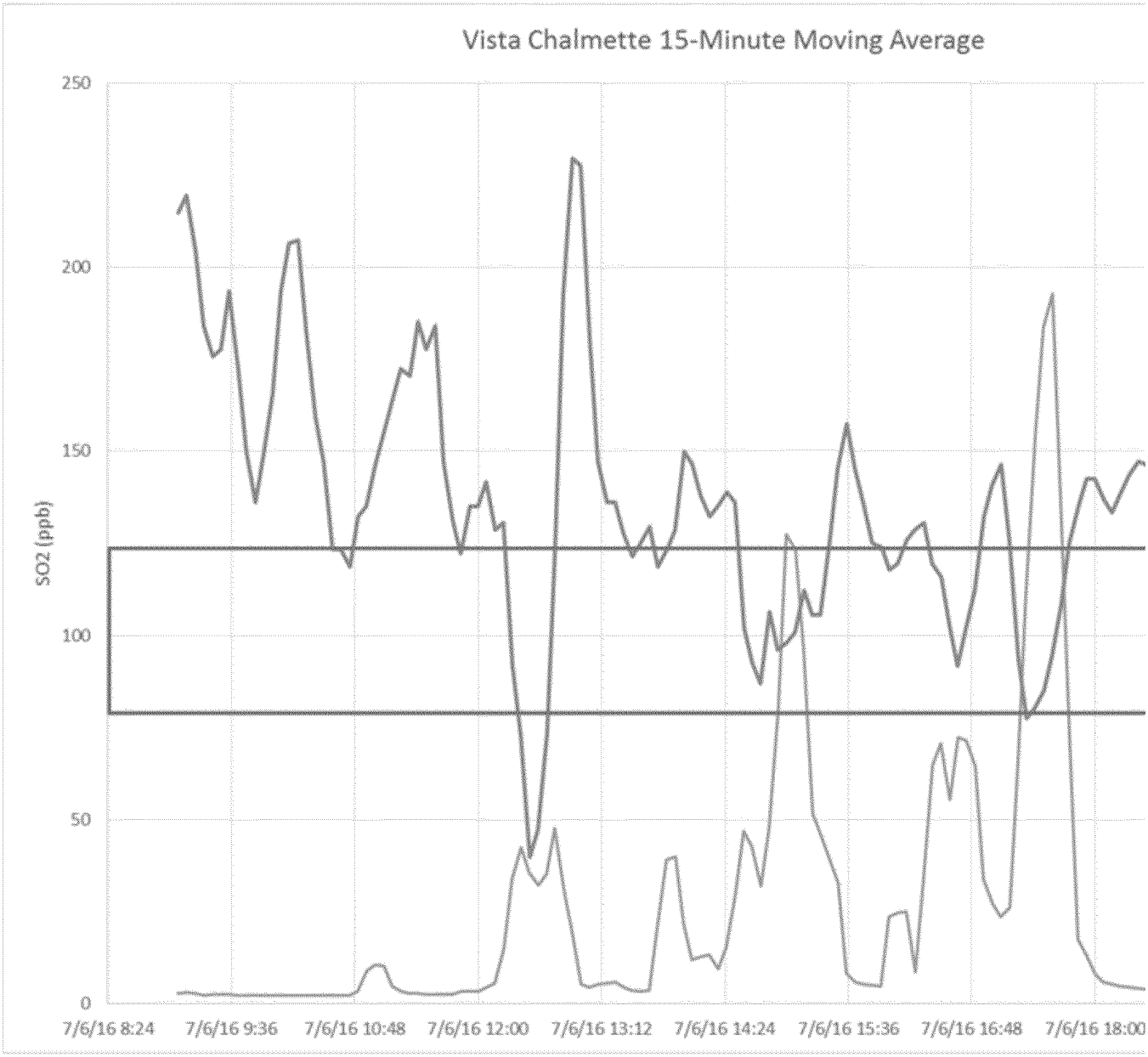

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e.g. if it is Rain at a distance X and an angular range = 15 degrees the plume is N meters wide

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2:00 AM	2.3	5	211
3:00 AM	N/A	4	206
4:00 AM	2	4	214
5:00 AM	2.1	4	208
6:00 AM	2	4	199
7:00 AM	2	3	206
8:00 AM	2.1	4	198
9:00 AM	2	6	209
10:00 AM	2.1	7	221
11:00 AM	2.5	5	215
12:00 PM	3.9	5	206
1:00 PM	3.4	6	206
2:00 PM	25.7	5	197
3:00 PM	13.4	6	198
4:00 PM	37.7	6	192
5:00 PM	36.7	7	196
6:00 PM	49	6	193
7:00 PM	**82.4**	**5**	**193**
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9:00 PM	43.8	4	192
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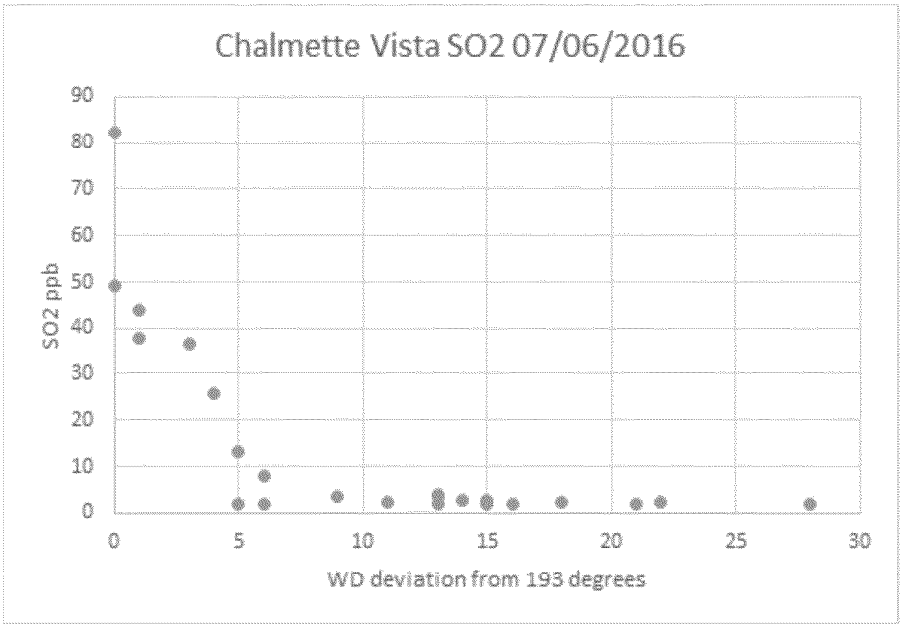

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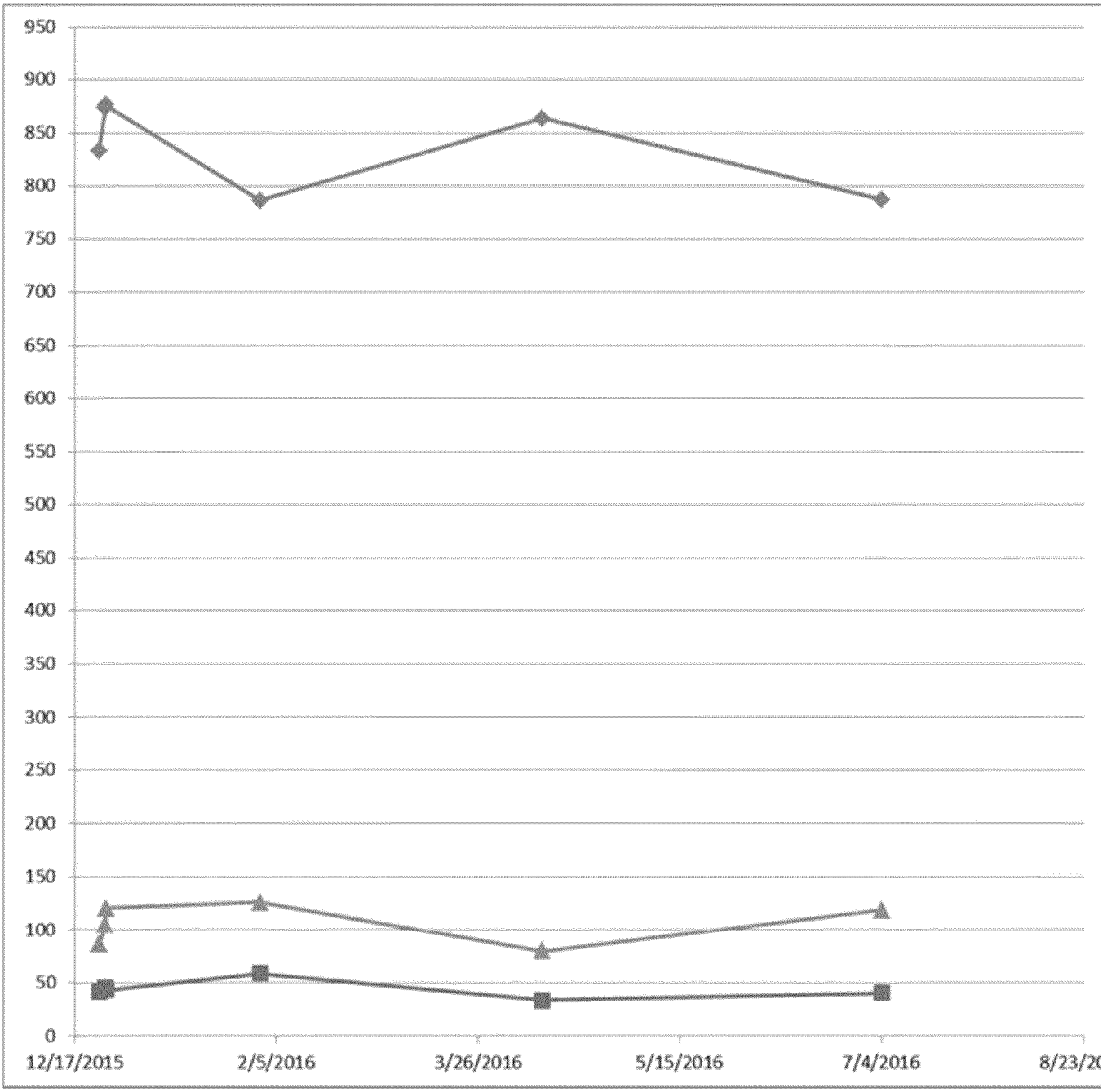

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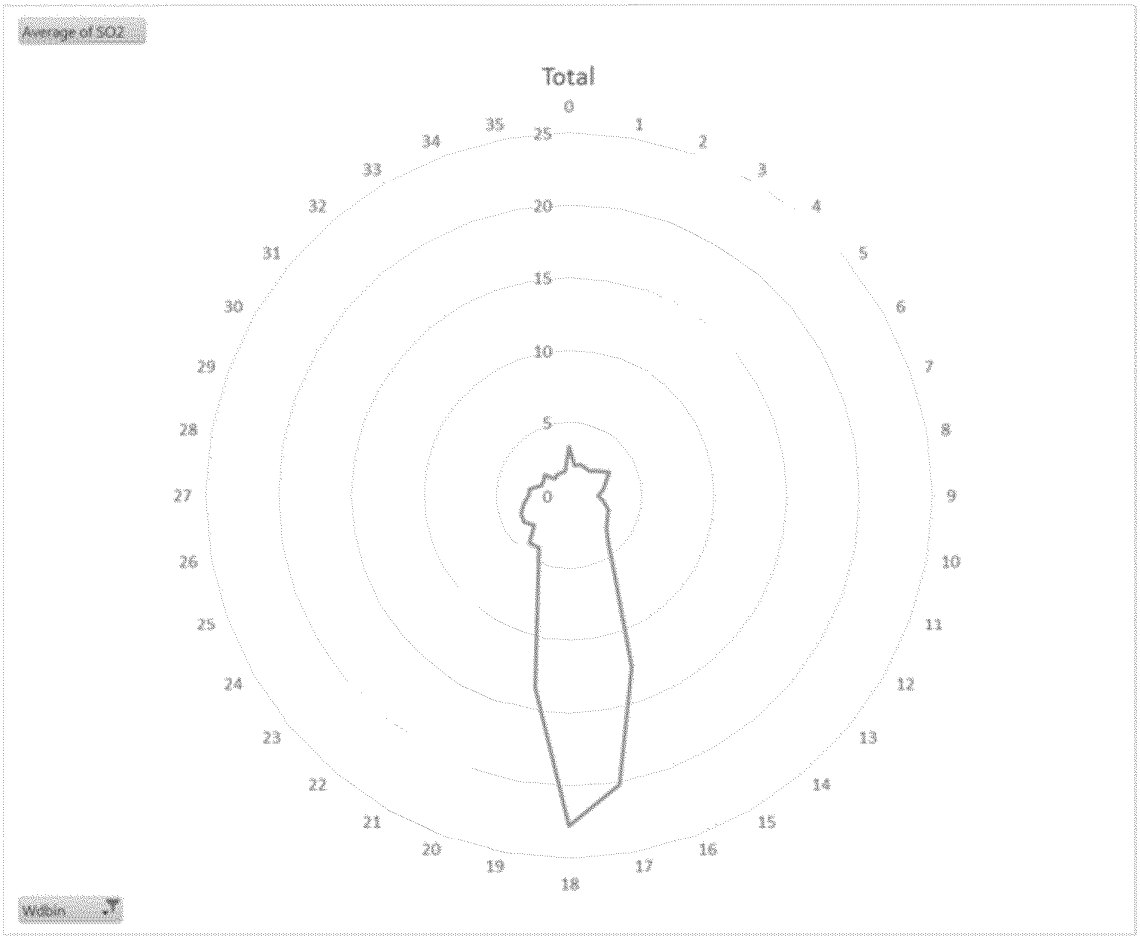

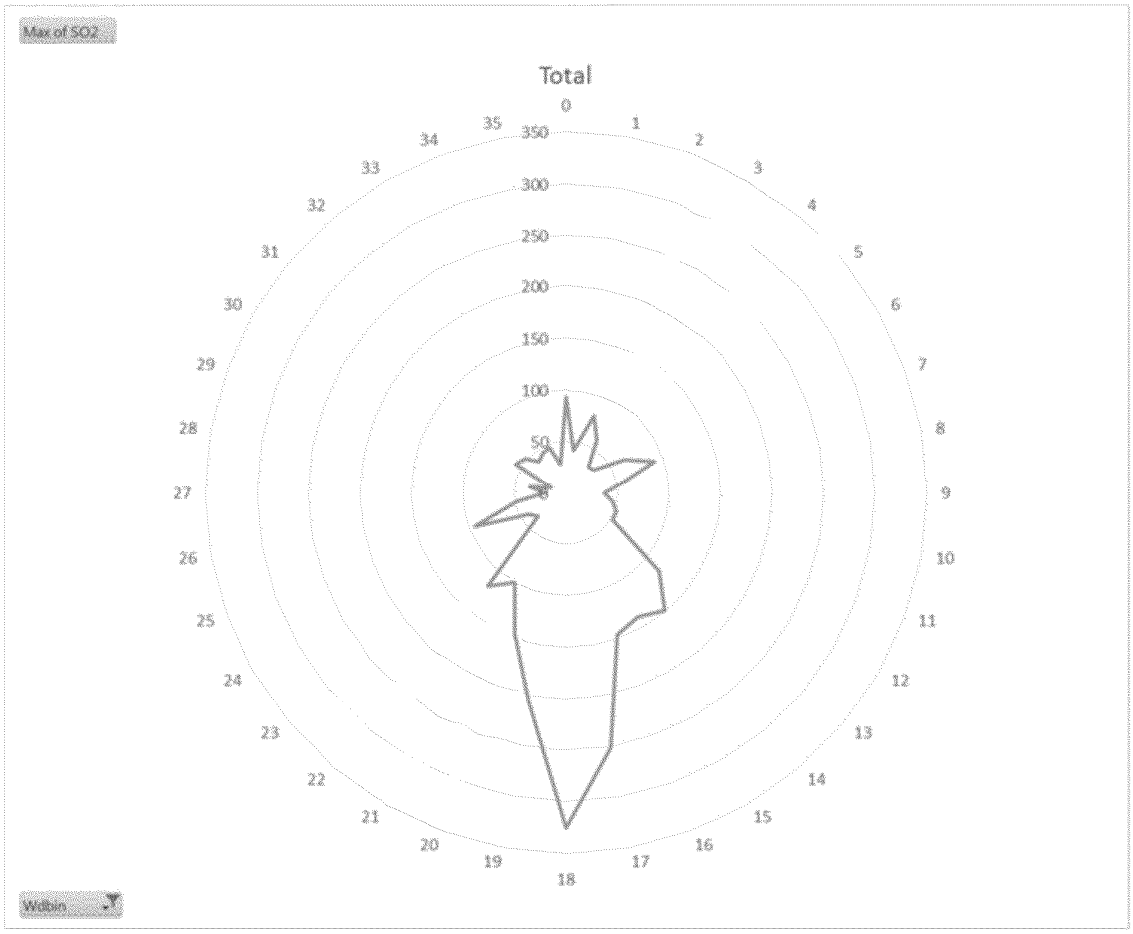

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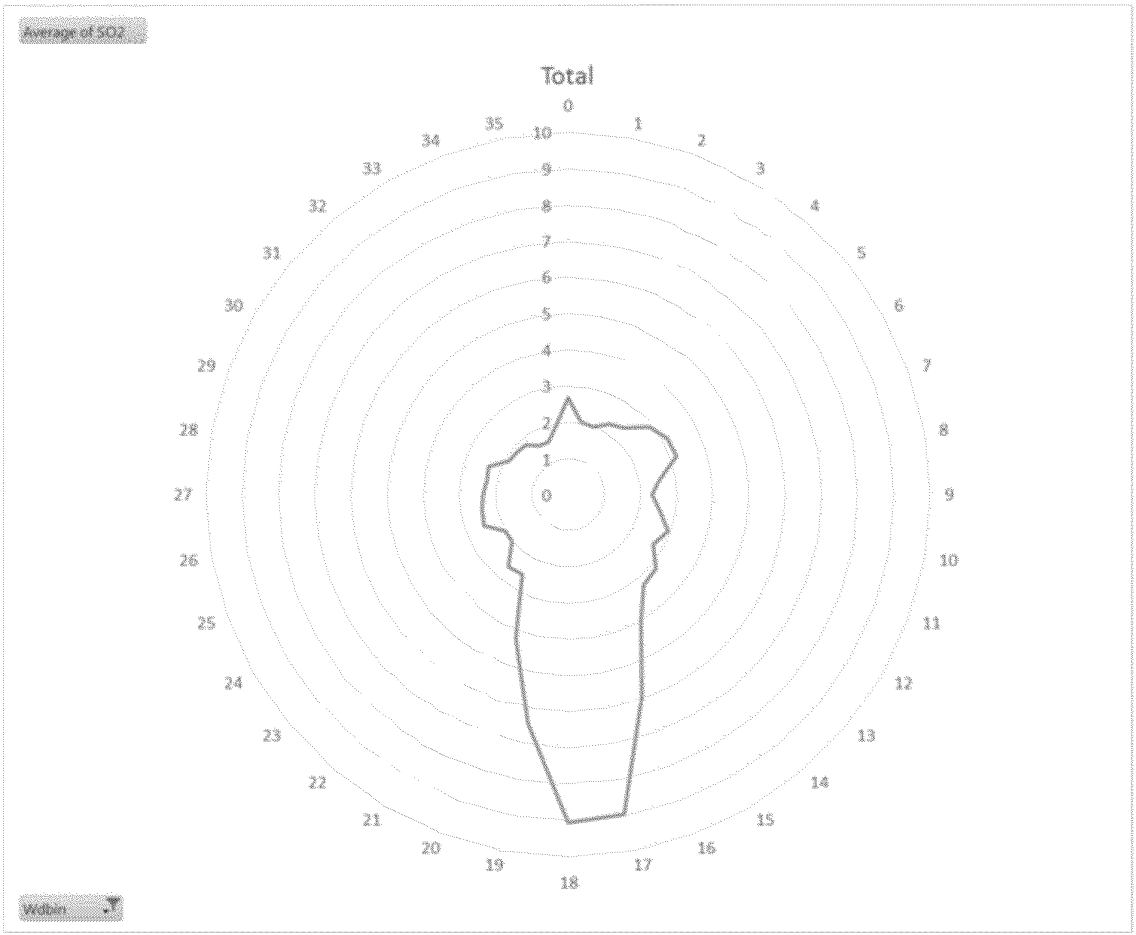
Average of SO2
Total
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1
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16
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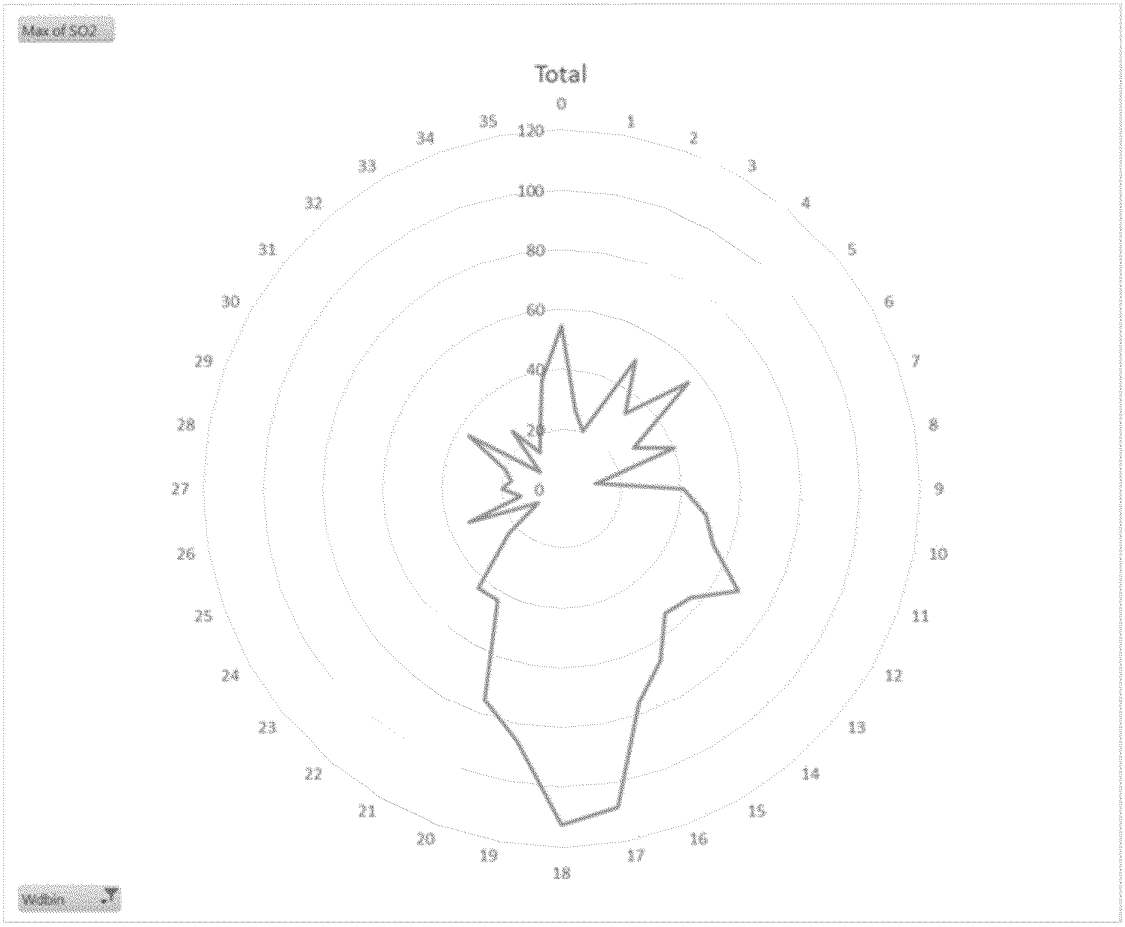
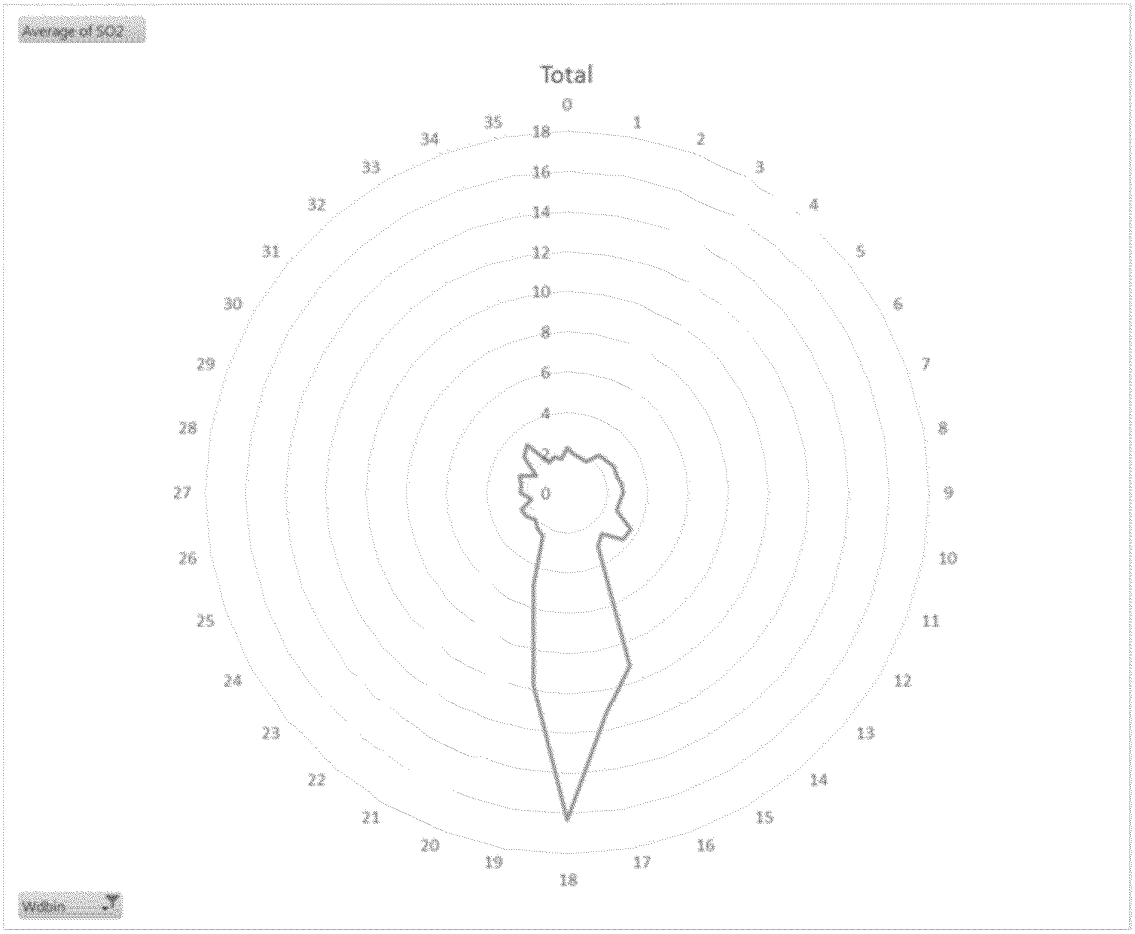
Wdbin



(c. Oct 2015 – Dec 2015 (After Scrubber)


Average of 502
Total
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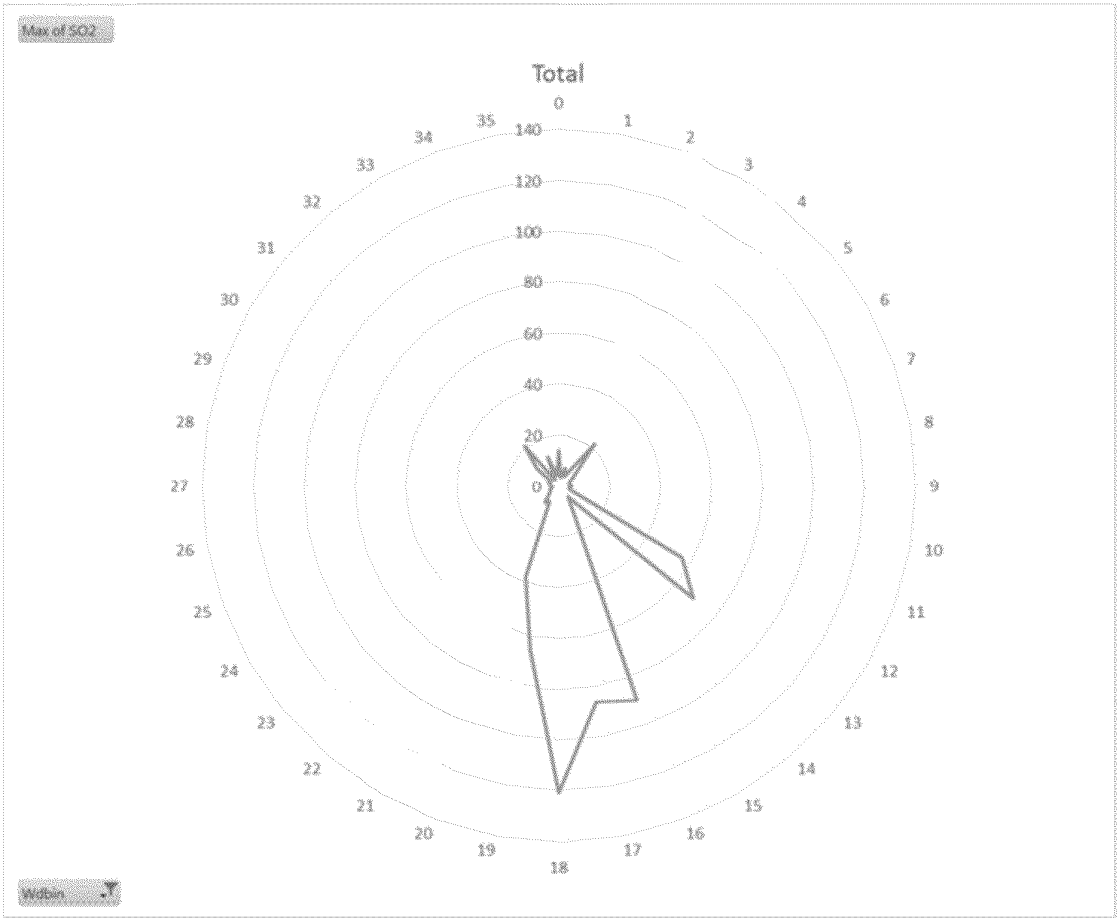

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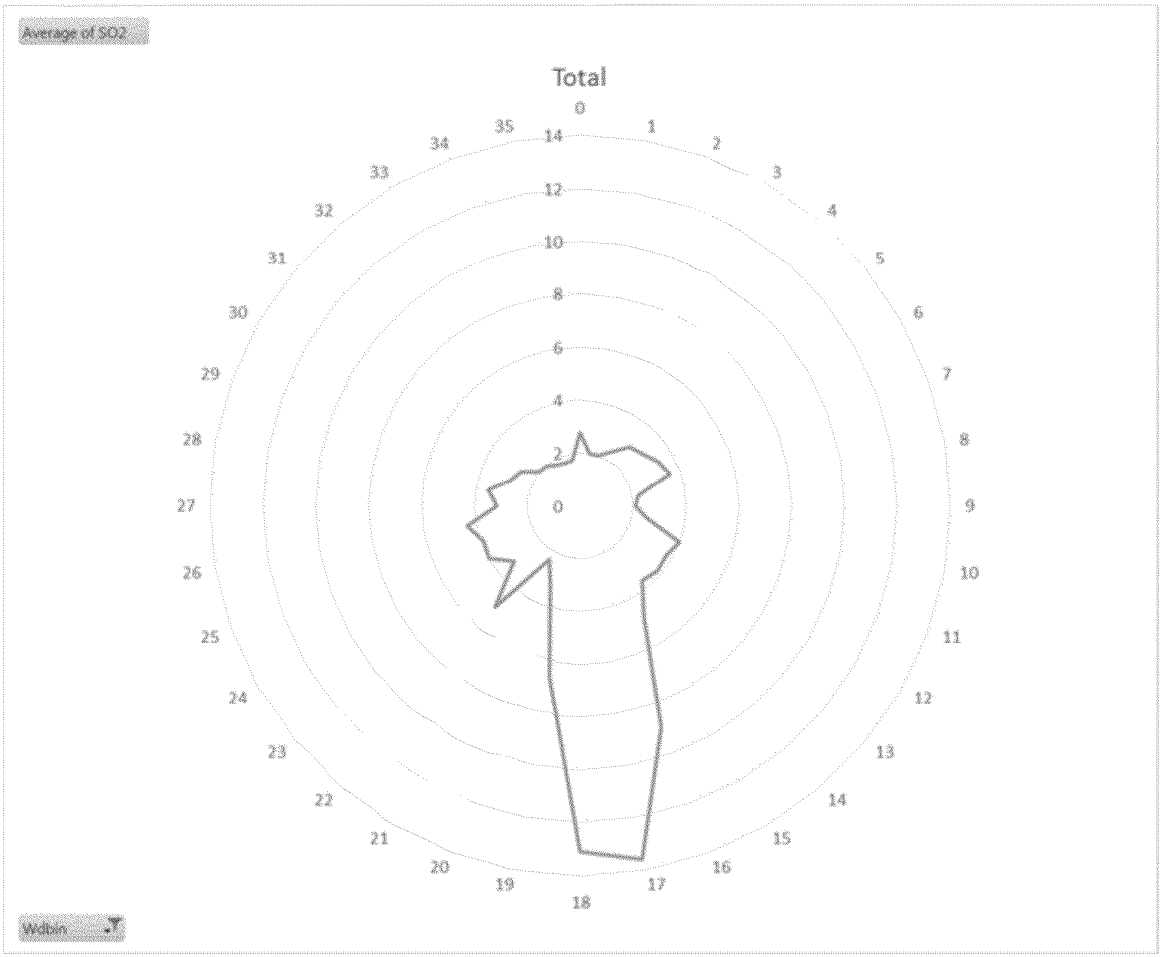
Oct 2014 – Dec 2014 (Before Scrubber but for 4th Quarter only)


Average of SO2
Total
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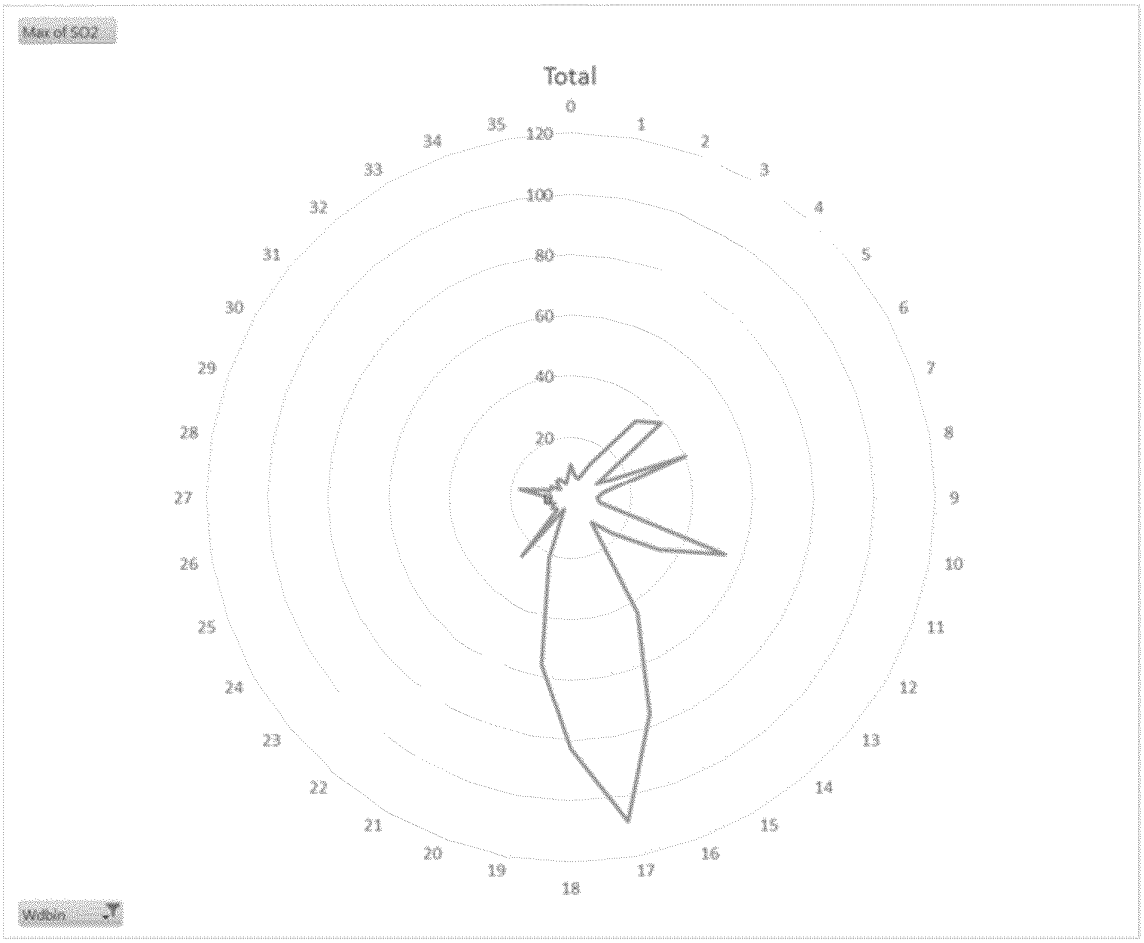

When we compare the same 3 months 2014 to 2015 the average and the max SO2 roses look similar even though there has been about a 50% reduction in the emissions from RAIN. Two theories for this are:

(1. Cooler exit temps could mean that the plume is getting entrained in the building wake, counteracting the reduction in emission rate. I haven't found a standalone version of PRIME, but we can test this by running AERMOD with the two sets of stack parameters for the same meteorology and emissions and looking at concentrations. We could do it in one run by putting in two sources with the same BPIP output for each.

a. Do we have good estimates of stack parameters for before and after scrubber installation? You'd mentioned they gave you a minimum temperature of 173 F post scrubber.

b. Where is the CEM located, after the heat recovery unit? If so are they measuring temperature as well as SO2? They need to get a volume flow rate at STP in order to calculate the SO2 emission rate from the SO2 concentration in the stack, so I assume that temperature is

measured as well as velocity. It would be really helpful to get stack temperature and velocity; having good temperature and velocities for the PRIME algorithm will be key to understanding the downwash effect on concentrations.

(2. It's another source entirely which has not altered its emissions

I downloaded but haven't looked at the 5-minute data. Have you done any analyses with the 5-minute data?

Best regards,

Bob

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Mon 7/25/2016 1:44:47 PM
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

I'd like to request some more information to help with the Rain CII Chalmette analysis.

•□□□□□□□□ The Excel files you sent me for 7/4 and 7/7/16 had only the SO2 data and no meteorology or H2S. Can you send me the 5-minute data including these parameters?

•□□□□□□□□ I'd like to request on-site 5-minute met data and Rain CII Chalmette emissions data for 1/26-1-28/16. EPA operated a mobile van recording SO2 and other data in the Chalmette area during 1/26 – 1/28/16. I'd very much like to get the on-site met and emissions data for those days to help interpret the concentrations recorded. I'll share the mobile data with you as soon as I get the researcher's OK – I'd love to get your take. Since the mobile data are labeled as "SO2_Raw", they may need to do some more work to get calibrated SO2 concentrations.

•□□□□□□□□ I want to be sure that I've got the correct current stack location and emission parameters for the baghouse (cold) stack. The stack parameters and max emission rate for the Pyroscrubber cold stack (Waste Heat Boiler/Baghouse) in the modeling files you submitted in April 2016, located in the zip file NewFullModel.zip in the AERMOD input file, NewFullModel.DTA:

** Waste Heat Boiler/Baghouse

SO LOCATION 199 POINT 212682.8 3315309.8 2.37

SO SRCPARAM 199 100.79830444325 60.6552 455.37 17.6784 2.7432

I notice that, the only source included in the SRCGROUP RAIN is 199. The emission point (shown by the yellow pin below located at 29°56'06.0257", -089°58'34.9692" when converted to Lat/Long) is actually close to the Pyroscrubber hot stack.

Is this the correct current location and stack parameters the baghouse stack? The red flag labeled "Waste Heat Stack" is based on "Chalmette Area.jpg" which you previously sent me which coincides with the location of a stack.

I see another location in **St. Bernard Parish SO2 Nonattainment Area Louisiana State Implementation Plan Revision, 4/1/2015.** The parameters for the source 199 are:

Source ID	Source Description	Easting (X)	Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diam

		(m)	(m)	(ft)	(ft)	(°F)	(fps)	(ft)
199	Waste Heat Boiler/Baghouse	212794.45	3315253.96	12.66	199.00	360.00	58.00	9.00

Which when converted to metric and compared to the AERMOD SO input:

Source ID	Source Description	Easting (X)	Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	SO2
199	Waste Heat Boiler/Baghouse	212794.45	3315253.96	60.655	255.22	17.68	2.74	113.45	From the SIP
199.00	Waste Heat Boiler/Baghouse	212682.33	3315309.28	60.655	255.37	17.68	2.74	100.85	From the AERMOD input

The SIP UTM coordinate when converted to LAT/LONG is 29°56'04.3079", -089°58'30.7562", which seems to be in the refinery.

The correct stack location in relation to the building is important in the estimation of wake effects in BPIP, can you confirm the location of the cold stack and whether the relationship to the building seems correct in the modeling files?

Thanks,

Bob

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Sent: Friday, July 15, 2016 9:48 AM
To: 'Vennetta Hayes' <Vennetta.Hayes@LA.GOV>
Subject: RE: SO2 roses for Chalmette/St. Bernard

Vennetta,

I've finally gotten a chance to look at the 5-minute data for 7/4 and 7/7. Can you send me the meteorological data and H2S in addition to the SO2 concentrations, like those you sent for 7/6?

Hour	H2S	SO2	WDIR	WSP
7/6/16 9:054		4.4	224	5
7/6/16 9:103		2.3	227	6
7/6/16 9:153		2.1	220	4
7/6/16 9:204		2.8	202	6
7/6/16 9:253		2.7	218	7
7/6/16 9:303		2.5	222	7
7/6/16 9:353		2.2	219	5
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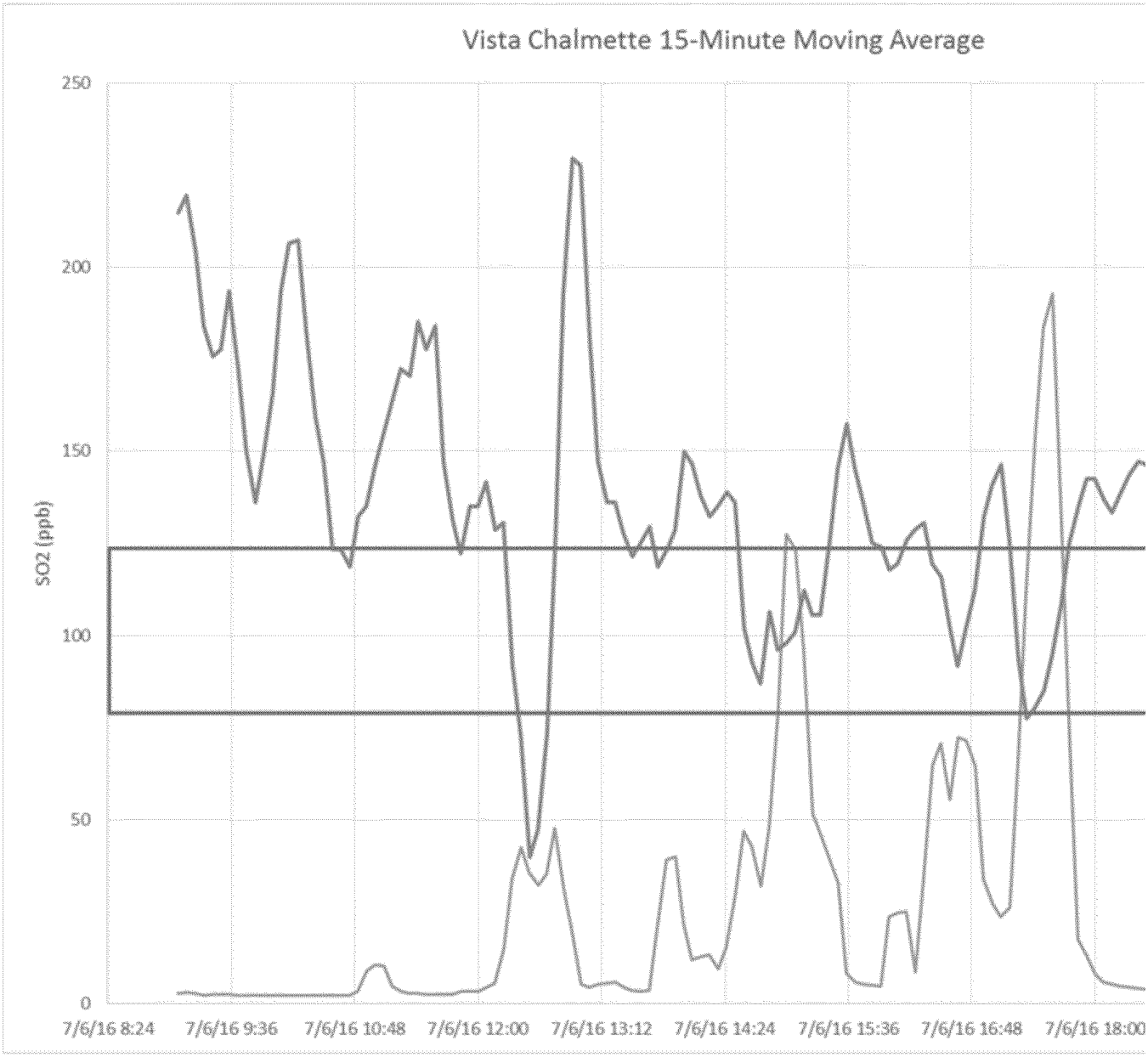

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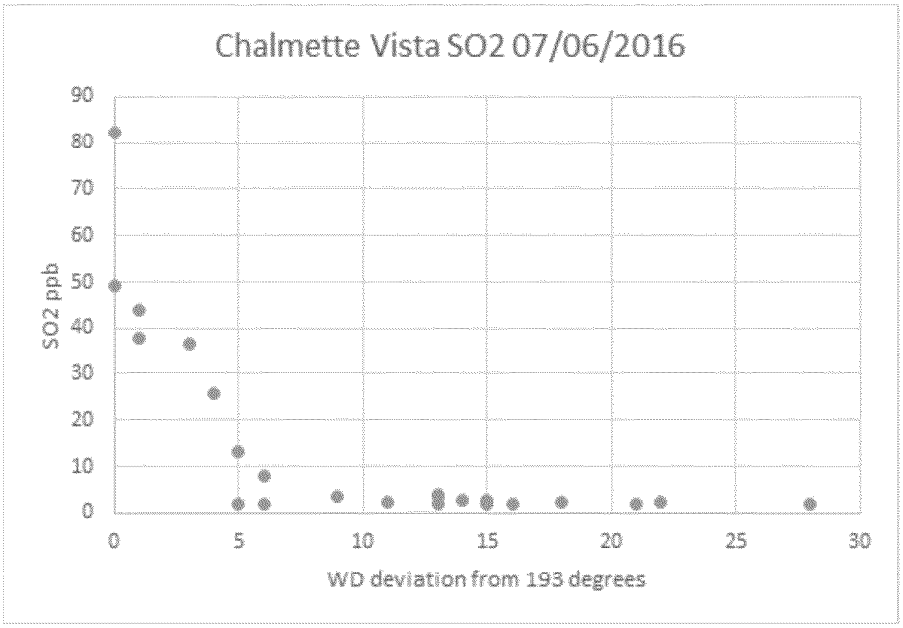

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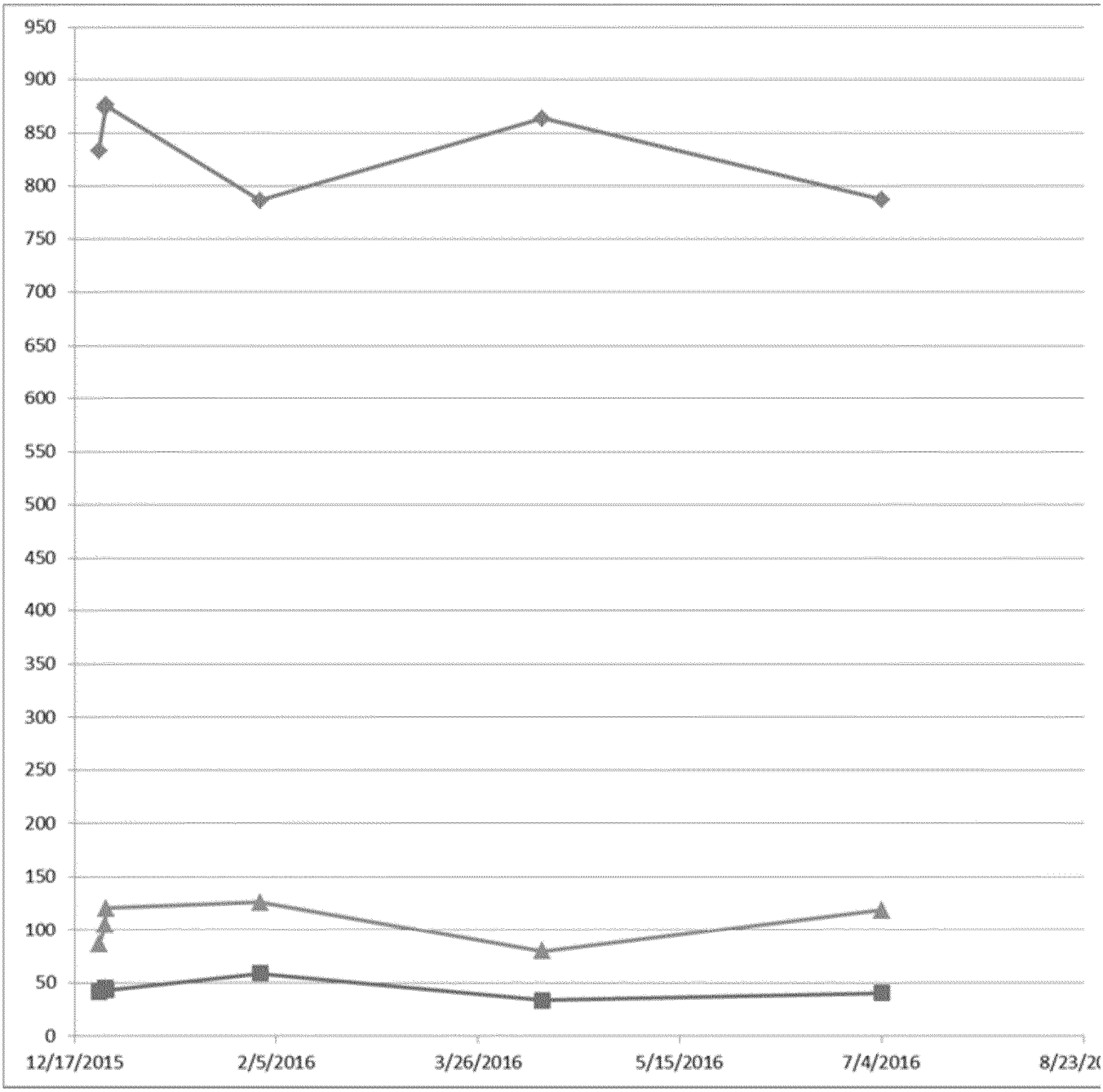

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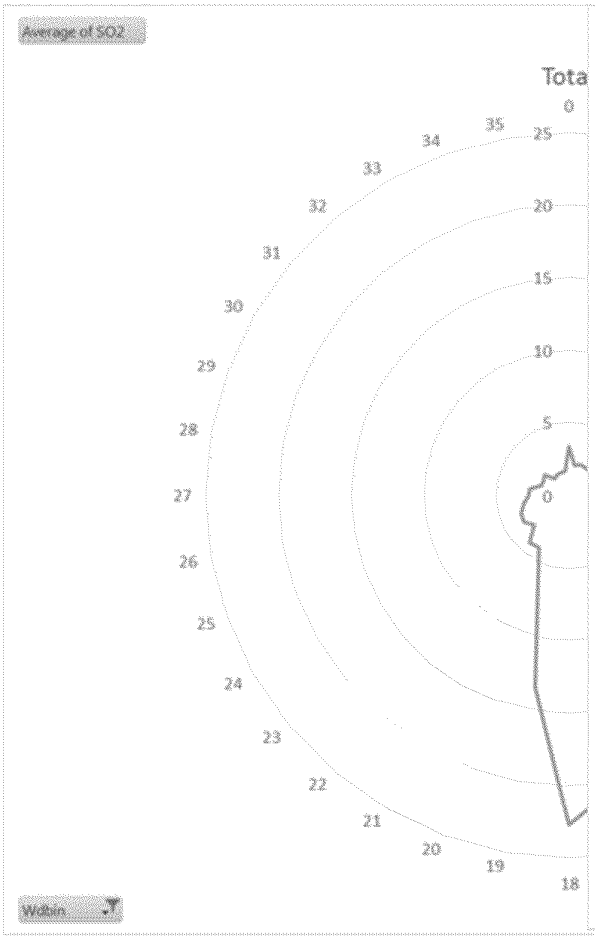

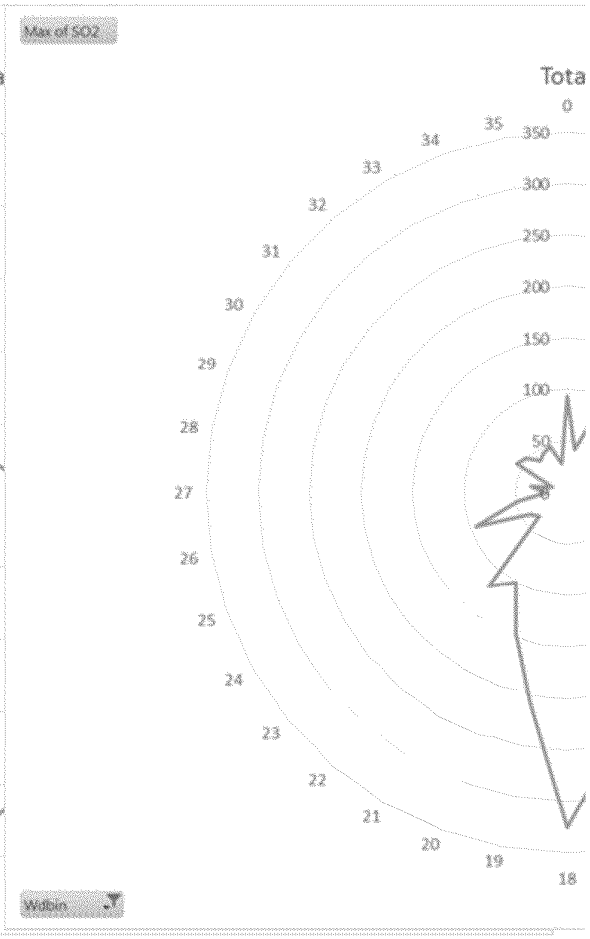

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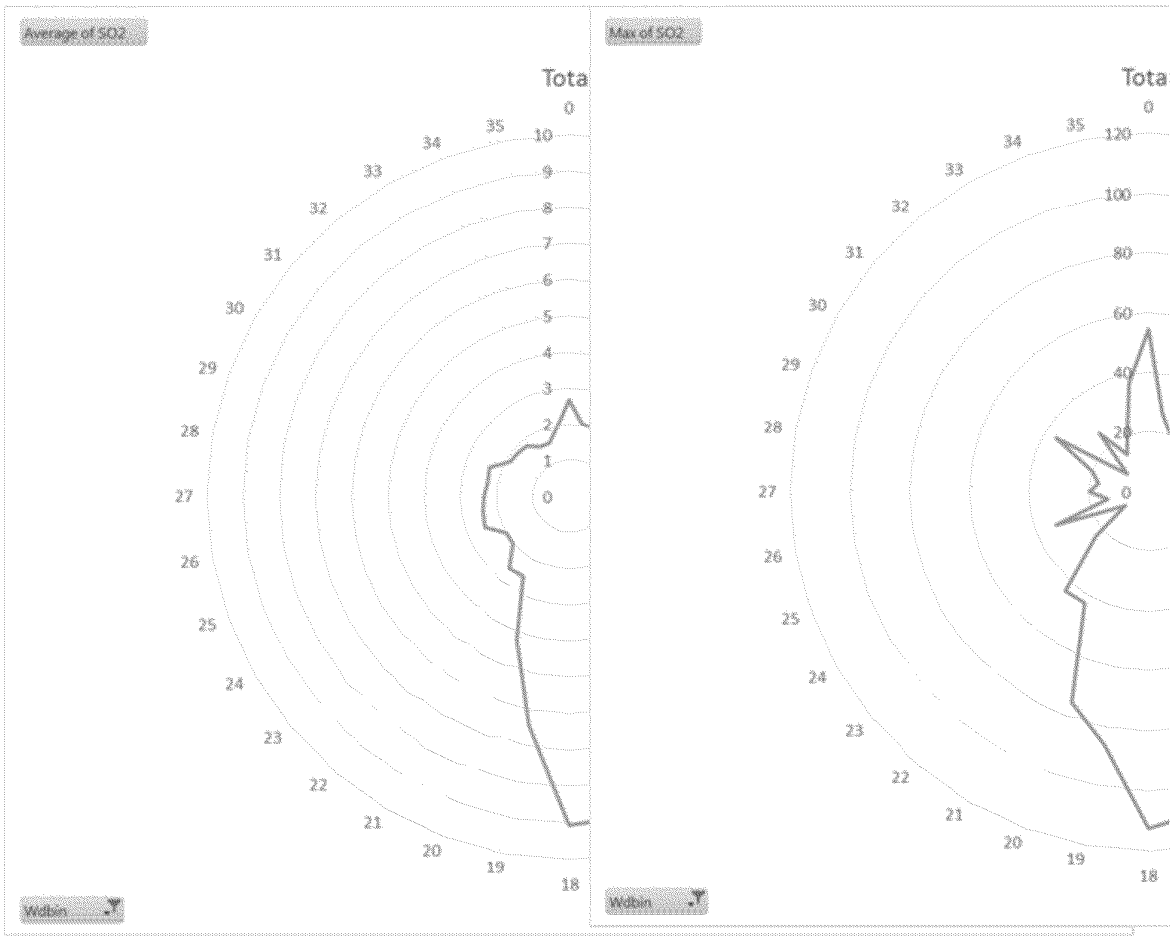

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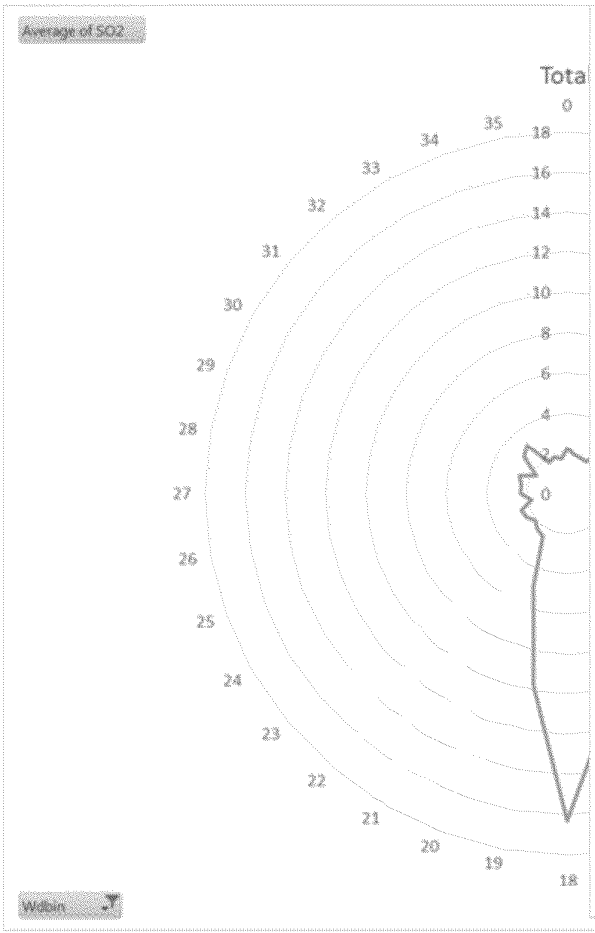

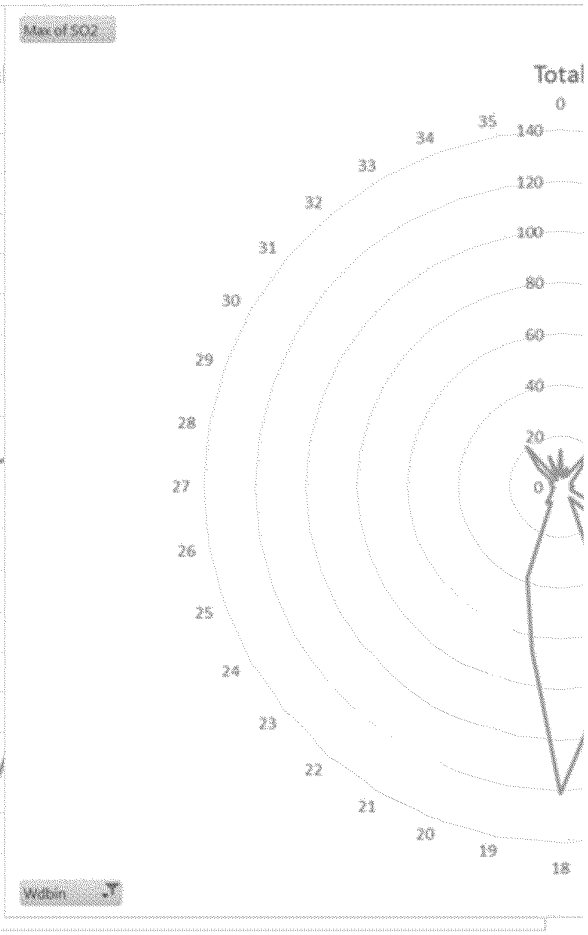

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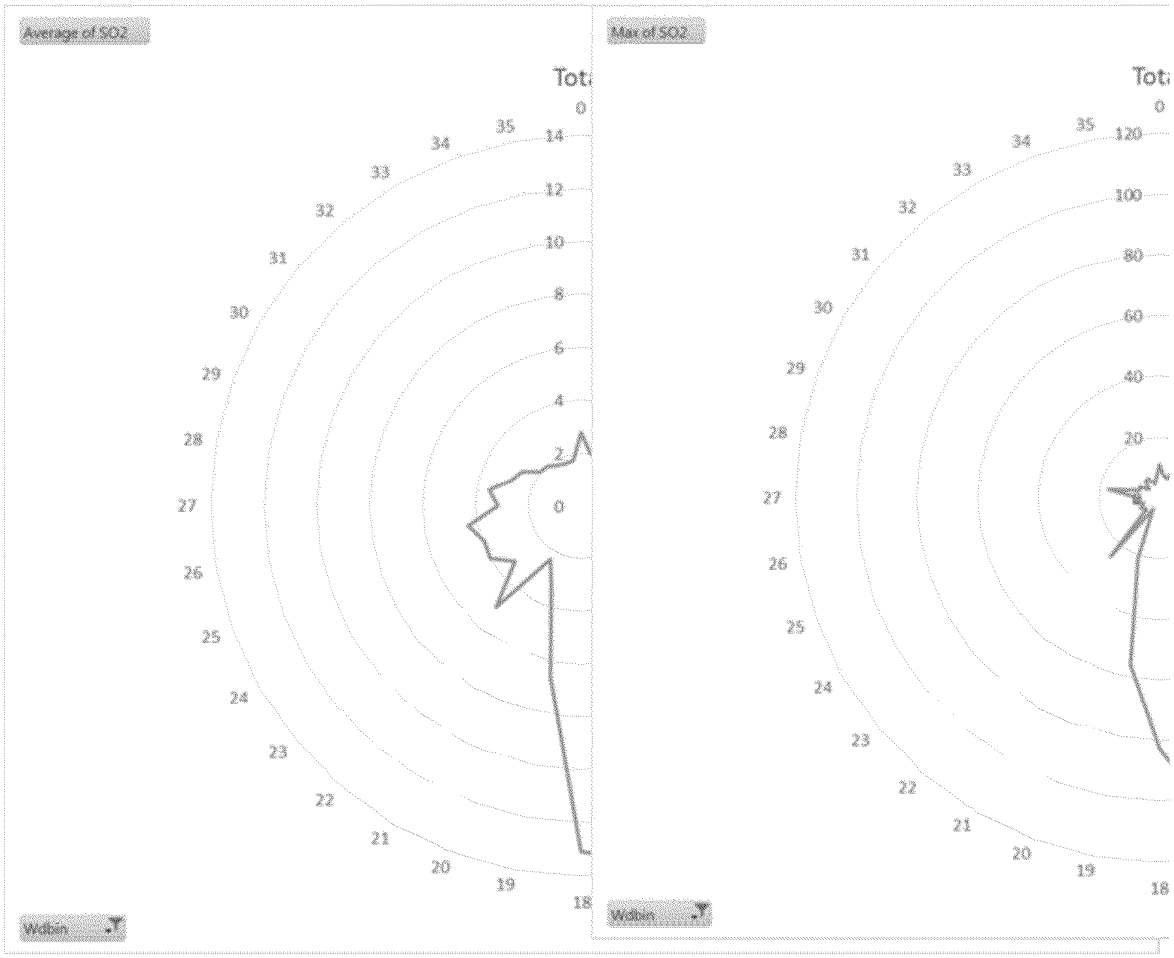

When we compare the same 3 months 2014 to 2015 the average and the max SO2 roses look similar even though there has been about a 50% reduction in the emissions from RAIN. Two theories for this are:

(1. Cooler exit temps could mean that the plume is getting entrained in the building wake, counteracting the reduction in emission rate. I haven't found a standalone version of PRIME, but we can test this by running AERMOD with the two sets of stack parameters for the same meteorology and emissions and looking at concentrations. We could do it in one run by putting in two sources with the same BPIP output for each.

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(2. It's another source entirely which has not altered its emissions

I downloaded but haven't looked at the 5-minute data. Have you done any analyses with the 5-minute data?

Best regards,

Bob

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

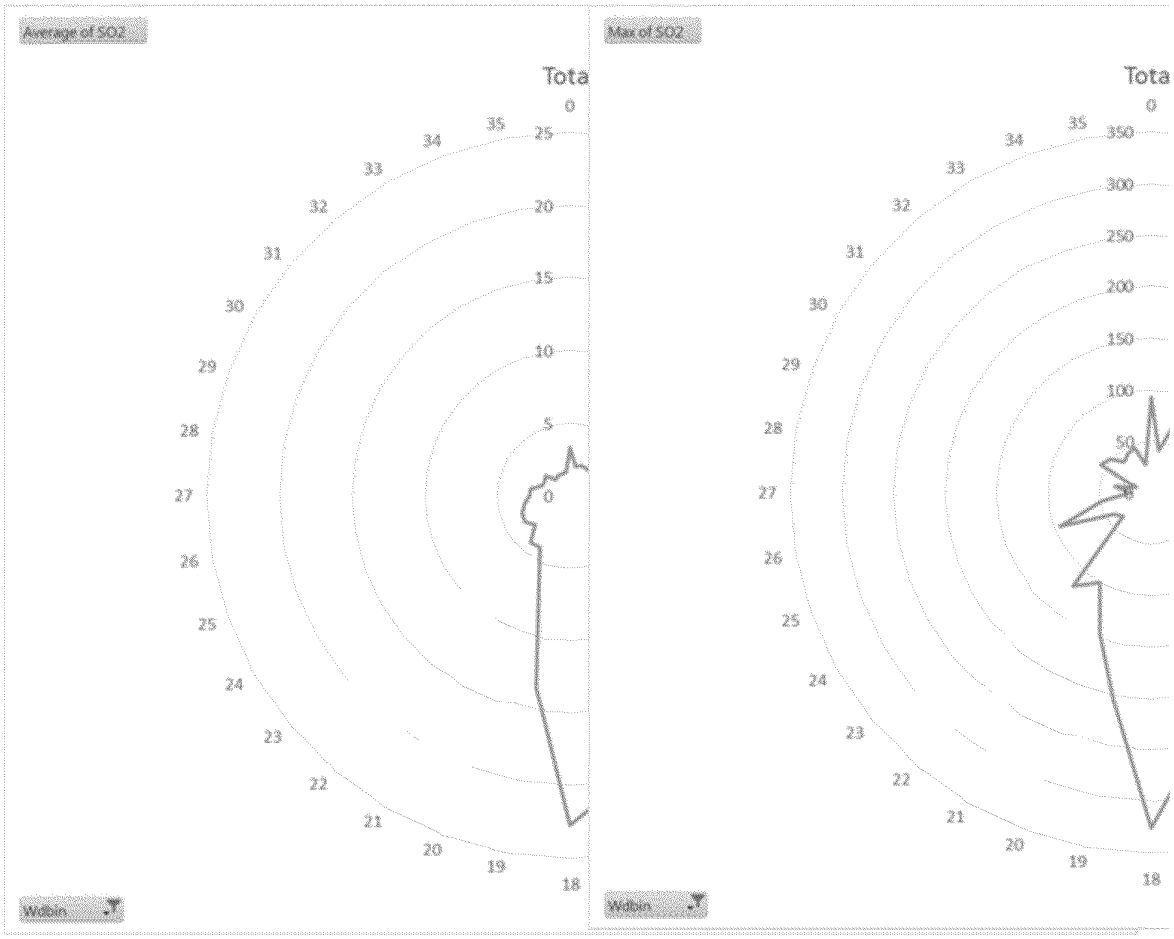
Email: Imhoff.Robert@epa.gov

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Thur 7/7/2016 12:12:07 PM
Subject: SO2 roses for Chalmette/St. Bernard

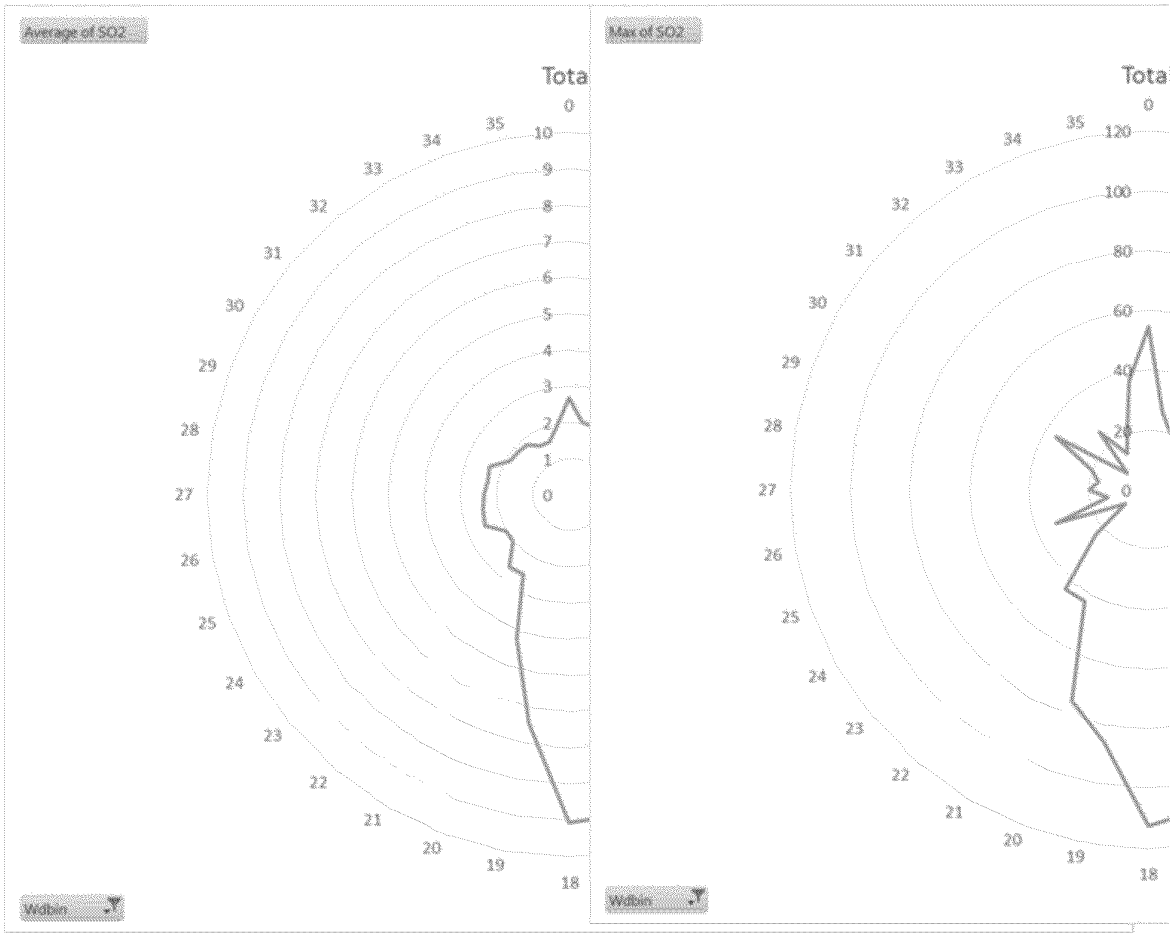
Vennetta,

I enjoyed talking to you yesterday morning. I've attached SO2 roses based on hourly data (a) before tall stack (b) after tall stack but before scrubber and (c) after scrubber

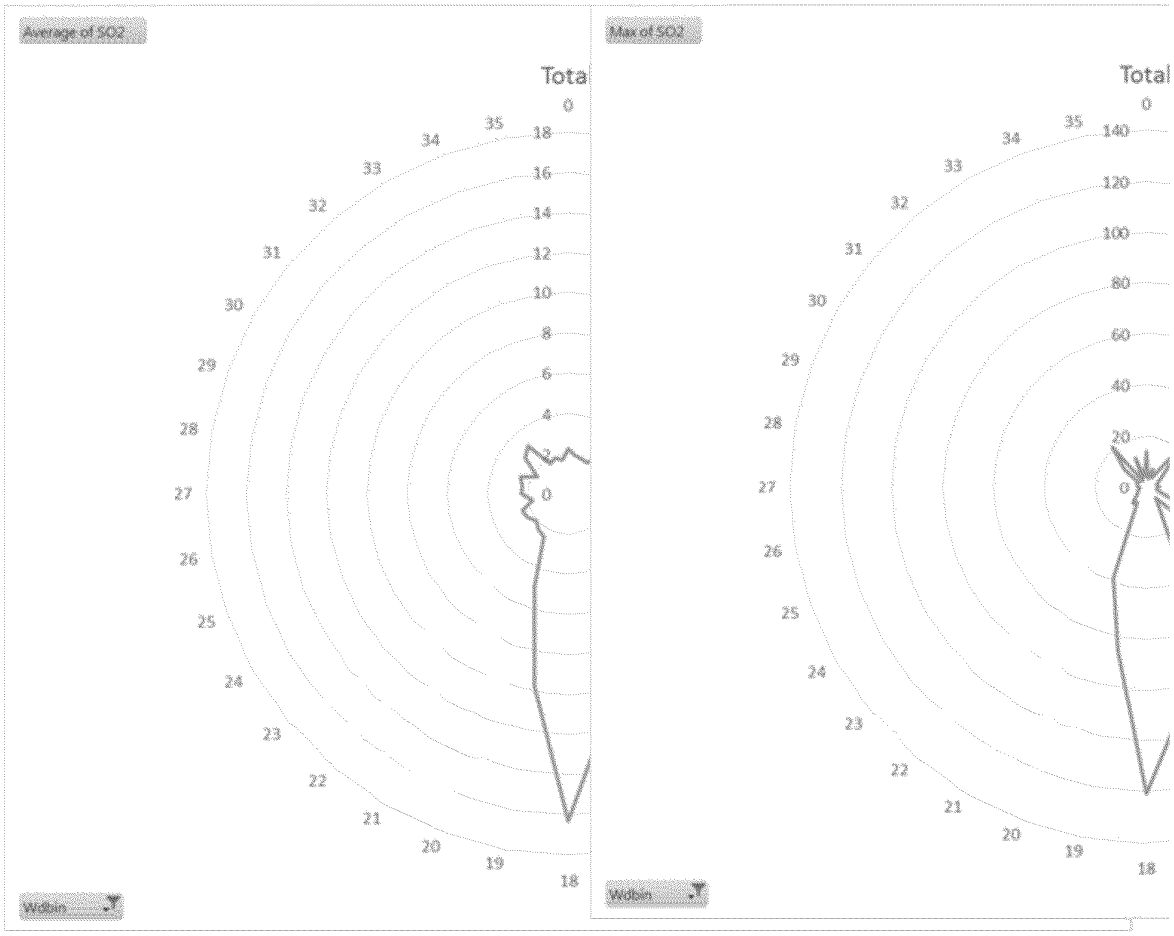
(a)Jan 2012 – Sept 2013 (Before Tall Stack)



(b) Nov 2013 – September 2015 (After Tall Stack but Before Scrubber)

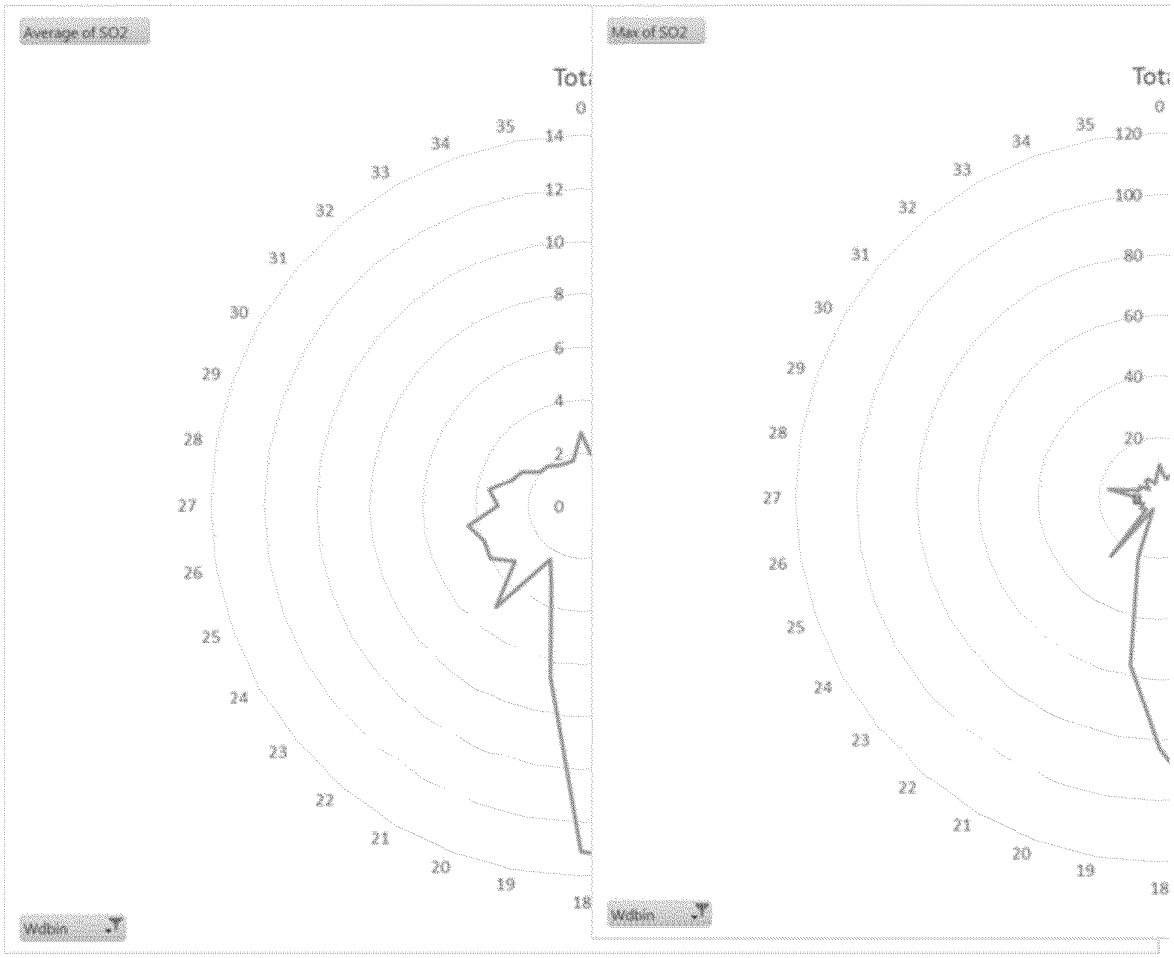


(c. Oct 2015 – Dec 2015 (After Scrubber)



There's no data available yet for 2016 on the aqs.epa.gov site and we only have 3 months for post scrubber (the met's available through April 2016). The impression from what we have now is that there was an increase in the average SO2 from the south when the scrubber went into operation. But to get a more apples-to-apples comparison below is the plot for the same 3 months for 2014 – before scrubber but with tall stack

Oct 2014 – Dec 2014 (Before Scrubber but for 4th Quarter only)



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Email: Imhoff.Robert@epa.gov

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Donaldson, Guy[Donaldson.Guy@epa.gov]; Snyder, Erik[snyder.erik@epa.gov]
From: Imhoff, Robert
Sent: Tue 6/28/2016 12:55:05 PM
Subject: Request for RAIN AERMOD modeling protocol and files

Venetta,

I'm the new modeler at EPA Region 6 and Guy Donaldson has asked me to look at the AERMOD modeling protocol and files for the RAIN plant. I understand that you have some updated modeling that is showing attainment for the SO2 standard while the monitor is still recording exceedances of the standard. Apparently, there are several theories of how this may be coming about. Since I also have experience in field studies for point source impacts Guy has asked me to take a look at the modeling and monitoring with fresh eyes.

I would appreciate any help you can give me in obtaining the modeling protocol and files and in consulting on any subsequent questions I may have regarding the modeling or monitoring data.

Best regards,

Bob

Robert Imhoff

Environmental Engineer

U.S. EPA Region 6

1445 Ross Ave

Dallas TX 75202

Ph: (214) 665 7262

Email: Imhoff.Robert@epa.gov

To: Snyder, Erik[snyder.erik@epa.gov]
From: Warden, Lee
Sent: Tue 6/7/2016 5:08:29 PM
Subject: RE: leaseair
removed.txt

The PM guidance is too big… look for EPA-452/R-93-008, PM-10 Guideline Document.

From: Warden, Lee
Sent: Tuesday, June 07, 2016 11:58 AM
To: snyder.erik@epa.gov
Subject: FW: leaseair

Sorry, I was in a meeting and thought I was communicating with Eric not Erik…

From: Warden, Lee
Sent: Tuesday, June 07, 2016 11:00 AM
To: Snyder, Erik
Subject: RE: leaseair

It's in that folder. Same guidance in SO2 and PM.

Sent via the Samsung GALAXY S® 5, an AT&T 4G LTE smartphone

-------- Original message --------
From: "Snyder, Erik" <snyder.erik@epa.gov>
Date: 06/07/2016 10:43 AM (GMT-06:00)
To: "Warden, Lee" <Lee.Warden@deq.ok.gov>
Subject: RE: leaseair

Hi Lee,

I have had a hard time finding an electronic version of the guidance you pulled the following citation. Do you have it electronically that you could forward?

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Warden, Lee [mailto:Lee.Warden@deq.ok.gov]
Sent: Monday, May 09, 2016 5:25 PM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: FW: leaseair

The SO2 and PM10 guidance from the 90s have this same guidance and I can't find the 87 memo referenced:

17. "We have never either flatly stated that land acquisition in general is acceptable or unacceptable under section 123 of the Clear Air Act...we will review individual situations on a case-by-case basis." Memorandum from Tyler, D., OAQPS, to I. Dickstein, Region VIII. April 7, 1987.

From: Milligan, Eric
Sent: Thursday, March 24, 2016 12:30 PM
To: Warden, Lee; Finley, Laura J.
Subject: RE: leaseair

Also, the Nearair.pdf also lists EPA's concern that "a three-strand barb-wire fence and "no trespassing" signs may not be adequate to keep the general public off the land. Three-strand barb-wire fences are easy to cross and signs could be ignored."

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Sent: Thursday, March 24, 2016 12:07 PM
To: Finley, Laura J.
Cc: Milligan, Eric
Subject: RE: leaseair

Eric Snyder didn't have anything in particular about leasing and the issue of continuing to farm did not come up. The memo below does address it, but to the extent that Oxbow "hires" the farmer, I don't know if that memo is preventative enough.

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You might review them.

Neaair.pdf

Discusses leased land to restrict ambient air but attempting to allow the farmer to continue using the land (they can't).

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ccc.pdf

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Discusses leased land and ambient air

R1408_McCourtney_13_Sept_99_.pdf

Discusses public access

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Sent: Thursday, March 24, 2016 10:44 AM
To: Warden, Lee
Subject: FW: leaseair

See below. Have you heard anything from EPA regarding leasing lands, particularly the ability of the farmer to continue farming?

Thanks,

Laura J. Finley

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Off the top of my head—

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Regional Office at Tulsa, Air Quality Division

Oklahoma Dept. of Environmental Quality

3105 East Skelly Drive, Suite 200

Tulsa, Oklahoma 74105

(T) 918.293.1625

(F) 918.293.1631

From: Finley, Laura J.
Sent: Thursday, March 24, 2016 9:36 AM
To: Miller, Madison B.
Subject: FW: leaseair

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From: Milligan, Eric
Sent: Wednesday, March 23, 2016 2:21 PM
To: Finley, Laura J.; Miller, Madison B.; Bradley, Cheryl

Subject: leaseair

Here is the document that I believe they were referencing in the meeting in regards to ambient air.

<< File: leaseair.pdf >>

Page 8, Section 3

… the general public may not include mail

carriers, equipment and product suppliers, maintenance and

repair persons, as well as persons who are permitted to enter

restricted land for the business benefit of the person who has

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contractors or delivery persons that are expressly granted

access to a plant site by the lessor are not the general public,

but instead are considered "business invitees."

To: Snyder, Erik[snyder.erik@epa.gov]
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removed.txt
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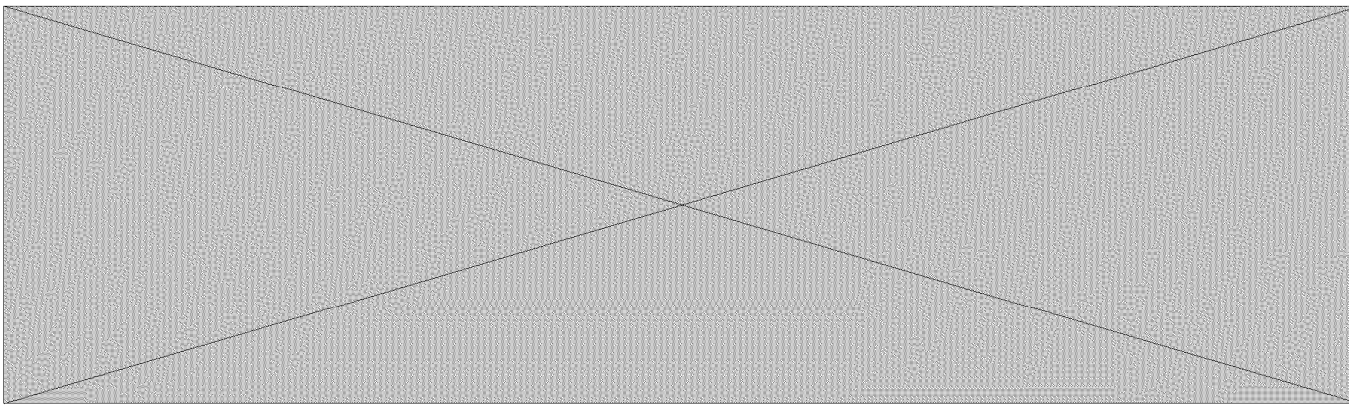

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From: Warden, Lee
Sent: Tue 6/7/2016 4:00:26 PM
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image002.jpg

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To: Snyder, Erik[snyder.erik@epa.gov]
Cc: Bradley, Cheryl[Cheryl.Bradley@deq.ok.gov]; Warden, Lee[Lee.Warden@deq.ok.gov]; Wills, Joseph[Joseph.Wills@deq.ok.gov]
From: Milligan, Eric
Sent: Thur 5/26/2016 2:00:43 PM
Subject: RE: Oxbow Calcining Kremlin Facility

I concur.

The testing in 2008 was supposed to be CEM data based on the 5/26/16 e-mail but I have not seen any of that data or the testing of the feed sulfur content on a continuous basis (at least once every fifteen minutes) during the testing to prove or justify the 20% reduction of SO2 from the daily emission calculations.

After taking a look at the graph of the new formula used for velocity calculations, I have to note that rather than following a straight line along the feed rate, after the test data ends, the equation predicts the same flow rate for all feed rates between 10 – 25 TPH which is not supported. Based on their review, there seems to be little or no correlation between flow rate and feed rate.

The real correlation for stack flow rate should be related to the difference between the raw petroleum coke feed rate and calcined coke production rate. Different amounts of coke are combusted in the kilns based on the type, blend, or other physical properties of the petroleum coke.

The equation should also take into account the amount of water used to quench the produced calcined petroleum coke. The flow rate is also dependent upon the amount of air fed into the pyro-scrubber/stack which cannot be determined without knowledge of the diluent gases like CEMS use. It is almost impossible to actually calculate the flow rates of the kilns on an hour by hour basis without all of the supporting data and even then use of a single value for stack moisture content or diluent gas only gives a relative stack velocity. The confidence level of modeling based on "calculated" hourly data is very low. Based on calculations for EGU and comparison to actual CEM data, it has been my experience that the calculated flow rates are always greater than actual measured values.

I am copying others on this and all future e-mail correspondence in an effort to keep everyone up to date.

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, May 26, 2016 8:13 AM
To: Milligan, Eric
Subject: RE: Oxbow Calcining Kremlin Facility

Thought you probably had but just wanted to make sure. It's hard/impossible to base modeling on data that is based on stack testing data that can't be reviewed. They told me it was done for litigation and that is why they did the summary. Seems pretty iffy if you can't review and determine the data is good.

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Milligan, Eric [mailto:Eric.Milligan@deq.ok.gov]
Sent: Thursday, May 26, 2016 8:02 AM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: Oxbow Calcining Kremlin Facility

Thanks but I already had these files this is not the test reports they are summaries of the test data and a stamped certified summary indicating that the data is ok.

The refuse to send the actual stack test reports.

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, May 26, 2016 7:59 AM
To: Milligan, Eric
Subject: FW: Oxbow Calcining Kremlin Facility

FYI

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Doug Landwehr [mailto:Doug.Landwehr@OXBOW.COM]
Sent: Wednesday, May 25, 2016 12:30 PM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: RE: Oxbow Calcining Kremlin Facility

Erik –

Attached is the stamped certified data from the performance tests that Oxbow has conducted over the years at the Kremlin facility. Please feel free to give me a call at 561.907.5445 if you have any questions or comments about the modeling files or supporting data that has been submitted.

Thank you,

Doug

From: Doug Landwehr
Sent: Tuesday, May 24, 2016 6:20 PM
To: 'snyder.erik@epa.gov'
Subject: Oxbow Calcining Kremlin Facility

Erik –

All of our modeling files have been uploaded and are available to you via the secure server link. The modeling shows the ambient air impact concentration would be 184.17 micrograms per cubic meter. The bases for the modeled parameters for the NAAQS modeling that we have conducted are as follows:

SO_2 Emission Rate

As required by the Enid Title V Permit, daily pounds of SO_2 emissions are calculated for each kiln determined by the use of a conservative mass balance equation. However, based on engineering tests using CEMS that were conducted in 2008, it was determined that the mass balance equation over-predicts the actual emissions by at least 20%. Testing conducted at other Oxbow facilities confirms that the mass balance calculation over-predicts the actual emissions by an amount greater than the 20+% seen during the Enid testing. The mass balance equation over-predicts SO_2 emissions since it assumes 100% of the sulfur released converts to SO_2. The mass balance equation does not account for conversion of sulfur to SO_3, sulfur that is part of particulate matter, sulfur loss to slag in the Pyroscrubber, etc. Please see Table 1 Sulfur Balance which shows the percent difference in relation to the CEMS testing and the mass balance calculations.

Thus to accurately reflect the actual emissions in accordance with the TAD, during the 2012-2014 time period, a conservative 0.8 factor was applied to daily mass balance SO_2 emissions. The actual daily emission per kiln is then converted to an hourly emission rate by using the feed rate to ratio emissions over the time that the kiln was operating for the day. With our Historian database, the feed rate is being recorded in one minute increments and these are used to generate one-hour increments for 2012 through 2014.

Stack Height

Kiln 1, 2 & 3 – 150 feet

The stack height is based on engineering drawings.

Stack Diameter

Kiln 1 and 2 – 13.5 feet

Kiln 3 – 13.167 feet

Process testing was conducted in 2008 during which the inner diameter was measured for the stacks. The measured diameters were used in the modeling.

Stack Flow

Equation: ACFM = SCFM * Temperature (Kelvin) / 293.15 (Kelvin)

Where

$SCFM = -0.2340X^4 + 23.11X^3 - 715.9X^2 + 9130X + 38820$

And X = Feed Rate (tons per hour)

The stack flow equation is based on combination of data including performance testing flow rates and combustion modeling results. A polynomial line was fitted to the data points in order to provide an equation that fits the lower end feed rates and the higher end feed rates found during the operating period of 2012-2014. The equation evaluates flow in standard cubic feet per minute (SCFM) based on the relationship with feed rate and then calculates actual cubic feet per minute (ACFM) using the hourly stack temperature, as discussed in the next paragraph. See Graph 1: Relationship Between Feed Rate and Air Flow. With our Historian database, the feed rate is being recorded in one minute increments and these are used to generate one-hour values for 2012 through 2014.

Stack Temperature

Equation: Stack Temp (Fahrenheit) = Pyroscrubber Temperature – 650 degrees F

The stack temperature equation is based on a correlation found between the stack temperature and pyroscrubber temperature during performance testing conducted in 2009. The average temperature difference between recorded pyroscrubber temperature and the temperature recorded during performance testing of all three kilns was 650 degrees Fahrenheit. The pyroscrubber temperature data is recorded in one minute intervals. The pyroscrubber one-minute data was

pulled from the Historian database for the 2012 to 2014 time period and averaged into one-hour blocks. See Table 2: Stack Temperature Versus Pyroscrubber Temperature.

Meteorological Data

Surface Data

Breckenridge, OK 2012-2014

Vance AFB, OK 2012-2014

Meteorological data from Breckenridge and Vance AFB were chosen due to the proximity of the stations to the site and the representativeness of the surface characteristics around Breckenridge compared to the site. However, it should be noted that either Vance AFB or Enid Woodring Regional Airport, OK are also acceptable alternative locations to consider that are representative of the Kremlin facility site location.

Generally, the climate of Oklahoma is dominated by the overall weather patterns of the continental United States. The most dominant large scale influence is the Bermuda High, which allows for southerly flow of warm moist air into Oklahoma. Due to the Bermuda High, the prevailing winds are typically South to Southeast from Spring through Fall for most of Oklahoma – including the area near the Kremlin facility site. During the winter months, the prevailing winds are evenly split between the South and North as the area is affected by low pressure systems and the breakdown of the Bermuda High.

The local topography around the meteorological station will have a greater affect at low wind speeds and/or calm conditions. The local topography around the Kremlin facility and Enid Woodring Regional Airport are very similar in that there is a gentle sloping to the west of the sites. With the gentle sloping to the west of the sites, it is expected that diurnal winds would travel along the slopes when there are no large scale synoptic features overriding the diurnal flow. The Vance AFB site is located on slightly higher elevation than the surrounding area so the location would also be affected by diurnal flow, which would be similar to the Kremlin facility location. Data from the Breckenridge site is the most conservative, because the area around the Breckenridge site is relatively flat with no sloping so it is expected that there would be no diurnal wind flow pattern resulting in slightly more calm periods than what would be expected at the Kremlin facility site.

Based on the location and local topography, the Enid Woodring Regional Airport, Vance AFB, and Breckenridge are the most representative of the meteorological conditions at the Kremlin site.

The meteorological data was prepared using AERMET version 15181 and the adjusted surface friction velocity (ADJ_U*) non-default/beta option. EPA through model evaluations has demonstrated that the AERMOD model performance is greatly improved with the use of the AERMET meteorological data set using ADJ_U*. EPA has also expressed concerns with using ADJ_U* in conjunction with the site specific sigma theta variable so this parameter was excluded from the Breckenridge data set when preparing the meteorological file. Otherwise, the meteorological data was prepared using model defaults.

Upper Air Data

Norman, OK 2012-2014

Upper air data is generally uniform over large areas, so roughly the same conditions should be seen at the two closest upper air sites to the facility – located at Norman, OK and Lamont, OK. A review of the Lamont, OK and Norman, OK data found that Norman, OK is a more complete data set. The Norman, OK upper air data was used to generate the AERMET files for both Enid Woodring Regional Airport and Vance AFB surface meteorological AERMET files.

Background Concentration

Oklahoma City, OK 2012-2014

Oklahoma has designated the Oklahoma City, OK monitor as the background monitor for modeling purposes. The SO2 data from 2012 to 2014 for the monitor was processed into seasonal hourly background concentrations per the guidance outlined in EPA Memorandum *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard.* The seasonal hourly concentrations were included as an input in the model and automatically added to the modeled impacts.

If you have any questions, please feel free to call me at 561.907.5445.

Thank you,

Doug

Manager, Environmental and Regulatory Matters

Oxbow Carbon LLC

1601 Forum Place, Suite 1200

West Palm Beach, FL 33401

Direct #: 561-907-5445

Office #: 561-697-4300

Mobile #: 561-568-8824

Table 1 Stack Test SO2 Emissions Results as Percentage of Mass Balance Calculated Emissions

Test Date		1/25/2008	1/23/2008	1/24/2008	Formula	Source
Mass Balance Calculated SO2 Emissions						
Wet feed	ton/hr	31.40	36.60	25.00		Measured
Water	%	6.58	8.99	7.95		Measured
Dry Feed	ton/hr	29.33	33.31	23.01	wet feed x (1-water/100)	Calculated
Sulfur	% dry basis	2.79	2.18	2.13		Measured
S input	ton/hr	0.818	0.726	0.490	sulfur/100 x dry feed	Calculated
Production	ton/hr	21.4	26.2	17.8		Measured
Sulfur	% dry basis	2.55	1.87	1.87		Measured
S out in product	ton/hr	0.546	0.490	0.333	sulfur/100 x production	Calculated
S emitted based on mass balance	ton/hr	0.273	0.236	0.157	sulfur input - sulfur output	Calculated
SO2 emitted based on mass balance	**lb/hr**	**1,091**	**945**	**629**	**sulfur emitted x 2,000 lb/ton x 2**	**Calculated**
Stack Test SO2 Emissions						
O2	%dry	10.8	8.3	10.7		Measured
SO2	ppmvd	964	925	720		Measured
Stack gas flow rate	dscfh	no data	4,909,740	no data		Measured
Stack flow rate adjusted for actual O2	dscfh	6,125,022	4,909,740	6,064,973	(20.9-8.3)/(20.9-actual O2) based on 40CFR Part 60 Appendix A Method 19	Calculated
Stack flow rate adjusted for actual O2 and dry feed rate	dscfh	5,393,951	4,909,740	4,190,081	stack gas flow adjusted for actual O2 x dry feed rate/33.31 dry ton/hr	Calculated
SO2 emitted based on stack testing	lb/hr	863	754	501	stack gas flow adjusted for actual O2 and dry feed rate x ppmvd/1,000,000 1 lb mole/385.6ft3 x 64 lb SO2/lb mole	Calculated
Stack Test SO2 Emissions / Mass Balance Calculated SO2 Emissions						
SO2 emitted	% of mass balance	79%	80%	80%	SO2 emitted based on stack testing / SO2 emitted based on mass balance	Calculated

Notes:

The mass balance without the 80% factor over estimates SO2 emissions because some sulfur leaves the process as slag, particulate in the knockout chamber, and particulate emissions, as well as a small amount of SO3 emissions. The stack test results for January 23 to 25, 2008 provide accurate SO2 emissions for those days. The mass balance calculation based on daily raw coke feed rates, product feed rates, and sulfur data with the 80% emitted factor provides reasonable estimates of emissions for other days.

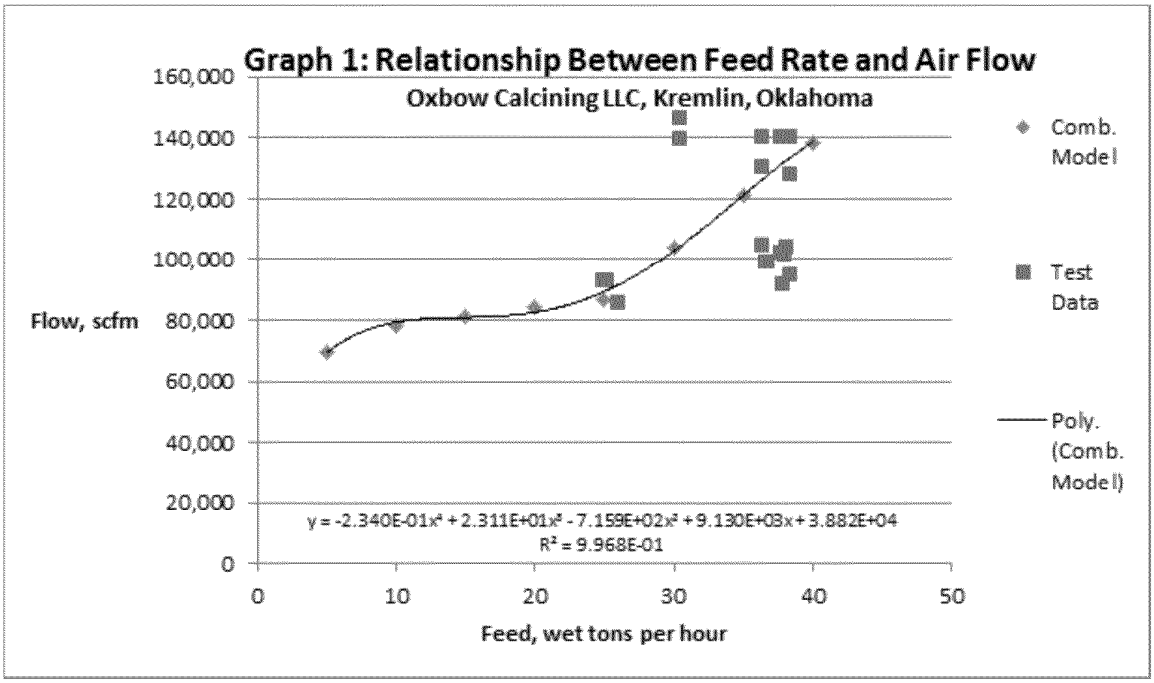

Table 2: Stack Temperature Versus Pyroscrubber Temperature
Oxbow Calcining LLC, Kremlin, Oklahoma

Date of Test	Avg Source Temp (°F)	Pyroscrubber Temperature (°F)	Pyroscrubber Temperature Minus Source Temperature (Source is stack temperature from testing company) (°F)
7/1/2009	1,573	2,187	614
7/1/2009	1,620	2,198	578
7/1/2009	1,616	2,196	580
7/1/2009	1,587	2,198	611
7/1/2009	1,580	2,196	616
7/1/2009	1,579	2,194	615
7/28/2009	1,652	2,446	794
7/30/2009	1,547	2,193	646
7/31/2009	1,465	2,196	731
8/1/2009	1,497	2,195	698
8/2/2009	1,523	2,191	668
		Average	**650**

To: Snyder, Erik[snyder.erik@epa.gov]
Cc: William Matthews (william.matthews@cleco.com) (william.matthews@cleco.com)[william.matthews@cleco.com]; Ashley N Ullstrom[anullstrom@aep.com]; 'Pakrasi, Arijit (Arijit.Pakrasi@cbi.com)' (Arijit.Pakrasi@cbi.com)[Arijit.Pakrasi@cbi.com]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]
From: David J Long
Sent: Thur 4/7/2016 7:41:39 PM
Subject: RE: File('Dolet Hills Modeling.zip') from AEP is ready to download
Long #30.pdf

Erik,

In response to your question, the spreadsheet system we used to develop the "Full Actual" case for Dolet Hills is included in the archive in the Emissions Processing directory. It contains the raw CEMS data we were given by CLECO as the first sheet in the Spreadsheet file (AEP is a part owner of Dolet Hills, but is not the operating owner - this means we don't receive a feed of the CEMS and EDR data from the plant like we do from AEP operated plants). As such, I'm not sure if the data we received from CLECO was an exact copy of what was in the EDR filed under Part 75 or raw CEMS data that may not have all the Part 75 data handling conventions applied (Bias Adjustment Factors, Missing Data Substitutions, Diluent Capping, etc). In order to give you a better understanding of the ways we handle CEMS data to generate an emissions inventory for modeling, I'm attaching a paper I'm presenting next week in Chapel Hill, NC at the AWMA Modeling Specialty Conference on our CEMS processing methods. This paper is referenced in the Technical Note that summarizes our work.

In response to your question about the differences in the two inventories, I did pull the processing spreadsheet we used and the Sierra Club inventory and made a gross summation of emissions to see how much different the three year emissions were. The input file we created had a total of 48053.63 tons and the Sierra Club file had 49676.72 tons across the three year period.

I took a quick look at a few places in the files to see what might be causing this deviation and I'm thinking that there is some kind of a bias adjustment factor difference between the two datasets that comes and goes over time. My reason for this suspicion is that there are times where the two files have virtually the same lb/hr emissions data and other places where there is the appearance of a consistent bias in the emissions data (that appears to be on the order of about 2 to 3% in most occurrences) and exists across the load range. From the information available to us, we are not able to determine if there is a Part 75 bias factor(s) in play and if it is being applied to the raw flow data, SO2 data, or both.

However, with the different simulations I've made using various combinations of data for Dolet Hills (supplied in the archive), I would not expect this difference in emissions to result in a change in the conclusion that when the correct operating temperature and flow is input into the model (including startup periods and the shutdown hour), that the area models attainment with the 1-Hour Standard regardless of the background used. The temperature the Sierra Club used as a full load temperature was 161 F, where the range from the CEMS data was typically in the range of 185 to 220 F at full load (lower at reduced loads). The actual flows and temperatures drove the exit velocities at full load up to 90+ fps from the roughly 85 fps used by the Sierra Club. Due to the measured flows across the load range being higher than assumed by the Sierra Club, it appears that except under low load and startup conditions the operating flows were typically within 5 fps of the Sierra Club value on the low end and up to about 20 fps higher at full load.

If you have any other questions as you review this work, please let me know.

Dave

David J. Long, PE
Environmental Engineer - Principal
Air Quality Services Section

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
Phone - 614-716-1245
Audinet - 200-1245
Fax - 614-716-2255

-----Original Message-----
From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, April 07, 2016 1:53 PM
To: David J Long
Cc: Mohr, Ashley; Imhoff, Robert
Subject: RE: File('Dolet Hills Modeling.zip') from AEP is ready to download

This is an EXTERNAL email. STOP. THINK before you CLICK links or OPEN attachments.

****
Thanks David. Wanted to confirm your email and I was able to download the file and unzip.
Based on the readme.txt file,
I did have a general question about the Full Actual Emissions, do you have a comparison file or some details to what was off with the emissions rates from Sierra Club as I thought they used CEM data. I have not received the full comment package yet so understand some of the details may be in the comments but didn't think you were able to provide spreadsheets or zip files to the docket.

Thanks,
Erik

Erik Snyder
Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

-----Original Message-----
From: djlong@aep.com [mailto:djlong@aep.com]
Sent: Thursday, April 07, 2016 12:26 PM
To: Snyder, Erik <snyder.erik@epa.gov>
Subject: File('Dolet Hills Modeling.zip') from AEP is ready to download

Use the link below to download your file. The file is available until 04/14/2016.

https://p2p.aep.com:443/AEPLargeFile/fileDownload.dsp?isEncrypted=true&isEnSet=true&fileStage=7&fileName=XOCzD3%2FktSoLZ%2BSDNBhGlvc%2FmHiOmlUdyj1EunPcAQxNhUk76M0aoQ%3D%3D&fop=bac60c80fce511e5a0a4dd023886f5419&version=v2

File Size = 53985 kb

Comments: Sorry for the slight delay. I discovered that I had never had Ashley send my the emission spreadsheet used to generate the hourly emission inventory, just the final output file. I had her send it to me and included it in the archive. If you have any questions, please let me know.

David Long

614-716-1245

(This note processed by "p2p.aep.com")

To: Vivian Aucoin[Vivian.Aucoin@LA.GOV]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]; Young, Carl[young.carl@epa.gov]; Donaldson, Tracie[donaldson.tracie@epa.gov]; Snyder, Erik[snyder.erik@epa.gov]; Amanda Polito[Amanda.Polito@LA.GOV]
Cc: Donaldson, Guy[Donaldson.Guy@epa.gov]
From: Huser, Jennifer
Sent: Fri 3/25/2016 5:46:56 PM
Subject: Louisiana Monthly Call: Action Items from 3/24/16

Good afternoon,

Please see the list of action items I have captured from yesterday's monthly planning call. Where possible, I have identified a point of contact for both EPA and LDEQ. As these items are completed, please let me know.

Thanks!

1. Tracking table or spreadsheet to track SO2 DRR sources – LDEQ: Vivian/Vennetta

2. Modeling files and results from St. Bernard SO2 modeling – LDEQ: Vennetta; EPA: Erik

3. Check if LDEQ received CAMx modeling files for Cleco – LDEQ: Vennetta

4. TAGA monitoring in St. Bernard? – EPA: Jennifer

5. PM2.5 Transport Memo from Mary to Tegan needs to be resent – EPA: Carl DONE

6. How to handle RVP in areas that have an expired maintenance plan? Looking for answer for 3 areas: Shreveport, Lake Charles, Lafayette – EPA: Carl/Tracie; LDEQ - Amanda

Jennifer Huser

Environmental Scientist

Air Planning Section (6MM-AA)
USEPA Region 6
1445 Ross Ave. Suite 1200
Dallas, TX 75202-2733
214-665-7347

From: Verhalen, Frances
Location: R6-ConfRm-CypressTree-06O02@epa.gov
Importance: Normal
Subject: ODEQ call SO2: Oxbow Facility
Start Date/Time: Wed 3/16/2016 3:00:00 PM
End Date/Time: Wed 3/16/2016 4:00:00 PM

Call-in number: **Ex. 6 - Personal Privacy**
Code: **Ex. 6 - Personal Privacy**

From Kent Stafford:

All,

Would you have time available on Wednesday, March 16 for a brief conference call regarding the ANR (Annual Network Review) as it relates to potential new sites required for the SO2 Data Requirements Rule? We have met with the Oxbow facility and have some questions relative to incorporation of the monitoring and modeling plans into the review. It appears that our folks will be available any time that day. Thanks.

Kent

To: Stafford, Kent[Kent.Stafford@deq.ok.gov]; Miller, Michael[Miller.Michael@epa.gov]; Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Bradley, Cheryl[Cheryl.Bradley@deq.ok.gov]; Eddie.Terrill@deq.ok.gov[Eddie.Terrill@deq.ok.gov]; Snyder, Erik[snyder.erik@epa.gov]; Grady, James[Grady.James@epa.gov]; john.munro@deq.ok.gov[john.munro@deq.ok.gov]
From: Verhalen, Frances
Sent: Mon 3/14/2016 5:36:18 PM
Subject: RE: Conf. Call request

Kent, EPA has the following times available for your call:

Wed morning: 10-11 am

Wed afternoon: 12-2:00, 2:30 - 4:00 pm

Please let me know what works best for you.

Frances Verhalen, P.E., Chief

Air Monitoring/Grants Section

US Environmental Protection Agency

1445 Ross Avenue (MC 6MM-AM)

Dallas, TX 75202

214-665-2172

verhalen.frances@epa.gov

From: Stafford, Kent [mailto:Kent.Stafford@deq.ok.gov]
Sent: Thursday, March 10, 2016 10:28 AM
To: Miller, Michael <Miller.Michael@epa.gov>; Verhalen, Frances <verhalen.frances@epa.gov>; Donaldson, Guy <Donaldson.Guy@epa.gov>
Cc: Bradley, Cheryl <Cheryl.Bradley@deq.ok.gov>; Eddie.Terrill@deq.ok.gov
Subject: Conf. Call request

All,

Would you have time available on Wednesday, March 16 for a brief conference call regarding the ANR (Annual Network Review) as it relates to potential new sites required for the SO2 Data Requirements Rule? We have met with the Oxbow facility and have some questions relative to incorporation of the monitoring and modeling plans into the review. It appears that our folks will be available any time that day. Thanks.

Kent

To: Snyder, Erik[snyder.erik@epa.gov]
From: Warden, Lee
Sent: Thur 1/28/2016 3:42:15 PM
Subject: Fwd: SO2 DRR

Sent via the Samsung GALAXY S® 5, an AT&T 4G LTE smartphone

-------- Original message --------
From: "Stafford, Kent" <Kent.Stafford@deq.ok.gov>
Date: 01/28/2016 9:39 AM (GMT-06:00)
To: "Verhalen, Frances (verhalen.frances@epa.gov)" <verhalen.frances@epa.gov>
Cc: "Warden, Lee" <Lee.Warden@deq.ok.gov>, "Milligan, Eric" <Eric.Milligan@deq.ok.gov>, "Bradley, Cheryl" <Cheryl.Bradley@deq.ok.gov>, "Terrill, Eddie" <Eddie.Terrill@deq.ok.gov>, "Davidson, Jeff" <Jeff.Davidson@deq.ok.gov>, "Botchlet-Smith, Beverly" <Beverly.Botchlet-Smith@deq.ok.gov>, "Goeller, Curt" <Curt.Goeller@deq.ok.gov>
Subject: SO2 DRR

Ms. Verhalen,

Some of our staff here at DEQ Air Quality would like to request a conference call to discuss potential SO2 monitoring relative to the Data Requirements Rule. We are looking at the possibility of adding 2 new sites and the re-location of two existing sites to meet the requirements of this rule. Most of our questions relate to siting and logistics relative to modeling. We also think it could be beneficial to include Erik Snyder of the modeling group on this call. Would you and other relevant Region 6 staff be available for this conversation tomorrow or sometime early next week? If so, please let us know a couple of times that we could possibly use for scheduling. Please feel free to forward to Erik or whoever you choose to include.

Thank you,
Kent

To: Snyder, Erik[snyder.erik@epa.gov]
From: Ron Thomas
Sent: Tue 1/26/2016 4:17:56 AM
Subject: Re: Request for Clarification/Feedback on Limestone and WA Parish Stack Parameters

Thanks

From: Snyder, Erik <snyder.erik@epa.gov>
Sent: Monday, January 25, 2016 5:26 PM
To: Daniel Menendez; Ron Thomas
Cc: Mohr, Ashley; Donaldson, Guy
Subject: FW: Request for Clarification/Feedback on Limestone and WA Parish Stack Parameters

FYI – updated info from NRG. Didn't see TCEQ on the email list.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: zachary.craft@bakerbotts.com [mailto:zachary.craft@bakerbotts.com]
Sent: Monday, January 25, 2016 5:10 PM
To: Donaldson, Guy <Donaldson.Guy@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>; Mohr, Ashley <Mohr.Ashley@epa.gov>
Cc: Craig.Eckberg@nrg.com; Lindsay.Little@nrg.com; matthew.kuryla@bakerbotts.com; Richard.Hamel@erm.com; Mark.Garrison@erm.com; Beth.Barfield@erm.com
Subject: RE: Request for Clarification/Feedback on Limestone and WA Parish Stack Parameters

Ashley, Erik, Guy –

Please find attached NRG's clarification regarding the stack parameters, as well as our response to the Sierra Club comment letter. We have also presented modeling results relating to both the confirmed stack parameters and the most recent dispersion modeling submitted by Sierra Club for NRG's Parish and Limestone plants. Please do not hesitate to contact us if you would like to discuss.

Thanks,

--Zach

Zachary L. Craft
Baker Botts L.L.P.
One Shell Plaza
910 Louisiana Street
Houston, Texas, 77002
713.229.1133
713.229.7933 (fax)
zachary.craft@bakerbotts.com

From: Mohr, Ashley [mailto:Mohr.Ashley@epa.gov]
Sent: Thursday, January 14, 2016 11:42 AM
To: Craig.Eckberg@nrg.com; Richard Hamel; Mark Garrison; daniel.menendez@tceq.texas.gov
Cc: Donaldson, Guy; Snyder, Erik
Subject: Request for Clarification/Feedback on Limestone and WA Parish Stack Parameters

All –

Based on our ongoing review of the modeling analyses submitted for the NRG Limestone and WA Parish facilities related to the SO2 Designations, we have identified potential discrepancies in modeled stack parameters and are requesting additional clarification or information from both industry and TCEQ regarding these stack parameters. This email outlines the additional information we are requesting and also provides a copy of a comment letter recently received from Sierra Club that identifies a discrepancy for one of the units located at the WA Parish facility.

Limestone:

Below is a table showing the stack parameter information from the most recent Industry

modeling, most recent Sierra Club modeling, and the 2014 Emissions Inventory Questionnaire (EIQ) pulled from the TCEQ's website. As you can see differences exist in both the stack height and stack diameter values.

	LMS1 and LMS2	
	Stack Height (ft)	**Stack Diameter (ft)**
Industry	565	23.6
Sierra Club	563	26.9
2014 EIQ	450	27

We are asking that both industry and TCEQ review these values and provide any additional information available to document what the actual stack parameters are for the two main stacks located at the Limestone Facility.

WA Parish:

We conducted a similar review and comparison for WA Parish and found the following differences for 4 of the modeled units at WA Parish:

	UNIT2A/2B		UNIT4		UNIT7		UNIT8	
	Stack Height (ft)	**Stack Diameter (ft)**	**Stack Height (ft)**	**Stack Diameter (ft)**	**Stack Height (ft)**	**Stack Diameter (ft)**	**Stack Height (ft)**	**Stack Diamete (ft)**
Industry	167.8	18	182	18	500	24	500	22.5
Sierra Club	Not modeled	Not modeled	Not modeled	Not modeled	500	22	500	22.5
2014 EIQ	168	10.5	191	22.5	500	22	500	22

As I previously mentioned, we did receive a comment letter from Sierra Club that referenced the stack diameter discrepancy for Unit 7. Again, we request you all to review this information and provide additional documentation and/or clarification regarding the potential discrepancies in the modeled stack parameters.

If you have any questions, please feel free to contact me. We are also available to set up a specific time to discuss in more detail, if necessary.

Thanks,

Ashley

Ashley N.Q. Mohr
Environmental Scientist
Air Permits Section (6MM-AP)
U.S. Environmental Protection Agency
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To: Snyder, Erik[snyder.erik@epa.gov]
From: Ron Thomas
Sent: Wed 1/13/2016 7:57:51 PM
Subject: RE: R6 Modeling workshop

You aren't calling in yourself, are you? Others can use that code?

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Wednesday, January 13, 2016 1:38 PM
To: Ron Thomas
Cc: Feldman, Michael
Subject: RE: R6 Modeling workshop

Planning on using my call in number. **Ex. 6 - Personal Privacy**

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Ron Thomas [mailto:Ron.Thomas@tceq.texas.gov]
Sent: Wednesday, January 13, 2016 12:30 PM
To: Snyder, Erik
Cc: Feldman, Michael
Subject: RE: R6 Modeling workshop

Zarena asked if you'll have a call-in number?

From: Ron Thomas

Sent: Tuesday, January 12, 2016 1:37 PM
To: 'Snyder, Erik'
Subject: RE: R6 Modeling workshop

Erik,

We're all booked for the Hotel Indigo, which had at least 7 rooms and took gov't rate.

See you on the 20th.

I think the agenda works in general. Examples of the single-source PSD ozone modeling would be helpful (what works for Tier 1 vs having to move to Tier 2).

Would you or Michael Feldman be wanting to discuss how Texas is informing monitor placement with CAMx?

Anything else?

-Ron

From: Ron Thomas
Sent: Thursday, January 07, 2016 1:36 PM
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Phone: 214-665-7305
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Cc: Feldman, Michael[Feldman.Michael@epa.gov]
From: Ron Thomas
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To: Snyder, Erik[snyder.erik@epa.gov]
Cc: Eric Milligan[Eric.Milligan@deq.ok.gov]
From: Vennetta Hayes
Sent: Wed 1/13/2016 5:08:46 PM
Subject: RE: R6 Modeling workshop

There must be something going on in town. Both hotels are showing no rooms on these dates. I actually can't book until we get travel approval and we have to use a state booking platform. I'll just use the approved rate for the travel request and see what happens later.

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Wednesday, January 13, 2016 10:45 AM
To: Vennetta Hayes
Cc: Eric Milligan
Subject: RE: R6 Modeling workshop

James got a room at the Hilton Garden Inn downtown 214-299-8982 and the Texas folks received government rate at Hotel Indigo 214-741-7700. Let me know if you don't get a room.

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Sent: Wednesday, January 13, 2016 10:35 AM
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Cc: Mohr, Ashley; Feldman, Michael; Donaldson, Guy
Subject: R6 Modeling workshop

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Fax: 214-665-7263
email: snyder.erik@epa.gov

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From: Ron Thomas
Sent: Thur 1/7/2016 7:36:47 PM
Subject: RE: R6 Modeling workshop

We'll have rental cars, so I think we can broaden our search. Thanks.

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Thursday, January 07, 2016 1:30 PM
To: Ron Thomas
Subject: RE: R6 Modeling workshop

Not so far. I'll try and look more tonight to see if there is an option that would be off the train.

-Erik

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La Quinta Inn Dallas Uptown

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Hi Mark,

I'll check and see about webcasting. If I can't get that to work we should at least be able to share the presentations ahead and have a telephone line.

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Cc: Mohr, Ashley; Feldman, Michael; Donaldson, Guy
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EPA Region 6
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Fax: 214-665-7263
email: snyder.erik@epa.gov

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Sent: Wednesday, December 16, 2015 2:28 PM
To: 'Daniel Menendez'; Daniel Jamieson (Daniel.Jamieson@tceq.state.tx.us); Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; 'vennetta.hayes@la.gov'; Nguyen, Tien; Yvette Olmos; Smith, Jim; 'Clark, David'; Mark McCorkle (MAC@adeq.state.ar.us)
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Cc: Clark, David[CLARKD@adeq.state.ar.us]
From: McCorkle, Mark
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From: Ron Thomas
Sent: Wed 1/6/2016 4:34:19 PM
Subject: RE: R6 Modeling workshop

Erik,

We've received approval to drive up on Tuesday and stay two nights.

Do you think you can reserve a block of rooms at the gov't rate and let us know what that is.

Also, please send us an updated agenda when you have one, since that goes with our travel justification.

We plan to bring 4 from AQD, and Daniel is bringing some from APD, and we plan to drive up on the 19th.

Daniel, do we want to try to reserve a van or two cars? Do you know how many from APD?

Thanks,

-Ron

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To: Snyder, Erik[snyder.erik@epa.gov]
From: Daniel Menendez
Sent: Tue 1/5/2016 9:34:44 PM
Subject: RE: R6 Modeling workshop

Hi Erik

I think we will be traveling on the 19th, so we (in Air Permits) are good with either 8:30 or 10. Is the Crown Plaza within walking distance? It seems to be the closest I can find that has a government rate.

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From: Vennetta Hayes
Sent: Tue 1/5/2016 7:03:31 PM
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Erik can we get a proposed agenda with the January dates. We have to have one to get travel approved.

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From: Daniel Menendez
Sent: Mon 1/4/2016 3:27:37 PM
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Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Daniel Menendez [mailto:daniel.menendez@tceq.texas.gov]
Sent: Tuesday, September 22, 2015 10:31 AM
To: Snyder, Erik
Cc: Ron Thomas
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Hi Erik,

Any updates on potential Region 6 modeling meeting?

Thanks,

Daniel

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Wednesday, August 19, 2015 11:16 AM
To: Daniel Menendez; Daniel Jamieson; Dominic Ruggeri; Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; vennetta.hayes@la.gov; Tien Nguyen; Yvette Olmos; Jim Smith
Cc: Mohr, Ashley; Feldman, Michael; Robinson, Jeffrey; Donaldson, Guy
Subject: Potential R6 Modeling workshop in Dallas in early November

Hi,

We haven't had a Region 6 modelers workshop in Dallas in a while. With the final DRR and proposed changes in App. W, thought it might be a good time to have a meeting here in Dallas. I am not planning on discussing photochemical issues other than maybe secondary pollutant analysis for permits. The main focus would be modeling for the SO2 sources as part of the SO2 Phase 3 and 4 designations process (either modeling directly or modeling for monitor locations around a facility). We could also discuss other issues if there is interest. I was thinking some discussion on ozone and PM2.5 impacts from single source for permitting might and what sources should be included in cumulative analysis are two topics that might also be beneficial. At this time I am targeting the first week in November (11/2-11/5) as possible date(s). Would only plan for 1 or two days within this period but we have locked meeting space for M-R currently. I think we will be able to get one or two people from OAQPS that week to come to Dallas (James Thurman and/or George Bridgers most likely). They are available for travel and this would be after the close of the proposed changes to App. W, so we could talk about any of the proposed changes.

Please let me know your interest and availability (if this week works and if M-T, T-W or W-R is best). Also any ideas for specific topics/issues.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

To: Vivian Aucoin[Vivian.Aucoin@LA.GOV]; vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Medina, Dayana[Medina.Dayana@epa.gov]; Feldman, Michael[Feldman.Michael@epa.gov]; Snyder, Erik[snyder.erik@epa.gov]; Casso, Ruben[Casso.Ruben@epa.gov]
From: Donaldson, Guy
Sent: Mon 12/28/2015 1:50:09 PM
Subject: FW: SO2 exceedances at Chalmette Vista on 12/23/15 and 12/25/15
MaxSO2Values-StBernard122815.pdf

Vivian, Vennetta:

I hope you guys had a good holiday.

Ruben has been keeping us up to date on monitoring hits at Chalmette. Fortunately there haven't been many as of late. I was wondering if you guys knew what operating scenario the company was operating under during the exceedences? Hot or cold stack. I was also wondering the status of the scrubber. Has it been installed yet?

From: Casso, Ruben
Sent: Monday, December 28, 2015 7:39 AM
To: Donaldson, Guy
Cc: Medina, Dayana; Miller, Michael
Subject: SO2 exceedances at Chalmette Vista on 12/23/15 and 12/25/15

The 4th high for 2015 was 75.1, but with a daily 1-hour max of **86.1** on 12/23 and a daily1-hour max of **120.8** on 12/24, the 2015 4th high is now **79.6 ppb**.

These latest exceedances are the two highest hourly SO_2 readings for 2015.

The preliminary 3 year DV for 2013-2015 is now (181 +79 + 79.6) /3 = **113**

Site Monitoring Data at Chalmette Vista site on 12/24/2015

Time	SO2 (PPB)	WSP (MPH)	WDIR (DEG)
1:00 AM	2.1	7	202
2:00 AM	1.9	6	201
3:00 AM	9.3	5	195
4:00 AM	2.4	4	206
5:00 AM	2.8	5	177
6:00 AM	3.2	4	175
7:00 AM	2.5	2	201
8:00 AM	2.1	2	94
9:00 AM	14.1	3	160
10:00 AM	56.1	5	170
11:00 AM	68.8	6	189
12:00 PM	42.7	7	191
1:00 PM	45.4	8	192
2:00 PM	104.7	7	177
3:00 PM	40.4	7	191
4:00 PM	62.4	7	181
5:00 PM	**120.8**	6	176
6:00 PM	50.8	5	174
7:00 PM	27.5	6	173
8:00 PM	4.8	5	177
9:00 PM	3.3	6	158
10:00 PM	2.8	6	162
11:00 PM	3.4	7	175
12:00 AM	15.9	8	175
Time	SO2 (PPB)	WSP (MPH)	WDIR (DEG)

Site Monitoring Data at Chalmette Vista site on 12/23/2015

Time	SO2 (PPB)	WSP (MPH)	WDIR (DEG)
1:00 AM	1.8	8	121
2:00 AM	N/A	10	116
3:00 AM	1.5	12	125
4:00 AM	1.6	9	129
5:00 AM	2	7	134
6:00 AM	1.9	8	135
7:00 AM	3.3	8	165
8:00 AM	7.7	9	173
9:00 AM	13.6	8	173
10:00 AM	14.8	8	172

11:00 AM	15	8	173
12:00 PM	42.5	8	175
1:00 PM	86.1	9	183
2:00 PM	36.7	9	193
3:00 PM	18	9	195
4:00 PM	3.4	9	202
5:00 PM	2.3	9	203
6:00 PM	2.5	9	200
7:00 PM	2.7	8	198
8:00 PM	6.6	7	196
9:00 PM	58	5	188
10:00 PM	51.1	5	187
11:00 PM	12.2	7	194
12:00 AM	3.8	7	198
Time	SO2 (PPB)	WSP (MPH)	WDIR (DEG)

From: Casso, Ruben
Sent: Monday, November 30, 2015 7:56 AM
To: Donaldson, Guy; Verhalen, Frances
Cc: Medina, Dayana; Feldman, Michael; Snyder, Erik; Miller, Michael
Subject: SO2 exceedance at Chalmette Vista on 11/29/15

The SO2 DV is the 4th high (over 3 years) –the 2015 4th high was 75.1ppb but with the new exceedance on 11/29 of 89.7 ppb, the 2015 4th high as of now is 75.3ppb.

The 3-year pDV of 112 didn't change.

Site Monitoring Data at Chalmette Vista site on 11/29/2015

Time	SO2 (PPB)	WSP (MPH)	WDIR (DEG)
1:00 AM	3.7	4	121
2:00 AM	N/A	5	125
3:00 AM	3.5	5	120
4:00 AM	3.6	3	137
5:00 AM	3.7	3	139

6:00 AM	4.1	4	134
7:00 AM	3.8	1	95
8:00 AM	3.8	4	179
9:00 AM	89	4	181
10:00 AM	**89.7**	**5**	**185**
11:00 AM	45.6	5	180
12:00 PM	65.4	5	181
1:00 PM	29	5	169
2:00 PM	17	5	174
3:00 PM	63.7	5	176
4:00 PM	32.2	4	180
5:00 PM	10.7	4	199
6:00 PM	21.3	4	176
7:00 PM	5.7	5	182
8:00 PM	4.7	3	168
9:00 PM	4.6	4	144
10:00 PM	4.5	4	142
11:00 PM	4.1	3	125
12:00 AM	4.1	5	128
Time	**SO2** (PPB)	**WSP** (MPH)	**WDIR** (DEG)

To: vennetta.hayes@la.gov[vennetta.hayes@la.gov]
Cc: Snyder, Erik[snyder.erik@epa.gov]
From: Mohr, Ashley
Sent: Mon 12/21/2015 9:15:34 PM
Subject: RE: Potential R6 Modeling workshop in Dallas in early November (REVISED DATES OF JANUARY 20 & 21, 2016)

Thank you Vennetta. Once we have additional details regarding the workshop, Erik or I will be sending out more information.

Have a Happy Holidays!

Thanks,

Ashley

THE POSITIONS or VIEWS CONTAINED IN THIS EMAIL DO NOT REPRESENT OFFICIAL EPA POLICY.

From: Vennetta Hayes [mailto:Vennetta.Hayes@LA.GOV]
Sent: Monday, December 21, 2015 2:55 PM
To: Mohr, Ashley <Mohr.Ashley@epa.gov>
Subject: RE: Potential R6 Modeling workshop in Dallas in early November (REVISED DATES OF JANUARY 20 & 21, 2016)

Ashley I don't know if anyone here has responded yet, but it appears that 3 of us will be attending pending travel approval.

From: Mohr, Ashley [mailto:Mohr.Ashley@epa.gov]
Sent: Monday, December 21, 2015 10:47 AM
To: Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Thomas Rheaume; Vennetta Hayes; Nguyen,

Tien; Yvette Olmos
Cc: Snyder, Erik
Subject: FW: Potential R6 Modeling workshop in Dallas in early November (REVISED DATES OF JANUARY 20 & 21, 2016)

All –

I wanted to follow-up with you to see if you had any feedback on the proposed dates of January 20th and 21st for the Region 6 Modeling Workshop. So far we have received confirmation from a few of our states for these dates, but I wanted check once more before finalizing for conference room reservation and HQs staff travel plans. **Please let me know by COB today if you are making plans to attend and these dates do not work for you or your staff that would be in attendance.**

Thanks,

Ashley

THE POSITIONS or VIEWS CONTAINED IN THIS EMAIL DO NOT REPRESENT OFFICIAL EPA POLICY.

From: Snyder, Erik
Sent: Wednesday, December 16, 2015 2:28 PM
To: Daniel Menendez <daniel.menendez@tceq.texas.gov>; Daniel Jamieson (Daniel.Jamieson@tceq.state.tx.us) <Daniel.Jamieson@tceq.state.tx.us>; Ron Thomas <Ron.Thomas@tceq.texas.gov>; Zarena Post <ZPost@tceq.texas.gov>; Jeff Stonesifer <jstonesifer@cabq.gov>; Sufi Mustafa <Sufi.Mustafa@state.nm.us>; Eric Peters <eric.peters@state.nm.us>; Gi-Dong <gi-dong.kim@state.nm.us>; Eric Milligan <Eric.Milligan@deq.ok.gov>; Lee Warden <lee.warden@DEQ.OK.gov>; Thomas Rheaume <rheaume@adeq.state.ar.us>; vennetta.hayes@la.gov; Nguyen, Tien <Nguyen.Tien@epa.gov>; Yvette Olmos <Yvette.Olmos@LA.GOV>; Smith, Jim <Smith.Jim@epa.gov>; Clark, David <CLARKD@adeq.state.ar.us>; Mark McCorkle (MAC@adeq.state.ar.us) <MAC@adeq.state.ar.us>

Cc: Mohr, Ashley <Mohr.Ashley@epa.gov>; Feldman, Michael <Feldman.Michael@epa.gov>
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Hi,

Making another run at this. I have locked down conference rooms here at the Region for January 20-21st to have a permit modeling workshop with most of the focus on SO2 modeling for CD and DRR sources. Looking at having James Thurman down from RTP and then some others by teleconference or video. Would be 1.5 to two days. I know we are getting towards the holidays but if you can let Ashley and I know if these dates would work by the end of this week, we can make sure James can get his travel done. I am going to be out of pocket for the rest of this week but please follow up with Ashley on any questions.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Daniel Menendez [mailto:daniel.menendez@tceq.texas.gov]
Sent: Tuesday, September 22, 2015 10:31 AM
To: Snyder, Erik
Cc: Ron Thomas
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

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Thanks,

Daniel

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Sent: Wednesday, August 19, 2015 11:16 AM
To: Daniel Menendez; Daniel Jamieson; Dominic Ruggeri; Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; vennetta.hayes@la.gov; Tien Nguyen; Yvette Olmos; Jim Smith
Cc: Mohr, Ashley; Feldman, Michael; Robinson, Jeffrey; Donaldson, Guy
Subject: Potential R6 Modeling workshop in Dallas in early November

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Please let me know your interest and availability (if this week works and if M-T, T-W or W-R is best). Also any ideas for specific topics/issues.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

To: Snyder, Erik[snyder.erik@epa.gov]
Cc: McCorkle, Mark[MAC@adeq.state.ar.us]
From: Clark, David
Sent: Wed 11/18/2015 7:53:05 PM
Subject: EPA/ADEQ/Entergy Call
removed.txt
ERM Review of Sierra Club Modeling - Entergy White Bluff Station - 111715.pdf
ERM Review of Sierra Club Modeling - Entergy Independence Station - 111715.pdf

Erik,

Attached are Entergy's/ERM's reviews of Sierra Club's 1-hour SO2 modeling of the Entergy facilities. We will also send a CD with ERM's manipulated Sierra Club AERMOD files (adding a culpability analysis for Independence) when we receive them from Entergy.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

U.S.A.

Voice: 501 682-0070

Fax: 501 682-0753

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From: Clark, David
Sent: Monday, November 16, 2015 8:56 AM
To: Snyder, Erik (snyder.erik@epa.gov)

Cc: McCorkle, Mark
Subject: FW: EPA/ADEQ/Entergy Call

Erik,

FYI: Everyone is good with our conference call/meeting this Wednesday November 18 at 10am. Below are the attendees for Entergy.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

North Little Rock, AR. 72118

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From: Triplett, David [mailto:dtripl1@entergy.com]
Sent: Monday, November 16, 2015 8:31 AM
To: Clark, David
Cc: McCorkle, Mark; JOHNSON, GEORGE; wood@gill-law.com; 'debra.jezouit@bakerbotts.com'; Richard Hamel (Richard.Hamel@erm.com)
Subject: RE: EPA/ADEQ/Entergy Call

Thanks David.

I have confirmed the attendees for Entergy for this meeting. They will be:

Myself

Tracy Johnson (Manager, Arkansas Environmental Support)

Rich Hamel (ERM)

Chad Wood (Gill Law Firm)

Debra Jezouit (Baker Botts)

Tracy, Chad, and I would like to attend in person at ADEQ. Rich and Debra will plan to call in with the information you provide below.

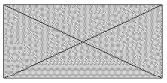
David Triplett, P.E.

Senior Lead Environmental Analyst

Air Lead, Arkansas Environmental Support

Entergy Services, Inc.

8-750-4030 (internal) | (501) 377-4030 (office) | (501) 650-1752 (cell)



From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Friday, November 13, 2015 12:26 PM
To: Triplett, David
Cc: McCorkle, Mark
Subject: RE: EPA/ADEQ/Entergy Call

David,

Erik Snyder is on board for 10am Wednesday November 18. We'll use this EPA call in number:

Ex. 6 - Personal Privacy Conf. Code Ex. 6 - Personal Privacy

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

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From: Triplett, David [mailto:dtripl1@entergy.com]
Sent: Tuesday, November 10, 2015 5:08 PM
To: Clark, David
Subject: EPA/ADEQ/Entergy Call

David,

I wanted to get back to you and let you know that a call at 10 am on Wednesday November 18th works for us. I will get back with you on exactly who, besides myself, will be participating on this call for Entergy. It looks like Rich Hamel with ERM will also be able to join us.

I am going to put this down on my calendar as a confirmed date/time. Please let me know if anything changes.

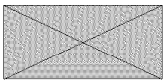
David Triplett, P.E.

Senior Lead Environmental Analyst

Air Lead, Arkansas Environmental Support

Entergy Services, Inc.

8-750-4030 (internal) | (501) 377-4030 (office) | (501) 650-1752 (cell)



To: Snyder, Erik[snyder.erik@epa.gov]
From: Clark, David
Sent: Fri 11/13/2015 6:23:26 PM
Subject: RE: EPA/ADEQ/Entergy 1-hour SO2 Sierra Club Modeling Conference Call

Thank you Erik, I'll pass your call in number on to Entergy.

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

5301 Northshore Drive

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U.S.A.

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From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Friday, November 13, 2015 12:21 PM
To: Clark, David
Subject: RE: EPA/ADEQ/Entergy 1-hour SO2 Sierra Club Modeling Conference Call

Hi David,

Some people are out today, but it looks like that time will work for us. We can use my #. It is 1-Ex. 6 - Personal Privacy Conf. Code Ex. 6 - Personal Privacy

Thanks for helping to coordinate.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Clark, David [mailto:CLARKD@adeq.state.ar.us]
Sent: Thursday, November 12, 2015 3:21 PM
To: Snyder, Erik
Subject: EPA/ADEQ/Entergy 1-hour SO2 Sierra Club Modeling Conference Call

Hello Erik,

Following up with you about a conference call on Wednesday November 18 to discuss Sierra Club's modeling of Entergy's Independence and White Bluff facilities. Does 10am work for your staff? Also, do you want to use an EPA call in number or I can provide an ADEQ call in number?

David

David W. Clark, M.S.

Epidemiologist

Air Division – Planning & Air Quality Analysis Branch
Arkansas Department of Environmental Quality

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To: Donaldson, Guy[Donaldson.Guy@epa.gov]
Cc: Huser, Jennifer[Huser.Jennifer@epa.gov]; Snyder, Erik[snyder.erik@epa.gov]; Feldman, Michael[Feldman.Michael@epa.gov]; Zachary Craft (zachary.craft@bakerbotts.com)[zachary.craft@bakerbotts.com]; Polozola, Gordon[Gordon.Polozola@nrg.com]; Ellender, Gary[Gary.Ellender@nrg.com]; vivian.aucoin@la.gov[vivian.aucoin@la.gov]; tegan.treadaway@la.gov[tegan.treadaway@la.gov]; O'Hara, Christopher C.[Chris.Ohara@nrg.com]
From: Eckberg, Craig
Sent: Fri 10/30/2015 7:44:24 PM
Subject: LaGen response to EPA's Section 114 information request
removed.txt
Appendix 1_EPAR6 Communication_BART Analysis NRG BC II.pdf
Appendix 2-2_NRG BC II Unit 1 DFGD Cost Calculation 10 29 2015_R2.xlsx
Appendix 2-3_NRG BC II Unit 1 WFGD Cost Calculation 10 29 2015_R3.xlsx
Appendix Cover Pages.docx
NRG LaGen 114 Response.pdf
Report- 5 Factor BART Analysis BC II_10 29 2015_FINAL.pdf

Please find the response of Louisiana Generating LLC (LaGen) to EPA's May 19, 2015 Clean Air Act Section 114 information request related to Units 1 and 2 of LaGen's Big Cajun II power plant in New Roads, Louisiana. Also attached is a report by CB&I. Another report by Sargent & Lundy LLC and an appendix to the CB&I report are being submitted separately as Confidential Business Information. Please contact me if you have any questions.

Craig

The hyperlink below provides access to the modeling files, which are also being provided in our hardcopy submittal today.

https://bbtransfer.bakerbotts.com/pickup/FycGxLUUp26J0DKISpfNNAL/Appendix_3_-_Louisiana_Generating_LLC_114_Modeling_Files.zip

The link will be available for approximately 3 days. If necessary, let me know and we will provide a new link to the same files.

Craig Eckberg

Director, Environmental Services

NRG Energy, Gulf Coast Region

1000 Main St., Houston, TX 77002

832-357-5291 (o)

281-850-6925 (c)

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From: Hansen, Mark
Location: R6-ConfRm-PineTree-06O15 <R6-ConfRm-PineTree-06O15@epa.gov>
Importance: Normal
Subject: SO2 Modeling from NRG
Start Date/Time: Thur 10/15/2015 3:00:00 PM
End Date/Time: Thur 10/15/2015 5:00:00 PM

Teleconference Info : Ex. 6 - Personal Privacy Conference Code Ex. 6 - Personal Privacy

SO2 modeling 1 hour NAAQS will be submitted by September 18

Limestone and Parish Units

Also Big Cajun 114 BART 5 Factor analysis questions

Craig Eckberg and Matt Kuryla in person

To: Snyder, Erik[snyder.erik@epa.gov]
Cc: Ron Thomas[Ron.Thomas@tceq.texas.gov]
From: Daniel Menendez
Sent: Tue 9/22/2015 3:30:30 PM
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Hi Erik,

Any updates on potential Region 6 modeling meeting?

Thanks,

Daniel

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Wednesday, August 19, 2015 11:16 AM
To: Daniel Menendez; Daniel Jamieson; Dominic Ruggeri; Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; vennetta.hayes@la.gov; Tien Nguyen; Yvette Olmos; Jim Smith
Cc: Mohr, Ashley; Feldman, Michael; Robinson, Jeffrey; Donaldson, Guy
Subject: Potential R6 Modeling workshop in Dallas in early November

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email: snyder.erik@epa.gov

To: Snyder, Erik[snyder.erik@epa.gov]
From: Ashford, Leon
Sent: Mon 9/21/2015 12:02:03 PM
Subject: RE: Modeling files used for the basis of our 2010 SO2 NAAQS Consent Decree recommendation

I will get it in the mail today.

Thanks

Leon

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Monday, September 21, 2015 7:01 AM
To: Ashford, Leon
Subject: RE: Modeling files used for the basis of our 2010 SO2 NAAQS Consent Decree recommendation

I haven't talked with Eric yet, but both would be appreciated. DVD is fine.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Ashford, Leon [mailto:Leon.Ashford@deq.ok.gov]
Sent: Friday, September 18, 2015 3:56 PM
To: Snyder, Erik
Subject: Modeling files used for the basis of our 2010 SO2 NAAQS Consent Decree

recommendation

Erik,

Has Eric Milligan talked to you about the modeling files? Would you want the report, the modeling files, or both? The report can be attached to email, but the modeling files are about 870 meg zipped, so we have used a DVD to transfer them.

Thanks

Leon Ashford

Oklahoma DEQ

To: Snyder, Erik[snyder.erik@epa.gov]
Cc: Daniel Menendez[daniel.menendez@tceq.texas.gov]; Jim Smith[jim.smith@tceq.texas.gov]
From: Ron Thomas
Sent: Wed 9/16/2015 2:10:43 PM
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Any more word on a workshop date?

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Monday, August 24, 2015 12:06 PM
To: Daniel Menendez
Cc: Dominic Ruggeri; Ron Thomas
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

I meant to include that we can have discussions earlier if we need too. Let me know.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Snyder, Erik
Sent: Monday, August 24, 2015 10:33 AM
To: 'Daniel Menendez'
Cc: Dominic Ruggeri; Ron Thomas
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Hi Daniel,

Appreciate the feedback. Not sure if we can do earlier due to timing and other commitments. The final DRR did provide some additional time for modeling and materials supporting monitor(s) locations. The only thing due January 16, 2016 is the list of sources and the final modeling and monitoring recommendations are due July 1st 2016 is my understanding. I know you all have internal review dates that would back up some from these dates. Do you have a revised timeline when you have to have the proposed sources for management review?

Give me a call if you have time and we can chat further.

-Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

From: Daniel Menendez [mailto:daniel.menendez@tceq.texas.gov]
Sent: Monday, August 24, 2015 7:51 AM
To: Snyder, Erik
Cc: Dominic Ruggeri; Ron Thomas
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Hello Erik,

We are glad to hear you are considering a Region 6 modelers meeting. It is something we are interested in and will begin the process to get travel approval once the dates have been confirmed.

That being said, we hope you can consider earlier dates for the meeting. With the short time frame requirements of the DRR, an earlier meeting would be beneficial so that we can incorporate any discussions during the meeting into our plan to evaluate the DRR sources. A meeting in November would not allow much time before the January deadline to identify the

sources/areas to be evaluated.

Thanks,

Daniel

From: Snyder, Erik [mailto:snyder.erik@epa.gov]
Sent: Wednesday, August 19, 2015 11:16 AM
To: Daniel Menendez; Daniel Jamieson; Dominic Ruggeri; Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; vennetta.hayes@la.gov; Tien Nguyen; Yvette Olmos; Jim Smith
Cc: Mohr, Ashley; Feldman, Michael; Robinson, Jeffrey; Donaldson, Guy
Subject: Potential R6 Modeling workshop in Dallas in early November

Hi,

We haven't had a Region 6 modelers workshop in Dallas in a while. With the final DRR and proposed changes in App. W, thought it might be a good time to have a meeting here in Dallas. I am not planning on discussing photochemical issues other than maybe secondary pollutant analysis for permits. The main focus would be modeling for the SO2 sources as part of the SO2 Phase 3 and 4 designations process (either modeling directly or modeling for monitor locations around a facility). We could also discuss other issues if there is interest. I was thinking some discussion on ozone and PM2.5 impacts from single source for permitting might and what sources should be included in cumulative analysis are two topics that might also be beneficial. At this time I am targeting the first week in November (11/2-11/5) as possible date(s). Would only plan for 1 or two days within this period but we have locked meeting space for M-R currently. I think we will be able to get one or two people from OAQPS that week to come to Dallas (James Thurman and/or George Bridgers most likely). They are available for travel and this would be after the close of the proposed changes to App. W, so we could talk about any of the proposed changes.

Please let me know your interest and availability (if this week works and if M-T, T-W or W-R is best). Also any ideas for specific topics/issues.

Thanks,

Erik

Erik Snyder

Lead Regional Air Quality Modeler
EPA Region 6
Phone: 214-665-7305
Fax: 214-665-7263
email: snyder.erik@epa.gov

To: Snyder, Erik[snyder.erik@epa.gov]
Cc: Daniel Menendez[daniel.menendez@tceq.texas.gov]; Jim Smith[jim.smith@tceq.texas.gov]; Zarena Post[zarena.post@tceq.texas.gov]
From: Ron Thomas
Sent: Fri 8/28/2015 1:37:46 PM
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

Erik,

Daniel is out all that week, and I am out Monday and Tuesday of that week, and I agree with Daniel that earlier would be better.

Please consider this as you finalize dates.

Let us know if you have alternative dates that we can chime in on.

-Ron

From: Daniel Menendez
Sent: Monday, August 24, 2015 7:51 AM
To: Snyder, Erik
Cc: Dominic Ruggeri; Ron Thomas
Subject: RE: Potential R6 Modeling workshop in Dallas in early November

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Daniel

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Sent: Wednesday, August 19, 2015 11:16 AM
To: Daniel Menendez; Daniel Jamieson; Dominic Ruggeri; Ron Thomas; Zarena Post; Jeff Stonesifer; Sufi Mustafa; Eric Peters; Gi-Dong; Eric Milligan; Lee Warden; Thomas Rheaume; vennetta.hayes@la.gov; Tien Nguyen; Yvette Olmos; Jim Smith
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Erik

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