UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
25063 CENTER RIDGE ROAD
WESTLAKE, OH 44145-4114

March 2, 2017

MEMORANDUM

SUBJECT: Clean Air Act Monitoring, American Electric Power, Cheshire, Ohio

FROM: Katharina Bellairs, Environmental Engineer (ME-W) KB

THRU: Mark Conti, Lead Environmental Engineer (ME-W) MEC

TO: Air Enforcement and Compliance Assurance Branch, IL/IN Section (AE-18J)
Nathan Frank, Section Chief

On October 28, 2016, I performed off-site visible emission readings under the Clean Air Act at American Electric Power, Gavin Station, Cheshire, Ohio, at Ethan Chatfield's request. My findings are attached.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
25063 CENTER RIDGE ROAD
WESTLAKE, OHIO 44145

DATE:	March 2, 2017
SUBJECT:	CLEAN AIR ACT OFF-SITE MONITORING EVALUTION REPORT American Electric Power – Gavin Generating Station
FROM:	Katharina Bellairs, Environmental Engineer OECA – Cleveland Office
THRU:	Mark Conti, Lead Environmental Engineer OECA – Cleveland Office
TO:	Nathan Frank, Section Chief Air & Radiation Division, AECAB (IL/IN)

BASIC INFORMATION

Facility Name: American Electric Power – Gavin Generating Station

Facility Location: 4 7397 Ohio Seven, Cheshire, Ohio 45620

Date of Inspection: October 28, 2016

Lead Monitor: Katharina Bellairs, Environmental Engineer

Purpose of Monitoring Evaluation: Perform Method 9 and Alternative Method 082 Opacity Readings

Facility Type: Electric Generating Station

Arrival Time: approximately 1:50 p.m. EST
Departure Time: approximately 2:50 p.m. EST

MONITORING INFORMATION

Field Measurements: were taken during this inspection.
I arrived in Robinson, West Virginia, across the Ohio River from the Gavin Power Plant, and stopped near the intersection of Airport Road and Ohio River Road. I performed Method 9 visible emissions readings from 2:02 p.m. to 2:32 p.m. EST and Method 082 alternative visible

emission readings with Virtual Technology's opacity camera from 1:59 p.m. EST to 2:40 p.m. EST. My reading location was at 38.913728, -82.113848.

SIGNATURES

Lead Monitor: _____ Date: 3/2/17

Lead Environmental Engineer: Mark Conti Date: 3-2-2017

APPENDICES AND ATTACHMENTS

Method 9 Visible Opacity Reading Sheets
Virtual Technology Method 082 Report

VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME: AEP Gavin

LOCATION: 7397 OH-7

LOCATION:

CITY: Cheshire | STATE: OH | ZIP: 45620

PROCESS EQUIPMENT: Eastern Stack | OPERATING MODE: operating

CONTROL EQUIPMENT: | OPERATING MODE:

DESCRIBE EMISSION POINT: point in plume after steam

HEIGHT ABOVE GROUND LEVEL: ~~1100 ft~~ 2400 ft | HEIGHT RELATIVE TO OBSERVER: START 2305 ft END 2305 ft

DISTANCE FROM OBSERVER: START 7296 ft END 7296 ft | DIRECTION FROM OBSERVER: START 357° END 357°

VERTICAL ANGLE TO PLUME: 18° | HORIZONTAL ANGLE TO PLUME: ~~18°~~ OK 12/21/16

DESCRIBE EMISSIONS: START gray smoke after water droplet plume END gray smoke after water droplet plume

EMISSION COLOR: START gray END gray | IF WATER DROPLET PLUME: ATTACHED ☒ DETACHED ☐ NA ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START highest non-folding point END highest non-folding point in plume

DESCRIBE PLUME BACKGROUND: START blue sky END blue sky

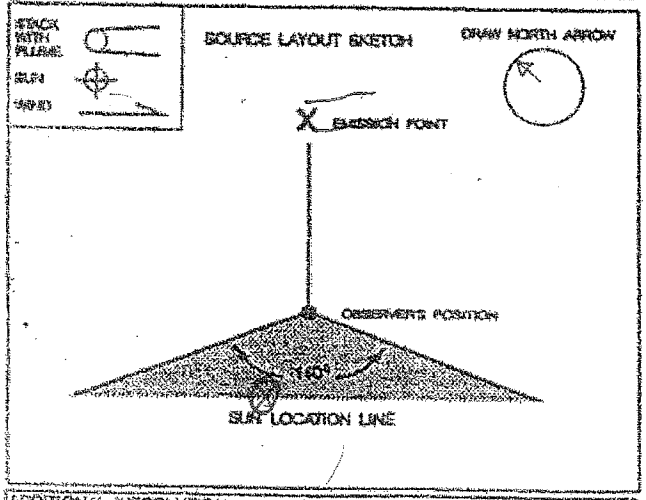
BACKGROUND COLOR: START blue END blue | SKY CONDITIONS: START clear END clear

WIND SPEED: START 4 mph END 4 mph | WIND DIRECTION: START NW END NW

AMBIENT TEMP: START 52°F END 52°F | WET BULB TEMP: 39°F | RH percent: 61%

STACK WITH PLUME | SUN | WIND

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



ADDITIONAL INFORMATION:

OBSERVATION DATE	START TIME	END TIME
10/28/16	2:02pm	2:32pm

MIN \ SEC	0	15	30	45	COMMENTS
1	75	75	75	75	
2	75	70	70	70	
3	70	75	65	55	
4	60	45	65	55	
5	60	65	70	65	
6	70	70	65	60	
7	60	60	65	45	
8	45	50	45	45	
9	45	45	50	40	
10	50	60	40	45	
11	50	45	45	50	
12	50	40	40	60	
13	55	55	45	50	
14	55	55	45	50	
15	50	45	40	35	
16	45	40	45	55	
17	60	55	55	45	
18	45	50	50	45	
19	45	40	45	35	
20	40	40	45	40	
21	50	55	60	55	
22	55	55	50	60	
23	55	55	50	40	
24	40	45	50	50	
25	45	40	40	35	
26	35	40	30	40	
27	40	45	60	70	
28	60	60	45	50	
29	50	65	60	55	
30	50	60	55	40	

OBSERVER'S NAME (PRINT): Katharina Ballairs

OBSERVER'S SIGNATURE: [signature] | DATE: 10/28/16

ORGANIZATION: ~~Whitlow Enterprises~~ US EPA

CERTIFIED BY: Whitlow Enterprises | DATE: 10/13/16

CONTINUED ON VEO FORM NUMBER:

VISIBLE EMISSION OBSERVATION FORM

Form Number	Page Of
Continued on VEO Form Number	

Method Used	
Equipment Owner	N/A
Facility Name	AEP Gavin Power Plant
EO Street Address	7397 OH-7
EO City	Cheshire
EO State	OH
EO Zip	45620

Process	Unit	Operating Mode
N/A	N/A	N/A
Control Equipment		Operating Mode
N/A		N/A

Describe Emission Point
gray emissions after the condensed water plume from middle stack

Height of Emiss. Pt.	Height of Emiss. Pt. Rel. to Observer
Start 2374.47 End Same	Start 2370.47 End Same
Distance to Emiss. Pt.	Direction to Emiss. Pt. (Degrees)
Start 7295.56 End Same	Start 356.56 End Same

Vertical Angle to Obs. Pt.	Direction to Obs. Pt.
Start 18 End Same	Start 23.67 End Same

Distance and Direction to Observation Point from Emission Point
Start 3732.72 / 86.63 End Same

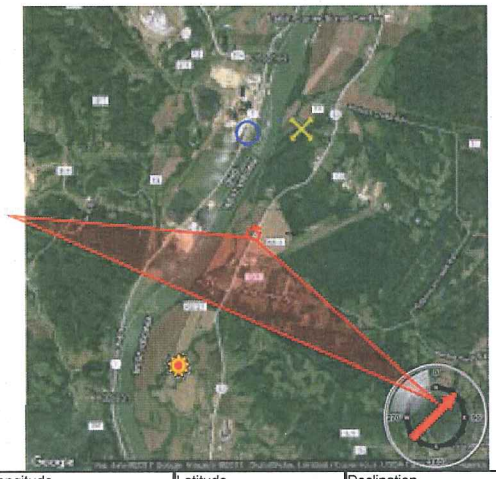
Describe Emissions
Start gray looping plume after condensed water plume End Same

Emission Color	Water Droplet Plume
Start End	Attached: (X) Detached: ( ) N/A: ( )

Describe Plume Background
Start blue sky End Same

Background Color	Sky Conditions
Start blue End Same	Start Clear End Same
Wind Speed	Wind Direction
Start 4 End Same	Start NW End Same

Ambient Temp.	Wet Bulb Temp.	RH Percent
Start 52 End Same	Start 39 End Same	Start 61 End Same



Longitude	Latitude	Declination
082.06.50.612 W	38.54.49.201 N	

Notes
Contact Katharina Bellairs, 4402501713, bellairs.katharina@epa.gov

Observation Date	Time Zone	Start Time	End Time
10/28/2016	EST	13:59:24	14:40:23

					Comments
1	50	45	45	50	
2	45	45	40	40	
3	45	40	40	45	Avg. Opacity = 44.167
4	45	45	40	45	
5	45	45	50	40	
6	45	45	40	45	
7	45	45	40	40	
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11	35	40	40	40	
12	45	35	45	40	
13	45	35	35	40	
14	45	45	45	45	
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19	40	40	40	45	
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26	30	45	40	35	
27	45	40	40	40	
28	45	45	40	45	
29	45	40	40	40	
30	45	40	45	40	
31	45	45	45	40	
32	45	40	45	45	

Observers Name (Print)	
Katharina Bellairs	
Observers Signature	Date
Katharina Bellairs	12/22/2016
Organization	
USEPA Region 5	
Certified By	Date
Katharina Bellairs	2/27/2017

	0	15	30	45	Comments
33	40	45	45	45	
34	45	45	45	40	
35	45	45	40	40	
36	40	45	45	45	
37	45	40	40	40	
38	45	45	40	45	
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Source

Name: AEP Gavin Power Plant
Address: 7397 OH-7
City: Cheshire
State: OH
Zip: 45620
Phone:
Local ID:

Regulatory

Permit ID:
Condition:
Regulatory Reference:

Process

Process: N/A
Unit: N/A
Operating Mode: N/A

Complaint

Name:
Address:
City:
State: NA
Zip:

Equipment

Name: N/A

Type of Inspection

Type of Inspection: Surveillance

Sun

Altitude: 32.6
Azimuth: 211.2
Data Source: Calculated

Map Information

Map Type: USGSDRG
Map Width: 32100

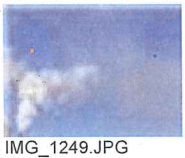
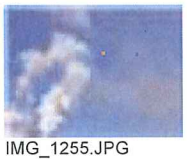
Analysis

Averaging Type: Manual
Method: Method 9
Number of Images: 24
Rolling High Count: 24
Seconds Between Images: 15
Who Created: DOCS II
Creation Date: 9/22/2011

Analyst Name: Pat Grieco
Affiliation: Virtual Technology LLC
Comments:

Image	Opacity	Coordinates	Date Taken	Camera Information
IMG_1233.JPG	50	**Foreground Coordinates** T L B R 170 347 182 357 **Background Coordinates** T L B R 177 41 189 52	**Date Taken** 10/28/2016 1:59:24 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1234.JPG	45	**Foreground Coordinates** T L B R 166 373 178 384 **Background Coordinates** T L B R 166 73 178 84	**Date Taken** 10/28/2016 1:59:39 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1235.JPG	45	**Foreground Coordinates** T L B R 162 342 174 353 **Background Coordinates** T L B R 159 523 171 533	**Date Taken** 10/28/2016 1:59:54 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1236.JPG	50	**Foreground Coordinates** T L B R 159 398 171 408 **Background Coordinates** T L B R 168 551 180 562	**Date Taken** 10/28/2016 2:00:09 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1237.JPG	45	**Foreground Coordinates** T L B R 213 454 225 465 **Background Coordinates** T L B R 208 572 220 582	**Date Taken** 10/28/2016 2:00:24 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1238.JPG	45	**Foreground Coordinates** T L B R 90 478 102 488 **Background Coordinates** T L B R 90 583 102 594	**Date Taken** 10/28/2016 2:00:39 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1239.JPG	40	**Foreground Coordinates** T L B R 94 492 106 502 **Background Coordinates** T L B R 98 585 110 596	**Date Taken** 10/28/2016 2:00:54 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1240.JPG	40	**Foreground Coordinates** T L B R 105 508 117 518 **Background Coordinates** T L B R 106 594 118 605	**Date Taken** 10/28/2016 2:01:09 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	

Image	Opacity	Coordinates	Date Taken	Camera Information
IMG_1241.JPG	45	**Foreground Coordinates** T L B R 99 513 111 524 **Background Coordinates** T L B R 100 75 112 85	**Date Taken** 10/28/2016 2:01:24 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1242.JPG	40	**Foreground Coordinates** T L B R 110 493 122 503 **Background Coordinates** T L B R 126 60 138 70	**Date Taken** 10/28/2016 2:01:39 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1243.JPG	40	**Foreground Coordinates** T L B R 128 543 140 553 **Background Coordinates** T L B R 94 60 106 70	**Date Taken** 10/28/2016 2:01:54 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1244.JPG	45	**Foreground Coordinates** T L B R 142 523 154 533 **Background Coordinates** T L B R 37 592 49 603	**Date Taken** 10/28/2016 2:02:09 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1245.JPG	45	**Foreground Coordinates** T L B R 165 429 177 439 **Background Coordinates** T L B R 172 96 184 107	**Date Taken** 10/28/2016 2:02:24 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1246.JPG	45	**Foreground Coordinates** T L B R 159 543 171 553 **Background Coordinates** T L B R 88 421 100 432	**Date Taken** 10/28/2016 2:02:39 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1247.JPG	40	**Foreground Coordinates** T L B R 150 556 162 566 **Background Coordinates** T L B R 100 445 112 455	**Date Taken** 10/28/2016 2:02:54 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1248.JPG	45	**Foreground Coordinates** T L B R 210 576 222 587 **Background Coordinates** T L B R 153 450 165 461	**Date Taken** 10/28/2016 2:03:09 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	

Image	Opacity	Coordinates	Date Taken	Camera Information
 IMG_1249.JPG	45	**Foreground Coordinates** T L B R 182 544 194 555 **Background Coordinates** T L B R 163 97 175 108	**Date Taken** 10/28/2016 2:03:24 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1250.JPG	45	**Foreground Coordinates** T L B R 195 544 207 555 **Background Coordinates** T L B R 189 149 201 160	**Date Taken** 10/28/2016 2:03:39 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1251.JPG	50	**Foreground Coordinates** T L B R 196 569 208 580 **Background Coordinates** T L B R 150 223 162 233	**Date Taken** 10/28/2016 2:03:54 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1252.JPG	40	**Foreground Coordinates** T L B R 195 566 207 577 **Background Coordinates** T L B R 189 223 201 233	**Date Taken** 10/28/2016 2:04:09 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1253.JPG	45	**Foreground Coordinates** T L B R 192 433 204 444 **Background Coordinates** T L B R 189 333 201 343	**Date Taken** 10/28/2016 2:04:24 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1254.JPG	45	**Foreground Coordinates** T L B R 192 475 204 485 **Background Coordinates** T L B R 190 341 202 352	**Date Taken** 10/28/2016 2:04:39 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
 IMG_1255.JPG	40	**Foreground Coordinates** T L B R 174 477 186 487 **Background Coordinates** T L B R 169 353 181 364	**Date Taken** 10/28/2016 2:04:54 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	
IMG_1256.JPG	45	**Foreground Coordinates** T L B R 171 495 183 505 **Background Coordinates** T L B R 172 364 184 374	**Date Taken** 10/28/2016 2:05:09 PM **Camera Mfg/Model** Canon/Canon PowerShot G15 **Wind Direction** SW **Wind Speed** 9 **Temperature** 56 **Rel Humidity** 60 **Wet Bulb Temp** 42	