UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS
75202-2733

November 17, 2015

Village of Doyline
ATTN: Gary Carter, Mayor
P.O. Box 626
Doyline, Louisiana 71023

RE: May 2015 Sampling of Doyline Water Tower
Doyline, Louisiana

Dear Mr. Carter,

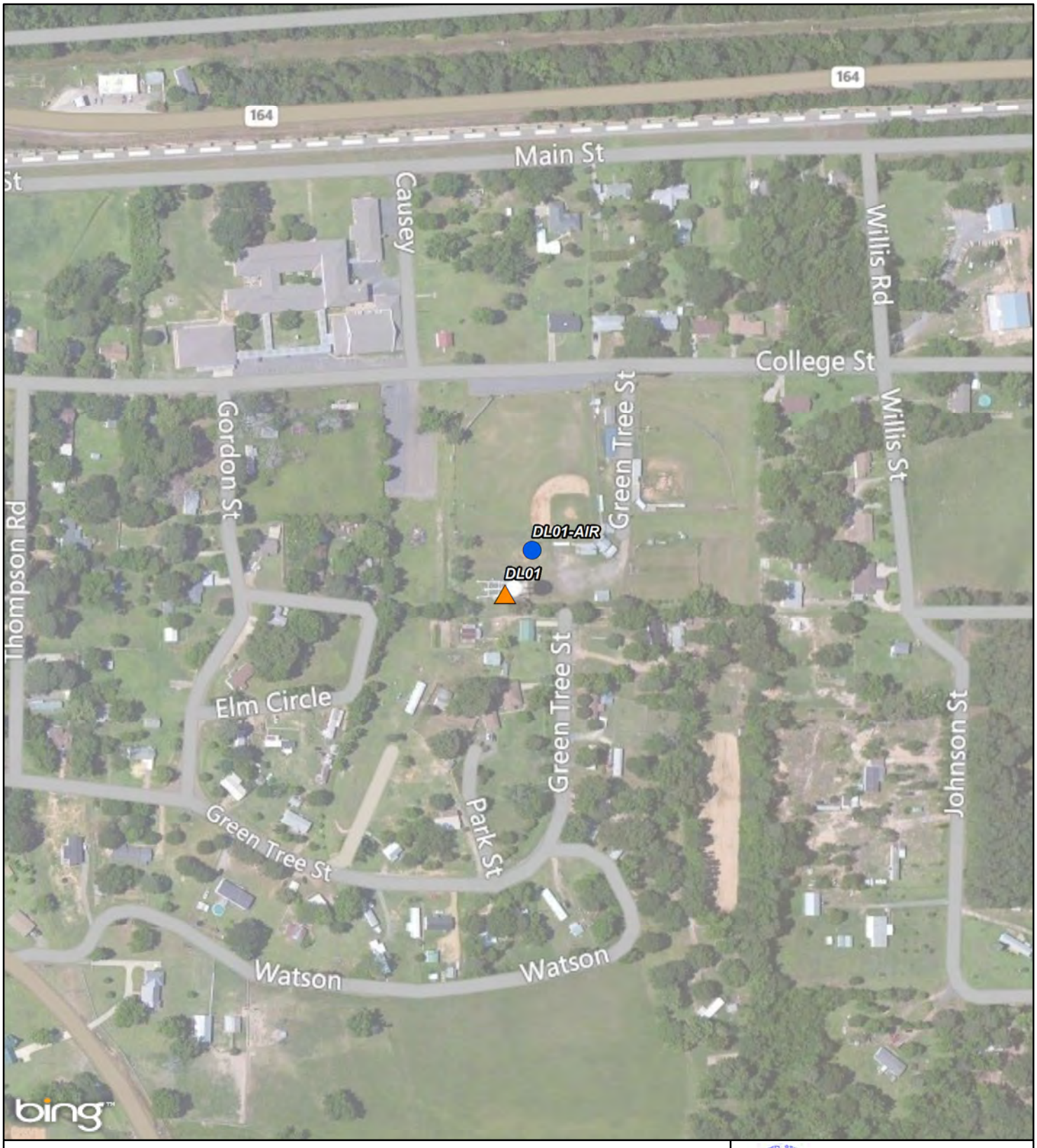
The Environmental Protection Agency (EPA) conducted real-time air monitoring and collected soil and air samples from near the Doyline Water Tower in May 2015. The monitoring and sampling was conducted to establish a baseline for soil and air prior to implementation of the removal operations at Camp Minden. Air monitoring was for carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxide (NO), nitrogen dioxide (NO2), NOX, sulfur dioxide (SO2), and fine particulates (2.5 micrometers [PM2.5]). Soil samples were analyzed for dioxin/furans, semi-volatile organic compounds (SVOCs), pH, and volatile organic compounds (VOCs). The air samples were analyzed for dioxin/furans, SVOCs, particulates (PM10 and PM2.5), and volatile organic compounds (VOCs).

Maximum detections for air monitoring are summarized on Table 1 - Air Monitoring Summary, and the data collected during the monitoring period is presented as graphs. The analytical results for the soil samples are summarized on the attached Table 2 - Soil Analytical Results. The results for the air samples are summarized on Tables 3 and 4 - Air Analytical Results. The monitoring and sampling location is shown on the attached figure.

Thank you for your cooperation. Please contact me at 214-665-2779 (office), Adam.Adams@epa.gov (email), or the EPA toll free number 800-533-3508 if you have any questions.

Adam Adams
On-Scene Coordinator
Prevention and Response Branch
USEPA Region 6 Dallas, TX

Enclosures: Table 1 – Air Monitoring Summary with graphs by analyte
Table 2 – Soil Analytical Results
Table 3 – Air Analytical Results – Dioxin/Furans
Table 4 – Air Analytical Results – SVOCs, Particulates and VOCs
Figure 1 - Sample Location Map
Toxicology Summary



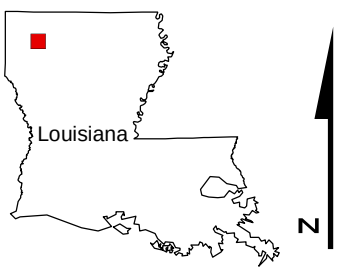
0 300 600

Feet

LEGEND

Soil Sampling Location

Air Sampling Location



TDD NO: 5/WESTON-042-15-006
CONTRACT NO: EP-W-06-042

SOURCE: 2010 Microsoft Corporation and its data suppliers

US EPA REGION 6

FIGURE 1
SAMPLE LOCATION MAP
DOYLINE WATER TOWER
DOYLINE, WEBSTER PARISH
LOUISIANA

DATE	PROJECT NO	SCALE
NOVEMBER 2015	20406.012.005.0934.01	AS SHOWN

FILE: L:\20406_START3_R6\EXPLO_SYSTEMS\GIS\1_WESTON-042-14-012\Figure 1 Sample Location Map Doyline Watertower.mxd 3:23:42 PM 11/2/2015 millerv

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region VI

Air Monitoring Summary

Camp Minden Baseline Event
Doyline Water Tower
Start Time: 05-13-2015 10:01 - End Time: 05-15-2015 11:01

Below is a summary of Doyline Water Tower Air Monitoring Data collected at the location referenced above. The table contains a detailed listing of the following:

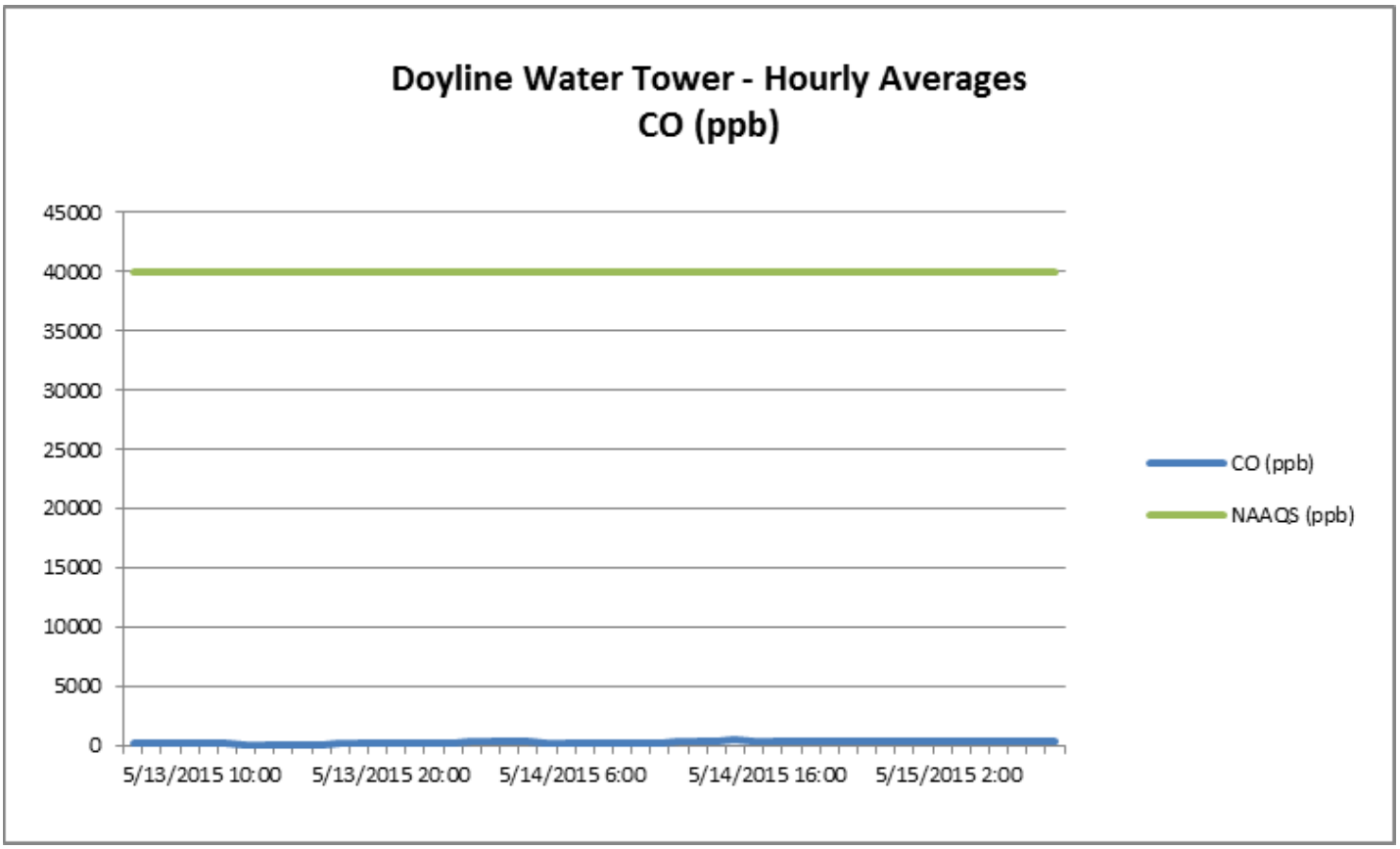
1 Total count of readings from May 13, 2015 10:01 through May 15, 2015 11:01
2 Average reading of each analyte from May 13, 2015 10:01 through May 15, 2015 11:01
3 Maximum reading of each analyte from May 13, 2015 10:01 through May 15, 2015 11:01

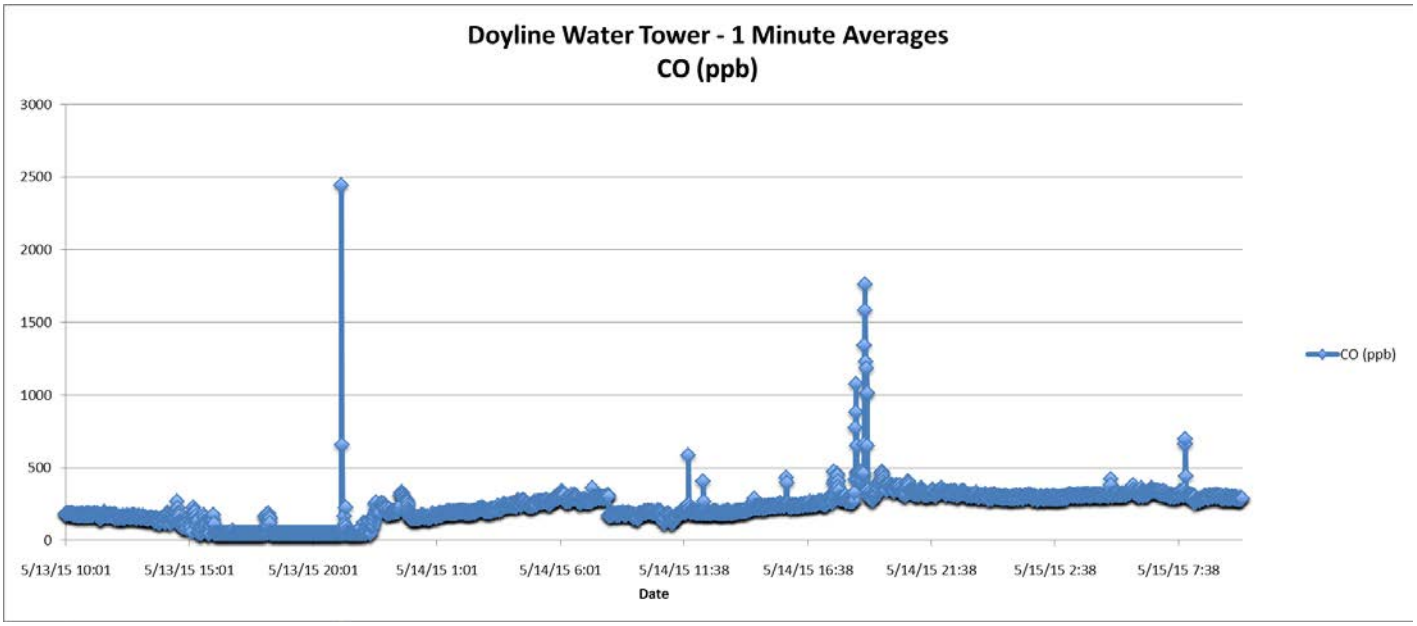
National Ambient Air Quality Standards (NAAQS) are listed with specific time frames and calculation formulas. Please visit NAAQS website for more in-depth information on how these are calculated - http://www.epa.gov/air/criteria.html.

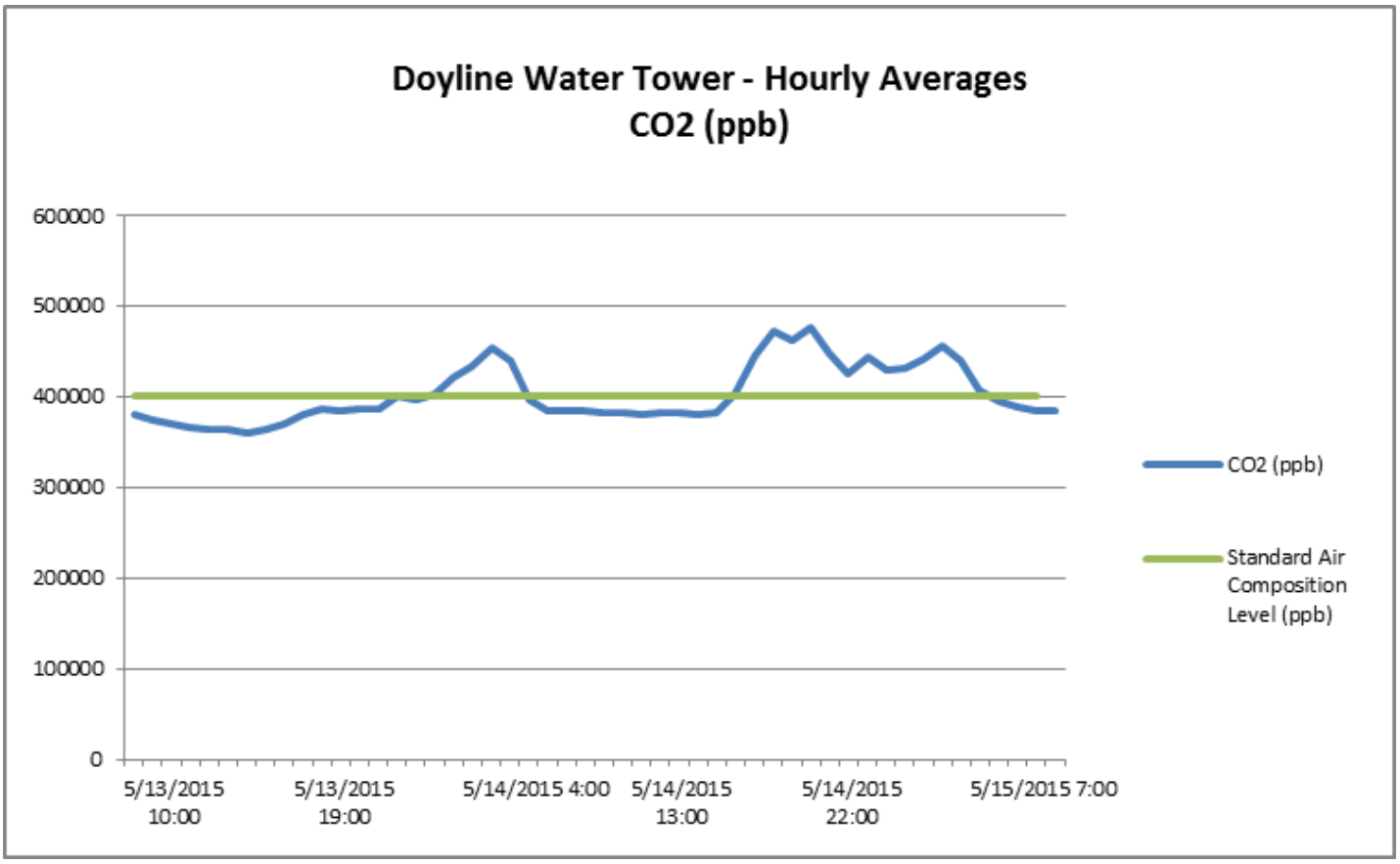
** Note: PM2.5 was captured in 60-min averages. All other analytes were captured in 1-min averages.

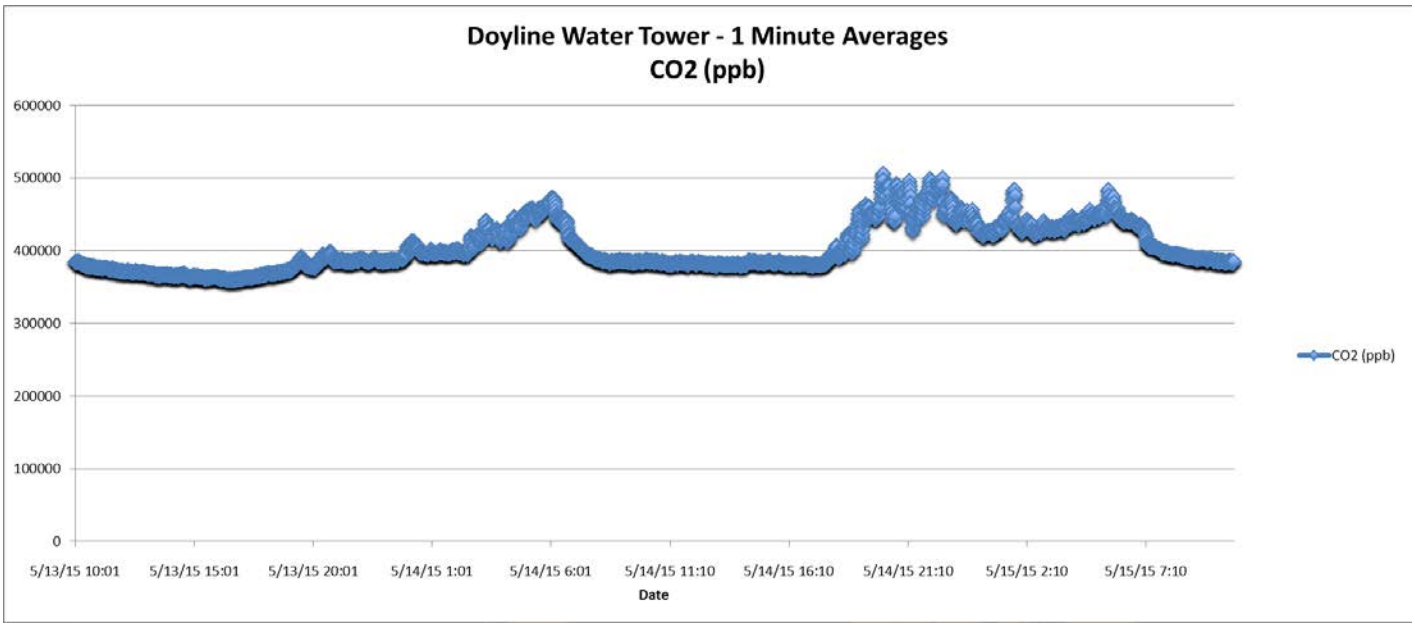
Summary of Location: Doyline Water Tower

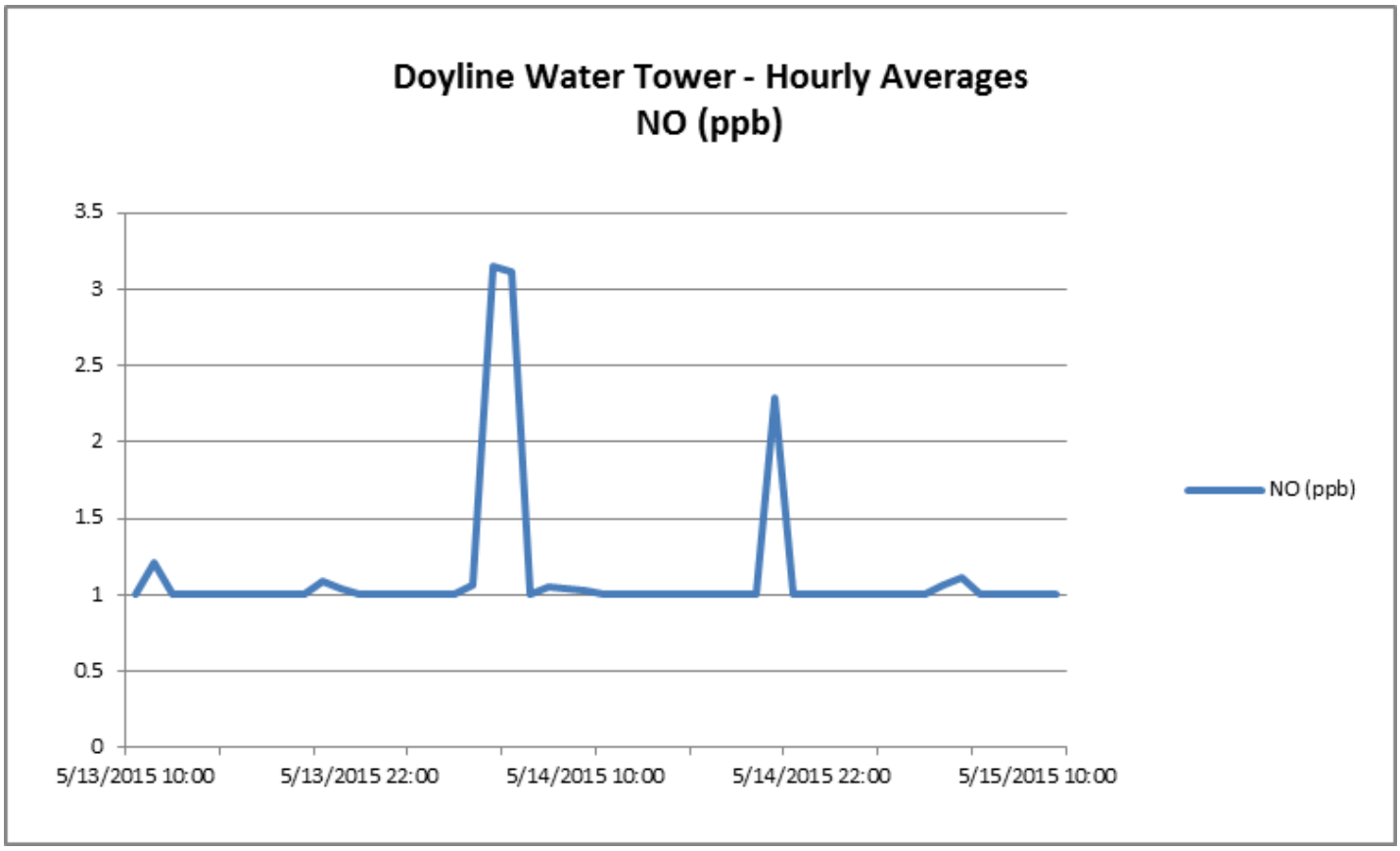
Parameter	Count of 1-min Readings	Maximum Average Concentration	Maximum Detection	Units	NAAQS standard
CO	2855	455.8	2442	ppb	40,000 (1-hour)
CO2	2923	477700	505600	ppb	
NO	2912	3.145	24.3	ppb	
NO2	2912	5.905	10.6	ppb	100 (1-hour)
NOX	2912	9.05	29.3	ppb	188 (1-hour)
SO2	2838	4.246	6.557	ppb	365 (3-hour)
Parameter	Count of 60-min Readings	Maximum Average Concentration	Maximum Detection	Units	NAAQS standard
PM 2.5	49	15.7875	23.6	ug/m3	35 (24-hour)

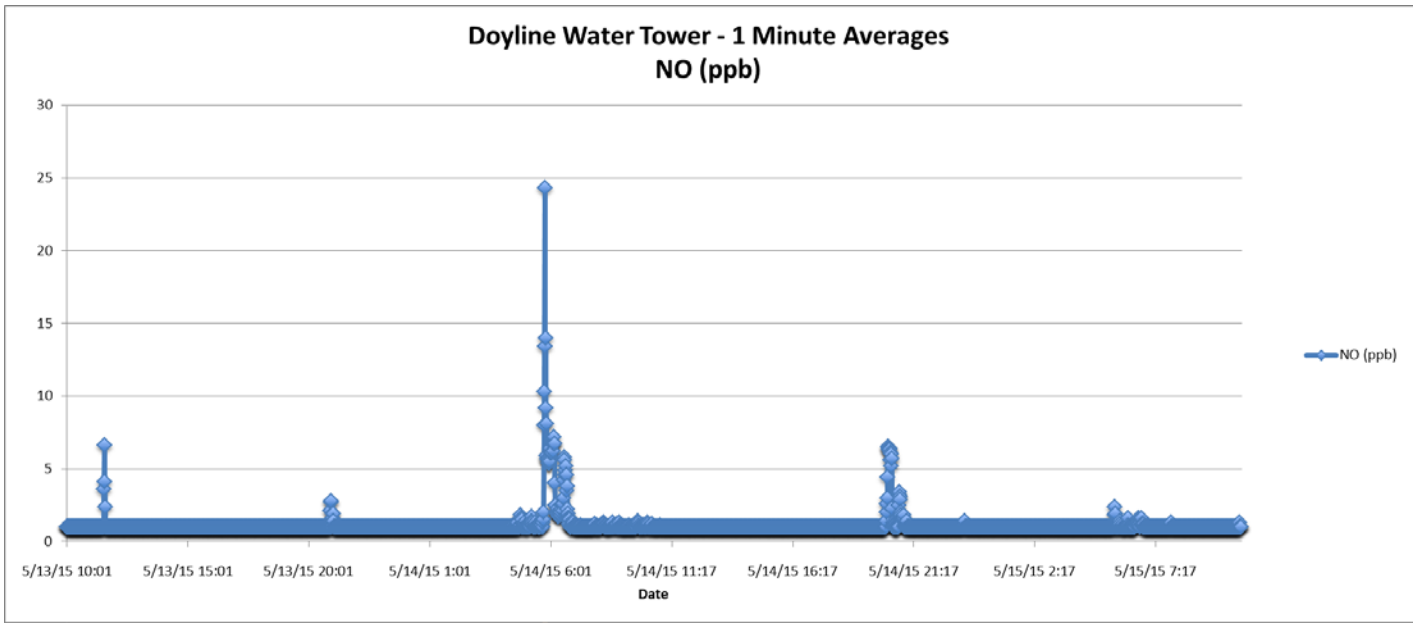

Doyline Water Tower - Hourly Averages
CO (ppb)
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
5/13/2015 10:00
5/13/2015 20:00
5/14/2015 6:00
5/14/2015 16:00
5/15/2015 2:00
CO (ppb)
NAAQS (ppb)

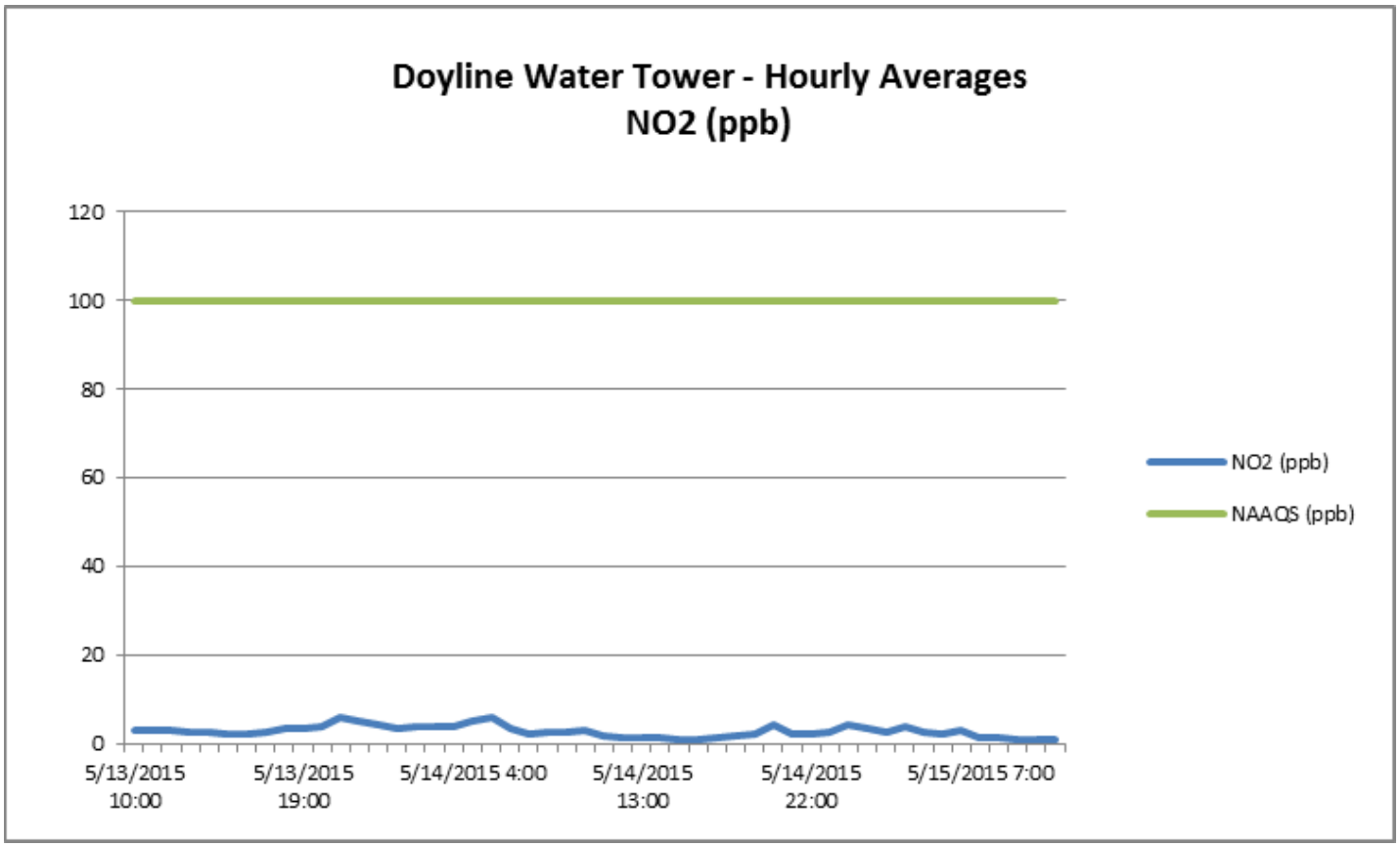

Doyline Water Tower - 1 Minute Averages
CO (ppb)
3000
2500
2000
1500
1000
500
0
5/13/15 10:01
5/13/15 15:01
5/13/15 20:01
5/14/15 1:01
5/14/15 6:01
5/14/15 11:38
5/14/15 16:38
5/14/15 21:38
5/15/15 2:38
5/15/15 7:38
Date
CO (ppb)

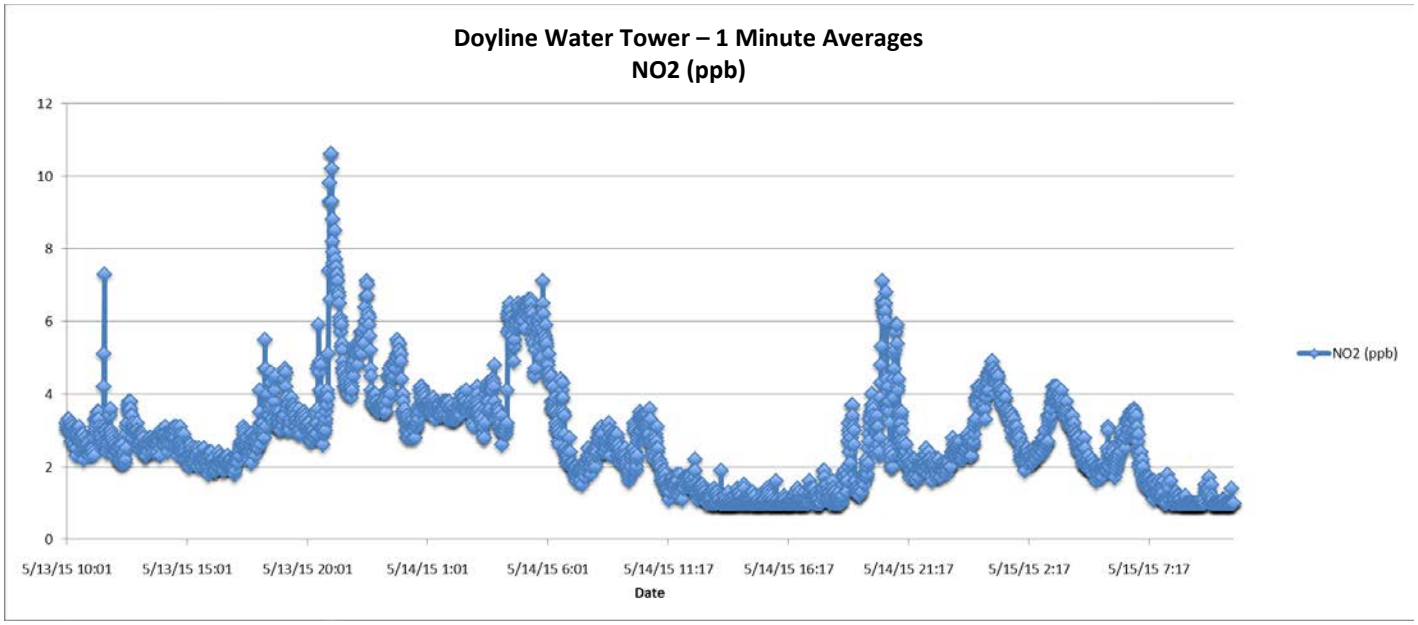

Doyline Water Tower - Hourly Averages
CO2 (ppb)
600000
500000
400000
300000
200000
100000
0
5/13/2015 10:00
5/13/2015 19:00
5/14/2015 4:00
5/14/2015 13:00
5/14/2015 22:00
5/15/2015 7:00
CO2 (ppb)
Standard Air Composition Level (ppb)

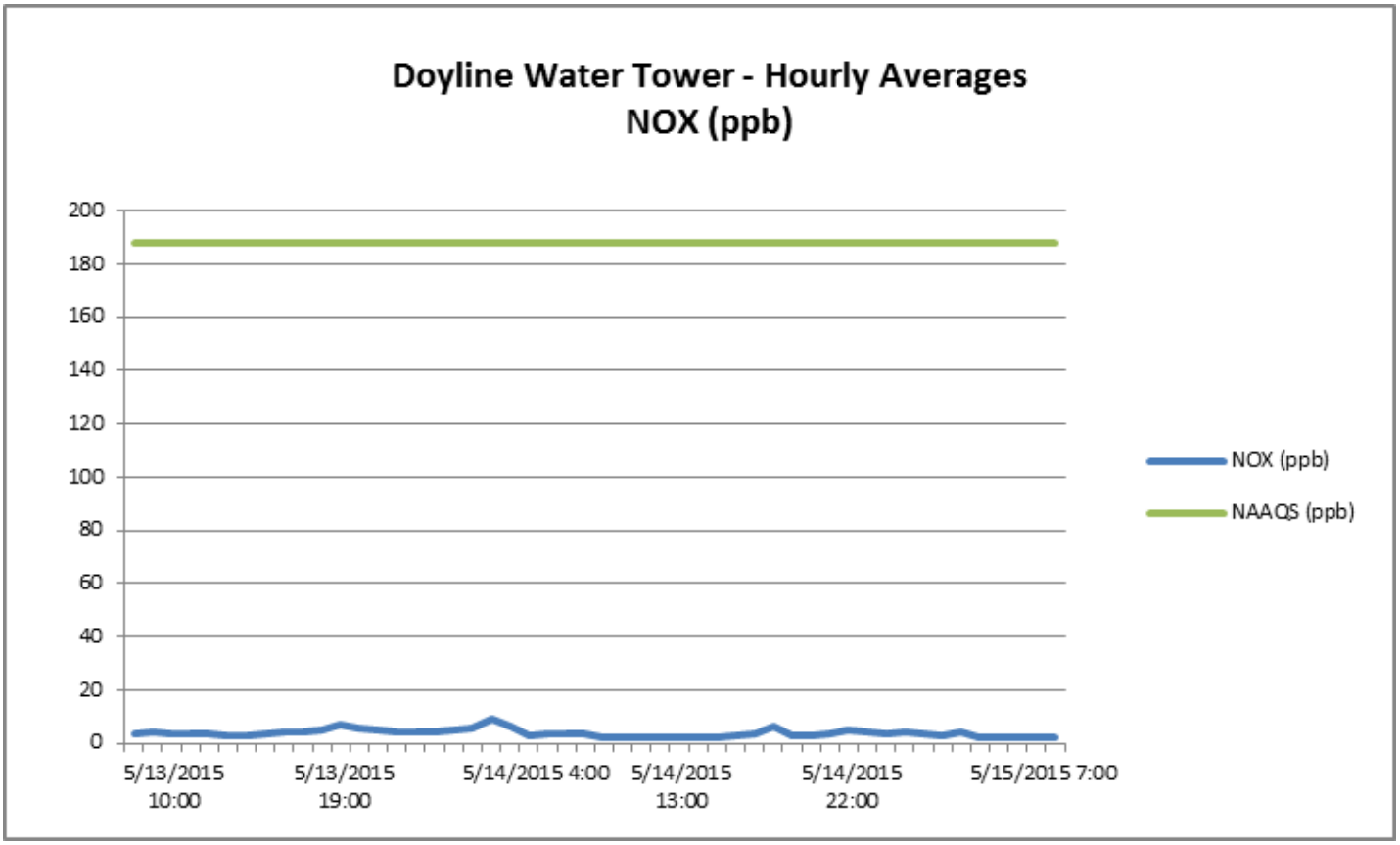

Doyline Water Tower - 1 Minute Averages
CO2 (ppb)
600000
500000
400000
300000
200000
100000
0
5/13/15 10:01
5/13/15 15:01
5/13/15 20:01
5/14/15 1:01
5/14/15 6:01
5/14/15 11:10
5/14/15 16:10
5/14/15 21:10
5/15/15 2:10
5/15/15 7:10
Date
CO2 (ppb)

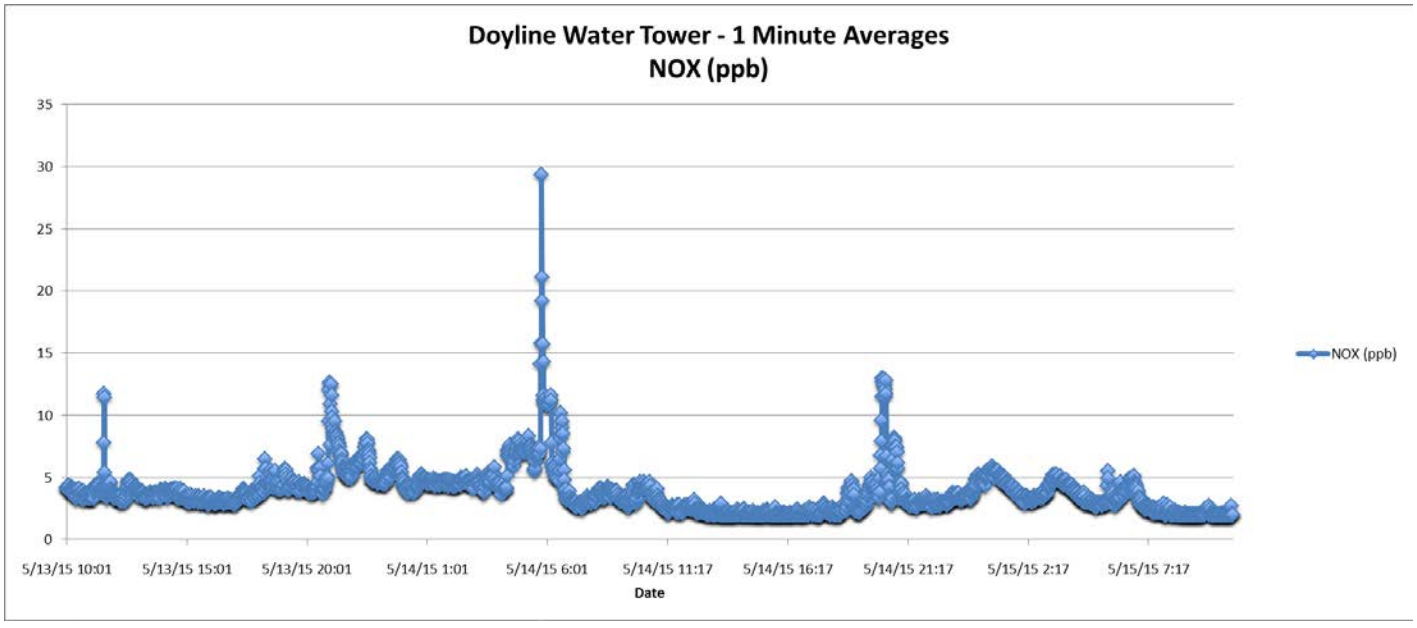

Doyline Water Tower - Hourly Averages
NO (ppb)
3.5
3
2.5
2
1.5
1
0.5
0
5/13/2015 10:00
5/13/2015 22:00
5/14/2015 10:00
5/14/2015 22:00
5/15/2015 10:00
NO (ppb)

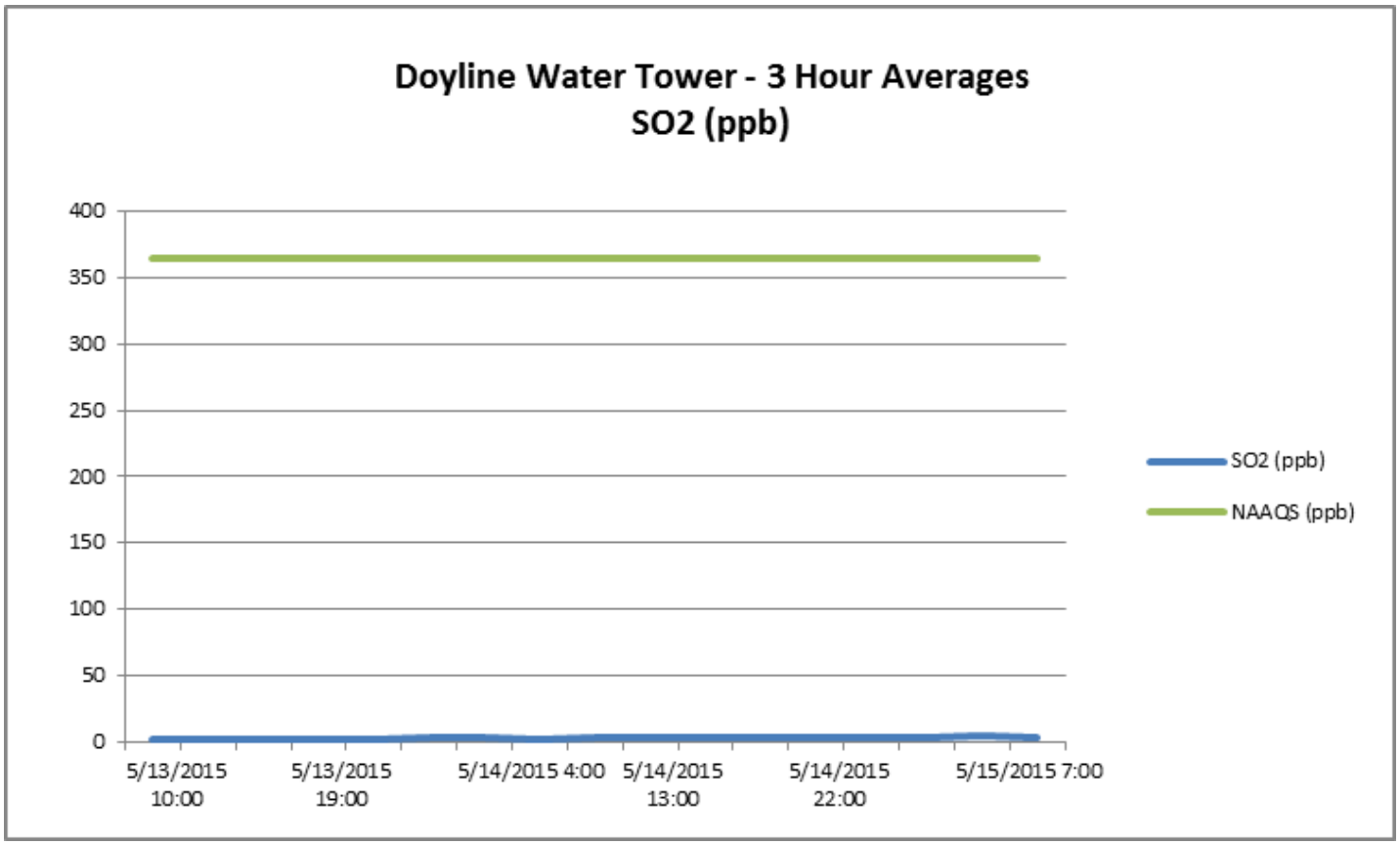

Doyline Water Tower - 1 Minute Averages
NO (ppb)
30
25
20
15
10
5
0
5/13/15 10:01
5/13/15 15:01
5/13/15 20:01
5/14/15 1:01
5/14/15 6:01
5/14/15 11:17
5/14/15 16:17
5/14/15 21:17
5/15/15 2:17
5/15/15 7:17
Date
NO (ppb)

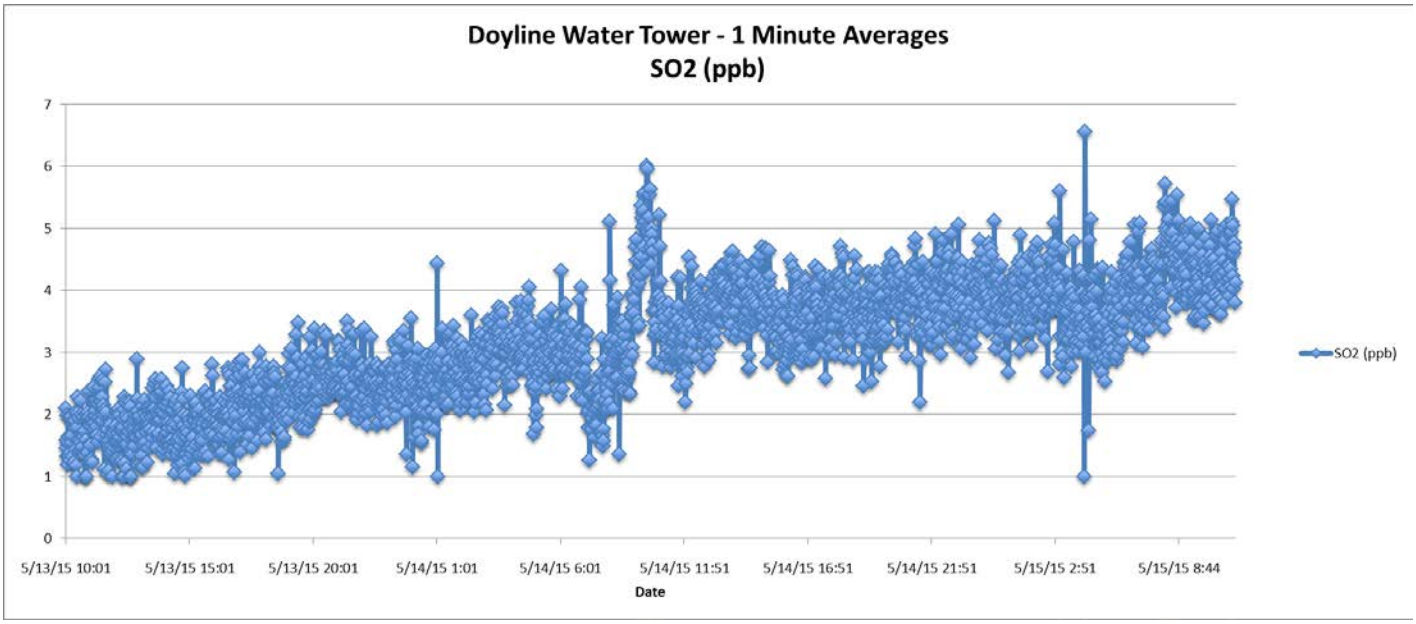

Doyline Water Tower - Hourly Averages
NO2 (ppb)
120
100
80
60
40
20
0
5/13/2015 10:00
5/13/2015 19:00
5/14/2015 4:00
5/14/2015 13:00
5/14/2015 22:00
5/15/2015 7:00
NO2 (ppb)
NAAQS (ppb)

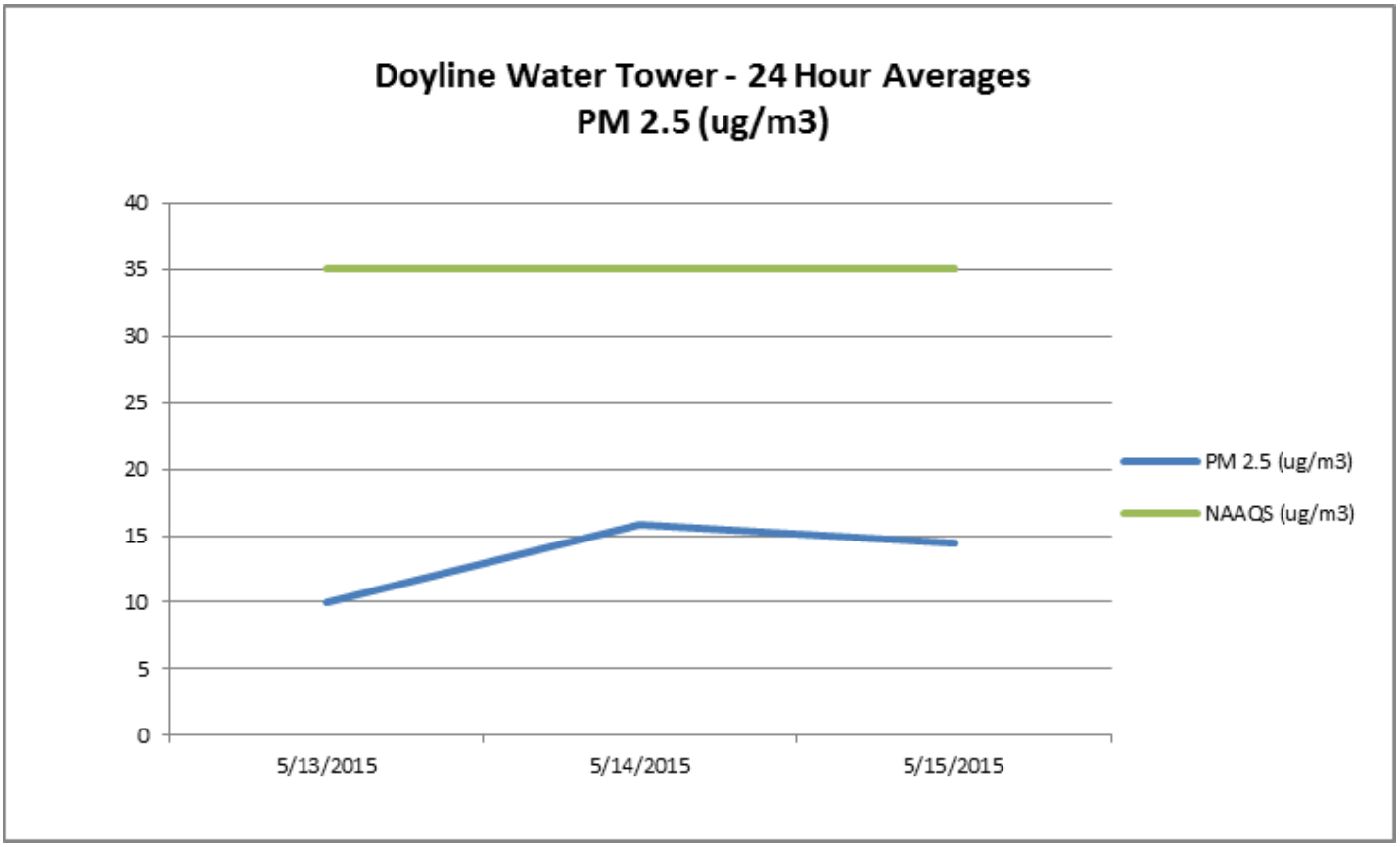

Doyline Water Tower – 1 Minute Averages
NO2 (ppb)
12
10
8
6
4
2
0
5/13/15 10:01
5/13/15 15:01
5/13/15 20:01
5/14/15 1:01
5/14/15 6:01
5/14/15 11:17
5/14/15 16:17
5/14/15 21:17
5/15/15 2:17
5/15/15 7:17
Date
NO2 (ppb)


Doyline Water Tower - Hourly Averages
NOX (ppb)
200
180
160
140
120
100
80
60
40
20
0
5/13/2015 10:00
5/13/2015 19:00
5/14/2015 4:00
5/14/2015 13:00
5/14/2015 22:00
5/15/2015 7:00
NOX (ppb)
NAAQS (ppb)


Doyline Water Tower - 1 Minute Averages
NOX (ppb)
35
30
25
20
15
10
5
0
5/13/15 10:01
5/13/15 15:01
5/13/15 20:01
5/14/15 1:01
5/14/15 6:01
5/14/15 11:17
5/14/15 16:17
5/14/15 21:17
5/15/15 2:17
5/15/15 7:17
Date
NOX (ppb)


Doyline Water Tower - 3 Hour Averages
SO2 (ppb)
400
350
300
250
200
150
100
50
0
5/13/2015 10:00
5/13/2015 19:00
5/14/2015 4:00
5/14/2015 13:00
5/14/2015 22:00
5/15/2015 7:00
SO2 (ppb)
NAAQS (ppb)


Doyline Water Tower - 1 Minute Averages
SO2 (ppb)
7
6
5
4
3
2
1
0
5/13/15 10:01
5/13/15 15:01
5/13/15 20:01
5/14/15 1:01
5/14/15 6:01
5/14/15 11:51
5/14/15 16:51
5/14/15 21:51
5/15/15 2:51
5/15/15 8:44
Date
SO2 (ppb)


Doyline Water Tower - 24 Hour Averages
PM 2.5 (ug/m3)
40
35
30
25
20
15
10
5
0
5/13/2015
5/14/2015
5/15/2015
PM 2.5 (ug/m3)
NAAQS (ug/m3)

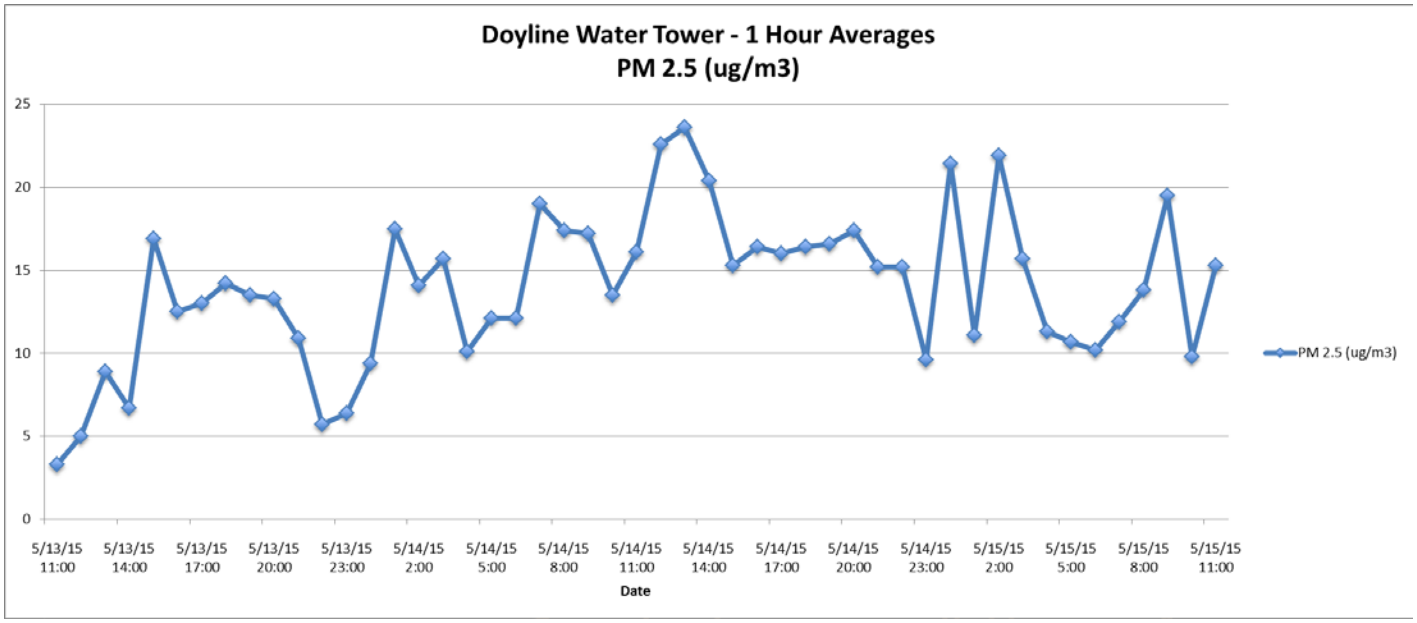

Doyline Water Tower - 1 Hour Averages
PM 2.5 (ug/m3)
25
20
15
10
5
0
5/13/15 11:00
5/13/15 14:00
5/13/15 17:00
5/13/15 20:00
5/13/15 23:00
5/14/15 2:00
5/14/15 5:00
5/14/15 8:00
5/14/15 11:00
5/14/15 14:00
5/14/15 17:00
5/14/15 20:00
5/14/15 23:00
5/15/15 2:00
5/15/15 5:00
5/15/15 8:00
5/15/15 11:00
Date
PM 2.5 (ug/m3)

Table 2
Soil Analytical Results
Doyline Water Tower
Camp Minden - Explo Baseline Study

			Property	Doyline, Water Tower
			Station	DL01
			Date	5/14/2015
			Type	FS
Analyte	**CAS.NO**	**Units**	**--**	**--**
Dioxin TEQ				
TEQ WHO2005 ND=0	3333-30-0	ng/kg	--	**0.63**
TEQ WHO2005 ND=0.5	3333-30-1	ng/kg	--	**2.29**
Dioxin/Furans				
1,2,3,4,6,7,8,9-OCDD	3268-87-9	ng/kg	--	**941**
1,2,3,4,6,7,8,9-OCDF	39001-02-0	ng/kg	--	**16.7**
1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	--	**29.6**
1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	--	**4.68**
1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	--	4.42 U
1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	--	4.42 U
1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	--	4.42 U
1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	--	4.42 U
1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	--	4.42 U
1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	--	4.42 U
1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	--	4.42 U
1,2,3,7,8-PeCDD	40321-76-4	ng/kg	--	4.42 U
1,2,3,7,8-PeCDF	57117-41-6	ng/kg	--	4.42 U
2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	--	4.42 U
2,3,4,7,8-PeCDF	57117-31-4	ng/kg	--	4.42 U
2,3,7,8-TCDD	1746-01-6	ng/kg	--	0.883 U
2,3,7,8-TCDF	51207-31-9	ng/kg	--	0.883 U
Total Heptachlorodibenzofuran	38998-75-3	ng/kg	--	**15.8**
Total Heptachlorodibenzo-p-dioxin	37871-00-4	ng/kg	--	**98.2**
Total Hexachlorodibenzofuran	55684-94-1	ng/kg	--	**1.97 J**
Total Hexachlorodibenzo-p-dioxin	34465-46-8	ng/kg	--	**7.77**
Total Pentachlorodibenzofuran	30402-15-4	ng/kg	--	4.42 U
Total Pentachlorodibenzo-p-dioxin	36088-22-9	ng/kg	--	4.42 U
Total Tetrachlorodibenzofuran	30402-14-3	ng/kg	--	0.883 U
Total Tetrachlorodibenzo-p-dioxin	41903-57-5	ng/kg	--	0.883 U
pH				
pH	C-006	pH Units	--	**5.3**
SVOCs				
2,4-Dinitrotoluene	121-14-2	µg/Kg	--	223 U
2,6-Dinitrotoluene	606-20-2	µg/Kg	--	223 U
2-Methylnaphthalene	91-57-6	µg/Kg	--	223 U
Acenaphthene	83-32-9	µg/Kg	--	223 U
Acenaphthylene	208-96-8	µg/Kg	--	223 U
Anthracene	120-12-7	µg/Kg	--	223 U
Benzo (a) anthracene	56-55-3	µg/Kg	--	223 U
Benzo (a) pyrene	50-32-8	µg/Kg	--	223 U
Benzo (b) fluoranthene	205-99-2	µg/Kg	--	223 U
Benzo (g,h,i) perylene	191-24-2	µg/Kg	--	223 U
Benzo (k) fluoranthene	207-08-9	µg/Kg	--	223 U
Chrysene	218-01-9	µg/Kg	--	223 U

Table 2
Soil Analytical Results
Doyline Water Tower
Camp Minden - Explo Baseline Study

			Property	Doyline, Water Tower
			Station	DL01
			Date	5/14/2015
			Type	FS
Analyte	**CAS.NO**	**Units**	**--**	**--**
Dibenz (a,h) anthracene	53-70-3	µg/Kg	--	223 U
Di-n-butyl phthalate	84-74-2	µg/Kg	--	223 U
Fluoranthene	206-44-0	µg/Kg	--	223 U
Fluorene	86-73-7	µg/Kg	--	223 U
Indeno (1,2,3-cd) pyrene	193-39-5	µg/Kg	--	223 U
Naphthalene	91-20-3	µg/Kg	--	223 U
N-Nitrosodiphenylamine/Diphenylamine	86-30-6/122-39-4	µg/Kg	--	223 U
Phenanthrene	85-01-8	µg/Kg	--	223 U
Pyrene	129-00-0	µg/Kg	--	223 U
VOCs				
1,1,1-Trichloroethane	71-55-6	µg/Kg	--	4.5 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/Kg	--	4.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	µg/Kg	--	4.5 U
1,1,2-Trichloroethane	79-00-5	µg/Kg	--	4.5 U
1,1-Dichloroethane	75-34-3	µg/Kg	--	4.5 U
1,1-Dichloroethene	75-35-4	µg/Kg	--	4.5 U
1,2,4-Trichlorobenzene	120-82-1	µg/Kg	--	4.5 U
1,2-Dibromo-3-chloropropane	96-12-8	µg/Kg	--	4.5 U
1,2-Dibromoethane	106-93-4	µg/Kg	--	4.5 U
1,2-Dichlorobenzene	95-50-1	µg/Kg	--	4.5 U
1,2-Dichloroethane	107-06-2	µg/Kg	--	4.5 U
1,2-Dichloropropane	78-87-5	µg/Kg	--	4.5 U
1,3-Dichlorobenzene	541-73-1	µg/Kg	--	4.5 U
1,4-Dichlorobenzene	106-46-7	µg/Kg	--	4.5 U
2-Butanone	78-93-3	µg/Kg	--	4.5 U
2-Hexanone	591-78-6	µg/Kg	--	4.5 U
4-Methyl-2-pentanone	108-10-1	µg/Kg	--	4.5 U
Acetone	67-64-1	µg/Kg	--	**11.7 B, J**
Benzene	71-43-2	µg/Kg	--	4.5 U
Bromodichloromethane	75-27-4	µg/Kg	--	4.5 U
Bromoform	75-25-2	µg/Kg	--	4.5 U
Bromomethane	74-83-9	µg/Kg	--	4.5 U
Carbon disulfide	75-15-0	µg/Kg	--	4.5 U
Carbon tetrachloride	56-23-5	µg/Kg	--	4.5 U
Chlorobenzene	108-90-7	µg/Kg	--	4.5 U
Chloroethane	75-00-3	µg/Kg	--	4.5 U
Chloroform	67-66-3	µg/Kg	--	4.5 U
Chloromethane	74-87-3	µg/Kg	--	4.5 U
cis-1,2-Dichloroethene	156-59-2	µg/Kg	--	4.5 U
cis-1,3-Dichloropropene	10061-01-5	µg/Kg	--	4.5 U
Cyclohexane	110-82-7	µg/Kg	--	4.5 U
Dibromochloromethane	124-48-1	µg/Kg	--	4.5 U
Dichlorodifluoromethane	75-71-8	µg/Kg	--	4.5 U
Ethylbenzene	100-41-4	µg/Kg	--	4.5 U

Table 2
Soil Analytical Results
Doyline Water Tower
Camp Minden - Explo Baseline Study

			Property	Doyline, Water Tower
			Station	DL01
			Date	5/14/2015
			Type	FS
Analyte	**CAS.NO**	**Units**	**--**	**--**
Isopropylbenzene	98-82-8	µg/Kg	--	4.5 U
meta-/para-Xylene	na	µg/Kg	--	9.1 U
Methyl acetate	79-20-9	µg/Kg	--	4.5 U
Methyl tert-butyl ether	1634-04-4	µg/Kg	--	4.5 U
Methylcyclohexane	108-87-2	µg/Kg	--	4.5 U
Methylene chloride	75-09-2	µg/Kg	--	4.5 U
ortho-Xylene	95-47-6	µg/Kg	--	4.5 U
Styrene	100-42-5	µg/Kg	--	4.5 U
Tetrachloroethene	127-18-4	µg/Kg	--	4.5 U
Toluene	108-88-3	µg/Kg	--	4.5 U
trans-1,2-Dichloroethene	156-60-5	µg/Kg	--	4.5 U
trans-1,3-Dichloropropene	10061-02-6	µg/Kg	--	4.5 U
Trichloroethene	79-01-6	µg/Kg	--	4.5 U
Trichlorofluoromethane	75-69-4	µg/Kg	--	4.5 U
Vinyl chloride	75-01-4	µg/Kg	--	4.5 U
Xylenes (total)	1330-20-7	µg/Kg	--	**0**

Notes:

ng/kg - nanograms per kilogram

µg/kg - micrograms per kilogram

FS - Field Sample

TEQ - Toxicity Equivalency Quotient calculated based on 2005 World Health Organization (WHO) dioxin toxicity equivalency factors (TEF).

B - Found in blank

J - Estimated value

U - Below detection limit

Bolded values denote detections

Table 3
Air Analytical Results - Dioxin/Furans
Doyline Water Tower
Camp Minden - Explo Baseline Study

			Station	Doyline Water Tower
			Station Code	DL01-Air
			Date	5/15/2015
			Type	FS
Analyte	**CAS.NO**	**Units**	**--**	**--**
TEQ Calculation 2005				
TEQ (Dioxin) ND = DL	1746-01-6	pg/m3	--	**0.0591982035768**
TEQ (Dioxin) ND = 0	1746-01-6	pg/m3	--	**0.0591982035768**
TEQ (Dioxin) ND = DL/2	1746-01-6	pg/m3	--	**0.0591982035768**
Dioxins/Furans				
1,2,3,4,6,7,8-HpCDD	35822-46-9	pg/m3	--	**0.144013167**
1,2,3,4,6,7,8-HpCDF	67562-39-4	pg/m3	--	**0.26608147**
1,2,3,4,7,8,9-HpCDF	55673-89-7	pg/m3	--	**0.032231518 J**
1,2,3,4,7,8-HxCDD	39227-28-6	pg/m3	--	**0.008078453 J**
1,2,3,4,7,8-HxCDF	70648-26-9	pg/m3	--	**0.054039226 J**
1,2,3,6,7,8-HxCDD	57653-85-7	pg/m3	--	**0.024687971 J**
1,2,3,6,7,8-HxCDF	57117-44-9	pg/m3	--	**0.055959402 J**
1,2,3,7,8,9-HxCDD	19408-74-3	pg/m3	--	**0.017418735 J**
1,2,3,7,8,9-HxCDF	72918-21-9	pg/m3	--	**0.029076944 J**
1,2,3,7,8-PeCDD	40321-76-4	pg/m3	--	**0.008078453 J**
1,2,3,7,8-PeCDF	57117-41-6	pg/m3	--	**0.025785215 J**
2,3,4,6,7,8-HxCDF	60851-34-5	pg/m3	--	**0.106021122**
2,3,4,7,8-PeCDF	57117-31-4	pg/m3	--	**0.041558085 J**
2,3,7,8-TCDD	1746-01-6	pg/m3	--	**0.00227678 J**
2,3,7,8-TCDF	51207-31-9	pg/m3	--	**0.01549856**
OCDD	3268-87-9	pg/m3	--	**0.215333973**
OCDF	39001-02-0	pg/m3	--	**0.120285283**
Total HpCDD	37871-00-4	pg/m3	--	**0.370319572**
Total HpCDF	38998-75-3	pg/m3	--	**0.410094637**
Total HxCDD	34465-46-8	pg/m3	--	**0.529419833**
Total HxCDF	55684-94-1	pg/m3	--	**0.7598409**
Total PeCDD	36088-22-9	pg/m3	--	**0.622685503**
Total PeCDF	30402-15-4	pg/m3	--	**0.934028254**
Total TCDD	41903-57-5	pg/m3	--	**1.080784529**
Total TCDF	55722-27-5	pg/m3	--	**1.051981895**

Notes:

pg/m3 - picograms per cubic meter

Bolded values denote detections

FS - Field Sample

J - Estimated concentration, detected between the sample detection limit (SDL) and the practical quantitation limit (PQL).

TEQ - Toxicity Equivalency Quotient calculated based on 2005 World Health Organization (WHO) dioxin toxicity equivalency factors (TEF).

U - Not detected above the indicated detection limit.

Table 4
Air Analytical Results - SVOCs, Particulates and VOCs
Doyline Water Tower
Camp Minden - Explo Baseline Study

			Station	Doyline Water Tower	
			Station Code	DL01-Air	
			Date	5/14/2015	5/15/2015
			Type	FS	FS
Analyte	**CAS.NO**	**Units**	**--**	**--**	**--**
Semi-volatile Organic Compounds (SVOC)					
2,4-Dinitrotoluene	121-14-2	µg/m3	--	0.014 U	0.013 U
2,6-Dinitrotoluene	606-20-2	µg/m3	--	0.014 U	0.013 U
2-Chloronaphthalene	91-58-7	µg/m3	--	0.0028 U	0.0027 U
2-Methylnaphthalene	91-57-6	µg/m3	--	**0.0057**	**0.0093**
Acenaphthene	83-32-9	µg/m3	--	**0.004**	**0.0054**
Acenaphthylene	208-96-8	µg/m3	--	0.0028 U	0.0027 U
Anthracene	120-12-7	µg/m3	--	0.0028 U	0.0027 U
Benzo(a)anthracene	56-55-3	µg/m3	--	0.0028 U	0.0027 U
Benzo(a)pyrene	50-32-8	µg/m3	--	0.0028 U	0.0027 U
Benzo(b)fluoranthene	205-99-2	µg/m3	--	0.0028 U	0.0027 U
Benzo(g,h,i)perylene	191-24-2	µg/m3	--	0.0028 U	0.0027 U
Benzo(k)fluoranthene	207-08-9	µg/m3	--	0.0028 U	0.0027 U
Chrysene	218-01-9	µg/m3	--	0.0028 U	0.0027 U
Dibenz(a,h)anthracene	53-70-3	µg/m3	--	0.0028 U	0.0027 U
di-n-Butylphthalate	84-74-2	µg/m3	--	**0.067**	0.054 U
Diphenylamine	122-39-4	µg/m3	--	0.028 U	0.027 U
Fluoranthene	206-44-0	µg/m3	--	0.0028 U	0.0027 U
Fluorene	86-73-7	µg/m3	--	**0.0031**	**0.0038**
Indeno(1,2,3-c,d)pyrene	193-39-5	µg/m3	--	0.0028 U	0.0027 U
Naphthalene	91-20-3	µg/m3	--	**0.01**	**0.016**
Phenanthrene	85-01-8	µg/m3	--	**0.0069**	**0.0082**
Pyrene	129-00-0	µg/m3	--	0.0028 U	0.0027 U
Particulate Size					
PM10	PM10	µg/m3	--	**19.3**	**25.5**
PM2.5	PM2.5	µg/m3	--	**10.6**	**14.2**
VOCs					
1,1,1-Trichloroethane	71-55-6	µg/m3	--	5.3 U	6.1 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/m3	--	6.6 U	7.6 U
1,1,2-Trichloroethane	79-00-5	µg/m3	--	5.3 U	6.1 U
1,1-Dichloroethane	75-34-3	µg/m3	--	3.9 U	4.5 U
1,1-Dichloroethene	75-35-4	µg/m3	--	3.8 U	4.4 U
1,2,4-Trichlorobenzene	120-82-1	µg/m3	--	29 U	33 U
1,2,4-Trimethylbenzene	95-63-6	µg/m3	--	4.8 U	5.5 U
1,2-Dibromoethane (EDB)	106-93-4	µg/m3	--	7.4 U	8.6 U
1,2-Dichlorobenzene	95-50-1	µg/m3	--	5.8 U	6.7 U
1,2-Dichloroethane	107-06-2	µg/m3	--	3.9 U	4.5 U
1,2-Dichloropropane	78-87-5	µg/m3	--	4.5 U	5.2 U
1,3,5-Trimethylbenzene	108-67-8	µg/m3	--	4.8 U	5.5 U
1,3-Butadiene	106-99-0	µg/m3	--	2.1 U	2.5 U
1,3-Dichlorobenzene	541-73-1	µg/m3	--	5.8 U	6.7 U
1,4-Dichlorobenzene	106-46-7	µg/m3	--	5.8 U	6.7 U
1,4-Dioxane	123-91-1	µg/m3	--	14 U	16 U
2,2,4-Trimethylpentane	540-84-1	µg/m3	--	4.5 U	5.2 U
2-Butanone (Methyl Ethyl Ketone)	78-93-3	µg/m3	--	11 U	13 U
2-Hexanone	591-78-6	µg/m3	--	16 U	18 U
2-Propanol	67-63-0	µg/m3	--	9.5 U	11 U
3-Chloropropene	107-05-1	µg/m3	--	12 U	14 U
4-Ethyltoluene	622-96-8	µg/m3	--	4.8 U	5.5 U
4-Methyl-2-pentanone	108-10-1	µg/m3	--	4 U	4.6 U
Acetone	67-64-1	µg/m3	--	23 U	26 U

Table 4
Air Analytical Results - SVOCs, Particulates and VOCs
Doyline Water Tower
Camp Minden - Explo Baseline Study

			Station	Doyline Water Tower	
			Station Code	DL01-Air	
			Date	5/14/2015	5/15/2015
			Type	FS	FS
Analyte	**CAS.NO**	**Units**	**--**	**--**	**--**
alpha-Chlorotoluene	100-44-7	µg/m3	--	5 U	5.8 U
Benzene	71-43-2	µg/m3	--	3.1 U	3.6 U
Bromodichloromethane	75-27-4	µg/m3	--	6.5 U	7.5 U
Bromoform	75-25-2	µg/m3	--	10 U	12 U
Bromomethane	74-83-9	µg/m3	--	38 U	43 U
Carbon Disulfide	75-15-0	µg/m3	--	12 U	14 U
Carbon Tetrachloride	56-23-5	µg/m3	--	6.1 U	7 U
Chlorobenzene	108-90-7	µg/m3	--	4.5 U	5.1 U
Chloroethane	75-00-3	µg/m3	--	10 U	12 U
Chloroform	67-66-3	µg/m3	--	4.7 U	5.4 U
Chloromethane	74-87-3	µg/m3	--	20 U	23 U
cis-1,2-Dichloroethene	156-59-2	µg/m3	--	3.8 U	4.4 U
cis-1,3-Dichloropropene	10061-01-5	µg/m3	--	4.4 U	5.1 U
Cumene	98-82-8	µg/m3	--	4.8 U	5.5 U
Cyclohexane	110-82-7	µg/m3	--	3.3 U	3.8 U
Dibromochloromethane	124-48-1	µg/m3	--	8.3 U	9.5 U
Ethanol	64-17-5	µg/m3	--	7.3 U	8.4 U
Ethyl Benzene	100-41-4	µg/m3	--	4.2 U	4.8 U
Freon 11	75-69-4	µg/m3	--	5.4 U	6.3 U
Freon 113	76-13-1	µg/m3	--	7.4 U	8.5 U
Freon 114	76-14-2	µg/m3	--	6.8 U	7.8 U
Freon 12	75-71-8	µg/m3	--	4.8 U	5.5 U
Heptane	142-82-5	µg/m3	--	4 U	4.6 U
Hexachlorobutadiene	87-68-3	µg/m3	--	41 U	48 U
Hexane	110-54-3	µg/m3	--	3.4 UB	3.9 UB
m,p-Xylene	108-38-3/106-42-3	µg/m3	--	4.2 U	4.8 U
Methyl tert-butyl ether	1634-04-4	µg/m3	--	3.5 U	4 U
Methylene Chloride	75-09-2	µg/m3	--	34 U	39 U
o-Xylene	95-47-6	µg/m3	--	4.2 U	4.8 U
Propylbenzene	103-65-1	µg/m3	--	4.8 U	5.5 U
Styrene	100-42-5	µg/m3	--	4.1 U	4.7 U
Tetrachloroethene	127-18-4	µg/m3	--	6.6 U	7.6 U
Tetrahydrofuran	109-99-9	µg/m3	--	2.9 U	3.3 U
Toluene	108-88-3	µg/m3	--	3.6 U	4.2 U
trans-1,2-Dichloroethene	156-60-5	µg/m3	--	3.8 U	4.4 U
trans-1,3-Dichloropropene	10061-02-6	µg/m3	--	4.4 U	5.1 U
Trichloroethene	79-01-6	µg/m3	--	5.2 U	6 U
Vinyl Chloride	75-01-4	µg/m3	--	2.5 U	2.8 U

Notes:

µg/m3 - micrograms per cubic meter

B - Found in blank

Bolded values denote detections

FS - Field Sample

J - Estimated concentration, detected between the sample detection limit (SDL) and the practical quantitation limit (PQL).

NP - Limit Not Published

U - Not detected above the indicated detection limit.

Toxicology Summary – Doyline Water Tower

Soil Results

The EPA collected one soil sample from the Doyline Water Tower. The soil sample was analyzed for the presence of volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs) and dioxin/furans. Analytical results were compared to the Regional Screening Level (RSL) and the Preliminary Remediation Goal (PRG) for residential and industrial soils. The results indicated that VOCs, SVOCs, and dioxin/furans did not exceed the comparison levels

In addition, these dioxin levels may be reflective of background values in the Camp Minden area. A comprehensive evaluation identified 18 studies with data on dioxin background levels in both rural and urban areas. The data from this evaluation found that TEQ concentrations in background rural soils ranged from 0.1 to 22.9 ng/kg, while mean rural TEQ concentrations ranged from 1.1 to 7.1 ng/kg and that the concentration in urban and suburban soils were substantially higher and more variable than those in rural soils, with TEQ concentrations ranging from 0.1 to 186.2 ng/kg. The range of the mean TEQ concentrations in urban/suburban soils was also substantially higher and range from 2.2 to 56.6 ng/kg" (Urban et al, 2013).

Air Monitoring/Sampling Data

The EPA did air monitoring and sampling at one location located at the Doyline Water Tower. Analytical result were compared to the National Ambient Air Quality Standards (NAAQS) air quality standards as well as the Regional Screening Level (RSL).

The 24-hour average PM 2.5 level did exceed the RSL standard of 12 $\mu g/m^3$, however did not exceed the 24-hour NAAQS standard of 35 $\mu g/m^3$.

Reference

Urban, J.D, Wikoff, D.S, Bunch, A.T, Harris, M.A., Haws, L.C. 2013. A review of background dioxin concentrations in urban/suburban and rural soils across the United States: Implications for site assessment and the establishment of soil cleanup levels. Science of the Total Environment, 466-467.