Educational Workshops
for the
Camp Minden Site
(in coordination with LDEQ, LMD, and CMCAG)

- Baseline Assessment Workplan — April 16, 2015
- Preparedness — April 23, 2015
- CBC Workplan and Sampling Plan — August, 2015
- LAAP Groundwater — September, 2015
- Baseline Data — November 19, 2015

- Ideas for additional workshops
  - Please make suggestions on the response cards provided or
  - email us at: R6_Camp_Minden@epa.gov

2015 Baseline Data

Educational Workshop

19 November 2015

Site: Camp Minden

Minden, Webster Parish, Louisiana

Presenters:

LMD: COL Stuckey and ESI-Dean Schellhase

LDEQ: Don Caffery

EPA: Adam Adams and Jon Rauscher

Guest: ATSDR - Michelle Watters

Agenda

- Introductions / Welcome
- LMD – LMD data access, data, and Sitrep format
- LDEQ – LDEQ data access
- EPA -
  - What was conducted during the EPA Baseline Assessment?
  - Where is the data posted?
  - What were the results?
    - Air Monitoring
    - Soil Sampling
    - Air Sampling
- Questions and Answers

LMD - ESI

- Data Reporting
- Data Management
- Sitrep Format

ESI - M6 Destruction Reporting

- Sampling
  - Collection of samples to go for laboratory analysis
    - Air Emissions, Water, Residual Waste
- Monitoring
  - Continuous (Instrumentation)
    - Air Monitoring Community & Stack
  - Periodic (Data)
    - Processing Rate, lbs./day

ESI - Sampling

- Stack
  - Quarterly - PM, VOC, SVOC,
  - Baseline,6 mo., Final - Dioxin & Furan
- Community Air Emissions
  - Weekly – PM2.5, PM10, SVOC, VOC
  - Baseline, 6 mo., Final – Dioxin & Furan
- Soil
  - Baseline & Final – Area I (35) and Monitoring wells (6) VOC, SVOC, Metals, DRO, GRO

ESI - Sampling continued

- Surface water & Sediment
  - Baseline & Final – VOC & SVOC
- Groundwater
  - Quarterly – 6 wells – VOC & SVOC
- Off-site Waste
  - As generated – RCI, VOC, SVOC, Metals, Explosives

ESI - Monitoring - Operational & Process

- Contained Burn Chamber Pressure/Temp.
- Afterburner Temp. & Combustion Air Flow
- Particulate Filter Pressure Differential
- Gas Cooler/SCR Temperature
- Processing Rate (lbs./day)
- Off-site waste shipments
- # / % Completion – magazines emptied

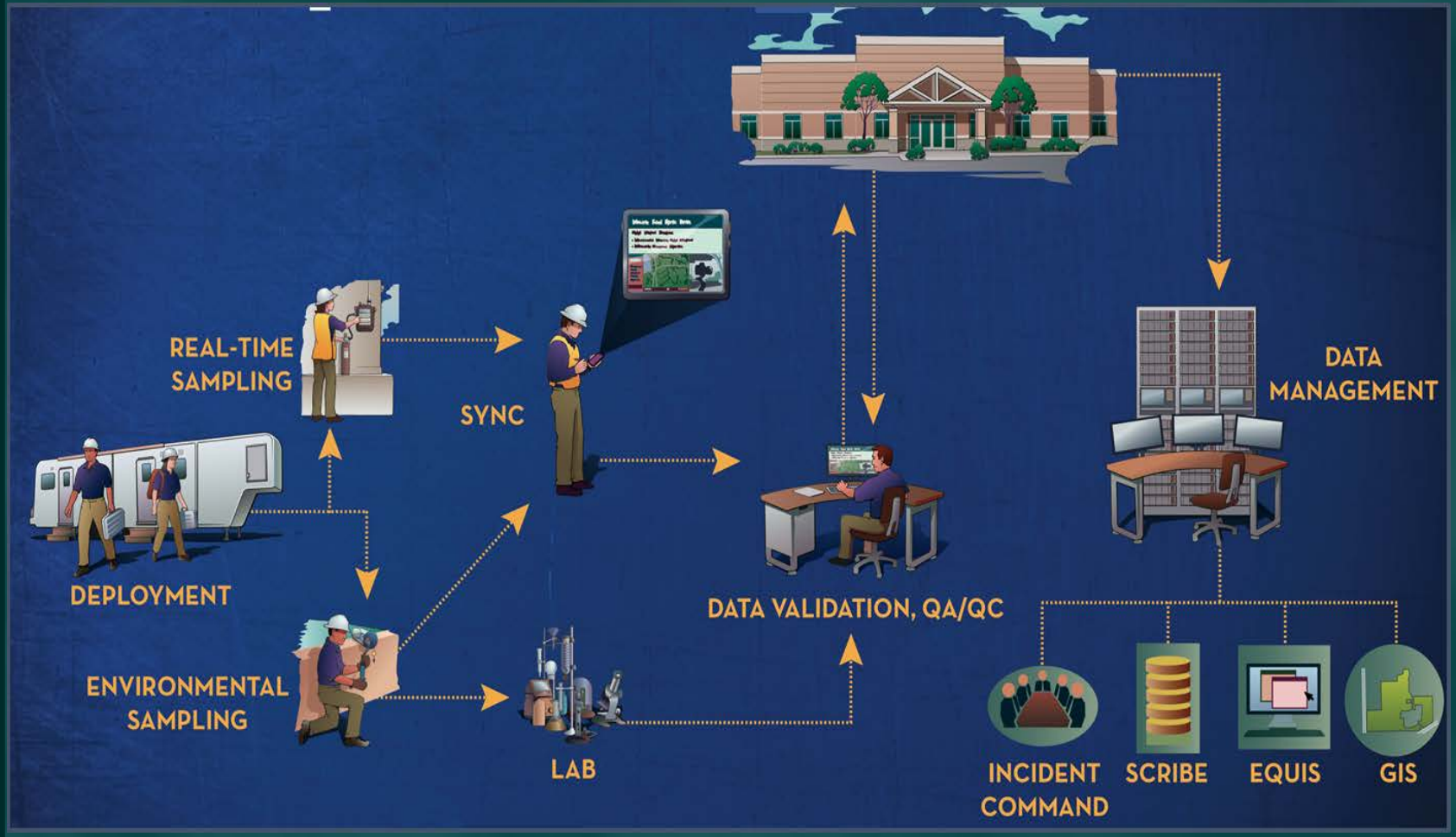
ESI - Monitoring - Environmental

- Stack
  - CEMS – O_2, CO, NO_x, THC, Flow Rate
- Community Air Emissions
  - CEMS – CO, NO_2, SO_2, $PM_{2.5}$

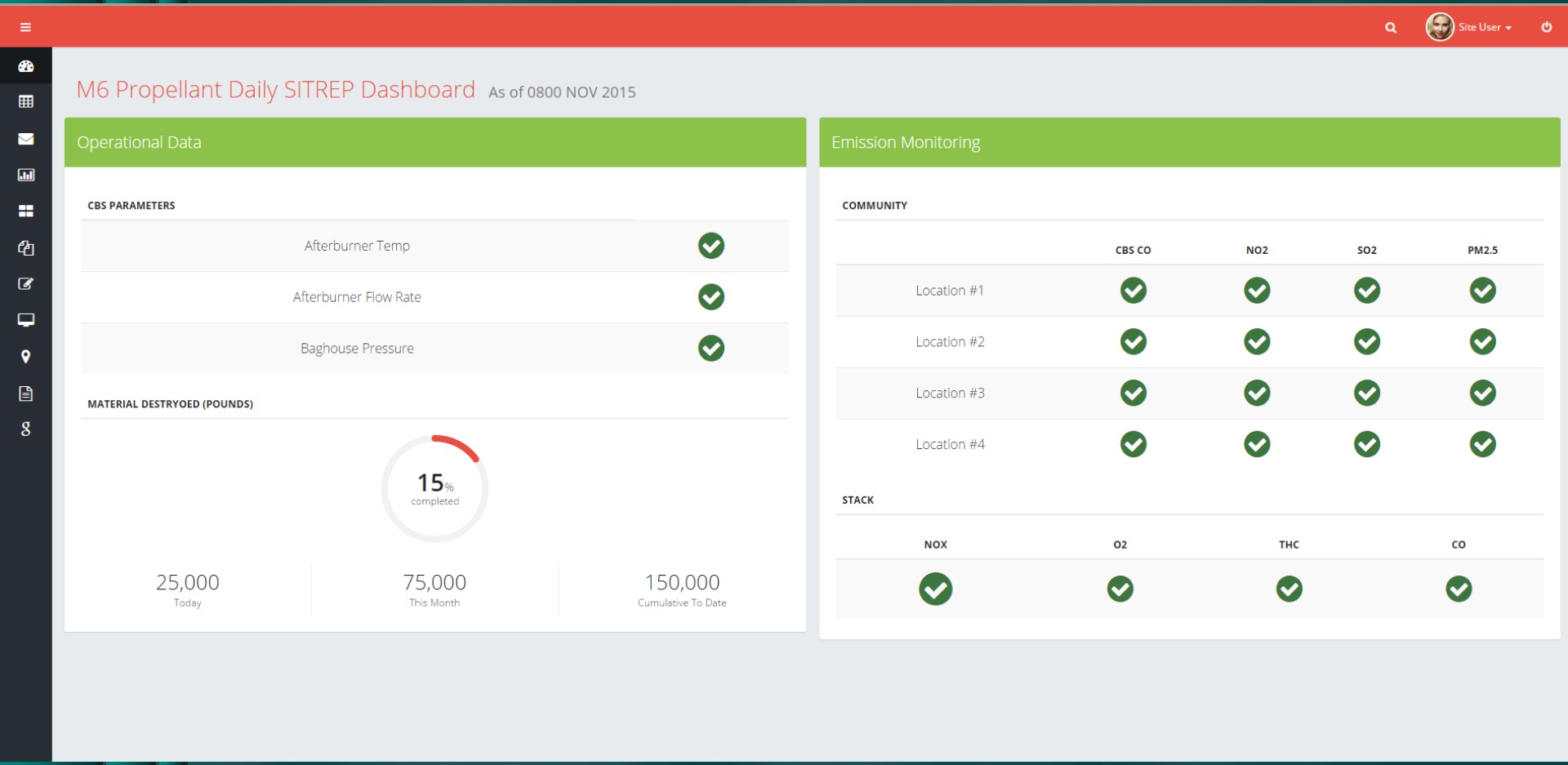
ESI - Reporting

- Daily
  - CEMS Stack & Community Air Monitors, Material Destruction Report
- Weekly
  - Community Air Sampling locations for SVOC, VOC
- Quarterly
  - Groundwater, Stack Emissions (VOC & SVOC)
- Semi-annual
  - Dioxin & Furan (Stack & Community Air Monitors)
- Data Validation/Submittal to LMD for posting

ESI - Data Management



ESI – Draft Daily Sitrep



LMD - ESI

- Any questions?

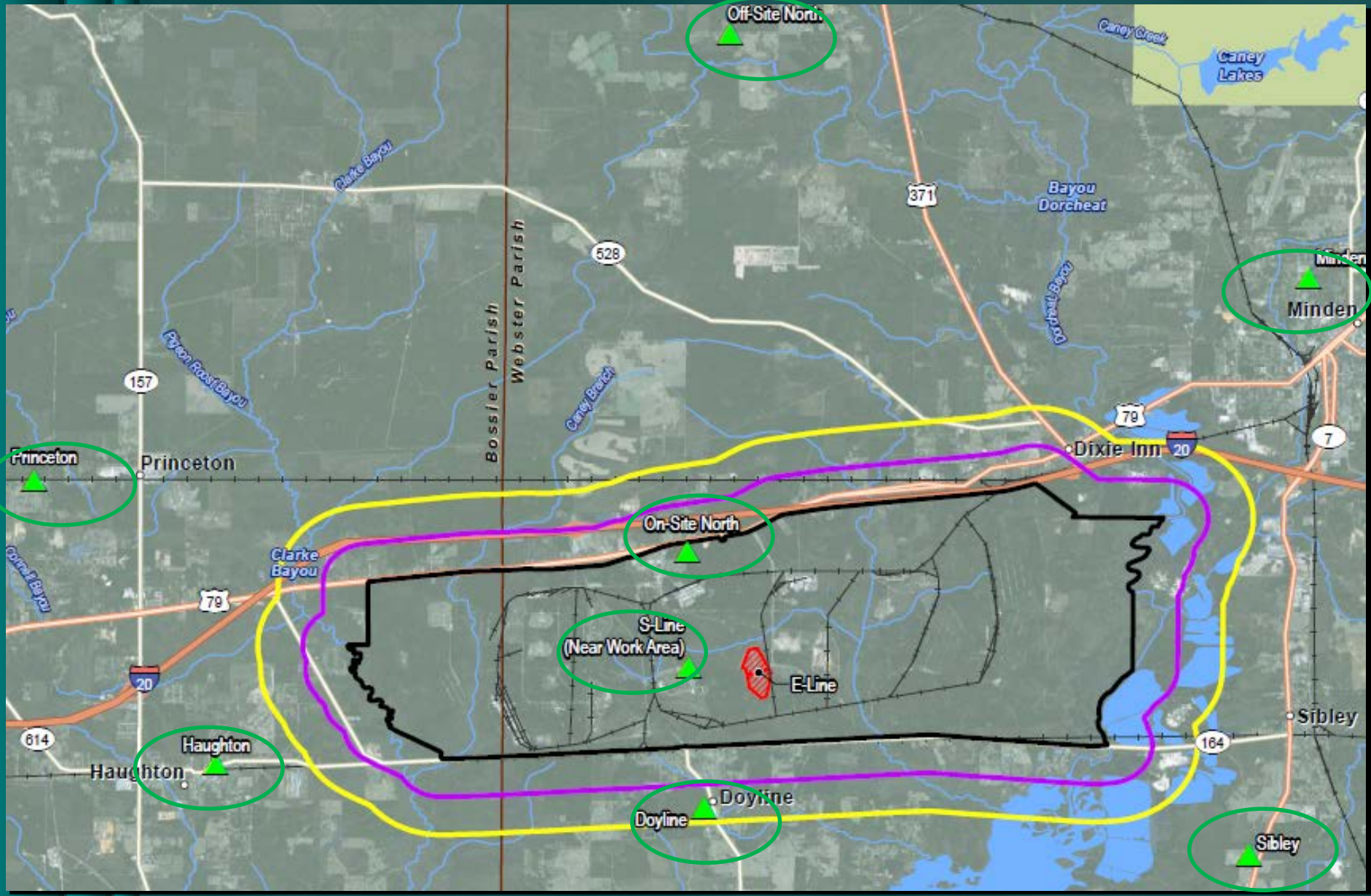
LDEQ

- Data Access / EDMS
  - Edms.deq.Louisiana.gov

- Any questions?

EPA Environmental Baseline Assessment

Where was the assessment conducted?



EPA - Baseline Air Sampling and Monitoring Performed (and equipment):

Sampling

- Dioxin/Furans
  - PS-1 PUF Sampler
- SVOC
  - PS-1 PUF Sampler
- PM10
  - BGI PQ200
- PM2.5
  - BGI PQ200
- VOC
  - Summa Canister

Monitoring

- CO
  - Thermo 48iTLE
- CO2
  - Teledyne-API Model 360E
- NO2
  - Thermo 42i
- SO2
  - Thermo 43i
- PM2.5
  - MetOne BAM1020

EPA - Baseline Soil Sampling Performed:

- Dioxin/Furans
- pH
- SVOC
- TCLP Metals (On Camp Minden only)
- VOC

- Soil was collected from at three points and composited together prior to analysis; disposable scoops were utilized.

EPA Baseline Reports / Results Packages:

- The Baseline Reports for each station are posted on the EPA Camp Minden website in the documents section (Results Packages).

- A link to the EPA Baseline Assessment Storyboard (Story Map) is also added to the EPA Camp Minden Website in the additional resources section.

EPA Environmental Baseline Assessment: Storyboard (interactive website)

EPA Region 6

Edit

No issues detected

Camp Minden Overview

Camp Minden is located in the northwestern portion of the State of Louisiana in Webster and Bossier Parishes. Explo Systems, Inc. is a former explosives recycling company that leased an operations area and bunkers on the Camp Minden installation for approximately 7 years. On 15 October 2012, one of the Explo leased storage bunkers at Camp Minden exploded prompting investigations by the EPA, Louisiana Department of Environmental Quality (LDEQ), and the Louisiana State Police (LSP).

As the primary emergency response authority in Louisiana, LSP responded and discovered large quantities of explosive and propellant materials improperly stored on the Explo-leased areas. LSP immediately ordered Explo Systems, Inc. to store the

EPA Baseline Data Summary:

- Air Monitoring
  - No exceedances above NAAQS
- Soil Sampling
  - No exceedances above EPA RSLs
- Air Sampling
  - PM2.5 exceeded EPA RSL, but is below NAAQS.

EPA Environmental Baseline Assessment:

Doyline Water Tower Baseline Sampling Results Package

And

Camp Minden Baseline Sampling Results Package

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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

November 17, 2015

Camp Minden
ATTN: COL. (Ret) Ronnie D. Stuckey
100 Louisiana Boulevard
Minden, Louisiana 71055

RE: May 2015 Sampling of Camp Minden
100 Louisiana Boulevard, Minden, Louisiana

Dear COL (Ret.) Stuckey,

The Environmental Protection Agency (EPA) conducted real-time air monitoring and collected soil and air samples from Camp Minden 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 through 5 - Air Analytical Results. The monitoring and sampling locations 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 and Particulates
Table 5 – Air Analytical Results - VOCs
Figure 1 - Sample Location Map
Toxicology Summary

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).

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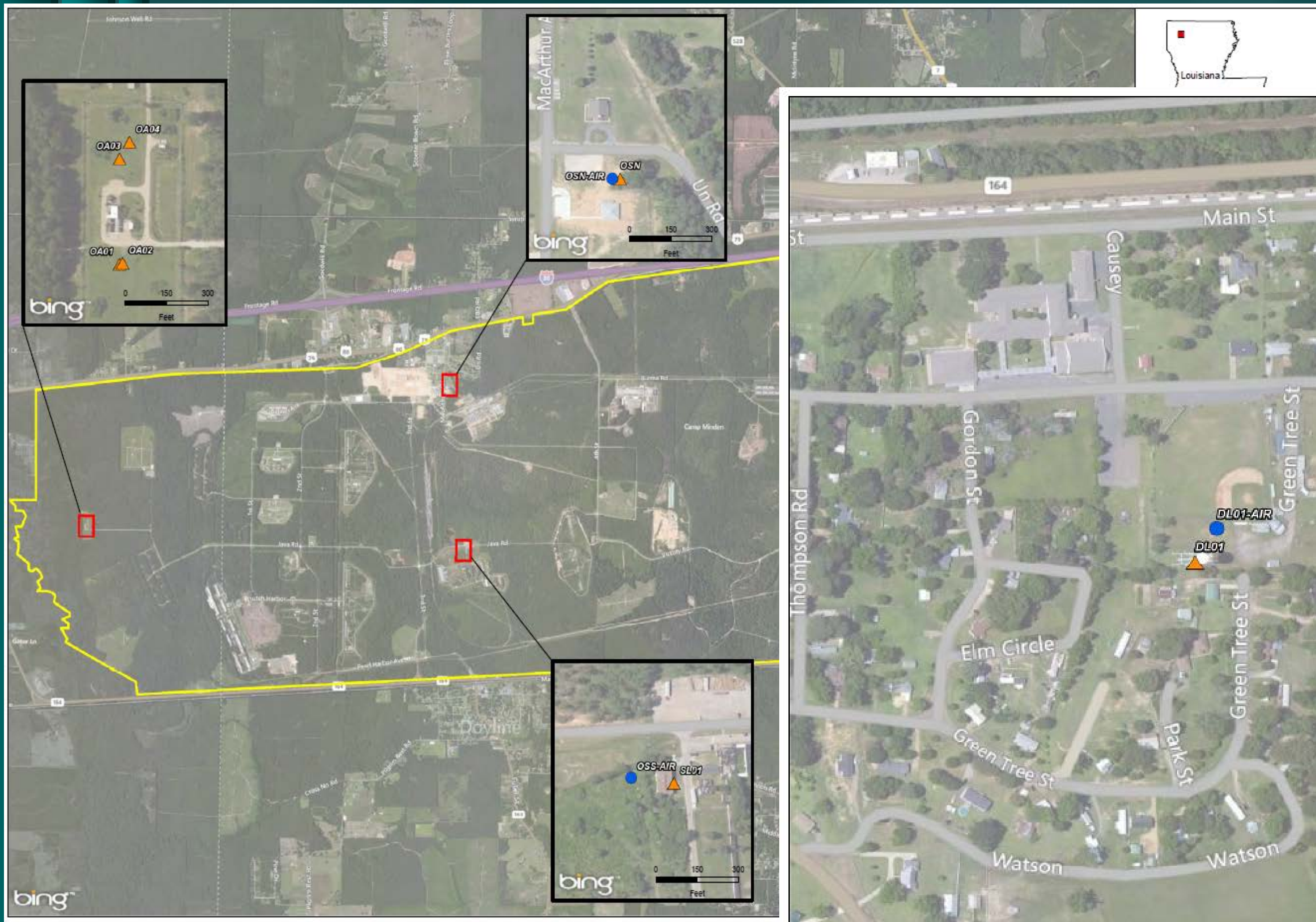
Table 4 – Air Analytical Results – SVOCs, Particulates and VOCs
Figure 1 - Sample Location Map
Toxicology Summary



OA04
OA03
OA01
OA02
OSN-AIR
OSN
MacArthur
Un Rd
OSS-AIR
SL01
Louisiana
bing

Main St
Causey
Willis Rd
College St
Willis St
Gordon St
Green Tree St
Thompson Rd
DL01-AIR
DL01
Elm Circle
Green Tree St
Park St
Johnson St
Watson
Watson
bing
0 300 600
Feet
LEGEND
Soil Sampling Location
Air Sampling Location
Louisiana
N
US EPA REGION 6
FIGURE 1
SAMPLE LOCATION MAP
DOYLINE WATER TOWER
DOYLINE, WEBSTER PARISH
LOUISIANA
TDD NO: SWESTON-042-15-006
CONTRACT NO: EP-W-06-042
SOURCE: 2010 Microsoft Corporation and its data suppliers
DATE NOVEMBER 2015
PROJECT NO 20406.012.005.0934.01
SCALE AS SHOWN

Locations:

Air Monitoring Summaries:

Summary of Location: Camp Minden North

Parameter	Count of 1-min Readings	Maximum Average Concentration	Maximum Detection	Units	NAAQS Standard
CO	2925	165.2	183	ppb	40,000 (1-hour)
CO2	2958	446900	770400	ppb	
NO	2898	1.217	8.5	ppb	
NO2	2898	3.262	10.5	ppb	100 (1-hour)
NOX	2898	4.272	17.3	ppb	188 (1-hour)
SO2	2796	5.543	8.901	ppb	365 (3-hour)
Parameter	**Count of 60-min Readings**	**Maximum Average Concentration**	**Maximum Detection**	**Units**	**NAAQS Standard**
PM 2.5	48	17.065	68	ug/m3	35 (24-hour)

Summary of Location: Camp Minden Central/ S Line

Parameter	Count of 1-min Readings	Maximum Average Concentration	Maximum Detection	Units	NAAQS Standard
CO	2927	260	394	ppb	40,000 (1-hour)
CO2	2752	530400	562400	ppb	
NO	2816	2.493	56.5	ppb	
NO2	2816	2.303	15.6	ppb	100 (1-hour)
NOX	2816	4.06	72.1	ppb	188 (1-hour)
SO2	2885	1.226	7.690	ppb	365 (3-hour)
Parameter	**Count of 60-min Readings**	**Maximum Average Concentration**	**Maximum Detection**	**Units**	**NAAQS standard**
PM 2.5	48	2.333	16.8	ug/m3	35 (24-hour)

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

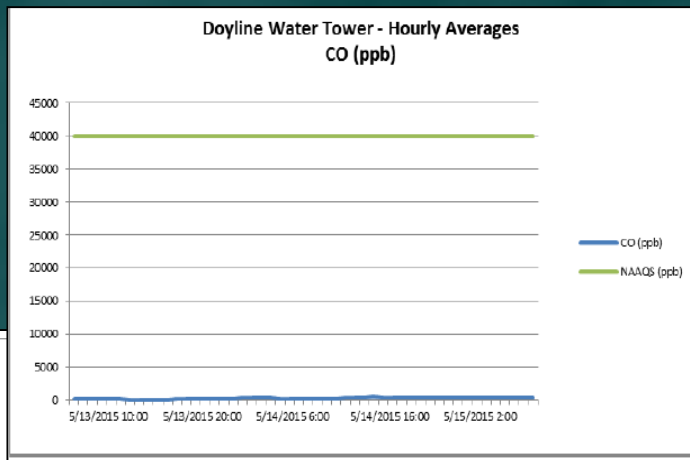
National Ambient Air Quality Standards (NAAQS) are listed with specific time frames and calculation formulas. Please visit NAAQS website for more in-depth information on how these are calculated - http://www.epa.gov/air/criteria.html.

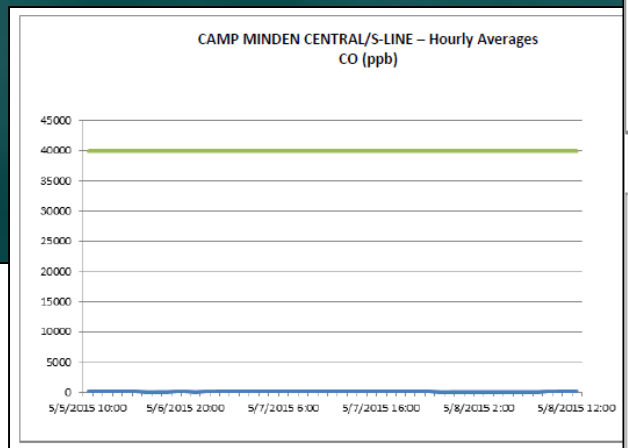
** Note: PM2.5 was captured in 60-min averages. All other analytes were captured in 1-min averages.

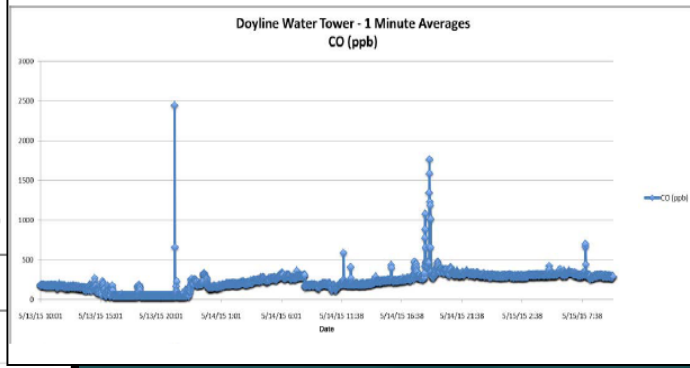
Summary of Location: Doyline Water Tower

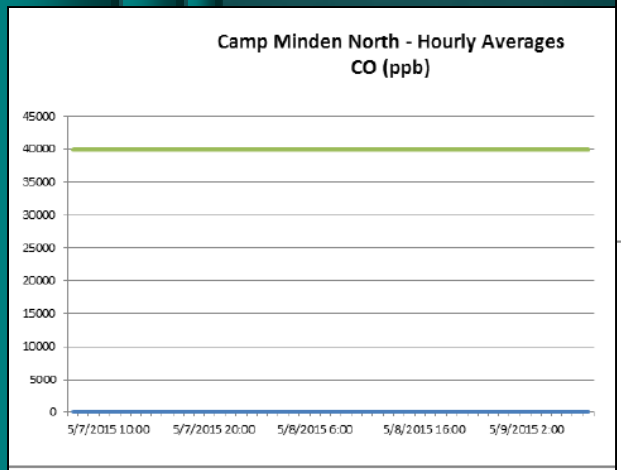
Parameter	Count of 1-min Readings	Maximum Average Concentration	Maximum Detection	Units	NAAQS standard
CO	2855	455.8	2442	ppb	40,000 (1-hour)
CO2	2923	477700	505600	ppb	
NO	2912	3.145	24.3	ppb	
NO2	2912	5.905	10.6	ppb	100 (1-hour)
NOX	2912	9.05	29.3	ppb	188 (1-hour)
SO2	2838	4.246	6.557	ppb	365 (3-hour)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

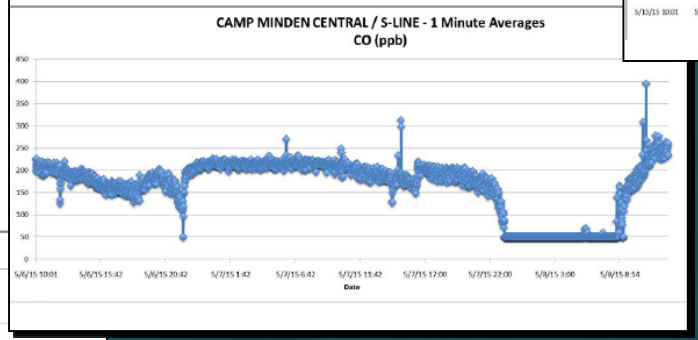
Air Monitoring Graphs - CO:

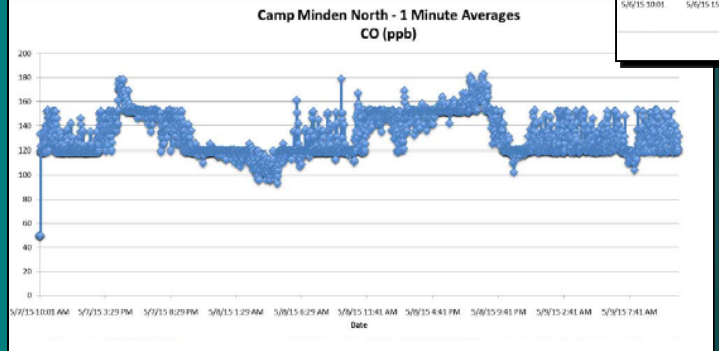




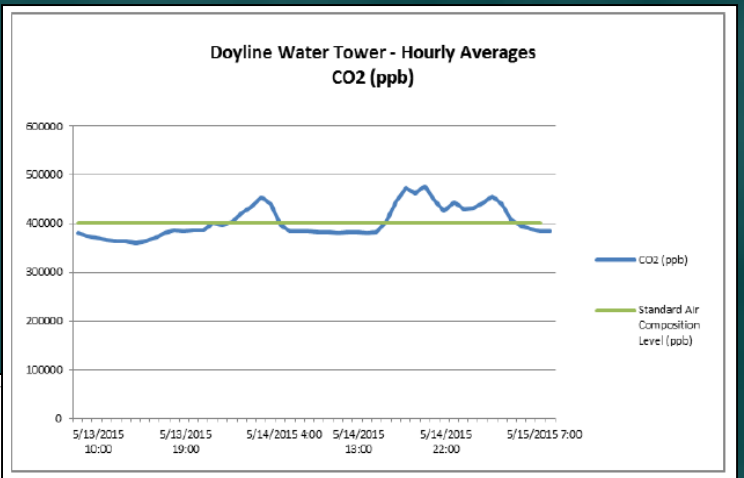


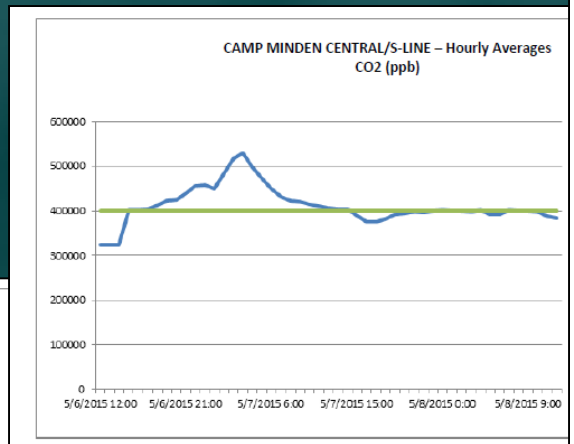


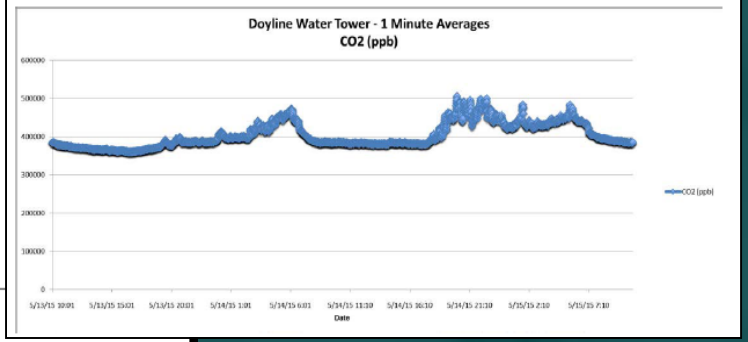


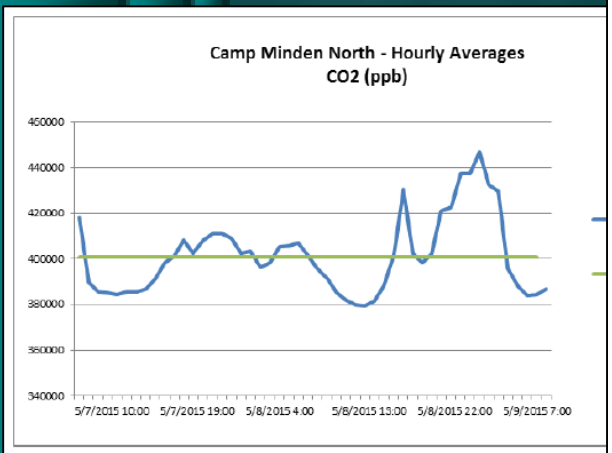


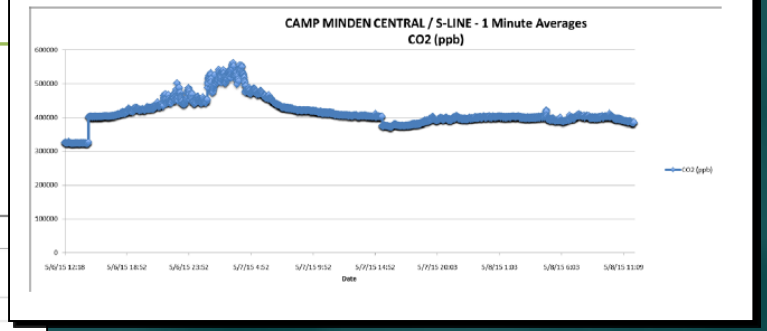
Air Monitoring Graphs – CO2:

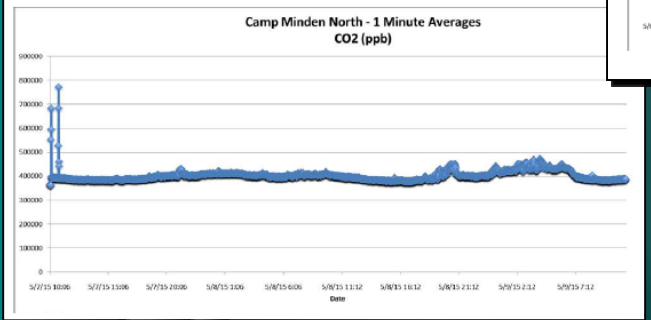


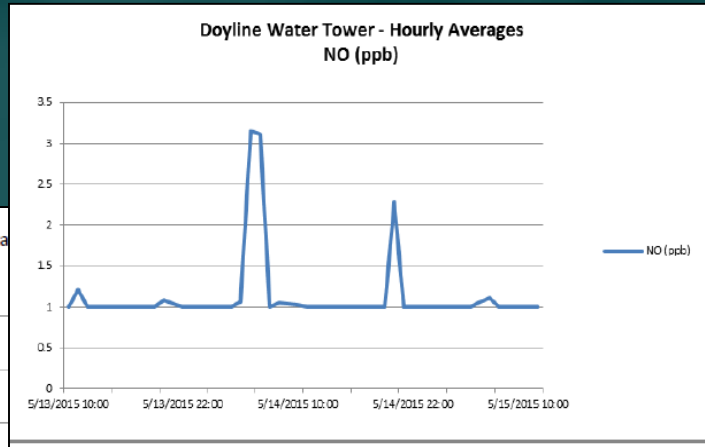


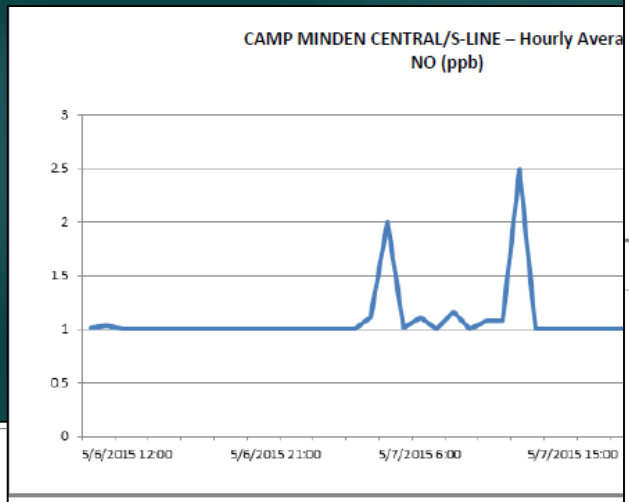


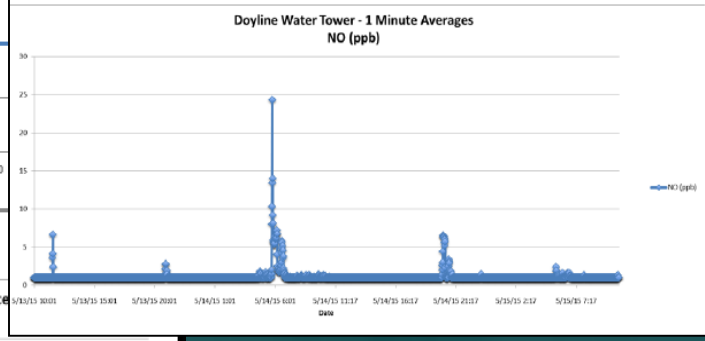


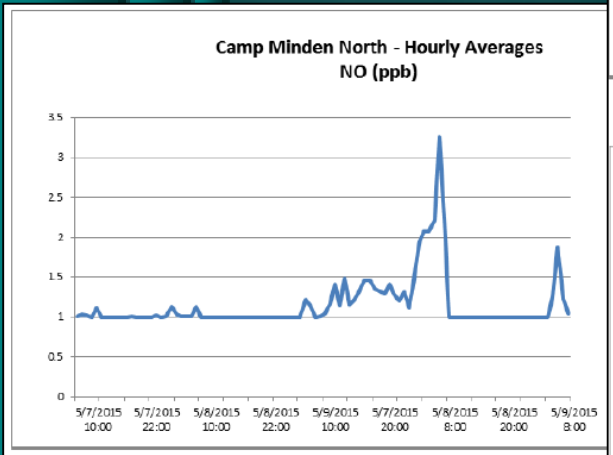


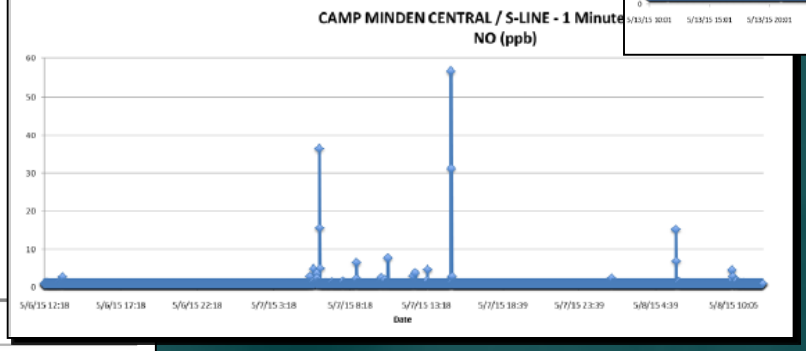


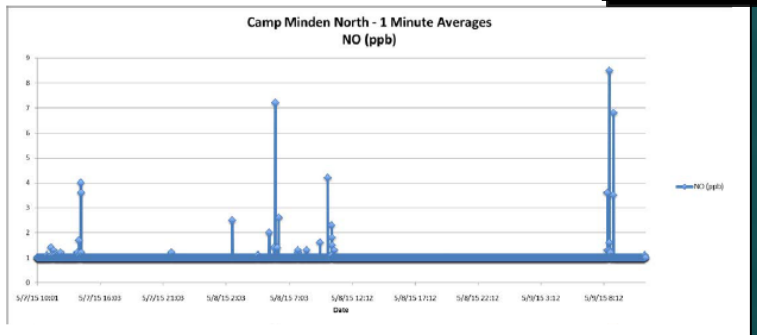




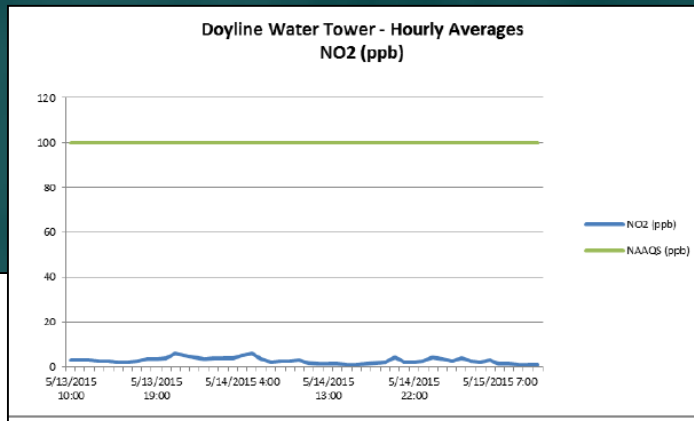


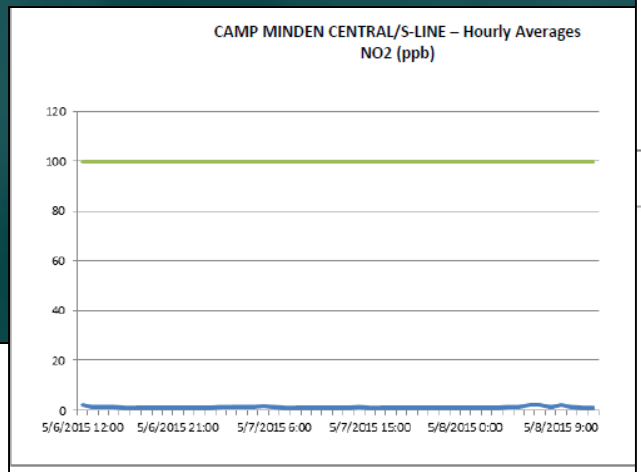


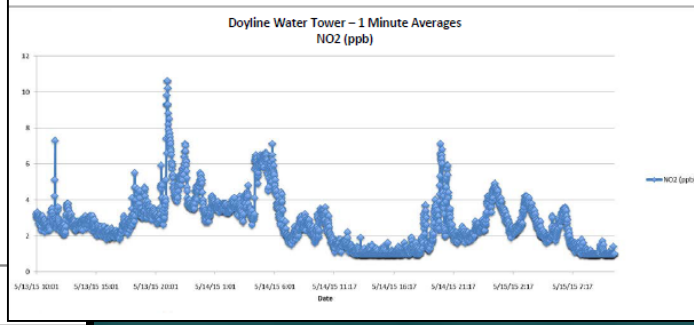


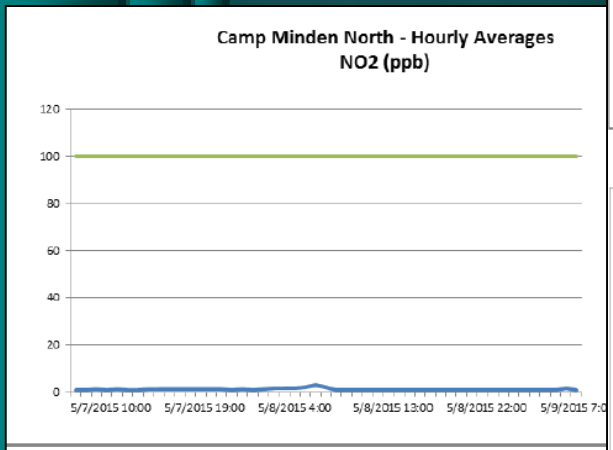


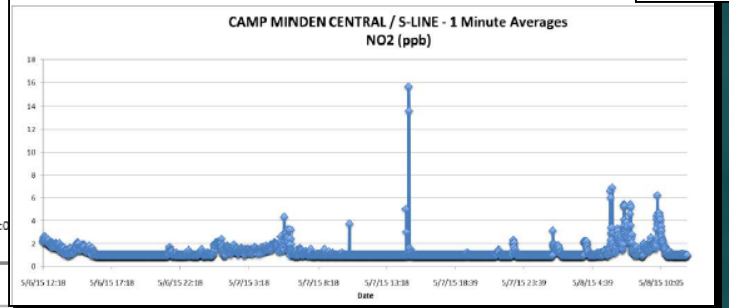
Air Monitoring Graphs - NO:

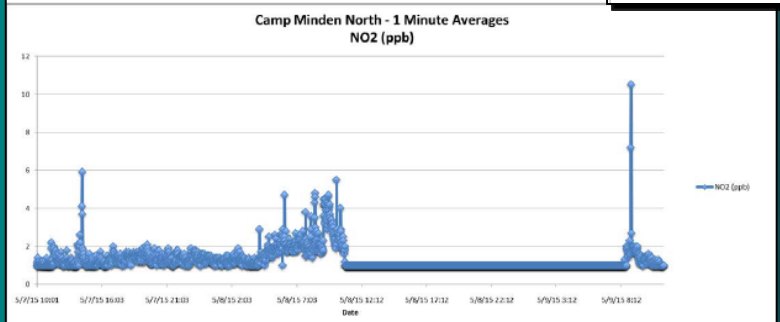




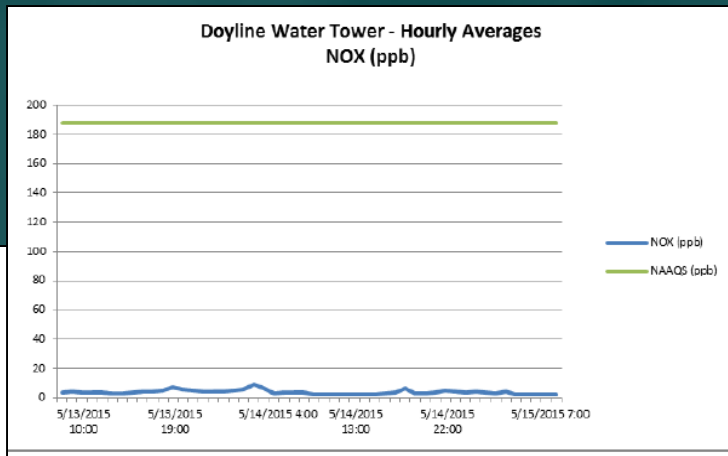


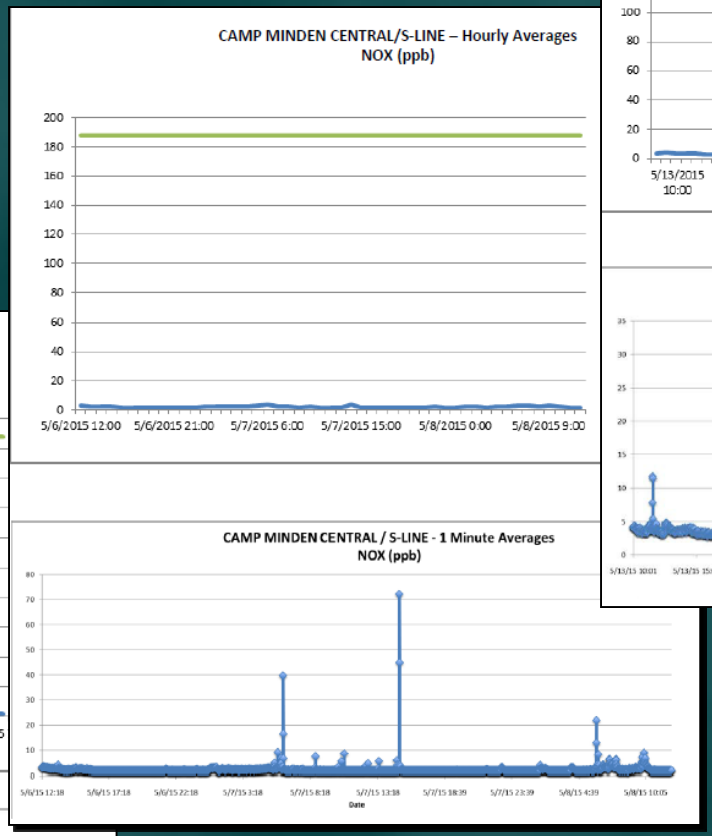


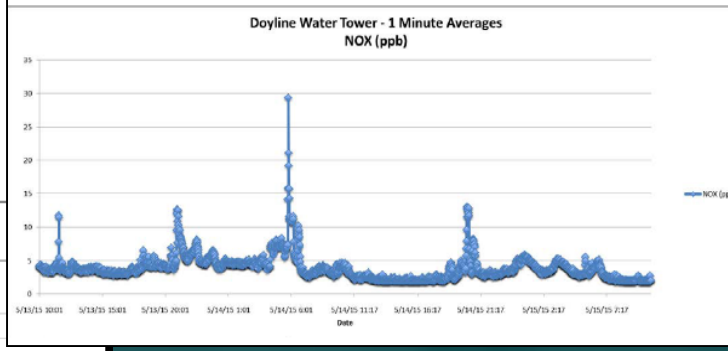


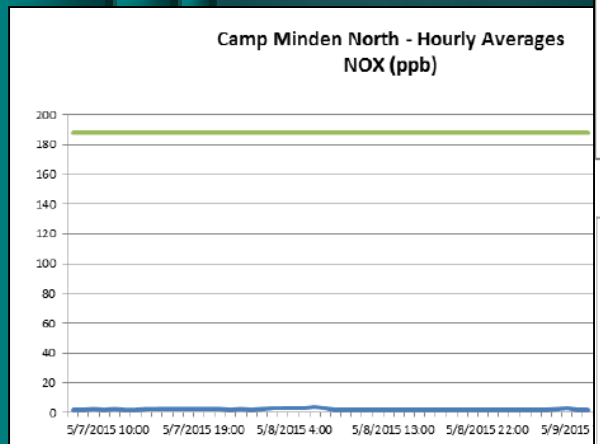


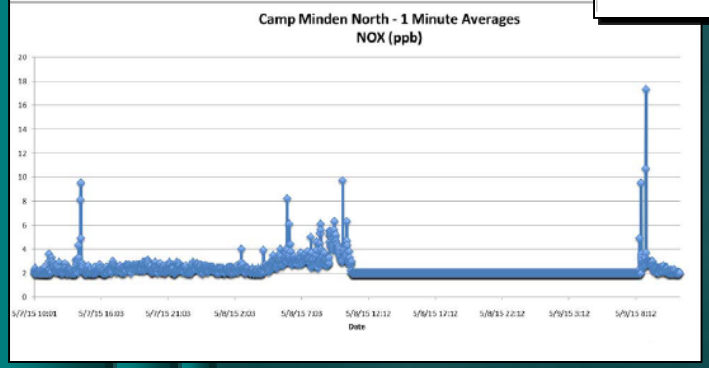
Air Monitoring Graphs – NO2:





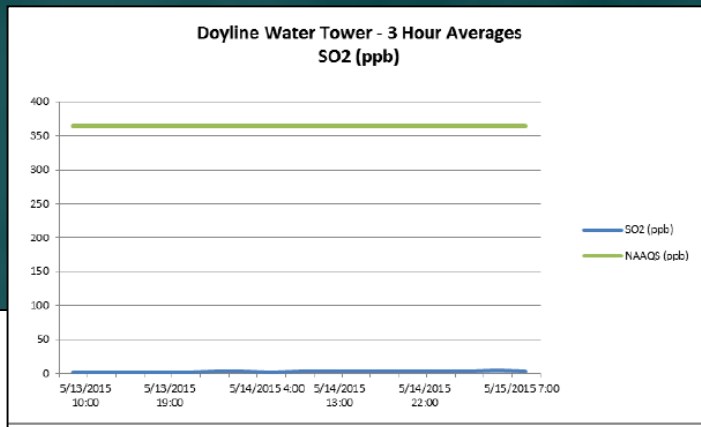


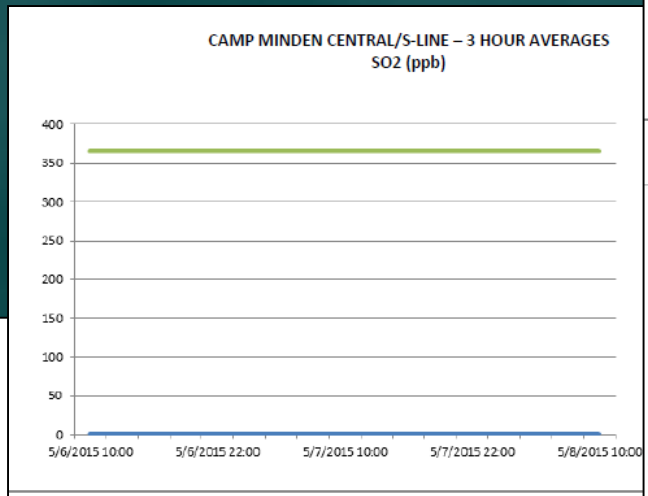


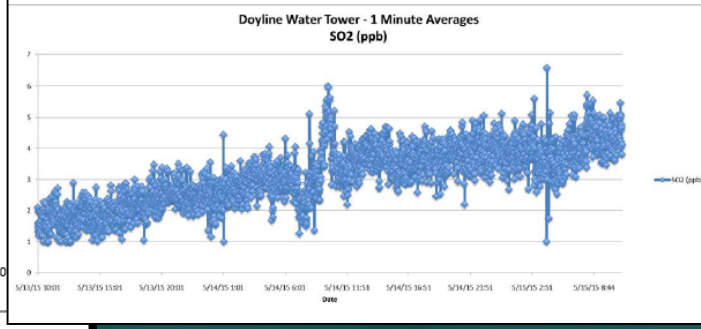


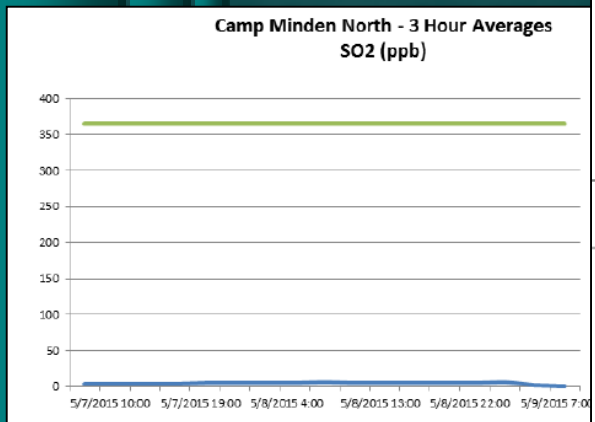
Air Monitoring Graphs - NOx:

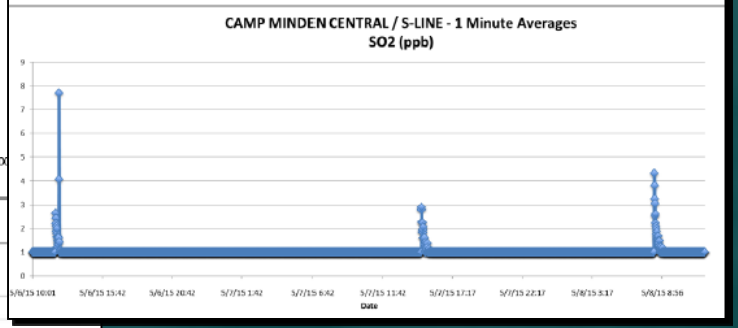
Air Monitoring Graphs – SO2:

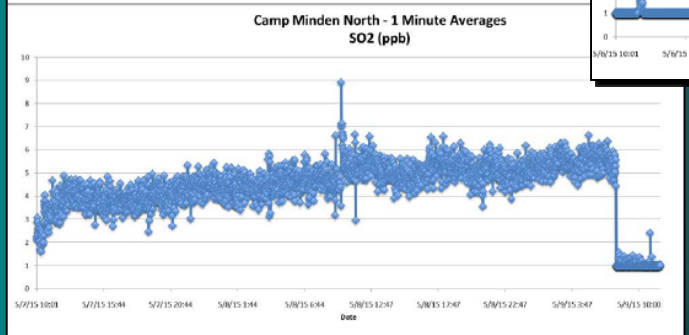




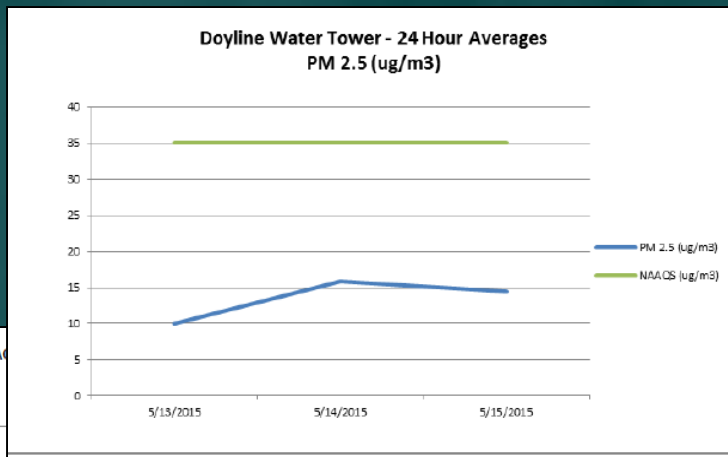


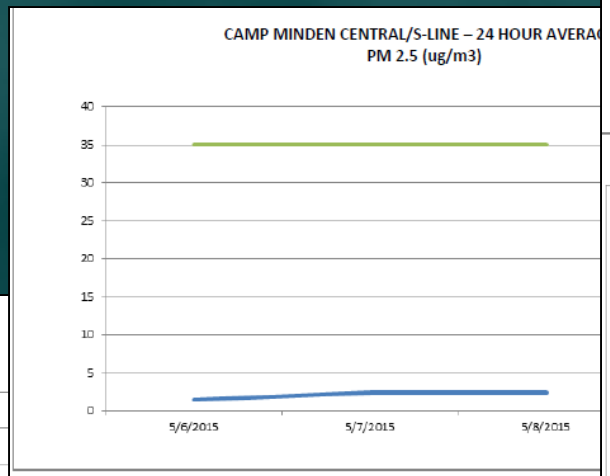


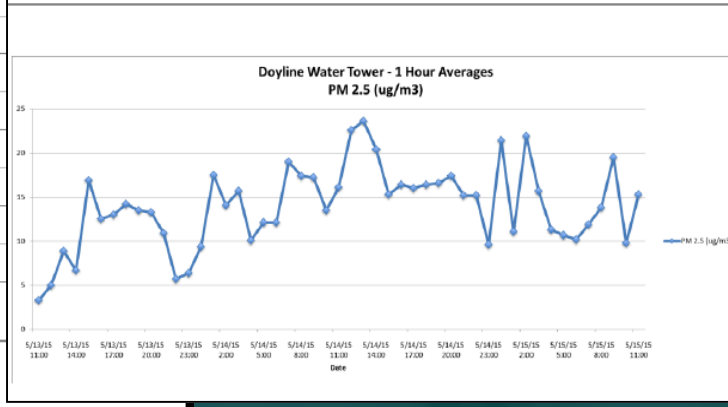


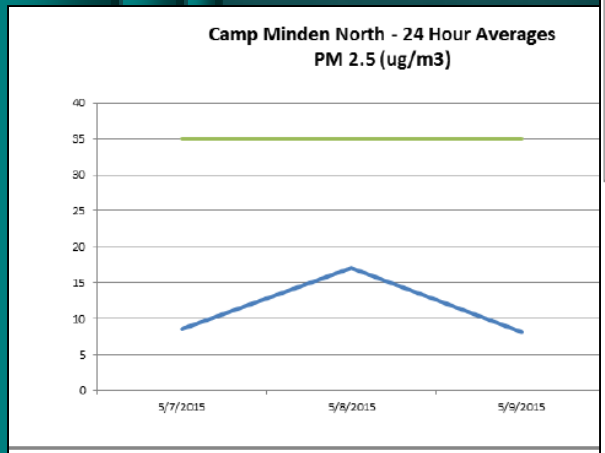


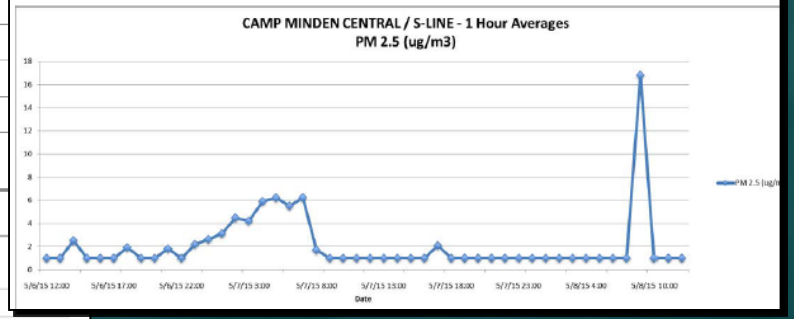
Air Monitoring Graphs – PM2.5:

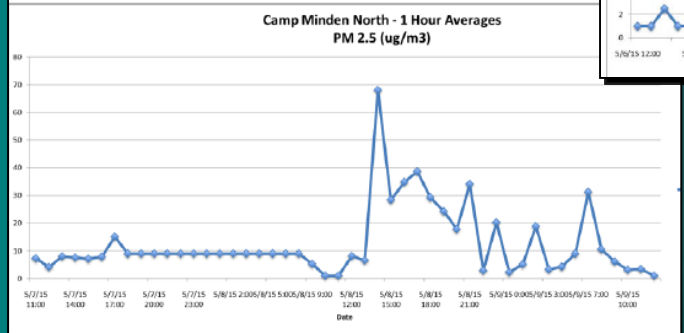












Camp Minden / Doyline Water Tower - Explo Baseline Study
Soil Analytical Results

Analyte	CAS NO	Units	Station	Camp Minden North	Camp Minden Central/S Line		Doyline Water Tower
			Date	OSN 5/13&14/2015	SL01 5/13&14/2015	SL01 5/13/2015	DL01 5/14/2015
			Type	FS	FS	DUP	FS
Dioxin TEQ							
TEQ WHO2005 ND=0	3333-30-0	ng/kg	--	**0.624**	**42.2**	**106**	**0.63**
TEQ WHO2005 ND=0.5	3333-30-1	ng/kg	--	**2.33**	**42.3**	**109**	**2.29**
Dioxin							
1,2,3,4,6,7,8,9-OCDD	3268-87-9	ng/kg	--	**1540**	**9990 J**	**21000 J**	**941**
1,2,3,4,6,7,8,9-OCDF	39001-02-0	ng/kg	--	**5.41 J**	**432**	**1060**	**16.7**
1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	--	**14.5**	**1250**	**3140**	**29.6**
1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	--	**1.63 J**	**330**	**774**	**4.68**
1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	--	4.53 U	**15.2**	**33.9**	4.42 U
1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	--	4.53 U	**21.9**	**55.1**	4.42 U
1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	--	4.53 U	**18.1**	**46.8**	4.42 U
1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	--	4.53 U	**51.4**	**146**	4.42 U
1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	--	4.53 U	**9.2**	**25.4**	4.42 U
1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	--	4.53 U	**49.6**	**133**	4.42 U
1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	--	4.53 U	**1.83 J**	22.9 U	4.42 U
1,2,3,7,8-PeCDD	40321-76-4	ng/kg	--	4.53 U	**6.24**	**16.7 J**	4.42 U
1,2,3,7,8-PeCDF	57117-41-6	ng/kg	--	4.53 U	4.55 U	22.9 U	4.42 U
2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	--	4.53 U	**11.7**	**30.1**	4.42 U
2,3,4,7,8-PeCDF	57117-31-4	ng/kg	--	4.53 U	**1.52 J**	22.9 U	4.42 U
2,3,7,8-TCDD	1746-01-6	ng/kg	--	0.906 U	0.911 U	4.57 U	0.883 U
2,3,7,8-TCDF	51207-31-9	ng/kg	--	0.906 U	0.911 U	4.57 U	0.883 U
Total Heptachlorodibenzofuran	38998-75-3	ng/kg	--	**5.38**	**762**	**1810**	**15.8**
Total Heptachlorodibenzo-p-dioxin	37871-00-4	ng/kg	--	**31.9**	**2240 J**	**5500**	**98.2**
Total Hexachlorodibenzofuran	55684-94-1	ng/kg	--	4.53 U	**302**	**754**	**1.97 J**
Total Hexachlorodibenzo-p-dioxin	34465-46-8	ng/kg	--	**3.26 J**	**397**	**1120**	**7.77**
Total Pentachlorodibenzofuran	30402-15-4	ng/kg	--	4.53 U	**37**	**92.3**	4.42 U
Total Pentachlorodibenzo-p-dioxin	36088-22-9	ng/kg	--	4.53 U	**25.7**	**55.1**	4.42 U
Total Tetrachlorodibenzofuran	30402-14-3	ng/kg	--	0.906 U	**3.34**	**4.32 J**	0.883 U
Total Tetrachlorodibenzo-p-dioxin	41903-57-5	ng/kg	--	0.906 U	**0.448 J**	**1.63 J**	0.883 U

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

Analyte	CAS NO	Units	Station	Camp Minden North	Camp Minden Central/S Line		Doyline Water Tower
			Date	OSN 5/13&14/2015	SL01 5/13&14/2015	SL01 5/13/2015	DL01 5/14/2015
			Type	FS	FS	DUP	FS
pH							
pH	C-006	pH Units	--	**7.2**	**5.6**	**5.4**	**5.3**
SVOCs							
2,4-Dinitrotoluene	121-14-2	µg/Kg	--	214 U	215 U	222 U	223 U
2,6-Dinitrotoluene	606-20-2	µg/Kg	--	214 U	215 U	222 U	223 U
2-Methylnaphthalene	91-57-6	µg/Kg	--	214 U	215 U	222 U	223 U
Acenaphthene	83-32-9	µg/Kg	--	214 U	215 U	222 U	223 U
Acenaphthylene	208-96-8	µg/Kg	--	214 U	215 U	222 U	223 U
Anthracene	120-12-7	µg/Kg	--	214 U	215 U	222 U	223 U
Benzo (a) anthracene	56-55-3	µg/Kg	--	214 U	215 U	222 U	223 U
Benzo (a) pyrene	50-32-8	µg/Kg	--	214 U	215 U	222 U	223 U
Benzo (b) fluoranthene	205-99-2	µg/Kg	--	214 U	215 U	**389**	223 U
Benzo (g,h,i) perylene	191-24-2	µg/Kg	--	214 U	215 U	222 U	223 U
Benzo (k) fluoranthene	207-08-9	µg/Kg	--	214 U	215 U	**345**	223 U
Chrysene	218-01-9	µg/Kg	--	214 U	215 U	**278**	223 U
Dibenz (a,h) anthracene	53-70-3	µg/Kg	--	214 U	215 U	222 U	223 U
Di-n-butyl phthalate	84-74-2	µg/Kg	--	214 U	215 U	222 U	223 U
Fluoranthene	206-44-0	µg/Kg	--	214 U	215 U	222 U	223 U
Fluorene	86-73-7	µg/Kg	--	214 U	215 U	222 U	223 U
Indeno (1,2,3-cd) pyrene	193-39-5	µg/Kg	--	214 U	215 U	222 U	223 U
Naphthalene	91-20-3	µg/Kg	--	214 U	215 U	222 U	223 U
N-Nitrosodiphenylamine/Diphenylamine	86-30-6/122-39-4	µg/Kg	--	214 U	215 U	222 U	223 U
Phenanthrene	85-01-8	µg/Kg	--	214 U	215 U	222 U	223 U
Pyrene	129-00-0	µg/Kg	--	214 U	215 U	222 U	223 U
TCLP Metals							
Arsenic	7440-38-2	mg/L	--	1 U	1 U	1 U	NA
Barium	7440-39-3	mg/L	--	**0.84**	**1.38**	**1.2**	NA
Cadmium	7440-43-9	mg/L	--	0.05 U	0.05 U	0.05 U	NA
Chromium	7440-47-3	mg/L	--	0.1 U	0.1 U	0.1 U	NA
Lead	7439-92-1	mg/L	--	0.3 U	0.3 U	0.3 U	NA
Selenium	7782-49-2	mg/L	--	1 U	1 U	1 U	NA
Silver	7440-22-4	mg/L	--	0.1 U	0.1 U	0.1 U	NA

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

Analyte	CAS.NO	Units	Station Date Type	Camp Minden North OSN 5/13&14/2015 FS	Camp Minden Central/ S-Line SL01 5/14/2015 FS	Doyline Water Tower DL01 5/14/2015 FS
VOCs						
1,1,1-Trichloroethane	71-55-6	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,1,2-Trichloroethane	79-00-5	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,1-Dichloroethane	75-34-3	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,1-Dichloroethene	75-35-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,2,4-Trichlorobenzene	120-82-1	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,2-Dibromo-3-chloropropane	96-12-8	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,2-Dibromoethane	106-93-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,2-Dichlorobenzene	95-50-1	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,2-Dichloroethane	107-06-2	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,2-Dichloropropane	78-87-5	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,3-Dichlorobenzene	541-73-1	µg/Kg	--	4.3 U	6.3 U	4.5 U
1,4-Dichlorobenzene	106-46-7	µg/Kg	--	4.3 U	6.3 U	4.5 U
2-Butanone	78-93-3	µg/Kg	--	4.3 U	6.3 U	4.5 U
2-Hexanone	591-78-6	µg/Kg	--	4.3 U	6.3 U	4.5 U
4-Methyl-2-pentanone	108-10-1	µg/Kg	--	4.3 U	6.3 U	4.5 U
Acetone	67-64-1	µg/Kg	--	**10.8 B, J**	**22.9 B, J**	**11.7 B, J**
Benzene	71-43-2	µg/Kg	--	4.3 U	6.3 U	4.5 U
Bromodichloromethane	75-27-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
Bromoform	75-25-2	µg/Kg	--	4.3 U	6.3 U	4.5 U
Bromomethane	74-83-9	µg/Kg	--	4.3 U	6.3 U	4.5 U
Carbon disulfide	75-15-0	µg/Kg	--	4.3 U	6.3 U	4.5 U
Carbon tetrachloride	56-23-5	µg/Kg	--	4.3 U	6.3 U	4.5 U
Chlorobenzene	108-90-7	µg/Kg	--	4.3 U	6.3 U	4.5 U
Chloroethane	75-00-3	µg/Kg	--	4.3 U	6.3 U	4.5 U
Chloroform	67-66-3	µg/Kg	--	4.3 U	6.3 U	4.5 U
Chloromethane	74-87-3	µg/Kg	--	4.3 U	6.3 U	4.5 U
cis-1,2-Dichloroethene	156-59-2	µg/Kg	--	4.3 U	6.3 U	4.5 U
cis-1,3-Dichloropropene	10061-01-5	µg/Kg	--	4.3 U	6.3 U	4.5 U
Cyclohexane	110-82-7	µg/Kg	--	4.3 U	6.3 U	4.5 U
Dibromochloromethane	124-48-1	µg/Kg	--	4.3 U	6.3 U	4.5 U
Dichlorodifluoromethane	75-71-8	µg/Kg	--	4.3 U	6.3 U	4.5 U

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

Analyte	CAS.NO	Units	Station Date Type	Camp Minden North OSN 5/13&14/2015 FS	Camp Minden Central/ S-Line SL01 5/14/2015 FS	Doyline Water Tower DL01 5/14/2015 FS
Ethylbenzene	100-41-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
Isopropylbenzene	98-82-8	µg/Kg	--	4.3 U	6.3 U	4.5 U
meta-/para-Xylene	na	µg/Kg	--	8.6 U	12.6 U	9.1 U
Methyl acetate	79-20-9	µg/Kg	--	4.3 U	6.3 U	4.5 U
Methyl tert-butyl ether	1634-04-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
Methylcyclohexane	108-87-2	µg/Kg	--	4.3 U	6.3 U	4.5 U
Methylene chloride	75-09-2	µg/Kg	--	4.3 U	6.3 U	4.5 U
ortho-Xylene	95-47-6	µg/Kg	--	4.3 U	6.3 U	4.5 U
Styrene	100-42-5	µg/Kg	--	4.3 U	6.3 U	4.5 U
Tetrachloroethene	127-18-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
Toluene	108-88-3	µg/Kg	--	4.3 U	6.3 U	4.5 U
trans-1,2-Dichloroethene	156-60-5	µg/Kg	--	4.3 U	6.3 U	4.5 U
trans-1,3-Dichloropropene	10061-02-6	µg/Kg	--	4.3 U	6.3 U	4.5 U
Trichloroethene	79-01-6	µg/Kg	--	4.3 U	6.3 U	4.5 U
Trichlorofluoromethane	75-69-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
Vinyl chloride	75-01-4	µg/Kg	--	4.3 U	6.3 U	4.5 U
Xylenes (total)	1330-20-7	µg/Kg	--	**0**	**0**	**0**

Camp Minden / Doyline Water Tower - Explo Baseline
Air Analytical Results

				Camp Minden North		Camp Minden Central/S Line	Doyline Water Tower
Analyte	CAS.NO	Units	Station Date Type	OSN-Air 5/9/2015 FS	OSN-Air 5/9/2015 DUP	SL01-Air 5/8/2015 FS	DL01-Air 5/15/2015 FS
Dioxins/Furans - TEQ Calculation 2005							
TEQ (Dioxin) ND = DL	1746-01-6	pg/m3	--	**0.006617549207**	**0.0056941891403**	**0.0066424603714**	**0.0591982035768**
TEQ (Dioxin) ND = 0	1746-01-6	pg/m3	--	**0.001886655917**	**0.0024314503303**	**0.0020242577414**	**0.0591982035768**
TEQ (Dioxin) ND = DL/2	1746-01-6	pg/m3	--	**0.004252102562**	**0.0040628197353**	**0.0043333590564**	**0.0591982035768**
Dioxins/Furans							
1,2,3,4,6,7,8-HpCDD	35822-46-9	pg/m3	--	**0.035666398 J**	**0.011757688 J**	**0.030044661 J**	**0.144013167**
1,2,3,4,6,7,8-HpCDF	67562-39-4	pg/m3	--	**0.011276482 J**	**0.009822375 J**	**0.011747192 J**	**0.26608147**
1,2,3,4,7,8,9-HpCDF	55673-89-7	pg/m3	--	0.001555377 U	0.000823171 U	0.00120314 U	**0.032231518 J**
1,2,3,4,7,8-HxCDD	39227-28-6	pg/m3	--	0.001903996 U	0.001816013 U	0.001583435 U	**0.008078453 J**
1,2,3,4,7,8-HxCDF	70648-26-9	pg/m3	--	**0.002413516 J**	**0.002081124 J**	**0.002327785 J**	**0.054039226 J**
1,2,3,6,7,8-HxCDD	57653-85-7	pg/m3	--	**0.003968892 J**	0.002014846 U	**0.002963865 J**	**0.024687971 J**
1,2,3,6,7,8-HxCDF	57117-44-9	pg/m3	--	**0.002279431 J**	**0.002372747 J**	**0.002639058 J**	**0.055959402 J**
1,2,3,7,8,9-HxCDD	19408-74-3	pg/m3	--	0.001971038 U	0.001882291 U	**0.002598457 J**	**0.017418735 J**
1,2,3,7,8,9-HxCDF	72918-21-9	pg/m3	--	0.001128989 U	0.000811241 U	0.000955474 U	**0.029076944 J**
1,2,3,7,8-PeCDD	40321-76-4	pg/m3	--	0.001903996 U	0.001471368 U	0.002084179 U	**0.008078453 J**
1,2,3,7,8-PeCDF	57117-41-6	pg/m3	--	0.002346474 U	**0.00269088 J**	0.002611991 U	**0.025785215 J**
2,3,4,6,7,8-HxCDF	60851-34-5	pg/m3	--	**0.002105122 J**	**0.001842524 J**	**0.002327785 J**	**0.106021122**
2,3,4,7,8-PeCDF	57117-31-4	pg/m3	--	0.00237329 U	**0.002982503 J**	0.002652592 U	**0.041558085 J**
2,3,7,8-TCDD	1746-01-6	pg/m3	--	0.00152856 U	0.0011307 U	0.001393964 U	**0.00227678 J**
2,3,7,8-TCDF	51207-31-9	pg/m3	--	**0.002855994 J**	**0.00595175 J**	**0.002828529 J**	**0.01549856**
OCDD	3268-87-9	pg/m3	--	**0.171627782**	**0.044671262 J**	**0.116524564 J**	**0.215333973**
OCDF	39001-02-0	pg/m3	--	**0.011477608 J**	**0.006521739 J**	**0.009446474 J**	**0.120285283**
Total HpCDD	37871-00-4	pg/m3	--	**0.072271386**	**0.031680806 J**	**0.081743132**	**0.370319572**
Total HpCDF	38998-75-3	pg/m3	--	**0.022526146 J**	**0.014316013 J**	**0.018270402 J**	**0.410094637**
Total HxCDD	34465-46-8	pg/m3	--	**0.028157683 J**	**0.018160127 J**	**0.04181892 J**	**0.529419833**
Total HxCDF	55684-94-1	pg/m3	--	**0.042772861 J**	**0.036717922 J**	**0.044119637 J**	**0.7598409**
Total PeCDD	36088-22-9	pg/m3	--	**0.006717619 J**	**0.01016702 J**	**0.023683854 J**	**0.622685503**
Total PeCDF	30402-15-4	pg/m3	--	**0.045454545 J**	**0.073700954**	**0.084585194**	**0.934028254**
Total TCDD	41903-57-5	pg/m3	--	**0.012805042 J**	**0.018160127**	**0.012884017 J**	**1.080784529**
Total TCDF	55722-27-5	pg/m3	--	**0.062349155**	**0.132025451**	**0.11408851**	**1.051981895**

Camp Minden / Doyline Water Tower - Explo Baseline
Air Analytical Results

				Camp Minden North			Camp Minden Central/S Line			Doyline Water Tower	
Analyte	CAS.NO	Units	Station Date Type	OSN-Air 5/8/2015 FS	OSN-Air 5/8/2015 DUP	OSN-Air 5/9/2015 FS	SL01-Air 5/7/2015 FS	SL01-Air 5/7/2015 DUP	SL01-Air 5/8/2015 FS	DL01-Air 5/14/2015 FS	DL01-Air 5/15/2015 FS
PAHs											
2,4-Dinitrotoluene	121-14-2	µg/m3	--	0.0067 U	NA	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.013 U
2,6-Dinitrotoluene	606-20-2	µg/m3	--	0.0067 U	NA	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.013 U
2-Chloronaphthalene	91-58-7	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
2-Methylnaphthalene	91-57-6	µg/m3	--	**0.022**	NA	**0.013**	**0.0082**	**0.0072**	**0.0041**	**0.0057**	**0.0093**
Acenaphthene	83-32-9	µg/m3	--	**0.022**	NA	**0.014**	**0.0048**	**0.0035**	0.0029 U	**0.004**	**0.0054**
Acenaphthylene	208-96-8	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Anthracene	120-12-7	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Benzo(a)anthracene	56-55-3	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Benzo(a)pyrene	50-32-8	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Benzo(b)fluoranthene	205-99-2	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Benzo(g,h,i)perylene	191-24-2	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Benzo(k)fluoranthene	207-08-9	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Chrysene	218-01-9	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Dibenz(a,h)anthracene	53-70-3	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
di-n-Butylphthalate	84-74-2	µg/m3	--	**0.063**	NA	0.062 U	0.059 U	0.055 U	0.059 U	**0.067**	0.054 U
Diphenylamine	122-39-4	µg/m3	--	0.013 U	NA	0.031 U	0.029 U	0.028 U	0.029 U	0.028 U	0.027 U
Fluoranthene	206-44-0	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Fluorene	86-73-7	µg/m3	--	**0.013**	NA	**0.0092**	**0.0042**	**0.003**	0.0029 U	**0.0031**	**0.0038**
Indeno(1,2,3-c,d)pyrene	193-39-5	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
Naphthalene	91-20-3	µg/m3	--	**0.02**	NA	**0.012**	**0.013**	**0.012**	**0.0066**	**0.01**	**0.016**
Phenanthrene	85-01-8	µg/m3	--	**0.017**	NA	**0.013**	**0.0089**	**0.0065**	**0.0059**	**0.0069**	**0.0082**
Pyrene	129-00-0	µg/m3	--	0.0013 U	NA	0.0031 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0027 U
PM10											
PM10	PM10	µg/m3	--	**14.2**	NA	**18.4**	**20.3**	**20.8**	**13**	**19.3**	**25.5**
PM2.5											
PM2.5	PM2.5	µg/m3	--	**6.96**	**6.62**	**10.3**	**11.4**	NA	**6.8**	**10.6**	**14.2**

Camp Minden / Doyline Water Tower - Explo Baseline
Air Analytical Results

				Camp Minden North		Camp Minden Central/S Line			Doyline Water Tower	
Analyte	CAS.NO	Units	Station Date Type	OSN-Air 5/8/2015 FS	OSN-Air 5/9/2015 FS	SL01-Air 5/7/2015 FS	SL01-Air 5/7/2015 DUP	SL01-Air 5/8/2015 FS	DL01-Air 5/14/2015 FS	DL01-Air 5/15/2015 FS
VOCs										
1,1,1-Trichloroethane	71-55-6	µg/m3	--	5.3 U	4.5 U	4.4 U	4 U	4.8 U	5.3 U	6.1 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/m3	--	6.7 U	5.7 U	5.5 U	5 U	6 U	6.6 U	7.6 U
1,1,2-Trichloroethane	79-00-5	µg/m3	--	5.3 U	4.5 U	4.4 U	4 U	4.8 U	5.3 U	6.1 U
1,1-Dichloroethane	75-34-3	µg/m3	--	3.9 U	3.4 U	3.2 U	3 U	3.5 U	3.9 U	4.5 U
1,1-Dichloroethene	75-35-4	µg/m3	--	3.9 U	3.3 U	3.2 U	2.9 U	3.5 U	3.8 U	4.4 U
1,2,4-Trichlorobenzene	120-82-1	µg/m3	--	29 U	25 U	24 U	22 U	26 U	29 U	33 U
1,2,4-Trimethylbenzene	95-63-6	µg/m3	--	4.8 U	4.1 U	3.9 U	3.6 U	4.3 U	4.8 U	5.5 U
1,2-Dibromoethane (EDB)	106-93-4	µg/m3	--	7.5 U	6.4 U	6.1 U	5.6 U	6.7 U	7.4 U	8.6 U
1,2-Dichlorobenzene	95-50-1	µg/m3	--	5.9 U	5 U	4.8 U	4.4 U	5.3 U	5.8 U	6.7 U
1,2-Dichloroethane	107-06-2	µg/m3	--	3.9 U	3.4 U	3.2 U	3 U	3.5 U	3.9 U	4.5 U
1,2-Dichloropropane	78-87-5	µg/m3	--	4.5 U	3.8 U	3.7 U	3.4 U	4 U	4.5 U	5.2 U
1,3,5-Trimethylbenzene	108-67-8	µg/m3	--	4.8 U	4.1 U	3.9 U	3.6 U	4.3 U	4.8 U	5.5 U
1,3-Butadiene	106-99-0	µg/m3	--	2.2 U	1.8 U	1.8 U	1.6 U	1.9 U	2.1 U	2.5 U
1,3-Dichlorobenzene	541-73-1	µg/m3	--	5.9 U	5 U	4.8 U	4.4 U	5.3 U	5.8 U	6.7 U
1,4-Dichlorobenzene	106-46-7	µg/m3	--	5.9 U	5 U	4.8 U	4.4 U	5.3 U	5.8 U	6.7 U
1,4-Dioxane	123-91-1	µg/m3	--	14 U	12 U	12 U	10 U	13 U	14 U	16 U
2,2,4-Trimethylpentane	540-84-1	µg/m3	--	4.6 U	3.9 U	3.7 U	3.4 U	4.1 U	4.5 U	5.2 U
2-Butanone (MEK)	78-93-3	µg/m3	--	12 U	9.8 U	9.4 U	8.7 U	10 U	11 U	13 U
2-Hexanone	591-78-6	µg/m3	--	16 U	14 U	13 U	12 U	14 U	16 U	18 U
2-Propanol	67-63-0	µg/m3	--	9.6 U	8.2 U	7.9 U	7.2 U	8.6 U	9.5 U	11 U
3-Chloropropene	107-05-1	µg/m3	--	12 U	10 U	10 U	9.2 U	11 U	12 U	14 U
4-Ethyltoluene	622-96-8	µg/m3	--	4.8 U	4.1 U	3.9 U	3.6 U	4.3 U	4.8 U	5.5 U
4-Methyl-2-pentanone	108-10-1	µg/m3	--	4 U	3.4 U	3.3 U	3 U	3.6 U	4 U	4.6 U
Acetone	67-64-1	µg/m3	--	23 U	20 U	19 U	**25**	21 U	23 U	26 U
alpha-Chlorotoluene	100-44-7	µg/m3	--	5 U	4.3 U	4.1 U	3.8 U	4.5 U	5 U	5.8 U
Benzene	71-43-2	µg/m3	--	3.1 U	2.6 U	2.6 U	2.3 U	2.8 U	3.1 U	3.6 U
Bromodichloromethane	75-27-4	µg/m3	--	6.5 U	5.6 U	5.4 U	4.9 U	5.9 U	6.5 U	7.5 U
Bromoform	75-25-2	µg/m3	--	10 U	8.6 U	8.3 U	7.6 U	9 U	10 U	12 U
Bromomethane	74-83-9	µg/m3	--	38 U	32 U	31 U	28 U	34 U	38 U	43 U
Carbon Disulfide	75-15-0	µg/m3	--	12 U	10 U	10 U	9.2 U	11 U	12 U	14 U
Carbon Tetrachloride	56-23-5	µg/m3	--	6.1 U	5.2 U	5 U	4.6 U	5.5 U	6.1 U	7 U
Chlorobenzene	108-90-7	µg/m3	--	4.5 U	3.8 U	3.7 U	3.4 U	4 U	4.5 U	5.1 U

Camp Minden / Doyline Water Tower - Explo Baseline
Air Analytical Results

				Camp Minden North		Camp Minden Central/S Line			Doyline Water Tower	
Analyte	CAS.NO	Units	Station Date Type	OSN-Air 5/8/2015 FS	OSN-Air 5/9/2015 FS	SL01-Air 5/7/2015 FS	SL01-Air 5/7/2015 DUP	SL01-Air 5/8/2015 FS	DL01-Air 5/14/2015 FS	DL01-Air 5/15/2015 FS
Chloroethane	75-00-3	µg/m3	--	10 U	8.8 U	8.4 U	7.8 U	9.2 U	10 U	12 U
Chloroform	67-66-3	µg/m3	--	4.8 U	4 U	3.9 U	3.6 U	4.3 U	4.7 U	5.4 U
Chloromethane	74-87-3	µg/m3	--	20 U	17 U	16 U	15 U	18 U	20 U	23 U
cis-1,2-Dichloroethene	156-59-2	µg/m3	--	3.9 U	3.3 U	3.2 U	2.9 U	3.5 U	3.8 U	4.4 U
cis-1,3-Dichloropropene	10061-01-5	µg/m3	--	4.4 U	3.8 U	3.6 U	3.3 U	4 U	4.4 U	5.1 U
Cumene	98-82-8	µg/m3	--	4.8 U	4.1 U	3.9 U	3.6 U	4.3 U	4.8 U	5.5 U
Cyclohexane	110-82-7	µg/m3	--	3.4 U	2.8 U	2.8 U	2.5 U	3 U	3.3 U	3.8 U
Dibromochloromethane	124-48-1	µg/m3	--	8.3 U	7.1 U	6.8 U	6.3 U	7.4 U	8.3 U	9.5 U
Ethanol	64-17-5	µg/m3	--	7.3 U	6.2 U	6 U	5.5 U	6.6 U	7.3 U	8.4 U
Ethyl Benzene	100-41-4	µg/m3	--	4.2 U	3.6 U	3.5 U	3.2 U	3.8 U	4.2 U	4.8 U
Freon 11	75-69-4	µg/m3	--	5.5 U	4.7 U	4.5 U	4.1 U	4.9 U	5.4 U	6.3 U
Freon 113	76-13-1	µg/m3	--	7.5 U	6.4 U	6.1 U	5.6 U	6.7 U	7.4 U	8.5 U
Freon 114	76-14-2	µg/m3	--	6.8 U	5.8 U	5.6 U	5.1 U	6.1 U	6.8 U	7.8 U
Freon 12	75-71-8	µg/m3	--	4.8 U	4.1 U	4 U	3.6 U	4.3 U	4.8 U	5.5 U
Heptane	142-82-5	µg/m3	--	4 U	3.4 U	3.3 U	3 U	3.6 U	4 U	4.6 U
Hexachlorobutadiene	87-68-3	µg/m3	--	42 U	35 U	34 U	31 U	37 U	41 U	48 U
Hexane	110-54-3	µg/m3	--	3.4 U	**26**	2.8 U	2.6 U	3.1 U	3.4 UB	3.9 UB
m,p-Xylene	08-38-3/106-42	µg/m3	--	4.2 U	3.6 U	3.5 U	3.2 U	3.8 U	4.2 U	4.8 U
Methyl tert-butyl ether	1634-04-4	µg/m3	--	3.5 U	3 U	2.9 U	2.6 U	3.2 U	3.5 U	4 U
Methylene Chloride	75-09-2	µg/m3	--	34 U	29 U	28 U	26 U	30 U	34 U	39 U
o-Xylene	95-47-6	µg/m3	--	4.2 U	3.6 U	3.5 U	3.2 U	3.8 U	4.2 U	4.8 U
Propylbenzene	103-65-1	µg/m3	--	4.8 U	4.1 U	3.9 U	3.6 U	4.3 U	4.8 U	5.5 U
Styrene	100-42-5	µg/m3	--	4.2 U	3.5 U	3.4 U	3.1 U	3.7 U	4.1 U	4.7 U
Tetrachloroethene	127-18-4	µg/m3	--	6.6 U	5.6 U	5.4 U	5 U	5.9 U	6.6 U	7.6 U
Tetrahydrofuran	109-99-9	µg/m3	--	2.9 U	2.4 U	2.4 U	2.2 U	2.6 U	2.9 U	3.3 U
Toluene	108-88-3	µg/m3	--	3.7 U	3.1 U	3 U	2.8 U	3.3 U	3.6 U	4.2 U
trans-1,2-Dichloroethene	156-60-5	µg/m3	--	3.9 U	3.3 U	3.2 U	2.9 U	3.5 U	3.8 U	4.4 U
trans-1,3-Dichloropropene	10061-02-6	µg/m3	--	4.4 U	3.8 U	3.6 U	3.3 U	4 U	4.4 U	5.1 U
Trichloroethene	79-01-6	µg/m3	--	5.2 U	4.5 U	4.3 U	4 U	4.7 U	5.2 U	6 U
Vinyl Chloride	75-01-4	µg/m3	--	2.5 U	2.1 U	2 U	1.9 U	2.2 U	2.5 U	2.8 U

Toxicology Summary – Camp Minden

Soil Results

The EPA collected soil samples collected from three locations located on Camp Minden. The soil samples were 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 did not exceed the comparison levels.

The results indicated that dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) Toxicity Equivalence (TEQ)) did not exceed the noncarcinogenic screening level for residential and industrial soil, but did exceed the carcinogenic screening level for both residential and industrial soils at one location Camp Minden Central S- Line [both field sample and duplicate SL 5/13 &14/2015 FS/ SL 5/14/2015 DUP. The noncancer RSL for 2,3,7,8-TCDD is a concentration of 50 ng/kg or parts per trillion (PPT) for residential land use and 720 ng/kg for industrial land use, and the carcinogenic RSL for 2,3,7,8-TCDD RSL is 4.9 ng/kg for residential land use and 22 ng/kg for industrial land use. The noncancer RSL for dioxin in soil typically is used as the preliminary remediation goal (PRG) for Superfund site decisions.

SL 5/13&14/2015 FS	Camp Minden S-Line	42.3 ng/kg (TEQ ND=0.5)
SL 5/14/2015 DUP	Camp Minden S-Line	109 ng/kg (TEQ ND=0.5)

In addition,some 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).

One soil sample that exceeded the residential screening value for the benzo(b)fluoranthene but it did not exceed the industrial screening value. The RSL for benzo(b)fluoranthene is 150 µg/kg for residential land use and 2,900 µg/kg for industrial land use. Benzo(b)fluoranthene was only detected in the duplicate sample at the Camp Minden S-Line location. This area is an industrial area and did not exceed the industrial screening value. There were no other chemicals detected in soil that exceeded the RSLs.

SL 5/14/2015 DUP	Camp Minden S-Line	389 µg/kg

Air Monitoring/Sampling Data

The EPA did air monitoring and sampling at eight locations located on or near Camp Minden. Analytical result were compared to the National Ambient Air Quality Standards (NAAQS) air quality standards as well as the Regional Screening Level (RSL). The air monitoring and analytical data did not exceed the comparison values.

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.

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 µg/m^3, however did not exceed the 24-hour NAAQS standard of 35 µg/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.

EPA Baseline Data Summary:

- Air Monitoring
  - No exceedances above NAAQS
- Soil Sampling
  - No exceedances above EPA RSLs
- Air Sampling
  - PM2.5 exceeded EPA RSL, but is below NAAQS.

Questions R6_Camp_Minden@epa.gov

- Any questions?

- We need your feedback on:
  - Future Workshop Topics

Email: R6_Camp_Minden@epa.gov

Info: www.epa.gov/region6 (click on Camp Minden) or www2.epa.gov/la/camp-minden

Thank you again.