

FINAL



Health Assessment of the Louisiana  
Department of Environmental Quality's Air  
Monitoring Data Results for the Clean  
Harbor- Colfax, LLC Facility

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By:

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Environmental Epidemiology and  
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The Louisiana Department of Health/Office of Public Health/Section of Environmental Epidemiology and Toxicology (LDH/OPH/SEET) has received air monitoring data collected by the Louisiana Department of Environmental Quality (LDEQ) from the following locations: off-site near the Clean Harbor Colfax, LLC facility (located downwind of the facility near the fenceline); in the residential area in close proximity to the facility; and a background sample. SEET received this air data from the LDEQ on January 23, 2017 and was requested to provide a draft assessment by January 30, 2017. Air sampling by LDEQ began on 10/30/16 and ended on 11/11/16.

### **1-Site Description**

Clean Harbors Colfax, LLC is a commercial facility located on an approximately 730-acre site in a rural, heavily wooded area about five miles northwest of the town of Colfax, Louisiana in Grant Parish. This facility receives, stores, and treats over 300 reactive wastes such as ammunitions, black powder, detonating trains, high explosives, detonator/blasting caps, TNT, RDX, and nitrocellulose propellants all in solid, sludge, and liquid forms. The Clean Harbors Colfax facility, which uses EPA approved thermal treatment to destroy and treat the waste materials, was first permitted to open burn explosives by an exemption issued by the LDEQ allowing them to perform open burn explosives in June 1985 and open burning of propellant explosive waste in August 1992. In August 2015, the facility began accepting and burning waste transported from the Camp Minden site (Webster Parish) which is approximately 100 miles northwest of the Colfax facility.

A Louisiana House Concurrent Resolution 118 (HCR 118) requested LDEQ “to develop and implement a sampling plan for testing of the soil, groundwater, and air at the commercial facility permitted to open burn and open detonate, during normal operations, to determine sufficient information to make informed decisions on the use of the process in normal operations.” The purpose of the air monitoring being performed at the Clean Harbors, Colfax facility is to determine if the air quality has been affected by the ongoing open burning/open detonation activities which are being conducted in accordance with the Clean Harbors’ air permit. The wastes that are treated by the facility are provided in Table I and were listed in the LDEQ’s Clean Harbors-Colfax Facility Air Sampling and Analysis Plan.

**Table 1: Materials Characterization / Materials Inventory<sup>1,2,3</sup>**

Waste Description	Quantity (lbs)	Chemical Constituent Content	% of Annual Receipts
Fireworks	50,088	Barium Chromate, Potassium Nitrate, Charcoal, Sulfur, Graphite, Lead Azide, Potassium Perchlorate, Sodium Nitrate	5-10
Detonators	42,933	HMX, RDX, Lead Azide, PETN, Lead Styphnate, Potassium Chlorate	4-8
Propellants	71,555	RDX, Lead Citrate, Zirconium Carbide, Nitroglycerin, Nitrocellulose, Ammonium Perchlorate, Aluminum Powder, Copper Chromite	10-20
Power Charges	50,088	HMX, PETN, Lead Azide, RDX, Strontium Nitrate, Potassium Perchlorate, Potassium Nitrate, Sulfur	5-10
Shaped Charges	78,711	HMX, HNS, RDX, PETN, Aluminum Graphite, Lead	10-20
Igniters	50,088	Charcoal, Potassium Nitrate, Sulfur, Barium Chromate, Potassium Perchlorate, Carbon	5-10
Fuses	42,933	Charcoal, Sulfur, Graphite, Lead Azide, RDX, Carbon, Potassium Perchlorate, Zirconium, Potassium Nitrate, Antimony Sulfide	2-10
Bulk High Explosives	143,111	RDX, HMX, PETN, TNT, Lead Azide, Lead Styphnate	20-25
Rocket Motors	85,866	Aluminum Powder, Ammonium Perchlorate, Polybutadiene, Diisocyanate, Nitrocellulose, Iron Oxide, Magnesium Oxide	10-15
Detonating Cord	50,088	PETN, RDX, HMX, HNS, PYX	5-10
Air Bag Inflators	14,311	Viton, Zirconium, Potassium Perchlorate, Argon, Helium	2-4
Explosive Contaminated Debris	35,777	RDX, TNT, HMX, PETN, Sodium Nitrate, Lead Azide, Lead Styphnate, Nitrocellulose	5-15

1 Information source: Clean Harbors Waste Analysis Plan

2 Information based on historical annual receipts from facility.

3 Because waste receipts are dependent on a wide variety of market parameters material inventory may vary.

## **2-Environmental Data Collection**

Air emission sample data were collected by the LDEQ and analyzed for particulates, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, dioxins/furans, explosive residues, sulfates, nitrates, and perchlorates. Additionally, included are the criteria pollutants: nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and carbon monoxide (CO) and the non-criteria pollutant carbon dioxide (CO<sub>2</sub>).

The equipment used for each of the chemicals of concern was provided by the LDEQ and are the following:

- For SO<sub>2</sub> analysis an Advanced Pollution Instrumentation (API) Model 100A Fluorescent Analyzer following EPA Equivalent method EQSA-0990-077 was used. Detection limit: 0.4 ppb.
- For H<sub>2</sub>S testing an Advanced Pollution Instrumentation Model 101A Fluorescent Analyzer, following EPA Equivalent method EQSA-0990-077 was used. Detection limit: 0.4ppb
- For NO-NO<sub>2</sub>-NO<sub>x</sub> a Thermo Electron model 42C instrument was employed using EPA reference method RFNA-1289-074. Detection limit: 0.4ppb
- For CO analysis a Thermo Environmental Instruments 48C instrument was used following EPA reference method RFCA-0981-054. Detection limit: 0.04ppm
- For PM<sub>2.5</sub> a Rupprecht and Patashnick 1400A TEOM was used that follows EPA Automated Equivalent Method EQPM-1090-079 for the monitoring of PM<sub>10</sub> and has the EPA designation of Correlated Acceptable Continuous Monitor (CACM) when operated in the PM<sub>2.5</sub> configuration. Detection limit: 0.06 µg/m<sup>3</sup> (1-hour average)
- For CO<sub>2</sub> analysis a Thermo Fisher 410i continuous analyzer was employed. Detection limit: 1.0 ppm
- PM<sub>2.5</sub> (24-hour) – TE-Wibur 2.5 - Low Volume Air Particulate Sampler
- PM<sub>10</sub> (24-hour) – TE-Wibur 10 - Low Volume Air Particulate Sampler
- TSP – General metal Works – Hi Vol.
- Semi-volatiles – TE-1000 – PUF – Hi volume polyurethane foam sampler with pre-filter (24-hour sample)
- Dioxins/Furans - TE-1000 – PUF – Hi volume polyurethane foam sampler with pre-filter (72-hour sample)
- Explosives – SKC Universal PCXR8 Personal sampling Pump (1 l/min.) with Tenax OVS Tube (SKC 226-56). OSHA Method 44 (Modified)

VOCs – 24 Hour passive sample – Evacuated SUMMA canister with critical orifice

Three air samples were collected at the following locations and dates. See map in APPENDIX B.

**Table 2: Background Sample –Grant Parish Water Facility near corner of Hwy 71 and Hwy 471**

<b>COC</b>	<b>Dates of Sample Collection</b>	<b>Weather Conditions</b> (WS = Wind Speed; AT = Average Temperature; RH = Relative Humidity; BP= Barometric Pressure)
Dioxins/Furans	10/31/16- 11/03/16	Average WS = 1 mph; Wind direction = 289 degrees; AT = 22.0 C RH=83%; BP= 29.97 in Hg
Explosive Residue (Sample #1, Sample #2, Sample #3)	10/30/2016-10/31/2016 (24 hour)	Average WS = 1 mph; Wind direction = 256 degrees; AT = 20.2 C RH=75%; BP= 29.99 in Hg
Polynuclear Aromatic Hydrocarbons (SVOCs)	10/30/2016-10/31/2016 (24 hour)	Average WS = 1 mph; Wind direction = 256 degrees; AT = 20.2 C RH=75%; BP= 29.99 in Hg
Volatiles (VOCs)	10/30/2016-10/31/2016 (24 hour)	Average WS = 1 mph; Wind direction = 256 degrees; AT = 20.2 C RH=75%; BP= 29.99 in Hg
Metals/Perchlorate/Nitrate/ Sulfate/TSP	10/30/2016-10/31/2016 (24 hour)	Average WS = 1 mph; Wind direction = 256 degrees; AT = 20.2 C RH=75%; BP= 29.99 in Hg
PM10	10/30/2016-10/31/2016 (24 hour)	Average WS = 1 mph; Wind direction = 256 degrees; AT = 20.2 C RH=75%; BP= 29.99 in Hg
PM 2.5	10/30/2016-10/31/2016 (24 hour)	Average WS = 1 mph; Wind direction = 256 degrees; AT = 20.2 C RH=75%; BP= 29.99 in Hg

**Table 3: Community Sample at vacant lot of Watkins Lane off of Hwy 158**

<b>COC</b>	<b>Dates of Sample Collection</b>	<b>Weather Conditions</b> (WS = Wind Speed; AT = Average Temperature; RH = Relative Humidity; BP= Barometric Pressure)
Dioxins/Furans	11/3/16- 11/6/16	Average WS = 1 mph; Wind direction = 61 degrees; AT = 20.5 C RH=70%; BP= 30.06 in Hg
Explosive Residue (Sample #1, Sample #2, Sample #3)	11/4/2016-11/5/2016 (24 hour)	Average WS = 2 mph; Wind direction = 75 degrees; AT = 21.1 C RH=72%; BP= 30.07 in Hg
Polynuclear Aromatic Hydrocarbons (SVOCs)	11/4/2016-11/5/2016 (24 hour)	Average WS = 2 mph; Wind direction = 75 degrees; AT = 21.1 C RH=72%; BP= 30.07 in Hg

<b>COC</b>	<b>Dates of Sample Collection</b>	<b>Weather Conditions</b> (WS = Wind Speed; AT = Average Temperature; RH = Relative Humidity; BP= Barometric Pressure)
Volatiles (VOCs)	11/4/2016-11/5/2016 (24 hour)	Average WS = 2 mph; Wind direction = 75 degrees; AT = 21.1 C RH=72%; BP= 30.07 in Hg
Metals/Perchlorate/Nitrate/Sulfate/TSP	11/4/2016-11/5/2016 (24 hour)	Average WS = 2 mph; Wind direction = 75 degrees; AT = 21.1 C RH=72%; BP= 30.07 in Hg
PM10	11/4/2016-11/5/2016 (24 hour)	Average WS = 2 mph; Wind direction = 75 degrees; AT = 21.1 C RH=72%; BP= 30.07 in Hg
PM 2.5	11/4/2016-11/5/2016 (24 hour)	Average WS = 2 mph; Wind direction = 75 degrees; AT = 21.1 C RH=72%; BP= 30.07 in Hg

**Table 4: Fenceline Sample at 312 Bush Road off of Hwy 71**

<b>COC</b>	<b>Dates of Sample Collection</b>	<b>Weather Conditions</b> (WS = Wind Speed; AT = Average Temperature; RH = Relative Humidity; BP= Barometric Pressure)
Dioxins/Furans	11/8/16- 11/11/16	Average WS = 2 mph; Wind direction = 70 degrees; AT = 16.1 C RH=82%; BP= 30.04 in Hg
Explosive Residue (Sample #1, Sample #2, Sample #3)	11/9/2016-11/10/2016 (24 hour)	Average WS = 3 mph; Wind direction = 69 degrees; AT = 15.0 C RH=76%; BP= 30.06 in Hg
Polynuclear Aromatic Hydrocarbons (SVOCs)	11/9/2016-11/10/2016 (24 hour)	Average WS = 3 mph; Wind direction = 69 degrees; AT = 15.0 C RH=76%; BP= 30.06 in Hg
Volatiles (VOCs)	11/9/2016-11/10/2016 (24 hour)	Average WS = 3 mph; Wind direction = 69 degrees; AT = 15.0 C RH=76%; BP= 30.06 in Hg
Metals/Perchlorate/Nitrate/Sulfate/TSP	11/9/2016-11/10/2016 (24 hour)	Average WS = 3 mph; Wind direction = 69 degrees; AT = 15.0 C RH=76%; BP= 30.06 in Hg
PM10	11/9/2016-11/10/2016 (24 hour)	Average WS = 3 mph; Wind direction = 69 degrees; AT = 15.0 C RH=76%; BP= 30.06 in Hg
PM 2.5	11/9/2016-11/10/2016 (24 hour)	Average WS = 3 mph; Wind direction = 69 degrees; AT = 15.0 C RH=76%; BP= 30.06 in Hg

### **3. Analytical Results from the Sampling**

LDH/OPH conducted the health consultation based on summary tables of the air analysis provided by LDEQ.

### **4. Screening Process**

Comparison values (CVs) are media-specific concentrations of chemicals that are used by health assessors to screen environmental contaminants for further evaluation. Agencies develop comparison values for an intended purpose and use, e.g., clean-up, permitting, worker exposure or population health. Comparison values set for clean-up and permitting are intended to be protective of health (e.g., have safety factors or buffers well below the levels that are associated with adverse health effects). These types of CVs (e.g., EPA's RSLs) provide guidance for the clean-up of Superfund or other sites or guide the permitting process. These are not used as predictors of adverse health effects. Other comparison values (e.g., TCEQ's AMCVs) are used to guide the interpretation of air monitoring results in order to prevent adverse health effects. If the AMCV is not available, the default comparison value used is the EPA's Regional Screening Level (RSL) and then the Texas Effects Screening Level (ESL). The comparison values used in the evaluation of the Clean Harbors-Colfax air monitoring compounds are listed below:

The Clean Air Act, which was last amended in 1990, requires EPA to set **National Ambient Air Quality Standards (NAAQS)** (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act identifies two types of national ambient air quality standards. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. EPA has set **National Ambient Air Quality Standards** for six principal pollutants, which are called "criteria" pollutants. See comparison values attached in tables.

The **Louisiana Toxic Air Pollutant Ambient Air Standards (LA AAS)** define the limits at which concentrations of toxic air pollutants (those identified in Title III of the Clean Air Act Amendments of 1990) are considered to be unacceptable and require air pollution controls. These compounds are known or suspected to cause cancer or other serious health effects. See comparison values attached in tables.

The **Texas Commission on Environmental Quality (TCEQ)** uses two types of screening values. **Air Monitoring Comparison Values (AMCVs)** are screening levels used in TCEQ's evaluation of ambient air monitoring data to assess the potential for measured concentrations of specific chemicals to cause health or welfare effects. Health-based AMCVs are safe levels at which exposure is unlikely to result in adverse health effects. Long-term AMCVs are similar to the USEPA's inhalation reference concentrations. **Effective Screening Levels (ESLs)** are screening levels used in the TCEQ's air permitting process to establish maximum emission rates that are written into enforceable air permits. Health-

based ESLs are set 70 percent lower than the safe level, or AMCV. This additional buffer allows TCEQ to take into account exposure to chemicals from multiple sources in air permit reviews. For the assessment of the air monitoring results for Clean Harbors, AMCVs for long term health are used. (<https://www.tceq.texas.gov/toxicology/amcv/about>)

The **EPA's risk-based screening levels (RSL's)** are developed using risk assessment guidance from the EPA Superfund program and can be used for Superfund sites. They are risk-based concentrations derived from standardized equations combining exposure information assumptions with EPA toxicity data. RSLs are used for site "screening" and as initial cleanup goals. At sites where contaminant concentrations fall below RSLs, no further action or study is warranted under the Superfund program. Chemical concentrations above the RSL would not automatically designate a site as "dirty" or trigger a response action; however, exceeding a RSL suggests that further evaluation of the potential risks by site contaminants is appropriate. <https://www.epa.gov/risk/regional-screening-levels-frequent-questions-may-2016#FQ1> The hazard quotient used in the RSL in the summary table varied from 1.0 to 0.1 for the various compounds reported.

## **5. Results and Discussion**

The air monitoring results are from a "snapshot in time" based on a small number of air samples collected over a short period of time and may not reflect actual long-term exposures. The concentration for chemicals detected at the Clean Harbor-Colfax facility were compared to respective comparison values (CVs) for the criteria and non-criteria pollutants, particulate matter, metals, explosives, VOC's, and dioxins/furans. See table in the Appendix A.

For the VOCs, none of the concentrations of the compounds tested in the air monitoring sampling exceeded the long term AMCVs. At the time of this round of air sampling, the results do not indicate a likelihood of adverse health effects. In addition, the concentrations of the compounds from the air monitoring were also compared to the RSLs in order to determine the compounds that may warrant further evaluation. All of the compounds, except for acrolein, were below the RSLs. Acrolein was detected at concentrations above the RSL of 0.02 ug/ m<sup>3</sup> at the fenceline, in the community and in the background sample.

The concentrations of acrolein detected at the fenceline (0.27 ug/ m<sup>3</sup>) and in the community (0.46 ug/ m<sup>3</sup>) were below the background level (0.66 ug/ m<sup>3</sup>) taken at this time. The concentrations of acrolein was below the AMCV of 2.7 ug/ m<sup>3</sup>. As a point of reference for workers, the Occupational Safety and Health Administration's permissible exposure limit (OSHA PEL) value for acrolein is 250 ug/ m<sup>3</sup> and the American Conference of Governmental Industrial Hygienist's (ACGIH) threshold limit value (TLV) is 230 ug/m<sup>3</sup>.

Acrolein is not classifiable as a human carcinogen (Group 3).  
[https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance\\_nmbr=364](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=364)



## **6. Conclusion**

The results of the 3 air monitoring samples collected between October 30, 2016 to November 11, 2016 do not indicate a likelihood of health effects from the compounds tested in air for people residing in the vicinity of the Clean Harbors- Colfax facility. The elevation of the concentration of acrolein above the RSL indicates this compound warrants following in future air monitoring. The background value for acrolein was above the values found at the fenceline and community; this may indicate another source of acrolein in the area.

It should be noted that the air sampling occurred over a two-week period. Depending upon the waste being burned, different combustion products and byproducts may be present. The results of this current air monitoring may not be representative of air contaminants at the site given the variety of wastes burned annually and the possible long term exposure of near-by residents.

## **7. Recommendations**

Additional air monitoring related to the variety of munitions burned on actual specific dates and times is needed to obtain a representative sample of possible air contaminants in order to assess risk to the community. Follow up on the air concentrations of acrolein is warranted. LDH/OPH/SEET will be available to assess future ambient air samples collected in the vicinity of the Clean Harbors-Colfax facility.

**APPENDIX A-**  
**AIR MONITORING SUMMARY RESULTS**

## Air Monitoring Summary Results Table (Clean Harbor-Colfax Facility)

### Continuous Monitor Results

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
Sulfur Dioxide	1-hour	ppb	7	1	0	75	NAAQS				0.4
Carbon Monoxide	1-hour	ppm	12.1	3.1	6.2	35	NAAQS				0.4
Nitrogen Monoxide	1-hour	ppb	29	11	13	NA					0.4
Nitrogen Dioxide	1-hour	ppb	14	4	7	100	NAAQS				0.4
Nitrogen Oxides	1-hour	ppb	31	15	19	NA					0.4
Hydrogen Sulfide	8-hour	ppb	2	3	0	237	LAAS - 8H				0.4
Carbon Dioxide	1-hour	ppm	743	811	869	NA					1.0

### Particulate Matter

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
Total Suspended Particulate (TSP)	24-hour	µg/m <sup>3</sup>	18	25	16	NA				1	0.0006
TSP Collocated	24-hour	µg/m <sup>3</sup>	4	16	10	NA				1	0.0006
PM10	24-hour	µg/m <sup>3</sup>	ND	ND	ND	150	NAAQS			1	0.0417
PM2.5	24-hour	µg/m <sup>3</sup>	ND	ND	ND	35	NAAQS			1	0.0417
PM2.5 Collocated	24-hour	µg/m <sup>3</sup>	ND	ND	ND	35	NAAQS			1	0.0417
TEOM PM2.5	24-hour	µg/m <sup>3</sup>	15.0	13.0	12.3	35	NAAQS				0.06
Sulfates	24-hour	µg/m <sup>3</sup>	ND	1.55	1.971	NA				5.0	0.0029
Nitrates	24-hour	µg/m <sup>3</sup>	ND	0.494	0.371	NA				2.0	0.0011
Perchlorates	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA				0.080	0.0033

## Metals

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
<b>Aluminum</b>	24-hour	µg/m <sup>3</sup>	0.156	0.224	ND	5	ESL			240	0.1369
Antimony	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.5	ESL	11.9	LAAS - 8H	72	0.0411
Arsenic	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.067	ESL	0.02	LAAS - A	120	0.0684
<b>Barium</b>	24-hour	µg/m <sup>3</sup>	ND	0.007	ND	0.52	RSL-THQ1.0	11.9	LAAS - 8H	12	0.0068
Beryllium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.002	ESL	0.04	LAAS - A	0.6	0.0003
Boron	24-hour	µg/m <sup>3</sup>	ND	ND	ND	5	ESL			60	0.0342
Cadmium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.003	ESL			3.6	0.0021
<b>Calcium</b>	24-hour	µg/m <sup>3</sup>	0.541	0.499	0.533	NA				720	0.4106
<b>Chromium</b>	24-hour	µg/m <sup>3</sup>	ND	ND	0.002	0.041	ESL			60	0.0342
Cobalt	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.02	ESL			3.6	0.0021
<b>Copper</b>	24-hour	µg/m <sup>3</sup>	0.363	0.109	0.185	1	ESL	23.800	LAAS - 8H	24	0.0137
<b>Iron</b>	24-hour	µg/m <sup>3</sup>	0.201	0.241	ND	NA				240	0.1369
Lead	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.15	NAAQS			60	0.0342
Lithium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.2	ESL			24	0.0137
<b>Magnesium</b>	24-hour	µg/m <sup>3</sup>	0.103	0.106	0.310	4	ESL			60	0.0342
<b>Manganese</b>	24-hour	µg/m <sup>3</sup>	0.006	0.011	0.008	0.052	RSL-THQ1.0	4.760	LAAS - 8H	6	0.0034
Molybdenum	24-hour	µg/m <sup>3</sup>	ND	ND	ND	3	ESL			18	0.0103
<b>Nickel</b>	24-hour	µg/m <sup>3</sup>	ND	ND	0.004	0.011	RSL-TR10 <sup>-6</sup>	0.21	LAAS - A	13	0.0074
Potassium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	2	ESL			600	0.3422
Selenium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.2	ESL			120	0.0684
Silver	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.01	ESL			12	0.0068
<b>Sodium</b>	24-hour	µg/m <sup>3</sup>	0.516	0.359	0.130	NA				180	0.1027
Strontium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	2	ESL			18	0.0103

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
Thallium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.1	ESL			60	0.0342
Tin	24-hour	µg/m <sup>3</sup>	ND	ND	ND	2	ESL			120	0.0684
<b>Titanium</b>	24-hour	µg/m <sup>3</sup>	0.005	0.007	0.002	5	ESL			3.6	0.0021
Vanadium	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA				3.6	0.0021
<b>Zinc</b>	24-hour	µg/m <sup>3</sup>	ND	ND	0.030	2	ESL	119	LAAS - 8H	24	0.0137

## Explosives

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
<b>Explosives 1</b>											
2,4,6-Trinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	0.1	ESL			0.10	0.21
2,4-Dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	4.76	LAAS - 8H			0.10	0.21
2,6-Dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	4.76	LAAS - 8H			0.10	0.21
RDX	8-hour	µg/m <sup>3</sup>	ND	ND	ND	0.5	ESL			0.10	0.21
HMX	8-hour	µg/m <sup>3</sup>	ND	ND	ND	NA				0.10	0.21
1,3,5-Trinitrobenzene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL			0.10	0.21
2-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL			0.10	0.21
4-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL			0.10	0.21
TETRYL	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1.5	ESL			0.10	0.21
1,3-Dinitrobenzene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL			0.10	0.21
3-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL			0.10	0.21
4-Amino-2,6-dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	9	ESL			0.10	0.21
2-Amino-4,6-dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	9	ESL			0.10	0.21
<b>Explosives 2</b>											

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
2,4,6-Trinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	0.1	ESL				
2,4-Dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	4.76	LAAS - 8H				
2,6-Dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	4.76	LAAS - 8H				
RDX	8-hour	µg/m <sup>3</sup>	ND	ND	ND	0.5	ESL				
HMX	8-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					
1,3,5-Trinitrobenzene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL				
2-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL				
4-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL				
TETRYL	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1.5	ESL				
1,3-Dinitrobenzene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL				
3-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL				
4-Amino-2,6-dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	9	ESL				
2-Amino-4,6-dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	9	ESL				
<b>Explosives 3</b>											
2,4,6-Trinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	0.1	ESL				
2,4-Dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	4.76	LAAS - 8H				
2,6-Dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	4.76	LAAS - 8H				
RDX	8-hour	µg/m <sup>3</sup>	ND	ND	ND	0.5	ESL				
HMX	8-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					
1,3,5-Trinitrobenzene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL				
2-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL				
4-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL				
TETRYL	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1.5	ESL				

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
1,3-Dinitrobenzene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL				
3-Nitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	11	ESL				
4-Amino-2,6-dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	9	ESL				
2-Amino-4,6-dinitrotoluene	8-hour	µg/m <sup>3</sup>	ND	ND	ND	9	ESL				

### PAHs

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
1-Methylnaphthalene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	20	ESL			5.0	0.0151
2-Methylnaphthalene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	20	ESL			5.0	0.0151
Acenaphthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	10	ESL			5.0	0.0151
Acenaphthylene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	10	ESL			5.0	0.0151
Anthracene	24-hour	µg/m <sup>3</sup>	ND	0.0172	ND	0.10	ESL			5.0	0.0151
Benzo(a)anthracene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Benzo(a)pyrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.003	ESL			5.0	0.0151
Benzo(b)fluoranthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Benzo(g,h,i)perylene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Benzo(k)fluoranthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Carbazole	24-hour	µg/m <sup>3</sup>	ND	ND	ND	10	ESL			5.0	0.0151
Chrysene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Dibenz(a,h)anthracene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Dibenzofuran	24-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL			5.0	0.0151
Fluoranthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Fluorene	24-hour	µg/m <sup>3</sup>	ND	0.0149	ND	1.00	ESL			5.0	0.0151
Indeno(1,2,3-cd)pyrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
Naphthalene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	50	ESL			5.0	0.0151

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
Phenanthrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.8	ESL			5.0	0.0151
Pyrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL			5.0	0.0151
PAHs Collocated						0.06	LAAS - A				
1-Methylnaphthalene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	20	ESL				
2-Methylnaphthalene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	20	ESL				
Acenaphthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	10	ESL				
Acenaphthylene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	10	ESL				
Anthracene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.10	ESL				
Benzo(a)anthracene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Benzo(a)pyrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.003	ESL				
Benzo(b)fluoranthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Benzo(g,h,i)perylene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Benzo(k)fluoranthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Carbazole	24-hour	µg/m <sup>3</sup>	ND	ND	ND	10	ESL				
Chrysene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Dibenz(a,h)anthracene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Dibenzofuran	24-hour	µg/m <sup>3</sup>	ND	ND	ND	1	ESL				
Fluoranthene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Fluorene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	1.00	ESL				
Indeno(1,2,3-cd)pyrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				
Naphthalene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	50	ESL				
Phenanthrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.8	ESL				
Pyrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.05	ESL				



### Dioxins and Furans - Toxic Equivalency

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	72-hour	pg/m <sup>3</sup>	0	0	0.00092	0.074	RSL-TR10 <sup>-6</sup>			0.44	0.00052
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	72-hour	pg/m <sup>3</sup>	0	0.00171	0.00127	0.074	RSL-TR10 <sup>-6</sup>			0.37	0.00043
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	72-hour	pg/m <sup>3</sup>	0	0.00036	0.00012	0.074	RSL-TR10 <sup>-6</sup>			0.28	0.00033
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	72-hour	pg/m <sup>3</sup>	0.00014	0.00044	0.00023	0.074	RSL-TR10 <sup>-6</sup>			0.26	0.00030
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	72-hour	pg/m <sup>3</sup>	0.00026	0.00089	0.00042	0.074	RSL-TR10 <sup>-6</sup>			0.27	0.00031
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	72-hour	pg/m <sup>3</sup>	0.00034	0.00056	0.00028	0.074	RSL-TR10 <sup>-6</sup>			0.40	0.00047
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	72-hour	pg/m <sup>3</sup>	0.00005	0.00007	0.00003	0.074	RSL-TR10 <sup>-6</sup>			0.34	0.00040
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	72-hour	pg/m <sup>3</sup>	0.00034	0.00111	0.00060	0.074	RSL-TR10 <sup>-6</sup>			0.65	0.00076
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	72-hour	pg/m <sup>3</sup>	0.00005	0.00023	0.00008	0.074	RSL-TR10 <sup>-6</sup>			0.56	0.00065
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	72-hour	pg/m <sup>3</sup>	0.00029	0.00513	0.00142	0.074	RSL-TR10 <sup>-6</sup>			0.56	0.00065
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	72-hour	pg/m <sup>3</sup>	0.00034	0.00524	0.00127	0.074	RSL-TR10 <sup>-6</sup>			0.32	0.00037
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	72-hour	pg/m <sup>3</sup>	0.00016	0.00217	0.00053	0.074	RSL-TR10 <sup>-6</sup>			0.28	0.00032

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	72-hour	pg/m <sup>3</sup>	0.00013	0.00228	0.00059	0.074	RSL-TR10 <sup>-6</sup>			0.31	0.00036
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72-hour	pg/m <sup>3</sup>	0	0.00024	0	0.074	RSL-TR10 <sup>-6</sup>			0.35	0.00040
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	72-hour	pg/m <sup>3</sup>	0.00010	0.00098	0.00029	0.074	RSL-TR10 <sup>-6</sup>			0.28	0.00032
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	72-hour	pg/m <sup>3</sup>	0.00001	0.00024	0.00004	0.074	RSL-TR10 <sup>-6</sup>			0.36	0.00042
1,2,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	72-hour	pg/m <sup>3</sup>	0.00001	0.00003	0.00001	0.074	RSL-TR10 <sup>-6</sup>			0.18	0.00021

### **Volatile Organic Compounds**

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
Acetone	24-hour	µg/m <sup>3</sup>	9.7	11	6.9	16000		3,200	RSL-THQ0.1		0.23
Acrolein	24-hour	µg/m <sup>3</sup>	0.66	0.46	0.27	2.7	Long-term AMCV	5.4 0.002	LAAS - 8H RSL-THQ0.1		0.13
Acrylonitrile	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.21	RSL-THQ0.1	1.47	LAAS-A		0.18
Allyl chloride	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.47	RSL-TR10 <sup>-6</sup>	71.40	LAAS - 8H		0.38
1,3-Butadiene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	20	Long-term AMCV	0.92 0.21	LAAS-A RSL-THQ0.1		0.40
Benzene	24-hour	µg/m <sup>3</sup>	1.9	0.38	0.32	4.5	Long-term AMCV	12 3.6	LAAS-A RSL-THQ0.1		0.099
Benzyl Chloride	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.1	RSL-THQ0.1				0.062
Bromodichloromethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.076	RSL-TR10 <sup>-6</sup>				0.19

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
Bromoform	24-hour	µg/m <sup>3</sup>	ND	ND	ND	2.6	RSL-TR10 <sup>-6</sup>				0.13
Bromomethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	12.0	Long-term AMCV	0.52	RSL-THQ0.1		0.23
2-Butanone	24-hour	µg/m <sup>3</sup>	0.74	1.3	0.62	520	RSL-THQ0.1	14,000	LAAS - 8H		0.091
n-Butylbenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					0.38
sec-Butylbenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					0.41
Carbon disulfide	24-hour	µg/m <sup>3</sup>	ND	ND	ND	73	RSL-THQ0.1	71.40	LAAS - 8H		0.15
Carbon tetrachloride	24-hour	µg/m <sup>3</sup>	0.54	0.49	0.49	13.0	Long-term AMCV	6.67	LAAS-A		0.23
								10	RSL-THQ0.1		
								1,100	LAAS - 8H		
Chlorobenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	46.0	AMCV	5.2	RSL-THQ0.1		0.14
Chloroethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	1,000	RSL-THQ0.1	6,290	LAAS - 8H		0.13
Chloroform	24-hour	µg/m <sup>3</sup>	ND	ND	ND	10	Long-term AMCV	4.3	LAAS-A		0.16
								10	RSL-THQ0.1		
Chloromethane	24-hour	µg/m <sup>3</sup>	1.3	1.4	1.5	103	Long-term AMCV	55.56	LAAS-A		0.15
								9.4	RSL-THQ0.1		
Cyclohexane	24-hour	µg/m <sup>3</sup>	0.65	ND	ND	340	Long-term AMCV	630	RSL-THQ0.1		0.083
Dibromochloromethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	2	ESL				0.18
1,1-Dichloroethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	400	Long-term AMCV	1.8	RSL-TR10 <sup>-6</sup>		0.17
1,1-Dichloroethene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	21	RSL-THQ0.1	2.00	LAAS-A		0.25
1,2-Dibromoethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.94	RSL-THQ0.1	0.45	LAAS-A		0.28
1,1-Dibromoethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					0.71
1,2-Dichloroethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.73	RSL-THQ0.1	3.85	LAAS-A		0.15
1,2-Dichloropropane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	46	Long-term	8,260	LAAS - 8H		0.18

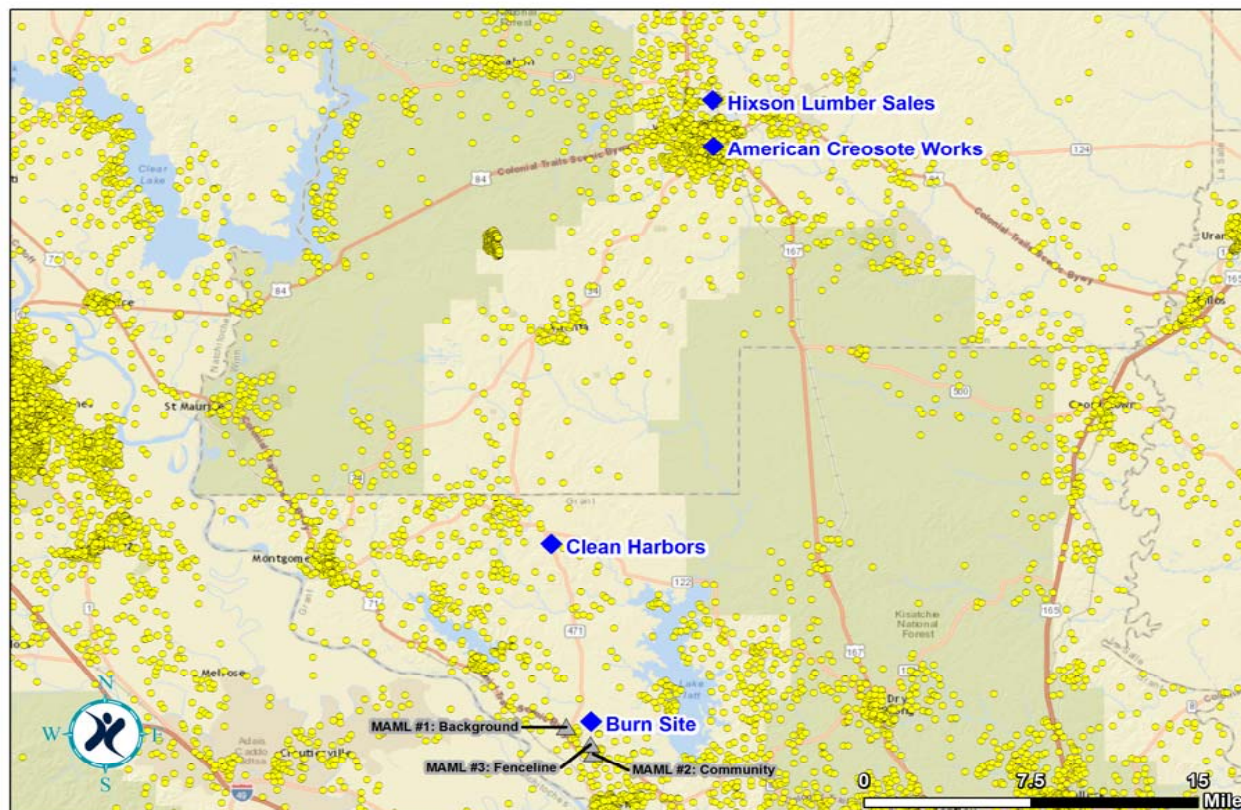
	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
							AMCV	0.42	RSL-THQ0.1		
1,4-Dioxane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	3.1	RSL-THQ0.1	2,140	LAAS - 8H		0.19
Dichlorodifluoromethane	24-hour	µg/m <sup>3</sup>	2.6	2.5	2.5	5000	Long-term AMCV	10	RSL-THQ0.1		0.29
trans-1,2-Dichloroethene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					0.11
cis-1,2-Dichloroethene	24-hour	µg/m <sup>3</sup>	ND	ND	0.13	790	ESL				0.11
cis-1,3-Dichloropropene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	4.5	Long-term AMCV	4.5	ESL		0.17
1,2-Dichlorobenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	21	RSL-THQ0.1				0.22
1,3-Dichlorobenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	160	ESL				0.17
1,4-Dichlorobenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	83	RSL-THQ0.1	1,430	LAAS - 8H		0.19
trans-1,3-Dichloropropene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	4.5	Long-term AMCV	4.5	ESL		0.14
1,2-Dichlorotetrafluoroethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	70000	ESL				0.42
Di-Isopropyl ether	24-hour	µg/m <sup>3</sup>	ND	ND	ND	73	RSL-THQ0.1				0.21
Ethanol	24-hour	µg/m <sup>3</sup>	9.2	5.6	2.6	1880	ESL				0.16
Ethylbenzene	24-hour	µg/m <sup>3</sup>	0.43	ND	ND	100	RSL-THQ0.1	10,300	LAAS - 8H		0.10
Ethyl Acetate	24-hour	µg/m <sup>3</sup>	1.8	0.54	ND	1440	Long-term AMCV	7.3	RSL-THQ0.1		0.30
Ethyl tert-Butyl Ether	24-hour	µg/m <sup>3</sup>	ND	ND	ND	21	ESL				0.21
4-Ethyltoluene	24-hour	µg/m <sup>3</sup>	0.24	ND	ND	125	ESL				0.22
Heptane	24-hour	µg/m <sup>3</sup>	1.4	0.18	ND	2700	ESL				0.098
Hexachloro-1,3-butadiene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.13	RSL-TR10 <sup>-6</sup>	4.55	LAAS-A		1.0
Hexane	24-hour	µg/m <sup>3</sup>	2.6	0.46	0.17	73	RSL-THQ0.1	4,190	LAAS - 8H		0.070

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
2-Hexanone	24-hour	µg/m <sup>3</sup>	ND	ND	ND	4.0	Long-term AMCV	3.1	RSL-THQ0.1		0.41
Isopropylbenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	42	RSL-THQ0.1				0.18
Isopropanol	24-hour	µg/m <sup>3</sup>	1.3	1.2	1.5	21	RSL-THQ0.1				0.24
p-Isopropyltoluene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					0.18
Methylene chloride	24-hour	µg/m <sup>3</sup>	1.2	0.83	0.83	350	Long-term AMCV	212.77 63	LAAS-A RSL-THQ0.1		0.18
4-Methyl-2-pentanone	24-hour	µg/m <sup>3</sup>	ND	ND	ND	310	RSL-THQ0.1	4,880	LAAS - 8H		0.21
Methyl Tert-Butyl Ether	24-hour	µg/m <sup>3</sup>	ND	ND	ND	180	Long-term AMCV	310	RSL-THQ0.1		0.27
Methyl methacrylate	24-hour	µg/m <sup>3</sup>	ND	ND	ND	73	RSL-THQ0.1	9,760	LAAS - 8H		0.65
Naphthalene	24-hour	µg/m <sup>3</sup>	0.31	ND	ND	50	Long-term AMCV	1,190 0.31	LAAS - 8H RSL-THQ0.1		0.27
Pentane	24-hour	µg/m <sup>3</sup>	5.9	1.7	0.65	100	RSL-THQ0.1				0.10
n-Propylbenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	250	Long-term AMCV	100	RSL-THQ0.1		0.47
Propene	24-hour	µg/m <sup>3</sup>	1.9	0.55	0.16	310	RSL-THQ0.1				0.070
Styrene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	470	Long-term AMCV	5,070 100	LAAS - 8H RSL-THQ0.1		0.34
1,1,2,2-Tetrachloroethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	7	Long-term AMCV	1.7 0.048	LAAS-A RSL-TR10 <sup>-6</sup>		0.15
1,1,1-Trichloroethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	5100	Long-term AMCV	45,200 520	LAAS - 8H RSL-THQ0.1		0.18
1,1,2-Trichloroethane	24-hour	µg/m <sup>3</sup>	ND	ND	ND	55	Long-term AMCV	6.25 0.18	LAAS-A RSL-TR10 <sup>-6</sup>		0.31
1,2,4-Trichlorobenzene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.21	RSL-THQ0.1				0.36
1,1,2-Trichlorotrifluoroethane	24-hour	µg/m <sup>3</sup>	0.67	0.56	0.53	3100	RSL-THQ0.1				0.38

	Sample Interval	Units	Background	Community	Fenceline	Comparison Value "Applied"	Source Standard	Additional Comparison Values	Source Standard	Reporting Limit	Detection Limit
1,2,4-Trimethylbenzene	24-hour	µg/m <sup>3</sup>	0.69	0.11	0.11	0.73	RSL-THQ0.1				0.11
1,3,5-Trimethylbenzene	24-hour	µg/m <sup>3</sup>	0.23	ND	ND	54	ESL				0.11
2,2,4-Trimethylpentane	24-hour	µg/m <sup>3</sup>	1.1	0.18	ND	540	ESL				0.084
t-Butyl Alcohol	24-hour	µg/m <sup>3</sup>	0.15	ND	ND	62	ESL				0.097
tert Amyl Methyl Ether	24-hour	µg/m <sup>3</sup>	ND	ND	ND	NA					0.063
Tetrachloroethene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	26	ESL	105.26	LAAS-A		0.16
Tetrahydrofuran	24-hour	µg/m <sup>3</sup>	ND	ND	ND	210	RSL-THQ0.1				0.47
Toluene	24-hour	µg/m <sup>3</sup>	3.2	0.57	0.57	4100	Long-term AMCV	8,900	LAAS - 8H		0.098
								520	RSL-THQ0.1		
Trichloroethene	24-hour	µg/m <sup>3</sup>	ND	ND	ND	54	Long-term AMCV	58.8	LAAS-A		0.16
								0.48	RSL-TR10 <sup>-6</sup>		
Trichlorofluoromethane	24-hour	µg/m <sup>3</sup>	1.3	1.3	1.3	5600	Long-term AMCV	5600	ESL		0.34
Vinyl acetate	24-hour	µg/m <sup>3</sup>	ND	ND	ND	21	RSL-THQ0.1	830	LAAS - 8H		0.20
Vinyl Bromide	24-hour	µg/m <sup>3</sup>	ND	ND	ND	0.31	RSL-THQ0.1				0.22
Vinyl chloride	24-hour	µg/m <sup>3</sup>	ND	ND	ND	1.2	Long-term AMCV	1.19	LAAS-A		0.18
								10	RSL-THQ0.1		
m,p-Xylene	24-hour	µg/m <sup>3</sup>	1.8	0.26	0.22	610	Long-term AMCV	10	RSL-THQ0.1		0.16
o-Xylene	24-hour	µg/m <sup>3</sup>	0.69	0.12	0.096	610	Long-term AMCV	10	RSL-THQ0.1		0.083
Xylenes,Total	24-hour	µg/m <sup>3</sup>	2.4	0.38	0.32	10	RSL-THQ0.1	10,300	LAAS - 8H		0.083

## **APPENDIX B- MAP**

## Map of Selected Facilities Near Clean Harbors in Colfax, La.



- Selected Facilities Near Colfax, LA**
- ◆ Requested Site
  - ▲ Air Monitor
- Population Density\***
- 1 Dot = 5 People



Map produced January 30, 2017 by the Louisiana Department of Health / Office of Public Health / Section of Environmental Epidemiology and Toxicology (SEET) using data provided by the Louisiana Department of Health.

\* 2010 population density randomly distributed by census block.

Disclaimer: SEET cannot guarantee the accuracy of the information contained on these maps and expressly disclaims liability for errors and omissions in their contents.