

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1009-AOP-R19 AFIN: 70-00098

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Clean Harbors El Dorado, LLC
309 American Circle
El Dorado, Arkansas 71730

3. PERMIT WRITER:

Andrea Sandage

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Hazardous Waste Treatment and Disposal
NAICS Code: 562211

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
4/26/2019	Modification	None – revised operational limits
5/9/19	Administrative Amendment	Added Diesel Tank to IA

6. REVIEWER'S NOTES:

Clean Harbors operates a hazardous waste treatment and storage facility located in El Dorado. The primary treatment process consists of incineration and some recycling activities. With this modification, the facility requests to revise the Subpart EEE operational limits specified in the current permit (Plantwide Conditions 150-182) with newly developed values based on the latest Comprehensive Performance Test (CPT) performed on SN-44 in 2018 and 2019. The facility also submitted an administrative

amendment which is incorporated into this permit modification to add a 550 gallon diesel tank as an A-3 Insignificant Activity. The total permitted emissions remained unchanged.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

On September 19, 2018, ADEQ granted the facility permission to revise the schedule by which a final NOC is to be submitted while the facility continues to operate SN-44.

The final Notice of Compliance (NOC) was submitted on March 4, 2019. This permit application updates the permit limits for SN-44 per the NOC.

8. PSD APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8 (b), explain why this permit modification is not PSD.

No change in emissions. Operational limits were revised.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-34	SO ₂ , opacity	40 CFR 60, Subpart Dc
SN-21	VOC	40 CFR 60, Subpart Kb
Equipment Leaks	VOC	40 CFR 60, Subpart VVa
Facility	VOC	40 CFR 61, Subpart C
Facility	VOC	40 CFR 61, Subpart E
Equipment Leaks	HAP	40 CFR 61, Subpart V
Facility	VOC	40 CFR 61, Subpart FF
SN-31, 37, 38, 39, 40, 41	HAP	40 CFR 63, Subpart DD
Tanks	HAP	40 CFR 63, Subpart OO
Containers	HAP	40 CFR 63, Subpart PP

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
Facility	ALL	40 CFR 63, Subpart EEE
SN-24A, 24B, 24D	HAP	40 CFR 63, Subpart ZZZZ
SN-24C, 24E	-	40 CFR 60, Subpart IIII

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? **N**

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

Include the results for any ambient air evaluations or modeling. Include NSR/PSD permits and permits that require an evaluation in accordance with revisions to the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

The facility emits HAPs related to incomplete combustion, waste incineration and handling, storage tanks and solvent recovery.

This permit does not contain a TLV table for organic HAPs since the Hazardous Waste Multipathway Risk Assessment dated November 16, 2012 included the evaluation of organic HAPs for all sources.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Antimony Compounds	0.5	0.055	0.68	N
Arsenic	0.01	0.0011	0.0442*	N
Beryllium	0.00005	0.0000055	0.0234***	N
Cadmium	0.002	0.00022	0.0552**	N
Calcium cyanamide	0.5	0.055	3.07	N
Chlorine	1.45	0.1595	15.435	N
Chromium	0.01	0.0011	0.0252	N
Cobalt	0.02	0.0022	1.09*	N
Cyanide Compounds	0.75	0.0825	3.061	N
Dioxins/Furans ^a	0.001	0.00011	1.069E-7	Y
Fluorene	0.2	0.022	0.02*	Y
Hydrazine	0.01311	0.001311	2.08 ^c	N
Hydrochloric acid	2.98	0.3278	15.89	N
Hydrogen fluoride	0.409	0.04499	6.86	N
Lead	0.05	0.0055	0.0732*	N
Manganese	0.1	0.022	7.27*	N
Mercury	0.01	0.0011	0.051*	N
Methyl chloroform	1909.89	210.08	16.461	Y
Methylene chloride	173.68	19.104	31.441	N
Nickel	0.1	0.011	2.59*	N
Phenanthrene	0.2	0.022	0.02*	Y
Phosphine	0.417	0.0458	3.101	N

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Phosphorus	0.1	0.011	3.061	N
Selenium	0.2	0.022	5.59	N
Tetrachloroethylene	169.52	18.64	5.331	Y
Titanium tetrachloride ^b	0.54	0.0594	3.101	N
H ₂ S	13.93	1.53	0.1	Y

^a Hypothetical value. The reviewing engineer screened these pollutants based on a hypothetical TLV of 0.001 mg/m³. The emission rates for dioxins and furans were based on the requirements of 40 CFR Part 63, Subpart EEE.

^b No TLV found. Used AEGL-1 (8-h)

^c Based on highest product received in past (51,000 lb/yr = 1.02 lb/hr); includes fugitives

* SN-08 & SN-34 = 0.01 lb/hr - Fluorene and Phenanthrene for SN-24 Emergency Generators and Fire Pump not included

** SN-08 & SN-34 = 0.001 lb/hr

*** SN-08 & SN-34 = 0.0001 lb/hr

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Modeling was not required for R18. Modeling was only performed on pollutants that had a change in emissions for R17. All other modeling results were from the R-11 version of the permit.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Version	Pass?
Antimony Compounds	5.0	0.08226	R11	Y
Arsenic	0.1	0.03059	R11	Y
Beryllium *	0.0005	0.00214	R11	N
Cadmium	0.02	0.00613	R11	Y
Calcium cyanamide	5.0	0.29893	R11	Y
Chlorine	14.5	1.2703	R17	Y
Chromium	0.1	0.00262	R17	Y

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Version	Pass?
Cobalt	0.2	0.1034	R11	Y
Cyanide Compounds	7.5	0.29893	R11	Y
Hydrazine*	0.1311	0.4223	R17	N
Hydrochloric acid	29.8	1.3179	R17	Y
Hydrogen fluoride	4.09	0.6271	R17	Y
Lead	0.5	0.03127	R11	Y
Manganese	1.0 ^a	0.6454	R17	Y
Mercury	0.1	0.0308	R11	Y
Methylene chloride	1,736.8	595.164	R17	Y
Nickel	1.0	0.2195	R11	Y
Phosphine	4.17	0.5279	R17	Y
Phosphorus	1.0	0.29893	R11	Y
Selenium	2.0	0.5019	R11	Y
Titanium tetrachloride	5.4	0.5279	R17	Y

^a TLV for manganese and inorganic compounds as manganese. Manganese cyclopentadienyl tricarbonyl has a lower TLV, however, since this compound is organic it would be emitted at a lower rate and pass the strategy.

* The facility performed alternate modeling for beryllium and hydrazine. The results are summarized in the following Table:

Pollutant	Highest Modeling Result ($\mu\text{g}/\text{m}^3$)	OEHHA – Chronic REL ($\mu\text{g}/\text{m}^3$)	Averaging Period	Pass?
Beryllium	0.00042	0.007	Annual	Pass
Hydrazine	0.086*	0.2	Annual	Pass

* Based on highest product received in past (51,000 lb/yr = 1.02 lb/hr); includes fugitives

REL = Reference Exposure Level

OEHHA = California Office of Environmental Health Hazard Assessment

Air quality standards established by the California Office of Environmental Health Hazard Assessment (OEHHA) were used to evaluate the modeling results. Said agency has promulgated a Chronic REL for the target pollutant.

ADEQ has accepted the use of OEHHA values as alternate air quality criteria in previous permitting actions for other Arkansas industrial facilities. The Air Division has determined that if the ambient air concentrations of a given HAP are less than 100% of the Chronic REL, then the emissions are acceptable from an air quality standpoint.

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards N

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H ₂ S	20 parts per million (5-minute average*)	10.2321 ppb or 0.0102 ppm	Y
	80 parts per billion (8-hour average) residential area	2.183 µg/m ³ = 1.566 ppb	Y
	100 parts per billion (8-hour average) nonresidential area	2.183 µg/m ³ = 1.566 ppb	Y

*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C_p = 5-minute average concentration

C_m = 1-hour average concentration

t_m = 60 minutes

t_p = 5 minutes

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	PM/PM ₁₀ : NESHAP limit	0.013 gr/dscf at 7% oxygen	Baghouse	Unknown	
01	SO ₂ : Sulfur feed rate	2045 lb/hr	Scrubber	98.9%	Sulfur content of fuel tested before burning
01	VOC: Testing and Material Balance	55,837 micrograms/L (groundwater) 1.1 lb/hr (combustion)	Incineration – Secondary Combustor	99.998%	125 gal groundwater/hr 1,095,000 gal groundwater/yr
01	CO: NESHAP limit	100 ppm	N/A	N/A	
01	NO _x : 2011 Stack Test	110.17 lb/hr, Standard Deviation = 24.01 lb/hr	N/A	N/A	2 standard deviation safety factor
01	Organic HAPs: Material Balance	Assumed 100% of waste is organic HAP	Incineration – Secondary Combustor	99.998%	61,025 lb feed/hr
01	HCl and Cl ₂ : NESHAP limit	32 ppmv	Scrubber	95%	
01	Mercury: NESHAP limit	130 µg/dscm	Activated Carbon	Unknown	
01	Lead and Cadmium (SVM): NESHAP limit	230 µg/dscm	Baghouse	Unknown	
01	Arsenic, Beryllium, Chromium (LVM): NESHAP limit	92 µg/dscm	Baghouse	Unknown	
01	Sb Co Mn Ni Se	489 µg/dscm 2224 µg/dscm 29719 µg/dscm 8898 µg/dscm 22245 µg/dscm			Conservative estimates
01	Dioxins/Furans: NESHAP limit	0.40 ng TEQ/dscm	Activated Carbon	Unknown	Combustion gas temp < 400 °F
07	Grain loading	25 gr/scf	Baghouse	99.9%	8,500 ft ³ /min
08	AP-42	Boiler factors Natural gas	N/A	N/A	8760 hr/yr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
09 A&B	AP-42 Table 11.12-2	0.73 lb PM/ton 0.47 lb PM ₁₀ /ton	Baghouse	95%	20 tons/truck 2 trucks/hr 1,794 trucks/yr
11	Tanks 4.0	N/A	N/A	N/A	55,496 gal/yr
12	Tanks 4.0	N/A	N/A	N/A	109,716 gal/yr
16	Estimate	0.1 lb/hr	Scrubber	Unknown	
18 47	AP-42 Table 11.12-2	0.73 lb PM/ton 0.47 lb PM ₁₀ /ton	Baghouse	95%	20 tons/truc 1 truck/hr 600 trucks/yr
20	Grain loading	15 gr/ft ³	Baghouse	99.9%	1,200 ft ³ /min
21	Tanks 4.0	N/A	2 Carbon Canisters (in series)	99%	6,000 gal/hr 18,000,000 gal/yr
24A, B, C	AP-42 Table 3.3-1	0.31 lb PM/PM ₁₀ /MMBtu 0.29 lb SO _x /MMBtu 0.36 lb VOC/MMBtu 0.95 lb CO/MMBtu 4.41 lb NO _x /MMBtu	None	N/A	24A – 44.25 HP 24B – 196 HP 24C – 275 HP
24D, E	AP-42 Table 3.4-1	0.10 lb PM/PM ₁₀ /MMBtu 0.0505 lb SO _x /MMBtu 0.09 lb VOC/MMBtu 0.85 lb CO/MMBtu 3.20 lb NO _x /MMBtu	None	N/A	24D – 805 HP 24E – 755 HP
25	Drum Sampling and	6.2 lb VOC/1000	N/A	N/A	825,000

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Drum Filling: Air Emission Models for Waste and Wastewater	gallons S=1.45 (splash loading)			samples/yr 2,400,000 gal/yr 95 samples /hr
25	Waste Repackaging	0.0037 lb/drum	N/A	N/A	56,000 drums/yr
25	Pumps, Flanges, Valves: EPA's Protocol for Equipment Leak Emission Estimates dated November 1995	Varied. See permit application for emission factors	N/A	N/A	
25	Tanker and Railcar Cleaning: AP-42 Tables 4.8-1 and 4.8-2	5.1808 lb/car 0.686 lb/truck	N/A	N/A	152 rail cars/yr 1930 tank trucks/yr
25	Tanker Loading/Unloading: Air Emission Models for Waste and Wastewater	19.88 lb/1000 gallons S=1.45	Series Carbon Canister	95%	100 tankers/yr
25	Drum Pumping: Air Emission Models for Waste and Wastewater	19.88 lb/1000 gallons S=1.45	110-gallon carbon tank	95%	25 drums/hr 1,930 tankers/yr
25	Vacuum Truck Loading: Air Emission Models for Waste and Wastewater	0.18 lb/1000 gallons S=1.45	N/A	N/A	3,000 gal/hr 750,000 gal/yr
25	Equipment and Truck Wash Decontamination: Tanks 4.0	N/A	N/A	N/A	1,260,000 gal washwater/yr
25	Barrel Crushing	1.0 lb/hr	N/A	N/A	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
25	Paved Roads: AP-42 13.2.1	0.1108 lb PM/VMT 0.0222 lb PM ₁₀ /VMT	N/A	N/A	8
25	Railcar Loading	18.01 lb/1000 gallons	Two carbon canisters in series	99%	4,800 gal/hr 1,380,000 gal/yr
25	Some pollutants emission rates are based on previous permit values	0.13% lb/hr; 0.67% tpy Chlorine, Hydrazine, Hydrochloric acid, Hydrogen fluoride, Phosphine, Titanium tetrachloride 1.46% lb/hr; 11.77% tpy Methyl chloroform 2.96% lb/hr; 24.47% tpy Methylene chloride 0.31% lb/hr; 2.35% tpy Tetrachloroethylene	N/A	N/A	HAPS based on VOC ratio method – previous testing
25	Shredding and Mixing: AP-42 Table 11.19.2-2 Tertiary Crushing of Stone	0.0054 lb/ton each activity	N/A	N/A	12.5 ton/hr 75,200 ton/yr
	Waste Unloading and Waste Transfer: AP-42 13.2.4 Equation 1	0.000218 lb/ton each activity			
31	Waste Solvent Tanks: Tanks 4.0	N/A	Carbon Canisters in series when SCC unavailable	95%	15,000 gal/hr 11,720,000 gal/yr 15% annually sent to carbon canisters
31	Intermediate and Final Product Tanks: Tanks 4.0	N/A	Carbon Canisters in series when SCC unavailable	95%	1,831.25 gal/hr 8,790,000 gal/yr 15% annually

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
					sent to carbon canisters
32	Stack Testing	Average of stack test: 0.002 lb/hr PM/PM ₁₀ 7.5E-6 lb/hr mercury Plus a safety factor	Baghouse and Carbon Adsorber	N/A	2,542 bulbs/hr * 0.63 lb/bulb * 24 hr/day = 38,435 lb/day
34	AP-42 Tables 1.4-1 through 4	Natural Gas Factors	N/A	N/A	33.75 MMBTU/hr
35, 36	AP-42 Section 13.4	PM/PM ₁₀ =Water Circulation Rate x Drift Rate x TDS	N/A	N/A	Drift Rate = 0.005% TDS = 13,600 ppm Water flow rate = 825 gal/min
37	AP-42 Table 4.7-1 (Highest of Range)	18.34 lb/ton	Carbon Canisters in series when SCC unavailable	95%	14.1 ton/hr 67,373 ton/yr
38	AP-42 Section 5.2 Equation 1	18.04 lb/1000 gallons HAPs estimated based on molecular weight and vapor pressure	Carbon Canisters in series	99%	4,800 gal/hr 1,771,000 gal/yr
39	AP-42 Section 5.2 Equation 1	18.04 lb/1000 gallons HAPs estimated	Carbon Canister	95%	4,400 gal/hr 879,000 gal/yr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		based on molecular weight and vapor pressure			
40	AP-42 Section 5.2 Equation 1	18.04 lb/1000 gallons HAPs estimated based on molecular weight and vapor pressure	Vapor Balance System (emissions sent back to tanks)	90%	1 tanker/hr 6,000 gal/tanker 6,153,000 gal/yr
41	Pumps, Flanges, Valves: EPA's Protocol for Equipment Leak Emission Estimates dated November 1995	Varied. See permit application for emission factors	N/A	N/A	28 pumps 749 valves 597 connectors
42	AP-42 Section 13.4	PM=Water Circulation Rate x Drift Rate x TDS PM ₁₀ = 15%PM	N/A	N/A	Drift Rate = 0.008% TDS = 13,600 ppm Water flow rate = 6,200 gal/min
43					Drift Rate = 0.0006% TDS = 13,600 ppm Water flow rate = 6,500 gal/min
44	PM/PM ₁₀ , Sb, Co, Mn, Ni, Se : NESHAP limit	0.0016 gr/dscf at 7% oxygen	Baghouse	Unknown	41,272.9 DSCFM
	SO ₂ : Sulfur feed rate	2045 lb/hr	Scrubber	98.9%	Sulfer content of fuel tested before burning

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	VOC: 2011 CPT Testing	Feed Rate x removal efficiency	Incineration – Secondary Combustor	99.997%	61,025 lb/hr
	CO: NESHAP limit	100 ppm	N/A	N/A	
	NO _x : 2015 Emission Data (SN- 01)	42.8 lb/hr, Standard Deviation = 6.7 lb/hr	N/A	De-NO _x 55% (hourly)	SN-01 (190 MMBtu/hr) SN-44 (155 MMBtu/hr) 2 standard deviation safety factor
	Organic HAPs: Material Balance	Assumed 100% of waste is organic HAP	Incineration – Secondary Combustor	99.997%	61,025 lb feed/hr
	Hydrazine	51,000 lb/hr	Incineration – Secondary Combustor	99.998%	
	Hydrogen Fluoride	100 lb/hr	Incineration – Secondary Combustor	99.4%	
	HCl and Cl ₂ : NESHAP limit	21 ppmv	Scrubber		
	Mercury: NESHAP limit	8.1 µg/dscm	Activated Carbon	Unknown	
	Lead and Cadmium (SVM): NESHAP limit	10 µg/dscm	Baghouse	Unknown	
	Arsenic, Beryllium, Chromium (LVM): NESHAP limit	23 µg/dscm	Baghouse	Unknown	
	Dioxins/Furans: NESHAP limit	0.11 ng TEQ/dscm	Activated Carbon	Unknown	
	Ammonia Emission test	20ppm			Deer Park, TX 5ppm x 4 safety factor
45	Tanks 4.0.9d	N/A	SCC/Carbon Tank	99%	399,360 gallons/yr
46	AP-42 Table 11.17- 7	0.01 PM grains/DSCF 55% of PM is	Baghouse	99%	1,800,000 cubic feet/hr blower capacity

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		PM ₁₀			

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01, 44	SO ₂ Removal Efficiency	6C	Every Five Years	To ensure compliance with SO ₂ limits
01, 44	Condensable PM	202	Every Five Years	To ensure compliance with PM limits
01, 44 (Comprehensive Performance Test)	D/F	0023A or 23 of Part 60 Appendix A (approval required)	Every 61 months and after a change in the design, operation, or maintenance practices of the source	NESHAP EEE
	Mercury	29		
	Lead and cadmium	29		
	Arsenic, beryllium, and chromium	29		
	Carbon monoxide and hydrocarbons	CO or Hydrocarbon CEMS		
	HCl and chlorine gas	26/26A of Part 60 Appendix A, 320 or 321 of Part 63 Appendix A, or ASTM D 6735-01 and 26/26A with additional requirements		
	PM	5 or 5I of Part 60 Appendix A		

SN	Pollutants	Test Method	Test Interval	Justification
	Hydrocarbons (Destruction and Removal Efficiency Test)	Refer to NESHAP EEE	Once unless source is modified	
01, 44 (Confirmatory Performance Test)	D/F	0023A or 23 of Part 60 Appendix A (approval required)	31 months after the previous comprehensive performance test	NESHAP EEE
21	VOC concentration	21	See permit	To determine breakthrough. See CAM plan.
25	VOC concentration	21	See permit	To determine breakthrough. See CAM plan.
31	VOC	21	See Permit	To determine breakthrough. See CAM plan.
34	Opacity	9	See NSPS Dc	Per NSPS Dc
41	VOC	21	Varied. See 60, VVa	60, VVa
Carbon Canisters for Subpart DD Sources (unless use design analysis)	VOC	18	63, DD	63, DD
Incinerator for Subpart DD (unless use design analysis)	VOC	18	63, DD	63, DD
Leak Interface	VOC	21	63, DD	63, DD
35, 36, 42, 43	PM/PM ₁₀ (TDS)	Conductivity and TDS	Weekly conductivity testing, with quarterly direct TDS testing	To ensure proper maintenance and operation

15. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
01, 44	Mercury Emissions	Monitors	Daily – ONLY if requirements of Plantwide Condition 24 are not met.	Y
01, 44	CO	CEM	Continuously	Y
01, 44	O ₂	CEM	Continuously	Y
01, 44	NO _x	CEM	Continuously	Y
01, 44	Opacity	COM or CPM	Continuously	Y
01, 44	PM	CEM	Not required until Agency promulgates all performance specifications and operational requirements	N/A
01, 44	Feedrates: Hazardous Waste; Ash; Chlorine and chloride; Mercury; Semivolatile Metals; Low Volatility Metals; Activated Carbon	CMS	Continuously	Y
01, 44	Temperature: Secondary combustion chamber; waste fired boiler	CMS	Continuously	Y
01, 44	Flue gas flowrate	CMS	Continuously	Y
01, 44	Scrubber Pressure Drop	CMS	Continuously	Y
01	Scrubber Liquid Flowrate	CMS	Continuously	Y
44	Condenser Liquid Flowrate			
01	Scrubber Inlet Liquid pH	CMS	Continuously	Y
44	Condenser Inlet Liquid pH			
01, 44	Activated Carbon Carrier Fluid Flowrate	CMS	Continuously	Y
01, 44	Baghouse pressure drop, per cell	CMS	Continuously	Y
01, 44	Combustion Chamber	CMS	Continuously	Y

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
	pressure: Kiln; Secondary Combustion Chamber; Waste Fired Boiler			
41	Equipment Leaks	See 60, VVa	See 60, VVa	
41	Equipment Leaks of Pumps	60.485a(b)	Monthly	Y
41	Equipment Leaks of Valves in Gas/Vapor/Light Liquid Service	60.485a(b)	Monthly	Y
41	Equipment Leaks of Connectors in Gas/Vapor/Light Liquid Service	60.485a(b)	See 60, VVa	Y
01, 44 SCC	Vent Stream Flow	CMS	Hourly	Y
Subpart DD Carbon Canisters	Concentration of Organic Compounds	CMS	Continuously	Y
Subpart DD Carbon Canisters	Concentration of Organic Compounds	CMS	Daily or no greater than 20% of the time required to consume the total carbon working capacity	Y
01, 44 SCC	Concentration of Organic Compounds	CMS	Continuously	Y

16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01, 44	Opacity	20%	Continuously	N
01	Sulfur Feed Rate	2045 lb/hr 2681.8 tpy	Monthly	Y
44		2045 lb/hr 1590 tpy		
01, 44	Scrubber efficiency for SO ₂ from test	98.9%	5 yrs	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01, 44	PM, cyanide compounds, hydrazine, hydrogen fluoride, phosphine, and titanium tetrachloride Testing results	See Permit Limits	5 yrs	Y
01	NO _x Emissions	158.2 lb/hr 451.0 tpy	Continuously	Y
44		56.2 lb/hr 38.0 tpy		
01	Utilization Rate of Recovered Energy from liquid waste	74% Maximum	Monthly	Y
07	Opacity	5%	Weekly	Y
07	Bag Filter Inspections	N/A	Daily	Y
08	Natural Gas	15,840,000 scf/yr	Monthly	Y
09A&B	Opacity	5%	Weekly	N
09A&B	Number of trucks containing lime	1794 trucks/yr combined	Monthly	Y
11	Gasoline	55,496 gal/yr	Monthly	Y
11	Vapor Pressure of Gasoline	6.2 psia at 70°F	As Needed	N
12	Diesel Fuel	109,716 gal/yr	Monthly	Y
18 & 47	Opacity	5%	Weekly	N
18 & 47	Number of trucks of flyash and/or lime	520 trucks/yr	Monthly	Y
20	Opacity	5%	Weekly	N
21	Operating plan for carbon canisters and maintenance performed	N/A	N/A	N/A
21	Vessel Analysis	Size	N/A	N
21	Organic liquids	18,000,000 gal/yr	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
21	Vapor Pressure of tank contents	6.159 psia at 65°F	As Needed	N
21	VOC Concentration between carbon canisters	500 ppmv or greater requires replacement of one or both carbon canisters	See Permit	Y
21	Inspection Documentation for carbon canisters	N/A	Daily	Y
24	Opacity	5%	Daily when operating	N
24A, C, D, E	Hours of Operation	100 hrs each	Monthly when operating	N
24B	Hours of Operation	500 hrs each	Monthly when operating	N
25	Drum Filling	2,400,000 gal/yr	Monthly	Y
25	Waste Repackaging	56,000 drums/yr	Monthly	Y
25	Tanker and Railcar Cleaning	152 rail tank cars/yr	Monthly	Y
25	Tanker and Railcar Cleaning	1930 tank trucks/yr	Monthly	Y
25	Tanker Loading/Unloading	100 tankers/yr	Monthly	Y
25	Tanker Loading/Unloading	1930 tankers pumped/yr	Monthly	Y
25	Vacuum Truck Loading	750,000 gal rain water collection/yr	Monthly	Y
25	Equipment and Truck Wash/Decontamination	1,260,000 gal wash water/yr	Monthly	Y
25	Paved roads	3,100 vehicle miles traveled via 18-wheel traffic/yr	Monthly	Y
25	Paved roads	133,360 vehicle miles traveled via Clean Harbors vehicles/yr	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
25	Road Maintenance Plan Recordkeeping	N/A	N/A	N
25	Railcar Loading	1,380,000 gal/yr	Monthly	Y
25	Railcar Loading: VOC Concentration between carbon canisters	500 ppmv or greater requires replacement of one or both carbon canisters	See Permit	Y
25	Railcar Loading: Inspection Documentation for carbon canisters	N/A	Daily	Y
25	Non-hazardous waste shredder: Opacity	5%	Weekly	N
25	Non-hazardous waste shredder	75,200 tons/yr	Monthly	Y
25	Non-hazardous waste shredder : VOC and HAP content	Container vapor space <500ppm	Per container	N
31	Throughput of Waste Solvent	11,720,000 gal/yr	Monthly	Y
31	Throughput of Intermediate and Final Products	8,790,000 gal/yr	Monthly	Y
31	Throughput of waste solvent while venting to carbon canister	1,758,000 gal/yr	Monthly	Y
31	Throughput of intermediate and final products while venting to carbon canister	1,318,500 gal/yr	Monthly	Y
31	Vapor Pressure of Tank Contents	6.159 psia at 65°F	As Needed	N
32	Amount of bulbs processed per day	38,435 lbs of bulbs/day	Daily	N
32	Opacity	5%	Weekly	N
34	Amount of fuel combusted per NSPS	N/A	Monthly	N
34	Records required by NSPS	See NSPS	See NSPS	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
37	Throughput of Solvent	67,373 tons/yr	Monthly	Y
37	Throughput of solvent while venting to carbon canister	10,106 tons/yr	Monthly	Y
38	Loadout to Railcar	1,771,000 gal/yr	Monthly	Y
39	Loadout to 55 gallon drums	879,000 gal/yr	Monthly	Y
40	Loadout to Tanker Trucks	6,153,000 gal/yr 1 tanker/hr	Monthly As needed	Y N
41	Items specified in 60.486a(a)(3)	See 60, VVa	Varied. See 60, VVa	N
41	Leak detected log (items specified in 60.486a(c))	See 60, VVa	As Needed when each leak detected	N
41	Log for 60.486a(e)	See 60, VVa	As Needed	N
41	Log for 60.486a(j)	N/A	As Needed	N
41	See 60.487a(b)	N/A	Semiannual	Y
41	See 60.487a(c)	N/A	Semiannual	Y
45	Diesel fuel throughput	399,360 gallons per year	Monthly	N
46	Opacity	5%	Daily	N
01, 44 SCC	Temperature	≤50°F below average combustion temperature during most recent test	Continuous	Y
01, 44 SCC	Vent stream flow	Must be established	Continuous	Y
63, Subpart DD sources	63.696(g)(1) and (g)(2)	N/A	Semiannual	N
Tanks (Level 2)	Inspections	N/A	Annual	N
Closed vent systems	Inspections and Monitoring	N/A	63, DD 63.695(c)	N
Closed vent complying with	Inspections	N/A	63.695(c)(2)	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
63.693(c)(1)(ii)				
Closed vent systems	Defect repair	N/A	As Needed	N
63, Subpart DD control device systems	Malfunctions 63.696(h)(1) to (h)(3)	N/A	As Needed	Y
Plantwide	Divert Stack Procedures	See Plantwide Conditions 10, 11, 13, and 15	As needed	Y
Plantwide	Monthly Fuel Use	No limit specified, used to show compliance with NSPS Dc	Monthly	N
01, 44	Operating Record Requirements	See NESHAP EEE	As needed	N
01	Total Hazardous Waste Feedrate	13,383 lb/hr Kiln 1	Continuously (Hourly Rolling Average)	Y ¹
		30,168 lb/hr Kiln 2		
		13,601 lb/hr (secondary combustion chamber)		
		3,873 lb/hr (waste fired boiler)		
44		28,035 lb/hr Kiln		
		12,602 lb/hr SCC		

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01	Pumpable Hazardous Waste Feedrate	5,005 lb/hr Kiln 1	Continuously (Hourly Rolling Average)	Y ¹
		9,527 lb/hr Kiln 2		
		13,601 lb/hr SCC		
		3,873 lb/hr (waste fired boiler)		
44		6,827 lb/hr Kiln		
		12,602 lb/hr SCC		
01	Ash Feedrate	15,695 lb/hr	Continuously (Rolling 12-hr average)	Y ¹
		164.2 lb/hr (WFB)		
44		10,252 lb/hr		
01	Chlorine and Chloride Feedrate	Total: 2718 lb/hr	Continuously (Rolling 12-hr average)	Y ¹
		1,020 lb/hr (WFB)		
44		2,035 lb/hr		
01	Mercury Feedrate	0.46 lb/hr	Continuously (Rolling 12-hr average)	Y ¹
		0.187 lb/hr (WFB)		
44		0.38 lb/hr		
01	Semi volatile metals feedrate	123 lb/hr	Continuously (Rolling 12-hr average)	Y ¹
44		73 lb/hr (kiln)		
01		3.12 lb/hr (WFB)		
01	Low volatile metals feedrate	44 lb/hr	Continuously (Rolling 12-hr average)	Y ¹
44		46 lb/hr (kiln)		
01		2.87 lb/MMBtu And 30 lb/hr (WFB)		
01	Activated carbon	22.4 lb/hr	Continuously	Y ¹

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
44	feedrate	24.9 lb/hr	(Hourly Rolling Average)	
01	Secondary combustion chamber temperature	1,851°F	Continuously (Hourly Rolling Average)	Y ¹
44		1,855°F		
01	Waste fired boiler temperature	1,856°F	Continuously (Hourly Rolling Average)	Y ¹
01	Flue gas flowrate	100,568 acfm	Continuously (Hourly Rolling Average)	Y ¹
44		86,967 acfm		
01	WFB Max combustion air flow rate	8,630 acfm	Continuously (Hourly Rolling Average)	Y ¹
01	Scrubber pressure drop	33.8 in. w.c.	Continuously (Hourly Rolling Average)	Y ¹
44	Condenser pressure drop	10.9 psi		
01	Scrubber liquid flowrate	664 gpm	Continuously (Hourly Rolling Average)	Y ¹
44	Condenser liquid flowrate	3635 gpm		
01	Scrubber liquid pH	3.4	Continuously (Hourly Rolling Average)	Y ¹
44	Condenser liquid pH	4.1		
01	Activated carbon carrier fluid flowrate	30 scfm	Continuously (Hourly Rolling Average)	Y ¹
44		60.1 scfm		
01, 44	Baghouse pressure drop, per cell	1 in. w.c. (minimum) 16 in. w.c. (maximum)	Continuously (Hourly Rolling Average)	Y ¹
01, 44	Combustion chamber pressure: kiln, secondary combustion chamber	Below atmospheric	Instantaneous	Y ¹
01	waste fired boiler			
01, 44	CO Emissions	100 ppmv	Continuously	Y ¹

¹. CMS performance report and summary report.

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 44	20%	Dept. Guidance	COMS
04	5%	Dept. Guidance	Natural Gas as Fuel
07	5%	Dept. Guidance	Weekly
08	5%	Dept. Guidance	Natural Gas as Fuel
09	5%	Dept. Guidance	Weekly
18	5%	Dept. Guidance	Weekly
20	5%	Dept. Guidance	Weekly
22	5%	Dept. Guidance	Weekly
25	Off-site 5%	Dept. Guidance	Inspections
25	Shredder - 5%	Dept. Guidance	Weekly
32	5%	Dept. Guidance	Weekly
34	20%	NSPS Dc	Performance Testing as required by NSPS
42, 43	20%	Dept. Guidance	Conductivity & TDS sampling
46	5%	Dept. Guidance	Daily

18. DELETED CONDITIONS:

Former SC	Justification for removal
	none

19. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
10,000 gal Diesel Storage Tank and	A-3	0	0	0.03	0	0	0.03	0.03

Dispenser Unit								
550 gal Diesel Storage Tank	A-3	0	0	0.000475	0	0	0.000475	0.000475
Nine (9) Solar Sipper Recovery Systems	A-13	0	0	0.0014	0	0	0	0
Surface Water Treatment	A-13	0	0	0.00014	0	0	0.00003	0.00014
SN-22 Brine Plant Sources (other than listed)	A-13	0	0	0	0	0	0	0
Filter Aid Loading Operation (at Tank 597) (formally SN-22)	A-13	0.0000078	0	0	0	0	0	0
Bulk Solid Mixing Process Backup Carbon Filter	A-13	0	0	0.91	0	0	0.91	0.91
Railcar Unloading Emergency Scrubber	A-13	0	0	0	0	0	0	0

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1009-AOP-R17

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Clean Harbors El Dorado, LLC
 Permit Number: 1009-AOP-R19
 AFIN: 70-00098

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	1022.43
Permit Type	Modification	Permit Fee \$	1000

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	0
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		84.2	84.2	0	0	84.2
PM ₁₀		59.1	59.1	0		
PM _{2.5}		0	0	0		
SO ₂		94.8	94.8	0	0	94.8
VOC		44.9	44.9	0	0	44.9
CO		234	234	0		
NO _x		535.5	535.5	0	0	535.5
Lead Compounds	<input type="checkbox"/>	0.26	0.26	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Antimony Compounds	<input type="checkbox"/>	2.97	2.97	0		
Arsenic Compounds	<input type="checkbox"/>	0.14	0.14	0		
Beryllium Compounds	<input type="checkbox"/>	0.14	0.14	0		
Cadmium Compounds	<input type="checkbox"/>	0.26	0.26	0		
Calcium cyanamide	<input type="checkbox"/>	13.37	13.37	0		
Chlorine	<input checked="" type="checkbox"/>	67.55	67.55	0	0	67.55
Chromium Compounds	<input type="checkbox"/>	0.13	0.13	0		
Cobalt Compounds	<input type="checkbox"/>	4.69	4.69	0		
Cyanide Compounds	<input type="checkbox"/>	13.37	13.37	0		
Dioxins/Furans	<input type="checkbox"/>	1.00E-02	1.00E-02	0		
Fluorene	<input checked="" type="checkbox"/>	0.07	0.07	0	0	0.07
Hydrazine	<input checked="" type="checkbox"/>	9.08	9.08	0	0	9.08
Hydrochloric acid	<input checked="" type="checkbox"/>	69.54	69.54	0	0	69.54
Hydrogen fluoride	<input checked="" type="checkbox"/>	30.07	30.07	0	0	30.07
Manganese Compounds	<input type="checkbox"/>	31.76	31.76	0		
Mercury Compounds	<input type="checkbox"/>	0.16	0.16	0		
Methyl chloroform	<input checked="" type="checkbox"/>	20.43	20.43	0	0	20.43
Methylene chloride	<input checked="" type="checkbox"/>	28.25	28.25	0	0	28.25
Nickel Compounds	<input type="checkbox"/>	11.26	11.26	0		
Phenanthrene	<input type="checkbox"/>	0.07	0.07	0		
Phosphine	<input checked="" type="checkbox"/>	13.49	13.49	0	0	13.49
Phosphorus	<input type="checkbox"/>	13.37	13.37	0		
Selenium Compounds	<input type="checkbox"/>	24.4	24.4	0		
Tetrachloroethylene	<input checked="" type="checkbox"/>	14.65	14.65	0	0	14.65
Titanium tetrachloride	<input type="checkbox"/>	13.49	13.49	0		
Single Organic HAP	<input type="checkbox"/>	41.74	41.74	0		
Total Organic HAP	<input type="checkbox"/>	41.84	41.84	0		
H2S	<input checked="" type="checkbox"/>	0.1	0.1	0	0	0.1

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Ammonia	<input checked="" type="checkbox"/>	9.8	9.8	0	0	9.8