

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1936-AOP-R6 AFIN: 30-00229

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

KGen Hot Spring LLC
696 Black Branch Road
Malvern, Arkansas 72104

3. PERMIT WRITER:

Patty Campbell, PE

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Fossil Fuel Electric Power Generation
NAICS Code: 221112

5. SUBMITTALS:

5/22/2012 and 6/18/2012

6. REVIEWER'S NOTES:

KGen Hot Spring LLC (KGen) owns and operates a 620 megawatt (MW) natural gas-fired combined-cycle electric power plant located at 696 Black Branch Road, Malvern, Hot Spring County, Arkansas 72104. This permitting action is necessary to modify the permit as follows:

- Install Cooling Water Pump Generator (SN-35) with a 2010 model year non-emergency stationary compression ignition (CI) internal combustion engine (ICE) with a displacement of 13.5 liters (L) per cylinder and
- Correct prior permit VOC total.

The total permitted annual emission rate changes associated with this modification include: 0.8 tpy (tons per year) PM/PM₁₀, 4.9 tpy SO₂, 15.9 tpy VOC, 13.7 tpy CO, 15.6 tpy NO_x, 0.01 tpy acrolein, 0.02 tpy benzene, 0.02 tpy formaldehyde, 0.01 tpy PAH/POM, 0.01 tpy toluene and 0.01 tpy xylene.

7. COMPLIANCE STATUS:

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

There are no active or pending air enforcement actions at this time.

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, explain why this permit modification is not PSD?

Criteria Pollutants	PSD Significant Emission Increase (tpy)	Permit #1936-AOP-R0 Emissions Increase (tpy)	Draft Permit #1936-AOP-R5 Emission Totals (tpy)
PM ₁₀	15	490.0	245.7
SO ₂	40	215.3	112.1
Ozone	40 tpy of VOC	328.6 tpy of VOC	179.6
CO	100	1929.3	976.1
NO ₂	40 tpy of NO _x	545.6 tpy of NO _x	287.0

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01 & 02	PM ₁₀ , SO ₂ , VOC, CO and NO _x	PSD
01 & 02	PM/PM ₁₀ , SO ₂ , NO _x	NSPS Subpart Da
01 & 02	SO ₂ & NO _x	NSPS Subpart GG
05	Records only	NSPS Subpart Dc
32 & 34	HAPs	NESHAP Subpart ZZZZ

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
35	HAPs	NESHAP Subpart ZZZZ, defers to NSPS Subpart III
	PM ₁₀ , VOC, CO, NO _x	NSPS Subpart III

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants (Permit #1936-AOP-R5)

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	58.8	150	24-Hour	15.06124* ¹	10%
SO ₂	27.5	80	Annual	0.18311 ¹	0.23%
		1300	3-Hour	4.714 ¹	0.37%
		365	24-Hour	1.985 ¹	0.55%
CO	241.4	10,000	8-Hour	64.28 ¹	0.65%
		40,000	1-Hour	114.62 ¹	0.29%
NO _x	94.2	100	Annual	0.844 ¹	0.85%
Pb	0.0005042	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	¹ 0	

* No Background needed because less than 50%.

¹ Modeled on for Permit #1936-AOP-R5 by PC
C:MODELS – KGen – 3000229 – R5 - Pollutant

Non-Criteria Pollutants: (Reportable HAPs Evaluation)

#	Pollutant	Permit #R5* Emission Rate	Draft #R6 (add SN-35)	TOTAL Emission Rate	Relative Toxicity	Total (lb/hr) x 4.4	Reporting required?
		lb/hr	lb/hr	lb/hr			
	Acetaldehyde	0.1607	0.000143	0.160843	0.90	0.7070	No
1	Acrolein	0.02586	0.0000447	0.0259047	0.004	0.1132	Yes
2	Benzene	0.05523	0.00440	0.05963	0.20	0.2373	Yes
3	1,3-Butadiene	0.001781			0.007	0.0076	Yes
	Dichlorobenzene	0.00211			0.3	0.0053	No
	Ethylbenzene	0.1284			1.0	0.5652	No
4	Formaldehyde	1.03	0.000447	1.0312	0.20	4.532	Yes
5	Hexane	1.816			1.0	7.9899	Yes
	Naphthalene	0.006444			1.0	0.0284	No
6	PAH/POM	0.01015	0.00120	0.01135	0.001	0.0436	Yes
7	Propylene Oxide	0.1164			0.50	0.5122	Yes
8	Toluene	0.5271	0.00159	0.52869	1.0	2.3169	Yes
9	Xylene	0.2582	0.00109	0.25929	1.0	1.1343	Yes
10	Arsenic	0.0002018			0.0005	0.0009	Yes
	Beryllium	0.00001211			0.0008	0.0001	No
11	Cadmium	0.001110			0.001	0.0049	Yes
	Chromium	0.001412			0.5	0.0062	No
	Cobalt	0.00008474			0.01	0.0004	No
	Manganese	0.0003834			0.08	0.0017	No
12	Mercury	0.0002623			0.001	0.0012	Yes
	Nickel	0.002119			0.1	0.0093	No
	Selenium	0.00002421			0.01	0.0001	No

* Total of SN-01, 02, 05 & 32 from Permit #1936-AOP-R5, issued 2011.

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 × TLV	R5 lb/hr	SN-35 lb/hr	R6 (R5 +SN-35) NEW lb/hr	Pass?
1	Acrolein	0.23	0.0253	0.02586	0.00005	0.0259047	N
	Benzene	1.60	0.1757	0.05523	0.005	0.05963	Y
	1,3-Butadiene	4.424	0.4866	0.001781	0.0	n/c	Y
2	Formaldehyde	1.5	0.165	1.03	0.0005	1.0312	N
	Hexane	176.23	19.3853	1.816	0.0	n/c	Y
	PAH/POM***	52.43	5.77	0.01015	0.002	0.01135	Y
	Propylene Oxide	4.748	0.5223	0.1164	0.0	n/c	Y
	Toluene	75.36	8.29	0.5271	0.002	0.52869	Y
	Xylene	434.2	47.762	0.2582	0.002	0.25929	Y
	Arsenic*	0.0033	0.000359	0.0002018	0.0	n/c	Y
3	Cadmium*	0.00218	0.0002393	0.001110	0.0	n/c	N
	Mercury*	0.01	0.0011	.0002623	0.0	n/c	Y
4	Ammonia	17.41	1.9151	67.4	0.0	n/c	N

* PM Compounds

*** Naphthalene used as representative POM

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.

Permit #: 1936-AOP-R6

AFIN: 30-00229

Page 6 of 12

#	Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled ^B Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
1	Acrolein	2.3	0.00278 ^{BD}	PASS
2	Formaldehyde	15.0	0.10577 ^{BD}	PASS
3	Cadmium	0.0218	0.00005 ^{BC}	PASS
4	Ammonia ^A	174.1	2.418 ^{BC}	PASS

^A – Non-HAP, non-criteria pollutant, air contaminate

^B - Models done by Trinity Consultants in BREEZE. Imported into AERMOD, used ADEQ MetData.

^C - Modeled in Permit #R5, no change in emissions in R6

D - Modeled in Permit #R5 and R6, no change in model because increase in emissions was miniscule.

Other Modeling: None.

Odor: None.

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Eq Eff	Comments
01 & 02	<p>*Manufr's Specs – criteria pollutants – BACT emissions except for ammonia</p> <p><u>Turbine</u>^A HAPs - AP-42 Table 3.1-3 (4/00) (except for Formaldehyd e)^C</p> <p><u>Burner</u>^B AP-42 Table 1.4-2 (7/98)</p> <p>^C AP-42 Table 1.4-3 (7/98)</p> <p>^D AP-42 Table 1.4-4 (7/98)</p> <p>& 1.4-4 <u>Turbine</u>^C US EPA memo 08/21/01 "HAP Em Control Tech for New Stationary CT" from Sims Roy US EPA OAQPS Em Sids group – Combustion Div</p>	<p>OEM Specs *PM/PM₁₀ – 27.8 lb/hr *SO₂ – 2.0 gr/100scf = 13.3 lb/hr *VOC – 9.4 ppm = 19.0 lb/hr *CO – 21 ppm = 115.6 lb/hr *NO_x – 3.5 ppm = 31.9 lb/hr ammonia – 10.0 ppm = 33.7 lb/hr <u>CT EF lb/MMBtu = lb/hr</u> ^A acetaldehyde - 4.00E-05 = 8.03E-02 lb/hr ^A acrolein – 6.40E-06 = 1.28E-02 ^A benzene – 1.20E-05 = 2.41E-02 ^A 1,3-butadiene – 4.30E-07 = 8.63E-04 lb/hr ^A ethylbenzene – 3.20E-05 = 6.42E-02 lb/hr ^C frmldehyd – 2.02E-04 = 0.41lb/hr ^A lead – ND ^A naphthalene – 1.30E-06 = 2.61E-03 lb/hr ^A PAH – 2.20E-06 = 4.42E-03 ^A propylene oxide – 2.90E-05 = 5.82E-02 lb/hr ^A toluene - 1.30E-04 = 2.61E-01 ^A xylene – 6.40E-05 = 1.28E-01 <u>Duct Burners Emission Factor</u> <u>lb/MMscf = lb/hr</u> ^B acetaldehyde = 0.0 ^B acrolein – 0.0 ^D arsenic – 2.0E-04 = 9.80E-05 ^C benzene – 2.10E-03 = 1.03E-03 ^D cadmium – 1.1E-03 = 5.39E-04 ^C formaldehyde – 7.50E-02 = 3.68E-02 lb/hr ^C hexane – 1.80E+00 = 8.82E-01 ^B lead – 5.00E-04 = 2.45E-04 ^D mercury – 2.6E-04 = 1.27E-04 ^B naphthalene – 6.10E-04 = 2.99E-04 lb/hr ^B PAH – 8.82E-05 = 4.32E-03 ^B propylene oxide – 0.0 ^C toluene - 3.40E-03 = 1.67E-03 ^B xylene – 0.0</p>	SCR and low NO _x burners	71.4% for NO _x	<p><u>Combustion Turbines (CT)/HRSG</u> <u>SN-01 & SN-02 (Identical)</u> Natural gas (NG) is the only fuel used @ 8,760 hrs/yr CT Power Gen Cap = 170 MW CT Heat Input Cap = 2,007 MMBtu/hr Duct Burner (DB) Heat Input = 500 MMBtu/hr DB NG HHV = 1,020 MMBtu/10⁶ scf</p> <p>HAP emissions calculated as (Heat Input Capacity (Cap), MMBtu/hr) x (Emission Factor, lb/MMscf) / (MMBtu/MMscf) ^A Turbine Heat Input = 2007 MMBtu/hr ^B Duct Burner Heat Input = 500 MMBtu/hr ^C Formaldehyde – Tests on lean premix stationary CT ranging in size from 10 MW to 170 MW, 95th percentile, EPA memo noted.</p> <p>To convert from (lb/MMBtu) to (lb/106 scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation: lb/hp & hr ' lb/MMBtu heat input, MMBtu/hr 1/operating HP, 1/hp</p>

SN	Emission Factor Source (AP-42, testing)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Eq Eff	Comments
05	<p>^ABACT</p> <p>^B AP-42 Table 1.4-2 (7/98)</p> <p>^C AP-42 Table 1.4-3 (7/98)</p> <p>^D AP-42 Table 1.4-4 (7/98)</p>	<p>^APM/PM₁₀ – 0.01 Lb/MMBtu 0.3 lb/hr</p> <p>^ASO₂ – 2.0 gr/100scf = 0.2 lb/hr</p> <p>^AVOC – 0.016 Lb/MMBtu = 0.5 lb/hr</p> <p>^ACO – 0.15 Lb/MMBtu = 4.4 lb/hr</p> <p>^ANO_x – 0.12 Lb/MMBtu = 3.5 lb/hr</p> <p>^B lead – 5.00E-04 = 1.42E-05 lb/hr</p> <p>^C benzene – 2.10E-03 = 5.97E-05 lb/hr</p> <p>^C formaldehyde – 7.50E-02 = 2.13E-03 lb/hr</p> <p>^C hexane – 1.80E+00 = 5.12E-02 lb/hr</p> <p>^C PAH/POM – 8.82E-05 = 2.51E-06 lb/hr</p> <p>^C toluene – 3.40E-03 = 9.67E-05 lb/hr</p> <p>^D arsenic – 2.00E-04 = 5.69E-06 lb/hr</p> <p>^D cadmium – 1.10E-03 = 3.13E-05 lb/hr</p> <p>^D mercury – 2.60E-04 = 7.39E-06 lb/hr</p>	None	N/A	<p><u>Auxiliary Boiler</u></p> <p>Natural gas (NG) is the only fuel used @2,000 hrs/yr Heat Input Cap = 29 MMBtu/hr NG HHV = 1,020 Btu/ scf Design Fuel Rate = 0.028 MMsfc/hr</p> <p>Criteria emissions calculations (except SO₂) - (Heat Input Cap, MMBtu/hr) x (BACT EF, lb/MMBtu)</p> <p>SO₂ Em Rate (lb/hr) = Fuel S content (gr/100 scf) x Heat Rate (MMBtu/hr) x 2 (MW SO₂/MW S) / 7000 (gr/lb) x 1020 (MMBtu/10⁶ scf)</p> <p>HAP emissions calc as (Heat Input Capacity (Cap), MMBtu/hr) x (Emission Factor, lb/MMscf) / (MMBtu/MMscf)</p>
07-16	Manuf. Spec	10.5 MM gallons circulating water	Drift eliminator, inherent to the design	Reduce to 0.005%	<p><u>Cooling Tower 1</u></p> <p>(10-cell)</p> <p>@8,760 hrs/yr</p>
32	BACT & AP-42 3.4 Tables 3.4-3 & 4	<p><u>BACT</u></p> <p>PM/PM₁₀ – 1.77 lb/hr</p> <p>SO₂ – 0.05 % wt</p> <p>VOC – 1.1</p> <p>CO – 3.0 g/bhp-hr</p> <p>NO_x – 14 Lb/MMBtu</p> <p>Acrolein - 9.25E-05</p> <p>Benzene – 9.33E-04</p> <p>Formaldehyde – 1.18E-03</p> <p>PAH – 1.68E-04</p> <p>Toluene – 4.09E-04</p> <p>Xylene – 2.85E-04</p>	None	N/A	<p>Emergency-use Generator @ 500 hrs/yr max w/diesel fuel</p> <p>Design Power Output = 500 kW</p> <p>Max heat Input = 4.69 MMBtu/hr</p> <p>Design Output = 670.5 bhp</p> <p>Heating Value Diesel = 19,300 Btu/lb</p> <p>PM/PM₁₀ & SO₂ calc as bhp x EF, g/bhp-hr / 453.59 g/lb</p> <p>HAP emissions calc. MMBtu/hr x EF, lb/MMBtu</p> <p>SO₂ emission rate (lb/hr) = % fuel S content x MMBtu/hr x 2 (ratio MWSO₂/MW S) x 10⁶ Btu/MMBtu / 19,300 Btu/lb</p>

SN	Emission Factor Source (AP-42, testing)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Eq Eff	Comments
34	AP-42 3.3 Tables 3.3-1 & 2	<u>lb/MMBtu</u> PM/PM ₁₀ – 0.31 SO ₂ – 0.29 VOC – 0.36 CO – 0.95 NO _x – 4.41 Acrolein - 9.25E-05 Benzene – 9.33E-04 Formaldehyde – 1.18E-03 PAH – 1.68E-04 Toluene – 4.09E-04 Xylene – 2.85E-04	None	N/A	Emergency-use Fire Pump Max Heat Input = 1.4 MMBtu/hr @ 500 hrs/yr max w/diesel fuel Design Power Output = 200 bhp <u>Emissions calc as</u> MMBtu/hr x EF lb/MMBtu
35	<u>PM, VOC (+NMHC), CO & NO_x</u> 40 CFR 89.112 Tier 2 Stds for non-road engines <u>SO₂ & HAPs</u> ^A AP-42 3.3 Tables 3.3-1 & 2	PM/PM ₁₀ – 0.15 g/bhp-hr SO ₂ – 2.05E-05 lb/hp-hr VOC – 2.98 g/bhp-hr CO – 2.61 g/bhp-hr NO _x – 2.98 g/bhp-hr <u>HAPs</u> <u>lb/MMBtu</u> Acrolein – 9.25E-05 Benzene – 9.33E-04 Formaldehyde – 1.18E-03 PAH – 1.68E-04 Toluene – 4.09E-04 Xylene – 2.85E-04	Lean Burn	N/A	Diesel Generator Design Power Output = 405 kW, 543 hp Est. Max. Heat Input = 3.80 MMBtu/hr 8,760 Hrs/Yr – Op Hrs Certified Engine @ 8,000 hour LIMIT <u>Criteria Em (CO, VOC, NO_x)</u> – 543.0 bhp x (EF g/bhp-hr) / 453.59 g/lb = lb/hr <u>HAP Em</u> – 3.80 MMBtu/hr x EF lb/MMBTU = lb/hr 1 kW-hr = 1.341 hp-hr

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01, 02 CTs	PM/PM ₁₀	5 and/or 201A	Alternate CTs every 5 years	Confirmation of BACT Limits
	VOC	25A		

SN	Pollutants	Test Method	Test Interval	Justification
	SO ₂ , CO & NO _x	7E	Initial only	
	Ammonia (NH ₃)	ADEQ approved methodology	Alternate CTs every 5 years	§18.1004 To assure accurately estimated emissions
05	NO _x	7E	Initial only	Confirmation of BACT Limits
07 through 16	TDS		Monthly	§18.1004

14. 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 & 02	CO	CEMS	Continuous	Y
	NO _x	CEMS	Continuous	Y

15. 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, 02, 05	All Performance Tests	N/A	On-going	Yes
01, 02	Sulfur in natural gas fuel	0.0006 lb SO ₂ / MMBtu of heat input	Monthly	Yes
01, 02, 05	Natural gas only	N/A	Verify by Inspector	Yes

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01, 02	Start-up & Shutdown Provisions which direct result of start-up and/or shut down	“Upset Condition” is reportable as stated in SC #31	On-going Real Time	Yes
05	Operating Hours	Nte 2,000 operating hours per rolling 12-month period	Monthly	Yes
05	Quantity of Fuel Used	No limit	Monthly	No
07 - 16	TDS	Nte Level of 1280 ppm-w	Monthly	Yes
32 & 34	Operating Hours	Nte 500 op hours each per consecutive 12-month period	Monthly	Yes
32, 34 & 35	Sulfur in Diesel Fuel	valid gas tariff; fuel purchase or pipeline transportation contract; vendor certification based on fuel sampling and analysis or other appropriate doc; or periodic testing.	On-going	Yes
32 & 34	Develop and follow Routine Maintenance Plan	1. Change oil & filter every 500 op hrs or annually, whichever is first 2. Inspect air cleaner filter annually 3. inspect hoses/belts every 500 hrs or annually, whichever is first	On-going	No
35	Operating Hours	NTE 8,000 op hrs (certified engine life)	Monthly	Yes
35	Report	Notifications, maintenance performed and certification of emissions documents.	On-going	Yes

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02 & 05	5%	§18.501 and A.C.A.	Use of natural gas as the only fuel.

SN	Opacity	Justification for limit	Compliance Mechanism
07 through 16	20%	§19.503 and A.C.A.	Use of drift eliminators
32, 34 & 35	20%	§19.503 and A.C.A.	Use of diesel fuel

17. DELETED CONDITIONS:

There were no conditions deleted.

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	A	Emissions (tpy)						
		PM/ PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							S	Tot
Diesel Storage Tank, 250 gal cap	A-2	0.0	0.0	0.0007	0.0	0.0	0	0
Diesel Storage Tank, 800 gal cap	A-3	0.0	0.0	0.004	0.0	0.0	0	0
Oil/Water Separator (WW Treatment)	A-13	0.0	0.0	0.7	0.0	0.0	0	0
4 Inlet Chiller Cooling Towers	A-13	0.001	0.0	0.0	0.0	0.0	0	0
Sludge Press	A-13	1.3	0.0	0.0	0.0	0.0	0	0

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1936-AOP-R5

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

 Paula Parker, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 08-30-11

Facility Name: KGen Hot Spring LLC
 Permit Number: 1936-AOP-R6
 AFIN: 30-00229

\$/ton factor	22.65	Annual Chargeable Emissions (tpy)	1136.93
Permit Type	Minor Mod	Permit Fee \$	500

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	
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	37.2
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 condensible 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	-	262.2	263	0.8	0.8	263
PM ₁₀		244.9	245.7	0.8		
SO ₂	-	107.2	112.1	4.9	4.9	112.1
VOC	-	163.7	179.6	15.9	15.9	179.6
CO		962.4	976.1	13.7		
NO _x	-	271.4	287	15.6	15.6	287
Lead	-	0.03	0.03	0	0	0.03
Acrolein		0.14	0.15	0.01		
Benzene		0.25	0.27	0.02		
1,3-Butadiene		0.03	0.03	0		
Formaldehyde		4.43	4.45	0.02		
Hexane		7.78	7.78	0		
PAH/POM		0.07	0.08	0.01		
Propylene Oxide		0.52	0.52	0		
Toluene		2.33	2.34	0.01		
Xylene		1.16	1.17	0.01		
Arsenic		0.03	0.03	0		
Cadmium		0.03	0.03	0		
Mercury		0.03	0.03	0		
Ammonia	-	295.2	295.2	0	0	295.2
pc 6/21/12		0	0	0		