STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2373-AOP-R0 AFIN: 35-01514

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Energy Security Partners GTL Plant
3500 NCTR Road
Redfield, Arkansas 72132

3. PERMIT WRITER:

Alexander Sudibjo

4. NAICS DESCRIPTION AND CODE:

NAICS Description: All Other Basic Organic Chemical Manufacturing
NAICS Code: 325199

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
12/28/2018	New	Initial PSD permit

6. REVIEWER'S NOTES:

This is the initial Title V Permit for the facility. he facility is a major source of PM, PM_{10}, $PM_{2.5}$, VOC, CO, NO_x, and CO_2e emissions to the air. The project proposes to construct and operate the process in three sequential phases. Each phase will add two trains of gas processing and associated product workup. The total facility's permitted annual emissions are 172.1 tpy PM, 57.1 tpy PM_{10}, 50.9 tpy $PM_{2.5}$, 23.3 tpy SO_2, 678.7 tpy VOC, 1,852.7 tpy CO, 1,199.8 tpy NOx, 8,378,365 tpy CO_2e, 66.81 tpy single HAP, and 72.66 tpy total HAPs.

Flares: only one of the six flares can operate in a non-normal operating scenario (start-up or spurious) at any one time. Each plant is equipped with two identical flares and only one of the two can operate at any one time.

7. COMPLIANCE STATUS:

This is the initial Title V permit for the facility.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y
If yes, were GHG emission increases significant? Y

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. N/A

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
Plantwide	-	NESHAP FFFF
SN-1202F001, 1202F001, 1770B001, 1770B002, 1770B003, 1400F001, 1400F002, 1110F001, 2201F001, 2202F001, 2770B001, 2400F001, 2400F002, 2400F003, 2110F001, 2530F001, 2530F002, 2530F003, 2530F004, 2530F005, 3201F001, 3202F001, 3400F001, 3400F002, 3400F003, and 3110F001	CO	NESHAP DDDDD
SN-1771F001, 1771F002, 1772F001, 1771F002, 1770B001, 1770B002, 1770B003, 2771F001, 2771F002, 2772F001, 2772F002, 2770B001, 3771F001, 3771F002, 3772F001, and 3772F002	NOx	NSPS Db
SN-1620G001, 1790G001,	-	NSPS IIII

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
2620G001, 3620G001		
Tanks and Fugitives	VOC	NESHAP UU
Naphtha Tanks (1801TK100, 1801TK200, 2801TK100, and 2801TK200)	VOC	NSPS Kb
Fugitives	VOC	NSPS VVa

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

Significant Impact Levels

The facility emissions form normal operation are modeled and results are first compared to Class II Significant Impact Levels (SILs), summarized in the following table.

Pollutant	Averaging Time	SIL ($\mu g/m^3$)	Result ($\mu g/m^3$)	Pass?
PM_{10}	24-Hour	5	3.28	Y
	Annual	1	0.88	Y
$PM_{2.5}$	24-Hour	1.2	0.69	Y
	Annual	0.2	0.24	N
NOx	1-Hour	7.52	40.48	N
	Annual	1	1.42	N
CO	1-Hour	2,000	207.12	Y
	8-Hour	500	102.87	Y

For the pollutants and averaging periods that did not pass the SIL, multisource impact analysis is required to demonstrate compliance with the NAAQS and PSD Increments.

Multisource – NAAQS

For the pollutants and averaging periods that did not pass the SIL, multisource impact analysis is required to demonstrate compliance with the NAAQS. As stated in the protocol, sources within 10 km from the facility site are included in the multisource analysis. There are 5 sources within the 10 km radius: the Entergy/White Bluff power plant, the Pine Bluff Arsenal, the National Center for Toxicological Research (NCTR), the Jefferson County Landfill, and Schollmier Crematory.

The receptors used in the multisource modeling are those that showed concentrations above the SILs. For NOx, nearly all receptors showed concentrations above the 1-hr SIL, so the entire receptor network was used for NOx multisource modeling for both averaging periods. For $PM_{2.5}$, only the receptors that showed concentrations above the annual SIL were used in the multisource model. The results of multisource modeling are shown in the following table.

Pollutant	NAAQS Standard ($\mu g/m^3$)	Averaging Time	Background ($\mu g/m^3$)	Result ($\mu g/m^3$)	Total ($\mu g/m^3$)	Pass?
PM_{10}	150	24-Hour	35	N/A	N/A	Y
$PM_{2.5}$	35	24-Hour	19	N/A	N/A	Y
	12	Annual	9.4	0.41	9.81	Y
NOx	188	1-Hour	78	76.9	154.9	Y

Pollutant	NAAQS Standard ($\mu g/m^3$)	Averaging Time	Background ($\mu g/m^3$)	Result ($\mu g/m^3$)	Total ($\mu g/m^3$)	Pass?
	100	Annual	15	1.9	16.9	Y
CO	40,000	1-Hour	1,533	N/A	N/A	Y
	10,000	8-Hour	1,265	N/A	N/A	Y

For NOx, the receptor with the highest average of the eighth highest daily 1-hour concentration from each year showed a concentration of 3,273 $\mu g/m^3$. However, this receptor and the subsequent highest receptors are all on property owned and controlled by the Pine Bluff Arsenal, meaning it is not ambient air and the NAAQS does not apply. Furthermore, these receptors each have contributions by ESP sources of less than 7 μg/m3, meaning that existing sources are the sole reason for the modeled NAAQS exceedance. The highest receptor in ambient air showed a concentration of 76.90 $\mu g/m^3$ with 6.27 $\mu g/m^3$ due to ESP sources.

Multisource – PSD Increments

For the pollutants and averaging periods that did not pass the SIL, multisource impact analysis is required to demonstrate that ESP sources will not cause or contribute to an exceedance of any PSD Class II Increment. Arkansas policy requires applicants to address effects to economic growth and alternatives to increment consumption if the screening level of an increment is exceeded. The modeling results are shown in the following table.

Pollutant	Averaging Time	Screening ($\mu g/m^3$)	Increment ($\mu g/m^3$)	Result ($\mu g/m^3$)	Pass?
PM_{10}	24-Hour	24	30	N/A	Y
	Annual	8.5	17	N/A	Y
$PM_{2.5}$	24-Hour	17.2	9	N/A	Y
	Annual	1.5	4	0.24	Y
NOx	Annual	12.5	25	1.90	Y

Significant Monitoring Concentrations

The facility emissions are modeled and the results are compared to the applicable Significant Monitoring Concentrations (SMCs). If the predicted concentrations are less than the SMCs, the Project is exempt from the requirements to conduct pre- and post-

construction monitoring under the PSD program. The results are shown in the following table.

Pollutant	Averaging Time	SMC ($\mu g/m^3$)	Result ($\mu g/m^3$)	Pass?
PM_{10}	24-Hour	10	3.28	Y
$PM_{2.5}$	24-Hour	0	0.69	Y
NOx	Annual	14	1.42	Y
CO	8-Hour	575	102.87	Y

EPA guidance notes that permitting authorities may no longer rely on the SMCs for $PM_{2.5}$ to exempt permit applicants from compiling preconstruction monitoring data for $PM_{2.5}$. However, the EPA believes PSD permit applicants may continue to meet the preconstruction monitoring requirements in these regulations by gathering, for purposes of the permitting analysis, data already available from existing monitors that are determined by the applicable permitting authority to be representative of background conditions in the affected area. For $PM_{2.5}$, existing monitoring data is representative. The facility is therefore exempt from monitoring requirements.

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.

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	Proposed lb/hr*	Pass?
Acenapthene	0.2	2.2E-2	1.36E-5	Y
Anthracene	0.2	2.2E-2	1.81E-5	Y
Benzo(a)anthracene	0.2	2.2E-2	1.36E-5	Y
Benzo(a)pyrene	0.2	2.2E-2	9.11E-6	Y

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr*	Pass?
Benzo(b)fluoranthene	0.2	2.2E-2	1.36E-5	Y
Benzo(g,h,i)perylene	0.2	2.2E-2	9.11E-6	Y
Benzo(k)fluoranthene	0.2	2.2E-2	1.36E-5	Y
Chrysene	0.2	2.2E-2	1.36E-5	Y
Fluoranthene	0.2	2.2E-2	2.27E-5	Y
Fluorene	0.2	2.2E-2	2.12E-5	Y
Hexane	176.2	19.38	13.95	Y
Indeno(1,2,3,c,d)pyrene	0.2	2.2E-2	1.36E-5	Y
Phenanthrene	0.2	2.2E-2	1.29E-4	Y
Pyrene	0.2	2.2E-2	3.78E-5	Y
Arsenic	0.01	1.1E-3	1.51E-3	N
Barium	0.5	5.5E-2	3.33E-2	Y
Beryllium	5.0E-5	5.5E-6	9.11E-5	N
Cadmium	0.01	1.1E-3	8.34E-3	N
Chromium	0.005	5.5E-4	1.06E-2	N
Cobalt	0.02	2.2E-3	6.37E-4	Y
Copper	0.2	2.2E-2	6.43E-3	Y
Lead	0.05	5.5E-3	3.78E-3	Y
Manganese	0.1	1.1E-2	2.88E-3	Y
Mercury	0.025	2.75E-3	1.97E-3	Y
Selenium	0.2	2.2E-2	1.81E-4	Y

* Does not include hourly emissions from alternate operating scenarios for the flares or auxiliary boilers and from emergency engines.

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.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Arsenic	0.1	2.0E-4	Y
Beryllium	0.0005	1.0E-5	Y
Cadmium	0.1	1.1E-3	Y
Chromium	0.05	1.4E-3	Y

c) H_2S Modeling:

The facility does not have any H_2S emissions.

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
HPU Steam Reformer 1110F001 2110F001 3110F001	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03	-	-	Fuel gas no SCR 95.93 MMBtu/hr
	Facility data and 40 CFR § 98.30	in lb/MMBtu CO_2e: 196.7	-	-	
	AP-42, 1.4	Various HAPs	-	-	
SGU Process Heater 1201F001 1202F001 2201F001 2202F001 3201F001 3202F001	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03	-	-	Fuel gas no SCR 391.5 MMBtu/hr
	Facility data	in lb/MMBtu	-	-	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	and 40 CFR § 98.30	CO_2e: 196.7			
	AP-42, 1.4	Various HAPs	-	-	
Reactor Feed Heater 1400F001 2400F001 3400F001	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03	-	-	Fuel gas no SCR 53.34 MMBtu/hr
	Facility data and 40 CFR § 98.30	in lb/MMBtu CO_2e: 196.7	-	-	
	AP-42, 1.4	Various HAPs	-	-	
Fractionator Feed Heater 1400F002 2400F002 3400F002	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03	-	-	Fuel gas no SCR 191.07 MMBtu/hr
	Facility data and 40 CFR § 98.30	in lb/MMBtu CO_2e: 196.7	-	-	
	AP-42, 1.4	Various HAPs	-	-	
Gasoil Side Stripper Reboiler 2400F003 3400F003	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03	-	-	Fuel gas no SCR 8.76 MMBtu/hr
	Facility data and 40 CFR § 98.30	in lb/MMBtu CO_2e: 196.7	-	-	
	AP-42, 1.4	Various HAPs	-	-	
Steam	Fuel gas	in lb/MMBtu	-	-	Fuel gas

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
Superheater 1771F001 1772F001 2771F001 2772F001 3771F001 3772F001	BACT	PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03			no SCR 232.87 MMBtu/hr
	Facility data and 40 CFR § 98.30	in lb/MMBtu CO_2e: 196.7	-	-	
	AP-42, 1.4	Various HAPs	-	-	
Steam Superheater 1771F002 1772F002 2771F002 2772F002 3771F002 3772F002	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03	-	-	Fuel gas no SCR 346.72 MMBtu/hr
	Facility data and 40 CFR § 98.30	in lb/MMBtu CO_2e: 196.7	-	-	
	AP-42, 1.4	Various HAPs	-	-	
2530F001 2530F002 2530F003 2530F004 2530F005	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059 VOC: 0.0054 CO: 0.035 NO_x: 0.03	-	-	Fuel gas no SCR MMBtu/hr 2530F001: 36.54 2530F002: 37.02 2530F003: 30.93 2530F004: 30.93 2530F005: 19.35
	Facility data and 40 CFR § 98.30	CO_2e: 196.7	-	-	
	AP-42, 1.4	Various HAPs	-	-	
Auxiliary Boiler 1770B001 1770B002 1770B003	Fuel gas BACT	in lb/MMBtu PM: 0.0039 PM_{10}: 0.0009 $PM_{2.5}$: 0.0008 SO_2: 0.00059	-	-	no SCR Normal Fuel gas 696.62 MMBtu/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
2770B001		VOC: 0.0054 CO: 0.035 NO_x: 0.03			6,102,362 MMBtu/yr <u>Startup</u> Natural gas 2,786.47 MMBtu/hr 2,006,256 MMBtu/yr
	Facility data and 40 CFR § 98.30	<u>in lb/MMBtu</u> CO_2e: 196.7	-	-	
	<u>Natural gas</u> AP-42, 1.4	<u>in lb/MMBtu</u> PM: 0.0075 PM_{10}: 0.0075 $PM_{2.5}$: 0.0075 SO_2: 0.000593 VOC: 0.0054 CO: 0.083 NO_x: 0.099 Various HAPs	-	-	
<u>Flares</u> 1900FL001 1900FL002 2900FL001 2900FL002 3900FL001 3900FL002	<u>Natural gas/Syngas</u> AP-42, 13.5	<u>in lb/MMBtu</u> PM: 0.011 PM_{10}: 0.011 $PM_{2.5}$: 0.011 SO_2: 0.0006 VOC: 0.14 CO: 0.37 NO_x: 0.03 Various HAPs	-	-	no SCR <u>Normal</u> 6.46 MMBtu/hr per plant 129 kg/hr natural gas per plant <u>Startup</u> 7,780.05 MMBtu/hr 52,000 kg/hr natural gas +250,000 kg/hr syngas <u>Spurious</u> 10,352.84 MMBtu/hr 500,200 kg/hr syngas
	Facility data and 40 CFR § 98.30	<u>in lb/MMBtu</u> CO_2e: 196.7	-	-	
<u>Emergency Generator</u> 1620G001 2620G001 3620G001 1790G001	<u>Diesel</u> AP-42, 3.4	<u>in lb/MMBtu</u> PM: 0.019 PM_{10}: 0.019 $PM_{2.5}$: 0.019 SO_2: 0.002 VOC: 0.09 CO: 2.26 NO_x: 0.433	-	-	Diesel no SCR 500 hr/yr 1620G001, 2620G001, 3620G001: 34.23 MMBtu/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		CO_2e: 196.7 Various HAPs			1790G001: 11.54 MMBtu/hr
	Facility data and GHG Inventories	<u>in lb/MMBtu</u> CO_2e: 166.5	-	-	
<u>CO_2 Vents</u> 1251C001 1252C002 2251C001 2252C002 3251C001 3252C002	Facility calculations	1,191.78 mol CO_2/h/plant CO_2 MW: 44.01 mol/kg	-	-	-
Roads	<u>Paved</u> AP-42, 13.2.1	<u>in lb/VMT</u> PM: 0.785 PM_{10}: 0.157 $PM_{2.5}$: 0.039	Watering	50%	5.79 VMT/hr 50,691 VMT/yr 110 wet days
	<u>Unpaved</u> AP-42, 13.2.2	<u>in lb/VMT</u> PM: 5.755 PM_{10}: 1.407 $PM_{2.5}$: 0.141			
Tanks	TANKS 4.0.9d	<u>VOC</u> 12.9 lb/hr 56.2 tpy	-	-	-
VR Barge	<u>Diesel</u> AP-42, 5.2	VOC: 0.031 lb/10^3 gal	Vapor Recovery	99.5%	5,000 bbl/hr 9,786,864 bbl/yr
	<u>Jet</u> AP-42, 5.2	VOC: 3.980 lb/10^3 gal			5,000 bbl/hr 9,786,864 bbl/yr
	<u>Gasoline</u> AP-42, 5.2	VOC: 10.713 lb/10^3 gal			5,000 bbl/hr 10,353,044 bbl/yr
	<u>Naphtha</u> AP-42, 5.2	VOC: 3.980 lb/10^3 gal			5,000 bbl/hr 11,872,757 bbl/yr
VR Rail	<u>Diesel</u> AP-42, 5.2	VOC: 0.031 lb/10^3 gal	Vapor Recovery	99.5%	5,000 bbl/hr 27,296,468 bbl/yr
	<u>Jet</u> AP-42, 5.2	VOC: 3.980 lb/10^3 gal			5,000 bbl/hr 13,981,234 bbl/yr
	<u>Gasoline</u> AP-42, 5.2	VOC: 10.713 lb/10^3 gal			5,000 bbl/hr 10,353,044 bbl/yr
	<u>Naphtha</u> AP-42, 5.2	VOC: 3.980 lb/10^3 gal			5,000 bbl/hr 11,872,757 bbl/yr
VR Tanker	<u>Diesel</u>	VOC: 0.031	Vapor	99.5%	5,000 bbl/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	AP-42, 5.2	lb/10^3 gal	Recovery		27,296,468 bbl/yr
	Jet AP-42, 5.2	VOC: 3.980 lb/10^3 gal			5,000 bbl/hr 13,981,234 bbl/yr
	Gasoline AP-42, 5.2	VOC: 10.713 lb/10^3 gal			5,000 bbl/hr 10,353,044 bbl/yr
	Naphtha AP-42, 5.2	VOC: 3.980 lb/10^3 gal			5,000 bbl/hr 11,872,757 bbl/yr
Fugitives	EPA "Protocol for Equipment Leak Emission Estimates" (11/95)	See Tables 2-9, 2-11, and 2-13 of guidance manual	-	-	-

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
1110F001, 1201F001, 1202F001, 1400F001, 1400F002, 1771F001, 1771F002, 1772F001, 1772F002, 2110F001, 2201F001, 2202F001, 2400F001, 2400F002, 2400F003, 2771F001, 2771F001, 2772F001, 2772F002, 2530F001, 2530F002, 2530F003, 2530F004, 2530F004, 3110F001, 3201F001, 3202F001, 3400F001, 3400F002, 3400F003, 3771F001, 3771F002, 3772F001, 3772F002, 1770B001, 1770B002, 1770B003, 2770B001	PM	5 and 202	Every 12 months until 2 consecutive successful tests, then every 36 months thereafter	Emission verification
	PM_{10}	201A or 5 and 202		
	$PM_{2.5}$	202		
	SO2	6C		
	VOC	25A		
	CO	10		
	CO_2e	EPA/Department approved method		

SN	Pollutants	Test Method	Test Interval	Justification
1110F001, 1201F001, 1202F001, 1400F001, 1400F002, 2110F001, 2201F001, 2202F001, 2400F001, 2400F002, 2400F003, 2530F001, 2530F002, 2530F003, 2530F004, 2530F004, 3110F001, 3201F001, 3202F001, 3400F001, 3400F002, 3400F003	NOx	7E	Every 12 months until 2 consecutive successful tests, then every 36 months thereafter	Emission verification
1990FL001, 1900FL002, 2900FL001, 2900FL002, 3900FL001, 3900FL002	Flare compliance assessment	40 C.F.R. § 63.987(b)	Initial	40 C.F.R. §§ 63.982(b), and 63.987(b)
Fugitive	VOC	ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93	Initial	40 C.F.R. § 60.485a(d)
1771F001, 1771F002, 1772F001, 1771F002, 1770B001, 1770B002, 1770B003, 2771F001, 2771F002, 2772F001, 2772F002, 2770B001, 3771F001, 3771F002, 3772F001, 3772F002	NOx	CEMS	Initial	40 C.F.R. § 60.46b(e)

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)
1771F001, 1771F002, 1772F001, 1772F002, 1770B001, 1770B002, 1770B003, 2771F001, 2771F002, 2772F001,	NOx	CEMS	During all periods of operations except for CEMS breakdowns and repairs	Y

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
2772F002, 2770B001, 3771F001, 3771F002, 3772F001, 3772F002				
1251C001, 1252C002, 2251C001, 2252C002, 3251C001, 3252C002	CO_2	Flow meter and gas analyzer	During all periods of operations with records updated monthly	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)
1620G001, 1790G001, 2620G001, 3620G001	Hours of operation	500 hours per calendar year	Monthly	N
1900FL001, 1900FL002	Natural gas usage during normal operations per rolling 12 months	1,072,765 kg	Monthly	N
	Date and duration of any downtime of SN-1900FL001	Only one of SN-1900FL001 or SN-1900FL002 may operate at any time	Monthly	N
2900FL001, 2900FL002	Natural gas usage during normal operations per rolling 12 months	1,072,765 kg	Monthly	N
	Date and duration of any downtime of SN-2900FL001	Only one of SN-2900FL001 or SN-2900FL002 may operate at any time	Monthly	N
3900FL001, 3900FL002	Natural gas usage during normal operations per	1,072,765 kg	Monthly	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	rolling 12 months			
	Date and duration of any downtime of SN-3900FL001	Only one of SN-3900FL001 or SN-3900FL002 may operate at any time	Monthly	N
1900FL001, 1900FL002, 2900FL001, 2900FL002, 3900FL001, 3900FL002	Date and duration of start-ups and spurious trips	Only one of 1900FL001, 1900FL002, 2900FL001, 2900FL002, 3900FL001, or 3900FL002 may operate in a start-up or spurious trip operating scenario at any time	Monthly	N
	Fuel usage during start-ups per rolling 12 months	Natural gas: 3,744,000 kg Syngas: 90,000,000 kg	Monthly	N
	Fuel usage during spurious trips per rolling 12 months	Natural gas: 0 kg Syngas: 6,002,400 kg	Monthly	N
	Hourly fuel usage limit during start-ups	Natural gas: 52,000 kg/hr Syngas: 250,000 kg/hr	Monthly	N
	Hourly fuel usage limit during spurious trips	Natural gas: 0 kg/hr Syngas: 500,200 kg/hr	Monthly	N
1770B001, 1770B002, 1700B003, 2700B001	Firing rates of all auxiliary boilers during normal operations	696.62 MMBtu/hr for all 4 boilers combined	Monthly	N
	Fuel usage limit during normal operations per rolling 12 months	Natural gas: 0 MMscf Fuel gas: 9,802 MMscf	Monthly	N
	Fuel usage limit during start-ups per rolling 12 months	Natural gas: 1,983 MMscf Fuel gas: 0 MMscf	Monthly	N
Tanks	Annual throughput limit	Specific Condition #171	Monthly	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
VR Barge	Annual throughput limit	Diesel: 9,786.864 bbl/yr Jet: 9,786,864 bbl/yr Gasoline: 10,353,044 bbl/yr Naphtha: 11,872,757 bbl/yr	Monthly	N
VR Rail	Annual throughput limit	Diesel: 27,962,468 bbl/yr Jet: 13,981,234 bbl/yr Gasoline: 10,353,044 bbl/yr Naphtha: 11,872,757 bbl/yr	Monthly	N
VR Tanker	Annual throughput limit	Diesel: 27,962,468 bbl/yr Jet: 13,981,234 bbl/yr Gasoline: 10,353,044 bbl/yr Naphtha: 11,872,757 bbl/yr	Monthly	N
Naphtha storage tanks	NSPS Kb Records	Specific Conditions #179, #180, #181	As required	Y
Fugitive	NSPS VVa Records	Specific Conditions #239, #241, #242, and #243	As required	Y
Plantwide	NESHAP FFFF Records	Plantwide Condition #21	As required	Y
1202F001, 1202F001, 1770B001, 1770B002, 1770B003, 1400F001, 1400F002, 1110F001, 2201F001, 2202F001, 2770B001, 2400F001, 2400F002, 2400F003, 2110F001, 2530F001, 2530F002, 2530F003, 2530F004, 2530F005, 3201F001, 3202F001, 3400F001, 3400F002, 3400F003, 3110F001	NESHAP DDDDD Records	Plantwide Conditions #33, #42, #43, #44, and #45	As required	Y
1771F001, 1771F002, 1772F001, 1771F002, 1770B001, 1770B002, 1770B003, 2771F001, 2771F002, 2772F001, 2772F002, 2770B001, 3771F001, 3771F002, 3772F001, 3772F002	NSPS Db Records	Plantwide Conditions #49, #50, #51, #57 and #58	As required	Y
Tanks and Fugitives	NESHAP UU Records	Plantwide Conditions #73, #77, #81, #83, #84, #86, #101, #104, #113, #124, #130, #133, #143, #144	As required	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
1110F001, 1201F001, 1202F001, 1400F001, 1400F002, 1771F001, 1771F002, 1772F001, 1772F002, 2110F001, 2201F001, 2202F001, 2400F001, 2400F002, 2400F003, 2771F001, 2771F001, 2772F001, 2772F002, 2530F001, 2530F002, 2530F003, 2530F004, 2530F004, 3110F001, 3201F001, 3202F001, 3400F001, 3400F002, 3400F003, 3771F001, 3771F002, 3772F001, 3772F002, 1770B001, 1770B002, 1770B003, 2770B001	5%	Reg.18.501	Daily observations
1990FL001, 1900FL002, 2900FL001, 2900FL002, 3900FL001, 3900FL002	0% except for periods not to exceed a total of five minutes during any two consecutive hours	Reg.18.501 and 40 C.F.R. §§ 60.18(c) and (f)	Method 22
1620G001, 1790G001, 2620G001, 3620G001	20%	Reg.19.705	Daily observations whenever in operation for more than 24 consecutive hours
Road	5%	Reg.18.501	Watering plan

18. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

19. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/ PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
20,000 gal NaOH Solution Tank (1760TK002)	A-4							
20,000 gal NaOH Solution Tank (1760TK003)	A-4							
20,000 gal NaOH Solution Tank (2760TK002)	A-4							
20,000 gal NaOH Solution Tank (2760TK003)	A-4							
20,000 gal NaOH Solution Tank (3760TK002)	A-4							
20,000 gal NaOH Solution Tank (3760TK003)	A-4							
26,000 gal Diesel Daily Tank (1800TK620)	A-13			0.0053				
26,000 gal Diesel Daily Tank (2800TK620)	A-13			0.0053				
26,000 gal Diesel Daily Tank (3800TK620)	A-13			0.0053				
Ammonia Storage Tank (1301TK001)	A-13	Pressurized. No emissions.						
Ammonia Storage Tank (2301TK001)	A-13	Pressurized. No emissions.						
Ammonia Storage Tank (3301TK001)	A-13	Pressurized. No emissions.						
23,000 gal HCl Solution Tank (1760TK001)	A-13						0.31	0.31
23,000 gal HCl Solution Tank (2760TK001)	A-13						0.31	0.31
23,000 gal HCl Solution Tank (3760TK001)	A-13						0.31	0.31
6 Cooling Towers (1750CT001-006)	A-13	0.64						
6 Cooling Towers (2750CT001-006)	A-13	0.64						
6 Cooling Towers (3750CT001-006)	A-13	0.64						

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
N/A

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Energy Security Partners GTL Plant
Permit Number: 2373-AOP-R0
AFIN: 35-01514

$/ton factor	23.93	Annual Chargeable Emissions (tpy)	2073.9
Permit Type	Initial Permit	Permit Fee $	49628.427

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)	2073.9
Initial Title V Permit Fee Chargeable Emissions (tpy)	2073.9

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		0	172.1	172.1	172.1	172.1
PM_{10}		0	57.1	57.1		
$PM_{2.5}$		0	50.9	50.9		
SO_2		0	23.3	23.3	23.3	23.3
VOC		0	678.7	678.7	678.7	678.7
CO		0	1852.7	1852.7		
NO_X		0	1199.8	1199.8	1199.8	1199.8
CO2e	☐	0	8378365	8378365		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Single HAP	☐	0	66.81	66.81		
Total HAPs	☐	0	72.66	72.66		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		