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Via electronic submission

Re: Comments on BP's Application to Amend Permit No. 47256 for the Texas City Refinery (Project No. 167140)

I. Introduction

BP Products North America Inc. ("BP") owns and operates the Texas City Refinery located in Galveston County, Texas. On June 5, 2011, BP submitted an application to transition from its Subchapter G flexible permit (Permit No. 47256) to a SIP-approved Subchapter B permit. Environmental Integrity Project, Sierra Club, and Air Alliance Houston ("Commenters") offer these preliminary comments regarding this application. We have several concerns about BP's application, including:

1) BP's proposal to establish unit-specific emission limits that are less stringent than those required by BP's pre-flexible permit NSR authorizations;

2) BP's proposal to eliminate throughput and capacity limits required under its pre-flexible permit NSR authorizations; and

3) BP's failure to provide a forthright and thorough account of changes made to its Texas City Refinery under the flexible permit.

The *Environmental Integrity Project* is a nonpartisan, nonprofit organization dedicated to effective enforcement of environmental laws. EIP works closely with communities in Texas and throughout the nation seeking to enforce those laws.

Sierra Club is an outdoor recreation and conservation organization representing approximately 24,000 Texans and 10 regional groups from Big Bend to Houston. Sierra Club values diversity and promotes environmental education and environmental justice in its efforts to fulfill its mission to explore, enjoy, and protect our Texas natural heritage and to protect public health.

Air Alliance Houston was formed to reduce air pollution in the Houston region and protect public health and the environment through research, education, and advocacy. Air Alliance Houston focuses on improving air quality in the Houston area to protect children's health, developing community programs to address environmental justice issues, and educating children and adults in local communities about air quality issues and prevention of exposure.

BP's Texas City Refinery is a major stationary source subject to federal preconstruction permitting requirements. Because the Commission's flexible permitting rules have not been approved as part of Texas' state implementation plan ("SIP"), flexible permits are not a proper substitute for SIP-approved construction authorizations required under the Clean Air Act. EPA disapproved the Commission's flexible permit rules, in part, out of concern that the permits could be used to circumvent federal preconstruction review requirements and that such circumvention could contribute to violations of health-based ambient air quality standards. In order to ensure that no circumvention has occurred or will occur in the future, EPA has required flexible permit holders to submit applications to transition from their flexible permits to SIP-approved NSR authorizations. As part of this application process, EPA has indicated that flexible permit holders must submit detailed information regarding changes to facilities made in reliance upon flexible permits. This detailed information is necessary to ensure that federal requirements have not been circumvented and that emissions from flexible permit facilities do not pose a threat to human health.

BP's Texas City Refinery is a large facility with hundreds of emissions units. BP's flexible permit indicates that the Texas City Refinery has the potential to emit more than 10,000 tons of dangerous pollutants each year. BP's application fails to include sufficient information to establish that changes made to the Texas City Refinery have not triggered federal permitting requirements and to ensure that emissions from the refinery are sufficiently controlled to protect human health. Moreover, information included in BP's application suggests that modifications have in fact been made to the refinery that require further review.

II. The Executive Director Should Require BP to Perform a Detailed Analysis Consistent with the Four-Step De-flex Process Recommended by EPA

The Executive Director should require BP to supplement its application to include all materials required under the de-flex process EPA has recommended.[1] This material is necessary to ensure that emission limits and special conditions established by BP's Subchapter B permit are consistent with current SIP-approved requirements and that construction or changes in operation

[1] *See* Letter from Al Armendariz, Regional Administrator of EPA Region 6, to Jim Mahoney, regarding Flint Hills Resources—Flexible Permits (October 21, 2010), available online at: http://www.epa.gov/region6/6xa/pdf/10-21-10_epa_letter_to_fha_with_all_transition_attachments.pdf and Letter from Al Armendariz to James E. Harris regarding INEOS Olefins and Polymers USA—Flexible Permits (December 22, 2010), available online at http://www.epa.gov/region6/6xa/pdf/response_letter_ineos_122110.pdf (last visited Sept. 16, 2011).

implemented at the Texas City Refinery in reliance upon BP's Subchapter G flexible permit have not circumvented applicable New Source Review requirements.

Notably missing from BP's application are the following materials:

Historical Review and Summary Report:

According to EPA, the Permit Holder shall prepare an historical review and summary report, organized chronologically, of physical or operational changes that required case-by-case NSR, PBR, standard permit authorization, qualified facility changes, and any other changes authorized under the flexible permit that did not require individual NSR authorization. The report shall include a description of Best Available Control Technology (BACT), air pollution control equipment, emission rates, and netting (as appropriate). The report shall, for each emission unit, begin with the last SIP-approved authorization, if any, issued prior to the flexible permit and include relevant information contained in the application for the flexible permit. Permit conditions established in the last SIP-approved permit for each emission unit issued prior to the flexible permit should be tracked chronologically as part of this process, including for emission points outside the Subchapter G emission cap.

Major NSR Applicability Report:

According to EPA, the Permit Holder shall prepare a report on major NSR applicability of changes authorized under the flexible permit. The report shall include a review of each project that affected or involved emission units under the flexible permit, including units that are not included in the cap for purposes of evaluation of Prevention of Significant Deterioration (PSD) or nonattainment NSR (NNSR) netting or significant threshold requirements. The scope of projects to be reviewed are physical or operational changes that required case-by-case NSR, PBR, standard permit authorization, qualified facility changes, and any other changes authorized under the flexible permit that did not require independent NSR authorization (i.e., those changes authorized under 30 TAC Section 116.718). The scope of projects to be reviewed for major NSR shall also be defined by applicable federal guidance, at the time of the project.

PBR Report:

According to EPA, the Permit Holder shall prepare a report to include, for each emission unit that is or was under the flexible permit, the following elements:

1. A list of PBRs that apply to, or authorize emissions from, the emission unit; and
2. A determination of the total emission limit for each such emission unit that also has emissions authorized by a PBR, considering all PBRs relevant to the unit.

Consent Decree Report:

According to EPA, the Permit Holder shall conduct an analysis of any final consent decree (CD) or other judicial determination that applies to emission units under the flexible permit to determine whether there are specific emission limitations required by the CD for individual emission units or groups of emission units covered by the flexible permit. The Permit Holder shall provide a report that documents the emission limitations required by the CD for each emission unit or group of emission units. For emission points that are covered by CDs, it will not be necessary to examine the operational or permitting history of such units prior to the date controls were installed pursuant to the final CD for pollutant(s) covered by the CD when analyzing the federally applicable requirements for emission units covered in the CD. However, the NSR analysis shall include units covered by the CD insofar as projects affected or potentially affected federally-applicable requirements for other (i.e., non-CD) units.

While BP's application does contain some information that would be submitted in these reports, the information is incomplete and scattered throughout the application. Without a detailed and coherent account of physical and operational changes made at the Texas City Refinery since issuance of flexible permit No. 47256 and the review undertaken to determine whether these changes triggered federal requirements, the Executive Director does not have sufficient information to determine that federal requirements have not been circumvented.

III. Unit-Specific Limits for Heaters are Higher than Limits in Pre-Flex SIP-approved Permits

As shown in Attachment 1 to these comments, many of the unit-specific emission limits for heaters at the Texas City Refinery proposed by BP are higher than the unit-specific emission limits for those units established by BP's pre-flexible permit NSR authorizations.[2] BP should be required to provide a thorough explanation of why such increases are proposed, and whether such increases are the result of modifications made to these units or to other units that affect the performance of the heaters. Moreover, BP should be required to conduct a BACT analysis demonstrating that those units for which increases are proposed satisfy *current* BACT or LAER requirements. In order to authorize increases in unit-specific emission limits, BP must also demonstrate that federal NSR requirements are met, and that such increases do not interfere with maintenance of any NAAQS, including recently promulgated short-term standards for SO2 and NO2. The fact that BP proposes to maintain site-wide emission caps established by its flexible permit does not render any of these demonstrations unnecessary.[3] Whether or not BP is able to demonstrate compliance with site-wide pollutant caps established by the flexible permit, BP must still show that modifications made to emissions units under the flexible permit have not circumvented federal requirements. If no modifications (including changes in the method of

[2] (Attachment 1), Spreadsheet based upon BP's pre-flexible permit NSR authorizations and Table 1(a) of BP's de-flex application. Highlighted numbers indicate proposed limits that are less stringent than pre-flexible permit NSR authorization limits.
[3] *See* de-flex application at 1-2.

operation) have been made to the heaters under the flexible permit, there is no reason that the unit-specific emission limits for any of BP's heaters should be increased.

IV. Throughput and Capacity Limits Should be Retained

BP has proposed to eliminate many of the capacity and throughput limitations established by its pre-flexible permit NSR authorizations.[4] According to BP, throughput and capacity limits "were historically utilized as permit limits due to the lack of emissions monitoring data."[5] BP's application states that, "[d]ue to advances in emissions monitoring technology, BP maintains that specific production throughputs are no longer necessary. Instead, production rates will be limited by the proposed individual short-term and annual emission limits for each facility."[6] Regardless of the purpose of such limits—and it is unclear that throughput and capacity limits in BP's pre-flex permit NSR authorizations are merely for monitoring purposes—operation of emissions units in excess of throughput and capacity limitations constitutes a change in the method of operation of such units and BP must demonstrate that operation of emissions units in excess of these limits does not cause an increase in *actual* emissions sufficient to trigger federal requirements. Moreover, increases in throughput and operational capacity simply indicate that BP has made physical changes to emissions units at the Texas City Refinery. Unless BP provides a full and thorough explanation of physical and operational changes made to the Texas City Refinery under its flexible permit, there can be no assurance that BP has not circumvented federal requirements.

V. Performance Standards Must be Retained

BP proposes to eliminate many of the lb/MMBtu performance standards or emissions limits in lbs/MMBtu, established by special conditions in its pre-flexible permit NSR authorizations.[7] According to BP, "the specific emission factors represented in the proposed permit amendment emission calculations are sufficient to demonstrate compliance with the historic limits."[8] BP has not explained why this is true or indicated why, even if it is true, preexisting enforceable limits should be eliminated. Limits established by BP's pre-flexible permit NSR authorizations, including representations on which those permits were based, are federally enforceable emission limits that must be retained.

VI. Questions Regarding Project No. 152126

[4] *See* Table A-1 through A-14 in BP's De-Flex application. *See* also Attachment 1 (Spreadsheet), which identifies emissions units for which MMBtu/hr heat-input rates in Table C-1 of BP's application exceed heat-input rates in BP's legacy permits.
[5] *See* Table A-1 through A-14 in the de-flex application. Specifically, BP proposes to remove limits established by special conditions 6 and 8 in permit 8810, special condition 4 in permit 21220, special conditions 3, 12A, and Table-1 in permit 2610, special condition 5 in permit 2611, special condition 2 in permit 3170, special condition 4 in 18707, and special condition 4 in permit 20982.
[6] *See*, e.g., Table A-4 at 1 of 11 of BP's de-flex application.
[7] *See* Table A-1 through A-14 in the de-flex application.
[8] *See*, e.g., Table A-7 at 5 of 18 in the de-flex application.

On December 29, 2009, BP's flexible permit was altered to: 1) pull three heaters from the VOC, NOx, CO, SO2, and PM10 caps, and 2) establish unit-specific limits for these heaters (102B, 104BA, and 104BB).[9] According to the Technical Review Document prepared for this alteration, "During the next ultracracker unit turnaround project, these heaters will have necessary repairs conducted, including tube and tube sheet replacement, support replacement, and fire-box repairs. . .The purpose of establishing individual annual emission limitations is to ensure that the repairs will not trigger federal new source review."[10] According to BP's application, these heaters are grandfathered. Commenters have several concerns and questions about this project:

What inquiry has the ED undertaken to ensure that the repairs BP has or will undertake with respect to these units do not constitute a major modification for purposes of PSD and NNSR review? How does the establishment of unit-specific limits in BP's flexible permit affect this inquiry? Is this alteration anything more than a paperwork exercise undertaken to circumvent federal requirements? What information did BP submit indicating that repairs to these heaters might trigger federal NSR requirements? Does BP or the ED anticipate that these repairs will increase the current operational capacity of these heaters? What permits, including PBRs, Standard Permits, exemptions, and any other kind of permit or registration currently authorize emissions from these units? What is the amount of emissions authorized under each such permit, registration, or other authorization? What are the operational constraints established by each such permit, registration, or other authorization? Prior to issuance of BP's flexible permit, which permits, exemptions, and registrations authorized emissions from these units? What is the amount of emissions authorized under these permits, exemptions, and registrations? What were the operational constraints established by each these permits?

What inquiry has the ED undertaken to evaluate whether the repairs anticipated by this alteration will not affect emissions increases at other emission units at the Texas City Refinery? Has BP made any physical changes or changes in the method of operation of the ultracracker that are related to the repairs anticipated by the alteration? If so, what steps has the ED taken to ensure that these changes in conjunction with repairs made/to be made to the above-listed heaters have not/ will not trigger federal NSR requirements?

VII. BP's BACT Analysis is Incomplete and Based on Flawed Assumptions

According to BP's application, "[t]here are no new facilities or modifications to existing facilities proposed in this permit amendment and there are no increases in allowable emission rates for any pollutant. Therefore, a BACT review is not required, and the prior BACT determination for the facilities included in this application need not be revised."[11] The question is not whether *this* permit amendment triggers BACT requirements for any specific unit covered

[9] TRV document for Project No. 152126 (Attachment 2).
[10] *Id*.
[11] Application at 6-1.

by BP's Flexible Permit. Rather, the question is whether any physical or operational changes during the term of BP's flexible permit triggered federal NSR requirements under Texas' SIP-approved rules. Thus, detailed information about the physical and operational changes undertaken since BP's flex permit was issued, as well as detailed emission data for periods prior to and after the issuance of BP's flexible permit, should be evaluated. BP's application does not include sufficient information for the Executive Director, EPA, or the public to make this determination.

Though BP claims that its deflex application does not trigger any federal NSR requirements, BP offers "for completeness" a description of "emission controls used at the BP Texas City Refinery that were determined to meet BACT requirements as part of historic NSR authorizations, the initial Flexible Permit review, or upon subsequent modification for both routine and MSS emission activities."[12] According to the application, CO, NOx, PM, SO2, and VOC emissions from FCCUs 1 and 3 satisfy current BACT requirements as described by the TCEQ guidance entitled "Best Available Control Technology Guidelines for Chemical Sources" that was last updated on November 17, 2006.[13] According to the agency webpage through which this guidance is accessed:

> This information is maintained by the Chemical NSR Permits Section and is subject to change. These requirements represent NSR BACT guidelines and are provided for informational purposes only. The BACT requirements for any permit or amendment are subject to change through TCEQ case by case evaluation procedures [30 TAC 116.111(a)].[14]

Texas' SIP-approved definition of BACT, found at 30 Tex. Admin. Code § 116.160(c)(1)(A) incorporates by reference the definition of BACT found at 40 C.F.R. § 52.21(b)(12). According to the federal definition:

> Best available control technology means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would

[12] Application at 6-1.
[13] Application at 6-2. These guidelines are available online at: http://www.tceq.texas.gov/permitting/air/nav/air_bact_chemsource.html (last accessed August 8, 2011).
[14] *Id*.

> exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61

As this definition makes clear, BACT is to be established on a case-by-case basis. Merely comparing proposed emission rates to those recommended in a general guidance document issued five years ago is not the kind of case-by-case analysis that BACT requires. Thus, as the disclaimer on the TCEQ's website regarding its BACT guidelines for chemical sources indicates, the fact that BP has proposed control technology and unit-specific limits consistent with those in the guidelines is not sufficient to demonstrate that the controls and limits proposed satisfy current BACT.

VIII. Additional Information Regarding Grandfathered Units should be Provided

BP claims that approximately 130 emission units at the Texas City Refinery are grandfathered.[15] For the grandfathered emission units, BP has not provided sufficient information about its pre-flexible permit authorizations to determine: 1) whether emission limits established by pre-flexible permit authorizations are more or less stringent than the unit-specific emission limits for those units proposed by BP's de-flex application, and (2) whether these emissions units have been modified under the flexible permit. BP should be required to supplement its application with information identifying pre-flexible permit emissions limits that applied to the grandfathered units and specifically describe changes and repairs made to these units that have occurred since BP's flexible permit was issued.

IX. The Application Fails to Include Necessary Information on Flares

According to BP's application:

> BP is currently reviewing waste stream flow and composition data which will be utilized to establish individual short-term and annual emission limits for the flares currently authorized by Flexible Permit No. 47256 and PSD-TX-402M2. Upon completion of the evaluation, BP will submit detailed emission calculations to established (*sic*) individual short-term and annual emission rate limits.

Without this information, neither the public, the EPA, nor the TCEQ can sufficiently evaluate the proposed permit limits for BP's flares. This information should have been included as part of BP's application before it was deemed administratively complete.

X. Conclusion

BP's de-flex application fails to provide an adequate account of operational and physical changes made to the Texas City Refinery after the issuance of flexible permit 47256. This is so despite the fact that BP has proposed unit-specific emission limits for many units that are less

[15] Table 1-2 of BP's de-flex application.

stringent that limits established by BP's pre-flexible permit NSR authorizations. Until such information has been provided, there can be no assurance that BP has not circumvented federal permitting requirements or that emissions from the Texas City Refinery adequately protect human health. The ED should require BP to supplement its application to provide this information and to re-notice the application once it is complete.

Respectfully Submitted,

ENVIRONMENTAL INTEGRITY PROJECT

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ATTACHMENT 1

Comparison of Pollutant Limits in Legacy Permits to Proposed Pollutant Limits in De-flex Application							
EPN No.	Unit Description	Legacy Permit No.	Pollutant	Hourly (De-flex)	Hourly (Legacy)	Annual (De-flex)	Annual (Legacy)
161	301-B Reheat Heater	2610	VOC	**2.14**	0.60	**7.31**	1.80
		2610	NOx	87.70	101.00	299.41	299.80
		2610	SO2	10.57	11.80	**36.10**	34.90
		2610	PM	**2.96**	1.30	**10.10**	4.00
		2610	CO	**118.48**	17.50	**98.85**	51.90
162	302-B Reheat Heater	2610	VOC	**1.52**	0.40	**5.08**	1.20
		2610	NOx	**25.46**	25.40	**85.15**	85.10
		2610	SO2	**7.50**	7.20	**25.07**	24.20
		2610	PM	**2.10**	4.80	**7.01**	21.00
		2610	CO	**84.00**	10.80	**68.66**	36.00
164	304-B Regeneration Flue Gas Heater	2610	VOC	**0.24**	0.10	**0.90**	0.20
		2610	NOx	9.70	9.70	**36.98**	36.90
		2610	SO2	**1.17**	1.10	**4.45**	4.30
		2610	PM	**0.33**	0.10	**1.24**	0.50
		2610	CO	**13.07**	1.50	**12.17**	5.60
165	305-B Hot Oil Heater	2610	VOC	**1.69**	0.40	**5.90**	1.50
		2610	NOx	69.10	69.10	241.78	241.90
		2610	SO2	**8.33**	8.00	**29.13**	28.10
		2610	PM	**2.33**	0.90	**8.15**	3.10
		2610	CO	**93.30**	12.00	**79.78**	41.90
167*	306-B Preheat Heater	2610	VOC	**1.88**	0.50	**7.81**	1.90
*(166 in legacy permit)		2610	NOx	77.10	77.10	**320.81**	320.40
		2610	SO2	**9.27**	9.00	**38.59**	37.30
		2610	PM	**2.59**	1.00	**10.80**	4.20
		2610	CO	**103.93**	6.20	**105.69**	26.80

168*	307-B Desulfurizer Heaters	2610	VOC	**0.42**	0.20	**1.35**	0.30
*(167 in legacy permit)		2610	NOx	17.10	17.10	**55.57**	55.40
		2610	SO2	1.03	2.00	**6.67**	6.40
		2610	PM	**0.57**	0.20	**1.87**	0.70
		2610	CO	**23.01**	1.20	**18.28**	5.40
169	308-B Process Heater	2610	VOC	**0.91**	0.24	**3.99**	1.04
		2610	NOx	8.50	8.50	37.23	37.23
		2610	SO2	4.50	5.11	19.73	22.37
		2610	PM	1.26	2.98	5.52	13.03
		2610	CO	**50.48**	6.80	**54.04**	29.78
471	101-B and 102-B CFHU Heaters	8810	NOx	6.65	7.02	**25.63**	20.63
		8810	SO2	1.11	2.12	**9.70**	7.45
		8810	PM10	0.70	1.35	2.71	4.77
		8810	CO	**7.05**	2.75	**26.57**	9.71
		8810	VOC	**0.51**	0.22	**1.96**	0.78
481	RHU Heaters Train 200	8810	NOx	**8.10**	8.00	**35.22**	35.20
		8810	SO2	**1.79**	1.70	**7.78**	7.60
		8810	PM	**0.50**	0.40	**2.18**	1.50
		8810	CO	**5.01**	2.40	**21.30**	10.60
		8810	VOC	0.36	--	1.57	--
482	RHU Heaters Train 300	8810	NOx	**8.10**	8.00	**35.22**	35.20
		8810	SO2	**1.79**	1.70	**7.78**	7.60
		8810	PM	0.00	0.40	0.00	1.50
		8810	CO	**5.01**	2.40	**21.30**	10.60
		8810	VOC	0.36	--	1.57	--
483	RHU Heaters Train 400	8810	NOx	**8.10**	8.00	**35.22**	35.20
		8810	SO2	**1.79**	1.70	**7.78**	7.60
		8810	PM	**0.50**	0.40	**2.18**	1.50
		8810	CO	**5.01**	2.40	**21.30**	10.60

		8810	VOC	0.36	--	1.57	--
484	RHU Fractionation Heaters	8810	NOx	8.25	21.70	36.13	95.10
		8810	SO2	4.85	5.00	0.02	20.60
		8810	PM	**1.36**	0.90	**5.94**	4.10
		8810	CO	**54.34**	7.20	**58.17**	31.70
		8810	VOC	0.98	--	4.30	--
485	VRS Hot Oil Heater	8810	NOx	3.35	10.20	13.03	44.70
		8810	SO2	**2.53**	2.20	**9.87**	9.70
		8810	PM	**0.71**	0.40	**2.76**	1.90
		8810	CO	**7.10**	3.40	**27.02**	14.90
		8810	VOC	0.51	--	2.00	--
78	Coke Feed Preheater	8810	NOx	9.24	3.40	19.45	14.70
		8810	SO2	**2.04**	0.80	**4.29**	3.20
		8810	PM	**0.57**	0.20	**1.2**	0.70
		8810	CO	**22.86**	1.00	**11.76**	4.40
		8810	VOC	0.41	--	0.87	--
391	B-101/102 Heaters	2611	NOx	**10.38**	10.3	**45.64**	45.3
		2611	SO2	1.39	2.7	9.98	11.8
		2611	CO	**6.38**	3.5	**27.34**	15.3
		2611	VOC	**0.46**	0.3	**2.02**	1.2
		2611	PM	**0.64**	0.5	**2.79**	2.2
392	B-201/202 Heaters	2611	NOx	**10.38**	10.3	**45.64**	45.3
		2611	SO2	1.39	2.7	9.98	11.8
		2611	CO	**6.38**	3.5	**27.34**	15.3
		2611	VOC	**0.46**	0.3	**2.02**	1.2
		2611	PM	**0.064**	0.5	**2.79**	2.2
550	RDU Heater	20982	NOx	**8.26**	8.21	**36.18**	35.96
		20982	SO2	3.13	3.24	13.7	14.19
		20982	CO	**8.76**	4.72	**37.51**	20.67

		20982	VOC	**0.63**	0.17	**2.77**	0.75
		20982	PM10	**0.87**	0.6	**3.83**	2.64
394	CFHU Heaters 101-B, 102-B	21220	NOx	2.38	3.66	10.42	16.05
		21220	SO2	1.62	1.7	**7.89**	7.46
		21220	CO	**5.05**	2.04	**21.61**	8.91
		21220	VOC	**0.36**	0.16	**1.6**	0.71
		21220	PM	0.5	0.29	2.21	1.27
395	RHU Heaters	21220	NOx	**3.78**	3.76	**16.56**	16.46
		21220	SO2	1.66	1.75	7.31	7.65
		21220	CO	**4.68**	2.09	**20.03**	9.14
		21220	VOC	**0.34**	0.17	**1.48**	0.73
		21220	PM	**0.47**	0.3	**2.05**	1.31

Comparison of Heat Input Limits in Legacy Permits to Heat Input Values in De-flex Application				
EPN No.	Unit Description	Heat Input Limit (Legacy Permit No. 8810)	C-1 Heat Input Value (De-flex Application)	
		MMBtu (Special Condition 8)	MMbtu/hr (max)	MMbtu/hr (annual avg.)
471	101-B and 102-B CFHU Heaters	67.3	95	83.6
485	VRS Hot Oil Heater	85	96	85
78	Coke Feed Preheater	27.8	77	37