







SI ID: Description	Relationship Type	Related SI ID: Description

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COMG 100: Storage Tank Heaters built before June 11, 1973	has members	EQUI 330, EQUI 331, EQUI 332, EQUI 334, EQUI 335, EQUI 336, EQUI 337, EQUI 338, EQUI 339, EQUI 340, EQUI 341, EQUI 342





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EQUI 283: 25H-3 O2 Analyzer	monitors	EQUI 501: #3 Crude Unit Vac Pre-Fractionator Heater - Process Heater







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EQUI 406: 23H3 Heater - Process Heater	sends to	STRU 65: 23H3 #3 Coker Heater Stack
EQUI 406: 23H3 Heater - Process Heater	is controlled by	TREA 58: SCR (Selective Catalytic Reduction)

SI ID: Description	Relationship Type	Related SI ID: Description
EQUI 421: FCCU - Refining Equipment	sends to	STRU 95: FCC Main Stack
EQUI 421: FCCU - Refining Equipment	is controlled by	TREA 23: Electrostatic Precipitator - Medium Efficiency
EQUI 421: FCCU - Refining Equipment	is controlled in parallel by	TREA 49: Direct Flame Afterburner w/Heat Exchanger
EQUI 421: FCCU - Refining Equipment	is controlled	TREA 50: Direct Flame Afterburner











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EQUI 541: Gas Oil HDS Charge Heater - Process Heater	sends to	STRU 128: 33H31 Stack
EQUI 542: Distillate Hydrotreater Fractnr Htr - Distillation Equipment	sends to	STRU 113: 27H102 Stack
EQUI 543: #2 H2 Plant Reformer Heater - Process Heater	sends to	STRU 114: 27H1 Stack
EQUI 544: Naphtha Hydrotreater Reactor Chg Htr - Reactor	sends to	STRU 115: 28H1 Stack
EQUI 545: #6 HDS Reactor Charge Heater - Process Heater	sends to	STRU 116: 31H1 Stack
EQUI 546: #2 HDS Fractionation Heater (31H2) - Fractionation Equipment	sends to	STRU 117: 31H2 Stack
EQUI 547: HDS Heater (hot oil system) - Process Heater	sends to	STRU 118: 31H4 Stack
EQUI 548: Unisar Reactor Charge Heater - Process Heater	sends to	STRU 119: 31H5 Stack
EQUI 549: #5 HDS Charge Heater (naphtha) - Process Heater	sends to	STRU 120: 31H7 Stack
EQUI 550: #1 HDS Reactor Charge Heater - Process Heater	sends to	STRU 121: 31H8 Stack
EQUI 551: #1 HDS Fractionation Heater - Fractionation Equipment	sends to	STRU 122: 31H9 Stack
EQUI 552: #2 HDS Reactor Charge Heater - Process Heater	sends to	STRU 123: 31H10 Stack













5. Limits and other requirements

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TFAC 4	03700011	Flint Hills Resources Pine Bend Refinery	
	5.1.2		The Permittee shall limit Sulfur Dioxide <= 3770 tons per year 365-day rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.1.3		Refinery Fuel Oil Restrictions: The Permittee shall not burn refinery nos. 3, 4 or 6 fuel oil at any Refinery location. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.1.4		<p>CHANGES NOT REQUIRING A MODIFICATION OF THE SIP:                      The Permittee is authorized to begin construction of the activities listed below at the Refinery without a modification of the SIP. The Permittee may conduct activities not listed below without a modification of the SIP, if the activities do not emit sulfur dioxide, do not affect the modeling parameters assumed in Appendix C, and do not affect the continuous emission monitors (CEMs) or continuous monitoring systems (CMSs) used to demonstrate compliance with SIP. The Permittee shall, however, obtain an air emission permit prior to commencing any new activity or facility modification if one is required by Minnesota statutes, Minnesota rules or federal statutes and regulations. After obtaining the appropriate air emission permit (if required) but prior to a modification of the SIP, the Permittee may begin construction of a new unit or modification to an existing unit. However, the Permittee shall not operate a new emission unit and shall not operate a modified unit in a manner contrary to the modeling parameters in Appendix C for that unit until the modification to the SIP is obtained and approved by EPA.</p> <p>A. The Permittee may install and operate any new SO2 process and control equipment with a maximum potential SO2 emissions rate that does not exceed 2.28 lbs/hr, except as expressly allowed elsewhere in the permit. The Permittee may modify and operate any existing SO2 process or control</p>

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			<p>equipment to increase the SO<sub>2</sub> emission rate up to 2.28 lbs/hr over the modeled emission rate for that emission unit in Appendix B.</p> <p>B. The Permittee may physically and operationally modify process and control equipment if the modification does not increase the modeled sulfur dioxide emissions rate above the amount allowed in Appendix B, decrease the modeled stack emissions exit velocity, or decrease the modeled heat content of the stack exit emissions, at the emission source where the modification occurs and all other potentially affected emission points assumed in the modeling presented in Appendix B.</p> <p>C. The Permittee may modify or replace and operate an existing sulfur dioxide emissions stack with a new stack if the height of the modified or replacement stack is not less than that of the stack assumed in the modeling presented in Appendix B, and if the exit diameter of the modified or replacement stack is not greater than that of the stack assumed in the modeling presented in Appendix B.</p> <p>D. The Permittee may install and operate new structures, or modify and operate existing structures if the new or modified structures do not increase the effective structural dimensions assumed in the modeling presented in Appendix B.</p> <p>E. The Permittee may replace and operate replacement SIP CEMs and CMSs covered by this permit or the Permittee may install and operate additional CEMs and CMSs, so long as the new or replacement SIP CEMs and CMSs are properly certified, comply with this permit and are operated and tested as required by this permit. (continued below). [Title I Condition: 40 CFR 50.4(SO<sub>2</sub> SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.5		<p>(continued from above)</p> <p>F. The Permittee may add additional CEMs or CMSs as needed to provide redundancy, providing the Permittee notifies the Commissioner in writing at least 30 days prior to conducting any CEM or CMS certification test. The Permittee may modify the fuel gas delivery system if the following conditions are met: 1) fuel gas flow and sulfur content must be continuously measured for all heaters, either by measuring the sulfur level in the main Refinery fuel gas system and feeding the heater directly from the system, or by separately monitoring the fuel gas to or sulfur dioxide emissions from the heater; and 2) any new fuel gas monitors added to the system must be certified within 60 days of startup, must meet 40 CFR pt. 60, Appendix F QA/QC requirements, must have a QA/QC plan prepared and implemented within 60 days of startup, and operate in accordance with Minn. R. 7017.1090 within two quarters of startup.</p> <p>G. The boundaries of the Permittee owned property may be extended and existing fencing removed provided that the</p>

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			<p>property excluded from the definition of ambient air, as shown in Appendix B, continues to meet the requirements in the permit. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.6		<p>Permittee Property and Access Restrictions:                      A. The Permittee shall prevent the general public access to Permittee-owned property in order to exclude the atmosphere above the property from the definition of ambient air subject to the sulfur dioxide NAAQS.                      B. Access Control                      The Permittee shall have enclosed the boundaries of the property with a continuous fence, excluding access points, and shall have installed gates at each access point. The Permittee shall therefore keep the gates closed unless: 1) a guard or other FHR employee or contractor patrols and monitors access at a gate or 2) authorized persons are entering or leaving the property through a gate.                      C. Inspection, Maintenance, and Repair                      The Permittee shall inspect the fencing and gates installed to ensure compliance with access control at least annually. The Permittee shall maintain and repair the fencing and gates to maintain continuous compliance. The Permittee shall complete all repairs and maintenance to the fencing and gates as soon as possible, but no later than 30 days after the date the Permittee observes the need for repair or maintenance, or after the MPCA notifies the Permittee of the need for repair or maintenance. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.7		<p>GENERAL MONITORING REQUIREMENTS FOR THE SIP EMISSION UNITS                      A. Accurate Measurements Required                      1. The Permittee shall install, certify, calibrate, operate and maintain each SIP CEM and CMS, and shall conduct all non-continuous sampling and analysis as required by the permit to ensure accurate measurements of the parameters to be monitored.                      2. The Permittee shall measure the stack sulfur dioxide concentration (ppm), stack velocity and stack temperature and compute the sulfur dioxide emission rate in lb/hr to determine compliance with the emission limitations listed for EQUI56 (31H-2), STRU139 (SRU 3/4), STRU83 (SRU 5), and STRU95 (FCCU). The Permittee shall measure the Refinery fuel gas sulfur concentration and fuel gas flow rate to determine compliance with the emission limit for sulfur dioxide emissions from Refinery fuel gas combustion.                      B. Continuous Monitoring Requirements                      1. General                      a) Compliance with Minnesota Rules and Federal Regulations. The Permittee shall meet the requirements of Minn. Rs. 7017.1002 to 7017.1020 and 40 CFR Section 60.13 with each</p>



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			<p>CEM and CMS. If the requirements of Minn. Rs. 7017.1002 to 7017.1020 and 40 CFR Section 60.13 differ, the more stringent regulation shall apply.</p> <p>b) Continuous Operation of CMS and CEM Systems. The Permittee shall at all times properly operate and maintain each CMS and CEM system to provide continuous, accurate, real time monitoring data for the determination of compliance with the terms and requirements of SIP requirements. In those situations where a CMS or CEM system becomes incapable of meeting the requirement of providing continuous, accurate, real time monitoring data, the Permittee shall expeditiously replace or repair the CMS or CEM system and take all other measures as necessary to meet the requirement as soon as possible.</p> <p>2. Monitor Certification</p> <p>a) Sulfur Dioxide CEMs. The Permittee shall certify each sulfur dioxide CEM as required by 40 CFR pt. 60, Appendix B, Performance Specification 2.</p> <p>b) Emission Rate CMSs. The Permittee shall certify each continuous monitoring system as required by 40 CFR pt. 60, Appendix B, Performance Specification 6, except that the Permittee need not meet calibration drift requirements for those flow monitors that are not designed for conducting calibration drift tests (pitot tube or venturi type).</p> <p>c) Total Reduced Sulfur CMSs for Fuel Gas Monitoring: The Permittee shall certify each total reduced sulfur CMS as required by 40 CFR pt. 60, Appendix B, by using the procedures specified in Performance Specification 5.</p> <p>d) All CEMs and CMS. All CEMs and CMS certification shall be conducted in compliance with Minn. Rs. 7017.1050 - 7017.1080.</p> <p>3. Quality Assurance</p> <p>The Permittee shall conduct a quality assurance and quality control (QA/QC) program as required by 40 CFR pt. 60, Appendix F, to properly maintain and calibrate each CEM and CMS. The Permittee shall develop and follow the master QA/QC Plans for each CEM and CMS.</p> <p>4. Monitoring System Uptime</p> <p>a) Mass Sulfur Dioxide CEM Systems.</p> <p>The Permittee shall operate and maintain each mass sulfur dioxide CEM system in accordance with Minn. R. 7017.1090 so that compliance with each emission limitation determined from real time certified CEM monitoring.</p> <p>b) Refinery Fuel Gas Sulfur Monitoring.</p> <p>The Permittee shall maintain an SO<sub>2</sub> CEMS at a representative heater which combusts 45 unit mix drum fuel gas, or maintain a CEMS which measures total sulfur in the 45 unit mix drum fuel gas stream. The SO<sub>2</sub> CEMS shall provide a continuous record of the sulfur dioxide content of the heater exhaust in ppm. The CEMS which measures total sulfur shall provide a continuous record of the total sulfur content of the fuel gas in ppm. (continued below). [Title I Condition: 40 CFR</p>

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	5.1.8		<p>50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p> <p>(continued from above)          The Permittee shall maintain a CEMS which measures reduced sulfur in the 41 unit mix drum fuel gas stream. The CEMS shall provide a continuous record of the reduced sulfur content of the fuel gas in ppm.          For heaters receiving commercial grade fuels directly that are neither inherently low in sulfur nor categorically exempt, contract guarantees for sulfur content and heat content shall be utilized for compliance demonstration purposes.          c) Each CEM or CMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit startup, shutdown, or malfunction. This requirement to operate the monitor applies whether or not an emission limit applies during these periods. CEM or CMS downtime is unacceptable except for reasonable periods of monitor downtime due to the following causes:          (1) damage to the CEM or CMS due to acts of God such as lightning strikes, tornadoes, or floods that render the CMS inoperative;          (2) sudden and not reasonably preventable CEM or CMS breakdowns;          (3) scheduled maintenance based on equipment manufacturer's recommended schedule which cannot be reasonably conducted when the emission unit is not operating; or          (4) unavoidable CEM or CMS downtime to conduct required checks and audits.          C. Non-Continuous Monitoring Requirements          1. The Permittee shall perform non-continuous monitoring as required by the permit;          2. The Permittee shall conduct performance stack tests to determine compliance with the SIP emission limitations and fuel restrictions as required by the Commissioner pursuant to Minn. Rs.7017.2001 to 7017.2060. Stack tests can also be required by authorized EPA personnel. All performance tests shall be conducted in accordance with the requirements of Minn. Rs. 7017.2001 to 7017.2060. The Permittee shall submit to the MPCA performance stack test plans, protocols and schedules at least 15 days prior to the pretest meeting requirements listed below. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.9		<p>Recordkeeping Requirements:          The Permittee is required to keep specified records so that EPA and the MPCA can evaluate the Permittee's compliance SIP requirements for the following.          1. The Permittee must keep records on maintenance of property access controls.          2. The Permittee must keep records on the Refinery control</p>

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			<p>plans and compliance schedules.</p> <p>3. The Permittee must keep records in the form and with the accessibility needed for EPA and MPCA staff inspection. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.10		<p>Recordkeeping for Property Boundary Fencing and Gates:                      The Permittee shall maintain records of each inspection of the fencing and gates as required. In addition, the Permittee shall maintain records of each maintenance activity and each repair activity as required. The Permittee shall retain each inspection, maintenance and repair record for a minimum of five years from the date the record was generated, despite any Permittee document retention policy to the contrary. These records shall be kept at the Refinery.</p> <p>1. The inspection records shall include: the date of inspection; name of the person conducting the inspection; identification of each section of fence and each gate inspected; and identification of each location where repair or maintenance is required. The inspection report shall be certified as accurate in writing by the person conducting each inspection.</p> <p>2. The maintenance and repair records shall include: the dates of the repairs or maintenance; a description of the repair and maintenance conducted; and the locations where they occurred. The maintenance and repair records shall be certified as accurate by the person(s) overseeing each maintenance or repair action. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.11		<p>Unless otherwise prohibited by a unit specific fuel restriction, any fuel gas combustion unit may burn refinery fuel gas not taken from the refinery fuel gas system provided that the Permittee install, operate, and maintain a hydrogen sulfide continuous emission monitoring system (CEMS) and flow meter at the fuel gas combustion unit in accordance with the requirements below whenever burning refinery fuel gas not taken directly from the refinery fuel gas system; or as an alternative, combustion units may burn refinery fuel gas not taken from the refinery fuel gas system if sulfur dioxide emissions are monitored under an EPA-approved Alternative Monitoring Plan (AMP), or are categorically exempt, or are inherently low in sulfur content in accordance with NSPS J (or Ja version) 40 CFR 60.104 and/or 60.105 (40 CFR 60.102a and/or 60.107a). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.12		<p>RECORDKEEPING REQUIREMENTS FOR SIP</p> <p>The Permittee shall maintain for the Refinery a copy of the records required pursuant to the SIP. Records shall be retained at the Refinery.</p> <p>1. Permanent Records</p>

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			<p>The Permittee shall permanently maintain the following information together with all amendments, revisions, and modifications to this information.</p> <p>a) Design, Construction and Operation Information. The Permittee shall maintain information on the design, construction and operation of each emission facility, emission source, fuel system, stack, structures pertinent to modeling for downwash in Appendix B, and any other information required to conduct sulfur dioxide ambient air quality modeling of emissions from the Refinery. These records shall also include all information required to demonstrate that the equipment identified in Appendix B is installed as described in that Appendix B. Where an activity has been undertaken for changes not requiring a SIP modification, the records shall include a description of each activity and all information required to demonstrate that the activity complies with each applicable requirement pursuant to changes not requiring a SIP modification. The records shall also identify and provide information on the design, construction and operation of each modification or new installation at the Refinery as required by the SIP.</p> <p>b) Information on Sulfur Dioxide Emission Limits, Operational Requirements, and Modeling Parameters. The Permittee shall maintain records at the Refinery. These records include all applicable SIP requirements.</p> <p>2. Non-Permanent Records</p> <p>The Permittee shall retain the information identified below for a minimum of five years following the date on which the information was obtained, despite any document retention policy to the contrary. This retention period shall be automatically extended upon the Commissioner's written request.</p> <p>a) Monitoring, Testing, and Other Records. The Permittee shall maintain records of all measurements, including: all continuous monitoring system and continuous monitoring device measurements; all performance stack testing measurements and operating conditions during the performance stack tests; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; all adjustments and maintenance performed on these systems or devices; and all other information required or applicable to verify compliance with the SIP. The Permittee shall prepare and maintain records of the one-hour averages for stack sulfur dioxide concentration (ppm); stack diameter, stack velocity and stack temperature; and the sulfur dioxide emission rate in lb/hr to determine compliance with refinery fuel gas SIP emission limitations listed in this Permit. The Permittee shall prepare and maintain records of the one-hour averages of the refinery fuel gas sulfur concentration and fuel gas flow rate to determine compliance with the refinery fuel gas SIP emission limit. Using the one-hour averages, FHR shall calculate the</p>

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			<p>three-hour, twenty four-hour, and annual rolling averages corresponding to the SIP emission limits referenced in the permit.</p> <p>b) Sulfur Dioxide Emissions, Fuel Records and Operations Records. The Permittee shall maintain records to demonstrate compliance with the sulfur dioxide emissions limitations, and fuel use and quality restrictions and operational requirements. These records shall be designed, and the information shall be maintained in a form suitable for the Commissioner to quickly determine compliance with each of the emission limitations, fuel restrictions, and operational requirements of the SIP. (continued below). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.13		<p>(continued from above)</p> <p>c) Startup, Shutdown, Bypass, and Breakdown Records. The Permittee shall maintain records for each startup, shutdown, bypass and breakdown for each piece of process equipment, control equipment, fuel supply system, emission stack, monitoring system and any other piece of equipment as applicable. These records shall include the date and time of the start and stop of each event.</p> <p>d) Excess Emissions, Exceedances of Fuel Usage and Quality Restrictions and Non-Compliance with Operational Requirements Records. The Permittee shall maintain a record of each exceedance of an emission limitation, fuel use restriction and fuel quality requirement, and operational requirement at the Refinery for each emission point and fuel system subject to the emission limitations, fuel restrictions, and operational requirements of the SIP. The record shall include for each period of exceedance a description of the exceedance, its cause, the magnitude of the exceedance, and the date and time of commencement and cessation of the exceedance.</p> <p>e) Operations Records for CEMs and CMSs. The Permittee shall maintain an operations record for each CEM and CMS used to establish compliance with the terms and conditions of this Order. The operations record shall specify each date and time the CEM or CMS was inoperative and the nature of the CEM or CMS repairs or adjustments. The operations record shall include for each calendar quarter, the percent of time the CEM or CMS was operating and the percent of time the CEM or CMS was not operating. The Permittee shall also record for each calendar quarter, the amount of time the process associated with the CEM or CMS was operated.</p> <p>3. Record Maintenance        The Permittee shall maintain all required documents, records, reports and plans in a format suitable for determination of FHR's compliance with SIP requirements by EPA or MPCA staff. The Permittee shall maintain the information in a form that is easily accessible for inspection</p>

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			by EPA or MPCA staff, and that is available for inspection at all reasonable times. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.1.14		<p>REPORTING REQUIREMENTS FOR SIP</p> <p>A. Notifications for SIP Requirements</p> <p>1. Notification of Process or Control Equipment Shutdown:                      The Permittee shall notify the Commissioner of shutdown of any control equipment or process equipment governed SIP in accordance with Minn. R. 7019.1000, subp 3.</p> <p>2. Notification of Process or Control Equipment Breakdown:                      The Permitt shall notify the Commissioner of breakdowns of control equipment or process equipment governed SIP in accordance with Minn. R. 7019.1000, subp. 2.</p> <p>3. Notification of CEM or CMS Breakdown:                      The Permittee shall notify the Commissioner of a breakdown or malfunction of any CEM or CMS used to demonstrate compliance with the terms and conditions of this Permit in the next air quality quarterly report (NSPS excess emissions and 1989 Stipulation Agreement quarterly report) following the breakdown or malfunction. The Permittee shall include the information identified in Minn. R. 7017.1110, subp. 2(B).</p> <p>4. Notification of CEM or CMS Certification Test and Quality Assurance Audit Test:                      The Permittee shall notify the Commissioner in writing at least 30 days prior to conducting any CEM or CMS certification test for any CEM or CMS required to be certified pursuant to SIP requirements. The Permittee may request a pretest meeting with the MPCA staff by making the request at least seven days prior to conducting any CEM or CMS certification test for the CEMs or CMS required pursuant to the SIP requirements. The Permittee shall notify the Commissioner in writing at least seven days prior to conducting calendar quarter quality assurance audit test procedures for those CEMs or CMSs required. Exceptions to these deadlines may be approved by MPCA on a case-by-case basis.</p> <p>5. Notification of Performance Tests:                      The Permittee shall notify the Commissioner of its intent to conduct performance stack tests required pursuant to this Order not less than 30 days prior to conducting each performance stack test as required by Minn. R. 7017.2030. The Permittee may request a pretest meeting with the MPCA staff by making the request at least seven days prior to conducting a performance stack test. The test date is subject to the Commissioner's approval and shall be approved by the Commissioner at least 15 days before the planned test date. Exceptions to these deadlines may be approved by MPCA on a case-by-case basis.</p> <p>6. Notification of Regularly Scheduled Turnaround on any Tail Gas Treating (TGTU) Unit:</p>

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			<p>The Permittee shall notify the Commissioner in writing 30 days prior to performing regularly scheduled turnaround (scheduled unit shutdown for maintenance) on any TGTU Unit. (continued below). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.1.15		<p>(continued from above)</p> <p><b>B. Quarterly Reports</b>                      The Permittee shall submit to the Commissioner each calendar quarter, a report that contains the following information: sulfur dioxide emissions, refinery fuel gas sulfur content or equivalent stack gas SO2 concentration (in a form that allows direct comparison with the requirements of the SO2 SIP); a record of each steam-air decoke event; a record of each startup, shutdown, bypass and breakdown of process and control equipment that results in a deviation from the requirements of the SO2 SIP; a summary record of excess sulfur dioxide emissions, exceedances of fuel usage and quality requirements and noncompliance with operational requirements, or the Permittee shall state if no exceedances or noncompliance conditions occurred in the quarter; a summary of CEM and CMS operation records including the amount of time the process equipment was operated; and, any quality assurance test results that do not meet the requirements of 40 CFR pt. 60, Appendix F (2010). Quarterly reports shall be postmarked within 30 days following the end of each calendar quarter. Upon written notification by the Commissioner, the Permittee may cease including sulfur dioxide emissions, fuel usage and quality, records of data used in calculating, and calculations of sulfur dioxide emissions, and fuel usage and quality in the quarterly reports. However, the Permittee shall submit this data within 30 days of receipt of a written request by the Commissioner.</p> <p><b>C. Performance Stack Tests Reports</b>                      The Permittee shall submit to the Commissioner, reports of each performance stack test conducted pursuant to this order. Performance stack test reports shall be postmarked no later than 45 days following completion of the performance stack test, unless otherwise approved by the MPCA.</p> <p><b>D. CEM Certification Test Results</b>                      The Permittee shall submit to the Commissioner, the results of each CEM certification test required pursuant to the SIP. Certification test reports shall be postmarked no later than 45 days after the CEM certification test date, unless otherwise approved by the MPCA.</p> <p><b>E. CEM and CMS Audit Test Results</b>                      The Permittee shall submit to the Commissioner, the results of quarterly cylinder gas audits and annual relative accuracy tests. Submitted results of quarterly audits and annual relative accuracy tests shall be included in the quarterly report for the quarter in which they were conducted. [Title I</p>

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			Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.1.16		<p>GENERAL CONDITIONS FOR SIP REQUIREMENTS</p> <p>A. Before the Permittee begins operation of new or modified equipment not specifically allowed by the SIP and which results in additional sulfur dioxide emissions, or changes to sulfur dioxide emission patterns assumed in the modeling presented in Appendix B, the Permittee shall obtain a modification to this Permit;</p> <p>B. The SIP is meant to delineate Minnesota's strategy for attainment in the Pine Bend area from the present into the future, and is not an admission that the restrictions in 40 CFR Sections 52.24 (a) and (b) (1991) previously applied or currently apply to the Pine Bend area.</p> <p>C. This permit does not relieve FHR of the obligation in undertaking all actions required by the SIP provisions, to comply with all applicable local, State and Federal laws and regulations, including, but not limited to, federal new source performance standards, and laws and regulations related to occupational safety and health. In the event there is a conflict in applicable federal or state or local laws or regulations, the more stringent of the conflicting provisions shall apply.</p> <p>D. The MPCA, EPA or their authorized representatives shall have authority to enter all property of the Permittee in Rosemount, Minnesota, at all reasonable times for the purposes of inspecting records, operating logs and contracts related to the Permittee's compliance with SIP Conditions; reviewing the progress of the Permittee in implementing of the SIP Conditions; conducting such tests as the EPA or MPCA deem necessary to determine compliance with SIP; and verifying the data submitted to the EPA and MPCA by the Permittee. The Permittee shall honor all reasonable requests for such access by the EPA or MPCA staff, conditioned only upon presentation of proper credentials. This section does not limit any other right of entry and inspection held by the EPA and MPCA pursuant to applicable federal or state laws, rules or permits.</p> <p>E. The Title I SIP Conditions in this Permit shall be binding upon the Permittee and its respective officers, employees, successors and assigns. FHR shall provide a copy of this Permit to any successor in interest prior to transfer of that interest, and shall simultaneously inform the MPCA that this notice has been given. Should the Permittee sell or otherwise convey or assign any of its right, title or interest in the Refinery, such conveyance shall not release the Permittee from any obligation imposed SIP Conditions, unless the party to whom the right, title or interest has been transferred or assigned agrees in writing to fulfill the obligations of this Permit and the MPCA finds that the new owner has the ability to fulfill the obligations of this Permit, and approves such transfer or assignment.</p>



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			<p>F. The SIP mandates actions and establishes limits necessary to attain, maintain and verify compliance with the federal sulfur dioxide NAAQS by FHR. To the extent that any federal or state statute, rule, permit, order, stipulation agreement, consent decree or schedule of compliance now in force or subsequently issued imposes limits and requires actions additional to or more stringent than those required in the Permit, FHR shall also comply with the requirements of the federal or state statute, rule, permit, order, stipulation agreement, consent decree or schedule of compliance.</p> <p>G. Once US EPA approves this Permit as part of the Minnesota SIP, this Permit shall supersede the requirements of all previous SIP revisions, as they apply to FHR. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
<b>COMG 5</b>	GP056	Storage Tank Heaters built after June 11, 1973	



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
COMG 24	GP104	Refinery Emergency Flares and Flare System (for Consent Decree Flare Policy)	
	5.20.5		Hydrocarbon Flare Systems: The refinery flare system and associated controls, which include flare gas recovery compressors, shall be designed, maintained, and operated in



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
COMG 28	GP011	Diesel Engines with SIP Conditions and <83.3 hr/mon	
	5.23.1		The Permittee shall limit Sulfur Dioxide <= 0.50 pounds per million Btu heat input 3-hour rolling average. Compliance with the fuel sulfur content standard will demonstrate compliance with this requirement. [Minn. R. 7011.2300, subp. 2]
	5.23.2		The Permittee shall limit Opacity <= 20 percent opacity once operating temperatures have been attained. (visible air contaminants). [Minn. R. 7011.2300, subp. 1]
	5.23.3		The Permittee shall limit Sulfur Dioxide <= 0.004 pounds per hour 3-hour rolling average. This limit applies to EQUI326. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.4		The Permittee shall limit Sulfur Dioxide <= 0.004 pounds per hour 24-hour rolling average. This limit applies to EQUI326. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.5		The Permittee shall limit Sulfur Dioxide <= 0.02 tons per year 12-month rolling average. This limit applies to EQUI326. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.7		The Permittee shall limit Sulfur Dioxide <= 0.016 pounds per hour 3-hour rolling average. This limit applies to EQUI514. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.8		The Permittee shall limit Sulfur Dioxide <= 0.016 pounds per hour 24-hour rolling average. This limit applies to EQUI514. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.9		The Permittee shall limit Sulfur Dioxide <= 0.07 tons per year 12-month rolling average. This limit applies to EQUI514. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.23.11		The Permittee shall limit Sulfur Dioxide $\leq$ 0.008 pounds per hour 3-hour rolling average. This limit applies individually to EQUI486, EQUI489, EQUI497, EQUI502, EQUI567, EQUI325, EQUI327, EQUI329, EQUI365 and EQUI366. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.12		The Permittee shall limit Sulfur Dioxide $\leq$ 0.008 pounds per hour 24-hour rolling average. This limit applies individually to EQUI486, EQUI489, EQUI497, EQUI502, EQUI567, EQUI325, EQUI327, EQUI329, EQUI365 and EQUI366. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.13		The Permittee shall limit Sulfur Dioxide $\leq$ 0.04 tons per year 12-month rolling average. This limit applies individually to EQUI486, EQUI489, EQUI497, EQUI502, EQUI567, EQUI325, EQUI327, EQUI329, EQUI365 and EQUI366. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.15		The Permittee shall limit Operating Hours $\leq$ 1000 hours per year 12-month rolling sum. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.16		The Permittee shall limit Sulfur Content of Fuel $\leq$ 0.0015 percent by weight of diesel fuel. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.17		Fuel Restriction: Authorized to burn diesel fuel only. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.19		Recordkeeping of Hours of Operation: By the 28th day of each month, record the hours of operation for each engine for the previous month. Sum the hours of operation for the

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			previous 12 months and record the 12-month rolling sum for the period ending with the preceding month. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.20		Diesel Fuel Certification: The Permittee shall retain records demonstrating sulfur content is less than 0.0015 percent by weight. Certificates of Analysis retained onsite demonstrating generally that all FHR diesel meets the federal ULSD standard satisfies this requirement. The records may be maintained in either electronic or paper format, unless it is expressly prohibited. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.22		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hour emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.23.23		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
COMG 65	GP116	Refinery Fuel Gas SO2 Emissions	
	5.49.3		Install, operate, and maintain a Total Sulfur CEMS on the 41 unit refinery fuel gas mix drum in accordance with 40 CFR pt. 60, Appendix B and Appendix F. Install, operate, and maintain flow meters on each refinery fuel gas mix drum or each combustion device firing fuel gas from the 41 unit refinery fuel gas mix drum. [Minn. R. 7007.0800, subp. 4, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) & Minn. R. 7007.3000]
	5.49.4		Daily Recordkeeping for 41 Unit: The Permittee shall maintain daily records of all monitoring data and calculations of SO2 to show continuous compliance with the applicable emission limits. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Minn. R. 7007.0800, subp. 4, Title I



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
COMG 100	GP054	Storage Tank Heaters built before June 11, 1973	



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 24	MR161	45 Mix Drum Fuel Gas Combustion SO2 Monitor at 25H3	
	5.85.4		Sulfur Dioxide: Emissions Monitoring: The owner or operator shall use a CEMS to measure emissions from EQUI501. [Minn. R. 7017.1010, subp 1, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 25	MR162	45 SO2 Monitor at 29H1/2	



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 29	MR166	45 Mix Drum Fuel Gas Combustion O2 Monitor at 29H1/2	
	5.87.4		Oxygen: Emissions Monitoring: The owner or operator shall use a CEMS to measure emissions from STRU70. [Minn. R. 7017.1010, subp 1, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 84	MR069	31H2 SO2 Analyzer	
	5.99.4		SO2 Emissions Monitoring: The Permittee shall calibrate, operate and maintain SO2 Continuous Emissions Monitoring System (CEMS). [CAAA of 1990, Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 283	MR033	25H-3 O2 Analyzer	

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.103.4		Oxygen: Emissions Monitoring: The owner or operator shall use a CEMS to measure emissions from EQUI501. [Minn. R. 7017.1010, subp 1, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 323	EU126	Steam Boiler No. 6 at Boilerhouse - Boiler	
	5.109.5		The Permittee shall limit Sulfur Dioxide <= 5.1 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.109.6		The Permittee shall limit Sulfur Dioxide <= 5.1 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.109.21		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.109.22		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 324</b>	EU127	Plant Air Compressor Diesel Engine - Reciprocating IC Engine	
	5.110.2		The Permittee shall limit Sulfur Dioxide <= 0.008 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.110.3		The Permittee shall limit Sulfur Dioxide <= 0.008 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.110.4		The Permittee shall limit Sulfur Dioxide <= 0.04 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.110.8		The Permittee shall limit Operating Hours <= 2500 hours per year 12-month rolling sum. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.110.9		The Permittee shall limit Sulfur Content of Fuel <= 0.0015 percent by weight of diesel fuel. Certificate of Analysis retained onsite to meet ULSD standard satisfies this requirement. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.110.11		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.110.12		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.110.13		Recordkeeping of Hours of Operation for SO2 SIP Limit: By the 28th day of each month, the Permittee shall record and sum the hours of operation for EQUI324 for each month and for the previous 12 months and record the 12-month rolling sum. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.110.14		Diesel Fuel Certification: The Permittee shall retain written documentation of each shipment of diesel fuel oil received for the diesel engine. The Permittee shall retain records demonstrating sulfur contents is less than 0.0015 percent by



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			weight. Certificates of Analysis retained onsite to meet demonstrating generally that all FHR diesel meets the federal ULSD standard satisfies this requirement. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 371</b>	EU204	Steam Boiler #8 - Boiler	
	5.111.5		The Permittee shall limit Sulfur Dioxide <= 14.3 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.111.6		The Permittee shall limit Sulfur Dioxide <= 14.3 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.111.7		The Permittee shall limit Sulfur Dioxide <= 50.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.111.21		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.111.22		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 376	EU212	11H-6 - Refining Equipment	

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.113.7		The Permittee shall limit Sulfur Dioxide <= 16.5 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.113.8		The Permittee shall limit Sulfur Dioxide <= 16.5 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.113.9		The Permittee shall limit Sulfur Dioxide <= 39.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.113.29		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.113.30		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I





Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 377	EU213	#3 H2 Heater - Process Heater	
	5.114.6		The Permittee shall limit Sulfur Dioxide <= 36.6 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.114.7		The Permittee shall limit Sulfur Dioxide <= 36.6 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.114.8		The Permittee shall limit Sulfur Dioxide ≤ 128.4 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.114.25		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.114.26		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 406	EU352	23H3 Heater - Process Heater	

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.115.17		<p>Recordkeeping: The Permittee shall calculate and record the hourly SO<sub>2</sub> emissions from refinery fuel gas and natural gas combustion by the 28th day of each month for the hourly periods ending on the last day of the preceding month. This requirement applies for hourly periods when any amount of refinery fuel gas is combusted. For hourly periods when only natural gas is fired, combustion of natural gas only shall constitute compliance with this requirement. [Title I Condition: 40 CFR 50.4(SO<sub>2</sub> SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 421	EU228	FCCU - Refining Equipment	
	5.117.2		The Permittee shall limit Sulfur Dioxide <= 182.6 pounds per hour 3-hour rolling average. The Permittee shall use CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.117.3		The Permittee shall limit Sulfur Dioxide <= 182.6 pounds per hour 24-hour rolling average. The Permittee shall use CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.117.4		The Permittee shall limit Sulfur Dioxide <= 800 tons per year 12-month rolling average (This requirement is met by complying with the more stringent requirement of 800 tons/year using a 365-day rolling average.). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.117.34		SO2 Emissions Monitoring: The Permittee shall calibrate, operate and maintain SO2 Continuous Emissions Monitoring System (CEMS). (2001 EPA Consent Decree, as amended). [CAAA of 1990, Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.117.36		SO2 Emissions Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of the following: <ol style="list-style-type: none"> <li>1. The Permittee shall use the SO2 CEMS to calculate and record each 1-hour average concentration (dry, 0% oxygen, ppmv of SO2 from the FCCU);</li> <li>2. The Permittee shall calculate and record the 7-day average (arithmetic mean) concentration of SO2 using all of the 1-hour average concentration values obtained during the previous seven successive 24-hour periods; and</li> <li>3. The Permittee shall calculate and record the 365-day average (arithmetic mean) concentration of SO2 using all of the 1-hour average concentration values obtained during the previous 365-day period.</li> </ol> The records may be maintained in either electronic or paper format, unless it is expressly prohibited. [Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) & Minn. R. 7007.3000]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
<b>EQUI 432</b>	EU241	#1 H2 Plant Reformer/Heater - Process Heater	
	5.118.2		The Permittee shall limit Sulfur Dioxide <= 14.1 pounds per hour 3-hour rolling average. This limit is applicable to EQUI431 and EQUI432. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.118.3		The Permittee shall limit Sulfur Dioxide <= 14.1 pounds per hour 24-hour rolling average. This limit is applicable to EQUI431 and EQUI432. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.118.4		The Permittee shall limit Sulfur Dioxide <= 49.4 tons per year 12-month rolling average. This limit is applicable to EQUI431 and EQUI432. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]





Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
<b>EQUI 457</b>	EU282	OSWTP - Thermal Oxidizer - Other Combustion	
	5.122.1		Emission Limits (Limits apply to the OSWTP during operation of either EQUI444 or EQUI457. EQUI457 is the primary OSWTP oxidizer; EQUI444 is the backup) Except when switching WWTP gases from one oxidizer to the other, only one oxidizer may combust gases from OSWTP equipment at a time. The other oxidizer may be fired concurrently with natural gas for standby purposes. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.122.2		The Permittee shall limit Sulfur Dioxide <= 50.71 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.122.3		The Permittee shall limit Sulfur Dioxide <= 50.71 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.122.4		The Permittee shall limit Sulfur Dioxide <= 39.4 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.122.6		Operational Restriction: The Permittee shall only operate one oxidizer at a time. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.122.12		Fuel Restriction: The Permittee shall burn natural gas in conjunction with oxidation of gases from OSWTP equipment. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]





Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.123.10		The Permittee shall limit Sulfur Dioxide $\leq$ 22.7 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.123.11		The Permittee shall limit Sulfur Dioxide $\leq$ 22.7 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.123.40		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.123.41		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
<b>EQUI 484</b>	EU005	#1 Crude Heater atmospheric distillation - Distillation Equipment	
	5.125.1		The Permittee shall limit Sulfur Dioxide <= 6.8 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.125.2		The Permittee shall limit Sulfur Dioxide <= 6.8 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.125.3		The Permittee shall limit Sulfur Dioxide <= 16.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.125.11		Fuel Restriction: Authorized to burn refinery gas and natural gas only. [Minn. R. 7007.0800, subp. 2, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.125.14		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.125.15		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.125.16		Fuel Flowrate: The Permittee shall calibrate, operate, and maintain continuous monitoring system (CMS) that records the fuel flowrate at each fuel combustion device. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 485	EU006	#1 Crude Heater crude preflash - Process Heater	
	5.126.2		The Permittee shall limit Sulfur Dioxide <= 2.4 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.126.3		The Permittee shall limit Sulfur Dioxide <= 2.4 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.126.4		The Permittee shall limit Sulfur Dioxide <= 5.7 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.126.15		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 487</b>	EU016	Vacuum Pre-Strip Heater - Process Heater	
	5.127.1		The Permittee shall limit Sulfur Dioxide <= 6.3 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.127.2		The Permittee shall limit Sulfur Dioxide <= 6.3 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.127.3		The Permittee shall limit Sulfur Dioxide <= 15.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.127.21		<p>SO<sub>2</sub> Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO<sub>2</sub> emissions of hourly averages of total SO<sub>2</sub> emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Title I Condition: 40 CFR 50.4(SO<sub>2</sub> SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.127.22		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 488</b>	EU019	#2 Vac Heater - Process Heater	
	5.128.1		The Permittee shall limit Sulfur Dioxide <= 10.0 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.128.2		The Permittee shall limit Sulfur Dioxide <= 10.0 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.128.3		The Permittee shall limit Sulfur Dioxide <= 23.7 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.128.15		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly averages of total SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.128.16		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 490	EU026	#1 Vac Heater - Process Heater	
	5.129.1		The Permittee shall limit Sulfur Dioxide <= 7.3 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.129.2		The Permittee shall limit Sulfur Dioxide < 7.3 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.129.3		The Permittee shall limit Sulfur Dioxide <= 17.3 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.129.11		Fuel Restriction: Authorized to burn refinery gas and natural gas only. [Minn. R. 7007.0800, subp. 2, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.129.14		SO2 Emissions Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.129.15		SO2 Emissions Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 491</b>	EU028	#1 Coker Heater - Process Heater	
	5.130.1		The Permittee shall limit Sulfur Dioxide <= 5.6 pounds per hour 3-hour rolling average (most stringent; meets the limit set by Minn. R. 7011.1410, subp. 3A). THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI491. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.130.2		The Permittee shall limit Sulfur Dioxide <= 5.6 pounds per hour 24-hour rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI491. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.130.3		The Permittee shall limit Sulfur Dioxide <= 13.2 tons per year 12-month rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI491. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.130.9		Fuel Restriction: Authorized to burn refinery gas and natural gas only. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI491. [Minn. R. 7007.0800, subp. 2, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.130.13		<p>SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI491. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.130.14		<p>SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI491. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.130.15		<p>Fuel Flowrate: The Permittee shall calibrate, operate, and maintain continuous monitoring system (CMS) that records the fuel flowrate at each fuel combustion device. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI491. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 492	EU030	#2 Coker Heater - Process Heater	
	5.131.1		The Permittee shall limit Sulfur Dioxide <= 5.6 pounds per hour 3-hour rolling average (This limit is most stringent, meets the limit set by Minn. R. 7011.1410, subp. 3(A)). THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.131.2		The Permittee shall limit Sulfur Dioxide <= 5.6 pounds per hour 24-hour rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.131.3		The Permittee shall limit Sulfur Dioxide <= 13.2 tons per year 12-month rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.131.9		Fuel Restriction: Authorized to burn refinery gas and natural gas only. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492. [Minn. R. 7007.0800, subp. 2, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.131.13		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited.

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			<p>The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.131.14		<p>SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.131.15		<p>Fuel Flowrate: The Permittee shall calibrate, operate, and maintain continuous monitoring system (CMS) that records the fuel flowrate at each fuel combustion device. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
<b>EQUI 493</b>	EU032	Steam/Air Heater Decoking - 21H-1 - Process Heater	
	5.132.1		<p>The Permittee shall limit Sulfur Dioxide &lt;= 8.0 pounds per hour 3-hour rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI493. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.132.2		<p>The Permittee shall limit Sulfur Dioxide &lt;= 8.0 pounds per hour 24-hour rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES</p>



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI493. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.132.3		The Permittee shall limit Sulfur Dioxide $\leq$ 1.73 tons per year 12-month rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI493. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.132.5		Decoking shall occur in one of the two following scenarios for any 1-, 3- or 24-hour period: 1. EQUI493 (21H1) only, or; 2. EQUI494 (21H2) only. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.132.6		The Permittee shall limit Operating Hours $\leq$ 432 hours per year 12-month rolling sum for steam-air decoking operation. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI493. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.132.7		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI493. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.132.8		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI493. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.132.9		Recordkeeping: The Permittee shall monitor the start and stop times for heater decoking and compute the hours of heater decoking operations. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI493. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 494</b>	EU033	Steam/Air Heater Decoking - 21H-2 - Process Heater	
	5.133.1		The Permittee shall limit Sulfur Dioxide <= 8.0 pounds per hour 3-hour rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI494. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.133.2		The Permittee shall limit Sulfur Dioxide <= 8.0 pounds per hour 24-hour rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI494. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.133.3		The Permittee shall limit Sulfur Dioxide <= 1.73 tons per year 12-month rolling average. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI494. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.133.5		Decoking shall occur in one of the two following scenarios for any 1-, 3- or 24-hour period: 1. EQUI493 (21H1) only, or; 2. EQUI494 (21H2) only. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.133.6		The Permittee shall limit Operating Hours <= 432 hours per year 12-month rolling sum for steam-air decoking operation. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI494. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.133.7		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI494. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.133.8		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI494. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.133.9		Recordkeeping: The Permittee shall monitor the start and stop times for heater decoking and compute the hours of heater decoking operations. The records may be maintained

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			in either electronic or paper format, unless electronic or paper records are expressly prohibited. THIS REQUIREMENT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI494. [Minn. R. 7007.0800, subp. 5, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 501	EU041	#3 Crude Unit Vac Pre-Fractionator Heater - Process Heater	
	5.134.6		The Permittee shall limit Sulfur Dioxide <= 17.5 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.134.7		The Permittee shall limit Sulfur Dioxide <= 17.5 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.134.8		The Permittee shall limit Sulfur Dioxide <= 48.8 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.134.18		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.134.19		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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EQUI 505	EU050	Distillate HDS Recycle Hydrogen Charge Heater - Process Heater	







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EQUI 515	EU313	Steam Boiler No. 9 - Boiler	
	5.137.5		The Permittee shall limit Sulfur Dioxide <= 9.9 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.137.6		The Permittee shall limit Sulfur Dioxide <= 9.9 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.137.7		The Permittee shall limit Sulfur Dioxide <= 23.5 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.137.33		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.137.34		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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EQUI 526	EU324	#3 Crude Unit Vacuum Heater - Process Heater	
	5.138.4		The Permittee shall limit Sulfur Dioxide <= 12.6 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.138.5		The Permittee shall limit Sulfur Dioxide <= 12.6 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.138.6		The Permittee shall limit Sulfur Dioxide <= 44.1 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.138.14		<p>SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.138.15		<p>SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

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EQUI 541	EU084	Gas Oil HDS Charge Heater - Process Heater	

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	5.142.3		The Permittee shall limit Sulfur Dioxide <= 13.4 pounds per hour 3-hour rolling average. Compliance with the fuel restriction constitutes compliance with this limit. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.142.4		The Permittee shall limit Sulfur Dioxide <= 13.4 pounds per hour 24-hour rolling average. Compliance with the fuel restriction constitutes compliance with this limit. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.142.5		The Permittee shall limit Sulfur Dioxide <= 46.9 tons per year 12-month rolling average. Compliance with the fuel restriction constitutes compliance with this limit. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.142.10		Fuel Restriction: Authorized to burn refinery gas and natural gas only. [Minn. R. 7007.0800, subp. 2, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.142.17		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly averages of total SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.142.18		SO2 Emissions Calculations and Recordkeeping for SIP Limits: The Permittee shall maintain records of the calculated SO2

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			emissions in lb/hr and tons/year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.142.19		Fuel Flowrate: The Permittee shall operate, and maintain continuous monitoring system (CMS) that records the fuel flowrate at each fuel combustion device. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 542	EU051	Distillate Hydrotreater Fractnr Htr - Distillation Equipment	
	5.143.5		The Permittee shall limit Sulfur Dioxide <= 7.3 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.143.6		The Permittee shall limit Sulfur Dioxide <= 7.3 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR





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	5.143.19		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.143.20		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



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	5.144.7		The Permittee shall limit Sulfur Dioxide <= 61.7 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.144.8		The Permittee shall limit Sulfur Dioxide <= 61.7 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.144.9		The Permittee shall limit Sulfur Dioxide <= 216.3 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.144.24		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.144.25		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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EQUI 544	EU053	Naphtha Hydrotreater Reactor Chg Htr - Reactor	
	5.145.5		The Permittee shall limit Sulfur Dioxide <= 2.6 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.145.6		The Permittee shall limit Sulfur Dioxide <= 2.6 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.145.7		The Permittee shall limit Sulfur Dioxide <= 9.2 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.145.18		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements

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			associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.145.19		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 545</b>	EU054	#6 HDS Reactor Charge Heater - Process Heater	
	5.146.1		The Permittee shall limit Sulfur Dioxide <= 1.0 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



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	5.146.2		The Permittee shall limit Sulfur Dioxide <= 1.0 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.146.3		The Permittee shall limit Sulfur Dioxide <= 2.3 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.146.5		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.146.6		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 546	EU055	#2 HDS Fractionation Heater (31H2) - Fractionation Equipment	
	5.147.2		The Permittee shall limit Sulfur Dioxide <= 66.4 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR



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	5.147.15		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly averages of total SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.147.16		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) & Minn. R. 7007.3000]
	5.147.18		SO2 Emissions Monitoring: The Permittee shall calibrate, operate and maintain SO2 Continuous Emissions Monitoring System (CEMS). See additional CEMS requirements under EQUI84. [CAAA of 1990, Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 547	EU056	HDS Heater (hot oil system) - Process Heater	



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	5.148.13		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.148.14		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 548	EU057	Unisar Reactor Charge Heater - Process Heater	
	5.149.1		The Permittee shall limit Sulfur Dioxide $\leq$ 0.4 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.149.2		The Permittee shall limit Sulfur Dioxide $\leq$ 0.4 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.149.3		The Permittee shall limit Sulfur Dioxide <= 1.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.149.5		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.149.6		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 549</b>	EU058	#5 HDS Charge Heater (naphtha) - Process Heater	
	5.150.1		The Permittee shall limit Sulfur Dioxide <= 2.9 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.150.2		The Permittee shall limit Sulfur Dioxide <= 2.9 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.150.3		The Permittee shall limit Sulfur Dioxide <= 6.8 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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	5.150.10		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.150.11		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

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EQUI 550	EU059	#1 HDS Reactor Charge Heater - Process Heater	
	5.151.1		The Permittee shall limit Sulfur Dioxide <= 1.6 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.151.2		The Permittee shall limit Sulfur Dioxide <= 1.6 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.151.3		The Permittee shall limit Sulfur Dioxide <= 3.9 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.151.5		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.151.6		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 551	EU060	#1 HDS Fractionation Heater - Fractionation Equipment	
	5.152.1		The Permittee shall limit Sulfur Dioxide <= 2.1 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.152.2		The Permittee shall limit Sulfur Dioxide <= 2.1 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.152.3		The Permittee shall limit Sulfur Dioxide <= 5.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.152.10		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.152.11		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 552</b>	EU061	#2 HDS Reactor Charge Heater - Process Heater	
	5.153.1		The Permittee shall limit Sulfur Dioxide <= 1.3 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.153.2		The Permittee shall limit Sulfur Dioxide <= 1.3 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.153.3		The Permittee shall limit Sulfur Dioxide <= 3.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.153.5		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.153.6		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 558	EU077	Powerformer Catalyst Regeneration - Refining Equipment	

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.154.18		The Permittee shall limit Sulfur Dioxide <= 0.4 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.154.19		The Permittee shall limit Sulfur Dioxide <= 0.4 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.154.20		The Permittee shall limit Sulfur Dioxide <= 0.9 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.154.22		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.154.23		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 559	EU085	Gas Oil HDS Fractionation Charge Heater - Process Heater	
	5.155.3		The Permittee shall limit Sulfur Dioxide <= 9.9 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.155.4		The Permittee shall limit Sulfur Dioxide <= 9.9 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.155.5		The Permittee shall limit Sulfur Dioxide <= 34.8 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.155.19		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
<b>EQUI 568</b>	EU102	Unit 38 Gasoil HDS A-Train Heater - Process Heater	



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.157.2		The Permittee shall limit Sulfur Dioxide <= 2.9 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.157.3		The Permittee shall limit Sulfur Dioxide <= 2.9 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.157.4		The Permittee shall limit Sulfur Dioxide <= 10.3 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.157.9		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.157.10		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>EQUI 569</b>	EU103	Unit 38 Gasoil HDS B-Train Heater - Process Heater	
	5.158.2		The Permittee shall limit Sulfur Dioxide <= 2.9 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.158.3		The Permittee shall limit Sulfur Dioxide <= 2.9 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.158.4		The Permittee shall limit Sulfur Dioxide <= 10.3 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.158.9		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.158.10		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
EQUI 570	EU104	Unit 38 Gasoil HDS Fractionation Charge Heater - Process Heater	



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.159.16		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.159.17		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.160.9		Emissions Monitoring: The Permittee shall calibrate, operate and maintain an SO2 CEMS. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.160.10		The Permittee shall use CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr) from STRU91. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.160.11		Calculation: The Permittee shall calculate valid hourly average emissions from CEMS. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.160.14		SIP SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 1456		EQUI24H1	



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.161.13		The Permittee shall limit Sulfur Dioxide <= 13.1 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.161.14		The Permittee shall limit Sulfur Dioxide <= 13.1 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.161.15		The Permittee shall limit Sulfur Dioxide <= 31.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.161.20		SIP SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 1491		#1 Coker Unit Charge Heater (new EQUI21H4)	
	5.165.7		The Permittee shall limit Sulfur Dioxide <= 2.28 pounds per hour 1-hour average, effective upon initial start-up. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1491 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI1491 AND EQUI493. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.165.8		The Permittee shall limit Sulfur Dioxide <= 9.65 pounds per hour 3-hour rolling average. THIS LIMIT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES

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			AMENDMENT 12 TO THE SIP AND PERMANENT SHUTDOWN OF PREVIOUSLY EXISTING EQUI491 AND EQUI493 HAS OCCURRED. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.165.9		The Permittee shall limit Sulfur Dioxide <= 9.65 pounds per hour 24-hour rolling average. THIS LIMIT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND PERMANENT SHUTDOWN OF PREVIOUSLY EXISTING EQUI491 AND EQUI493 HAS OCCURRED. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.165.10		The Permittee shall limit Sulfur Dioxide <= 33.8 tons per year 12-month rolling average. THIS LIMIT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND PERMANENT SHUTDOWN OF PREVIOUSLY EXISTING EQUI491 AND EQUI493 HAS OCCURRED. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.165.14		SIP SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. Emission monitoring for SO2 shall be conducted either directly at the stack with a new CEMS or using existing CEMS at another representative source. If a new SO2 CEMS is installed, the Permittee shall follow the existing SIP requirements in this permit for installing and maintaining the CEMS. THIS REQUIREMENT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES





Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.166.7		The Permittee shall limit Sulfur Dioxide <= 2.28 pounds per hour 1-hour average, effective upon initial start-up. THIS LIMIT WILL BE TERMINATED ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND FINAL CONSTRUCTION OF REPLACEMENT UNIT EQUI1492 ALLOWS FOR PERMANENT SHUTDOWN OF EXISTING EQUI492 AND EQUI494. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.166.8		The Permittee shall limit Sulfur Dioxide <= 9.65 pounds per hour 3-hour rolling average. THIS LIMIT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND PERMANENT SHUTDOWN OF PREVIOUSLY EXISTING EQUI492 AND EQUI494 HAS OCCURRED. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.166.9		The Permittee shall limit Sulfur Dioxide <= 9.65 pounds per hour 24-hour rolling average. THIS LIMIT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND PERMANENT SHUTDOWN OF PREVIOUSLY EXISTING EQUI492 AND EQUI494 HAS OCCURRED. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.166.10		The Permittee shall limit Sulfur Dioxide <= 33.8 tons per year 12-month rolling average. THIS LIMIT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND PERMANENT SHUTDOWN OF PREVIOUSLY EXISTING EQUI492 AND EQUI494 HAS OCCURRED. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.166.11		The Permittee shall limit Sulfur Dioxide <= 9.65 pounds per hour 1-hour average. The 1-hour emission limitations for fuel gas combustion sources is a state-only requirement and, pursuant to Minn. R. 7007.1750, is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080]

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	5.166.14		SIP SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. Emission monitoring for SO2 shall be conducted either directly at the stack with a new CEMS or using existing CEMS at another representative source. If a new SO2 CEMS is installed, the Permittee shall follow the existing SIP requirements in this permit for installing and maintaining the CEMS. THIS REQUIREMENT SHALL BECOME EFFECTIVE ON THE DATE THE US EPA APPROVES AMENDMENT 12 TO THE SIP AND PERMANENT SHUTDOWN OF PREVIOUSLY EXISTING EQUI492 AND EQUI494 HAS OCCURRED. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]







Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.172.14		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.172.15		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>STRU 83</b>	SV042	#5 SRU 26 Unit Stack	
	5.173.1		The Permittee shall limit Sulfur Dioxide <= 170.8 pounds per hour 3-hour rolling average. The Permittee shall use CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.173.2		The Permittee shall limit Sulfur Dioxide <= 93.6 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.173.3		The Permittee shall limit Sulfur Dioxide <= 343.0 tons per year 12-month rolling average. [Title I Condition: 40 CFR



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.173.16		<p>SIP SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.173.17		<p>SIP SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2</p>



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.173.27		<p>The Permittee may use STRU83 during periods when tail gas from SRU 5 (EQUI503) is bypassing the Tail Gas Recovery Unit #2 (TGTU #2, EQUI428 and EQUI429). The Permittee shall not shut down the TGTU #2 except as necessary for maintenance or repair. The Permittee shall not bypass the TGTU #2 with tail gas from SRU 5 except: 1) during periods of startup, shutdown, or breakdown (as governed by 40 CFR pt. 60, subp. A) of SRU 5, the TGTU #2 or TGTU #2 incinerator (EQUI 429), or 2) to prevent a breakdown of the TGTU #2. Sulfur degassing gas may be combusted in the SRU 5 startup incinerator and omitted from STRU83. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.173.33		Sulfur Dioxide: Emissions Monitoring: The Permittee shall calibrate, operate and maintain SO2 Continuous Emissions Monitoring System (CEMS). [40 CFR 60.105, 40 CFR 63.1568(b)(1), CAAA of 1990, Minn. R. 7011.1435(A), Minn. R. 7011.1435(D), Minn. R. 7011.7280(B), Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.173.34		Sulfur Dioxide: Emissions Measuring: The Permittee shall use a SO2 CEMS to measure emissions from STRU83. [40 CFR 60.105, 40 CFR 63.1568(b)(1), CAAA of 1990, Minn. R. 7011.1435(A), Minn. R. 7011.1435(D), Minn. R. 7011.7280(B), Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]









Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			sources is a state-only requirement and, pursuant to Minn. R. 7007.1750, it is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.174.19		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>STRU 130</b>	SV082	37H1 2 6 Stack	
	5.175.3		The Permittee shall limit Sulfur Dioxide <= 6.9 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.175.4		The Permittee shall limit Sulfur Dioxide <= 6.9 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.175.5		The Permittee shall limit Sulfur Dioxide $\leq$ 24.3 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
5.175.12			SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly averages of total SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.175.13		SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total SO2 in tons per year. The records may be maintained in either electronic or paper format, unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
<b>STRU 131</b>	SV083	37H3 4 5 Stack	
	5.176.3		The Permittee shall limit Sulfur Dioxide <= 30.1 pounds per hour 3-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.176.4		The Permittee shall limit Sulfur Dioxide <= 30.1 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.176.5		The Permittee shall limit Sulfur Dioxide <= 105.6 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.176.13		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.176.14		SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
STRU 139	SV093	45H61 Stack	
	5.177.2		The Permittee shall limit Sulfur Dioxide <= 149.0 pounds per hour 3-hour rolling average. The company shall use CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr). [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.177.3		The Permittee shall limit Sulfur Dioxide <= 86.5 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.177.4		The Permittee shall limit Sulfur Dioxide <= 324.3 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.177.16		<p>SIP SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.177.17		<p>Total SO2 Emissions Recordkeeping: The Permittee shall calculate and record the total SO2 emissions (including sulfur degassing and bypasses) at stack in ppm (at 0% oxygen). The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [CAAA of 1990, Minn. R. 7007.0800, subp. 5, Minn. R. 7011.1435(A)]</p>
	5.177.18		<p>SIP SO2 Emission Calculation and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.177.28		Sulfur Dioxide: Emissions Monitoring: The Permittee shall calibrate, operate and maintain SO2 Continuous Emissions Monitoring System (CEMS). [40 CFR 63.1568(b)(1), CAAA of 1990, Minn. R. 7011.7280(B), Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.177.30		Sulfur Dioxide: Emissions Measuring: The Permittee shall use a SO2 CEMS to measure SO2 emissions from STRU139. [40 CFR 63.1568(b)(1), CAAA of 1990, Minn. R. 7011.7280(B), Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.177.40		The Permittee shall not emit SRU 3 (EQUI319) tail gas at STRU140 unless tail gas from SRU 3 is bypassing the SCOT/TGTU #1 Unit (EQUI 479 and EQUI480). The Permittee may use STRU139 during periods when tail gas from SRU 4 (EQUI320) is bypassing the SCOT Unit/TGTU #1. The Permittee shall not shut down the SCOT Unit except as necessary for maintenance or repair. The Permittee shall not bypass the SCOT Unit with tailgas from SRU 3 (EQUI319) or SRU 4 (EQUI320) except: (1) during periods of startup, shutdown, or breakdown of SRU 3, SRU 4, the SCOT/TGTU #1 Unit, or SCOT incinerator (EQUI480); or (2) to prevent a breakdown of the SCOT Unit. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.177.41		Sulfur degassing gas may be combusted in the SRU 4 (EQUI320) startup/bypass incinerator and emitted from STRU140 during instances of startup, shutdown, or malfunction. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
			50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.178.3		The Permittee shall limit Sulfur Dioxide <= 1.6 pounds per hour 24-hour rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.178.4		The Permittee shall limit Sulfur Dioxide <= 4.5 tons per year 12-month rolling average. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.178.8		The Permittee shall limit Hydrogen Sulfide (H2S) <= 0.10 grains per dry standard cubic foot 3-hour rolling average (Supplemental Fuel Gas) (230 mg/dscm (162ppm)). This limit does not apply during periods of startup, shutdown, or malfunction. [40 CFR 60.104(a)(1), Minn. R. 7011.1410, subp. 2, Minn. R. 7011.1435(A), Minn. R. 7011.1435(D), Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.178.14		<p>SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of hourly average of total stack SO2 emissions in lb/hr. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. The calculation and recordkeeping requirements associated with the 1-hr emission limitations for fuel gas combustion sources is a state-only requirement and is not enforceable by the EPA administrator or citizens under the Clean Air Act. [Minn. R. 7009.0080, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>
	5.178.15		<p>SO2 Emission Calculations and Recordkeeping: The Permittee shall maintain records of the calculated SO2 emissions of total stack SO2 emissions in tons/year. The records may be maintained in either electronic or paper format unless electronic or paper records are expressly prohibited. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]</p>

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
	5.178.28		Sulfur Dioxide: Emissions Monitoring: The Permittee shall calibrate, operate and maintain SO2 Continuous Emissions Monitoring System (CEMS). [40 CFR 60.105, 40 CFR 63.1568(b)(1), CAAA of 1990, Minn. R. 7011.1435(A), Minn. R. 7011.1435(D), Minn. R. 7011.7280(B), Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]
	5.178.29		Sulfur Dioxide: Emissions Measuring: The Permittee shall use a SO2 CEMS to measure SO2 emissions from STRU140. [40 CFR 60.105, 40 CFR 63.1568(b)(1), CAAA of 1990, Minn. R. 7011.1435(A), Minn. R. 7011.1435(D), Minn. R. 7011.7280(B), Minn. R. 7017.1006, Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y]





Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 376	EU212	11H-6 - Refining Equipment	



Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 488	EU019	#2 Vac Heater - Process Heater	
	6.50.3		The Permittee shall submit excess emission/downtime report : Due by 30 days after the end of each calendar quarter following permit issuance if there are any exceedances of the SO2 or NOx limit. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) & Minn. R. 7007.3000]
EQUI 490	EU026	#1 Vac Heater - Process Heater	
	6.51.1		The Permittee shall submit excess emission/downtime report : Due by 30 days after the end of each calendar quarter following permit issuance if there are any exceedances of the SO2 or NOx limit. [Title I Condition: 40 CFR 50.4(SO2 SIP), Title I Condition: 40 CFR 51, Title I Condition: 40 CFR pt. 52, subp. Y, Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) & Minn. R. 7007.3000]

Subject Item	Sec.SI.Reqt	SI des:SI desc	Requirement & Citation
EQUI 574	EU361	ATS Process Unit - Refining Equipment	





**Appendix B: Title I Conditions: Stack Parameters Relied Upon in the Modeling to Demonstrate Compliance with the National Ambient Air Quality Standards for State Implementation Plan (SIP) Sulfur Dioxide (SO<sub>2</sub>)**

Appendix B																	
Title I Condition: Stack Parameters Relied Upon to Demonstrate Compliance with the NAAQS for SIP SO <sub>2</sub>																	
Stack Parameters for 1-Hour, 3-Hour, 24-Hour and Annual Modeling of SO <sub>2</sub> Emission Units at Flint Hills Resources Pine Bend Refinery																	
Stack ID	TEMPO ID	Description	NAD83 UTM_E <sup>1</sup>	NAD83 UTM_N <sup>1</sup>	Base Elevation (m) <sup>1</sup>	1 Hour SIP Emission Rate		3 Hour SIP Emission Rate		24 Hour SIP Emission Rate		Annual SIP Emission Rate		Stack Height (m)	Exit Temp. (K) <sup>3</sup>	Exit Velocity (m/s) <sup>3</sup>	Exit Diameter (m)
						(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)				
K2_#3SRU	EQUI319, 320, 479, 480	SRU3, SRU4, Tail Gas Treating Unit #1 (SCOT), TGTU #1 (SCOT) Incinerator	496906.7	4956920.9	282.7	18.822	149.381	18.781	149.056	10.906	86.556	9.332	74.065	60.96	577.5944444	16	1.448
K3_#5SRU	EQUI428, 503	SRU 5, Tail Gas Treating Unit #2	496868.5	4956631.4	277.6	21.520	170.794	21.520	170.794	11.793	93.595	9.867	78.311	65.00	463.7055556	9.3	2.103
K8 FCC	EQUI421 EQUI 554, 555, 556	Fluid Catalytic Cracking Unit Process Heater 32H-5,6,7	496993.1	4956990.2	283.6	23.013	182.643	23.013	182.643	23.013	182.643	23.013	182.644	69.27	366.4833333	15.24	2.937
K10_32FG	EQUI490	Process Heater 19H-1	496585.4	4957137.0	280.4	0.921	7.310	0.921	7.310	0.921	7.310	0.498	3.948	62.48	422.0388889	1.35448766	2.730
K11_19FG	EQUI487	Process Heater 12H-4	496667.2	4957137.0	280.9	0.799	6.341	0.799	6.341	0.799	6.341	0.431	3.424	58.52	422.0388889	2.39734536	2.134
K13_12FG	EQUI488	Process Heater 16H-1	496627.7	4957108.0	280.8	1.262	10.016	1.262	10.016	1.262	10.016	0.681	5.407	60.50	422.0388889	2.40826887	2.070
K14_33FG	EQUI541	Process Heater 33H-31	496981.5	4956855.0	283.5	1.691	13.421	1.691	13.421	1.691	13.421	1.353	10.738	55.78	552.5944444	2.92733265	1.969
K15_16FG	EQUI488	Process Heater 16H-1	496627.7	4957108.0	280.8	1.262	10.016	1.262	10.016	1.262	10.016	0.681	5.407	58.83	479.8166667	1.80535063	3.340
K19_11FG	EQUI484	Process Heater 11H-1	496649.9	4957059.0	281.0	0.852	6.762	0.852	6.762	0.852	6.762	0.460	3.652	39.93	466.4833333	5.08204693	1.397
K20_37FG	EQUI560, 561, 565	Process Heater 37H-1,2,6	496870.1	4956697.0	280.2	0.875	6.944	0.875	6.944	0.875	6.944	0.700	5.554	60.96	422.0388889	6.6055906	1.009
K21_33FG	EQUI559	Process Heater 33H-32	496923.7	4956848.0	283.0	1.252	9.937	1.252	9.937	1.252	9.937	1.002	7.949	56.12	547.0388889	6.04956559	1.436
K23_11FG	EQUI485	Process Heater 11H-2	496637.9	4957060.0	281.0	0.304	2.413	0.304	2.413	0.304	2.413	0.164	1.301	35.05	508.15	0.7748875	1.867
K27_21FG	EQUI491	Process Heater 21H-1S	496551.5	4957092.5	280.7	0.351	2.786	0.351	2.786	0.351	2.786	0.190	1.506	38.71	477.5944444	1.70253143	1.410
K28_21FG	EQUI491	Process Heater 21H-1N	496551.5	4957101.5	280.6	0.351	2.786	0.351	2.786	0.351	2.786	0.190	1.506	38.71	477.5944444	1.70253143	1.410
K29_21FG	EQUI492	Process Heater 21H-2S	496550.8	4957025.2	280.9	0.351	2.786	0.351	2.786	0.351	2.786	0.190	1.506	39.93	488.7055556	1.74214038	1.410
K30_21FG	EQUI492	Process Heater 21H-2N	496550.8	4957034.2	280.9	0.351	2.786	0.351	2.786	0.351	2.786	0.190	1.506	39.93	488.7055556	1.74214038	1.410
K31_33FG	EQUI431, 432	Process Heater 33H-4 (33H- 1&2)	496921.1	4956899.0	282.9	1.775	14.087	1.775	14.087	1.775	14.087	1.420	11.269	30.48	549.8166667	4.19036629	1.829
K32_23FG	EQUI495	Process Heater 23H-1	496531.7	4956882.6	272.9	1.604	12.730	1.604	12.730	1.604	12.730	1.283	10.183	57.91	422.0388889	4.63476265	1.631
K33_31FG	EQUI545	Process Heater 31H-1	496768.3	4957087.0	281.9	0.122	0.968	0.122	0.968	0.122	0.968	0.066	0.525	20.42	566.4833333	1.87025589	1.111
K34_31FG	EQUI546	Process Heater 31H-2	496769.0	4957077.0	281.9	8.363	66.373	8.363	66.373	8.363	66.373	5.753	45.662	18.59	666.4833333	2.99051121	0.953
K36_31FG	EQUI548	Process Heater 31H-5	496802.9	4957102.0	282.2	0.053	0.421	0.053	0.421	0.053	0.421	0.029	0.228	17.98	422.0388889	1.1683867	0.800
K37_31FG	EQUI552	Process Heater 31H-10	496802.9	4957112.0	282.2	0.160	1.270	0.160	1.270	0.160	1.270	0.086	0.685	30.48	524.8166667	1.48195411	1.372
K41_32FG	EQUI557, 558 EQUI562, 563, 564	Process Heater 32H-9 Process Heater 37H-3,4,5	496774.0	4957037.0	281.9	0.048	0.381	0.048	0.381	0.048	0.381	0.026	0.205	21.64	533.15	1.01768562	0.914
K42_37FG	EQUI562, 563, 564	Process Heater 37H-3,4,5	496914.2	4956703.2	279.8	3.798	30.143	3.798	30.143	3.798	30.143	3.038	24.112	71.20	422.0388889	2.50037374	3.417
K46_38FG	EQUI568	Process Heater 38H-1A	496952.1	4956560.5	281.5	0.371	2.944	0.371	2.944	0.371	2.944	0.297	2.358	44.50	599.8166667	0.94695949	1.803
K47_38FG	EQUI569	Process Heater 38H-1B	496952.1	4956571.3	281.5	0.371	2.944	0.371	2.944	0.371	2.944	0.297	2.358	44.50	599.8166667	0.94695949	1.803
K48_38FG	EQUI570	Process Heater 38H-2	496979.3	4956563.4	281.7	0.603	4.786	0.603	4.786	0.603	4.786	0.482	3.826	60.96	422.0388889	3.19216031	0.838
K50_25FG	EQUI500	Process Heater 25H-1	496755.4	4956642.0	274.5	2.459	19.516	2.459	19.516	2.459	19.516	1.967	15.614	65.00	422.0388889	1.4587034	3.600
K51_25FG	EQUI501	Process Heater 25H-3	496786.2	4956635.0	275.8	2.207	17.516	2.207	17.516	2.207	17.516	1.765	14.010	65.00	427.5944444	1.40288098	3.500
K52_25FG	EQUI526	Process Heater 25H-4	496800.5	4956636.9	276.8	1.584	12.571	1.584	12.571	1.584	12.571	1.268	10.060	60.96	422.0388889	3.2684697	1.930
K53_23FG	EQUI496	Process Heater 23H-2	496532.5	4956853.8	269.8	1.186	9.413	1.186	9.413	1.186	9.413	0.949	7.529	57.91	435.9277778	5.28336784	1.335
K54_27FG	EQUI543	Process Heater 27H-1	496725.5	4956511.4	277.1	7.776	61.714	7.776	61.714	7.776	61.714	6.221	49.373	45.72	422.0388889	6.09393695	3.132
K55_27FG	EQUI505	Process Heater 27H-101	496811.6	4956500.1	276.6	0.817	6.484	0.817	6.484	0.817	6.484	0.653	5.184	45.72	422.0388889	5.06687784	1.113
K56_27FG	EQUI542	Process Heater 27H-102	496813.3	4956402.9	276.0	0.923	7.325	0.923	7.325	0.923	7.325	0.739	5.863	45.72	422.0388889	5.06687784	1.113
K57_31FG	EQUI547	Process Heater 31H-4	496798.1	4957001.9	282.0	0.378	3.000	0.378	3.000	0.378	3.000	0.204	1.620	32.46	555.3722222	1.6269879	1.347
K58_31FG	EQUI549	Process Heater 31H-7	496798.0	4957025.0	282.0	0.364	2.889	0.364	2.889	0.364	2.889	0.197	1.561	28.65	544.2611111	2.5410536	1.067
K59_31FG	EQUI550	Process Heater 31H-8	496799.2	4957036.0	282.1	0.206	1.635	0.206	1.635	0.206	1.635	0.111	0.881	28.80	519.2611111	3.22727692	1.049
K60_31FG	EQUI551	Process Heater 31H-9	496798.8	4957018.0	282.0	0.266	2.111	0.266	2.111	0.266	2.111	0.144	1.141	24.84	510.9277778	3.31587169	0.905
K61_28FG	EQUI544	Process Heater 28H-1	496837.8	4956502.2	276.9	0.330	2.619	0.330	2.619	0.330	2.619	0.264	2.098	45.72	810.9277778	7.88153185	0.787
K62_BLR8	EQUI371	Process Heater 71B-8	496698.3	4956542.5	277.5	1.798	14.270	1.798	14.270	1.798	14.270	1.439	11.417	9.04	422.0388889	5.95186772	1.524
K63_27FG	EQUI377	Process Heater 27H-501	496722.3	4956358.0	275.1	4.617	36.643	4.617	36.643	4.617	36.643	3.694	29.315	35.05	422.0388889	3.5770415	3.150
K67_11FG	EQUI376	Process Heater 11H-6	496630.1	4956988.4	280.7	2.183	17.329	2.183	17.329	2.183	17.329	1.179	9.357	54.86	422.0388889	4.17797231	2.642

K68_BLR9	EQUI515	Process Heater 71B-9	496569.0	4957199.8	280.0	1.251	9.929	1.251	9.929	1.251	9.929	0.676	5.363	12.19	422.0388889	3.01833833	1.829
K70_4H2	EQUI471	Heater 30H-401	496664.6	4956414.6	274.4	8.748	69.429	8.748	69.429	8.748	69.429	6.999	55.544	35.05	422.0388889	4.32173977	2.896
K71HCFD	EQUI469, 470	Heaters 29H-1, 29H-2	496923.0	4956351.0	277.0	2.138	16.968	2.138	16.968	2.138	16.968	1.711	13.578	40.78	422.0388889	0.10811933	2.629
K1006_BH	EQUI323	71B-6 Boiler	496566.9	4957213.0	280.1	0.639	5.071	0.639	5.071	0.639	5.071	0.345	2.739	21.34	422.0388889	3.17795937	1.372
	EQUI1491	#1 Coker Unit Charge Heater				1.216	9.650	1.216	9.650	1.216	9.650	0.972	7.717	39.62	449.8170000	3.23402844	2.438
	EQUI1492	#2 Coker Unit Charge Heater				1.216	9.650	1.216	9.650	1.216	9.650	0.972	7.717	39.62	449.8170000	3.23402844	2.438

Stack ID	TEMPO ID	Description	NAD83 UTM_E <sup>1</sup>	NAD83 UTM_N <sup>1</sup>	Base Elevation (m) <sup>1</sup>	1 Hour SIP Emission Rate		3 Hour SIP Emission Rate		24 Hour SIP Emission Rate		Annual SIP Emission Rate		Stack Height (m)	Exit Temp. (K) <sup>3</sup>	Exit Velocity (m/s) <sup>3</sup>	Exit Diameter (m)
						(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)				
K113_FG		SRU 3 Tail Gas Incinerator on Hot Standby	496901.4	4956953.5	282.7	0.202	1.603	0.202	1.603	0.202	1.603	0.181	1.025	53.68	422.0388889	0.80647003	1.016
K331_DSL	EQUI328	Diesel Engine 93P-160	496832.2	4956976.5	282.3	0.0003	0.002	0.0003	0.002	0.0003	0.002	0.0003	0.002	4.27	616.48	23.6009212	0.102
K332_DSL	EQUI365	Diesel Engine 93P-400	496753.3	4957695.5	270.9	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.008	4.57	616.48	37.8955891	0.152
K333_DSL	EQUI366	Diesel Engine 93P-570	495957.0	4956960.1	262.2	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.008	5.49	616.48	9.41187521	0.305
K348_OXD	EQUI457	Oil Separation & Waste Treatment Plant Thermal Oxidizer	496636.2	4957613.5	276.0	6.389	50.706	6.389	50.706	6.389	50.706	1.134	9.000	22.11	533.15	10.36423	1.717
K407_DSL	EQUI502	Diesel Engine EE-1657	496799.3	4956593.5	275.1	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.007	6.10	616.48	20.429156	0.203
K408_DSL	EQUI486	Diesel Engine EE-1852	496684.0	4957064.0	281.1	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.008	4.11	616.48	20.5313017	0.203
K435_DSL	EQUI497	Diesel Engine 23ME26	496526.5	4956971.5	278.6	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.009	7.01	616.48	41.6001259	0.152
K453_DSL	EQUI567	Diesel Engine EE-1309	496910.2	4956656.0	278.4	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.009	7.92	616.48	41.6001259	0.152
K465_DSL	EQUI489	Diesel Engine EE-1718	496908.4	4957114.5	283.0	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.008	4.57	616.48	20.5313017	0.203
K505_DSL	EQUI327	Diesel Engine 81P-159	496846.2	4956974.5	282.5	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.006	5.49	616.48	18.5905319	0.203
K506_DSL	EQUI329	Diesel Engine 81P-357	496838.3	4956933.5	282.2	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.006	6.10	616.48	17.0242966	0.203
K507_DSL	EQUI325	Diesel Engine 81P-444	496646.3	4956932.5	281.1	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.008	4.57	616.48	13.7013817	0.254
K508_DSL	EQUI326	Diesel Engine 81P-89	496639.3	4956990.5	280.9	0.0005	0.004	0.0005	0.004	0.0005	0.004	0.0005	0.004	4.57	616.48	43.8302822	0.102
K511_DSL	EQUI324	Diesel Engine 71C-11	496987.9	4956786.1	282.1	0.001	0.008	0.001	0.008	0.001	0.008	0.001	0.009	6.10	616.48	15.3324986	0.254
K513_DSL	EQUI514	Diesel Cooling Water Pump	496672.2	4956267.3	271.9	0.002	0.016	0.002	0.016	0.002	0.016	0.002	0.015	9.75	477.4444444	14.017697	0.305
K600_DEC	EQUI493	Process Heater 21H-1 Decoking	496522.1	4957081.7	280.6	1.008	8.000	1.008	8.000	1.008	8.000	0.050	0.395	1.50	NA	NA	NA
K601_DEC	EQUI494	Process Heater 21H-2 Decoking	496528.9	4957028.6	280.8	1.008	8.000	1.008	8.000	1.008	8.000	0.050	0.395	1.50	NA	NA	NA
K602_DEC <sup>4</sup>	EQUI498	Process Heater 23H-1 Decoking	496461.0	4956855.0	264.1	2.545	20.198	2.545	20.198	2.545	20.198	0.126	0.996	1.50	NA	NA	NA
K603_DEC <sup>2</sup>	EQUI499	Process Heater 23H-2 Decoking	496461.0	4956855.0	264.1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.50	NA	NA	NA
K700ACDL <sup>5</sup>		Sulfuric Acid Loading	496560.0	4957484.0	280.6	0.572	4.540	0.572	4.540	0.572	4.540	0.572	4.540	3.10			
K701ACDS <sup>5</sup>		Sulfuric Acid Storage	496837.0	4957122.0	282.6	0.572	4.540	0.572	4.540	0.572	4.540	0.572	4.540	7.60			
	EQUI319, 321, 478	SRU 3 Bypass Incinerator	496901.4	4956953.5	282.7	0.202	1.606	0.202	1.606	0.202	1.606	0.181	1.435	53.68	422.02	0.81	1.020
	EQUI406	Process Heater 23H-3	469562.7	4956874.8	272.4	0.287	2.280	0.287	2.280	0.287	2.280	0.287	2.280	57.91	288.71	2	4.040
	EQUI407	Process Heater 25H-2	496743.3	4956638.2	273.0	0.058	0.456	0.058	0.456	0.058	0.456	0.058	0.456	51.82	288.71	2	4.770
	EQUI367, 368	Combustion Turbine and Duct Burners	497051.8	4955898.8	268.2	0.119	0.943	0.119	0.943	0.119	0.943	0.119	0.943	51.82	366.98	8.68	3.660
	EQUI574	ATS Process Unit	496949.2	4956768.7	280.6	0.630	5.000	0.630	5.000	0.630	5.000	0.567	4.500	59.44	377.594	8.829921	0.838
	EQUI1456	Process Heater 24H-1	496516.5	4956578.1	264.3	1.651	13.100	1.651	13.100	1.651	13.100	0.892	7.078	67.06	422.0	4.467	3.048

<sup>1</sup> Adjustments were made to locations of stacks and buildings based on more recent aerial photographs and GIS data as well as the updated modeling program AERMOD that allow elevations from the USGS national seamless elevation dataset where the most recent elevation data was used

<sup>2</sup> Emissions have been included in EQUI498 as part of the area source, EQUI499 is being included for completeness.

<sup>3</sup> The exit temperatures and exit velocities have all been updated to reflect the worst case scenario being modeled in SIP 9

<sup>4</sup> Modeled as an area source; parameters are emission rate (g/s-m<sup>2</sup>), release height (m), X dimension (m), Y dimension (m)

<sup>5</sup> Modeled as a volume source; parameters are emission rate (g/s), release height (m), X dimension (m), Y dimension (m)

For the air permit issued to authorize changes for the Pine Bend Technology and Efficiency Improvement Projects (PBTEIP), new federally enforceable SO<sub>2</sub> emissions limits are in the permit for the new 24H1 process heater (EQUI1456) and the existing SO<sub>2</sub> emissions limits for the 30H401 process heater (EQUI471) are decreased in the permit from those shown in this table. The SO<sub>2</sub> limits for EQUI1456 are effective upon approval of the SIP revision by the US EPA. The decreased SO<sub>2</sub> limits at EQUI471 are also effective upon approval of the SIP revision by the US EPA.