Kern River Cogeneration Company | Box 80478, Bakersfield, CA 93380 • (661) 392-2630

Neil E. Burgess, Executive Director

VIA FEDERAL EXPRESS

December 16, 2005

KR-9000

Ms. Nancy Tronaas
Compliance Project Manager
Siting & Environmental Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814-5512

Re: **Kern River Cogeneration Company (82-AFC-2)**
Petition for Insignificant Amendments

Dear Ms. Tronaas:

This petition is being submitted to allow the other two (2) cogeneration units at Kern River Cogeneration Company (KRCC), Unit 1 and Unit 2, to operate in either simple cycle mode (without the cogeneration of steam), or in the current cogeneration configuration. The addition of simple cycle capability is needed because the steam demand in the adjacent oilfield is gradually declining and to respond to current electricity market conditions for power.

The petition does not require the addition, elimination or modification of any conditions of certification. Furthermore, the proposed change poses no potential for adverse environmental impacts. Under these circumstances, pursuant to Section 1769(a)(2), CEC Staff have the authority to approve the proposed change without full CEC approval providing a 14-day notice is provided to the docket, each commissioner and any party on the post-certification mailing list. If you have any questions, please contact Mervyn Soares at (661) 392-2643 or David Stein of CH2M Hill at (510) 587-7787.

N E Burgess

DLB:yh

Attachment

bxc: R. T. Muse (w/o attachment)
J. A. Blackmon (w/o attachment)
David Stein, CH2M Hill (w/attachment)

1.0 OVERVIEW

Kern River Cogeneration Company (KRCC) received original approval (82-AFC-2) in September 1983 from the California Energy Commission (CEC) for a 300 megawatt (MW) cogeneration plant in Kern County, California. The facility consists of four (4) 75 MW (nominal) natural-gas fired General Electric Frame 7EA combustion turbines equipped with dry Low NOx (DLN) combustors, four (4) unfired heat recovery steam generators (HRSGs), each capable of generating up to 450,000 pounds per hour (lb/hr) of steam for delivery to the adjacent oilfield operator for use in enhanced oil recovery and ancillary equipment. KRCC is owned jointly by Chevron and Edison Mission Energy. A post-certification petition for the operation of two of the four combustion turbines in simple cycle mode and removal of a requirement to meet explicit cogeneration efficiency criteria was approved by the CEC on April 7, 2004

This petition is being submitted to allow the other two (2) cogeneration units, Unit 1 and Unit 2, to operate in either simple cycle mode, (without the cogeneration of steam,) or in the current cogeneration configuration. The addition of simple cycle capability is needed because the steam demand in the adjacent oilfield is gradually declining and, in order to respond to current electricity market conditions for the power. . It is anticipated that at any given point in time two of the four units will continue to operate in cogeneration mode. However, cogeneration service will be rotated among the four units during each calendar year to ensure that the facility conforms with qualifying facility (QF) requirements.

The petition does not require the addition, elimination or modification of any conditions of certification. Furthermore, the proposed change poses no potential for adverse environmental impacts. Under these circumstances, pursuant to Section 1769 (a) (2), CEC Staff have the authority to approve the proposed change without full CEC approval providing a 14-day notice is provided to the docket, each commissioner and any party on the post-certification mailing list.

This petition is consistent with recent requests approved by both the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the United States Environmental Protection

Agency (EPA). Appendix A includes the complete copy of the SJVAPCD engineering analysis and revised Authorities to Construct and Appendix B includes a copy of the letter requesting EPA confirmation that Prevention of Significant Deterioration (PSD) review is not required. A confirmation letter from EPA is expected in late December. The CEC will be provided with a copy of the EPA confirmation letter as soon as it is received.

This petition for a post-certification amendment of KRCC is being submitted under the provisions of Section 1769 of Title 20, California Administrative Code (CEC *Rules of Practice and Procedure and Power Plant Site Certification Regulations*) to seek a minor modification to the air quality conditions of certification. The petition is organized to address the informational requirements of Section 1769 in the order they appear in the section. The requirement appears in ***bold italics*** followed by a narrative response.

2.0 INFORMATION REQUIRED BY SECTION 1769

(A) A complete description of the proposed modifications, including new language for any conditions that will be affected

Kern River Cogeneration Company (KRCC) is a cogeneration facility located in the Kern River oilfield near Bakersfield, CA. The facility employs four (4) General Electric Frame 7EA combustion turbines (CTs) and four (4) unfired heat recovery steam generators (HRSGs) to cogenerate 300 MW (nominal rating) of electricity and 1.8 million pounds per hour of steam for enhanced oil recovery. Each CT/HRSG generates approximately ¼ of the total steam and electricity output. Each CT is equipped with Dry Low NOx (DLN) combustor technology capable of meeting the current SJVAPCD Rule 4703 NOx limit for gas turbines of 16.4 ppmv at 15% O2, dry and a CO emissions limit of 25 ppmv at 15% O2, dry.

As a result of gradually declining steam demand and negotiations regarding the KRCC electricity contract, it has been determined that all of the KRCC CT units must be able to operate in either cogeneration or simple cycle mode . As a result, KRCC is requesting post-certification approval to operate Unit 1 and Unit 2 in either cogeneration or simple cycle mode.

No additional physical construction is needed to facilitate the addition of simple cycle operation to Units 1 and 2. Each CT discharges to a HRSG through a transition section that is equipped with a gas-tight bypass stack. In order to operate in simple cycle, the bypass stack damper would be repositioned to block off the HRSG, directing the CT exhaust through the bypass stack to the atmosphere. Since the Dry-Low NOx (DLN) operation is unaffected by the positioning of the bypass damper, the change to simple cycle operation will not impact the effectiveness of the current air pollution control system. As a result, during simple cycle operations there will not be any change in normal short-term CT emission rates.

The current license is based on a continuous, 24-hr day operation. While KRCC does not propose to specifically restrict its operating schedule in the future, it is anticipated that the power host will operate two units of the four KRCC units in simple cycle on a dispatch schedule that is anticipated to be substantially fewer hours than historical operations. The other two KRCC units would continue to cogenerate steam to service Chevron's existing thermally enhanced oil recovery operation. KRCC will annually cycle all four units in both modes of operation. At the present time, we envision that units that are dispatched to operate in simple cycle mode would operate in response to peak power demands occurring during the normal work week, Monday through Friday, and would not operate on weekends or holidays. Instead of a 24-hr operation, it is more likely that these two units would ultimately operate for no more than a 6 to 8 hr/day. We also anticipate that the units will operate more frequently in the summer peak power period, April through October, and less during the off-peak period of the year, November through March. The addition of simple cycle operation will increase the number of startups and shutdowns to one or two per day for the affected CT. These emission impacts have been previously evaluated under the previous request for Units 3 and 4 and found to be insignificant..

(B) A discussion of the necessity for the proposed modifications

The modifications are necessary in order to allow KRCC to continue to sell power while adjusting to a gradually declining steam demand and need for dispatchable power by the utilities. KRCC units must maintain QF status on a calendar year basis for the facility, but otherwise KRCC units must also be available for dispatchable simple cycle operation..

(C) If the modification is based on information that was known by the petitioner during the certification proceeding, an explanation why the issue was not raised at that time

This need for dispatchable power and maintenance of unit-specific cogeneration criteria has come about as a result of clarifications regarding the terms of the proposed power purchase agreement that will require KRCC to remain as a QF facility. The modification is not based on information that was known to the petitioner at the time of the certification.

(D) If the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, an explanation of why the change should be permitted

- The proposed modification is based on new information that was not available at the time of the original decision. First, demand for steam from KRCC is gradually declining and KRCC will not be able to continue to produce and sell all of the steam it is capable of generating. Second, the electricity host has indicated that its future resource needs are focused on peaking, not baseload capacity. The host has therefore asked that any two of the four KRCC units be made available on a dispatchable basis. However each of the four KRCC units must also continue to meet contract-specific QF status on a calendar year basis.

Although there will be no changes in any of the existing air emission limits in the CEC license, operation in simple cycle mode will modify the dispersion characteristics of the two affected units. When Units 1 and 2 are operated in simple cycle mode, the exhaust gas will be discharged through a slightly shorter bypass stack with a higher temperature and a marginally lower stack exit velocity. A comprehensive analysis of these potential changes to exhaust gas stack discharge conditions has been performed by SJVAPCD. The analysis demonstrates that even under worst-case assumptions there will be a beneficial impact to ambient air quality.

(E) An analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts

A complete analysis of the proposed changes has been performed and approved by the SJVAPCD.. The engineering analysis and final Authorities to Construct are include in Appendix A. The air quality impact analysis demonstrates that beneficial air quality impacts will result from the proposed changes. Furthermore, the original KRCC facility was fully mitigated with emission offsets. Since the proposed change will not increase allowable daily or annual emissions from the facility, no additional air quality mitigation is needed. Based on the above, the proposed change will not cause any significant air quality impacts. To the contrary, the air quality impacts are actually beneficial.

No other environmental issues or concerns are impacted by the proposed change and no additional analysis is needed for other environmental issue areas.

(F) A discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards

The proposed changes will comply with all applicable laws, ordinances, regulations and standards as demonstrated by the attached SJVAPCD engineering analysis and approval (Appendix A). The applicant has also requested that EPA formally acknowledge that the proposed changes do not constitute a major modification that would be subject to full PSD review. A copy of this request is included (Appendix B). A copy of EPA's response will be forwarded to the CEC under separate cover. While this response will be informative, it is not a requirement for the CEC to process this petition request as KRCC will comply with all applicable federal laws, ordinances, regulations and standards as it has since it began operation.

(G) A discussion of how the modification affects the public

The proposed revisions will have a beneficial impact on the public since air quality impacts will be lessened by the proposed change to KRCC.

(H) A list of property owners potentially affected by the modification

There are no property owners that will be affected by the proposed modification. A single property owner is located within 1000 feet of the KRCC site, Chevron. The applicable contact information for Chevron is provided below:

Chevron	Physical Address	Mailing Address
	1546 China Grade Loop	P.O. Box 1392
	Bakersfield, CA 93302	Bakersfield, CA 93380

(I) A discussion of the potential effect on near by property owners, the public and the parties in the application proceedings

The proposed revisions will have a positive impact on near by property owners, since air quality impacts will be lessened by the proposed change to KRCC.

3.0 SCHEDULE

The request for EPA confirmation of the PSD nonapplicability has been submitted (see Appendix B) and a formal confirmation response is expected in late December 2005. A copy of the letter will be provided as soon as it is received. The SJVAPCD has approved the proposed change (see Appendix A).

We respectfully request that the CEC process this petition to approve the described change in the method of operation of the facility expeditiously as is possible, so that KRCC has the ability to commence simple cycle operation of any of the four units .

4.0 PETITION CONTACTS

Questions regarding this petition should be directed to:

Mervyn Soares
HES Manager
Kern River Cogeneration Company
P.O. Box 81438
Bakersfield, CA 93380
Phone: (661) 392-2643
Fax: (661) 392-2990
Email: masoares@sycamore.com

David A. Stein, PE
Vice President
CH2M HILL
155 Grand Avenue
Oakland, CA 94612
Phone: (510) 587-7787
Fax: (510) 622-9177
Email: dstein@ch2m.com

5.0 SUMMARY

This minor amendment will require no changes to existing conditions of certification, will have no significant environmental impacts and will have a beneficial effect on air quality.

Pursuant to Section 1769 (a) (2) of the CEC Siting Regulations, CEC staff is authorized to approve this proposed change with full Commission approval, provided a 14-day notice is submitted to the docket, each Commissioner and any party on the post-certification mailing list.

Expedited processing of this petition is respectfully requested..

APPENDIX A

SJVAPCD ENGINEERING ANALYSIS AND FINAL AUTHORITIES TO CONSTRUCT

APPENDIX B

REQUEST FOR EPA PSD NONAPPLICABILITY CONFIRMATION

1.0 OVERVIEW

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David A. Stein, PE
Vice President
CH2M HILL
155 Grand Avenue
Oakland, CA 94612
Phone: (510) 587-7787
Fax: (510) 622-9177
Email: dstein@ch2m.com

5.0 SUMMARY

This minor amendment will require no changes to existing conditions of certification, will have no significant environmental impacts and will have a beneficial effect on air quality.

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Expedited processing of this petition is respectfully requested..

APPENDIX A

SJVAPCD ENGINEERING ANALYSIS AND FINAL AUTHORITIES TO CONSTRUCT

KERN RIVER COGEN CO	
NEB	JRB
KSL	RTM
GLE	JAB
LSP	
MAS	
ADD	
Copy:	
Note:	
(Minor Mod) NOV 18 2005	

San Joaquin Valley Air Pollution Control District

NOV 15 2005

Mr. Mervyn Soares
Kern River Cogeneration Company
P.O. Box 81617
Bakersfield, CA 93380

Re: Final – Authority to Construct/Certificate of Conformity (Minor Mod)
Project # 1053208

Dear Mr. Soares:

The Air Pollution Control Officer has issued Authorities to Construct (S-88-1-14, '-2-14, '-3-14, and '-4-14) with Certificates of Conformity to Kern River Cogeneration Company. The project authorizes the addition of simple cycle operation, addition of a 1-hr CO emissions limit, and revised source testing and sampling provisions for gas turbine cogeneration systems. The facility is located at the center of the north 1/2 of Section 32, T 28S, R28E in the Central Kern County oil fields.

Prior to operating with modifications authorized by the Authority to Construct, you must submit an application to modify the Title V permit as an administrative amendment in accordance with District Rule 2520, Section 11.5.

Enclosed are the Authorities to Construct, invoice, and engineering evaluation with attachments. The application and proposal were sent to US EPA Region IX on September 20, 2005. All comments received have been addressed by the District. A summary of the comments and the District's response to each comment is included below.

EPA Verbal Comment:

Please ensure that the conditions #22 and #45 recently added to the Title V PTOs, as recommended by EPA, are included as conditions on the ATCs issued in project 1053208. The conditions allow for a CEMS Relative Accuracy Test Audit (RATA) on only one of the four turbines per year with a different turbine RATA tested each year for four years. The other three turbines not RATA tested are required to be Relative Accuracy Audit (RAA) tested and are subject to the annual source testing requirements of Rule 4703. In the event that a turbine fails RAA testing, RATA testing is required within 60 days. Additionally, a cylinder gas audit (CGA) must be performed on each turbine not RATA or RAA tested in any given quarter.

District Response:

The requested conditions have been added to ATC's S-88-1-14, '-2-14, '-3-14, and '-4-14.

David L. Crow
Executive Director / Air Pollution Control Officer

ATC Condition #23:
The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

ATC Condition #46:
Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3]

EPA Verbal Comment:

Please delete ATC condition references to County Rules 108 and 109 which are no longer in the SIP.

District Response

Reference to County Rules 108 and 109 have been deleted.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Thomas Goff, Permit Services Manager, at (661) 326-6900.

Sincerely,

for David Warner
Director of Permit Services

Enclosures
rue

c: Thomas Goff, Permit Services Manager

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-1-14 **ISSUANCE DATE:** 11/15/2005

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #1), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-88-1-14 : Nov 15 2005 9:48AM -- EDGEHILR : Joint Inspection NOT Required

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

60. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-2-14 **ISSUANCE DATE:** 11/15/2005

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #2), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-88-2-14 : Nov 15 2005 9:48AM -- EDGEHILR : Joint Inspection NOT Required

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

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30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

60. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-3-14 **ISSUANCE DATE:** 11/15/2005

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3): REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit

2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit

3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-88-3-14 : Nov 15 2005 9:48AM – EDGEHILR : Joint Inspection NOT Required

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

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28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

CONDITIONS CONTINUE ON NEXT PAGE

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-4-14 **ISSUANCE DATE:** 11/15/2005

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4) : REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit

2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit

3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

for DAVID WARNER, Director of Permit Services
S-88-4-14 : Nov 15 2005 9:46AM -- EDGEHILR : Joint Inspection NOT Required

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

CONDITIONS CONTINUE ON NEXT PAGE

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

San Joaquin Valley Unified Air Pollution Control District Application Review

Facility Name:	Kern River Cogeneration Company
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Processing Engineer:	Richard Edgehill
Lead Engineer:	Allan Phillips, Sup. Air Quality Engineer AP SUPR AQE
Date:	September 9, 2005 9-9-05
Project Number:	1053208
Application Numbers:	S-88-1-14, '-2-14, '-3-14, and '-4-14
Deemed Complete:	July 19, 2005

I. PROPOSAL

Kern River Cogeneration Company (KRCC) is a cogeneration facility located in the Kern River oilfield near Bakersfield, CA. The facility employs four (4) General Electric Frame 7EA combustion turbine generators (CTGs) and four (4) unfired heat recovery steam generators (HRSGs) to cogenerate 300 MW (nominal rating) of electricity and 1.8 million pounds per hour of steam for enhanced oil recovery. These units are part of Chevron's heavy oil central stationary source in the Kern County oil fields.

Applicant is proposing the following modifications to the current PTOs:

A. KRCC is requesting that the existing Permits to Operate (PTOs) for Unit 1 (S-88-1) and Unit 2 (S-88-2) be modified to allow an additional mode of operation: producing electricity without recovering exhaust heat ("simple cycle" mode). The two units will still maintain the physical and operational ability to recover heat in the form of steam. The proposed addition to simple cycle involves a redirection of the CTG exhaust through an existing bypass stack. No physical changes to the units are needed to accommodate this operation.

   This request is being made to allow KRCC flexibility in offering dispatchable power to Southern California Edison (SCE) as part of a power purchase agreement (PPA). The PPA is due to expire August 2005 and the proposed modifications will allow KRCC to distribute cogeneration and dispatchable loads between all four (S-88-1, '-2, '-3, and '-4) units resulting in higher efficiencies in both electricity and steam production. These modifications will allow KRCC to continue the contract with SCE beyond the expiration date.

B. A 1-hour average CO emission limit of 200 lb/hr per turbine will be added to the permits for S-88-1 and '-2 to validate short-term emission modeling. There will be no change to the current 3-hour average CO emission limits of 25 ppmv @ 15%O_2 and 44.0 lb/hr which are applicable during periods of normal operation and no change to the current 140 lb/hr (2 hr average) emissions limit applicable during startups and shutdowns.

C. The stack sampling permit condition from S-88-3-12 and -4-12 (condition 36) will be revised to pertain only to the HRSG stack. Following discussions with EPA, emissions source testing requirements can be accomplished by conducting the testing at the HRSG stack for both modes of operation. Since there will be no control devices downstream of the turbine, testing from the HRSG stack only will meet the requirements of District Rule 1081.

KRCC received their Title V Permit on October 31, 1999. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. KRCC must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC(s) issued with this project.

KRCC has determined that the requested changes will not trigger PSD review and has requested formal confirmation from EPA Region IX.

There are no outstanding ATCs for the permit units being modified. Copies of the current PTOs are included in **Attachment I**.

BACT, offsets, and public notice are not required for the project.

II. APPLICABLE RULES

Rule 1080	Stack Monitoring (12/17/92)
Rule 1081	Source Sampling (12/16/93)
Rule 2201	New and Modified Stationary Source Review (04/20/05)
Rule 2520	Federally Mandated Operating Permits (6/15/95)
Rule 2540	Acid Rain Program (11/13/97)
Rule 4001	NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines (04/14/99)
Rule 4101	Visible Emissions (02/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92) – **exempt** - CTGs do not meet the definition of fuel burning equipment and this rule does not apply
Rule 4703	Stationary Gas Turbines (04/25/02)
Rule 4801	Sulfur Compounds (12/17/92)
CH&S Code, Section 41700	

III. PROJECT LOCATION

KRCC is located in the center of the north ½ of Section 32, Township 28 South, Range 28 East in the Kern River Oil Field, within the central Kern County oil fields. There are no schools within 1000 feet of the project site.

IV. PROCESS DESCRIPTION

No additional physical construction is needed to facilitate operation of Units 1 and 2 without recovery exhaust heat. Each combustion turbine

generator (CTG) discharges to a heat recovery steam generator (HRSG) through a transition section that is equipped with a gas-tight bypass stack. In order to operate without recovering exhaust heat, the bypass stack damper would be repositioned to block off the HRSG, directing the CTG exhaust through the bypass stack to the atmosphere. The dry-low NOx (DLN) combustor operation may be unaffected by the position of the bypass damper so routing the exhaust through the bypass stack is not expected to impact the pollution created. As a result, no changes in permitted emissions limitations are requested; only additional limitations will be added. Emissions monitoring will take place at the transition section. The HRSG stack configuration is shown in **Attachment II**.

The current KRCC permit allows 24-hr a day operation. While KRCC does not propose to specifically restrict its operating schedule in the future, it is anticipated that Units 1 and 2 will operate substantially fewer hours than historical operations. At the present time, KRCC envisions that these units would operate without recovering exhaust heat in response to peak power demands occurring during the normal work week, Monday through Friday, and would not operate on weekends or holidays. Instead of a 24-hr operation, it is more likely that these two units would ultimately operate for no more than a 6 to 8 hr/day without recovering exhaust heat. KRCC also anticipates that the units will operate more frequently in the summer peak power period, April through October, and less during the off-peak period of the year, November through March. When operating without recovering exhaust heat, the number of startups and shutdowns for the affected CTG will likely be higher due to power demands.

Although actual startups and shutdown emissions may be higher than during current operations (due to more frequent startups and shutdowns), no change in permitted maximum hourly, daily or annual emissions is proposed or required, with the exception of adding a 1-hr CO emission limit to validate short-term modeling.

V. EQUIPMENT LISTING

Pre-Project Equipment Description:

PTO S-88-1-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #1)

PTO S-88-2-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #2)

PTO S-88-3-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3)

PTO S-88-4-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4)

Proposed Modifications:

ATC S-88-1-14: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #1), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

ATC S-88-2-14: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #2), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

ATC S-88-3-14: REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

ATC S-88-4-14: REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

Post Project Equipment Description:

PTO S-88-1-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #1) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #1)

PTO S-88-2-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX

NOX COMBUSTORS (KRCC UNIT #2) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #2)

PTO S-88-3-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #3)

PTO S-88-4-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #4)

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

The combustion turbines utilize GE's proprietary dry low NOx (DLN) technology. The DLN technology employs lean premixed combustion to stage combustion, resulting in reduced NOx formation. The DLN system installed at KRCC is currently limited to 16.4 ppmv NOx and 25 ppmv CO, dry at 15% oxygen. No post-combustion emission control for either NO_x or CO is required with this system.

VII. CALCULATIONS

A. Assumptions:

Operating schedule:24 hr/day, 365 day/yr

The changes requested to units '-3 and '-4 are revisions to a compliance procedure and therefore are not NSR modifications as defined by Rule 2201 (please see Compliance Section). Therefore calculations for units '-3 and '-4 are not required. Only PE2 will be calculated for these units.

B. Emission Factors:

Emission factors are identical for both S-88-1 and S-88-2. The maximum air contaminant mass emission rates (lb/hr), concentrations (ppmvd @ 15% O_2), and start-up and shut-down emissions rates for the CTGs are summarized below. Pre-project emissions factors are based on current permit conditions (PTOs S-88-1-12, '-2-12):

Pre-Project
Normal Operation

	NO_X	CO	VOC	PM_{10}	SO_X
Mass Emission Rates (per turbine, lb/hr)	79.7 (1-hr avg) 67.9 (3-hr avg)	44 (3-hr avg)	12	5.0	0.9
ppmvd @ 15% O_2 limits	16.4 (3-hr avg)	25 (3-hr avg)	--	--	--

Startup and Shutdown

	NO_X	CO	VOC	PM_{10}	SO_X
Mass Emission Rates (per turbine, lb/hr)	140 (2-hr avg)	140 (2-hr avg)	12	5.0	0.9

Post-Project
Normal Operation

	NO_X	CO	VOC	PM_{10}	SO_X
Mass Emission Rates (per turbine, lb/hr)	79.7 (1-hr avg) 67.9 (3-hr avg)	44 (3-hr avg)	12	5.0	0.9
ppmvd @ 15% O_2 limits	16.4 (3-hr avg)	25 (3-hr avg)	--	--	--

Startup and Shutdown

	NO_X	CO	VOC	PM_{10}	SO_X
Mass Emission Rates (per turbine, lb/hr)	140 (2-hr avg)	140 (2 -hr avg) 200 (1-hr avg)	12	5.0	0.9

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Maximum Hourly Emissions, lb/hr

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1-12	140[3]	140[3]	12[1]	5.0[1]	0.9[1]
S-88-2-12	140[3]	140[3]	12[1]	5.0[1]	0.9[1]
S-88-3-12	140[4]	200	12[2]	5.0[2]	0.9[2]
S-88-4-12	140[4]	200	12[2]	5.0[2]	0.9[2]
Total	560	560	48	20	3.6

[1] Based on current Permit to Operate (Condition # 38 PTO S-88-1-12, '-2-12)
[2] Based on current Permit to Operate (Condition # 39 PTO S-88-3-12, '-4-12)
[3] Maximum emissions for startup only (Condition #41 PTO S-88-1-12, '-2-12). Maximum emissions during normal operation are listed in the table in Section VII B., above.
[4] Maximum emissions for startup only (Condition #42 PTO S-88-3-12, '-4-12). Maximum emissions during normal operation are listed in the table in Section VII B., above.

Maximum Daily Emissions, lb/day (PE1)

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1-12	1629.6[2]	1056[1,2]	288[1]	120[1]	21.6[1]
S-88-2-12	1629.6[2]	1056[1,2]	288[1]	120[1]	21.6[1]
S-88-3-12	1629.6[3]	1056[3,4]	288[3]	120[3]	21.6[3]
S-88-4-12	1629.6[3]	1056[3,4]	288[3]	120[3]	21.6[3]
Total	6518.4	4224	1152	480	86.4

[1] Current Permit to Operate emission limit (Condition #39 PTO S-88-1-12, '-2-12 includes startup and shutdown emissions)
[2] Maximum hourly emissions during normal operation (Conditions #s 38, 40 PTO S-88-1-12, '-2-1, 3-hr average), lb/hr x 24 hr/day
[3] Current Permit to Operate emission limit (Condition #40 PTO S-88-3-12, '-4-12 includes startup and shutdown emissions)
[4] Maximum hourly emissions during normal operation (Conditions #s 39, 41 PTO S-88-3-12, '-4-12, 3-hr average), lb/hr x 24 hr/day

Maximum Annual Emissions, lb/yr[1]

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1-12	594804	385440	105120	43800	7884
S-88-2-12	594804	385440	105120	43800	7884
S-88-3-12	594804	385440	105120	43800	7884
S-88-4-12	594804	385440	105120	43800	7884
Total	2,379,216	1,541,760	420,480	175,200	31,536

[1] Maximum daily emissions lb/day x 365 day/yr

2. Post Project Potential to Emit (PE2)

Maximum Hourly Emissions, lb/hr[1]

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1-14	140[2]	200[3]	12[1]	5.0[1]	0.9[1]
S-88-2-14	140[2]	200[3]	12[1]	5.0[1]	0.9[1]
S-88-3-14	140	200	12	5.0	0.9
S-88-3-14	140	200	12	5.0	0.9
Total	560	800	48	20	3.6

[1] Based on current Permit to Operate (Condition # 38 PTO S-88-1-12, '-2-12)
[2] Maximum emissions for startup only (Condition #41 PTO S-88-1-12, '-2-12). Maximum emissions during normal operation are listed in the table in Section VII B., above.
[3]. Proposed 1-hr average proposed by applicant

Maximum Daily Emissions, lb/day (PE2)

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1-14	1629.6[2]	1056[1,2]	288[1]	120[1]	21.6[1]
S-88-2-14	1629.6[2]	1056[1,2]	288[1]	120[1]	21.6[1]
S-88-3-14	1629.6	1056	288	120	21.6
S-88-4-14	1629.6	1056	288	120	21.6
Total	6518.4	4224	1152	480	86.4

[1] Current Permit to Operate emission limit (Condition #39 PTO S-88-1-12, '-2-1 includes startup and shutdown emissions)
[2] Maximum hourly emissions during normal operation (Condition #s 38, 40 PTO S-88-1-12, '-2-1, 3-hr average), lb/hr x 24 hr/day

Maximum Annual Emissions, lb/yr[1]

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1-14	594804	385440	105120	43800	7884
S-88-2-14	594804	385440	105120	43800	7884
S-88-3-14	594804	385440	105120	43800	7884
S-88-4-14	594804	385440	105120	43800	7884
Total	2,379,216	1,541,760	420,480	175,200	31,536

[1] Maximum daily emissions, lb/day x 365 day/yr

The emissions profiles are included in **Attachment III.**

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. KRCC is part of Chevron's heavy oil central stationary source consisting of facility ID's S-0088, S-

0511, S-1127, S-1131, and S-1551 because the units are permitted to be used in the production of oil and are owned by Chevron. This source is a major source for all pollutants. The pre-project Stationary Source Potential to Emit was obtained using the District's SSPE calculator which does not include banked ERCs.

Pre-Project Stationary Source Potential To Emit (SSPE1)

	NO_X	CO	VOC	PM_{10}	SO_X
SSPE1*	6553747	4703270	4975497	1505128	7302953

*not including ERCs

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

There is no change in the contribution of permit units to the SSPE. Therefore, SSPE2 equals SSPE1 and is as follows:

Post-Project Stationary Source Potential To Emit (SSPE2)

	NO_X	CO	VOC	PM_{10}	SO_X
SSPE2*	6553747	4703270	4975497	1505128	7302953

* not including ERCs

5. Major Source Determination

Pursuant to Section 3.25 of District Rule 2201, a major source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.25.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
Pre-Project, SSPE1	6553747	4703270	4975497	1505128	7302953
Post-Project, SSPE2	6553747	4703270	4975497	1505128	7302953
Major Source Thresholds	50000	200000	50000	140000	140000
Major Source?	Yes	Yes	Yes	Yes	Yes

This source is an existing Major Source for all pollutants. No changes in criteria pollutants are proposed or expected as a result of this project.

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

NO_x, VOC, PM10 and SOx

Pursuant to Rule 2201, subsection 3.7.1.3, baseline emissions (BE) are equal to the pre-project potential to emit (PE1) for fully offset emission units and for pollutants for which a source is not a major stationary source. Except for CO, the KRCC emission units were fully offset at the time they were originally permitted under the provisions of the then existing Kern County APCD New Source Review Rule 210.1. The reductions used to provide the offsets were made prior to adoption of a formal banking rule, and thus were tracked in the form of a cumulative net emissions change for the stationary source. These reductions were applied to the KRCC project to offset the emissions increases in NO_X, VOC, and SO_X. PM10 emissions were offset with a combination of NO_x reductions at a 13.3:1 (NO_x for PM10) offset ratio, and SO_X reductions at a 3.3:1 (SO_X for PM10) ratio. Therefore these units qualify as Fully Offset for NO_x, VOC, PM10 and SO_X as the new emissions were fully mitigated under the New Source Review rule.

Therefore, BE = PE1 for NOx, VOC, PM_{10} and SO_2

CO

For CO emissions, the emission units are not Highly Utilized, Fully Offset, nor Clean; therefore, BE=HAE.

The baseline period is the 2-year period preceding submission of the complete application, July 19, 2005. For this project, the baseline period is July 19, 2003 to July 19, 2005.

For this project historical actual emissions during the baseline period were obtained from continuous monitoring records available from the facility

continuous monitoring system (CEMs). The data are included in the project file (email dated August 11, 2005).

Baseline Emissions (lb/yr)

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1	0	132,370	0	0	0
S-88-2	0	49,485	0	0	0

7. Contemporaneous Increase in Permitted Emissions (CIPE) & Title I Modification

Rule 2201 defines a Major Modification by referencing 40CFR51.165. A Major Modification as defined in 40CFR51.165 (nonattainment plans and permitting) occurs if the Post-Project Stationary Source Potential to Emit (SSPE2) exceeds the Major Source Thresholds (as defined in Rule 2201) and the net emissions increase, is equal to or greater than one or more of the following threshold values:

For an existing Major Source:

Major Modification CIPE Thresholds	
Pollutant	CIPE (lb/year)
NO_X	50,000
VOC	50,000
SO_X	30,000
PM_{10}	80,000

Calculating the CIPE is required for existing Major Sources to determine if the current project has emissions increases above Title I Modification thresholds or is required for existing non-Major Sources becoming Major Sources, to determine if the current project has emissions increases above Major Source thresholds.

Section 3.39 of District Rule 2201 defines a Title I Modification as "the same as a Major Modification." District Policy APR 1125 *(currently in draft form)* defines a Major Modification as "*any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.*"

As discussed in Section VII.C.5 above, the facility is a Major Source for NO_X, VOCs, PM10, and SOx however, the project must "result in" a significant increase in emissions in order to trigger a Title I Modification. According to the District's database the facility has provided offsets for NO_X, VOCs, PM10, and SOx for the modified emissions units within this project; therefore these units qualify as Fully Offset. Also, as seen in Sections VII.C.1 and VII.C.2, the modified emissions units within this project are not proposing an increase in emissions.

Therefore, the project does not "result in" a significant increase and according to District Policy, CIPE calculations are not necessary and the project does not constitute a Title I Modification.

The KRCC facility is located in a CO attainment area, and since 40CFR51.165 addresses Major Modifications in nonattainment areas only, this project is not a Major Modification for CO pursuant to 40CFR51.165.

(It is noted that EPA has not delegated Federal Prevention of Significant Deterioration (PSD) permitting requirements under 40CFR52.21 to the District. KRCC has submitted a notification to EPA that the project will not be subject to PSD review.)

VIII. COMPLIANCE

Rule 1080 *Stack Monitoring* (12/17/92)

This rule allows the APCO to request the installation and use of continuous emissions monitors (CEMs), and specifies performance standards for the equipment and administrative reporting, recordkeeping and violation and equipment breakdown notification requirements. CEMs sampling ports exist both in the transition section and in the HRSG exhaust. However, the CTG bypass stack exhaust piping has no EPA method compliant stack sampling capability at the bypass stack. The facility is proposing to compare (RATA test) transition section CEMS concentrations with EPA method compliant source test measurements taken at the HRSG exhaust. If the source test HRSG exhaust and transition CEMs readings agree (within an acceptable range as allowed by RATA requirements) HRSG exhaust concentrations will be considered equivalent to the transition section concentrations. Annual source testing will be done at the HRSG exhaust for verification of compliance for both simple cycle and combined cycle modes. For ongoing compliance, CEMS in the transition section will be used to verify compliance for simple cycle operation and CEMS in the HRSG exhaust will be used to verify compliance for combined cycle operation. Compliance with the rule is expected.

Rule 1081 *Source Sampling* (12/16/93)

This rule requires adequate and safe facilities for use in sampling to determine compliance and specifies methods and procedures for source testing, sample collection and compliance determination. Conditions are included on the ATCs which will ensure compliance with the requirements of this rule for both simple and combined cycle operation. Compliance is expected.

Rule 2201 *New and Modified Stationary Source Review* (12/19/02)

This rule applies to all new stationary sources and all modifications to existing stationary sources, which are subject to District permitting requirements. This rule defines modification as an action including at least one of the following items:

3.26.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

3.26.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. Routine replacement shall not be considered to be a structural change.

3.26.1.3 An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.

3.26.1.4 Addition of any new emissions unit which is subject to District permitting requirements.

3.26.1.5 A change in a permit term or condition proposed by an applicant to obtain an exemption from an applicable requirement to which the source would otherwise be subject.

S-88-3 and '-4
Revision of Condition # 37 (ATCs S-88-3-14 and '-4-14) to indicate that permanent stack sampling provisions pursuant to District Rule 1081 will pertain only to the HRSG stack (not to "each exhaust stack" as required by condition #36 of PTOs S-88-3-12 and '-4-12) for both simple and combined cycle operations is a compliance procedural change only with no change in the method of operation nor physical modifications to the system. The requested change does not trigger any of the above requirements for a New Source Review (NSR) modification pursuant to Rule 2201, "New and Modified Stationary Source Review Rule", Section 3.25.1.

Therefore, Rule 2201 does not apply to the proposed modifications to units S-88-3 and S-88-4. Best Available Control Technology (BACT) review, offsets, Title I modification, and public noticing are not applicable to Units #3 and #4.

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or

d. Any new or modified emissions unit, in a stationary source project, which results in a Title I Modification.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

As discussed in Section I above, there are no new emissions units associated with this project; therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

It is also noted that allowing operation without recovering exhaust heat does not change the class or category of source since these units will retain the physical and operational ability to operate in cogeneration mode.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

AIPE = PE2 – HAPE

Where,
AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's Potential to Emit prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 =The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

Since there is no proposed change to daily emission factors listed in Section VII. B, above, EF2 = EF1. Therefore,

HAPE = PE1

The HAPE is identical for both S-88-1 and S-88-2 and is listed in the table below:

Historically Adjusted Potential to Emit (HAPE), lb/day

Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-88-1	1629.6	1056	288	120	21.6
S-88-2	1629.6	1056	288	120	21.6

AIPE = PE2 – HAPE

For this project, there is no change in emission factor or potential to emit. Therefore the AIPE is zero. Therefore, BACT is not triggered.

d. Title I Modification

As discussed in Section VII.C.7 above, this project does not constitute a Title I Modification; therefore BACT is not triggered.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post-project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 or Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Post Project SSPE (SSPE2)	6553747	7302953	1505128	4703270	4975497
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets calculations required?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_X, SOx, PM10, CO, and VOC; therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE)

The facility is proposing to modify two emissions units (Units '-1 and '-2); and Baseline Emissions for the two units are the pre-project potential to emit for NOx, VOCs, PM10, and SOx. Also, there are no increases in cargo carrier emissions; therefore offsets for each unit can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

<u>NOx</u>
PE2 (NO_X) = 594,804 lb/year
BE (NO_X) = 594,804 lb/year
ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1 (worst case), the amount of NO_X ERCs that would need to be withdrawn is:

Offsets Required (lb/year) = ([594,804 – 594,804 + 0) x 1.5
= 0 x 1.5
= 0 lb NO_X/year

<u>VOCs</u>
PE2 (VOCs) = 105,120 lb/year
BE (VOCs) = 105,120 lb/year
ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1 (worst case), the amount of NO_X ERCs that would need to be withdrawn is:

Offsets Required (lb/year) = ([105,120 – 105,120 + 0) x 1.5
= 0 x 1.5
= 0 lb VOCs/year

PM10
PE2 (PM10) = 43,800 lb/year
BE (PM10) = 43,800 lb/year
ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1 (worst case), the amount of NO_X ERCs that would need to be withdrawn is:

Offsets Required (lb/year) = ([43,800 – 43,800 + 0) x 1.5
= 0 x 1.5
= 0 lb PM10/year

SOx
PE2 (SO_X) = 7884 lb/year
BE (SO_X) = 7884 lb/year
ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1 (worst case), the amount of NO_X ERCs that would need to be withdrawn is:
Offsets Required (lb/year) = ([7884 – 7884 + 0) x 1.5
= 0 x 1.5
= 0 lb SO_X/year

As demonstrated in the calculation above, the amount of offsets is zero for NOx, VOCs, PM10, and SOx; therefore, offsets will not be required for these pollutants.

CO

For CO, baseline emissions were obtained from continuous emissions monitoring records available from the facility continuous emissions monitoring system (CEMS). These data are included in the project file. The quantity of offsets required for CO are calculated below.

	CO
Post-project Potential to Emit (PE2) (S-88-1 & S-88-2)	770,880
Baseline Emissions (S-88-1 & S-88-2)	181,855
Required CO Offsets	589,025

District-performed modeling indicates that post-project CO emissions will not cause or contribute to a violation of the applicable CO ambient air quality standards. Pursuant to Section 4.6.1 of Rule 2201, the project is therefore exempt from CO emission offset requirements. See **Attachment IV** for summary of modeling results.

(Note: A 1-hour average limit of 200 lb/hr per turbine (estimate to be the worst case) will be added to the permits. The existing 3-hour average for normal operation of 44 lb/hr for CO will continue to be included on the permits as well as the 2-hour average of 140 lb/hr for startups.)

C. Public Notification

1. Applicability

Public noticing is required for:

a. Any new Major Source, which is a new facility that is also a Major Source,
b. Title I Modifications,
c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
d. Any project which results in the offset thresholds being surpassed, and/or
e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Title I Modification

As demonstrated in VII.C.7, this project does not constitute a Title I Modification; therefore, public noticing for Title I Modification purposes is not required.

c. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger

public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

d. Offset Threshold

Public notification is required if the Pre-Project Stationary Source Potential to Emit (SSPE1) is increased from a level below the offset threshold to a level exceeding the emissions offset threshold, for any pollutant.

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	6553747	6553747	20,000 lb/year	No
SO_X	7302953	7302953	54,750 lb/year	No
PM_{10}	1505128	1505128	29,200 lb/year	No
CO	4703270	4703270	200,000 lb/year	No
VOC	4975497	4975497	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	6553747	6553747	0	20,000 lb/year	No
SO_x	7302953	7302953	0	20,000 lb/year	No
PM_{10}	1505128	1505128	0	20,000 lb/year	No
CO	4703270	4703270	0	20,000 lb/year	No
VOC	4975497	4975497	0	20,000 lb/year	No

2. Public Notice Action

As discussed above, this project will not result in emissions, for any criteria pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.17 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.17.1 and 3.17.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

The existing PTO contains explicit DELs, validated by the use of continuous emission monitors for NO_x and CO, and fuel use monitoring for SOx. These same conditions will be carried onto the ATCs issued with this project. No further conditions are necessary.

E. Compliance Assurance

1. Source Testing

The gas turbine engines are required to be source tested annually for NO_x and CO, and fuel sulfur content per Rule 2201 and Rule 4703, and once per 5-year permit term for PM10. No change in source testing will occur with this project as there is no change in emission control systems or change in permitted emission rates.

2. Monitoring

NO_x, CO, and CO_2 CEMs in the transition section and HSRG exhaust stack will be used for verification of ongoing compliance during both simple and combined cycle operation. This monitoring satisfies Rule 2201 and Rule 4703 requirements. No additional monitoring is proposed or required.

3. Recordkeeping

KRCC is required to maintain records of emissions, source test results, CEM operations, etc. No changes are proposed or required.

4. Reporting

KRCC is required to report deviations, CEM breakdowns, equipment breakdowns, and other malfunctions. No changes are proposed or required.

Rule 2520 *Federally Mandated Operating Permits (06/21/2001)*

KRCC has received their initial Title V Permit and is subject to this rule. This project qualifies as a minor modification to the Title V permit.

KRCC has requested to have the ATC issued with a Certificate of Conformity (COC), and a copy of KRCC Compliance Certification is provided in **Attachment V.** A 45-day EPA project review period is required. Compliance with this rule is expected.

Rule 2540 *Acid Rain Program (11/13/97)*

The existing units are exempt (are not "affected units") from the acid rain program pursuant to 40 CFR 72.6 (b)(1) because they are considered "simple combustion turbines that commenced commercial operation before November 15, 1990. " The definition of "simple combustion turbine" is provided in 40 CFR 72.2 as follows:

> *"Simple combustion turbine* means a unit that is a rotary engine driven by a gas under pressure that is created by the combustion of any fuel. This term includes combined cycle units without auxiliary firing. This term excludes combined cycle units with auxiliary firing, unless the unit did not use the auxiliary firing from 1985 through 1987 and does not use auxiliary firing at any time after November 15, 1990."

Since "simple combustion turbine" definition includes the combined cycle units without auxiliary firing, KRCC is exempt under the provisions of 40 CFR 72.6 (b) (1). The units will continue to be "simple combustion turbines" in both cogeneration and simple cycle modes and KRCC will continue to be exempt from Rule 2540. Compliance is expected.

Rule 4001 *NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines (04/14/99)*

The turbines are subject to Subpart GG, which limits oxides of nitrogen and sulfur from stationary gas turbines. The current operating permits include NOx and SOx limits that meet the standards of Subpart GG. These operating permit limits will not be changed.

Also, reporting and notification requirements specified in Subpart A are also contained in the current operating permits. Compliance is expected.

Rule 4101 *Visible Emissions (12/17/92)*

The current and proposed permits limit visible emissions equal to or greater than 20% opacity (No. 1 Ringelmann) to periods less than three minutes in any one hour period (see Condition # 22 PTO S-88-0-1). Continued compliance is expected.

Rule 4102 *Nuisance (12/17/92)*

The current facility has not generated any nuisance complaints. Operation of the turbines without recovering exhaust heat is not expected to result in any nuisance complaints. Continued compliance is expected.

A. California Health & Safety Code 41700

Pursuant to District's Risk Management Policy APR 1905, for any sources with increases in hazardous air pollutant (HAP) emissions, the health risks resulting from such projects must be evaluated. The health risk assessment (HRA) process begins with the calculation of a "prioritization score" using CAPCOA Facility Prioritization Guidelines. If the facility-wide prioritization score is ≤ 1.0, then the project is approvable without further analysis of the health risks.

There is no change in HAP emissions with this project. However, because the bypass stack has different dimensions that the HRSG stack, and since the exhaust gas temperature will be different, a revised HRA is necessary. The prioritization score was calculated to determine if further risk screening was necessary. This project has a prioritization score of 0.44; therefore, no further screening is required. See **Attachment VI** for summary of results.

B. Discussion of T-BACT

Since the prioritization score is less than 1, T-BACT is not required.

Rule 4201 *Particulate Matter Concentration (12/17/92)*

Rule 4201 limits PM emissions from any source operation to less than 0.1 gr/dscf. The current operating permit limits PM emissions to less than 0.0072 gr/scf at 12% CO2 for each turbine (Condition #34 PTOs S-88-1-12, '-2-12). The proposed modifications will not alter this limit and continued compliance is expected.

Rule 4703 *Stationary Gas Turbines (04/25/02)*

This rule limits NOx and CO emissions from stationary gas turbines. The KRCC turbines are currently in compliance with the Tier I emission limits and monitoring requirements of this rule. Future requirements include lowering of the NO_x limit to 3 ppmv @ 15% O_2 per the Enhanced Option. KRCC has submitted a compliance plan

stating that they will comply with the Enhanced Option by 2008 or at the first overhaul, as required by the rule. Compliance is expected.

Rule 4801 *Sulfur Compounds (12/17/92)*

Rule 4801 limits sulfur compound emission to 0.2% (2,000 ppm) dry volume. SOx emissions from the turbines are based on combusting natural gas with a fuel sulfur content limited by the operating permit at 0.3 gr/100 scf (Condition #34 PTOs S-88-1-12, '-2-12). Use of this fuel S content results in a calculated SOx emission concentration much less than the 2,000 ppm rule limit (approximately 0.2 ppmvd). Continued compliance is expected.

IX. RECOMMENDATION

Issue preliminary decision to approve project and publish preliminary decision. After 45-day EPA comment period, issue ATCs S-0088-1-14, '-2-14, '-3-14, and '-4-14. See **Attachment VII** for the draft ATC conditions.

X. BILLING INFORMATION

Application filing fees have been received.

No change in annual fees result with this project.

Permit Number	Fee Schedule	Fee Rating	Annual Fee
S-88-1-12	3020-8B-A	75,000 kW	$ 8757
S-88-2-12	3020-8B-A	75,000 kW	$ 8757
S-88-3-12	3020-8B-A	75,000 kW	$ 8757
S-88-4-12	3020-8B-A	75,000 kW	$ 8757

Attachments

I: Current PTO(s)
II: HRSG Stack Configuration
III: Emissions Profiles
IV: CO Modelling
V: Compliance Certification Form
VI: HRA
VII: Draft ATCs

Attachment I

Current Permits to Operate

San Joaquin Valley
Air Pollution Control District

FACILITY: S-88-0-1 **EXPIRATION DATE:** 08/31/2004

FACILITY-WIDE REQUIREMENTS

1. The owner or operator shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reportingperiod was necessary. [District Rule 1100, 6.1; County Rules 110 (Fresno, Stanislaus, San Joaquin); 109 (Merced); 113 (Madera); and 111 (Kern, Tulare, Kings)] Federally Enforceable Through Title V Permit

2. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0; County Rules 110 (Fresno, Stanislaus, San Joaquin); 109 (Merced); 113 (Madera); and 111 (Kern, Tulare, Kings)] Federally Enforceable Through Title V Permit

3. The owner or operator of any stationary source operation that emits more than 25 tons per year of nitrogen oxides or reactive organic compounds, shall provide the District annually with a written statement in such form and at such time as the District prescribes, showing actual emissions of nitrogen oxides and reactive organic compounds from that source. [District Rule 1160, 5.0] Federally Enforceable Through Title V Permit

4. Any person building, altering or replacing any operation, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants, shall first obtain an Authority to Construct (ATC) from the District unless exempted by District Rule 2020 (7/21/94). [District Rule 2010, 3.0 and 4.0; 2020; and County Rule 201 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

5. The permittee must comply with all conditions of the permit including permit revisions originated by the District. All terms and conditions of a permit that are required pursuant to the Clean Air Act (CAA), including provisions to limit potential to emit, are enforceable by the EPA and Citizens under the CAA. Any permit noncompliance constitutes a violation of the CAA and the District Rules and Regulations, and is grounds for enforcement action, for permit termination, revocation, reopening and reissuance, or modification; or for denial of a permit renewal application. [District Rules 2070, 7.0; 2080; and 2520, 9.9.1 and 9.13.1] Federally Enforceable Through Title V Permit

6. A Permit to Operate or an Authority to Construct shall not be transferred unless a new application is filed with and approved by the District. [District Rule 2031] Federally Enforceable Through Title V Permit

7. Every application for a permit required under Rule 2010 (12/17/92) (Permits Required) shall be filed in a manner and form prescribed by the District. [District Rule 2040] Federally Enforceable Through Title V Permit

8. The operator shall maintain records of required monitoring that include: 1) the date, place, and time of sampling or measurement; 2) the date(s) analyses were performed; 3) the company or entity that performed the analysis; 4) the analytical techniques or methods used; 5) the results of such analysis; and 6) the operating conditions at the time of sampling or measurement. [District Rule 2520, 9.5.1] Federally Enforceable Through Title V Permit

9. The operator shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, or report. Support information includes copies of all reports required by the permit and, for continuous monitoring instrumentation, all calibration and maintenance records and all original strip-chart recordings. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

10. The operator shall submit reports of any required monitoring at least every six months unless a different frequency is required by an applicable requirement. All instances of deviations from permit requirements must be clearly identified in such reports. [District Rule 2520, 9.6.1] Federally Enforceable Through Title V Permit

11. Deviations from permit conditions must be promptly reported, including deviations attributable to upset conditions, as defined in the permit. For the purpose of this condition, promptly means as soon as reasonably possible, but no later than 10 days after detection. The report shall include the probable cause of such deviations, and any corrective actions or preventive measures taken. All required reports must be certified by a responsible official consistent with section 10.0 of District Rule 2520(6/15/95) [District Rules 2520, 9.6.2 and 1100, 7.0] Federally Enforceable Through Title V Permit

12. If for any reason a permit requirement or condition is being challenged for its constitutionality or validity by a court of competent jurisdiction, the outcome of such challenge shall not affect or invalidate the remainder of the conditions or requirements in that permit .. [District Rule 2520, 9.8] Federally Enforceable Through Title V Permit

13. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. [District Rule 2520, 9.9.2] Federally Enforceable Through Title V Permit

14. The permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 2520, 9.9.3] Federally Enforceable Through Title V Permit

15. The permit does not convey any property rights of any sort, or any exclusive privilege. [District Rule 2520, 9.9.4] Federally Enforceable Through Title V Permit

16. The Permittee shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliancewith the permit. Upon request, the permittee shall also furnish to the District copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to EPA along with a claim of confidentiality. [District Rule 2520, 9.9.5] Federally Enforceable Through Title V Permit

17. The permittee shall pay annual permit fees and other applicable fees as prescribed in Regulation III of the District Rules and Regulations. [District Rule 2520, 9.10] Federally Enforceable Through Title V Permit

18. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must bekept under condition of the permit. [District Rule 2520, 9.14.2.1] Federally Enforceable Through Title V Permit

19. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 2520, 9.14.2.2] Federally Enforceable Through Title V Permit

20. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit. [District Rule 2520, 9.14.2.3] Federally Enforceable Through Title V Permit

21. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. [District Rule 2520, 9.14.2.4] Federally Enforceable Through Title V Permit

22. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

23. No person shall supply, sell, solicit or apply any architectural coating, except specialty coatings, that contains more than 250 grams of VOC per liter of coating (less water and exempt compounds, and excluding any colorant added to tint bases), or manufacture, blend, or repackage such coating with more than 250 grams of VOC per liter (less water and exempt compounds, and excluding any colorant added to tint bases) for use within the District. [District Rule 4601, 5.1] Federally Enforceable Through Title V Permit

24. No person shall apply, sell, solicit, or offer for sale any specialty architectural coating listed in the Table of Standards (District Rule 4601, Table 1 (12/17/92)), nor manufacture, blend, or repackage such coating for use within the District, whichcontains VOCs (less water and exempt compounds, excluding any colorant added to tint bases) in excess of the specified limits listed in Table 1 of Rule 4601 (12/17/92). [District Rule 4601, 5.2] Federally Enforceable Through Title V Permit

25. All VOC-containing materials shall be stored in closed containers when not in use. In use includes, but is not limited to: being accessed, filled, emptied, maintained or repaired. [District Rule 4601, 5.4] Federally Enforceable Through Title V Permit

26. A person shall not use VOCs for the cleanup of spray equipment unless equipment for collection of the cleaning compounds and minimizing its evaporation to the atmosphere is used. [District Rule 4601, 5.5] Federally Enforceable Through Title V Permit

27. The permittee shall comply with all the Labeling and Test Methods requirements outlined in Rule 4601 sections 6.1 and 6.2 (12/17/92). [District Rule 4601, 6.1 and 6.2] Federally Enforceable Through Title V Permit

28. With each report or document submitted under a permit requirement or a request for information by the District or EPA, the permittee shall include a certification of truth, accuracy, and completeness by a responsible official [District Rule 2520, 9.14.1and 10.0] Federally Enforceable Through Title V Permit

29. If the permittee performs maintenance on, or services, repairs, or disposes of appliances, the permittee shall comply with the standards for Recycling and Emissions Reduction pursuant to 40 CFR Part 82, Subpart F. [40 CFR 82 Subpart F] Federally Enforceable Through Title V Permit

30. If the permittee performs service on motor vehicles when this service involves the ozone-depleting refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the standards for Servicing of Motor Vehicle Air Conditioners pursuant to all the applicable requirements as specified in 40 CFR Part 82, Subpart B. [40 CFR Part 82, Subpart B] Federally Enforceable Through Title V Permit

31. Disturbances of soil related to any construction, demolition, excavation, extraction, or water mining activities shall comply with the requirements for fugitive dust control in SJVUAPCD District Rule 8020 (4/25/96) unless specifically exempted undersection 4 of Rule 8020 (4/25/96). [District Rule 8020] Federally Enforceable Through Title V Permit

32. Outdoor handling and storage of any bulk material which emits dust shall comply with the requirements of SJVUAPCD Rule 8030 (4/25/96), unless specifically exempted under section 4 of Rule 8030 (4/25/96). [District Rule 8030] Federally Enforceable Through Title V Permit

33. Any paved road over 3 miles in length, and any unpaved roads over half a mile in length, constructed after December 10, 1993 shall use the design criteria and dust control measures of, and comply with the administrative requirements of, SJVUAPCD Rule 8060 (4/25/96) unless specifically exempted under section 4 of Rule 8060 (4/25/96). [District Rule 8060] Federally Enforceable Through Title V Permit

34. Any owner or operator of a demolition or renovation activity, as defined in 40 CFR 61.141, shall comply with the applicable inspection, notification, removal, and disposal procedures for asbestos containing materials as specified in 40 CFR 61.145 (Standard for Demolition and Renovation). [40 CFR 61 Subpart M] Federally Enforceable Through Title V Permit

35. The permittee shall submit certifications of compliance with the terms and standards contained in Title V permits, including emission limits, standards and work practices, to the District and the EPA annually (or more frequently as specified in an applicable requirement or as specified by the District). The certification shall include the identification of each permit term or condition, the compliance status, whether compliance was continuous or intermittent, the methods used for determining the compliance status, and any other facts required by the District to determine the compliance status of the source. [District Rule 2520, 9.17] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

36. The permittee shall submit an application for Title V permit renewal to the District at least six months, but not greater than 18 months, prior to the permit expiration date. [District Rule 2520, 5.2] Federally Enforceable Through Title V Permit

37. When a term is not defined in a Title V permit condition, the definition in the rule cited as the origin and authority for the condition in a Title V permit shall apply. [District Rule 2520, 9.1.1] Federally Enforceable Through Title V Permit

38. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following outdated SIP requirements: Rule 401 (Madera, Fresno, Kern, Kings, San Joaquin, Stanislaus, Tulare and Merced), Rule 110 (Fresno, Stanislaus, San Joaquin), Rule 109 (Merced), Rule 113 (Madera), Rule 111 (Kern, Tulare, Kings), Rules 201, 202, 203, 204, 208, and 209 (Fresno, Kern, Tulare, Kings, Madera, Stanislaus, Merced, San Joaquin), Rule 410.1 (Kern), and Rule 423 (Kern, Fresno, Stanislaus, San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

39. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rules 1100, sections 6.1 and 7.0 (12/17/92); 2010, sections 3.0 and 4.0 (12/17/92); 2031 (12/17/92); 2040 (12/17/92);2070 , section 7.0 (12/17/92); 2080 (12/17/92); 4101 (12/17/92); 4601, sections 5.1, 5.2, 5.4, 5.5, 6.1, and 6.2 (12/17/92); 8020 (4/25/96); 8030 (4/25/96); 8060 (4/25/96); A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

40. The owner and operator shall submit a single Risk Management Plan (RMP) that includes the information required by 40 CFR Subpart G, Sections 68.155 through 68.185 for all covered processes. The RMP shall be submitted in a method and format to a central point as specified by EPA prior to June 21, 1999. [40 CFR 68] Federally Enforceable Through Title V Permit

41. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-1-12 **EXPIRATION DATE:** 08/31/2004

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #1)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit
2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit
3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit
4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
6. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit
7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit
8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit
9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (c)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

32. Bypass stack valve preceding each HRSG shall be designed to be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

34. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

35. Each HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

36. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

37. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

38. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

41. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, or 140 lb/hr of CO on a 2-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

43. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

44. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

45. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

47. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

48. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

49. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

50. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. Startup and shutdown of CGT, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

52. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

53. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

54. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

55. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

59. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gasses and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

61. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

65. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-2-12 **EXPIRATION DATE:** 08/31/2004

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #2)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit
2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit
3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit
4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
6. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit
7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit
8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit
9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (c)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

32. Bypass stack valve preceding each HRSG shall be designed to be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

34. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

35. Each HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

36. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

37. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

38. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

41. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, or 140 lb/hr of CO on a 2-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

43. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

44. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

45. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

47. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

48. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

49. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

50. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. Startup and shutdown of CGT, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

52. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

53. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

54. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

55. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

59. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gasses and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

61. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

65. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-3-12 **EXPIRATION DATE:** 08/31/2004

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit
2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit
3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit
4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
6. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit
7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit
8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit
9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (c)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. CGT may exhaust either through unfired 450,000 lb/hr heat recovery steam generator or through bypass stack. [District Rule 2201] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule] Federally Enforceable Through Title V Permit

34. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

36. Each exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CGT, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gasses and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-4-12 **EXPIRATION DATE:** 08/31/2004

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit
2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit
3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit
4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
6. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit
7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit
8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit
9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (c)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. CGT may exhaust either through unfired 450,000 lb/hr heat recovery steam generator or through bypass stack. [District Rule 2201] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule] Federally Enforceable Through Title V Permit

34. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

36. Each exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CGT, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gasses and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

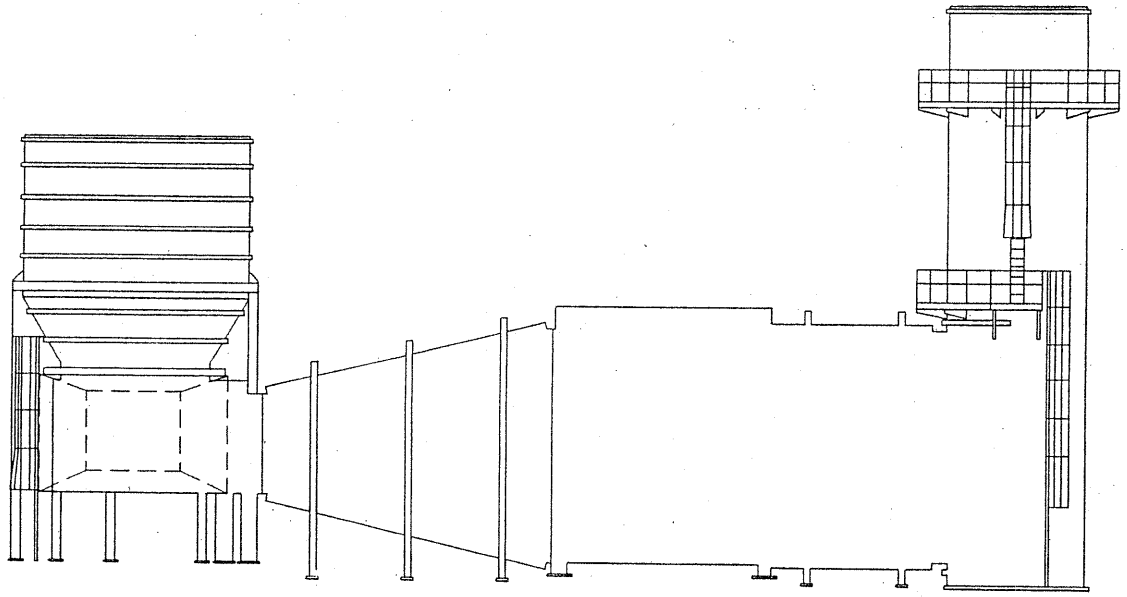
65. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

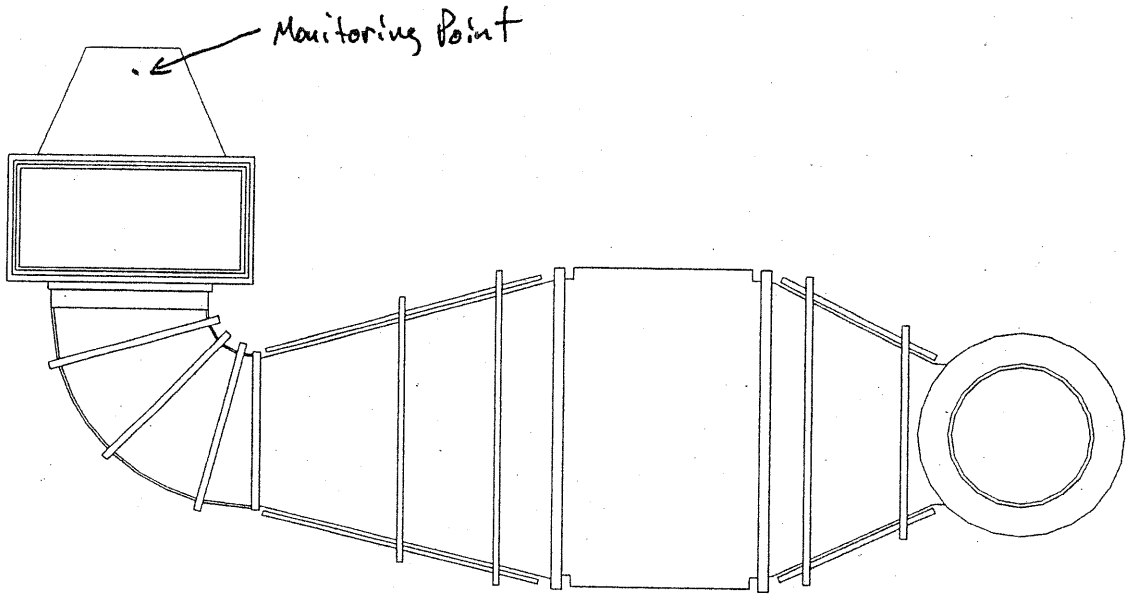
66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

Attachment II

HRSG Stack Configuration




Monitoring Point

Attachment III
Emissions Profiles

Permit #: S 88 -1 -14 Issued: / / Implemented: / /

Facility: KERN RIVER COGENERATION CO

Last Updated
07/30/05 EDGEHILR

Equipment Prebaselined: ☐ Yes ☐ No

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	594804	7884	43800	385440	105120
Daily Emis. Limit (lb/Day):	1629.6	21.6	120.0	1056.0	288.0
Quarterly Net Emissions Change (lb/Qtr) 1:	0	0	0	0	0
2:	0	0	0	0	0
3:	0	0	0	0	0
4:	0	0	0	0	0
Check if offsets are triggered but exemption applies	☐	☐	☐	☐	☐
Offset Ratio:					
Quarterly Offset Amounts (lb/Qtr) 1:					
2:					
3:					
4:					
SLC ID (PTE):					
SLC ID (DEL):					

Facility SLC Exit

Permit #: S 88 -2 -14 Issued: / / Implemented: / /

Facility: KERN RIVER COGENERATION CO

Last Updated
07/30/05 EDGEHILR

Equipment Prebaselined: ☐ Yes ☐ No

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	594804	7884	43800	385440	105120
Daily Emis. Limit (lb/Day):	1629.6	21.6	120.0	1056.0	288.0
Quarterly Net Emissions Change (lb/Qtr) 1:	0	0	0	0	0
2:	0	0	0	0	0
3:	0	0	0	0	0
4:	0	0	0	0	0
Check if offsets are triggered but exemption applies	☐	☐	☐	☐	☐
Offset Ratio:					
Quarterly Offset Amounts (lb/Qtr) 1:					
2:					
3:					
4:					
SLC ID (PTE):					
SLC ID (DEL):					

Facility SLC Exit

Permit #: S 88 -3 -14 Issued: / / Implemented: / /

Facility: KERN RIVER COGENERATION CO

Last Updated
07/30/05 EDGEHILR

Equipment Prebaselined: ☐ Yes ☐ No

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	594804	7884	43800	385440	105120
Daily Emis. Limit (lb/Day):	1629.6	21.6	120.0	1056.0	288.0
Quarterly Net Emissions Change (lb/Qtr) 1:	0	0	0	0	0
2:	0	0	0	0	0
3:	0	0	0	0	0
4:	0	0	0	0	0
Check if offsets are triggered but exemption applies	☐	☐	☐	☐	☐
Offset Ratio:					
Quarterly Offset Amounts (lb/Qtr) 1:					
2:					
3:					
4:					
SLC ID (PTE):					
SLC ID (DEL):					

Facility SLC Exit

Permit #: S 88 -4 -14 Issued: / / Implemented: / /

Facility: KERN RIVER COGENERATION CO

Last Updated
07/30/05 EDGEHILR

Equipment Prebaselined: ☐ Yes ☐ No

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	594804	7884	43800	385440	105120
Daily Emis. Limit (lb/Day):	1629.6	21.6	120.0	1056.0	288.0
Quarterly Net Emissions Change (lb/Qtr) 1:	0	0	0	0	0
2:	0	0	0	0	0
3:	0	0	0	0	0
4:	0	0	0	0	0
Check if offsets are triggered but exemption applies	☐	☐	☐	☐	☐
Offset Ratio:					
Quarterly Offset Amounts (lb/Qtr) 1:					
2:					
3:					
4:					
SLC ID (PTE):					
SLC ID (DEL):					

Facility SLC Exit

Attachment IV
CO Modelling

San Joaquin Valley Unified
Air Pollution Control District

MEMORANDUM

DATE: August 17, 2005

TO: Richard Edgehill, AQE —Permit Services

FROM: Esteban Gutierrez, AQS—Technical Services

SUBJECT: RMR and CO Modeling request for Kern River Cogeneration Co. (S-88-1-14 & -2-14) Project #1053208

As per your request, Technical Services performed CO Modeling and a RMR, for (2) NG fired Gas Turbines operating in simple cycle mode. The maximum fuel rate for the turbines used during the analysis was 1.02 MMcf/hr and 8935.2 MMcf/yr. Technical Services performed a prioritization using Ventura County emission factors for natural gas internal combustion. The units were assumed to operate 8760 hours per year. The CO emission rate used for the CO Modeling is as follows:

Pollutant	Max Hourly Emission Rate
CO (1-14)	200 lb
CO (2-14)	200 lb

The results from the RMR modeling runs and AAQA are as follows:

RMR Modeling Results

	(2) NG fired Turbines	Facility Total
Prioritization	0.44	0.96
Acute	NA	NA
Chronic	NA	NA
Cancer	NA	NA
TBACT Required	NO	NO

RMR Conclusion:

The prioritization score for the project was 0.44 @ 1066.7 meters. In accordance with the District's Risk Management Policy, no further analysis is required. Permitting may proceed without consideration of Toxic Best Available Control Technology (TBACT).

CO Modeling Results*
Values are in ug/m^3

2 – NG fired Turbines	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	N/A	X	X	X	N/A
SO_x	N/A	N/A	X	N/A	N/A
PM_{10}	X	X	X	N/A	N/A

* Results were taken from the attached PSD spreadsheet.

Analysis:

The District's review found Kern River Cogeneration's potential CO concentrations to be less than the maximum limits for the 1-hour and 8-hour averaging times for State and Federal standards.

Modeling Conclusion:

The CO modeling runs indicate that the emissions from the proposed simple cycle operating mode will not require CO offsets. Therefore, **no further modeling will be required to demonstrate that CO offsets are not required .**

NOTE: This project <u>does not</u> determine if the AAQS or EPA's level of significance will be exceeded for NOx, SOx & PM. Further modeling will be required to determine if other criteria pollutants will have an adverse impact on the State and National AAQS (as required by Public Notice).

Attachment V
Compliance Certification Form

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[ ] SIGNIFICANT PERMIT MODIFICATION
[X] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: **Kern River Cogeneration Company**	FACILITY ID: **S – 88**
1. Type of Organization:[ ] Corporation [ ] Sole Ownership [ ] Government [X] Partnership [ ] Utility	
2. Owner's Name: **Kern River Cogeneration Company**	
3. Agent to the Owner: **Neil Burgess**	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial **all** circles for confirmation):

(20) Based on information and belief formed after reasonable inquiry, the source identified in this application will continue to comply with the applicable federal requirement(s).

(20) Based on information and belief formed after reasonable inquiry, the source identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

(20) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

(20) Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Neil E Burgess
Signature of Responsible Official

6/27/05
Date

Neil E. Burgess
Name of Responsible Official (please print)

Executive Director
Title of Responsible Official (please print)

Attachment VI
HRA

San Joaquin Valley Unified
Air Pollution Control District

MEMORANDUM

DATE: August 17, 2005

TO: Richard Edgehill, AQE —Permit Services

FROM: Esteban Gutierrez, AQS—Technical Services

SUBJECT: RMR and CO Modeling request for Kern River Cogeneration Co. (S-88-1-14 & -2-14) Project #1053208

As per your request, Technical Services performed CO Modeling and a RMR, for (2) NG fired Gas Turbines operating in simple cycle mode. The maximum fuel rate for the turbines used during the analysis was 1.02 MMcf/hr and 8935.2 MMcf/yr. Technical Services performed a prioritization using Ventura County emission factors for natural gas internal combustion. The units were assumed to operate 8760 hours per year. The CO emission rate used for the CO Modeling is as follows:

Pollutant	Max Hourly Emission Rate
CO (1-14)	200 lb
CO (2-14)	200 lb

The results from the RMR modeling runs and AAQA are as follows:

RMR Modeling Results

	(2) NG fired Turbines	Facility Total
Prioritization	0.44	0.96
Acute	NA	NA
Chronic	NA	NA
Cancer	NA	NA
TBACT Required	NO	NO

RMR Conclusion:

The prioritization score for the project was 0.44 @ 1066.7 meters. In accordance with the District's Risk Management Policy, no further analysis is required. Permitting may proceed without consideration of Toxic Best Available Control Technology (TBACT).

CO Modeling Results*
Values are in ug/m^3

2 – NG fired Turbines	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	N/A	X	X	X	N/A
SO_x	N/A	N/A	X	N/A	N/A
PM_{10}	X	X	X	N/A	N/A

* Results were taken from the attached PSD spreadsheet.

Analysis:

The District's review found Kern River Cogeneration's potential CO concentrations to be less than the maximum limits for the 1-hour and 8-hour averaging times for State and Federal standards.

Modeling Conclusion:

The CO modeling runs indicate that the emissions from the proposed simple cycle operating mode will not require CO offsets. Therefore, **no further modeling will be required to demonstrate that CO offsets are not required .**

NOTE: This project <u>does not</u> determine if the AAQS or EPA's level of significance will be exceeded for NOx, SOx & PM. Further modeling will be required to determine if other criteria pollutants will have an adverse impact on the State and National AAQS (as required by Public Notice).

Attachment VII
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-88-1-14 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #1), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-88-1-14 : Sep 13 2005 8:42AM -- GOFFT : Joint Inspection NOT Required

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

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PERMIT NO: S-88-2-14 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #2), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

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DAVID WARNER, Director of Permit Services
S-88-2-14 : Sep 13 2005 8:43AM – GOFFT : Joint Inspection NOT Required

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

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38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

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PERMIT NO: S-88-3-14 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3): REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit

2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit

3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

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DAVID WARNER, Director of Permit Services

Southern Regional Office • 2700 M Street, Suite 275 • Bakersfield, CA 93301-2370 • (661) 326-6900 • Fax (661) 326-6985

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-88-4-14 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 **TOWNSHIP:** 28S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4) : REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit

2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit

3. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

DAVID L. CROW, Executive Director / APCO

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DAVID WARNER, Director of Permit Services
S-88-4-14 : Sep 20 2005 9:09AM – EDGEHILR : Joint Inspection NOT Required

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District,the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84- 01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84- 01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84- 01] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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APPENDIX B

REQUEST FOR EPA PSD NONAPPLICABILITY CONFIRMATION

15075
File # 708.1
Entered 6/24/05
CO

Kern River Cogeneration Company | Box 80478, Bakersfield, CA 93380 • (661) 392-2630

Neil E. Burgess, Executive Director

VIA FEDERAL EXPRESS:

June 14, 2005

KR-8895

Mr. Bob Baker
Air-3
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: **Kern River Cogeneration Company (NSR 4-4-8, SJ 84-01)**
Notice of PSD Nonapplicability Determination for Proposed Simple Cycle Operation of Any Two KRCC Turbine Units

Dear Mr. Baker:

We are writing as a follow-up to our recent conversation to notify EPA of a possible change in the method of operation of Kern River Cogeneration Company (KRCC) (NSR 4-4-8, SJ 84-01). In order to retain additional operating flexibility, KRCC would like to be able to operate any two of the four KRCC units in simple cycle mode at any given time. Although this change constitutes a potential change in the method of operation of the units, we have concluded that no combination of two units operating in simple cycle mode would trigger PSD review. Accordingly, we are seeking EPA's confirmation that this change will not be subject to a revision to the KRCC PSD permit.

Background

KRCC is a cogeneration facility located in the Kern River oilfield near Bakersfield, CA. The facility employs four (4) General Electric Frame 7EA combustion turbines (CTs) and four (4) unfired heat recovery steam generators (HRSGs) to cogenerate 300 MW (nominal rating) of electricity and 1.8 million pounds per hour of steam for enhanced oil recovery. Each CT/HRSG generates approximately ¼ of the total steam and electricity output. Each CT is equipped with Dry Low NOx (DLN) combustor technology capable of meeting the current PSD NOx limit of 16.4 ppmv at 15% O2, dry and a CO emissions limit of 25 ppmv at 15% O2, dry.

As a result of gradually declining steam demand and negotiations regarding the KRCC electricity contract, it has been determined that up to two of the four KRCC CT units may need to operate in simple cycle mode at any given time, and that all four units could possibly be operated in both simple cycle and cogeneration mode.

Description of Simple Cycle Operation for Units 3 and 4

No additional physical construction is needed to facilitate simple cycle operation. Each CT discharges to a HRSG through a transition section that is equipped with a gas-tight bypass stack. In order to operate in simple cycle, the bypass stack damper would be repositioned to block off the HRSG, directing the CT exhaust through the bypass stack to the atmosphere. Since the DLN operation is unaffected by the positioning of the bypass damper, the change to simple cycle operation will not impact the current air pollution control system that has been previously determined to represent Best Available Control Technology (BACT). As a result, during simple cycle operations we do not anticipate any change in normal CT emission rates.

The current KRCC permit is based on a continuous, 24-hr day operation. While KRCC does not propose to specifically restrict its operating schedule in the future, it is anticipated up to two units will operate in simple cycle. It is also anticipated that each unit will operate for substantially fewer hours than historical operations. At the present time, we envision that the simple cycle units would operate in response to peak power demands occurring during the normal work week, Monday through Friday, and would not operate on weekends or holidays. Instead of a 24-hr operation, it is more likely that these two units would ultimately operate for no more than a 6 to 8 hr/day. However, to be conservative, projected actual emissions have been calculated assuming the equivalent of a 24 hr/day operation, 5 days per week. We also anticipate that the units will operate more frequently in the summer peak power period, April through October, and less during the off-peak period of the year, November through March. The addition of simple cycle operation will increase the number of startups and shutdowns for the affected CT. Although emissions are higher during startups and shutdowns, KRCC will not be increasing either permitted maximum daily or maximum annual emissions.

Redirection of the CT exhaust through the existing bypass stack will also cause a substantial increase in stack gas temperature and a minor decrease in exit velocity, improving stack gas dispersion overall. These changes have a positive impact on ambient dispersion. This was demonstrated in Attachment B of our December, 2003 submittal.

Proposed Emissions Changes Are Not Significant

Since the proposed amendment constitutes a potential change in the method of operation, we have completed an evaluation of the applicability of PSD regulations. Pursuant to 40 CFR 52.21 (a) (2) (iv) (c), existing units are to calculate emissions increases based on an "actual to projected actual" applicability test. The test involves summing the difference between *projected actual emissions* and *baseline actual emissions* as defined in 40 CFR 52.21 (b) (41) and (b) (48), respectively. As specified in 40 CFR 52.21 (b) (48) (i), for an existing electric utility steam generating unit, *baseline actual emissions* is the average rate in tons per year (tpy) at which the unit actually emitted during any consecutive 24-month period within the last five years. The attached calculations demonstrate that the impact of the proposed simple cycle operation would not be considered significant under PSD regulations irrespective of which units are operated in simple cycle. Therefore an amendment to the PSD permit is not required.

- Baseline Actual Emissions

For NOx and CO, the reported baseline emissions reflect actual continuous emissions monitoring system (CEMS) data collected for the period Nov 2001 – Oct 2003. For VOC, SO2 and PM10 baseline emissions were calculated using continuously recorded fuel consumption in conjunction with emissions factors from source tests and fuel sulfur content from monthly fuel analyses over the same period. Historical testing has demonstrated that VOC emissions are below detection limits. Therefore, baseline VOC emissions are reported as negligible. Baseline emissions for Unit 3 & 4 were documented in our prior December, 2003 letter.

- Projected Actual Emissions

Projected actual emissions for NOx and CO emission during normal operation were calculated based on the average CEMS-based emission factors in lb/MMBtu observed during the baseline period and a maximum fuel consumption of 1020 MMBtu/hr (LHV.) Startup and shutdown NOx and CO emissions were based on the current startup and shutdown limit in the SJVACPD Permit to Operate of 140 lb/hr. The calculation is summarized in Table 1, below. In fact, for most of the criteria air contaminants, KRCC anticipates a decrease in emissions. Projected actual VOC, SO2 and PM10 emissions during normal operation were calculated using the source test or fuel analysis based emission factors from the baseline period and maximum fuel consumption. Since no test data are available to estimate projected actual VOC emissions during startup and shutdown, we applied the AP-42 Table 3.1-2a emission

factor for natural gas-fired combustion turbines and a conservative safety factor of 10 to account for potentially higher startup and shutdown VOC emissions.

Although KRCC anticipates that units will typically operate in simple cycle mode for no more than 500 hr/yr and in cogeneration mode for no more than 3500 hr/yr, we have conservatively based projected actual emissions on 22 hr/day, 5 days/wk, 52 wks/yr. We have assumed that each day of operation would include up to 2 startups lasting ½ hour each and 2 shutdowns lasting ½ hour each. These operating assumptions yield a conservative total of 5720 normal hr/yr of operation and 520 startup/shutdown hr/yr for each unit (for a total of 6240 hr/yr).

- PSD Applicability Summary

Detailed calculations based on the above assumptions are included in Attachment A. The results of these calculations are summarized in Table 1, below. These calculations demonstrate that the proposed operations change is not subject to PSD review.

Table 1. Summary of PSD Applicability Review

PSD Applicability Summary - Units 1 & 2, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 1 & 2, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 1 & 2, ton/yr	233.26	126.22	0.00	1.19	17.65
Net change, ton/yr	31.74	-20.84	11.14	-0.12	-1.80
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 1 & 3, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 1 & 3, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 1 & 3, ton/yr	258.22	54.51	0.00	1.20	17.74
Net change, ton/yr	6.78	50.87	11.14	-0.13	-1.89
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 1 & 4, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 1 & 4, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 1 & 4, ton/yr	239.66	58.50	0.00	1.18	17.53
Net change, ton/yr	25.34	46.88	11.14	-0.11	-1.68
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 2 & 3, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 2 & 3, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 2 & 3, ton/yr	243.61	101.09	0.00	1.20	17.84
Net change, ton/yr	21.39	4.29	11.14	-0.13	-1.99
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 2 & 4, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 2 & 4, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 2 & 4, ton/yr	225.05	105.08	0.00	1.19	17.64
Net change, ton/yr	39.95	0.30	11.14	-0.12	-1.79
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 3 & 4, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 3 & 4, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 3 & 4, ton/yr	250.01	33.37	0.00	1.20	17.72
Net change, ton/yr	14.99	72.01	11.14	-0.13	-1.87
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

Summary

Based on the foregoing analysis, we have concluded that KRCC's addition of simple cycle operating flexibility for all of the KRCC units will not be subject to PSD review. We respectfully request your written concurrence as expeditiously as possible. If you have any questions, please contact either Mervyn Soares at (661) 392-2643 or our consultant, David Stein of URS at (510) 874-3143. Thank you for your prompt consideration.

Neil Burgess/yh

DLB:yh

Attachments

xc: D. Stein – URS-Oakland (w/attachments)

ATTACHMENT A

Supporting Emissions Calculations and Historical Operating Data

PSD Applicability Summary - Units 1 & 2, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 1 & 2, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 1 & 2, ton/yr	233.26	126.22	0.00	1.19	17.65
Net change, ton/yr	31.74	-20.84	11.14	-0.12	-1.80
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 1 & 3, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 1 & 3, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 1 & 3, ton/yr	258.22	54.51	0.00	1.20	17.74
Net change, ton/yr	6.78	50.87	11.14	-0.13	-1.89
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 1 & 4, tons/yr

	NOx	CO	VOC	SO2	PM10
Projected Actual Emissions - Units 1 & 4, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 1 & 4, ton/yr	239.66	58.50	0.00	1.18	17.53
Net change, ton/yr	25.34	46.88	11.14	-0.11	-1.68
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

PSD Applicability Summary - Units 2 & 3, tons/yr

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Baseline Actual Emissions - Units 2 & 4, ton/yr	225.05	105.08	0.00	1.19	17.64
Net change, ton/yr	39.95	0.30	11.14	-0.12	-1.79
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PSD Applicability Summary - Units 3 & 4, tons/yr

	NOx	CO	VOC	SO2	PM10

Projected Actual Emissions - Units 3 & 4, ton/yr	265.00	105.38	11.14	1.07	15.85
Baseline Actual Emissions - Units 3 & 4, ton/yr	250.01	33.37	0.00	1.20	17.72
Net change, ton/yr	14.99	72.01	11.14	-0.13	-1.87
PSD significance thresholds	40	100	40	40	15
PSD Review Triggered?	No	No	No	No	No

Projected Actual Emissions (ton/yr)

	NOx	CO	VOC	SO2	PM10
Unit 1, startups & shutdowns	36.40	36.40	5.57	0.04	0.66
Unit 1, normal operation	96.10	16.29	negligible	0.49	7.26
Unit 2, startups & shutdowns	96.10	16.29	5.57	0.04	0.66
Unit 2, normal operations	36.40	36.40	negligible	0.49	7.26
Total	265.00	105.38	11.14	1.07	15.85

		Comment
Average CO Emission Factor, lb/MMBtu	0.00558	Average of Nov 01 - Oct 03
Average NOx Emission Factor, lb/MMBtu	0.0329	Average of Nov 01 - Oct 04
Projected Maximum Normal Operating Hours/Day	22	Average maximum daily hours over the year
Projected Maximum Normal Operating Hours/Year	5720	5 days/wk, 52 wk/yr
Projected Maximum Startup & Shutdown Operating Hours/Year	520	260 operating days, (2) 0.5 hr starts and (2) 0.5 hr stops per day
Projected Maximum Heat Input, MMBtu/hr	1020	Unchanged
Projected Maximum Startup & Shutdown NOx & CO Emissions, lb/hr	140	
Estimated VOC Emission Factor for Startup/Shutdown	2.10E-02	10 times EPA AP-42 Table 3.1-2a factor for gas-fired turbines

Baseline Actual Emissions

Historical Average Hourly Emission Rates (lb/hr), Nov 2001 - Oct 2003

	NOx	CO	VOC	SO2	PM10	Comment
Unit 1	29.30	9.55	negligible	0.14	2.07	CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM10
Unit 2	26.28	11.95	negligible	0.14	2.13	CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM11
Unit 3	31.54	3.55	negligible	0.14	2.10	Previous Nonapplicability letter/application
Unit 4	27.70	4.64	negligible	0.14	2.09	Previous Nonapplicability letter/application

Historical Average Daily Emission Rates (lb/day), Nov 2001 - Oct 2003

	NOx	CO	VOC	SO2	PM10	Comment
Unit 1	694.32	223.08	negligible	3.24	48.07	CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM10
Unit 2	621.16	277.64	negligible	3.28	48.65	CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM11
Unit 3	749.14	81.97	negligible	3.31	49.11	Previous Nonapplicability letter/application
Unit 4	654.75	105.68	negligible	3.24	48.01	Previous Nonapplicability letter/application

Historical Annual Average Emission Rates (ton/year), Nov 2001 - Oct 2003

	NOx	CO	VOC	SO2	PM10	Comment
Unit 1	123.94	39.82	negligible	0.59	8.77	CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM10
Unit 2	109.32	86.40	negligible	0.60	8.88	CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM11
Unit 3	134.28	14.69	negligible	0.60	8.96	Previous Nonapplicability letter/application
Unit 4	115.73	18.68	negligible	0.59	8.76	Previous Nonapplicability letter/application
Total	483.27	159.59	0.00	2.39	35.37	

Emission Factors for VOC, SO2 and PM10

			Comment
Maximum Fuel Gas Rate:	1020	MMBtu/hr (LHV)	
VOC Emission Factor:	negligible	lb/MMBtu(LHV)	based on compliance tests
Average S content:	0.06	gr/100 scf	based on monthly fuel S tests
Fuel Heat Content, avg:	1020	Btu/scf (LHV)	based on monthly fuel tests
SO2 Emission Factor:	0.000168	lb/MMBtu(LHV)	
PM Emission Factor:	0.00249	lb/MMBtu(LHV)	based on compliance tests

Unit 1 - CEMS Data

Month/Year	Day	Daily Fuel Gas in tons/day	fuel gas heat rate (mmbtu/hr) – lower heating value	Average CO2 conc. (%)	Average O2 conc. (%)	Average CO conc. uncorrected (ppm)	Average CO conc. corrected (ppm)	Average CO emission factor (lb/mmbtu)	Average CO mass emission rate (lb/hr)	CO mass emissions rate (lb/day)	Average NOx conc. uncorrected (ppm)	Average NOx conc. corrected (ppm)	Average NOx emission factor (lb/mmbtu)	Average NOx mass emission rate (lb/hr)	Daily NOx mass emissions rate (lb/day)	Daily turbine run time (hr/day)	Fuel Gas (MMBtu/day)
Nov01	1	493.3377	851.4278564	3.288117	15.04977	10.2044144	10.29031563	0.025415741	21.64577866	519.4987	7.412495613	7.475790501	0.03033158	25.8251457	619.8034668	24	20434.26855
	2	493.7756	852.1817627	3.284239	15.05667	10.5050573	10.6032896	0.026188757	22.32756233	535.8615	7.536502838	7.610043526	0.030876283	26.3108082	631.4594116	24	20452.3623
	3	492.849	850.5838623	3.286973	15.0518	11.4414902	11.53675079	0.028494274	24.2500782	582.0019	7.406772137	7.472915173	0.030319899	25.7881794	618.9163208	24	20414.0127
	4	490.2275	846.0606689	3.290789	15.045	10.7751713	10.85557938	0.026811855	22.69150352	544.5961	7.370522499	7.427659035	0.0301363	25.4960785	611.9058838	24	20305.45605
	5	488.9424	843.8416748	3.26359	15.09342	8.75006485	8.885092735	0.021945013	18.53061676	426.2042	7.410779953	7.531015873	0.030555649	25.779583	592.9304199	24	20252.2002
	6	491.2617	847.8433838	3.279215	15.06562	9.28453636	9.383393288	0.02317575	19.66305351	471.9133	7.44858408	7.534415245	0.030569438	25.9192924	622.0629883	24	20348.24121
	7	496.9483	857.6581421	3.273555	15.07568	10.2713556	10.40029716	0.025687363	22.04214096	529.0114	7.590398312	7.689867973	0.031200154	26.7577705	642.1865234	24	20583.79541
	8	494.1318	852.7980957	3.26923	15.08337	10.9909134	11.14086914	0.027516529	23.47410774	563.3786	7.54413414	7.653408051	0.031052247	26.480545	635.5330811	24	20467.1543
	9	493.5603	851.8120117	3.275971	15.07139	9.53796101	9.652183533	0.023839641	20.32699585	487.8479	7.788651943	7.885121822	0.031992372	27.2487965	653.9711304	24	20443.48828
	10	492.0716	849.2420654	3.267895	15.08575	8.78167057	8.906769753	0.021998558	18.69107056	448.5857	7.687856197	7.801679611	0.031653814	26.8891964	645.3406982	24	20381.80957
	11	433.6952	781.036377	3.04361	14.12176	10.2940645	12.79179478	0.031594053	21.08244324	484.8962	6.708206654	6.87834692	0.027907565	23.1427574	532.2834473	23	17963.83667
	12															0	0
	13															0	0
	14															0	0
	15															0	0
	16															0	0
	17															0	0
	18															0	0
	19	136.3818	806.9504395	3.088042	14.65931	4.89163876	8.894111633	0.021967271	9.971495628	69.80047	8.464155197	9.315858841	0.037797313	29.6355286	207.4487	6.930556	5592.615065
	20	501.2416	865.0687256	3.282012	15.06063	2.00813293	2.027979612	0.005008848	4.334720612	104.0333	9.338500023	9.433152199	0.038273185	33.1308899	762.010498	24	20761.64941
	21	499.9259	862.7974854	3.276862	15.0698	1.6788758	1.69825542	0.004194471	3.622666597	86.944	11.17549133	11.31084156	0.045891564	39.5939751	950.2553711	24	20707.13965
	22	497.2995	858.2649536	3.299883	15.02884	1.76091206	1.767782927	0.004366194	3.750835419	90.02005	10.52001762	10.57674217	0.042913113	36.8192787	883.6627197	24	20598.35889
	23	504.212	870.1942749	3.292698	15.04163	1.83913338	1.851166606	0.004572139	3.98139596	95.5535	10.52779579	10.60231209	0.043016858	37.4332504	898.3980103	24	20884.6626
	24	497.7475	859.0377808	3.27915	15.06573	1.41210091	1.429593325	0.00353091	3.038450718	72.92281	10.62000465	10.74336147	0.043589097	37.4506035	898.8145142	24	20616.90674
	25	510.6182	881.2509155	3.267514	15.08644	1.95932496	1.98853004	0.004911411	4.328948498	103.8948	10.70170784	10.86077118	0.04406542	38.8319473	931.9666748	24	21150.02197
	26	514.0074	887.1018677	3.228911	15.15512	1.90463376	1.953434587	0.004824729	4.284733772	102.8336	10.69282055	10.98276711	0.044560436	39.5271378	948.6513062	24	21290.44482
	27	515.5853	889.8233643	3.19486	15.21569	2.30897641	2.397089958	0.0059205	5.2688694	115.9151	10.45723629	10.85309601	0.044034358	39.1714401	861.7717285	24	21355.76074
	28	509.3677	879.093689	3.155027	15.28658	2.18950701	2.301808119	0.005685166	5.011232853	115.2584	9.544556618	10.04855537	0.040770099	35.9140778	826.0238037	24	21098.24854
	29	499.8157	862.6080322	3.261153	15.09774	2.37014246	2.391536713	0.005906779	5.10665369	122.5597	9.646226883	9.81536293	0.039823912	34.3453484	824.2883911	24	20702.59277
	30	505.742	872.835144	3.29117	15.04435	2.25344682	2.262257576	0.005587479	4.882372379	117.1769	9.772462845	9.848521233	0.039958484	34.8752136	837.005127	24	20948.04346
Dec01	01	503.7525	869.4024658	3.266178	15.08881	1.35184538	1.372506142	0.003389912	2.946937561	70.7265	10.10823536	10.26397419	0.0416441	36.2122612	869.0942993	24	20865.65918
	02	496.272	856.4915161	3.26726	15.08688	1.96075559	1.988834858	0.004912164	4.208042622	100.993	9.983439445	10.13283253	0.041112013	35.2097244	845.0333862	24	20555.79639
	03	504.4671	870.6351929	3.251048	15.11573	2.18596792	2.227586508	0.005501849	4.789204597	110.1517	10.10808945	10.3109436	0.041834682	36.4238205	837.7479248	24	20895.24463
	04	508.6566	877.8655396	3.275717	15.07184	1.76075459	1.783053756	0.004403908	3.867331743	92.81596	10.33748341	10.46503735	0.042459853	37.2740822	894.5780029	24	21068.77295
	05	508.6953	877.9319458	3.279724	15.0647	1.80669916	1.826701283	0.004511712	3.963897467	95.13354	10.25910854	10.37298298	0.042086363	36.9513741	886.8330078	24	21070.3667
	06	504.1814	870.1418457	3.266114	15.08893	1.87999129	1.908654213	0.004714127	4.104997635	98.51994	10.04145908	10.19512939	0.041364729	35.9937325	863.8496094	24	20883.4043
	07	502.3764	867.0268555	3.267641	15.0862	1.89016712	1.918057084	0.004737352	4.110078812	98.64189	9.835097313	9.981231689	0.040496904	35.1142883	842.7429199	24	20808.64453
	08	496.7476	857.3119507	3.255366	15.10805	1.76584172	1.796907902	0.004438129	3.813340902	91.52018	10.06514454	10.25572109	0.041610591	35.6665611	855.9974976	24	20575.48682
	09	503.5523	869.0562744	3.246018	15.12467	1.57982838	1.611967921	0.003981349	3.466654539	83.19971	10.68470383	10.91802502	0.04429777	38.4848022	923.6353149	24	20857.35059
	10	508.8738	878.2401123	3.268423	15.0848	1.7943517	1.820339203	0.004495997	3.950228691	94.80549	10.73823357	10.89529133	0.044205546	38.8217087	931.7210083	24	21077.7627
	11	509.2393	878.8708496	3.278323	15.06719	2.06902504	2.092261791	0.005167615	4.543487549	109.0437	10.62714195	10.75008297	0.043616369	38.3335838	920.0059814	24	21092.90039
	12	509.2693	878.9228516	3.286146	15.05328	2.18365121	2.203055859	0.005441258	4.785002708	114.8401	10.4142704	10.50923729	0.042639263	37.4761887	899.4285278	24	21094.14844
	13	506.7826	874.631958	3.259755	15.10022	2.19144297	2.22759676	0.005501876	4.818831921	115.652	10.45895004	10.64055443	0.043171991	37.7562294	906.1494751	24	20991.16699
	14	504.9398	871.4506226	3.246337	15.12411	1.83674788	1.876245379	0.004634079	4.039412498	96.9459	10.7144289	10.9460001	0.044411253	38.7030296	928.8726807	24	20914.81494
	15	510.4975	881.0422974	3.296322	15.03518	1.83420455	1.844992518	0.004556889	4.018232822	96.43759	10.90029144	10.96605015	0.044492636	39.2003784	940.809082	24	21145.01514
	16	508.3934	877.4105835	3.295302	15.03699	1.96568465	1.977496624	0.004884159	4.288794994	102.9311	10.52445412	10.59040833	0.042968534	37.7060623	904.9454956	24	21057.854
	17	500.9065	864.4903564	3.285828	15.05384	1.74247003	1.758152962	0.004342409	3.757375002	90.177	10.32858467	10.4246254	0.042295866	36.5685463	877.6450806	24	20747.76855
	18	501.61	865.7041016	3.302109	15.02489	2.27761126	2.285847902	0.005645743	4.872283459	116.9348	9.945438385	9.988063812	0.040524632	35.0948944	842.2775269	24	20776.89844
	19	503.874	869.6109009	3.292125	15.04264	2.23055339	2.245530367	0.005546168	4.833301067	115.9992	10.24988365	10.32509136	0.041892078	36.4254417	874.2105713	24	20870.66162
	20	496.8023	857.4064941	3.299119	15.0302	1.62657082	1.634211659	0.004036289	3.464447975	83.14675	10.54750443	10.60564613	0.043030348	36.8879204	885.3101196	24	20577.75586
	21	502.0772	866.5100708	3.330916	14.97363	1.89636755	1.887700438	0.004662373	4.041294575	96.99107	10.29664135	10.25141239	0.041593138	36.0402107	864.9650879	24	20796.2417
	22	499.6318	862.2902832	3.322713	14.98822	1.89700413	1.891326666	0.004671325	4.034684658	96.83243	10.29439163	10.27495861	0.041688681	35.9432907	862.6389771	24	20694.9668
	23	502.6701	867.5342407	3.320615	14.99195	2.13468504	2.131340027	0.005264131	4.568847656	109.6523	10.08249092	10.06894493	0.040852804	35.4401665	850.5640259	24	20820.82178
	24	506.6541	874.4093018	3.313159	15.00522	2.17258596	2.174109459	0.005369767	4.696594238	108.0217	10.03542805	10.04450798	0.040753685	35.6262436	819.4035645	24	20985.82324
	25	504.47	870.6399536	3.314892	15.00215	2.3208549	2.321540356	0.005733903	4.99600172	119.904	10.16467953	10.16976261	0.041261848	35.9282227	862.2772827	24	20895.35889
	26	507.89	876.5427856	3.337784	14.9614	2.46759868	2.451230288	0.006054222	5.308919907	127.4141	10.36450863	10.29732895	0.041779421	36.6219139	878.9259033	24	21037.02686
	27	498.7334	860.7398682	3.315843	15.00044	1.87983251	1.878232956	0.004638991	4.001398087	96.03355	10.40299606	10.40335846	0.042209648	36.3365707	872.0776978	24	20657.75684
	28	492.5385	850.0480957	3.314509	15.00281	1.71083164	1.710185766	0.004223934	3.592704535	86.22491	10.07071495	10.07822037	0.040890429	34.7556915	834.1365967	24	20401.1543

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	29	343.2593	748.3045654	2.94304	13.64707	6.49627209	15.08851433	0.037266716	13.13690758	249.6012	9.001466751	9.338009834	0.037887163	30.7765846	584.755127	18.60278	13920.54332
	30	494.9012	854.1256714	3.336513	14.96368	1.7984308	1.786876678	0.004413352	3.770792961	90.49903	9.910457611	9.850061417	0.039964728	34.1343079	819.2233887	24	20499.01611
	31	495.2171	854.6708984	3.308192	15.01406	1.7862438	1.789920807	0.004420866	3.779665947	90.71198	9.87537384	9.899424553	0.040165	34.3272018	823.8529053	24	20512.10156
Jan02	01	495.9641	855.9606323	3.300772	15.02726	1.71401167	1.721323371	0.004251442	3.641309261	87.39142	10.06435871	10.11242771	0.04102923	35.1181297	842.835083	24	20543.05518
	02	495.9945	856.0126953	3.310695	15.00961	1.68285084	1.684377909	0.004160193	3.563057423	85.51338	10.06419563	10.08234119	0.040907145	35.0144463	840.3466797	24	20544.30469
	03	501.2775	865.1304932	3.33276	14.97034	2.07204366	2.061407804	0.005091408	4.405267715	105.7264	9.820631981	9.771715164	0.03964686	34.3005905	823.2141724	24	20763.13184
	04	508.3387	877.3156738	3.318133	14.99637	2.3739562	2.372309208	0.005859294	5.141455173	123.3949	10.09918118	10.09318161	0.040951118	35.927536	862.2609253	24	21055.57617
	05	509.1397	878.7000732	3.313681	15.0043	2.39971256	2.401109695	0.005930427	5.213468552	125.1233	10.12031269	10.12751579	0.041090399	36.1110954	866.6663208	24	21088.80176
	06	502.3598	866.9984741	3.306369	15.0173	2.34295464	2.349270821	0.00580239	5.033541679	120.805	10.00393963	10.03404045	0.040711235	35.2998352	847.1959839	24	20807.96338
	07	498.3024	859.9955444	3.306665	15.01677	2.27893758	2.284996271	0.005643642	4.855140209	116.5234	9.66673851	9.695177078	0.039336305	33.8342247	812.0214233	24	20639.89307
	08	500.4507	863.7033081	3.316036	15.00011	2.30909204	2.309570789	0.005704338	4.931406975	118.3538	9.830172539	9.831305504	0.039888639	34.4518814	826.8452148	24	20728.87939
	09	496.9618	857.6817627	3.305033	15.01968	1.94501626	1.951069117	0.004818886	4.135762691	99.2583	10.02684593	10.06060314	0.040818945	35.0092278	840.2214966	24	20584.3623
	10	498.3185	860.0241089	3.308784	15.01301	2.08539963	2.090062141	0.005162179	4.440617085	106.5748	9.734145164	9.755734444	0.039582025	34.0412865	816.9909058	24	20640.57861
	11	505.4065	872.2566528	3.324238	14.98551	2.55472279	2.54830718	0.006293988	5.490520477	131.7725	9.793446541	9.769387245	0.039637413	34.574707	829.7929688	24	20934.15967
	12	511.6286	882.9957275	3.320995	14.99128	2.89844704	2.893302917	0.007146077	6.309943199	151.4386	10.1661005	10.15201378	0.041189838	36.37146	872.914978	24	21191.89746
	13	511.9974	883.6311646	3.286591	15.05248	2.62292719	2.645960093	0.006535173	5.776082039	138.626	10.76658344	10.86411667	0.044079058	38.9471207	934.730896	24	21207.14795
	14	511.5528	882.8629761	3.263236	15.09402	2.39732051	2.435544252	0.006015474	5.310341358	122.1378	10.8887043	11.06514359	0.044894714	39.6250572	911.3762817	24	21188.71143
	15	508.6787	877.9035034	3.274	15.07489	2.28254008	2.312165737	0.005710749	5.014424801	120.3462	10.72350407	10.8619585	0.044070289	38.6896133	928.5507202	24	21069.68408
	16	509.9339	880.0703735	3.298802	15.03076	2.42864799	2.441198826	0.006029442	5.310950279	127.4628	10.48184967	10.53806686	0.04275617	37.6332893	903.1989136	24	21121.68896
	17	505.7552	872.8587646	3.286337	15.05294	2.30018759	2.318490744	0.00572637	5.010062695	120.2415	10.31093311	10.40552521	0.042218369	36.8439903	884.2557983	24	20948.61035
	18	505.1178	871.758667	3.280105	15.06404	2.39208174	2.417185783	0.005970135	5.207853794	124.9885	10.14258289	10.25469971	0.041606478	36.2679291	870.4302979	24	20922.20801
	19	503.8765	869.6157227	3.269803	15.08237	2.22212672	2.253287077	0.005565325	4.846459389	116.315	10.38613796	10.53347874	0.042737555	37.1677094	892.0250244	24	20870.77734
	20	502.4919	867.2260132	3.291743	15.04333	2.04056573	2.054177046	0.00507355	4.409144402	105.8195	10.45688343	10.53461647	0.042742144	37.0634613	889.5230713	24	20813.42432
	21	499.8544	862.6743774	3.179874	15.24237	1.73628461	1.80808723	0.004465737	3.848647356	84.67024	10.66762733	11.13231373	0.045167245	38.8867455	855.5084229	24	20704.18506
	22	505.3876	872.2233887	3.152027	15.2919	1.94676459	2.048012972	0.005058324	4.414207935	105.941	10.81762886	11.38188362	0.046179768	40.2782669	966.6784058	24	20933.36133
	23	510.9476	881.8199463	3.221218	15.1688	2.41719985	2.48986578	0.006149644	5.429128647	130.2991	10.52763939	10.84258366	0.043991659	38.8002472	931.2058716	24	21163.67871
	24	505.8434	873.010376	3.232029	15.14957	2.42085743	2.48045969	0.006126409	5.358998775	128.616	10.30823708	10.57704163	0.042914316	37.4620934	899.09021	24	20952.24902
	25	500.5605	863.8928833	3.192728	15.2195	2.11035991	2.191479683	0.005412668	4.6804986	112.332	10.22270966	10.61762142	0.043078996	37.2177925	893.2269897	24	20733.4292
	26	499.0026	861.2045288	3.199658	15.20715	2.15455747	2.233744144	0.005517056	4.759203434	114.2209	10.32683754	10.70350456	0.043427393	37.403389	897.6812744	24	20668.90869
	27	503.9584	869.7579346	3.240486	15.13453	2.36855173	2.423435926	0.005985571	5.206769943	124.9625	10.08342552	10.31900883	0.041867387	36.4145737	873.9498291	24	20874.19043
	28	509.794	879.8285522	3.225965	15.16036	2.39992452	2.465725422	0.006090018	5.360229015	128.6455	10.61113453	10.91492176	0.044285193	38.9567947	896.0062866	24	21115.88525
	29	517.8904	893.8013916	3.245636	15.12535	2.84805012	2.909711361	0.007186608	6.424238205	154.1817	10.57008743	10.80127048	0.043824021	39.1698685	940.0767822	24	21451.2334
	30	515.272	889.2826538	3.264016	15.09266	2.74518585	2.787652969	0.006885136	6.128072262	147.0737	10.37039185	10.53668308	0.042750578	38.0144882	912.3477173	24	21342.78369
	31	513.7249	886.6135254	3.247353	15.1223	2.81593418	2.873516321	0.007097208	6.300502777	151.2121	10.20649242	10.42229557	0.042286459	37.4941139	899.8587036	24	21278.72461
Feb02	01	510.6953	881.383728	3.223251	15.16518	2.72801495	2.804828405	0.006927555	6.114008904	146.7362	10.17977905	10.47347069	0.042494096	37.4506111	898.8146973	24	21153.20947
	02	506.4754	874.1010132	3.23101	15.15138	2.50209832	2.567917585	0.006342423	5.550548553	133.2132	10.17929554	10.44856644	0.042393066	37.0671387	889.6113281	24	20978.42432
	03	504.9778	871.5170288	3.243093	15.12987	2.69399333	2.754181147	0.006802469	5.933945656	142.4147	9.807279587	10.02837753	0.040688232	35.4614182	851.0739746	24	20916.40869
	04	503.739	869.3786011	3.250723	15.11631	2.58572412	2.63707757	0.006513236	5.670067787	136.0816	9.857515335	10.05576324	0.04079932	35.4713211	851.3117065	24	20865.08643
	05	500.6839	864.1062622	3.266495	15.08824	2.50957155	2.547474623	0.00629193	5.438063145	130.5135	9.807594299	9.957456589	0.040400468	34.9141006	837.9384155	24	20738.55029
	06	501.3156	865.1967773	3.276353	15.07071	2.55074787	2.58094883	0.006374602	5.519142151	132.4594	9.896785736	10.01812172	0.040646575	35.1694756	844.0673828	24	20764.72266
	07	498.5798	860.4743042	3.266368	15.08847	2.43516636	2.471558332	0.006104423	5.255473614	126.1314	9.764987946	9.914095879	0.040224507	34.6155663	830.7736206	24	20651.3833
	08	471.036	812.9329224	3.093647	14.52494	5.25952721	11.24259949	0.027767807	10.4960804	251.9059	8.842401505	9.167946815	0.03719718	31.2482719	749.9585571	24	19510.39014
	09	328.6238	756.1884155	2.883087	13.73845	6.45689154	11.80526447	0.029157476	11.07520199	199.3536	9.261584282	9.834686279	0.039902356	32.3442459	582.1964111	17.8	13460.15322
	10	501.5497	865.5996704	3.255811	15.10726	2.76299167	2.808096647	0.006935634	6.01621294	144.3891	9.782633781	9.971049309	0.040455628	34.9964714	839.9152832	24	20774.39209
	11	502.8932	867.918335	3.252887	15.11245	2.56871295	2.617193699	0.006464129	5.614536285	134.7489	9.959589005	10.15425968	0.041198943	35.7530251	858.0725708	24	20830.04004
	12	502.2196	866.7565918	3.256829	15.10545	2.60257697	2.649375916	0.006543613	5.675103664	136.2025	9.877389908	10.05972767	0.040815424	35.3788528	849.0925293	24	20802.1582
	13	498.852	860.9437256	3.265794	15.08949	2.58429384	2.62296629	0.006478383	5.57939291	133.9054	9.811572075	9.963385582	0.040424526	34.8050308	835.3206787	24	20662.64941
	14	500.0963	863.0916138	3.283285	15.05837	2.79892325	2.826468229	0.006981006	6.027962685	144.6711	9.701870918	9.799488068	0.03975952	34.3195648	823.6696167	24	20714.19873
	15	496.8898	857.5584717	3.281121	15.0622	2.75234079	2.780617952	0.006867764	5.893079758	141.4339	9.554333687	9.656414032	0.039179049	33.5970917	806.3302002	24	20581.40332
	16	498.7609	860.7872925	3.271964	15.07851	2.73962164	2.776219606	0.006856901	5.905296326	141.7271	9.798532486	9.930805206	0.040292341	34.6827774	832.3867188	24	20658.89502
	17	498.7852	860.829834	3.268276	15.08508	2.41958618	2.453588009	0.00606004	5.224322319	125.3837	10.13399124	10.28269482	0.041720029	35.9128571	861.9085693	24	20659.91602
	18	506.0659	873.3945923	3.27985	15.06449	2.79558492	2.825930834	0.00697968	6.098591328	146.3662	10.11491299	10.22680378	0.041493308	36.2393761	869.7449951	24	20961.47021
	19	504.0441	869.9049072	3.268434	15.0848	3.0369091	3.080243111	0.007607797	6.617844582	152.2104	9.759442329	9.90145874	0.040173229	34.940464	803.6306763	24	20877.71777
	20	499.6154	862.2617798	3.26605	15.08903	3.08477759	3.130240917	0.007731285	6.668981552	160.0556	9.272137642	9.41527462	0.038200647	32.9370422	790.4890137	24	20694.28271
	21	497.4472	858.520874	3.27241	15.07772	3.11450696	3.155082941	0.007792641	6.689991951	160.5598	9.166412354	9.29049778	0.037694395	32.3684692	776.8433228	24	20604.50098
	22	492.0052	849.1282349	3.249197	15.11901	2.91371083	2.972330332	0.007341268	6.236317635	149.6716	9.290578842	9.482510567	0.038473465	32.6679764	784.0313721	24	20379.07764
	23	496.1841	856.3398438	3.247417	15.12219	2.63707662	2.69321537	0.00665189	5.699498177	136.7879	9.681362152	9.886776924	0.040113665	34.3528175	824.4675903	24	20552.15625
	24	501.8216	866.0691528	3.26713	15.0871	2.91625381	2.959357023	0.007309224	6.334052563	152.0173	9.740507126	9.88646698	0.040112413	34.7419662	833.8071899	24	20785.65967
	25	499.8685	862.697998	3.23552	15.14336	3.10641861	3.183483124	0.007862783	6.782487392	155.9972	9.479680061	9.715306282	0.039417997	33.9981041	781.9564209	24	20704.75195
	26	496.1347	856.2546387	3.248498	15.12026	2.96840215	3.029334068	0.007482058	6.408994675	153.8159	9.365777969	9.564596176	0.038806487	33.2321281	797.571106	24	20550.11133
	27	492.7278	850.3752441	3.253332	15.11165	2.71609259	2.767304659	0.006834881	5.815991879	139.5838	9.493284225	9.678305626	0.03926786	33.3914223	801.394104	24	20409.00586
	28	492.8519	850.588562	3.264206	15.09232	2.45185828	2.489456654	0.006148633	5.233821869	125.6117	9.769917488	9.927052498	0.040277068	34.2576485	822.1835938	24	20414.12549
Mar02	01	498.4363	860.2277222	3.240485	15.13451	2.38794756	2.442088366	0.006031639	5.194495678	124.6679	10.40267086	10.64640045	0.043195747	37.1541214	891.6989136	24	20645.46533

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	02	502.2968	866.8894653	3.243727	15.12874	2.71418285	2.771716356	0.006845775	5.944618225	142.6708	10.29345131	10.52485847	0.042702645	37.0093498	888.2243652		24	20805.34717
	03	501.1567	864.9216919	3.237752	15.13939	2.96553993	3.034934521	0.007495893	6.493028641	155.8327	9.968006134	10.2106142	0.041427638	35.8222313	859.7335815		24	20758.12061
	04	502.0306	866.4295654	3.227703	15.15727	3.02674794	3.107322931	0.007674679	6.656821251	159.7637	9.916980743	10.19050503	0.041345991	35.8188858	859.6533203		24	20794.30957
	05	498.7224	860.7209473	3.2478	15.1215	2.90019584	2.957132816	0.007303736	6.292905331	151.0297	9.900283813	10.11273384	0.041030459	35.3087463	847.4099121		24	20657.30273
	06	494.3295	853.1396484	3.263188	15.09412	2.93278909	2.97818923	0.00735574	6.278965473	150.6952	9.596309662	9.755046844	0.039579224	33.7651291	810.3630981		24	20475.35156
	07	497.871	859.2510986	3.266051	15.08904	2.91418839	2.957839251	0.007305475	6.279036045	150.6969	9.699485779	9.84916687	0.039961126	34.3387604	824.130188		24	20622.02637
	08	508.3627	877.3585205	3.257909	15.10351	3.21482706	3.27061367	0.008077992	7.09470129	170.2728	10.24370289	10.42637062	0.042303041	37.1165009	890.7960205		24	21056.60449
	09	504.6295	870.9147339	3.258548	15.10239	3.44074321	3.499764681	0.008643958	7.537064075	180.8895	9.785813332	9.958486557	0.040404662	35.1943893	844.6652832		24	20901.95361
	10	499.4872	862.0390625	3.248307	15.1206	3.25059748	3.316817045	0.008192102	7.065145969	169.5635	9.756720543	9.961805344	0.0404181	34.8409691	836.1832886		24	20688.9375
	11	500.9479	864.5615234	3.2543	15.10995	3.68628526	3.755123138	0.009274665	8.02084446	184.4794	9.523200989	9.70550251	0.039378203	34.0382729	782.8803101		24	20749.47656
	12	496.2614	856.4725952	3.24373	15.12875	3.3374033	3.411816597	0.008426739	7.219120502	173.2589	9.656085014	9.874077797	0.040062167	34.3130074	823.512207		24	20555.34229
	13	501.6377	865.7514648	3.227894	15.15693	2.98159575	3.061791658	0.007562226	6.55327177	157.2785	10.34305	10.62670898	0.043115824	37.3255882	895.8140869		24	20778.03516
	14	504.8608	871.3129883	3.25225	15.11359	3.10846591	3.168911695	0.007826796	6.829536915	163.9089	10.32779121	10.53092957	0.042727239	37.2258987	893.4216309		24	20911.51172
	15	492.7555	850.4227295	3.182106	15.02067	3.3353374	4.399534702	0.010866292	6.920320034	166.0877	10.3824873	10.79820442	0.043811645	37.2664413	894.3945923		24	20410.14551
	16	201.5635	695.7362671	2.642448	12.28025	2.46807575	2.637460709	0.006514187	5.256121635	63.07346	9.31712532	9.741374969	0.039523698	32.8984756	394.7817078	11.225		7809.639863
	17	511.4012	882.6022339	3.271328	15.07965	2.59383297	2.627402544	0.006489341	5.735612869	137.6547	10.43654156	10.57964993	0.042924836	37.8831558	909.1956787		24	21182.45361
	18	514.3242	887.6470337	3.200814	15.20511	2.55448174	2.642699957	0.006527122	5.796113968	133.3106	10.32625198	10.70119572	0.043418065	38.5063667	885.6464233		24	21303.52881
	19	506.264	873.7360229	3.211105	15.18679	2.73389912	2.82286787	0.006972112	6.097685337	146.3445	10.0268364	10.35576057	0.042016514	36.721756	881.3220825		24	20969.66455
	20	495.7882	855.6572266	3.232218	15.14923	2.55376863	2.618555069	0.00646749	5.535372734	132.849	9.774528503	10.03025627	0.040695809	34.8239136	835.7739258		24	20535.77344
	21	493.0603	850.9489746	3.251487	15.11494	2.3927176	2.439965963	0.006026397	5.132510185	123.1802	9.771029472	9.965679169	0.040433839	34.4084702	825.8032837		24	20422.77539
	22	497.1893	858.0751343	3.259691	15.10035	2.20320654	2.240338802	0.005533346	4.749016285	113.9764	10.09249401	10.2694025	0.041666094	35.7522354	858.0537109		24	20593.80322
	23	498.1651	859.7582397	3.260262	15.09933	2.42451406	2.465491772	0.006089442	5.238337994	125.7201	9.871666908	10.04096794	0.040739261	35.025486	840.6116943		24	20634.19775
	24	501.8272	866.0787964	3.251868	15.11426	2.52610373	2.57414341	0.006357797	5.510949135	132.2628	10.06323814	10.2633934	0.041641731	36.0606575	865.4558105		24	20785.89111
	25	501.2145	865.0213623	3.250978	15.11586	2.49701118	2.546634912	0.00628985	5.441488266	130.5957	10.05560589	10.25671387	0.041614644	36.0032387	864.0776978		24	20760.5127
	26	497.6483	858.8669434	3.257465	15.1043	2.53135037	2.577929497	0.006367148	5.470520496	131.2925	9.856724739	10.0346365	0.040713616	34.9682007	839.2368164		24	20612.80664
	27	493.1148	851.0438843	3.260201	15.09945	2.42896581	2.470868826	0.006102721	5.194293976	124.6631	9.62095356	9.788410187	0.039714605	33.7962608	811.1102905		24	20425.05322
	28	492.4723	849.9343262	3.2616	15.09696	2.43834543	2.478113413	0.006120616	5.203990459	124.8958	9.882317543	10.04810047	0.040768187	34.6486664	831.5679932		24	20398.42383
	29	488.6481	843.3343506	3.274318	15.07432	2.28413081	2.313064575	0.005712966	4.82371664	115.7692	9.800916672	9.926586151	0.040275201	33.9656219	815.1749268		24	20240.02441
	30	487.1403	840.7314453	3.273173	15.07635	2.35360789	2.383877993	0.005887871	4.953593254	118.8862	9.526194572	9.651229858	0.039157994	32.9254646	790.2111816		24	20177.55469
	31	486.4449	839.5318604	3.264397	15.09198	2.69367623	2.736114502	0.006757845	5.673950672	136.1748	9.357034683	9.505271912	0.038565803	32.3776016	777.0623779		24	20148.76465
Apr02	01	486.1397	839.0054932	3.240782	15.13399	2.84116173	2.906236172	0.007178023	6.024769783	144.5945	9.430166245	9.649697304	0.039151788	32.8471489	788.331604		24	20136.13184
	02	486.2939	839.270813	3.258928	15.1017	2.76855755	2.817131996	0.006957945	5.842972755	140.2314	9.478021622	9.644724846	0.039131615	32.8423386	788.2161255		24	20142.49951
	03	490.2089	846.0275269	3.266877	15.08756	2.79908323	2.840325832	0.00701523	5.939448357	142.5468	9.465302467	9.607951164	0.038982406	32.9826698	791.5841064		24	20304.66064
	04	493.1292	851.0675049	3.253713	15.11097	2.8641088	2.918305397	0.007207833	6.136514664	147.2764	9.583585739	9.767742157	0.039630733	33.7290955	809.498291		24	20425.62012
	05	496.1291	856.2451172	3.24678	15.12331	2.72594881	2.783531666	0.006874959	5.888464451	141.3232	9.832085609	10.04259968	0.040745918	34.8881989	837.3167725		24	20549.88281
	06	490.7174	846.9046021	3.239341	15.13654	2.32721448	2.382232189	0.0058838	4.983440876	119.6026	10.04384899	10.28236294	0.041718692	35.332386	847.9772949		24	20325.71045
	07	468.9347	844.4977417	3.258878	15.1018	2.40235162	2.44358182	0.006035325	5.100515842	117.3119	9.968419075	10.14433765	0.041158725	34.7566872	799.4038086		24	20267.9458
	08	489.8545	845.4157715	3.256188	15.10659	2.81662774	2.867733955	0.007082928	5.99789238	131.9536	9.325395584	9.497167587	0.038532909	32.6147385	717.524231		24	20289.97852
	09	490.4863	846.5062256	3.265924	15.08926	2.6556778	2.697937012	0.006663552	5.645444393	135.4907	9.165776253	9.306801796	0.037760567	31.9636879	767.128479		24	20316.14941
	10	489.2085	844.3015137	3.258165	15.10307	2.85901999	2.909226656	0.007185409	6.069496155	145.6679	9.080084801	9.241631508	0.037496153	31.6579838	759.791626		24	20263.23633
	11	489.9557	845.5913086	3.257784	15.10376	2.67221284	2.720154524	0.006718426	5.68782568	136.5078	9.185649872	9.351044655	0.037940074	32.0792809	769.90271		24	20294.19141
	12	487.0967	840.6554565	3.267132	15.08711	2.6413691	2.678866625	0.006616453	5.563705444	133.5289	9.07960701	9.216452599	0.03739398	31.4392033	754.5408936		24	20175.73096
	13	484.3242	835.8713989	3.263508	15.09356	2.68842888	2.731691599	0.006746922	5.646944523	135.5267	8.842879295	8.985589027	0.036457289	30.475996	731.4238892		24	20060.91357
	14	479.9036	828.2427368	3.260963	15.0981	2.33262157	2.371627808	0.005857611	4.856599808	116.5584	8.908062935	9.059239388	0.036756132	30.4419785	730.6074829		24	19877.82568
	15	494.8544	854.0449829	3.227004	15.15852	2.10574841	2.163267851	0.005342989	4.569044113	109.6571	10.33542633	10.62234783	0.043098133	36.8162956	883.5910645		24	20497.07959
	16	498.6149	860.5359497	3.2478	15.12153	2.64009714	2.693853855	0.006653466	5.728937149	137.4945	10.22095013	10.43684196	0.042345468	36.437561	874.5015259		24	20652.86279
	17	496.0406	856.0934448	3.239342	15.13656	2.64486718	2.705753803	0.006682855	5.726890087	137.4454	10.13558388	10.37680054	0.04210189	36.0408592	864.9805908		24	20546.24268
	18	499.629	860.3278809	3.22885	15.17395	2.94264507	3.027493238	0.007479086	6.45083046	154.8199	10.08391094	10.39360619	0.042180132	36.2704544	870.4909058		24	20647.86914
	19	500.281	860.0223389	3.232537	15.1809	2.86426592	2.953653336	0.007298067	6.282031536	150.7688	10.06386948	10.38333893	0.042145304	36.2430649	869.8336182		24	20640.53613
	20	495.3026	851.4645996	3.235526	15.17562	2.7362833	2.817844152	0.006962508	5.933093071	142.3942	9.995843887	10.30453396	0.041825458	35.6080399	854.5928955		24	20435.15039
	21	492.2532	846.22229	3.249008	15.15177	2.8408947	2.91468215	0.007201779	6.097060204	146.3294	9.78788662	10.04767609	0.040782925	34.5099258	828.2382202		24	20309.33496
	22	489.4317	841.3720703	3.257211	15.13724	2.97327614	3.042784691	0.007518301	6.330217361	151.9252	9.481572151	9.707725525	0.039403051	33.1514282	795.6342773		24	20192.92969
	23	488.2007	839.2562866	3.265415	15.12272	2.93215418	2.994144201	0.007398114	6.214788914	149.1549	9.337956429	9.537241936	0.038711071	32.4898529	779.7564697		24	20142.15088
	24	489.7062	841.8444214	3.270312	15.11403	2.65472364	2.705373287	0.006684606	5.630328178	135.1279	9.201069832	9.383793831	0.038088243	32.0647545	769.5540771		24	20204.26611
	25	490.2206	842.7275391	3.26497	15.1235	2.70369196	2.759891987	0.006819314	5.74955368	137.9893	9.327462196	9.527107239	0.038669944	32.5888901	782.1334229		24	20225.46094
	26	489.0805	840.7675781	3.259628	15.13296	2.55869746	2.618558645	0.006470097	5.442048073	130.6091	9.488196373	9.707180977	0.039400849	33.1274948	795.0598755		24	20178.42188
	27	496.2274	853.0560303	3.265477	15.12259	2.68986011	2.746373415	0.006785912	5.791035175	138.9848	9.851475716	10.06061459	0.040835436	34.8344345	836.0264282		24	20473.34473
	28	305.7054	741.9296875	2.828772	13.43832	4.41288662	6.843648911	0.016909681	8.767296791	149.0441	9.421687126	10.24991226	0.041603751	33.1803055	564.0651855	16.46369		12215.0474
	29	497.9391	855.9984131	3.259246	15.13365	1.89700246	1.94125545	0.004796576	4.10777092	98.5865	9.820949554	10.0493021	0.040789496	34.9146271	837.9511108		24	20543.96191
	30	499.7579	859.1248169	3.255175	15.14085	1.94072247	1.987299562	0.004910344	4.221218109	101.3092	9.936694145	10.17965698	0.041318603	35.4988213	851.9716797		24	20618.99561
May 02	01	497.2827	854.8696899	3.241312	15.16539	2.29653287	2.363436699	0.005839723	4.98645401	119.6749	9.908390999	10.1944046	0.041378457	35.3710327	848.9047852		24	20516.87256
	02	494.9922	850.9307861	3.270629	15.11347	2.48174834	2.530605793	0.00625278	5.323626041	127.767	9.696147919	9.888195992	0.040135585	34.1515427	819.6370239		24	20422.33887
	03	492.0107	845.8068237	3.283475	15.09072	2.1354804	2.168166637	0.005357245	4.535996914	108.8639	9.423808098	9.571435928	0.038849868	32.8613434	788.6721802		24	20299.36377

Unit 1 - CEMS Data

	04	490.1398	842.5905762	3.28761	15.08341	2.07427049	2.102432489	0.005194821	4.38022089	105.1253	9.508228302	9.644776344	0.039147563	32.9839592	791.6149902		24	20222.17383
	05	489.6066	841.6743774	3.290789	15.07776	2.16600537	2.193759203	0.005420479	4.561716557	109.4812	9.403617859	9.5297575	0.038680721	32.5552483	781.3259888		24	20200.18506
	06	490.3346	842.9260254	3.275779	15.10433	2.23993134	2.279450417	0.005632207	4.750087261	114.0021	9.567848206	9.740930557	0.039537832	33.3238983	799.7736206		24	20230.22461
	07	492.1648	846.0713501	3.273427	15.10851	2.21910453	2.25987339	0.005583836	4.727412701	113.4579	9.657356262	9.840730667	0.039942887	33.7953491	811.0883789		24	20305.7124
	08	495.6891	852.1304932	3.280996	15.09511	2.53723383	2.578431606	0.006370951	5.431357861	130.3526	9.647817612	9.806283951	0.03980311	33.9163094	813.991394		24	20451.13184
	09	494.7306	850.4823608	3.27241	15.11033	2.51608968	2.562764168	0.006332238	5.389174461	129.3402	9.739710808	9.926903725	0.040292703	34.2646675	822.3519897		24	20411.57666
	10	497.0601	854.4871826	3.261599	15.12947	2.41624713	2.469693661	0.00610227	5.216646671	125.1995	9.898053169	10.12098122	0.0410804	35.100399	842.4096069		24	20507.69238
	11	494.9917	850.9309692	3.284238	15.08938	2.43087411	2.466814995	0.006095162	5.18936348	124.5447	9.599485397	9.748352051	0.039567962	33.6674156	808.0180054		24	20422.34326
	12	491.3406	844.65448	3.286209	15.08588	2.57713866	2.614129543	0.006459155	5.461206436	131.069	9.340659142	9.478841782	0.038474046	32.4981384	779.9553223		24	20271.70752
	13	490.5282	843.2564697	3.262361	15.12812	2.82245255	2.883862019	0.007125622	6.012424469	144.2982	9.285808563	9.492658615	0.038530111	32.4912529	779.7901001		24	20238.15527
	14	490.0277	842.3969116	3.272155	15.11076	2.63342047	2.683748722	0.006631174	5.589993	134.1598	9.413473129	9.594115257	0.038941935	32.8044357	787.3065186		24	20217.52588
	15	486.8545	836.9421997	3.284874	15.08824	2.52387905	2.561794519	0.006329842	5.300718307	127.2172	9.347336769	9.490014076	0.038519386	32.2377625	773.7062988		24	20086.61279
	16	486.5742	836.4605103	3.299501	15.06235	2.48794961	2.513809681	0.006211279	5.199187279	124.7805	9.283741951	9.383249283	0.038086034	31.8562012	764.5488281		24	20075.05225
	17	482.7306	829.8534546	3.294857	15.07057	2.14088464	2.165660858	0.005351051	4.444025993	106.6566	9.3306427	9.444087029	0.038332976	31.8089867	763.4157104		24	19916.48291
	18	484.0632	832.1438599	3.290089	15.079	2.14199829	2.170462847	0.005362916	4.465832233	107.18	9.364984512	9.49269104	0.038530238	32.0621758	769.4921875		24	19971.45264
	19	489.7062	841.8444824	3.299627	15.06213	2.15328622	2.175585508	0.005375573	4.528476715	108.6834	9.593921661	9.696791649	0.039358702	33.1331825	795.1964111		24	20204.26758
	20	493.5031	848.3712158	3.288943	15.08103	2.35360551	2.385479689	0.005894192	5.003780842	120.0907	9.627307892	9.762345314	0.03962478	33.6190414	806.8569946		24	20360.90918
	21	498.6018	857.1366577	3.276162	15.10367	2.37236667	2.413656712	0.005963814	5.113882065	122.7332	9.647658348	9.820672989	0.03986153	34.165451	819.9708252		24	20571.27979
	22	495.0554	851.0395508	3.257719	15.13634	3.00576115	3.073861599	0.007595088	6.468126297	155.235	9.579771996	9.807880402	0.039809585	33.8771973	813.0527344		24	20424.94922
	23	491.3735	844.7110596	3.256383	15.13868	3.03167629	3.104599237	0.007671037	6.48443985	155.6266	9.628580093	9.862561226	0.040031511	33.8155251	811.5725708		24	20273.06543
	24	485.4146	834.4674072	3.275843	15.10423	2.57729864	2.623560429	0.006482456	5.420245647	130.0859	9.378019333	9.546916008	0.038750354	32.3386955	776.1287231		24	20027.21777
	25	483.4096	831.0197144	3.273364	15.10863	2.48302078	2.528619051	0.006247868	5.196188927	124.7085	9.104566574	9.275951385	0.037650529	31.2858963	750.8615112		24	19944.47314
	26	483.8544	831.7849121	3.283475	15.0907	2.34883714	2.385011196	0.005893036	4.901995659	117.6479	9.183900833	9.327734947	0.037860699	31.4887543	755.7301025		24	19962.83789
	27	484.5307	832.9467163	3.286209	15.08589	2.32117462	2.353453398	0.005815057	4.84739399	116.3375	9.054646492	9.188867569	0.037297059	31.0656128	745.574707		24	19990.72119
	28	484.9779	833.7165527	3.260898	15.13071	2.60368991	2.661132574	0.006575289	5.486628532	131.6791	8.839698792	9.040504456	0.036694869	30.590229	734.1655273		24	20009.19727
	29	479.8463	824.8944092	3.259118	15.13387	2.77841449	2.842648745	0.007023795	5.792793751	139.0271	8.590094566	8.789810181	0.035677295	29.4339867	706.4157104		24	19797.46582
	30	473.9398	814.7404785	3.257783	15.13623	3.19829249	3.271180868	0.008082638	6.587669849	158.1041	8.315686226	8.513167381	0.034554429	28.1562462	675.7498779		24	19553.77148
	31	474.2314	815.2411499	3.26853	15.11721	2.26123548	2.306047916	0.005697925	4.647108555	111.5306	8.657344818	8.834176064	0.035857383	29.2405701	701.7736816		24	19565.7876
Jun 02	01	482.5503	829.5415649	3.27152	15.1119	2.07935834	2.117517471	0.005232093	4.340699673	104.1768	9.349403381	9.530874252	0.038685232	32.09235	770.2163696		24	19908.99756
	02	490.8245	843.7663574	3.268148	15.11786	2.23516369	2.278584957	0.005630072	4.7575984	114.1824	9.496939659	9.69131279	0.03933645	33.1892395	796.5418091		24	20250.39258
	03	485.6758	834.9163208	3.263952	15.12531	2.38662386	2.436960459	0.006021395	5.026515484	120.6364	9.127779961	9.326663971	0.037856359	31.6150074	758.7601929		24	20037.9917
	04	478.1021	821.8953857	3.26923	15.11596	2.35932922	2.405804157	0.005944408	4.887086868	117.2901	8.690571785	8.864758492	0.035981532	29.5789337	709.8944092		24	19725.48926
	05	473.9236	814.7122803	3.26694	15.12002	2.30829668	2.355847597	0.005820975	4.746869564	113.9249	8.356704712	8.530376434	0.03462426	28.2141876	677.1405029		24	19553.09473
	06	471.2119	810.0506592	3.267068	15.11979	2.09939122	2.141165733	0.005290526	4.288090706	102.9142	8.439375877	8.615149498	0.034968354	28.3261242	679.8270264		24	19441.21582
	07	474.654	815.9685059	3.271264	15.11234	2.16171288	2.202265501	0.005441495	4.439342022	106.5442	8.952418327	9.126214981	0.037042748	30.2264786	725.4354858		24	19583.24414
	08	482.6509	829.7163086	3.269674	15.11518	1.6817379	1.717986703	0.004244911	3.522666216	84.54399	9.33080101	9.517276764	0.038630031	32.0549393	769.3184814		24	19913.19141
	09	490.909	843.9129028	3.259436	15.1333	2.27888417	2.331388712	0.005760543	4.861337662	116.6721	9.811245918	10.0388689	0.040747155	34.3900452	825.361084		24	20253.90967
	10	485.077	833.8864746	3.252864	15.14494	2.02721119	2.077623844	0.00513352	4.282258987	102.7742	9.454545975	9.693048477	0.039343491	32.8115044	787.4760742		24	20013.27539
	11	482.0713	828.7198486	3.263253	15.12652	2.31370258	2.365060329	0.005843739	4.850245953	116.4059	9.142564774	9.344642639	0.037929349	31.4400215	754.5604858		24	19889.27637
	12	480.0357	825.2202148	3.266367	15.12103	2.47840953	2.529515028	0.006250083	5.15803194	123.7928	8.890574455	9.076867104	0.036842447	30.4047413	729.7138062		24	19805.28516
	13	480.4342	825.9051514	3.261344	15.12993	2.39796448	2.451796532	0.006058046	5.008151531	120.1956	8.89597702	9.09718132	0.03692491	30.502224	732.0534058		24	19821.72363
	14	481.7532	828.1720581	3.262298	15.12824	2.36537242	2.417221785	0.005972622	4.950878143	118.8211	8.895025253	9.09412384	0.036912501	30.5833702	734.0009155		24	19876.12939
	15	355.3865	733.1030884	2.913307	13.8298	6.11887407	16.02196693	0.039588016	12.07647324	241.5295	8.456515312	9.072333336	0.036824036	28.7673244	575.3464966	19.60556		14372.89401
	16	485.1126	833.947937	3.279088	15.09847	2.03977084	2.074015379	0.005124605	4.275322914	102.6077	9.439546585	9.600149155	0.038966428	32.4947586	779.8742065		24	20014.75049
	17	484.1185	832.2382202	3.262639	15.12765	1.96204185	2.00491643	0.004953874	4.122975349	90.70546	9.177743912	9.380719185	0.03807576	31.6662502	696.6575317		24	19973.71729
	18	478.9618	823.3737183	3.275526	15.1048	2.05694127	2.093036175	0.005171608	4.260437012	102.2505	8.821415901	8.981856346	0.036456812	30.0181293	720.4351196		24	19760.96924
	19	476.091	818.4384766	3.283857	15.09005	2.10034513	2.132595062	0.005269349	4.314060688	103.5375	8.850510597	8.988246918	0.036482744	29.8573208	716.5756836		24	19642.52344
	20	479.044	823.5152588	3.282711	15.09206	2.01910281	2.050641298	0.005066857	4.173611164	100.1667	9.241451263	9.388921738	0.038109042	31.3863506	753.2723999		24	19764.36621
	21	488.3058	839.43573	3.283221	15.09118	2.33532429	2.371743679	0.005860254	4.919924736	118.0782	9.447495461	9.596701622	0.038952433	32.6990471	784.7770996		24	20146.45752
	22	486.184	835.789917	3.290724	15.07788	2.19398618	2.223363876	0.005493623	4.593995571	110.2559	8.980717659	9.101175308	0.036941104	30.8780289	741.0726929		24	20058.95801
	23	480.1407	825.3997803	3.282966	15.09163	2.16457367	2.198883057	0.005433136	4.489498138	107.7479	8.822687149	8.962272644	0.036377326	30.0248032	720.5952759		24	19809.59473
	24	479.9417	825.0598145	3.274508	15.10661	2.2668004	2.307787418	0.005702225	4.706490993	112.9558	8.85321331	9.016506195	0.036597449	30.1942711	724.6624756		24	19801.43555
	25	477.8787	821.5128784	3.28551	15.08712	2.35869408	2.393827438	0.00591482	4.861073971	116.6658	8.686278343	8.817429543	0.035789397	29.4017715	705.6425171		24	19716.30908
	26	478.9015	823.2697754	3.288244	15.08227	2.24263453	2.273738384	0.005618099	4.626827717	111.0439	8.871814728	8.997923851	0.036522016	30.0674953	721.619873		24	19758.47461
	27	479.209	823.7988892	3.28341	15.09083	2.33484674	2.370771646	0.005857851	4.826399326	115.8336	8.888825417	9.028367996	0.036645588	30.1916122	724.5986938		24	19771.17334
	28	478.3844	822.381897	3.275207	15.10536	2.27665949	2.31823945	0.005728055	4.71282196	113.1077	8.82618618	8.986680984	0.036476381	29.9969215	719.9260864		24	19737.16553
	29	478.1703	822.0136108	3.280231	15.09646	2.23357248	2.270350456	0.005609725	4.612384319	110.6972	8.779762268	8.926145554	0.036230683	29.7818127	714.7634888		24	19728.32666
	30	474.1758	815.1466064	3.293712	15.07261	1.80399704	1.827492952	0.004515485	3.682403326	88.37768	9.108541489	9.220477104	0.037425347	30.5132465	732.3178711		24	19563.51855
Jul 02	01	468.4207	805.2525635	3.275017	15.10572	2.27188993	2.313055515	0.005715241	4.606272697	110.5505	8.393110275	8.546975136	0.03469165	27.9407749	670.5786133		24	19326.06152
	02	476.0332	818.3391724	3.281948	15.09343	2.14454174	2.178425074	0.005382588	4.407762051	105.7863	8.831590652	8.975343704	0.036430366	29.8209877	715.7036743		24	19640.14014
	03	478.5903	822.7360229	3.279659	15.09748	2.01544595	2.048783779	0.005062263	4.168042183	100.033	9.029844284	9.182331085	0.03727052	30.6639042	735.9337158		24	19745.66455
	04	477.9255	821.5932617	3.281631	15.09399	2.00161457	2.034558296	0.005027116	4.133199215	99.19678	9.105202675	9.252640724	0.037555903	30.8530655	740.4735718		24	19718.23828
	05	479.4892	824.2804565	3.28074	15.09555	2.24613285	2.282294512	0.005639234	4.650733471	111.6176	8.913784981	9.061094284	0.036778416	30.3152332	727.5656128		24	19782.73096

Unit 1 - CEMS Data

	06	478.4283	822.4575195	3.278897	15.09881	2.03452492	2.069056273	0.005112356	4.209621429	101.0309	8.842243195	8.993340492	0.036503427	30.0219631	720.5270996	24	19738.98047
	07	477.6479	821.1162109	3.285445	15.08722	2.090168	2.121253252	0.005241326	4.306845665	103.3643	8.638901711	8.768841743	0.035592198	29.2248993	701.397583	24	19706.78906
	08	478.9838	823.4115601	3.288564	15.0817	2.28095007	2.312871218	0.005714788	4.711489201	113.0757	8.541285515	8.661488533	0.035156466	28.9489784	694.7755127	24	19761.87744
	09	473.5328	814.0415649	3.286337	15.08565	2.06155205	2.09148407	0.005167769	4.211681366	101.0804	8.33063221	8.455005646	0.034318347	27.9485245	670.7645874	24	19536.99756
	10	469.508	807.1228027	3.290025	15.07912	1.9982754	2.025106192	0.00500376	4.040697098	96.97673	8.186113358	8.297958374	0.033680905	27.1856499	652.4556274	24	19370.94727
	11	472.761	812.7144775	3.278579	15.09939	1.6551888	1.682136655	0.004156325	3.375621319	81.01491	8.511396408	8.657909393	0.035141915	28.5666828	685.6004028	24	19505.14746
	12	471.6039	810.7261963	3.285319	15.08747	1.95423746	1.982982039	0.004899676	3.975215912	95.40518	8.5430336	8.672963142	0.035203021	28.5528717	685.2689209	24	19457.42871
	13	472.2885	811.9020996	3.291679	15.07619	2.16521049	2.192913294	0.005418386	4.402465343	105.6592	8.286909103	8.395597458	0.034077208	27.6695957	664.0703125	24	19485.65039
	14	467.4672	803.6138306	3.298356	15.06438	2.1758616	2.198864222	0.00543309	4.368980408	104.8555	8.022360802	8.111430168	0.03292381	26.4567871	634.9628906	24	19286.73193
	15	473.3269	813.6871948	3.280422	15.09613	2.11258578	2.14613843	0.005302812	4.317843914	103.6283	8.375678062	8.515083313	0.034562211	28.1228542	674.9484863	24	19528.49268
	16	475.4921	817.4088745	3.284047	15.08971	2.05471706	2.085130453	0.005152068	4.213124752	101.115	8.678011894	8.812964439	0.035771292	29.2450333	701.8807983	24	19617.81299
	17	476.4809	819.1090698	3.292315	15.07506	2.19859719	2.226602077	0.005501626	4.509614468	108.2308	8.518709183	8.628797531	0.035023764	28.6901283	688.5631104	24	19658.61768
	18	475.9675	818.2259521	3.280424	15.09612	2.30400252	2.341646194	0.005785887	4.739031315	113.7367	8.472126961	8.613001823	0.034959644	28.6066208	686.5588989	24	19637.42285
	19	473.9585	814.7735596	3.288753	15.0814	2.25583029	2.287120819	0.00565116	4.606926918	110.5663	8.355115891	8.472570419	0.034389652	28.0196457	672.4714966	24	19554.56543
	20	473.1899	813.4512329	3.285892	15.08643	2.09207749	2.122560501	0.005244554	4.268064499	102.4335	8.527294159	8.654227257	0.035126992	28.5743332	685.7839966	24	19522.82959
	21	478.7719	823.0478516	3.282331	15.09274	2.03198123	2.064321995	0.005100656	4.20127058	100.8305	8.815375328	8.956659317	0.036354542	29.9273033	718.2553101	24	19753.14844
	22	480.173	825.4564209	3.273618	15.1082	2.16664076	2.206555128	0.005452093	4.502444267	108.0587	8.747011185	8.911635399	0.03617179	29.8691425	716.859375	24	19810.9541
	23	478.3815	822.3772583	3.285827	15.08657	2.33198404	2.366090536	0.005846284	4.809229851	115.4215	8.497882843	8.626748085	0.035015438	28.8124924	691.4998169	24	19737.0542
	24	475.3269	817.1255493	3.286463	15.08542	2.61879301	2.656530857	0.006563921	5.367301941	128.8152	8.056542397	8.175038338	0.033181988	27.1181412	650.8353882	24	19611.01318
	25	473.5062	813.9943237	3.280042	15.09679	2.54375243	2.585791349	0.006389134	5.203488827	124.8837	8.060994148	8.195711136	0.033265885	27.0772877	649.8549194	24	19535.86377
	26	476.4955	819.1326294	3.267641	15.11878	2.15487623	2.19941783	0.005434459	4.454326153	106.9038	8.582622528	8.758752823	0.035551246	29.1195545	698.8693237	24	19659.18311
	27	312.3682	715.9689331	2.902251	13.73324	5.45190048	10.13433075	0.025040548	7.882593155	141.8867	8.297084808	8.906592369	0.036151327	27.538311	495.6896057	17.78611	12734.30351
	28	479.0689	823.5579834	3.306624	15.04975	2.34820032	2.367369652	0.005849445	4.816775799	115.6026	8.757980347	8.833594322	0.035855021	29.5328255	708.7877808	24	19765.3916
	29	479.6046	824.4787598	3.272918	15.10943	2.62403989	2.673012972	0.006604644	5.448406696	130.7618	8.505194664	8.66596508	0.035174627	29.0009918	696.0238037	24	19787.49023
	30	474.6127	815.897644	3.290853	15.07768	2.77571177	2.812592983	0.006949527	5.671772957	136.1225	8.342077255	8.455901146	0.034321997	28.0056076	672.1345825	24	19581.54346
	31	477.1899	820.3274536	3.309993	15.04379	2.36251044	2.382809162	0.005887589	4.836455822	116.0749	8.88024044	8.944760323	0.036306232	29.7756958	714.6166992	24	19687.85889
Aug 02	01	477.0028	820.0064087	3.305987	15.05087	2.27649999	2.2966609	0.005674735	4.654690266	111.7126	8.928412437	9.005722046	0.036553666	29.9746838	719.392395	24	19680.15381
	02	474.4618	815.6377563	3.294285	15.07158	2.41735911	2.447093248	0.006046431	4.932089806	118.3702	8.606627464	8.713282585	0.03536668	28.8505783	692.4138794	24	19575.30615
	03	479.3907	824.1105347	3.300773	15.0601	2.54104948	2.566854954	0.006342346	5.226639748	125.4393	8.670539856	8.75974369	0.035555262	29.3038998	703.2935791	24	19778.65283
	04	483.552	831.2654419	3.292379	15.07495	2.66299295	2.69686842	0.006663589	5.54155302	132.9973	8.865454674	8.979887009	0.036448799	30.2971916	727.1326294	24	19950.37061
	05	483.9701	831.9833984	3.278324	15.09983	2.6548841	2.70013833	0.006671671	5.553683758	133.2884	8.875946999	9.029103279	0.036648579	30.488512	731.7243042	24	19967.60156
	06	486.3485	836.0730591	3.282775	15.09197	2.50655007	2.546858311	0.006292937	5.264597416	126.3503	9.021417618	9.16464901	0.037198745	31.1004295	746.4102783	24	20065.75342
	07	484.8408	833.4804688	3.278959	15.09872	2.71561551	2.761386156	0.006823003	5.689692497	136.5526	8.876900673	9.028287888	0.036645245	30.5414505	732.994812	24	20003.53125
	08	481.75	828.1673584	3.287544	15.08352	2.71879625	2.758377552	0.006815572	5.64788866	135.5493	8.793435097	8.920136452	0.03620629	29.9850159	719.6403809	24	19876.0166
	09	477.2552	820.440979	3.290661	15.07799	2.62165618	2.656817198	0.00656463	5.390078545	129.3619	8.726025581	8.843458176	0.035895068	29.4510326	706.8248291	24	19690.5835
	10	474.9316	816.4453735	3.288817	15.08126	2.49097037	2.525174618	0.006239357	5.09578371	122.2988	8.759569168	8.882677078	0.036054254	29.4362545	706.4700928	24	19594.68896
	11	474.5711	815.8267212	3.284111	15.08958	2.60734582	2.647010088	0.006540395	5.337973118	128.1114	8.719347954	8.854393959	0.035939459	29.3200951	703.682312	24	19579.84131
	12	472.1051	811.5856323	3.271138	15.11257	2.54974174	2.598865509	0.006421443	5.212544441	125.1011	8.707794189	8.877644539	0.036033817	29.2428284	701.8278809	24	19478.05518
	13	470.1814	808.2798462	3.269041	15.1163	2.34295464	2.389455318	0.005904014	4.775617599	114.6148	8.720619202	8.897080421	0.0361127	29.1886711	700.5280762	24	19398.71631
	14	470.5164	808.8560181	3.283666	15.09037	2.40845799	2.4451437	0.006041617	4.889739037	117.3537	8.690412521	8.826349258	0.03582564	28.9772339	695.4536133	24	19412.54443
	15	470.9894	809.6682739	3.281886	15.09353	2.41656423	2.454827785	0.006065541	4.915184021	117.9644	8.674674034	8.814890862	0.035779111	28.9668007	695.203186	24	19432.03857
	16	470.1125	808.1616821	3.284175	15.08947	2.46124005	2.498149633	0.006172582	4.991201878	119.7888	8.554162979	8.686994553	0.035259977	28.4975758	683.9417725	24	19395.88037
	17	470.9858	809.6635742	3.2871	15.08429	2.87936878	2.920110941	0.007215188	5.847335339	140.336	8.284684181	8.405431747	0.034117125	27.6194992	662.867981	24	19431.92578
	18	470.6862	809.1487427	3.276862	15.10243	2.38540339	2.426628828	0.005995865	4.856361866	116.5527	8.726026535	8.881691933	0.036050253	29.1663837	699.9932251	24	19419.56982
	19	474.052	814.9341431	3.265415	15.12272	2.43596125	2.486929178	0.006144859	5.01102829	120.2647	8.796135902	8.983562469	0.036463737	29.7149372	713.1585083	24	19558.41943
	20	478.6155	822.7786865	3.271965	15.11112	2.50305033	2.550876617	0.006302864	5.188511372	124.5243	8.886281013	9.057243347	0.0367628	30.2460499	725.9052124	24	19746.68848
	21	480.9999	826.8781738	3.275971	15.10401	2.31878781	2.360463381	0.005832383	4.824442387	115.7866	9.204091072	9.369885445	0.038031776	31.449913	754.7979126	24	19845.07617
	22	480.846	826.6135864	3.286719	15.08497	2.54963636	2.586593628	0.006391121	5.28423357	126.8216	9.084693909	9.217903137	0.037414908	30.9303875	742.3292847	24	19838.72607
	23	482.2744	829.069397	3.283539	15.09062	2.71164179	2.753661633	0.00680392	5.645501614	135.492	8.91537571	9.054591179	0.036752027	30.4732418	731.3577881	24	19897.66553
	24	480.5608	826.1223755	3.274444	15.10672	2.84566498	2.897467136	0.007159239	5.917713642	142.0251	8.788823128	8.951206207	0.036332399	30.0135498	720.3251953	24	19826.93701
	25	480.6867	826.3397217	3.26694	15.12001	2.9098947	2.969321728	0.007336784	6.067275524	145.6146	8.833817482	9.017889977	0.036603067	30.2441254	725.8590088	24	19832.15332
	26	480.3822	825.8153076	3.26427	15.12475	2.69971704	2.757123232	0.006812471	5.630119324	135.1229	8.962911606	9.157330513	0.037169054	30.6952953	736.6870728	24	19819.56738
	27	475.7249	817.8103027	3.268785	15.11672	2.46044493	2.510133266	0.006202194	5.074592113	121.7902	9.002023697	9.185574532	0.037283693	30.4949245	731.8781738	24	19627.44727
	28	474.1236	815.0568848	3.287292	15.08397	2.45233822	2.487754583	0.006146896	5.012480736	120.2995	8.97785759	9.108312607	0.036970075	30.1352577	723.2462158	24	19561.36523
	29	475.5108	817.4418945	3.29594	15.06865	2.72785759	2.759522915	0.0068184	5.576496601	133.8359	8.76020813	8.863535881	0.035976551	29.4106541	705.8557129	24	19618.60547
	30	474.4258	815.5765381	3.306877	15.0493	2.89351964	2.917453766	0.007208628	5.882685661	141.1845	8.645897865	8.719594002	0.035392303	28.8649044	692.7576904	24	19573.83691
	31	471.8079	811.0756836	3.305225	15.05223	2.67571092	2.698926687	0.006668676	5.411514759	129.8764	8.694069862	8.77230072	0.035606235	28.8779545	693.0709229	24	19465.81641
Sep 02	01	471.1847	810.0036011	3.303379	15.05549	2.71513867	2.740090847	0.006770386	5.492446423	131.8187	8.611397743	8.693875313	0.035287917	28.5837879	686.0109253	24	19440.08643
	02	470.0768	808.1004028	3.289898	15.07935	2.67125869	2.706320763	0.006686945	5.409049511	129.8172	8.67149353	8.790686607	0.035680871	28.8309288	691.9423218	24	19394.40967
	03	472.6544	812.5303955	3.280816	15.09545	2.3991065	2.445249796	0.006041872	4.906647205	107.9462	9.238098145	9.374723434	0.038051438	30.9551373	681.0130005	24	19500.72949
	04	475.313	817.1018677	3.281758	15.09377	2.70019627	2.743163824	0.006777981	5.537833691	132.908	8.783894539	8.927124023	0.036234658	29.613224	710.7174072	24	19610.44482
	05	485.4128	834.4627686	3.287735	15.08317	3.04980159	3.092806578	0.007641901	6.377045631	153.0491	8.88055706	9.007834435	0.036562238	30.513279	732.3187256	24	20027.10645
	06	485.3849	834.4154053	3.280105	15.09668	2.84359884	2.890397549	0.007141774	5.961500645	143.076	8.995981216	9.146711349	0.037125941	30.9774284	743.458313	24	20025.96973

Unit 1 - CEMS Data

	07	239.9644	582.3517456	2.311912	11.48474	6.54005814	12.9003849	0.031875096	10.12671852	172.1542	7.749090672	9.379487991	0.038070794	25.5164051	433.7789001	15.53333	9045.863486
	08	494.5136	850.1091919	3.300964	15.05976	2.45169878	2.476233006	0.006118429	5.203785896	124.8909	9.504731178	9.602332115	0.038975295	33.1316109	795.1586914	24	20402.62061
	09	487.7453	838.4723511	3.292506	15.07473	2.1148138	2.142378807	0.005293525	4.444505692	106.6681	9.474525452	9.596794128	0.038952805	32.6639137	783.9338989	24	20123.33643
	10	482.8626	830.0800171	3.287544	15.08351	2.13357115	2.163882971	0.005346658	4.439263821	106.5423	9.325395584	9.459981918	0.038397487	31.8741035	764.9785156	24	19921.92041
	11	481.3873	827.5438843	3.289579	15.0799	2.1464479	2.175614595	0.005375643	4.450167656	106.804	9.306159973	9.434457779	0.038293879	31.6875553	760.5012817	24	19861.05322
	12	481.9369	828.4883423	3.300074	15.06134	2.1992321	2.222086668	0.00549047	4.549662113	109.1919	9.362440109	9.46138382	0.038403183	31.8188496	763.6524048	24	19883.72021
	13	481.6019	827.9122925	3.298928	15.06336	2.40511703	2.431235313	0.006007249	4.973990917	119.3758	9.19010067	9.290168762	0.037708212	31.2182503	749.2379761	24	19869.89502
	14	481.014	826.9016113	3.29613	15.06831	2.52117753	2.550567865	0.006302101	5.21210289	125.0905	9.262761116	9.372407913	0.038042016	31.4511299	754.8270874	24	19845.63867
	15	480.6401	826.2592773	3.279214	15.09827	2.4954226	2.537557125	0.006269957	5.184131622	124.4192	9.059732437	9.213484764	0.037396971	30.8973618	741.5366821	24	19830.22266
	16	489.0888	840.7817993	3.287227	15.08407	2.62276793	2.660531759	0.006573808	5.527973652	132.6714	9.052578926	9.183865547	0.037276749	31.3412876	752.190918	24	20178.76318
	17	487.9644	838.8500977	3.284683	15.08859	2.59415126	2.633845091	0.006507868	5.463457584	131.123	9.097729683	9.237150192	0.037493043	31.451992	754.8477783	24	20132.40234
	18	483.4341	831.0623169	3.302107	15.05774	2.55949259	2.584531307	0.006386018	5.310000896	127.44	8.954961777	9.044384003	0.036710586	30.5106297	732.255127	24	19945.49561
	19	478.3577	822.3345947	3.296322	15.06798	2.45933175	2.487651348	0.006146646	5.056801319	121.3632	8.960051537	9.065224648	0.036795195	30.255909	726.1417847	24	19736.03027
	20	477.5933	821.0217896	3.293077	15.07371	2.47491336	2.505669594	0.006191164	5.08380127	122.0112	9.017602921	9.132529259	0.037068374	30.4368382	730.4840698	24	19704.52295
	21	479.0684	823.5579224	3.299246	15.0628	2.7397809	2.769008875	0.006841836	5.635910511	135.2619	8.833498955	8.928835869	0.036241591	29.8462124	716.309082	24	19765.39014
	22	478.7694	823.0430298	3.293141	15.0736	2.89860797	2.935107946	0.007252247	5.968743324	143.2498	8.756232262	8.86714077	0.035991188	29.6223621	710.9367065	24	19753.03271
	23	476.6675	819.4301147	3.284492	15.08891	2.62308574	2.662734985	0.006579251	5.397337437	129.5361	8.709119797	8.842750549	0.035892196	29.4129505	705.9108276	24	19666.32275
	24	477.8322	821.4326782	3.292378	15.07498	2.73024297	2.765004635	0.006831944	5.612459183	134.699	8.817918777	8.931829453	0.036253747	29.7801704	714.7241211	24	19714.38428
	25	479.118	823.6428223	3.305096	15.05245	2.70051217	2.723521709	0.006729448	5.545551777	133.0932	9.009016991	9.090637207	0.036898334	30.3881702	729.3161011	24	19767.42773
	26	480.3764	825.8059082	3.290725	15.07788	2.69510579	2.731289148	0.006748642	5.574176311	133.7802	9.203772545	9.32734108	0.037859105	31.2653713	750.3688965	24	19819.3418
	27	485.1927	834.0849609	3.303062	15.05606	2.48683619	2.512342215	0.006207651	5.176119804	124.2269	9.265140533	9.355032921	0.037971504	31.6714001	760.1135864	24	20018.03906
	28	488.0194	838.9446411	3.305479	15.05177	2.48667836	2.508668423	0.006198575	5.20092392	124.8222	9.154806137	9.236066818	0.037488621	31.4505539	754.8132935	24	20134.67139
	29	488.7772	840.2481079	3.279844	15.09718	2.68047857	2.723675966	0.00672983	5.653871536	124.3852	9.088596344	9.240950584	0.037508458	31.4976006	692.9472046	24	20165.95459
	30	489.78	841.9719238	3.219373	15.2042	2.64709282	2.741180897	0.006773082	5.704509258	136.9082	9.039648056	9.364311218	0.038009163	32.0009003	768.0216064	24	20207.32617
Oct 02	01	493.6291	848.588562	3.229355	15.18653	2.33579922	2.412893295	0.005961928	5.059685707	121.4325	9.426192284	9.734992981	0.039513744	33.5324364	804.7785034	24	20366.12549
	02	492.4098	846.4915161	3.257275	15.13713	2.49685049	2.555924177	0.006315336	5.328575611	127.8858	9.672300339	9.902975082	0.040195532	34.0369911	816.8878174	24	20315.79639
	03	496.247	853.0892334	3.24729	15.15481	2.32228494	2.384168625	0.005890954	5.028045177	120.6731	9.506797791	9.763067245	0.039627697	33.8083267	811.3997803	24	20474.1416
	04	491.8185	845.4760742	3.249134	15.15153	2.08460546	2.139849663	0.005287271	4.472900391	107.3496	9.61744976	9.871645927	0.040068403	33.8791275	813.0991211	24	20291.42578
	05	490.066	842.4628906	3.263888	15.12543	2.24915218	2.297766685	0.005677464	4.783680916	114.8083	9.350198746	9.552960396	0.038774863	32.6740417	784.177002	24	20219.10938
	06	485.6213	834.8215942	3.262235	15.12836	2.33945704	2.391040325	0.00590793	4.933548927	118.4052	8.995504379	9.196025848	0.037326116	31.1676502	748.0236206	24	20035.71826
	07	481.3351	827.4541626	3.2616	15.12949	2.22435212	2.274032116	0.005618823	4.651070118	111.6257	8.927775383	9.128182411	0.037050739	30.6603241	735.8477783	24	19858.8999
	08	477.8411	821.4468384	3.275844	15.10425	2.04819703	2.08463335	0.005150841	4.232801914	101.5872	9.083104134	9.247037888	0.037533168	30.8338203	740.0117188	24	19714.72412
	09	478.4481	822.4906006	3.293204	15.07349	2.1016171	2.128002405	0.005257999	4.325371742	103.8089	9.0414505	9.155984879	0.037163589	30.5688839	733.6531982	24	19739.77441
	10	482.3625	829.2203979	3.304907	15.05279	2.11640263	2.135122538	0.005275591	4.375319958	105.0077	9.116649628	9.199712753	0.037341062	30.9675007	743.2200317	24	19901.28955
	11	488.3904	839.5822144	3.301281	15.0592	2.43262219	2.457046747	0.006071025	5.097718716	122.3453	8.954327583	9.044903755	0.03671271	30.8265381	739.8369141	24	20149.97314
	12	486.4865	836.3092651	3.300899	15.05988	2.80353451	2.831777573	0.006996931	5.852804661	140.4673	8.699317932	8.788925171	0.035673741	29.8347702	716.0344849	24	20071.42236
	13	484.0911	832.190979	3.297148	15.06651	2.7439158	2.774821758	0.006856203	5.708500862	137.004	8.701700211	8.801176071	0.035723448	29.730217	713.5252075	24	19972.5835
	14	482.6212	829.6644897	3.293267	15.07338	2.56442046	2.596286774	0.006415068	5.32399559	127.7759	8.842401505	8.954393387	0.036345333	30.1544342	723.7064209	24	19911.94775
	15	484.2167	832.4082642	3.294094	15.07191	2.44518137	2.474839211	0.00611499	5.092251301	122.214	9.14590168	9.259074211	0.037582029	31.2833824	750.8012085	24	19977.79834
	16	488.3574	839.5254517	3.308468	15.04649	2.44756746	2.466943026	0.006095477	5.119318962	122.8637	9.316493988	9.391078949	0.038117811	32.0011902	768.0286255	24	20148.61084
	17	488.2415	839.3271484	3.309995	15.04379	2.54200339	2.560620785	0.006326941	5.312110901	127.4907	9.252262115	9.32153511	0.037835535	31.7569294	762.1663208	24	20143.85156
	18	484.4284	832.7720337	3.312409	15.03951	2.38635874	2.408909559	0.005952087	4.958494186	119.0039	9.389780045	9.447675705	0.03834752	31.9346676	766.4320068	24	19986.52881
	19	6.502734	134.1450043	0.58074	4.197525	5.06145	12.07229996	0.029828951	7.587500095	15.175	2.398119926	4.293190002	0.0174258	6.90320015	13.8064003	2	268.2900085
	20	186.5109	699.5406494	2.777916	13.14204	1.87451375	2.024609089	0.005002528	3.804445505	41.8489	8.512659073	8.855751038	0.035944935	28.7446823	316.1914978	10.21667	7146.973991
	21	485.8765	835.2609253	3.258185	15.1355	2.05794835	2.105371237	0.00520208	4.346485138	104.3157	9.264876366	9.483449936	0.038492743	32.1491547	771.5797119	24	20046.26221
	22	337.393	732.6387329	2.864774	13.63237	1.96063054	3.803941011	0.009399019	3.768828869	71.60775	9.347677231	10.14660454	0.041184437	32.2352371	612.4694824	18.20556	13338.09612
	23	491.9258	845.6603394	3.248626	15.15244	2.27792954	2.33751297	0.00577567	4.887143135	117.2914	9.194232941	9.438136101	0.038308814	32.3970032	777.5280762	24	20295.84814
	24	495.808	852.3334961	3.237688	15.1718	2.41990256	2.491679668	0.006156594	5.249113083	125.9787	9.211403847	9.487986565	0.03851115	32.823719	787.7692871	24	20456.00391
	25	493.0848	847.6533813	3.244365	15.15999	2.31990218	2.384759665	0.005892414	4.995930195	119.9023	9.29487133	9.554233551	0.03878006	32.8735924	788.9661865	24	20343.68115
	26	491.5933	845.0889282	3.257784	15.13624	2.2426343	2.295608282	0.005672132	4.794642925	115.0714	9.212358475	9.430030823	0.03827592	32.3441238	776.2590332	24	20282.13428
	27	492.3545	846.3970947	3.26516	15.12317	2.37173033	2.421892166	0.005984165	5.066255569	121.5901	9.237158775	9.434132576	0.038292579	32.4111786	777.8682861	23.9	20228.89024
	28	491.8324	845.4998169	3.264334	15.12463	2.33405089	2.38401866	0.005890581	4.983003616	119.5921	9.172772408	9.37095356	0.038036123	32.1592712	771.8225098	24	20291.99561
	29	490.4638	843.1478271	3.278197	15.10007	2.21735716	2.255520821	0.00557308	4.700600624	112.8144	9.400277138	9.562952995	0.038815442	32.7270699	785.449707	24	20235.54785
	30	491.5882	845.0794067	3.297211	15.0664	2.24040914	2.265672445	0.005598164	4.732566833	113.5816	9.477544785	9.585824013	0.038908273	32.8805046	789.1320801	24	20281.90576
	31	496.1433	852.9098511	3.296002	15.06854	2.42133451	2.448996305	0.006051134	5.162649155	123.9036	9.600279808	9.713458061	0.039426319	33.6267242	807.0413818	24	20469.83643
Nov 02	1	497.2972	854.8934326	3.271137	15.11258	2.41179419	2.458119631	0.006073677	5.194460869	124.6671	9.555130005	9.741351128	0.039539538	33.8013802	811.2330933	24	20517.44238
	2	496.8463	854.1187744	3.279151	15.09838	2.59796715	2.640986204	0.006525516	5.568644524	133.6475	9.547338486	9.710048676	0.039412498	33.6663132	807.9915161	24	20498.85059
	3	496.8131	854.0621948	3.268085	15.118	2.41449833	2.463567495	0.006087134	5.203113556	124.8747	9.581520081	9.777626991	0.039686792	33.8948898	813.477417	24	20497.49268
	4	495.4754	851.7622681	3.265541	15.1225	2.46791458	2.519093752	0.006224332	5.300834656	127.22	9.52762413	9.730144501	0.039494067	33.6398964	807.3574829	24	20442.29443
	5	495.6694	852.0974731	3.26109	15.13036	2.58143258	2.639187098	0.006521069	5.557610035	133.3826	9.459738731	9.674812317	0.039269473	33.4600296	803.0407104	24	20450.33936
	6	494.9669	850.8884888	3.27012	15.11438	2.54279828	2.592545509	0.006405825	5.453410625	130.8819	9.460532188	9.648121834	0.039161149	33.3215218	799.7164917	24	20421.32373
	7	490.9259	843.9412842	3.27597	15.10402	2.52944374	2.57396841	0.006359919	5.370659828	128.8958	9.128572464	9.293066025	0.037719972	31.8453999	764.2896118	24	20254.59082
	8	481.1188	827.0812378	3.291106	15.07721	2.5385046	2.571588278	0.00635404	5.256356239	126.1525	8.665770531	8.78024292	0.035638478	29.4748631	707.3966675	24	19849.94971

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	9	483.0608	830.4199829	3.295368	15.06966	2.74216509	2.773951292	0.006854053	5.696888924	136.7253	8.777535439	8.882899284	0.03605514	29.9373417	718.4962158		24	19930.07959
	10	494.1923	849.5565796	3.285573	15.08702	3.0717411	3.117565393	0.007703075	6.545536518	157.0929	8.875630379	9.008730888	0.036565874	31.0646248	745.5510254		24	20389.35791
	11	495.1013	851.119812	3.276924	15.10231	3.3431263	3.401551247	0.008404762	7.155058384	171.7214	8.751145363	8.905906677	0.036148529	30.7664452	738.3947144		24	20426.87549
	12	489.1127	840.8242188	3.282733	15.09203	2.98594284	3.034161329	0.007496993	6.310911179	151.4619	8.788825035	8.928292274	0.036239397	30.4713955	731.3134766		24	20179.78125
	13	487.9337	838.7981567	3.2995	15.06235	2.74470997	2.774245501	0.006854782	5.750260353	138.0063	8.878968239	8.973920822	0.036424596	30.5530167	733.2723999		24	20131.15576
	14	488.0437	838.9870605	3.315019	15.0349	2.69335699	2.70997262	0.006695969	5.616496563	134.7959	9.068000793	9.119926453	0.037017204	31.0543957	745.305481		24	20135.68945
	15	488.1733	839.2091675	3.308659	15.0415	2.72594929	2.747034073	0.006787542	5.699074268	136.7778	8.892801285	8.963573456	0.036382604	30.5345669	732.8295898		24	20141.02002
	16	490.7712	843.677002	3.311137	15.04176	2.80591822	2.825726748	0.006981984	5.893540859	141.445	9.085967064	9.152070999	0.037147697	31.3468094	752.3234253		24	20248.24805
	17	494.0631	849.3347778	3.31826	15.02916	2.78906631	2.80214119	0.006923703	5.88248539	141.1797	9.096616745	9.141998291	0.037106812	31.5165119	756.3963013		24	20384.03467
	18	493.9061	849.0654297	3.316607	15.03209	2.89918876	2.914418697	0.007201127	6.114813328	146.7555	8.819720268	8.868328094	0.035996012	30.5645294	733.5487061		24	20377.57031
	19	493.7584	848.8104858	3.318069	15.0295	3.04598546	3.060536623	0.007562165	6.421329975	154.1119	8.592796326	8.635969162	0.035052873	29.7533951	714.0814819		24	20371.45166
	20	486.4474	836.2432251	3.300964	15.05976	2.65202165	2.679121256	0.006619739	5.539810181	132.9554	8.732149124	8.82189846	0.035807546	29.9190788	688.1387939		24	20069.8374
	21	482.6347	829.6879272	3.302935	15.05628	2.49383092	2.516936302	0.006219005	5.161812782	123.8835	9.061005592	9.150139809	0.037139859	30.8147335	739.5535889		24	19912.51025
	22	483.527	831.2229614	3.313808	15.03704	2.47745633	2.493084908	0.006160071	5.121570587	122.9177	9.084217072	9.141843796	0.037106175	30.8436661	740.2479858		24	19949.35107
	23	491.8239	845.4855957	3.31718	15.03108	2.63723588	2.650804996	0.00654977	5.539054871	132.9373	9.163708687	9.212545395	0.03739316	31.6150036	758.7600708		24	20291.6543
	24	492.7581	847.0913086	3.30923	15.04514	2.74598074	2.766693354	0.006836116	5.792079926	139.0099	9.141610146	9.212433815	0.037392706	31.6743126	760.1834717		24	20330.19141
	25	490.6019	843.3840332	3.299946	15.06156	2.6113224	2.638385773	0.006519087	5.500293255	132.007	9.221738815	9.319246292	0.037826251	31.9012413	765.6298218		24	20241.2168
	26	494.4152	849.9390869	3.296194	15.06821	2.77873278	2.809953451	0.006943006	5.903137207	141.6753	9.215698242	9.32401371	0.037845604	32.1654434	771.9705811		24	20398.53809
	27	495.6179	852.0078125	3.290597	15.07813	2.65249872	2.687147856	0.006639572	5.656764984	135.7624	9.492489815	9.621423721	0.039052758	33.2758369	798.6201172		24	20448.1875
	28	494.0906	849.381897	3.2995	15.06235	2.74645948	2.774974108	0.006856577	5.82612133	139.8269	9.363393784	9.46435833	0.038415246	32.6266327	783.0391846		24	20385.16553
	29	492.4121	846.4963379	3.293142	15.0736	2.60114622	2.633746147	0.006507623	5.509548664	132.2292	9.457830429	9.5779953	0.038876496	32.9092789	789.8226929		24	20315.91211
	30	5.141946	21.07855034	0.082367	1.771458	8.49917221	33.06207275	0.08169201	16.96212578	169.6213	0.479878992	1.80191493	0.00731386	1.56465709	15.64657021	7.983333		168.2770888
Dec 02	01	311.4424	676.2739868	2.646116	12.8301	5.8567977	18.46298599	0.04561948	9.692081451	184.1496	8.030898094	8.882450104	0.036053315	27.6273994	524.9205933	17.21111		11639.4267
	02	497.7527	855.6773071	3.306749	15.04953	2.13929462	2.157326698	0.005330455	4.562167168	109.492	9.806008339	9.889185905	0.040139593	34.3472557	824.3341064		24	20536.25537
	03	498.3878	856.7683105	3.315782	15.03355	2.17331839	2.185376167	0.005399763	4.627367496	111.0568	9.746387482	9.802515984	0.039787814	34.0895081	818.1481934		24	20562.43945
	04	499.1294	858.043335	3.327163	15.01341	2.18651199	2.19119215	0.005414132	4.646951199	111.5268	9.738915443	9.761177063	0.039620016	33.9972038	815.9329224		24	20593.04004
	05	497.4786	855.2050171	3.308849	15.04581	2.24915218	2.266037464	0.005599067	4.789717197	114.9532	9.718882561	9.795419693	0.039758991	34.0027199	816.0653076		24	20524.92041
	06	494.2614	849.6746826	3.317434	15.03063	1.98698914	1.997351289	0.004935181	4.19504118	100.681	9.858632088	9.910529137	0.040226229	34.1796837	820.3123779		24	20392.19238
	07	494.9805	850.9119263	3.324747	15.01769	2.1321404	2.138357878	0.005283589	4.497054577	107.9293	9.680089951	9.709319115	0.039409526	33.5336151	804.8068237		24	20421.88623
	08	495.5825	851.9463501	3.317054	15.0313	2.29732656	2.309103251	0.005705481	4.862174511	116.6922	9.605051041	9.65659523	0.039195538	33.3926773	801.4243164		24	20446.7124
	09	496.3298	853.230896	3.312792	15.03884	2.17156863	2.185365438	0.005399735	4.608597755	110.6063	9.757042885	9.822428703	0.039868671	34.0177422	816.4257813		24	20477.5415
	10	497.1516	854.6430664	3.302871	15.05639	2.30400157	2.325647593	0.005746354	4.912439346	117.8986	9.495985985	9.588108063	0.038917542	33.2600403	798.2409668		24	20511.43359
	11	498.5442	857.0373535	3.298292	15.06449	2.34851837	2.373799086	0.00586533	5.027942657	120.6706	9.604255676	9.710838318	0.039415695	33.7808533	810.7404785		24	20568.89648
	12	499.2557	858.2606812	3.301154	15.05943	2.34327292	2.367076635	0.005848721	5.021690369	120.5206	9.741140366	9.841220856	0.039944917	34.2849503	822.8388062		24	20598.25635
	13	498.083	856.2440186	3.310565	15.04278	2.26155376	2.277413368	0.005627174	4.819478035	115.6675	9.754179001	9.826298714	0.039884321	34.1525269	819.6605835		24	20549.85645
	14	494.9509	850.8599854	3.30745	15.04829	2.12196541	2.139165878	0.005285582	4.499015808	107.9764	9.707594872	9.788167953	0.039729569	33.8042641	811.3023071		24	20420.63965
	15	493.4426	848.2672119	3.326147	15.01521	2.03563714	2.040506363	0.005041811	4.277709007	102.665	9.643206596	9.668813705	0.039245114	33.2914734	798.9953613		24	20358.41309
	16	492.514	846.6708984	3.278196	15.10006	2.04008865	2.075433731	0.005128107	4.342523098	104.2206	9.651265144	9.819033623	0.039854854	33.7504578	810.0109863		24	20320.10156
	17	498.9006	857.6513672	3.291594	15.07634	2.39040685	2.421653032	0.005983572	5.1352911	118.1117	9.707788467	9.835408211	0.039921317	34.2462234	787.6630859		24	20583.63281
	18	505.3952	868.81604	3.298356	15.06437	2.84582448	2.876995802	0.007108659	6.177270412	148.2545	9.69742012	9.804552078	0.039796062	34.5753136	829.8074951		24	20851.58496
	19	498.8738	857.604187	3.288181	15.08239	2.56076336	2.596074581	0.006414543	5.499291897	131.983	10.06339741	10.2062664	0.041426629	35.5264626	852.6351318		24	20582.50049
	20	495.6729	852.102356	3.289644	15.07979	2.55615377	2.589927197	0.006399356	5.446479321	130.7155	9.658150673	9.790545464	0.03973924	33.8574753	812.5794067		24	20450.45654
	21	495.135	851.1764526	3.271709	15.11156	2.2515378	2.294534683	0.005669478	4.82774353	115.8659	9.686290741	9.873200417	0.040074717	34.1103058	818.6473389		24	20428.23486
	22	468.6316	805.6162109	3.293141	15.0736	5.00817251	5.070128918	0.012527594	10.07941914	241.9061	8.813307762	8.924945831	0.036225822	29.1898708	700.5568848		24	19334.78906
	23	484.2889	832.531189	3.290534	15.07821	4.30339336	4.359939098	0.010772812	8.92313385	214.1552	9.189623833	9.313938141	0.0378047	31.4991417	755.9793701		24	19980.74854
	24	487.2829	837.6789551	3.29365	15.0727	4.66794395	4.724250317	0.011672973	9.74373436	233.8496	8.908380508	9.020140648	0.036612201	30.6881657	736.5159912		24	20104.29492
	25	481.613	827.9311523	3.28303	15.09152	5.21071911	5.289414406	0.013069413	10.80771828	259.3852	8.729681969	8.86734581	0.03599203	29.8047829	715.3148193		24	19870.34766
	26	485.7856	835.1048584	3.264206	15.12485	3.35520864	3.425936222	0.008465014	7.04930687	169.1834	9.071022034	9.267939568	0.037617996	31.4300251	754.3206177		24	20042.5166
	27	486.0083	835.4875488	3.277753	15.10085	3.11260033	3.164101601	0.007818063	6.517048836	156.4092	8.898522377	9.054546356	0.036751863	30.7125206	737.1005249		24	20051.70117
	28	491.4561	844.8527222	3.26942	15.1156	2.36902881	2.413476229	0.005963367	5.038069248	120.9137	9.578022957	9.772490501	0.03966593	33.5117073	804.2810059		24	20276.46533
	29	486.747	836.7579346	3.307068	15.04896	3.68033171	3.710501671	0.009168147	7.642670631	183.4241	9.111562729	9.188289642	0.037294708	31.2277508	749.4660034		24	20082.19043
	30	489.7281	841.8822021	3.322268	15.02207	3.480968	3.490134239	0.008623647	7.208605289	173.0065	9.156711578	9.192424774	0.037311506	31.4389038	754.5336914		24	20205.17285
	31	496.5023	853.5285034	3.304905	15.05279	2.36012673	2.383060932	0.005888217	5.011698723	120.2808	9.561964989	9.646341324	0.039153915	33.4314384	802.3544922		24	20484.68408
Jan 03	01	481.7032	828.0869751	3.300581	15.06044	4.22835302	4.270521641	0.010551875	8.719921112	209.2781	8.634768486	8.724518776	0.0354123	29.3329048	703.9896851		24	19874.0874
	02	350.9258	723.9069214	2.887209	13.44056	6.04434443	11.68171978	0.028863899	11.92396736	238.4794	7.766522408	8.080784798	0.032799408	26.3401241	526.8024902	19.63333		14212.7058
	03	493.9753	849.1834717	3.304715	15.05313	2.64852285	2.672693729	0.006603858	5.602884293	134.4692	9.240498543	9.324667931	0.037848264	32.145546	771.493103		24	20380.40332
	04	494.3104	849.7596436	3.301853	15.05819	3.3607738	3.395705462	0.008390321	7.125828743	171.0199	8.979604721	9.068696976	0.036809269	31.2837296	750.8095093		24	20394.23145
	05	492.0437	845.8634644	3.310185	15.04345	3.62643695	3.651779652	0.009023042	7.594940186	182.2786	9.079288483	9.14729023	0.037128296	31.4237289	754.1694946		24	20300.72314
	06	493.121	847.7145996	3.303952	15.05447	3.21609879	3.245650768	0.008019558	6.7695961	162.4703	9.201229095	9.2872715	0.037696473	31.9716587	767.3198242		24	20345.15039
	07	495.4312	851.6866455	3.307323	15.04851	3.43454456	3.46123004	0.008552219	7.251973152	174.0473	9.322216988	9.399770737	0.038153101	32.5063667	780.152771		24	20440.47949
	08	494.822	850.6381836	3.297148	15.06651	2.84296203	2.875715733	0.007105497	6.043696404	145.0487	9.447495461	9.554916382	0.038782824	32.9939651	791.8551636		24	20415.31641
	09	493.3656	848.1349487	3.301853	15.05819	2.75663304	2.782211304	0.006874459	5.833390236	140.0014	9.285808563	9.380142212	0.038073424	32.2890892	774.9381104		24	20355.23877
	10	495.3791	851.5966797	3.318578	15.0286	3.01959372	3.033195019	0.007494604	6.384025097	153.2166	9.031435013	9.076327324	0.036840267	31.3724003	752.9376221		24	20438.32031

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	11	126.0135	577.5230103	2.250883	11.11207	9.00784206	23.5791111	0.058260553	18.59045029	167.3141	6.247879982	6.977210999	0.028320078	21.702837	195.325531	8.141667	4702.000246
	12	500.1622	859.8190918	3.316735	15.03186	2.99129415	3.00666666	0.007429058	6.38899231	153.3358	8.945105553	8.994098663	0.0365065	31.3891506	753.3395996	24	20635.6582
	13	501.7912	862.6199341	3.299628	15.06213	3.098768	3.131272554	0.007736943	6.675848484	160.2204	8.979604721	9.075136185	0.036835428	31.7771301	762.651123	24	20702.87842
	14	501.7611	862.5678711	3.305288	15.05211	3.54471993	3.577273846	0.008838945	7.609958172	182.639	8.982467651	9.062625885	0.036784641	31.7373161	761.6956177	24	20701.62891
	15	468.931	806.121521	3.115526	14.51702	3.30067968	3.594995499	0.008882737	6.962677002	167.1042	9.074831963	9.935957909	0.040329453	31.4830246	755.5925903	24	19346.9165
	16	495.7306	852.2014771	3.298673	15.06381	3.68907785	3.726955891	0.00920879	7.783688068	186.8085	8.964660645	9.0636549	0.03678881	31.3867626	753.2822876	24	20452.83545
	17	497.3105	854.9171143	3.298483	15.06415	3.7272346	3.766624928	0.009306812	7.905660152	189.7358	9.141450882	9.242557526	0.037514977	32.1001205	770.4028931	24	20518.01074
	18	503.3846	865.3590088	3.30745	15.04829	2.92611241	2.950460434	0.007290178	6.308563709	151.4055	9.45321846	9.531256676	0.038686804	33.4782829	803.4788208	24	20768.61621
	19	495.4399	851.7008057	3.306751	15.04953	3.61896491	3.648836136	0.009015776	7.610504627	182.6521	9.272933006	9.351643562	0.03795775	32.3684654	776.8432007	24	20440.81934
	20	474.2473	815.2693481	3.313173	15.03816	6.12551546	6.164448261	0.015231479	12.4076767	297.7842	8.715056419	8.771941185	0.035604775	29.0313797	696.7531128	24	19566.46436
	21	488.0912	839.0672607	3.31222	15.03985	4.64346218	4.668434143	0.011535051	9.592101097	230.2104	8.857504845	8.91870594	0.036200479	30.3952084	729.4849854	24	20137.61426
	22	501.9943	862.9691772	3.308975	15.04559	3.21037459	3.234805346	0.007992757	6.899372101	165.5849	9.050193787	9.121665001	0.037024274	31.9540577	766.8973999	24	20711.26025
	23	499.1377	858.0575562	3.307196	15.04874	3.12341166	3.148440123	0.007779363	6.678818703	160.2917	8.914738655	8.989351273	0.036487225	31.3092747	751.4226074	24	20593.38135
	24	497.4336	855.1294556	3.295431	15.06955	3.18112206	3.218716145	0.007953005	6.801859379	163.2446	8.733020782	8.837427139	0.035870567	30.6747456	736.1939087	24	20523.10693
	25	498.4672	856.9051514	3.298547	15.06404	3.14137697	3.175179482	0.007845432	6.72526741	161.4064	8.722049713	8.818024635	0.03579184	30.6689034	736.0537109	24	20565.72363
	26	496.7416	853.9393921	3.294159	15.0718	3.08430052	3.121775866	0.007713478	6.588540554	158.125	8.738743782	8.84655571	0.035907637	30.6644459	735.9467163	24	20494.54541
	27	496.5255	853.5661621	3.283156	15.09127	3.00989628	3.056870461	0.007553107	6.449573994	154.7898	8.980557442	9.121754646	0.037024636	31.6046543	758.5117188	24	20485.58789
	28	494.44	849.9815674	3.265351	15.12282	2.84969258	2.909980059	0.00719016	6.112018108	146.6884	9.079287529	9.272978783	0.037638459	31.9923	767.8151855	24	20399.55762
	29	494.2693	849.6887817	3.271202	15.11245	2.97460175	3.032450438	0.007492765	6.36692524	152.8062	8.825708389	8.997899055	0.036521938	31.0338535	744.8125	24	20392.53076
	30	495.8953	852.4847412	3.287292	15.08395	3.15027785	3.195095539	0.007894637	6.732072353	161.5697	8.685165405	8.81069088	0.035762064	30.4857674	731.6583862	24	20459.63379
	31	496.4646	853.4623413	3.275842	15.10423	3.03724074	3.091272831	0.00763811	6.52238369	156.5372	8.838904381	8.997854233	0.03652174	31.1709881	748.1036987	24	20483.09619
Feb 03	01	496.3026	853.1837769	3.280741	15.09557	2.76728582	2.813555002	0.006951907	5.932757378	142.3862	9.147015572	9.298402786	0.037741657	32.2020683	772.8496094	24	20476.41064
	02	489.5247	841.5327759	3.284365	15.08914	3.04185081	3.086073875	0.007625265	6.372144699	152.9315	9.358304977	9.503165245	0.038572773	32.4816475	779.5595093	24	20196.78662
	03	491.2333	844.4701538	3.265732	15.12215	3.51578331	3.589420319	0.008868963	7.445558548	178.6934	9.163710594	9.357981682	0.03798347	32.1025963	770.4622803	24	20267.28369
	04	495.4588	851.7338867	3.261345	15.12992	3.08239126	3.147749901	0.00777766	6.584050179	158.0172	9.281993866	9.492341042	0.038528826	32.838623	788.1270142	24	20441.61328
	05	496.0938	852.8249512	3.258293	15.13532	3.06649423	3.135317802	0.00774694	6.571843147	157.7242	9.368321419	9.589399338	0.038922787	33.2166252	797.1989746	24	20467.79883
	06	492.4152	846.5009766	3.245892	15.15727	3.1033783	3.18419838	0.007867717	6.632529259	159.1807	9.595672607	9.860282898	0.040022299	33.8935242	813.4445801	24	20316.02344
	07	489.9922	842.3355713	3.263633	15.12585	1.78428245	1.825697899	0.004511048	3.806888342	91.36532	10.43113518	10.65443325	0.043245684	36.4092598	873.8222046	24	20216.05371
	08	499.9149	859.3942261	3.267704	15.11866	3.02038789	3.081263781	0.007613378	6.521821022	156.5237	9.676434517	9.874979973	0.040081955	34.4548073	826.9154053	24	20625.46143
	09	499.2917	858.3220215	3.259564	15.13309	3.14566827	3.217114687	0.007949042	6.798666954	163.168	9.545749664	9.766405106	0.039641254	34.0457077	817.0969849	24	20599.72852
	10	498.2533	856.5368652	3.235674	15.17536	2.87205625	2.957531691	0.007307651	6.250053883	150.0013	9.548027992	9.841218948	0.039944917	34.2204666	821.2911987	24	20556.88477
	11	493.3028	848.0264282	3.256002	15.13937	2.5318296	2.592166662	0.00640489	5.434656143	130.4317	9.364664078	9.593066216	0.038937669	33.0203819	792.4891968	24	20352.63428
	12	486.4511	836.2479858	3.269738	15.11504	2.27824664	2.322993279	0.0057398	4.801286221	115.2309	9.051465988	9.232913017	0.037475828	31.3366585	752.0797729	24	20069.95166
	13	491.4616	844.8621826	3.301727	15.05841	2.70861959	2.734934092	0.006757646	5.710735798	137.0577	8.952418327	9.042305946	0.036702164	31.0102367	744.2457275	24	20276.69238
	14	495.5826	851.946167	3.295368	15.06966	3.03867197	3.074264526	0.007596082	6.474190712	155.3806	8.807742119	8.913244247	0.036178309	30.8215828	739.7180176	24	20446.70801
	15	493.0605	847.6107788	3.299841	15.06176	3.16813707	3.200960875	0.007909133	6.705718994	160.9373	8.751673698	8.844676018	0.035900015	30.4285622	730.2855225	24	20342.65869
	16	495.5497	851.8896484	3.30109	15.05954	3.16029596	3.191782475	0.007886456	6.720714092	161.2971	8.821098328	8.911513329	0.036171269	30.8133335	739.5200195	24	20445.35156
	17	494.9172	850.8035278	3.292824	15.07416	3.59400415	3.637253284	0.008987153	7.609003544	182.6161	8.987076759	9.102300644	0.036945671	31.4524803	754.8594971	24	20419.28467
	18	501.3617	861.8829956	3.284875	15.08825	3.42945552	3.480870008	0.008600753	7.415332317	177.968	9.112673759	9.251314163	0.037550516	32.3634491	776.7227783	24	20685.19189
	19	495.418	851.663147	3.278833	15.09895	3.76984167	3.82956624	0.009462327	8.000991821	192.0238	9.159097672	9.317026138	0.037817229	32.2361832	773.668396	24	20439.91553
	20	500.4785	860.3623047	3.289072	15.0808	3.51006126	3.556641579	0.008787968	7.534193516	180.8206	9.301072121	9.431001663	0.038279857	32.9459076	790.7017822	24	20648.69531
	21	490.1729	842.6471558	3.291106	15.0772	4.23661995	4.287848949	0.010594675	8.86965847	212.8718	8.985805511	9.105812073	0.03695992	31.1629791	747.911499	24	20223.53174
	22	497.7232	855.6253662	3.281757	15.09376	3.03994417	3.08810544	0.007630283	6.532721996	156.7853	9.104885101	9.252204895	0.037554137	32.1333694	771.2009277	24	20535.00879
	23	494.1866	849.5471191	3.271455	15.112	2.67745948	2.728559494	0.006741897	5.729557991	137.5094	9.211245537	9.390454292	0.038115278	32.3818817	777.1652222	24	20389.13086
	24	492.0822	845.9295044	3.245318	15.15829	2.49542093	2.563488245	0.006334026	5.360407352	128.6498	9.367527008	9.626047134	0.039071534	33.0510292	793.2246704	24	20302.30811
	25	495.1229	851.1575928	3.253078	15.14457	2.5944674	2.658866644	0.006569693	5.593540192	134.245	9.35131073	9.586389542	0.038910568	33.1176796	794.8242798	24	20427.78223
	26	498.0605	856.2062378	3.252378	15.1458	2.81704831	2.887588024	0.007134833	6.110836029	146.6601	9.303297997	9.539583206	0.038720589	33.1527214	795.6652832	24	20548.94971
	27	498.4646	856.9005737	3.239152	15.16921	3.01768661	3.105792522	0.007673982	6.563925743	157.5342	9.318401337	9.593942642	0.038941223	33.3765259	801.0366211	24	20565.61377
	28	459.0106	789.0770874	3.012439	14.26406	2.83374	4.273835182	0.010560067	5.999830246	143.9959	8.68914032	9.042253494	0.03670197	30.8258858	739.821228	24	18937.8501
Mar 03	01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25	0
	02															0	0
	03	0.014652	0	0.000678	0	0.0050875	0	0	0	0	0.001695833	0	0	0	0	1.858333	0
	04	385.0345	836.0838623	3.163784	14.93585	16.3787498	25.2029705	0.062273111	34.23181152	650.4044	7.878404617	8.44210434	0.034265984	28.1155949	534.1962891	18.60278	15553.48205
	05	507.0661	871.687561	3.274953	15.10581	12.3302002	12.55310822	0.03101703	27.04449081	649.0678	6.708669662	6.831307411	0.027727859	24.1700211	580.0805054	24	20920.50146
	06	503.451	865.4724121	3.265415	15.12272	12.3844128	12.64567947	0.031245749	27.05653381	649.3568	6.560973644	6.700436115	0.027196666	23.5375462	564.901123	24	20771.33789
	07	499.0273	857.8687744	3.24411	15.16044	12.1548567	12.48884869	0.030858224	26.50029945	636.0072	6.562722683	6.746909142	0.027385304	23.4880161	563.7124023	24	20588.85059
	08	44.9038	308.5278625	1.261193	7.347828	11.443716	27.90406609	0.068947129	18.51748276	111.1049	2.461718082	3.063571692	0.012434855	8.21861267	49.31167221	5.261111	1623.199264
	09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.75	0
	10															0	0
	11															0	0
	12	31.12635	641.9920044	2.660255	13.58085	40.9702606	65.09114838	0.160830811	57.54615021	115.0923	7.740005493	8.487725258	0.03445125	24.8843002	49.76860046	1.788889	1148.452391
	13	494.0412	849.296936	3.278198	15.10007	11.8596058	12.05890465	0.029795896	25.32801628	607.8724	6.32790184	6.437022209	0.026127484	22.1907578	532.578186	24	20383.12646
	14	498.2936	856.6077271	3.256638	15.13825	12.3435583	12.6400919	0.031231921	26.77114677	642.5075	6.31581974	6.467243671	0.026250133	22.4821091	539.5706177	24	20558.58545

Unit 1 - CEMS Data

	15	494.0526	849.3157959	3.252759	15.14512	10.918107	11.19424915	0.027659466	23.50035858	564.0086	6.436649323	6.598833084	0.026784254	22.7497368	545.9937134		24	20383.5791
	16	502.9913	864.6834717	3.260581	15.13128	11.5605507	11.82212925	0.029210825	25.26662064	606.3989	6.716777802	6.869998455	0.027884888	24.1098251	578.6358032		24	20752.40332
	17	507.8414	873.0194702	3.246145	15.15681	12.6475372	12.99381256	0.032105912	28.03124619	672.7499	6.608510017	6.789271832	0.027557246	24.0575294	577.3806763		24	20952.46729
	18	510.464	877.52948	3.243666	15.16123	14.1943045	14.59008789	0.0360501	31.65001297	759.6003	6.52456665	6.708236694	0.027228316	23.8903084	573.3674316		24	21060.70752
	19	508.2751	873.765564	3.245002	15.15886	13.8003378	14.18078804	0.035038814	30.64254951	735.4212	6.539987087	6.721116066	0.027280601	23.8325825	571.9819946		24	20970.37354
	20	506.2999	870.369751	3.237243	15.17259	13.7367582	14.14834595	0.034958623	30.43987083	730.5569	6.401035786	6.59401083	0.026764683	23.2937908	559.0510254		24	20888.87402
	21	504.1209	866.6246948	3.243603	15.16134	13.1443615	13.51490307	0.03339348	28.9715786	695.3179	6.614391804	6.799994946	0.027600758	23.912571	573.9016724		24	20798.99268
	22	500.1296	859.7623901	3.254222	15.14255	11.4748669	11.76045036	0.029058488	25.00126266	600.0303	6.872581482	7.042925358	0.028586796	24.5811882	589.9484863		24	20634.29736
	23	498.4398	856.8580933	3.24729	15.15481	11.2947292	11.59610367	0.028652363	24.56847954	589.6435	6.780212402	6.962970257	0.028262254	24.2159958	581.1838989		24	20564.59424
	24	497.5714	855.3656006	3.25278	15.14509	10.6478348	10.91701031	0.026974455	23.07574654	553.8179	6.922502518	7.0966959	0.028805042	24.6384792	591.3234863		24	20528.77441
	25	499.4091	858.5252075	3.265224	15.12305	12.3793335	12.63995838	0.031231612	26.8232708	643.7585	6.771150589	6.915549278	0.028069789	24.0972958	578.335083		24	20604.60498
	26	498.8187	857.5098877	3.242394	15.16347	12.2815542	12.62590027	0.031196879	26.77102852	642.5047	6.615506172	6.804531574	0.027619172	23.6843452	568.4243164		24	20580.2373
	27	503.9337	866.3035889	3.226432	15.19171	10.0432072	10.38256931	0.025653884	22.25384903	534.0924	7.194684505	7.436062813	0.030182516	26.1448956	627.477478		24	20791.28613
	28	500.4839	860.3719482	3.253585	15.14364	9.39264774	9.622760773	0.023776533	20.4663372	491.1921	7.227912903	7.408877373	0.030072179	25.8714867	620.9157104		24	20648.92676
	29	499.5189	858.7141113	3.265414	15.12271	10.1877279	10.40246296	0.025703058	22.11601639	530.7844	7.089597702	7.240455627	0.029388567	25.2361927	605.6685791		24	20609.13867
	30	496.5963	853.6890259	3.253331	15.14411	9.7091856	9.948004723	0.024580142	21.02802467	504.6726	6.951916695	7.126041412	0.028924178	24.6914577	592.5949707		24	20488.53662
	31	484.9507	833.6693726	3.22217	15.19925	7.67338657	7.923849583	0.019578751	16.47064972	395.2956	6.931884766	7.175450325	0.029124716	24.268013	582.432312		24	20008.06494
Apr 03	01	496.8934	854.1990967	3.250915	15.14837	8.32522583	8.54287529	0.021108262	18.02663803	432.6393	7.209946632	7.395354271	0.030017292	25.6420422	615.4089966		24	20500.77832
	02	503.4481	865.4676514	3.25543	15.14038	8.89120865	9.104681969	0.022496425	19.48674202	467.6818	7.230296612	7.407234669	0.030065512	26.0180626	624.4334717		24	20771.22363
	03	506.0993	870.0251465	3.241439	15.16514	9.76276302	10.03453255	0.024793938	21.60237503	518.457	7.358440399	7.572095871	0.030734671	26.732605	641.5825195		24	20880.60352
	04	508.1866	873.6142578	3.246781	15.1557	10.2376518	10.51684284	0.025985671	22.7201004	545.2824	7.244289398	7.441281319	0.030203721	26.3843956	633.2255249		24	20966.74219
	05	511.841	879.8955078	3.257592	15.13657	11.3518162	11.61794853	0.028706353	25.27422523	606.5814	7.260982513	7.433433533	0.030171862	26.5443382	637.0640869		24	21117.49219
	06	485.7114	871.2808228	3.237643	15.17188	10.6718235	10.98483849	0.027142018	23.69070053	544.8861	7.157787323	7.372821331	0.029925844	26.0700741	599.6116943		24	20910.73975
	07	501.3327	861.8310547	3.25333	15.14408	10.8950653	11.16335201	0.027583087	23.77889061	570.6934	6.867654324	7.04066515	0.028577633	24.6306419	591.135376		24	20683.94531
	08	497.3162	854.9263916	3.267195	15.11956	11.1786718	11.40505219	0.028180322	24.14905357	579.5773	6.743487358	6.883214951	0.02793855	23.8803082	573.1273804		24	20518.2334
	09	489.2879	841.1265259	3.252569	15.14545	9.02141476	9.236976624	0.0228233	19.27194405	462.5267	6.778305531	6.951755524	0.028216746	23.7280006	569.4719849		24	20187.03662
	10	494.9586	850.8742676	3.284619	15.08869	12.4891872	12.6767664	0.031322557	26.66831207	640.0395	6.208187103	6.303017139	0.025583558	21.7666912	522.4005737		24	20420.98242
	11	496.2827	853.1505737	3.277879	15.10062	12.3725004	12.58529568	0.031096559	26.54645348	637.1149	6.14856863	6.255408764	0.025390321	21.6598415	519.8361816		24	20475.61377
	12	428.8818	769.3286133	2.969223	14.05653	11.8760624	16.51277924	0.040800836	22.6889286	521.8453	6.020564556	6.321577072	0.025658896	21.0189323	483.4354553	22.79167		17534.28229
	13	497.8622	855.8661499	3.28977	15.07957	9.31760979	9.443037987	0.023332438	19.97881317	479.4915	6.430765152	6.519744396	0.026463233	22.6492176	543.5811768		24	20540.7876
	14	501.1211	861.4674072	3.268149	15.11787	8.42443085	8.593456268	0.021233249	18.29572487	439.0974	6.707398415	6.845160961	0.027784096	23.9346466	574.4315186		24	20675.21777
	15	504.8102	867.8100586	3.270184	15.11426	9.32714653	9.507305145	0.023491241	20.4002037	489.6049	6.800244808	6.934662342	0.028147371	24.4260712	586.225708		24	20827.44141
	16	503.1186	864.9009399	3.242775	15.1628	9.41538429	9.679588318	0.023916934	20.69478416	496.6748	6.722183228	6.913301945	0.028060654	24.2701168	582.4827881		24	20757.62256
	17	501.3297	861.826355	3.268467	15.1173	10.8096695	11.02687836	0.027245916	23.49118805	563.7885	6.35747385	6.486451149	0.026328104	22.6900539	544.5612793		24	20683.83252
	18	502.2417	863.3942261	3.244619	15.15952	11.3727875	11.68262005	0.028866149	24.94704628	598.7291	6.453658581	6.634031296	0.026927114	23.2472382	557.9337158		24	20721.46143
	19	494.6126	850.2792358	3.237878	15.17145	9.09009743	9.352739334	0.023109337	19.70706558	472.9696	6.544757843	6.741417408	0.027363004	23.2580032	558.1920776		24	20406.70166
	20	494.4532	850.0053711	3.258292	15.13532	8.32410812	8.516915321	0.021044133	17.91874504	430.0499	6.527109623	6.680496216	0.027115721	23.0456543	553.0957031		24	20400.12891
	21	499.2332	858.2229004	3.248181	15.15322	7.88293266	8.09290123	0.019996449	17.16406631	411.9376	6.602945805	6.779476643	0.027517471	23.6174583	566.8189697		24	20597.34961
	22	505.6407	869.2364502	3.243029	15.16235	9.38629246	9.651399612	0.023847278	20.7419796	497.8075	6.692771912	6.882092476	0.027933979	24.2781219	582.6749268		24	20861.6748
	23	502.4012	863.668335	3.259563	15.13307	10.1045761	10.33631039	0.025539583	22.0642662	529.5424	6.415183544	6.56313467	0.02663935	23.0079708	552.1912842		24	20728.04004
	24	499.9892	859.5217285	3.26605	15.12158	10.1659384	10.37930679	0.02564585	22.05186653	529.2448	6.249841213	6.381550789	0.025902325	22.265255	534.3660889		24	20628.52148
	25	499.3767	858.4685669	3.254159	15.14264	9.14128971	9.36590004	0.023141854	19.87268829	476.9445	6.410574436	6.570044994	0.026667405	22.891674	549.4002075		24	20603.24561
	26	503.7253	865.9447632	3.256321	15.13883	9.5767498	9.805843353	0.024228912	20.98865891	503.7278	6.489906311	6.646573067	0.026978033	23.3583832	560.6011963		24	20782.67432
	27	500.7085	860.7589722	3.254666	15.14175	9.68247128	9.920526505	0.02451225	21.10571671	506.5372	6.496743202	6.656578064	0.027018625	23.2559757	558.1433716		24	20658.21533
	28	500.8489	861	3.249191	15.15145	9.80400467	10.05663109	0.024848536	21.40676117	492.3555	6.370109558	6.538620949	0.026539853	22.8483734	525.5125732		24	20664
	29	502.5523	863.9280396	3.256575	15.13835	9.06800079	9.281625748	0.022933608	19.8277874	475.8669	6.623931408	6.783243179	0.027532762	23.784296	570.8231201		24	20734.27295
	30	500.4617	860.3339844	3.266878	15.12012	9.03143406	9.217176437	0.022774367	19.60112	470.4269	6.521386623	6.657051563	0.027020566	23.2469368	557.9265137		24	20648.01563
May 03	01	497.3846	855.0444946	3.277815	15.10075	9.19153023	9.348434448	0.023098703	19.75790787	474.1898	6.453023434	6.565537453	0.026649117	22.7855949	546.8543091		24	20521.06787
	02	496.2362	853.0703125	3.277371	15.10154	9.09152794	9.24708271	0.022848254	19.49532509	467.8878	6.325517654	6.4368186	0.026126659	22.2903671	534.968811		24	20473.6875
	03	491.2502	844.4985352	3.291489	15.07655	8.63206577	8.74419117	0.021605697	18.24723244	437.9336	6.278458595	6.361582279	0.025821267	21.8054161	523.3300171		24	20267.96484
	04	494.9725	850.897644	3.295112	15.07013	9.77659321	9.891510963	0.024440559	20.80138016	499.2331	6.304214001	6.381112099	0.025900537	22.0383873	528.9213257		24	20421.54346
	05	494.4317	849.9674072	3.29259	15.07458	7.40189457	7.495111465	0.018519396	15.74625397	377.9101	6.553978443	6.638426304	0.026944967	22.902071	549.6497192		24	20399.21777
	06	491.3795	844.7207031	3.297593	15.06573	6.99166346	7.069357395	0.017467404	14.76357079	354.3257	6.644758701	6.719894409	0.02727565	23.0380135	552.9122925		24	20273.29688
	07	492.5271	846.6946411	3.299946	15.06156	7.08546209	7.158553123	0.017687805	14.98072052	359.5373	6.608985424	6.67902565	0.027109763	22.9535294	550.8847046		24	20320.67139
	08	495.412	851.6535034	3.308467	15.04649	6.97226524	7.027482986	0.017363958	14.76733303	354.416	6.790865421	6.845067024	0.027783692	23.6650124	567.9603271		24	20439.68408
	09	491.3595	844.687561	3.290788	15.07779	8.02744675	8.141888618	0.020117478	16.80606651	403.3456	6.686570644	6.775383472	0.027500859	23.261055	558.2653198		24	20272.50146
	10	494.8792	850.7371826	3.298291	15.06451	7.75478745	7.838168621	0.019367034	16.48666191	395.6799	6.618368149	6.692510605	0.027164496	23.1097336	554.633606		24	20417.69238
	11	489.5417	841.5610352	3.310629	15.04266	7.24969482	7.302384853	0.018043196	15.1947794	364.6747	6.501513958	6.549231052	0.026582912	22.3724957	536.9398804		24	20197.46484
	12	482.321	829.1495972	3.308212	15.04694	6.6951561	6.747832298	0.016672971	13.83187485	331.965	6.48275423	6.535188675	0.026525937	21.9946289	527.8710938		24	19899.59033
	13	479.621	824.5072632	3.315144	15.03467	6.79420424	6.834908009	0.016888121	13.93339634	334.4015	6.390223503	6.428266525	0.026091946	21.5119457	516.2866821		24	19788.17432
	14	483.9124	831.8841553	3.307895	15.0475	6.75382185	6.807679176	0.016820833	13.99834156	335.9602	6.459541798	6.512922287	0.026435558	21.9911041	527.786499		24	19965.21973
	15	481.214	827.2463989	3.318768	15.02826	8.22379208	8.262414932	0.020415287	16.82832909	403.8799	6.165737152	6.195680618	0.025147887	20.8142166	499.5411987		24	19853.91357
	16	447.7224	769.6712646	3.078322	14.14742	7.96464777	10.30172253	0.02545413	15.85709572	380.5703	5.856831074	5.988323689	0.024306251	19.8050842	475.3220215		24	18472.11035

Unit 1 - CEMS Data

	17																0	0
	18																0	0
	19																0	0
	20																0	0
	21																0	0
	22																0	0
	23	153.5496	703.7528687	2.88597	13.47178	11.447299	19.75884056	0.048821334	21.91534424	197.2381	7.804231167	8.39023304	0.03405549	25.4921436	229.429306	8.091667	5694.533987
	24	479.6019	824.4741821	3.335304	14.99901	7.57863426	7.576123238	0.018719546	15.44239998	370.6176	6.623611927	6.622890472	0.026881916	22.1661167	531.9868164	24	19787.38037
	25	485.2665	834.2124634	3.337847	14.99451	8.29136086	8.281377792	0.020462146	17.0832119	409.9971	6.763838291	6.75744772	0.027428063	22.8783913	549.0814209	24	20021.09912
	26	482.5555	829.5511475	3.348149	14.97629	9.15687752	9.117541313	0.022528183	18.69874191	448.7698	6.42854023	6.403033733	0.025989525	21.5601578	517.4437866	24	19909.22754
	27	479.0608	823.5436401	3.331657	15.00546	8.74754047	8.752549171	0.021626333	17.83252144	427.9805	6.342952251	6.348997593	0.025770195	21.2321911	509.5726013	24	19765.04736
	28	468.6235	805.6021118	3.31667	15.03197	7.51027155	7.545398235	0.018643625	15.04058361	360.974	6.085609913	6.119019032	0.024836725	20.0100994	480.2424011	24	19334.45068
	29	471.0188	809.7203979	3.310312	15.04323	6.82600069	6.873464584	0.016983392	13.76037121	330.2489	6.428061962	6.476038456	0.026285855	21.2877712	510.9064941	24	19433.28955
	30	480.3458	825.7540894	3.333079	15.00295	7.91742992	7.918911457	0.019566542	16.17111206	388.1067	6.552706242	6.556369781	0.026611909	21.9785461	527.4851074	24	19818.09814
	31	475.9065	818.1220703	3.337593	14.99496	7.92696857	7.918384552	0.019565234	16.02364159	384.5674	6.365581512	6.360440731	0.025816649	21.1202831	506.8868103	24	19634.92969
Jun 03	01	472.4838	812.2374268	3.330406	15.00768	7.01105881	7.016980171	0.017337983	14.10503387	338.5208	6.423610687	6.432276249	0.026108226	21.2052174	508.9252014	24	19493.69824
	02	469.0463	806.3292847	3.320359	15.02545	6.70771646	6.733514786	0.016637592	13.43339157	322.4014	6.333785534	6.361315727	0.025820179	20.8209953	499.7038879	24	19351.90283
	03	467.9782	804.4920654	3.320868	15.02455	6.33426046	6.357226372	0.01570783	12.64853764	303.5649	6.264784813	6.291235447	0.025535733	20.5431957	493.0366821	24	19307.80957
	04	471.1894	810.0130615	3.330661	15.00723	6.54745865	6.553601265	0.016193051	13.12516212	315.0039	6.324564457	6.332695007	0.025704034	20.8228493	499.7483826	24	19440.31348
	05	469.478	807.0708618	3.346052	14.98	6.72027636	6.695336342	0.016543241	13.3555336	320.5328	6.114863396	6.094463825	0.024737051	19.9671535	479.2117004	24	19369.70068
	06	473.3302	813.6920166	3.354319	14.96537	7.06097937	7.017153263	0.017338425	14.11143303	338.6744	6.179253578	6.143715382	0.024936974	20.2950325	487.0808105	24	19528.6084
	07	470.9866	809.6635132	3.346306	14.97955	6.99245691	6.966916084	0.017214304	13.94684124	334.7242	6.094830513	6.073980331	0.024653921	19.963438	479.1224976	24	19431.92432
	08	469.4558	807.03302	3.34408	14.98349	7.34063339	7.318347454	0.018082621	14.59958363	350.39	6.004209995	5.987718105	0.024303775	19.614212	470.7410889	24	19368.79248
	09	474.082	814.986084	3.329771	15.0088	7.69612169	7.704341888	0.019036358	15.51887894	372.4531	6.178138256	6.188537598	0.025118891	20.4778214	491.4677124	24	19559.66602
	10	486.0853	835.619812	3.304543	15.05344	8.54978371	8.625315666	0.021311954	17.80361748	391.6796	6.276883125	6.334129333	0.025709845	21.4720268	472.384613	24	20054.87549
	11	487.0417	837.2633667	3.309548	15.04458	8.79566097	8.861590385	0.02189577	18.34750366	440.3401	6.267488003	6.315764427	0.025635296	21.4652882	515.1668701	24	20094.3208
	12	485.7172	834.9869385	3.332188	15.00453	7.4174242	7.429157257	0.01835642	15.33381748	368.0116	6.635855198	6.640006542	0.026951374	22.5016212	540.0388794	24	20039.68652
	13	484.3267	832.597229	3.321696	15.02309	8.92523575	8.955982208	0.022128992	18.43668365	442.4804	6.255565166	6.280647755	0.025492767	21.2254295	509.4103088	24	19982.3335
	14	481.0277	826.925293	3.315782	15.03355	9.16291523	9.215507507	0.02277025	18.83311272	451.9947	6.121699333	6.156857967	0.024990296	20.6641121	495.9386902	24	19846.20703
	15	482.3322	829.1685791	3.312285	15.03974	9.48485851	9.545425415	0.023585426	19.56461334	469.5507	6.272892952	6.315926075	0.025635963	21.2554913	510.1318054	24	19900.0459
	16	477.9504	821.6357422	3.299205	15.06287	9.53594494	9.636778831	0.023811158	19.5662365	469.5897	6.133306026	6.199674129	0.025164096	20.6822834	496.3748169	24	19719.25781
	17	472.1211	811.6141357	3.307579	15.04806	10.1317711	10.21243286	0.0252335	20.49048233	491.7716	5.864621639	5.913263798	0.024001574	19.4806213	467.5349121	24	19478.73926
	18	474.2584	815.288269	3.308913	15.0457	9.54495144	9.615083694	0.023757549	19.37312126	464.9549	6.033464432	6.08163023	0.024684967	20.1266327	483.0391846	24	19566.91846
	19	481.0992	827.0480347	3.310885	15.04221	8.81887245	8.882561684	0.021947596	18.15890884	435.8138	6.4107337	6.45713377	0.026209105	21.6759701	520.2232666	24	19849.15283
	20	485.1318	833.9810791	3.309931	15.0439	9.33875179	9.406813622	0.023242941	19.39216232	465.4119	6.450480938	6.499419689	0.026380742	22.0030422	528.072998	24	20015.5459
	21	485.3572	834.3682251	3.310376	15.04311	9.66356087	9.733514786	0.02405018	20.07369995	481.7688	6.41168642	6.459067345	0.026216963	21.8754749	525.0114136	24	20024.8374
	22	483.9973	832.0305176	3.306052	15.05076	9.88566113	9.968589783	0.024631016	20.50111198	492.0267	6.367012501	6.423095226	0.026070954	21.6924038	520.6176758	24	19968.73242
	23	485.7392	835.0247803	3.290217	15.07878	8.83651829	8.954974174	0.0221265	18.49205017	443.8092	6.629177094	6.719060421	0.027272262	22.771534	546.5167847	24	20040.59473
	24	485.5026	834.6186523	3.30904	15.0455	8.50074387	8.563180923	0.021158438	17.66004944	423.8412	6.508191109	6.561956882	0.026634583	22.2421341	533.8112183	24	20030.84766
	25	478.0962	821.8859863	3.309486	15.0447	9.35576248	9.424514771	0.023286674	19.14692116	459.5261	6.057786942	6.103818417	0.024775021	20.3645592	488.7493896	24	19725.26367
	26	473.5964	814.1502686	3.295686	15.06911	9.13080692	9.235198975	0.022818891	18.586092	446.0662	5.98990202	6.060810089	0.024600467	20.0283051	480.6792908	24	19539.60645
	27	470.9721	809.6399536	3.285002	15.08802	8.63794804	8.763597488	0.02165365	17.5364666	420.8752	5.954288483	6.045027733	0.024536408	19.8671703	476.8121033	24	19431.35889
	28	469.7118	807.472168	3.295749	15.06899	8.02029324	8.113625526	0.020047663	16.1967659	388.7224	6.051746845	6.123366833	0.024854375	20.0721416	481.7314148	24	19379.33203
	29	473.8025	814.5043945	3.303762	15.05482	8.36830997	8.444117546	0.02086425	17.00065804	408.0158	6.14538765	6.20353508	0.025179775	20.5079842	492.1915894	24	19548.10547
	30	478.3766	822.3677979	3.306434	15.05009	8.59581661	8.665216446	0.021410542	17.62594604	423.0227	6.310891628	6.365656853	0.025837813	21.2437668	509.8504028	24	19736.82715
Jul 03	01	480.3788	825.8106689	3.3016	15.05865	10.4284344	10.52746964	0.026011936	21.48056602	515.5336	6.280365944	6.34434557	0.025751304	21.2716122	510.5187073	24	19819.45605
	02	477.2174	820.3747559	3.304716	15.05313	10.7648497	10.86090279	0.026835795	22.05523682	529.3257	6.053654194	6.108901978	0.02479565	20.3396549	488.1517029	24	19688.99414
	03	477.1865	820.322937	3.308531	15.04638	10.9596024	11.04298687	0.027285704	22.39752579	537.5406	5.991490841	6.039042473	0.024512105	20.1088505	482.6123962	24	19687.75049
	04	475.8212	817.9755859	3.313873	15.03693	9.12936687	9.185688972	0.022696558	18.57629967	445.8312	6.102462292	6.140977383	0.024925858	20.3883953	489.3215027	24	19631.41406
	05	291.4613	707.3323975	2.879438	13.55163	10.5481195	16.25262833	0.040158052	20.08697128	341.4785	5.848386288	6.259965897	0.025408836	19.3704834	329.2982178	16.62778	11761.36544
	06	479.912	825.0078125	3.314383	15.03603	8.14143848	8.188996315	0.020233875	16.70832443	400.9998	6.565108299	6.605595112	0.026811704	22.1179714	530.8312988	24	19800.1875
	07	481.0113	826.8968506	3.315528	15.034	10.3953695	10.45303917	0.02582803	21.36980057	512.8752	6.214387894	6.250844002	0.025371801	20.9788914	503.4934082	24	19845.52441
	08	486.8103	836.8666382	3.30001	15.06145	11.7465668	11.86741829	0.029322762	24.56537437	589.569	6.415024757	6.48260355	0.026312487	22.0197163	528.4732056	24	20084.79932
	09	480.7639	826.4718018	3.304653	15.05324	11.456748	11.55958939	0.028562142	23.62862968	567.0871	6.17225647	6.229301929	0.025284363	20.9047966	501.7150879	24	19835.32324
	10	477.6403	821.1021118	3.308468	15.04649	11.467555	11.55055046	0.028539779	23.45727158	562.9745	6.02996397	6.078569412	0.024672549	20.2567043	486.1608887	24	19706.45068
	11	476.7007	819.4869385	3.310248	15.04334	9.9130106	9.983642578	0.02466822	20.25297546	486.0714	6.128854275	6.174371243	0.025061401	20.5390415	492.9370117	24	19667.68652
	12	474.4015	815.5339355	3.31451	15.0358	9.06147957	9.113679886	0.022518639	18.37838364	441.0812	6.100395203	6.138039112	0.024913916	20.3169422	487.6065979	24	19572.81445
	13	476.1981	818.6226196	3.318072	15.0295	9.42794132	9.469863892	0.023398725	19.17368317	460.1684	6.066373348	6.097161293	0.024748005	20.2580338	486.1928101	24	19646.94287
	14	473.3573	813.7392578	3.308851	15.04581	8.6627512	8.726097107	0.021560997	17.56979179	421.675	6.100077629	6.148056984	0.024954587	20.3090134	487.4162903	24	19529.74219
	15	471.4342	810.4334106	3.340583	14.98967	6.57718897	6.605027676	0.016320109	13.19682693	316.7238	7.187531471	7.142442703	0.028990729	23.5456257	565.0950317	24	19450.40186
	16	471.0411	809.7580566	3.345734	14.98056	7.36813831	7.356338024	0.01817649	14.71742821	353.2183	6.626791477	6.594863892	0.026768142	21.6873875	520.4973145	24	19434.19336
	17	468.6842	805.7058716	3.347005	14.97831	7.72474098	7.718067169	0.019070284	15.34646702	368.3152	6.487045765	6.44740963	0.026169624	21.1116619	506.6799011	24	19336.94092
	18	467.9401	804.4260864	3.322459	15.02174	8.76110744	8.78814888	0.0217143	17.47608757	419.4261	5.730014324	5.752632618	0.023349583	18.7816467	450.7595215	24	19306.22607

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	19	469.7501	807.5383301	3.312284	15.03974	8.34175968	8.39659214	0.020746822	16.75944138	402.2266	6.045069695	6.086957455	0.024706597	19.951704	478.8409119	24	19380.91992
	20	468.5742	805.5171509	3.314955	15.03501	7.98150063	8.02655983	0.019832522	15.9829874	383.5917	5.962237835	5.997954369	0.024345338	19.6128159	470.7076111	24	19332.41162
	21	470.3546	808.5773926	3.33153	15.0057	6.2793107	6.334654808	0.01565207	12.6031847	277.2701	7.176157951	7.14796114	0.029013146	23.5270691	517.59552	24	19405.85742
	22	467.6404	803.9112549	3.343509	14.9845	7.25398779	7.282334805	0.017993653	14.37814426	345.0755	6.866066933	6.813795567	0.027656782	22.3387623	536.1303101	24	19293.87012
	23	469.3844	806.9102173	3.353683	14.9665	6.9620924	6.969810009	0.017221445	13.81725121	331.614	7.059867382	6.988093853	0.028364234	22.9757881	551.4188843	24	19365.84521
	24	470.2935	808.4734497	3.362903	14.95019	6.37003422	6.385584831	0.015777899	12.69835377	304.7605	7.245085239	7.134990215	0.028960509	23.4887714	563.7305298	24	19403.36279
	25	468.8354	805.9656982	3.333207	15.00272	7.661623	7.663442135	0.018935317	15.26573753	366.3777	5.96668911	5.969568729	0.024230113	19.5304699	468.7312927	24	19343.17676
	26	469.4753	807.0661011	3.33645	14.99699	8.90345097	8.895936966	0.021980638	17.72683334	425.444	5.693712234	5.691457748	0.023101266	18.6509838	447.6235962	24	19369.58643
	27	466.4534	801.8710327	3.333588	15.00205	9.51761055	9.515771866	0.023512166	18.86357498	452.7258	5.630436897	5.633088112	0.022864372	18.3327579	439.9862061	24	19244.90479
	28	469.5691	807.2266846	3.352114	14.96928	7.09123945	7.115740776	0.017582024	14.10688114	338.5652	7.137453556	7.059342384	0.02865345	23.2278576	557.4686279	24	19373.44043
	29	465.1789	799.6796875	3.324812	15.01758	10.611104	10.63905907	0.026287641	21.02822113	504.6773	5.556190968	5.573116779	0.022620942	18.089016	434.1364136	24	19192.3125
	30	468.1017	804.7046509	3.33734	14.99541	13.6758499	13.66052532	0.03375325	27.16957092	652.0697	5.295456886	5.291727543	0.021478808	17.2838745	414.8129883	24	19312.91162
	31	470.9704	809.6352539	3.332824	15.0034	14.1386499	14.14114571	0.034940805	28.2874794	678.8995	5.397525311	5.401731491	0.0219253	17.754776	426.1145935	24	19431.24609
Aug 03	01	470.0304	808.0201416	3.344208	14.98326	14.6516943	14.63577557	0.036162972	29.17902374	700.2966	5.539656162	5.512717724	0.022375779	18.1147079	434.7529907	24	19392.4834
	02	471.6375	810.7828979	3.32831	15.01139	13.4909458	13.51572514	0.033395492	27.07730865	649.8554	5.495778084	5.507018566	0.022352658	18.1261158	435.0267944	23.99167	19452.03313
	03	470.7141	809.1959839	3.339374	14.99181	13.3434086	13.32268715	0.032918502	26.63795471	639.3109	5.494345665	5.4870224	0.022271501	18.0220299	432.5286865	23.99722	19418.4564
	04	471.9314	811.288147	3.332697	15.00362	10.3479853	10.35643005	0.025589325	20.75481606	498.1156	5.920425415	5.922451496	0.024038875	19.514679	468.3522949	24	19470.91553
	05	475.9097	818.1266479	3.326975	15.01375	9.7952013	9.816429138	0.024255037	19.85017586	476.4042	5.960011959	5.974594593	0.024250513	19.8426628	476.2239075	24	19635.03955
	06	473.8329	814.5563354	3.334923	14.99969	10.3286018	10.32613087	0.025514457	20.79337883	499.0411	5.855400085	5.855440617	0.023766879	19.3596992	464.6328125	24	19549.35205
	07	473.2502	813.5550537	3.332697	15.00362	10.0031443	10.00767803	0.024727609	20.1257534	483.0181	5.902778149	5.906638145	0.023974692	19.5053501	468.1283875	24	19525.32129
	08	473.1458	813.3756104	3.323922	15.01915	10.5098276	10.54105663	0.026045492	21.19047165	508.5713	5.920902252	5.94049263	0.024112096	19.6135788	470.7258911	24	19521.01465
	09	469.4918	807.0943604	3.326655	15.01431	10.2215939	10.24614239	0.025316838	20.43788719	490.5093	5.819627762	5.833921432	0.023679538	19.11343	458.72229	24	19370.26465
	10	468.7416	805.8051147	3.328882	15.01038	10.3144417	10.33088112	0.025526188	20.57377052	493.7705	5.763667107	5.773967266	0.023436179	18.8865242	453.2766113	24	19339.32275
	11	473.8957	814.6647949	3.305925	15.05099	12.0430832	12.1463747	0.030012017	24.46064186	587.0554	5.782586098	5.833578587	0.023678143	19.2885876	462.9260864	24	19551.95508
	12	471.8625	811.1700439	3.311394	15.04132	9.59630585	9.671125412	0.023896025	19.39511681	465.4828	6.052540779	6.095498085	0.024741262	20.0720825	481.730011	24	19468.08105
	13	471.3242	810.2444458	3.326658	15.01431	9.41585732	9.437078476	0.023317721	18.90050507	453.6121	6.011365414	6.026293278	0.024460355	19.8185959	475.6463013	24	19445.8667
	14	468.9778	806.2111816	3.325385	15.01656	9.70060062	9.726256371	0.024032246	19.38089943	465.1416	5.949837208	5.966782093	0.024218809	19.5259953	468.6239014	24	19349.06836
	15	471.1786	809.9942017	3.326338	15.01488	9.76721287	9.792411804	0.024195684	19.58738327	470.0972	6.04411459	6.059792042	0.024596324	19.9234657	478.163208	24	19439.86084
	16	225.2579	619.5491333	2.709096	13.32032	10.246994	17.81164742	0.044010159	12.35861969	185.3793	5.754477501	6.282745361	0.025501281	17.5087948	262.6319275	14.03889	8697.78147
	17	459.8213	790.4702759	3.283476	15.09074	6.33680487	6.424109459	0.015873095	12.58349323	302.0038	6.488318443	6.590465546	0.026750308	21.1416245	507.3990173	24	18971.28662
	18	469.9562	807.8925171	3.320985	15.02435	8.13856316	8.175158501	0.020199686	16.32226753	359.0899	6.665903568	6.68861866	0.027148699	21.92556	482.3623047	24	19389.42041
	19	471.7746	811.0189819	3.333714	15.00183	7.62712574	7.645077229	0.01888993	15.32448101	367.7875	7.013127327	7.006573677	0.028439254	23.0706749	553.696228	24	19464.45557
	20	474.7885	816.1998901	3.370218	14.93725	5.72932577	5.740804672	0.014184734	11.57093239	277.7024	8.865451813	8.729334831	0.035431847	28.9326878	694.3845215	24	19588.79736
	21	468.6293	805.6115723	3.328055	15.01184	9.79885292	9.816711426	0.024255734	19.55151558	469.2364	6.118837833	6.130540848	0.024883492	20.0484619	481.1630859	24	19334.67773
	22	472.6044	812.4453125	3.321379	15.02365	9.85227489	9.885243416	0.02442508	19.86000061	476.64	6.120585918	6.146187305	0.024947001	20.2698879	486.4772949	24	19498.6875
	23	472.9638	813.0639038	3.324176	15.0187	10.1759605	10.20483112	0.025214741	20.51442528	492.3462	6.032507896	6.051649094	0.024563275	19.9732838	479.3587952	24	19513.53369
	24	470.1075	808.1522827	3.325893	15.01566	10.2193642	10.24320793	0.025309542	20.4685173	491.2444	5.93346262	5.949554443	0.024148863	19.5161877	468.3884888	24	19395.65479
	25	468.0333	804.5866089	3.339779	14.9911	9.90087128	9.882099152	0.0244173	19.65981674	471.8356	5.960011959	5.951310158	0.024156008	19.4351959	466.4447021	24	19310.07861
	26	473.3181	813.6732788	3.377276	14.92476	6.65716219	6.599000454	0.016305232	13.24262619	317.823	7.036496162	6.93467617	0.028147426	22.9202995	550.0872192	24	19528.15869
	27	478.8569	823.1942139	3.388978	14.90406	5.85110903	5.755772114	0.014221717	11.71426678	281.1424	7.07322216	6.960118771	0.028250696	23.2568798	558.1651001	24	19756.66113
	28	483.3983	831.0009766	3.382618	14.91531	5.8412509	5.756835461	0.014224354	11.82850838	283.8842	7.302317619	7.199101448	0.029220721	24.2816086	582.758606	24	19944.02344
	29	486.0387	835.5396118	3.379122	14.9215	5.76859426	5.690231323	0.014059779	11.75480366	282.1153	7.372907639	7.276137352	0.029533399	24.6762409	592.2297974	24	20052.95068
	30	483.8626	831.7990723	3.370727	14.93635	5.42471218	5.364639759	0.013255292	11.03909588	264.9383	7.277039528	7.199959278	0.029224204	24.314909	583.5578003	24	19963.17773
	31	478.7526	823.0149536	3.37645	14.92622	4.97351313	4.910926342	0.012134225	9.995519638	239.8925	7.155892849	7.067858219	0.028687995	23.6113911	566.6734009	24	19752.35889
Sep 03	01	476.8932	819.8175659	3.385734	14.9098	4.73201609	4.658715725	0.01151105	9.443788528	226.6509	7.161776543	7.053913593	0.028631404	23.4727325	563.3455811	24	19675.62158
	02	475.9945	818.2731934	3.364899	14.94666	3.95992923	3.936536789	0.009726631	7.937987804	174.6357	8.170302391	8.075696945	0.032778755	26.8603497	590.9277344	24	19638.55664
	03	473.4668	813.9281006	3.37842	14.92274	4.08685493	4.059341908	0.010030072	8.134313583	195.2235	8.06274128	7.917924881	0.032138385	26.2400875	629.762085	24	19534.27441
	04	475.736	817.8291016	3.393429	14.89619	3.8394773	3.794716835	0.009376225	7.645823956	183.4998	8.095653534	7.92193222	0.032154653	26.3592701	632.6224976	24	19627.89844
	05	476.7199	819.5200195	3.372126	14.93388	4.5971961	4.550378799	0.011243353	9.214904785	221.1577	7.176085472	7.092391491	0.028787579	23.5979538	566.3508911	24	19668.48047
	06	216.6943	687.7196655	2.869117	13.41228	6.89190817	13.43419075	0.033194046	9.648946762	125.4363	7.535964489	7.903372288	0.032079268	24.1199532	313.5593872	12.74167	8762.694826
	07	483.9318	831.9171143	3.395019	14.89338	4.03741217	3.964119196	0.009794786	8.153112411	195.6747	7.74986124	7.612159729	0.030897295	25.7077675	616.9863892	24	19966.01074
	08	488.1209	839.1193848	3.384908	14.91126	4.47350645	4.408284187	0.010892264	9.139368057	219.3448	8.075141907	7.954064369	0.032285053	27.0954285	650.2902832	24	20138.86523
	09	492.4944	846.6379395	3.384972	14.91115	4.89878988	4.824193954	0.011919921	10.09600639	242.3042	8.288022041	8.165914536	0.03314494	28.0608997	673.4616089	24	20319.31055
	10	486.8741	836.9751587	3.400298	14.88404	5.15809441	5.056766987	0.012494579	10.46230221	251.0953	7.726329803	7.577318192	0.030755876	25.7450581	617.8814087	23.93839	20036.25504
	11	483.1732	830.6137085	3.390886	14.90069	5.19195843	5.103963375	0.012611183	10.48125267	251.5501	7.569094181	7.444427967	0.030216483	25.0976219	602.3428955	24	19934.729
	12	481.929	828.4742432	3.385862	14.90958	4.79306555	4.718852997	0.011659634	9.668120384	232.0349	7.867667675	7.749810696	0.031456023	26.0582542	625.3981323	24	19883.38184
	13	479.077	823.5720825	3.387578	14.90654	4.38526964	4.316095829	0.010664478	8.785230637	210.8456	7.786902905	7.666062832	0.03111608	25.6293964	615.1055298	24	19765.72998
	14	480.1129	825.3525391	3.396292	14.89112	4.67128372	4.584449768	0.011327548	9.355506897	224.5322	7.77704668	7.636511326	0.030996125	25.5823212	613.975708	24	19808.46094
	15	481.9395	828.4931641	3.386456	14.90853	4.60387373	4.531522751	0.011196772	9.281414986	222.754	8.002803802	7.881480217	0.031990446	26.5024128	636.0579224	24	19883.83594
	16	477.8822	821.5177002	3.331489	14.78807	6.36796618	7.061360836	0.017447654	11.96495438	287.1589	8.204078674	8.192533493	0.033252995	27.246563	653.9174805	24	19716.4248
	17	438.8983	754.4877319	3.103442	13.44988	5.93505383	7.606383324	0.018794341	9.530622482	228.7349	9.295984268	9.123987198	0.037033711	30.100605	722.4144897	23.01667	17365.79244
	18	487.8987	838.7369385	3.428852	14.83352	4.40673351	4.28198576	0.010580202	8.881672859	213.1602	8.326020241	8.096714973	0.032864075	27.567955	661.6309204	24	20129.68652
	19	485.2639	834.2077026	3.399343	14.88573	4.1687336	4.086114407	0.010096224	8.429641724	202.3114	8.210119247	8.053878784	0.032690205	27.2728577	654.548584	24	20020.98486

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	20	485.044	833.8297729	3.40087	14.88303	4.04090881	3.960415363	0.009785636	8.167581558	196.022	8.23333168	8.073617935	0.032770317	27.3278198	655.8676758	24	20011.91455
	21	480.5577	826.1175537	3.400807	14.88314	3.76523113	3.689549446	0.009116367	7.541218281	180.9892	8.133966446	7.975577354	0.032372374	26.7494202	641.986084	24	19826.82129
	22	479.2858	823.9309692	3.383955	14.91295	3.58414841	3.529292583	0.008720396	7.193348408	172.6404	8.067510605	7.949910641	0.0322682	26.5932121	638.2371216	24	19774.34326
	23	480.2992	825.6737671	3.38847	14.90496	3.75314784	3.691222906	0.009120502	7.535072327	180.8417	8.037143707	7.910368919	0.032107711	26.5128326	636.3079834	24	19816.17041
	24	483.3081	830.8451538	3.393875	14.8954	4.57843685	4.495890141	0.011108723	9.236873627	221.685	7.790719032	7.654931545	0.031070912	25.8188915	619.6533813	24	19940.28369
	25	485.5331	834.6704712	3.401124	14.88258	4.90642214	4.806903362	0.0118772	9.921590805	238.1182	7.710591316	7.559551716	0.030683758	25.6115074	614.6762085	24	20032.09131
	26	483.8571	831.7896729	3.387388	14.90687	4.94457817	4.863742352	0.012017637	10.00566101	240.1359	7.710272789	7.590303421	0.03080857	25.6283741	615.0809937	24	19962.95215
	27	480.827	826.5805664	3.389296	14.9035	4.6601553	4.582485676	0.0113227	9.367359161	224.8166	7.647634029	7.524548531	0.030541683	25.2494659	605.9871826	24	19837.93359
	28	476.1675	818.5707397	3.398581	14.88708	4.04075098	3.963382959	0.00979297	8.029180527	192.7003	7.700733662	7.556079865	0.030669663	25.1089325	602.6143799	24	19645.69775
	29	478.2663	822.178833	3.415008	14.85801	3.47349334	3.390316725	0.008377007	6.892383575	165.4172	8.104290009	7.913730621	0.032121342	26.4106464	633.8555298	24	19732.29199
	30	480.522	826.0563354	3.417596	14.85344	3.90163922	3.804961681	0.009401534	7.771566868	186.5176	8.049227715	7.853176117	0.031875558	26.3356285	632.0551147	24	19825.35205
Oct 03	01	482.7695	829.9194336	3.418231	14.85231	3.95458078	3.856431961	0.009528712	7.911881924	189.8852	8.130469322	7.932034492	0.032195646	26.7206459	641.2955322	24	19918.06641
	02	484.3325	832.6066895	3.423763	14.84252	3.69146252	3.593104124	0.008878066	7.398015022	177.5524	8.42713356	8.208501816	0.033317812	27.7400246	665.7606201	24	19982.56055
	03	483.9696	831.9832764	3.425671	14.83915	3.55982256	3.463116169	0.008556882	7.124970913	170.9993	8.433175087	8.209053993	0.033320047	27.72892	665.4940796	24	19967.59863
	04	480.2823	825.6455078	3.426307	14.83803	3.51530623	3.418542624	0.008446748	6.980099201	167.5224	8.123313904	7.905696392	0.032088742	26.4995842	635.9899902	24	19815.49219
	05	479.9336	825.0455933	3.433366	14.82554	3.46586251	3.364817619	0.008314	6.862991333	164.7118	8.194856644	7.959001541	0.032305103	26.654501	639.7080078	24	19801.09424
	06	478.9478	823.3500366	3.403413	14.87852	3.44567084	3.373944283	0.008336553	6.868953705	164.8549	8.131422043	7.966911316	0.032337222	26.6260662	639.0255737	24	19760.40088
	07	477.2916	820.5023193	3.399662	14.88516	3.28668714	3.22206831	0.007961286	6.537026882	156.8886	8.136668205	7.981935501	0.03239819	26.5841789	638.0203247	24	19692.05566
	08	478.4153	822.4338989	3.415624	14.85693	3.3550508	3.273699045	0.008088858	6.657018661	159.7684	8.19438076	7.998819828	0.032466717	26.7053127	640.9274902	24	19738.41357
	09	480.7418	826.434021	3.423382	14.8432	3.31339669	3.225951195	0.007970882	6.591148853	158.1876	8.354477882	8.137733459	0.03303057	27.3013039	655.2313232	24	19834.4165
	10	491.3845	844.7300415	3.406722	14.87267	3.51451254	3.438829899	0.008496876	7.18381834	172.4116	8.788984299	8.603912354	0.034922749	29.5007248	708.017395	24	20273.521
	11	490.7804	843.690979	3.409138	14.8684	3.6223042	3.541828871	0.008751374	7.386361599	177.2727	8.677375793	8.490037918	0.034460545	29.0832672	697.9984131	24	20248.5835
	12	488.711	840.1347046	3.411744	14.86379	3.79607463	3.708728313	0.009163758	7.702750683	184.866	8.544941902	8.352626801	0.033902805	28.4829006	683.5895996	24	20163.23291
	13	491.1755	844.3710938	3.401697	14.88156	3.81499219	3.738423824	0.00923713	7.803329468	187.2799	8.747646332	8.575780869	0.034808557	29.3914089	705.3937988	24	20264.90625
	14	490.9563	843.9931641	3.344017	14.9836	4.20581913	4.196982384	0.010370159	8.74630928	201.1651	8.6621418	8.637097359	0.035057459	29.5730572	680.1802979	24	20255.83594
	15	488.7473	840.196167	3.34885	14.97505	4.49910212	4.478278637	0.011065212	9.301776886	223.2426	8.55797863	8.525343895	0.034603853	29.0786343	697.887207	24	20164.70801
	16	493.6154	848.5648804	3.37575	14.92746	4.94998312	4.88850832	0.012078833	10.25322151	246.0773	8.508374214	8.404997826	0.034115367	28.9494419	694.7866211	24	20365.55713
	17	490.0579	842.4488525	3.36653	14.94378	4.9453721	4.897379398	0.012100754	10.19896984	244.7753	8.345257759	8.266657829	0.033553857	28.2744408	678.5866089	24	20218.77246
	18	337.9071	733.748291	2.967597	13.72458	8.34859562	15.82354641	0.039097805	15.80166912	300.2317	7.159123898	7.490514278	0.030403547	23.9182873	454.4474487	18.84722	13829.11647
	19	487.7966	838.5622559	3.371617	14.93478	5.7668457	5.702517033	0.014090129	11.82006264	283.6815	7.957176208	7.870299339	0.031945068	26.790329	642.9678955	24	20125.49414
	20	485.6346	834.8452148	3.375432	14.92803	5.70484304	5.635092258	0.013923533	11.62800789	279.0722	7.879750252	7.785247803	0.031599846	26.385788	633.2589111	24	20036.28516
	21	484.4588	832.8239136	3.360679	14.95413	6.02996492	5.982968807	0.014783087	12.31194592	295.4867	7.832689762	7.771999836	0.031546067	26.2765255	630.6365967	24	19987.77393
	22	486.3683	836.1062012	3.352094	14.96931	6.73538017	6.698997021	0.016552309	13.84430408	332.2633	7.826648712	7.786450386	0.031604722	26.4275379	634.2609253	24	20066.54883
	23	490.8904	843.8799438	3.357944	14.95896	7.10708523	7.056381226	0.017435342	14.71840382	353.2417	7.907731056	7.853426933	0.031876571	26.8996296	645.5911255	24	20253.11865
	24	488.9259	840.5031738	3.362714	14.95053	6.84110451	6.783479214	0.01676105	14.09336662	338.2408	7.808048725	7.743850708	0.031431805	26.4229832	634.1516113	24	20172.07617
	25	488.6345	840.0024414	3.361696	14.95232	7.22473478	7.165759087	0.017705612	14.87547874	357.0115	7.623148918	7.561927319	0.030693408	25.7851543	618.843689	24	20160.05859
	26	491.099	844.2387085	3.349995	14.97303	7.46591377	7.428956509	0.018355928	15.50492859	372.1183	7.853359699	7.817866802	0.03173225	26.791996	643.0078735	24	20261.729
	27	490.6649	843.4926147	3.338803	14.99282	6.99706697	6.987037659	0.017264001	14.57018375	349.6844	7.953042984	7.944030285	0.032244336	27.2050247	652.9205933	24	20243.82275
	28	490.3105	842.8834229	3.337086	14.99586	6.55986118	6.55398035	0.016193978	13.65679169	327.763	8.163378716	8.158329964	0.033114165	27.915184	669.9644165	24	20229.20215
	29	490.3435	842.9401855	3.351649	14.9701	6.04284334	6.0115695	0.014853762	12.52691269	300.6459	8.41489315	8.373261452	0.033986546	28.6497841	687.5947876	24	20230.56445
	30	504.1948	866.7521362	3.377213	14.92488	6.77496672	6.687586784	0.016524104	14.32645416	343.8349	8.783100128	8.673977852	0.035207145	30.5184669	732.4431763	24	20802.05127
	31	506.2063	870.2092285	3.37238	14.93342	6.98800564	6.904998779	0.017061304	14.85413742	356.4993	8.756550789	8.661889076	0.035158083	30.5945091	734.2681885	24	20885.02148
Total		341,435	593211.5579							159,276					495,742	16814.83	14,092,153
Average		478.2007	830.8285124	3.251826	14.90118	4.60889106	4.952725379	0.012236776	9.54685129	223.0756	8.462022414	8.586436264	0.034848139	29.2985415	694.3169782	23.03402	19304.31944
Ann Avg		170,718								79,638					247,871	8407.417	7,046,077

6907.918232 mmscf/yr

Unit 2 - CEMS Data

Month/Year	Day	Daily Fuel Gas in tons/day	fuel gas heat rate (mmbtu/hr) – lower heating value	Average CO2 conc. (%)	Average O2 conc. (%)	Average CO conc. uncorrected (ppm)	Average CO conc. corrected (ppm)	Average CO emission factor (lb/mmbtu)	Average CO mass emission rate (lb/hr)	CO mass emissions rate (lb/day)	Average NOx conc. uncorrected (ppm)	Average NOx conc. corrected (ppm)	Average NOx emission factor (lb/mmbtu)	Average NOx mass emission rate (lb/hr)	Daily NOx mass emissions rate (lb/day)	Daily turbine run time (hr/day)	Fuel Gas (MMBtu/day)
Nov01	01	487.7719	841.8217163	3.383063	14.88085	5.29784203	5.193184853	0.012826496	10.79915237	259.1797	10.19059849	9.988922119	0.040528134	34.1184158	818.84198	24	20203.72119
	02	486.9919	840.4753418	3.375685	14.89399	9.94351673	9.767323494	0.024124013	20.28245163	486.7788	10.20537567	10.02538872	0.040676113	34.1868896	820.4854126	24	20171.4082
	03	486.2444	839.18573	3.383063	14.88084	14.5149746	14.22607136	0.035136547	29.48587418	707.661	9.966252327	9.769283295	0.039637014	33.2641487	798.3395996	24	20140.45752
	04	483.1212	833.7947388	3.389422	14.86952	14.0429497	13.73962879	0.033935089	28.29617882	679.1083	9.968643188	9.753038406	0.039571088	32.9940681	791.857605	24	20011.07373
	05	480.7527	829.7077637	3.353838	14.93285	11.4677916	11.3384304	0.02800443	23.23973083	534.5138	10.02150345	9.909024239	0.040203936	33.3515511	767.0856934	24	19912.98633
	06	482.8543	833.3347778	3.373459	14.89793	12.5771046	12.36487103	0.030539654	25.45107841	610.8259	10.07294083	9.904279709	0.04018474	33.4938431	803.8521729	24	20000.03467
	07	488.5992	843.2491455	3.366338	14.91062	13.4286289	13.22513294	0.032664351	27.54840851	661.1618	10.19233799	10.04085159	0.040738847	34.3539391	824.4945068	24	20237.97949
	08	486.1154	838.9628906	3.363412	14.9158	14.1707792	13.96503353	0.034491803	28.94013786	694.5633	10.14130783	9.999861717	0.040572476	34.0396309	816.9511108	24	20135.10938
	09	485.6868	838.2231445	3.372315	14.89997	13.4855499	13.26117134	0.032753341	27.46586609	659.1808	10.36022949	10.18810081	0.041336287	34.6497536	831.5941162	24	20117.35547
	10	484.2527	835.7481079	3.361378	14.91944	12.703021	12.5314579	0.030951066	25.87597847	621.0235	10.24860764	10.11055374	0.041021608	34.2943382	823.0640869	24	20057.95459
	11	481.6793	831.305542	3.377848	14.89013	14.4502668	14.18547535	0.035036292	29.12621689	699.0292	9.687086105	9.51003933	0.038585156	32.0763474	769.8322754	24	19951.33301
	12	485.8821	838.5597534	3.353971	14.93261	13.0444651	12.89840412	0.031857386	26.7381382	614.9772	9.93241787	9.820183754	0.039843518	33.423748	768.7462158	24	20125.43408
	13	491.6671	848.545105	3.352856	14.9346	14.2507458	14.09449959	0.034811597	29.54531288	709.0875	10.14496326	10.03377342	0.040710095	34.5443306	829.0639038	24	20365.08252
	14	490.5655	846.6437988	3.362714	14.91706	15.1133919	14.90417099	0.036811359	31.17974663	748.3139	10.25385857	10.11177349	0.041026592	34.7340393	833.6168823	24	20319.45117
	15	487.6126	841.5467529	3.367292	14.90892	14.6809587	14.4560709	0.035704609	30.04986191	721.1967	10.39042091	10.23291683	0.041518107	34.9403954	838.569458	24	20197.12207
	16	483.1779	833.8943481	3.391647	14.86557	14.5734835	14.25077534	0.035197537	29.35852051	704.6045	10.24241257	10.01523495	0.040634863	33.8877525	813.3060913	24	20013.46436
	17	114.0192	590.3406982	2.379616	11.44118	14.691124	28.33718491	0.069989376	31.40690804	251.2553	8.535076141	9.523182869	0.038638499	28.3995399	227.1963196	7.794444	4601.377563
	18	490.3841	846.3309326	3.393556	14.86216	7.50216246	7.330989838	0.018106584	15.32687473	367.845	10.52461624	10.28444576	0.041727185	35.3154297	847.5703125	24	20311.94238
	19	490.3322	846.2409058	3.379053	14.88799	7.48045778	7.340961933	0.018131217	15.34410858	352.9145	10.02646828	9.838259697	0.039916869	33.7852135	777.0598755	24	20309.78174
	20	490.5497	846.6154175	3.353364	14.93369	7.13331842	7.051772594	0.01741695	14.75150871	354.0362	9.541723251	9.433794022	0.038275801	32.4348526	746.0015869	24	20318.77002
	21	488.6156	843.2774048	3.347195	14.94467	6.26033306	6.199772358	0.015312617	12.9254179	310.21	11.51699162	11.41177464	0.046301112	39.0444374	937.0665283	24	20238.65771
	22	487.0852	840.6364136	3.371997	14.90053	6.38545513	6.273516655	0.015494763	13.03880215	312.9313	10.91714573	10.74056625	0.043577775	36.6196899	878.8726196	24	20175.27393
	23	493.4529	851.6270142	3.371361	14.90166	6.59133959	6.479717255	0.01600405	13.63904572	327.3371	10.95450783	10.77618313	0.043722287	37.2308426	893.5402222	24	20439.04834
	24	399.1214	718.6335449	2.875257	13.05824	7.09956455	10.47501278	0.025871834	14.38239288	330.795	9.737651825	9.958278656	0.040403824	32.7300186	752.7904053	21.60556	15526.47765
	25	501.0631	864.7606201	3.379883	14.8865	4.10736465	4.029125214	0.009951416	8.6065588	206.5574	11.08709621	10.87790871	0.044135075	38.1664124	915.9938965	24	20754.25488
	26	503.1763	868.4067383	3.351902	14.9363	4.30244017	4.254076958	0.01050702	9.12962532	219.111	11.12574196	11.0074749	0.044660699	38.7830048	930.7921143	24	20841.76172
	27	505.4063	872.2567749	3.324174	14.98563	4.7206254	4.708566666	0.011629547	10.14255428	223.1362	11.17284584	11.1460495	0.045222938	39.4302635	867.4658203	24	20934.1626
	28	498.9451	861.1049805	3.321854	14.98976	4.17529297	4.168817997	0.010296431	8.899316788	204.6843	11.33970451	11.32064342	0.045931343	39.5893784	910.5556641	24	20666.51953
	29	489.1755	844.2446899	3.348022	14.94319	3.91785574	3.858038664	0.009528846	8.056663513	193.3599	11.06705856	10.96951675	0.044506706	37.5681496	901.6356201	24	20261.87256
	30	495.2113	854.661438	3.377656	14.89047	4.41992855	4.331121445	0.010697307	9.150367737	219.6088	10.81920052	10.62287045	0.043100301	36.8353615	884.0487061	24	20511.87451
Dec01	01	493.0578	850.9441528	3.34885	14.94173	3.31196618	3.280046701	0.008101281	6.896781921	165.5228	10.92032528	10.81482506	0.043879107	37.3455544	896.2932739	24	20422.65967
	02	486.3652	839.3943481	3.354447	14.93178	3.67143011	3.627856731	0.008960324	7.524095058	180.5783	10.86372948	10.73981667	0.043574765	36.5747223	877.793335	24	20145.46436
	03	494.8927	854.1115112	3.354612	14.93149	4.17015076	4.120651245	0.010177473	8.691607475	199.907	11.07024384	10.94349957	0.044401161	37.9197617	872.15448	24	20498.67627
	04	499.2833	861.6882324	3.376766	14.89205	3.46236587	3.401106596	0.008400288	7.240319729	173.7677	11.30124569	11.09807491	0.045028321	38.8007813	931.218689	24	20680.51758
	05	496.9483	857.65802	3.366592	14.91015	3.51149201	3.459021568	0.008543331	7.328520298	175.8845	11.15912533	10.99200821	0.044597935	38.2541275	918.0991211	24	20583.79248
	06	493.819	852.2575684	3.35966	14.92248	3.73184419	3.68325758	0.009097166	7.756689072	186.1605	10.97278786	10.83048344	0.043942578	37.4531097	898.8746338	24	20454.18164
	07	491.9616	849.0523682	3.361949	14.91841	3.71912551	3.66831708	0.00906026	7.696081638	184.706	10.74258709	10.59670448	0.042994145	36.5080833	876.1939697	24	20377.25684
	08	486.761	840.0771484	3.355018	14.93075	3.22420669	3.183513403	0.007862859	6.622279167	158.9347	11.01046658	10.88541698	0.044165485	37.0963516	890.3123779	24	20161.85156
	09	492.673	850.2803345	3.337085	14.96266	2.97857571	2.957327604	0.007304213	6.226232529	149.4296	11.64290428	11.57126617	0.046948142	39.9050751	957.7218018	24	20406.72803
	10	499.0826	861.3419189	3.345245	14.94814	3.53115249	3.501511574	0.008648276	7.451264858	178.8304	11.63216209	11.53068352	0.04678354	40.2947121	967.0731201	24	20672.20605
	11	499.2249	861.588623	3.365384	14.91233	4.00513792	3.946388006	0.009747063	8.400035858	201.6008	11.57740879	11.40808773	0.046286147	39.8806839	957.1364136	24	20678.12695
	12	498.6432	860.5834961	3.355527	14.92984	4.3736639	4.32205534	0.010674898	9.188200951	220.5168	11.28264618	11.15002918	0.045239117	38.9337502	934.4099731	24	20654.00391
	13	496.0355	856.0838013	3.338675	14.95983	4.2240591	4.193443775	0.010357262	8.875276566	213.0066	11.34815788	11.27195454	0.045733776	39.1502266	939.6054077	24	20546.01123
	14	495.1681	854.5856323	3.316862	14.99864	3.58923459	3.588711739	0.008863647	7.577040195	181.849	11.63957119	11.63790417	0.047218509	40.3516579	968.4398193	24	20510.05518
	15	500.8955	864.4713745	3.368246	14.9072	3.35854793	3.30685997	0.008167511	7.063606739	169.5266	11.82987881	11.64725399	0.047256488	40.8551941	980.5247192	24	20747.31299
	16	498.8055	860.8632202	3.366975	14.90949	3.60068345	3.546766281	0.008760051	7.538760185	180.9303	11.3774128	11.20440006	0.045459732	39.1458588	939.5006104	24	20660.71729
	17	489.4803	844.7709351	3.363285	14.91605	3.34201407	3.294377089	0.008136681	6.881164551	165.1479	11.13702965	10.98190784	0.044556964	37.6477089	903.5449829	24	20274.50244
	18	494.044	852.6464844	3.380137	14.88605	4.45808601	4.373597145	0.010802217	9.21287632	221.109	10.86563778	10.6597538	0.043249905	36.8774261	885.0582275	24	20463.51563
	19	493.731	852.105896	3.364813	14.91332	4.32278919	4.258661747	0.010518339	8.983984947	215.6156	11.16213799	11.0008955	0.044634059	38.0276642	912.6638794	24	20450.5415
	20	485.6922	838.232666	3.383063	14.88085	3.15536594	3.091398001	0.007635346	6.408891678	153.8134	11.46293736	11.24017525	0.045604855	38.2186661	917.2479858	24	20117.58398
	21	491.1671	847.6821899	3.398518	14.85335	3.62166739	3.532795906	0.008725543	7.398967743	177.5752	11.08963776	10.8213377	0.043905497	37.2169189	893.2061157	24	20344.37256
	22	334.818	729.8384399	2.94387	13.37058	8.09849739	14.84713173	0.036670547	15.47700119	294.063	9.745699883	9.952260017	0.040379439	32.4690475	616.9118652	18.53333	13526.33872
	23	497.739	859.0236206	3.395464	14.85877	7.54127264	7.364596367	0.018189596	15.63097954	375.1435	10.8921833	10.63757896	0.043159984	37.0768738	889.8450317	24	20616.56689
	24	500.6154	863.9876099	3.38934	14.86968	7.83116293	7.660564423	0.018920587	16.34753036	375.9932	11.05519581	10.8158474	0.043883242	37.9030266	871.7695923	24	20735.70264
	25	498.7696	860.8015747	3.39133	14.86612	7.70502663	7.53337574	0.018606437	16.02786255	384.6687	11.049263	10.8055706	0.043841533	37.7483444	905.9603271	24	20659.23779
	26	502.7994	867.756958	3.405766	14.84045	7.86957693	7.662025452	0.018924205	16.42817497	394.2762	11.36913776	11.06987095	0.044913899	38.9769325	935.4464111	24	20826.16699
	27	491.0522	847.4829102	3.391839	14.86524	6.19499063	6.05308485	0.014950321	12.70168114	304.8403	11.44718361	11.19118309	0.045406058	38.4890327	923.7368164	24	20339.58984
	28	483.7962	834.9610596	3.396545	14.85686	5.93982077	5.793635845	0.014309525	11.95588303	286.9412	11.05849171	10.79905415	0.043815047	36.5821495	877.9716187	24	20039.06543

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	29	484.7006	836.5209961	3.416577	14.82123	6.43251419	6.242628098	0.015418483	12.90337467	309.681	10.87422085	10.5546875	0.042823609	35.8221436	859.7313843		24	20076.50391
	30	484.6593	836.4498291	3.417212	14.82008	6.92139149	6.714287281	0.01658342	13.88151646	333.1564	10.74497509	10.42734146	0.042306975	35.3864212	849.2741089		24	20074.7959
	31	483.838	835.0320435	3.388107	14.87187	6.68105841	6.537323952	0.016146341	13.48800373	323.7121	10.73383331	10.50623322	0.042627063	35.5944405	854.2666016		24	20040.76904
Jan02	01	484.1048	835.4920654	3.380646	14.88515	6.22217751	6.10040617	0.015067209	12.59491253	302.2779	10.99918365	10.79043293	0.0437801	36.5774765	877.859375		24	20051.80957
	02	484.9128	836.8861084	3.387452	14.87303	6.4345808	6.295346737	0.015548692	13.01968765	312.4725	10.99187088	10.76194572	0.043664467	36.5396423	876.951416		24	20085.2666
	03	491.4842	848.2275391	3.406019	14.84	8.17975521	7.963908195	0.019669805	16.68833351	400.52	10.66037464	10.37924576	0.042111728	35.7214203	857.3140869		24	20357.46094
	04	499.3513	861.8067017	3.397181	14.85573	9.29168987	9.069416046	0.022400284	19.30697441	463.3674	11.07071686	10.80657101	0.043845642	37.7884789	906.9235229		24	20683.36084
	05	499.6847	862.3804321	3.381854	14.88299	8.86799812	8.694698334	0.021474771	18.52975082	444.714	11.06389141	10.84868336	0.044016495	37.9700127	911.2802734		24	20697.13037
	06	492.0222	849.1567383	3.386497	14.87474	8.31759357	8.14321804	0.020112684	17.09207535	410.2098	10.93607044	10.70921707	0.043450601	36.9010849	885.6259766		24	20379.76172
	07	487.6817	841.6653442	3.384631	14.87805	8.14679146	7.981322289	0.019712817	16.59474945	398.274	10.58135796	10.36783314	0.042065497	35.4090652	849.817627		24	20199.96826
	08	491.1375	847.6300659	3.389485	14.86944	8.21886539	8.042630196	0.019864259	16.8533287	404.4799	10.80235863	10.56915951	0.042882316	36.347332	872.3359985		24	20343.12158
	09	487.3352	841.0679932	3.38249	14.88187	7.1744957	7.033574104	0.017372008	14.61908722	350.8581	11.06866646	10.85095406	0.044025637	37.0300026	888.7200928		24	20185.63184
	10	487.7609	841.8027344	3.386434	14.87485	7.88690472	7.723298073	0.019075537	16.06138802	385.4733	10.67262936	10.45096684	0.042402782	35.6950264	856.680603		24	20203.26563
	11	496.7145	857.2550659	3.391776	14.86534	9.57166767	9.357796669	0.02311253	19.81681633	475.6036	10.66037464	10.42255402	0.042287547	36.253788	870.0908813		24	20574.12158
	12	503.9149	869.6820679	3.385607	14.87631	10.9618168	10.73725796	0.026519645	23.06656647	553.5976	11.08645821	10.85974598	0.044061325	38.3200989	919.682373		24	20872.36963
	13	503.41	868.8095703	3.342681	14.9527	10.1223812	10.0407877	0.024799425	21.54853249	517.1648	11.68027496	11.58812046	0.047016557	40.8472443	980.3339233		24	20851.42969
	14	503.5218	869.0040283	3.291284	15.04414	9.27949905	9.346725464	0.023085192	20.05809593	461.3362	11.67276955	11.75893021	0.047709577	41.4510956	953.3751831		24	20856.09668
	15	499.5363	862.1244507	3.342173	14.95361	9.19359875	9.123369217	0.022533525	19.43196297	466.3671	11.63019562	11.53997517	0.04682114	40.3664284	968.7943115		24	20690.98682
	16	500.6425	864.0352783	3.36958	14.90484	9.47437096	9.323361397	0.02302748	19.90792465	477.7902	11.54099178	11.36019993	0.046091851	39.8309288	955.9422607		24	20736.84668
	17	496.8952	857.5678711	3.361695	14.91887	9.00393486	8.87485981	0.021919753	18.83870888	452.129	11.42367077	11.26990414	0.045725454	39.2055283	940.9326782		24	20581.62891
	18	495.6485	855.4153442	3.353492	14.93347	9.40806961	9.299902916	0.022969546	19.66545868	471.971	11.13495445	11.01130009	0.044676248	38.2139816	917.1356201		24	20529.96826
	19	495.1539	854.5618896	3.33842	14.96028	8.70344639	8.645869255	0.021354163	18.27161217	438.5187	11.42479134	11.34887505	0.046045892	39.3496552	944.3917236		24	20509.48535
	20	493.5686	851.8260498	3.360614	14.9208	7.88515615	7.777993202	0.019210629	16.39655495	393.5173	11.46166229	11.30986691	0.045887578	39.0855141	938.0523071		24	20443.8252
	21	490.6292	846.7528076	3.302183	15.02476	7.16627121	7.192872524	0.017765455	15.0251503	330.5533	11.88742256	11.94203663	0.048452538	40.9506912	900.9152222		24	20322.06738
	22	497.5333	858.6679077	3.263124	15.09424	8.73731041	8.87597847	0.021922501	18.8332119	451.9971	12.01127911	12.2076292	0.049530078	42.5290642	1020.69751		24	20608.02979
	23	502.3903	867.0507202	3.288626	15.04886	9.47229671	9.552417755	0.023593212	20.46474266	491.1538	11.48408318	11.58605003	0.047008157	40.7691917	978.4605713		24	20809.21729
	24	497.4923	858.5967407	3.311457	15.00825	9.3420887	9.344715118	0.023080204	19.85661697	476.5588	11.30378342	11.31949615	0.045926668	39.4332504	946.3980103		24	20606.32178
	25	491.1482	847.6488647	3.270693	15.08076	8.39168072	8.506942749	0.021011038	17.82575417	427.8181	11.22795868	11.38378334	0.046187498	39.1532326	939.6776123		24	20343.57275
	26	488.3929	842.8934937	3.272156	15.07818	7.41090488	7.515766621	0.018562958	15.68158722	376.3581	11.40776634	11.56170845	0.046909396	39.5428123	949.0275269		24	20229.44385
	27	494.0987	852.7411499	3.302745	15.02375	8.89789532	8.933429718	0.022064408	18.8229332	451.7504	11.09758759	11.14280796	0.045209821	38.551651	925.239624		24	20465.7876
	28	500.058	863.0252075	3.285786	15.05392	9.24653721	9.330785751	0.023045825	19.89596176	477.5031	11.63374329	11.74926567	0.047670368	41.1389732	946.1964111		24	20712.60498
	29	509.5352	879.3828735	3.279659	15.06483	10.0492516	10.15990543	0.025093617	22.06985855	529.6766	11.71588326	11.84788704	0.048070483	42.2730751	1014.553833		24	21105.18896
	30	505.3655	872.1853638	3.319343	14.99421	9.9886837	9.976631165	0.024640976	21.498312	515.9595	11.50332451	11.49264145	0.046629153	40.6700974	976.0822754		24	20932.44873
	31	502.8158	867.7856445	3.315907	15.00033	10.4382868	10.43706131	0.025778163	22.38515854	537.2438	11.34990025	11.35004616	0.046050612	39.971035	959.3048096		24	20826.85547
Feb02	01	499.6288	862.2855225	3.285192	15.05497	10.1460686	10.23923588	0.025289584	21.82627869	523.8307	11.24257946	11.34842491	0.046044029	39.7022209	952.8532715		24	20694.85254
	02	380.0107	749.3391724	2.85983	13.32368	8.24503326	12.29894924	0.03037682	17.59933472	369.586	9.74909687	10.21229744	0.041434452	34.3686714	721.7420654	20.11111		15070.04304
	03	502.1815	866.6903076	3.3257	14.98292	5.00403881	4.989284039	0.012322892	10.68471432	256.4331	10.77725792	10.74597454	0.043599755	37.7933235	907.0397949		24	20800.56738
	04	497.0883	857.8997192	3.326146	14.98213	6.02503395	6.026180267	0.01488387	12.74148655	305.7957	10.59202862	10.55685139	0.042832408	36.7606201	882.2548828		24	20589.59326
	05	494.7475	853.8601074	3.347258	14.94455	4.49528694	4.452816486	0.010997871	9.394177437	225.4603	10.74352932	10.64445877	0.043187812	36.8811302	885.1470947		24	20492.64258
	06	494.602	853.6088867	3.35858	14.92441	4.47859383	4.420810223	0.010918817	9.327795982	223.8671	10.85466194	10.71852493	0.043488368	37.1272278	891.0535278		24	20486.61328
	07	489.5332	844.861145	3.344907	14.94875	4.01626825	3.980263233	0.009830732	8.316876411	199.605	10.73051167	10.6384306	0.043163389	36.4734535	875.362915		24	20276.66748
	08	494.4287	853.3103027	3.37168	14.9011	5.39672995	5.307140827	0.013107946	11.18866634	268.528	10.226367	10.05758572	0.040806741	34.8233261	835.7598267		24	20479.44727
	09	493.1098	851.0343628	3.352474	14.93527	5.15268898	5.090855598	0.012573745	10.72068787	257.2965	10.66292953	10.5503912	0.042806193	36.4175606	874.0214844		24	20424.82471
	10	489.3214	844.4959717	3.340456	14.95666	5.31644249	5.264640331	0.013002964	11.00557899	264.1339	10.54417515	10.47451973	0.04249835	35.8712158	860.9092407		24	20267.90332
	11	490.4752	846.4874268	3.332697	14.97047	4.58511353	4.559387684	0.011261097	9.544781685	229.0748	10.78932953	10.73657036	0.043561559	36.8694038	884.8657227		24	20315.69824
	12	490.3542	846.2786865	3.336067	14.96445	4.75904274	4.729443073	0.011681105	9.891378403	237.3931	10.7883749	10.72644997	0.043520547	36.8318558	883.9644775		24	20310.68848
	13	487.5107	841.3713989	3.347768	14.94366	4.56365108	4.51981163	0.011163337	9.395379066	225.4891	10.7940836	10.69255447	0.043383013	36.5023575	876.0565796		24	20192.91357
	14	488.4586	843.0072632	3.366336	14.91062	5.01628065	4.940872192	0.012203312	10.29262066	247.0229	10.72174549	10.5623455	0.042854674	36.130909	867.1417847		24	20232.17432
	15	484.3492	835.9141846	3.365574	14.91198	4.86381578	4.790920258	0.011832941	9.897609711	237.5426	10.55942059	10.40441227	0.042213924	35.2871742	846.8922119		24	20061.94043
	16	487.9289	842.0921021	3.35629	14.92849	4.97685146	4.916629314	0.012143425	10.23450089	245.628	10.83508778	10.70547104	0.043435436	36.5756569	877.8157959		24	20210.21045
	17	487.9129	842.0635376	3.346497	14.94592	4.35426903	4.312063694	0.010650232	8.982057571	215.5694	11.17342091	11.07242107	0.044924237	37.8286705	907.8881226		24	20209.5249
	18	494.1871	852.8930054	3.355591	14.92973	5.1288414	5.068135262	0.012517625	10.67925262	256.3021	11.0433836	10.91307545	0.044277709	37.7656555	906.3757324		24	20469.43213
	19	492.2584	849.5644531	3.353838	14.93285	5.79909277	5.732627869	0.014158835	12.02817535	276.648	10.67622566	10.5563879	0.042830549	36.3902435	836.9755859		24	20389.54688
	20	488.3432	842.8080444	3.351267	14.93742	6.31979513	6.250905514	0.015438925	13.01782894	312.4279	10.13112926	10.02556801	0.040676784	34.2812309	822.7495117		24	20227.39307
	21	485.5714	838.0240479	3.359534	14.92272	6.31804514	6.234422684	0.015398221	12.9006834	309.6164	10.03256035	9.904593468	0.040185954	33.6847725	808.4345093		24	20112.57715
	22	480.8792	829.9258423	3.337339	14.9622	5.55476046	5.517603397	0.013627758	11.31365108	271.5276	10.25386333	10.18909073	0.041340251	34.3091698	823.420105		24	19918.22021
	23	486.0171	838.7918701	3.337402	14.96209	5.0733552	5.042127609	0.0124534	10.45380592	250.8914	10.69042873	10.62274551	0.043099776	36.1534958	867.6838989		24	20131.00488
	24	124.1867	642.9841309	2.559143	12.42802	11.7817087	19.95713425	0.049291611	28.99007797	231.9206	9.800917625	10.40130997	0.042201374	32.8593826	262.875061		8	5143.873047
	25	493.1895	851.171814	3.30951	15.01172	10.7856236	10.83864689	0.026770048	22.72162247	522.5973	9.962609291	9.974774361	0.040470727	34.4435043	792.2006226		24	20428.12354
	26	487.3846	841.1531982	3.310947	15.00916	11.3339996	11.35372066	0.028042238	23.59116745	566.188	9.37802124	9.395967484	0.03812233	32.0711174	769.7067871		24	20187.67676
	27	485.129	837.2605591	3.323666	14.98653	9.90647888	9.881667137	0.024406437	20.44355774	490.6454	9.547339439	9.527370453	0.038655479	32.3649101	776.7578125		24	20094.25342
	28	484.8898	836.8482056	3.329771	14.97568	9.06163597	9.021837234	0.022282759	18.66022491	447.8454	9.823815346	9.784687996	0.039699454	33.2208252	797.2998047		24	20084.35693
Mar02	01	430.4918	775.2675781	3.032396	13.91453	7.77757502	7.862619877	0.019419661	16.29955292	374.8897	9.543383598	9.641551018	0.039118756	32.8269196	755.019165		23	17831.1543

Unit 2 - CEMS Data

	02															0	0
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	25															0	0
	26															0	0
	27	110.0549	506.1992188	1.952301	10.84684	21.9764194	61.25178528	0.15128386	44.82178879	403.3961	5.542273521	8.536047935	0.034633346	19.0804768	171.7243042	6.855556	3470.276856
	28	507.717	876.2440186	3.318643	14.99546	2.52165365	2.518450499	0.006220242	5.463505268	131.1241	7.732691288	7.727843285	0.03135423	27.4689159	659.2540283	24	21029.85645
	29	511.6073	882.9578857	3.35362	14.93323	2.44200206	2.414819479	0.00596429	5.272402287	126.5377	7.491192341	7.407675266	0.030055217	26.5388451	636.932312	24	21190.98926
	30	510.3768	880.8336182	3.353557	14.93335	2.53342009	2.504205465	0.006185058	5.451680183	130.8403	7.328393459	7.246459961	0.029401125	25.9012489	621.6300049	24	21140.00684
	31	509.1759	878.7617798	3.342681	14.9527	2.93247032	2.908701181	0.007184114	6.314736843	151.5537	7.208039761	7.150601864	0.029012196	25.4957714	611.8984985	24	21090.28271
Apr02	01	508.4998	877.595459	3.3186	14.99554	3.10894299	3.105404139	0.007669945	6.734014988	161.6164	7.282869339	7.277420044	0.029526733	25.9129581	621.9110107	24	21062.29102
	02	508.1929	877.0643921	3.335241	14.96595	3.02531743	3.007752895	0.007428759	6.519236088	156.4617	7.332525253	7.290661812	0.02958045	25.9452324	622.6856079	24	21049.54541
	03	511.0684	882.0283813	3.341919	14.95406	3.48859715	3.461102486	0.008548469	7.540991783	180.9838	7.337135792	7.280433655	0.029538959	26.0568657	625.3648071	24	21168.68115
	04	513.7831	886.7130127	3.328881	14.97726	3.78971338	3.774319649	0.009322074	8.270030022	198.4807	7.36257267	7.334513187	0.029758388	26.3878288	633.3079224	24	21281.1123
	05	517.4753	893.0852661	3.317179	14.99808	3.80990553	3.808004618	0.009405271	8.403347969	201.6804	7.494372368	7.492261887	0.030398417	27.148962	651.5750732	24	21434.04639
	06	511.9972	883.6309814	3.316735	14.99886	3.0655396	3.064635277	0.007569249	6.689557076	160.5494	7.706139565	7.705165863	0.031262223	27.6244717	662.9873047	24	21207.14355
	07	488.8523	880.3672485	3.332403	14.97098	3.17626262	3.159115076	0.007802602	6.874605656	158.1159	7.607203007	7.57065773	0.030716492	27.0411777	621.9470825	24	21128.81396
	08	510.373	880.8290405	3.330626	14.97415	3.78753233	3.770017624	0.009311448	8.212791443	180.6814	7.044865131	7.013698101	0.028456727	25.0913219	552.0090942	24	21139.89697
	09	511.7007	883.1190186	3.338483	14.96017	3.74726629	3.722968817	0.009195246	8.126516342	195.0364	6.910580158	6.864411354	0.027851028	24.5959625	590.3031006	24	21194.85645
	10	510.9948	881.9005737	3.333586	14.9689	4.01960611	3.996577978	0.009871017	8.711001396	209.064	6.832042694	6.796219349	0.027574345	24.3177376	583.6256714	24	21165.61377
	11	510.5853	881.1939697	3.328309	14.97827	3.82739425	3.812856197	0.009417255	8.306077957	199.3459	6.859228611	6.834485054	0.027729591	24.4344463	586.4266968	24	21148.65527
	12	507.1401	875.2483521	3.338485	14.96016	3.75759959	3.730568409	0.009214019	8.067646027	193.6235	6.814393997	6.768903732	0.027463537	24.0405006	576.9719849	24	21005.96045
	13	503.9643	869.767395	3.331425	14.97273	3.98431158	3.965505362	0.009794288	8.52559948	204.6144	6.594519615	6.564225197	0.026633084	23.16642	555.9940796	24	20874.41748
	14	499.8267	862.6268921	3.330027	14.97521	3.43374872	3.418239117	0.008442605	7.289186954	174.9405	6.676396847	6.648988724	0.026976991	23.2704258	558.4901733	24	20703.04541
	15	514.728	888.3440552	3.292631	15.04174	2.82245302	2.841592789	0.007018362	6.241361618	149.7927	7.688174725	7.744047642	0.031419978	27.9176216	670.0228882	24	21320.25732
	16	519.0849	895.8638916	3.305097	15.01956	3.5043366	3.512644529	0.00867577	7.778622627	186.6869	7.558283806	7.584244251	0.030771613	27.5655251	661.5725708	24	21500.7334
	17	516.4695	891.3500366	3.3016	15.02579	3.35155368	3.364577055	0.008310064	7.414730549	177.9535	7.54731369	7.580821037	0.030757716	27.4150467	657.9611206	24	21392.40088
	18	520.4093	896.1087036	3.293205	15.0598	3.79210043	3.824717999	0.009448477	8.490618706	203.7749	7.539363861	7.618575096	0.030918293	27.6947784	664.6746826	24	21506.60889
	19	519.9808	893.8890991	3.286082	15.08613	3.72786951	3.78066659	0.009341506	8.360839844	200.6601	7.473387241	7.585264206	0.030788129	27.5189495	660.4547729	24	21453.33838
	20	515.7748	886.6586914	3.299501	15.06238	3.5100596	3.5434196	0.008755301	7.771088123	186.5061	7.471795559	7.553310871	0.030658416	27.1797333	652.3135986	24	21279.80859
	21	512.5052	881.0384521	3.310566	15.04278	3.74265456	3.76796627	0.009310132	8.206783295	196.9628	7.260665417	7.314864159	0.029690584	26.1577415	627.7857666	24	21144.92285
	22	509.8327	876.4432373	3.320593	15.02504	4.01351023	4.028486729	0.009953839	8.730074883	209.5218	7.046405315	7.076776028	0.028724182	25.1754742	604.2114258	24	21034.6377
	23	508.3268	873.8552246	3.329071	15.01004	4.05267382	4.058827877	0.010028804	8.768959999	210.455	6.948737144	6.961091518	0.028254651	24.6912575	592.59021	24	20972.52539
	24	509.1347	875.2437744	3.337403	14.9953	3.70290804	3.698298693	0.009137988	8.002203941	192.0529	6.898656368	6.894096851	0.027982712	24.4903507	587.7683716	24	21005.85059
	25	510.588	877.7419434	3.330279	15.0079	3.64551497	3.648677588	0.00901538	7.917969227	190.0313	7.01328373	7.022940636	0.028505687	25.0202923	600.4869995	24	21065.80664
	26	509.3822	875.6686401	3.308659	15.04617	3.42993212	3.46067667	0.008550855	7.491177082	179.7883	7.119008541	7.174583435	0.029121205	25.5	612	24	21016.04736
	27	516.7778	888.3823242	3.325383	15.01656	3.65759706	3.667202473	0.00906115	8.052355766	193.2565	7.312335014	7.332921505	0.029763883	26.440958	634.5830078	24	21321.17578
	28	516.3657	887.6738892	3.319153	15.02759	4.08192825	4.100303173	0.01013129	8.996060371	215.9055	7.185304165	7.219481945	0.02930343	26.0120411	624.2890015	24	21304.17334
	29	513.7301	883.1448364	3.312283	15.03974	3.38748384	3.409991741	0.008425618	7.445094109	178.6823	7.215034008	7.264727116	0.029487075	26.0406837	624.9763794	24	21195.47607
	30	516.1511	887.305603	3.313236	15.03805	3.38016987	3.401016712	0.008403442	7.461805344	179.0833	7.374655724	7.422595978	0.030127862	26.7328873	641.5892944	24	21295.33447
May 02	01	513.596	882.9133911	3.29632	15.06798	3.63120747	3.673622131	0.009077013	8.01351738	192.3244	7.365594864	7.451733589	0.030246133	26.7033253	640.8798218	24	21189.92139
	02	510.1706	877.0241699	3.324621	15.01791	3.80624914	3.816878796	0.009430979	8.275314331	198.6075	7.193573475	7.216868877	0.029292837	25.6895618	616.5494995	24	21048.58008
	03	507.2839	872.0606079	3.341981	14.9872	3.61419702	3.60491538	0.008907247	7.773761272	186.5703	6.975922108	6.961156368	0.028254913	24.6419411	591.4066162	24	20929.45459

Unit 2 - CEMS Data

	04	505.4841	868.9671021	3.345607	14.98079	3.54948902	3.536041737	0.00873707	7.595006466	182.2802	6.994205475	6.971675396	0.028297612	24.5893173	590.1436157	24	20855.21045
	05	504.9229	868.0038452	3.348787	14.97516	3.79209995	3.775347948	0.009328368	8.097759247	194.3462	6.952074528	6.923070431	0.028100321	24.3915672	585.397583	24	20832.09229
	06	505.4591	868.9247437	3.334667	15.00014	3.85950708	3.858654499	0.009534209	8.287809372	198.9074	7.058435917	7.059062481	0.028652316	24.8952332	597.4855957	24	20854.19385
	07	508.7889	874.6486816	3.332633	15.00374	3.78255963	3.783712149	0.009349035	8.182114601	196.3707	7.170837402	7.177063942	0.029131275	25.4806118	611.534729	24	20991.56836
	08	511.3298	879.0170288	3.339947	14.9908	4.43248749	4.425036907	0.010933653	9.617214203	230.8132	7.154778481	7.14385128	0.028996466	25.4874039	611.6976929	24	21096.40869
	09	510.5633	877.6995239	3.330724	15.00711	4.40387154	4.407655716	0.010890717	9.564509392	229.5482	7.199295998	7.208758831	0.029259916	25.6797085	616.3129883	24	21064.78857
	10	513.9229	883.4755249	3.319596	15.0268	4.29751062	4.315684319	0.010663462	9.425707817	226.217	7.3268013	7.360889435	0.029877421	26.3945541	633.4692993	24	21203.4126
	11	148.9141	511.9240417	1.966702	10.31131	8.63731766	28.23379517	0.069761708	17.14721298	205.7666	5.550360203	7.621583462	0.030935524	19.1355515	229.6266022	10.98611	5624.054186
	12	513.0468	881.9689331	3.362205	14.95142	4.64219046	4.602759361	0.011372785	10.03839302	240.9214	7.115988731	7.057723999	0.028646871	25.2683086	606.4393921	24	21167.25439
	13	512.8547	881.6381836	3.338165	14.99395	4.82978964	4.822817326	0.011916508	10.51412582	252.339	6.982123375	6.975212574	0.028311968	24.9624424	599.0986328	24	21159.31641
	14	512.3626	880.7927856	3.349102	14.9746	4.33964062	4.321213722	0.010677127	9.41210556	225.8905	7.114556313	7.084135532	0.02875408	25.3264217	607.8341064	24	21139.02686
	15	508.8569	874.7667847	3.362649	14.95064	4.17509222	4.140039444	0.010229458	8.95249176	214.8598	7.070041656	7.011615276	0.02845972	24.8960781	597.5059204	24	20994.40283
	16	508.2116	873.6568604	3.377785	14.92386	4.23630333	4.180980682	0.010330638	9.031246185	216.7499	6.998975277	6.909900188	0.028046854	24.5036697	588.0880737	24	20967.76465
	17	504.203	866.7663574	3.373333	14.93174	3.61928368	3.576668262	0.008837455	7.662924767	183.9102	7.047306538	6.96688652	0.028278163	24.5103073	588.2473755	24	20802.39258
	18	505.3763	868.78302	3.369899	14.93781	3.68478537	3.645374298	0.009007222	7.82924509	187.9019	7.077195168	7.003633976	0.028427342	24.6973743	592.7369995	24	20850.79248
	19	510.6731	877.8883667	3.370344	14.93703	7.73714161	7.652906895	0.018909266	16.60311699	398.4748	7.226164341	7.150466919	0.029023295	25.4792423	611.50177	24	21069.3208
	20	514.8931	885.1425171	3.352601	14.96841	9.13938713	9.090474129	0.022461308	19.89970779	477.593	7.15637064	7.118991852	0.028895559	25.5782757	613.8786011	24	21243.42041
	21	519.7068	893.4169922	3.331299	15.0061	10.562603	10.57151604	0.026120771	23.3435173	560.2444	7.120757103	7.128155708	0.028932763	25.8483963	620.3615112	24	21442.00781
	22	515.5495	886.2712402	3.329517	15.00925	10.7743855	10.78886604	0.026657812	23.63554192	567.253	7.125685692	7.137565613	0.028970949	25.6750908	616.2022095	24	21270.50977
	23	512.7093	881.3878784	3.329389	15.00947	10.499814	10.51475143	0.025980495	22.91477585	549.9546	7.121234417	7.133999348	0.028956475	25.5224285	612.5383301	24	21153.30908
	24	506.3701	870.4926147	3.346371	14.97944	10.3753338	10.33936501	0.025547141	22.24964523	533.9915	6.901516914	6.877635002	0.027915891	24.3036842	583.2883911	24	20891.82275
	25	504.1816	866.7285156	3.347261	14.97786	11.1397295	11.09764194	0.027420737	23.7700882	570.4821	6.629813194	6.60513401	0.026809834	23.2382126	557.7171021	24	20801.48438
	26	504.9398	868.0323486	3.356483	14.96155	10.8721533	10.8019619	0.026690146	23.16575432	555.9781	6.678304672	6.635200024	0.026931867	23.3767204	561.0413208	24	20832.77637
	27	505.1592	868.4099731	3.355526	14.96324	10.7834368	10.7131815	0.026470818	22.99595451	551.9029	6.61121273	6.570255756	0.026668258	23.1599617	555.8391113	24	20841.83936
	28	505.8375	869.5764771	3.335112	14.99935	12.902072	12.91982174	0.031923112	27.72018433	665.2844	6.636331081	6.631061077	0.026915075	23.4188499	562.0523682	24	20869.83545
	29	504.9065	867.9755249	3.368435	14.9404	10.1041117	10.07130051	0.024884811	21.57185555	517.7245	7.448584557	7.360471249	0.029875699	25.9423466	622.616272	24	20831.4126
	30	480.8021	826.5379028	3.319088	15.02774	6.415977	6.507650375	0.016079508	13.10246563	314.4592	7.526963711	7.535377979	0.030585645	25.44133	610.5919189	24	19836.90967
	31	466.8188	802.4991455	3.272473	15.1102	7.0636816	7.190927029	0.017767796	14.29901886	343.1765	6.483706951	6.608785152	0.026824659	21.5226574	516.5438232	24	19259.97949
Jun 02	01	490.5957	843.3745728	3.307576	15.04807	9.78963375	9.838271141	0.024309024	20.66513824	495.9633	6.874013424	6.932510376	0.028138634	23.7197914	569.2750244	24	20240.98975
	02	512.9318	881.7705078	3.338293	14.99372	12.8278418	12.8124876	0.031657871	27.92134094	670.1122	6.916464329	6.909407139	0.028044863	24.7290745	593.4978027	24	21162.49219
	03	506.662	870.993103	3.331468	15.0058	14.7476749	14.76280785	0.036476854	31.77309608	762.5543	6.532249451	6.539039612	0.026541559	23.1254826	555.0115967	24	20903.83447
	04	493.4666	848.3096924	3.322268	15.02209	15.0000334	15.03320503	0.037144959	31.64270782	759.425	6.2407794	6.264724731	0.025428129	21.5685673	517.6456299	24	20359.43262
	05	493.6266	848.5838623	3.345798	14.98046	11.2470388	11.21167946	0.027702508	23.5483284	565.1599	6.498174191	6.47600174	0.026285704	22.3070507	535.3692017	24	20366.0127
	06	495.6289	852.0266113	3.367292	14.94242	8.96306992	8.876626015	0.02193293	18.68639946	448.4736	6.78132534	6.716395378	0.027261434	23.2276592	557.4638062	24	20448.63867
	07	499.3763	858.4683838	3.373651	14.93118	7.45382977	7.367852211	0.018204954	15.62337875	374.9611	7.238247395	7.154660702	0.02904032	24.9319	598.3656006	24	20603.24121
	08	507.514	872.4572144	3.37238	14.93342	6.38402367	6.316780567	0.015607895	13.61722469	326.8134	7.555741787	7.47162962	0.030326888	26.4615574	635.0773926	24	20938.97314
	09	516.0468	887.1261597	3.361569	14.95255	6.76892471	6.715004921	0.016591851	14.71706676	353.2096	7.905983448	7.84351635	0.031836357	28.2450199	677.8804932	24	21291.02783
	10	510.0908	876.8872681	3.357732	14.95934	6.55456066	6.509329796	0.016083647	14.10226631	338.4544	7.650335312	7.5982337	0.030840766	27.047121	649.1309204	24	21045.29443
	11	506.7171	871.0877686	3.36443	14.94749	7.97005463	7.901914597	0.019524554	17.01363373	408.3272	7.397072315	7.332658768	0.029762825	25.9305496	622.3331909	24	20906.10645
	12	504.4037	867.111145	3.368754	14.93984	8.864501	8.776730537	0.021686109	18.79309082	451.0342	7.220600605	7.147834778	0.029012617	25.1585827	603.8060303	24	20810.66748
	13	504.4453	867.1819458	3.360806	14.9539	9.1150589	9.044198036	0.022346975	19.37512016	465.0029	7.197706223	7.142465115	0.028990822	25.1455421	603.492981	24	20812.3667
	14	506.6924	871.045166	3.36424	14.94783	8.75829887	8.681432724	0.021450629	18.67689514	448.2455	7.257166386	7.194607735	0.029202471	25.4470043	610.7280884	24	20905.08398
	15	504.4143	867.1299438	3.369708	14.93815	8.21218777	8.128647804	0.020084767	17.41845322	418.0429	7.222665787	7.147670269	0.029011954	25.1570549	603.7692871	24	20811.11865
	16	506.7581	871.1585693	3.369708	14.93815	8.41171265	8.325116158	0.020570217	17.91822433	430.0374	7.360666275	7.284337997	0.029566679	25.7573338	618.1760254	24	20907.80566
	17	504.9889	868.1169434	3.355279	14.96368	8.20579815	8.155070305	0.02015006	17.49355888	384.8583	7.187429905	7.143404484	0.028994637	25.16255	553.5761108	24	20834.80664
	18	499.0078	857.8356934	3.36214	14.95154	8.40249157	8.334950447	0.02059452	17.66993713	424.0785	6.89102459	6.835187435	0.027743613	23.8004837	571.2116089	24	20588.05664
	19	497.1592	854.6571655	3.373523	14.9314	8.17784691	8.084664345	0.019976083	17.07229996	409.7352	6.954618931	6.874866486	0.027904667	23.848608	572.3665771	24	20511.77197
	20	499.9971	859.5357666	3.370788	14.93624	7.88102198	7.796582699	0.019264283	16.554533	397.3088	7.217102528	7.140553951	0.028983075	24.9161663	597.9879761	24	20628.8584
	21	509.3741	875.6546021	3.37327	14.93185	7.99819469	7.906646729	0.019536238	17.10521698	410.5252	7.46893549	7.384196758	0.029972004	26.2471828	629.932373	24	21015.71045
	22	506.6708	871.0074463	3.378102	14.9233	8.81410122	8.701212883	0.021499487	18.72571182	449.4171	7.038562775	6.948482037	0.028203484	24.5689964	589.6558838	24	20904.17871
	23	500.6619	860.678772	3.370916	14.93601	9.3215847	9.22296524	0.02278867	19.62190819	470.9258	6.917257786	6.843064308	0.027775578	23.9065247	573.7565918	24	20656.29053
	24	500.7308	860.796875	3.364175	14.94794	9.48438454	9.401444435	0.023229679	19.99524117	479.8858	6.913600445	6.853033066	0.027816046	23.9448662	574.6768188	24	20659.125
	25	498.1896	856.4281006	3.370471	14.9368	9.9411478	9.833871841	0.024298137	20.81192398	499.4862	6.716779709	6.646188259	0.02697647	23.1048794	554.5170898	24	20554.27441
	26	499.2744	858.2937012	3.37346	14.93151	9.22762108	9.119303703	0.022532545	19.33939552	464.1455	6.874489784	6.795947552	0.027584339	23.677454	568.2589111	24	20599.04883
	27	500.5497	860.4851074	3.371617	14.93478	9.03016186	8.930966377	0.022067184	18.99219513	455.8127	6.916143894	6.840761662	0.02776625	23.8951626	573.4838867	24	20651.64258
	28	484.2415	832.4509277	3.269167	14.68062	10.256094	11.6785202	0.028856046	20.8270092	499.8482	7.07576561	7.419629097	0.030115817	24.0709171	577.7020264	24	19978.82227
	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	30	82.90944	683.7260132	2.762515	13.92242	18.7285995	42.10187149	0.104027823	32.68814087	163.4407	6.285098076	8.451587677	0.03430444	20.3680401	101.8402023	4.363889	2983.704577
Jul 02	01	490.338	842.9307251	3.344018	14.9836	7.08037472	7.059186935	0.017442271	14.70686245	352.9647	6.287202358	6.270006657	0.025449574	21.4576874	514.9844971	24	20230.3374
	02	498.0416	856.1732178	3.350375	14.97235	7.18737268	7.152381897	0.01767255	15.13865852	363.3278	6.537443638	6.507873535	0.026415067	22.6219788	542.9274902	24	20548.15723
	03	499.8683	859.3139038	3.346242	14.97966	7.16384268	7.137575626	0.017635962	15.16252899	363.9007	6.646505356	6.623988152	0.02688635	23.103941	554.4945679	24	20623.53369
	04	499.8431	859.2714844	3.351012	14.97122	7.00899363	6.977903843	0.017241443	14.82359123	355.7662	6.722979069	6.690027237	0.027154408	23.3318005	559.9631958	24	20622.51563
	05	500.9724	861.2123413	3.347324	14.97775	8.33603764	8.302684784	0.020514792	17.67302513	424.1526	6.530766487	6.506351948	0.026408879	22.7439709	545.8552856	24	20669.09619

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	06	500.2052	859.8946533	3.345543	14.9809	8.54589558	8.517105103	0.021044595	18.1036911	434.4886	6.480368614	6.459623814	0.02621923	22.5461006	541.1063843		24	20637.47168
	07	499.2385	858.2324219	3.353238	14.96729	9.07245541	9.021130562	0.022289971	19.13632584	459.2718	6.323768139	6.288965702	0.025526525	21.9077168	525.7852173		24	20597.57813
	08	500.4421	860.3009644	3.353554	14.96673	9.84495735	9.788459778	0.024185929	20.81305504	499.5133	6.237439632	6.20246315	0.025175413	21.6602077	519.8449707		24	20647.22314
	09	494.3129	849.7645264	3.349422	14.97404	10.4052229	10.35720158	0.025591208	21.75932121	522.2237	6.051746368	6.025995731	0.024459153	20.7932301	499.0375061		24	20394.34863
	10	490.1067	842.5338745	3.35273	14.96819	9.91713524	9.86193943	0.02436748	20.5376873	492.9045	5.958421707	5.926762581	0.024056366	20.2691631	486.4598999		24	20220.81299
	11	494.1459	849.4762573	3.345733	14.98056	8.39533806	8.365202904	0.020669257	17.56002045	421.4405	6.257153511	6.236973286	0.025315501	21.5094299	516.2263184		24	20387.43018
	12	492.8958	847.3273926	3.350694	14.97179	8.15988159	8.120807648	0.020065404	17.00508308	408.122	6.282114029	6.252576351	0.025378821	21.5129547	516.3109131		24	20335.85742
	13	493.0276	847.5542603	3.350439	14.97224	9.78613853	9.737771988	0.024060708	20.39155769	489.3974	6.0771842	6.04889679	0.024552109	20.8122253	499.4934082		24	20341.30225
	14	487.9755	838.8690796	3.357308	14.96009	9.28327179	9.215740204	0.022770833	19.11158752	458.6781	5.895147324	5.855638981	0.023767687	19.9383507	478.5203857		24	20132.85791
	15	494.3158	849.7692261	3.341453	14.98814	7.49824047	7.480364323	0.018482959	15.7095747	377.0298	6.108344555	6.096346855	0.024744708	21.0276299	504.6631165		24	20394.46143
	16	496.0908	852.8200684	3.347959	14.97663	6.76924276	6.739426613	0.0166522	14.20543289	340.9304	6.28608942	6.261949062	0.025416879	21.6805286	520.3327026		24	20467.68164
	17	496.8138	854.0622559	3.353428	14.96695	7.11964464	7.078226566	0.017489316	14.94059563	358.5743	6.20198679	6.167552948	0.025033729	21.3819008	513.1655884		24	20497.49414
	18	496.7728	853.9915161	3.343317	14.98484	7.49771118	7.477319717	0.018475413	15.78467083	378.8321	6.152383804	6.136850357	0.024909096	21.2737427	510.5697937		24	20495.79639
	19	493.5519	848.4561768	3.351774	14.96988	7.39738989	7.358028412	0.01818067	15.42890835	370.2938	6.077978134	6.047393322	0.024545996	20.826704	499.8409119		24	20362.94824
	20	492.6682	846.9354858	3.34529	14.98135	6.81216908	6.789269447	0.016775342	14.20986652	341.0368	6.207710743	6.18808651	0.025117071	21.273283	510.5588074		24	20326.45166
	21	498.407	856.8015137	3.345863	14.98034	6.5721035	6.549097061	0.016181933	13.86995029	332.8788	6.400239944	6.379192829	0.025892749	22.1885796	532.5258789		24	20563.23633
	22	499.6346	858.9124146	3.338929	14.9926	6.71805048	6.70677042	0.016571496	14.22326279	341.3583	6.374006748	6.36639452	0.025840808	22.203804	532.8912964		24	20613.89795
	23	498.0189	856.135437	3.348468	14.97573	7.6406374	7.605427742	0.018791959	16.07577515	385.8186	6.164785385	6.140921593	0.024925634	21.3528042	512.4672852		24	20547.25049
	24	494.9175	850.8035278	3.348215	14.97618	9.36482048	9.325922966	0.023043076	19.60167122	470.4401	5.824398041	5.800773621	0.023544984	20.0366783	480.8803101		24	20419.28467
	25	492.7531	847.0818481	3.342173	14.98686	9.041605	9.019571304	0.022286125	18.88549614	453.2519	5.864303589	5.851472378	0.023750778	20.1175747	482.8218079		24	20329.96436
	26	496.121	852.8718262	3.334733	15.00002	7.05350733	7.052171707	0.017424947	14.86646652	356.7952	6.25969696	6.259730816	0.025407871	21.6690083	520.0562134		24	20468.92383
	27	495.7913	852.3052979	3.337847	14.99451	6.33775997	6.331212044	0.015643563	13.33516216	320.0439	6.384977341	6.379379272	0.025893517	22.0703621	529.6887207		24	20455.32715
	28	494.9926	850.9309692	3.36106	14.95345	7.0632062	7.004446507	0.017307024	14.71240807	353.0978	6.211048126	6.163106918	0.025015671	21.2931919	511.0365906		24	20422.34326
	29	495.3904	851.6156006	3.333014	15.00306	8.10948372	8.114635468	0.020050149	17.0765667	409.8376	5.996897697	5.999351025	0.024350991	20.7397385	497.7536926		24	20438.77441
	30	490.379	843.0014038	3.344335	14.98304	9.11601639	9.08390522	0.022445083	18.91390038	453.9336	5.816449165	5.801483154	0.023547871	19.8551083	476.5226135		24	20232.03369
	31	491.9898	845.7689209	3.344907	14.98203	8.84605789	8.817576408	0.021787008	18.431633	442.3592	5.915019512	5.897096157	0.023935955	20.2448711	485.8768921		24	20298.4541
Aug 02	01	492.5329	846.7039795	3.345797	14.98045	7.77815914	7.751297951	0.019152395	16.22215462	389.3317	6.065101624	6.045321465	0.024537574	20.7750664	498.601593		24	20320.89551
	02	491.1158	844.2671509	3.351329	14.97066	7.770051	7.728488922	0.019096037	16.11598778	386.7837	6.049998283	6.020746708	0.024437847	20.6352501	495.2460022		24	20262.41162
	03	495.7311	852.2012939	3.356927	14.96076	7.90693808	7.853038788	0.019403784	16.53423691	396.8217	6.137438774	6.096899509	0.024746941	21.0913372	506.1921082		24	20452.83105
	04	499.5874	858.8322754	3.348406	14.97584	7.6948514	7.66272068	0.018933512	16.26034927	390.2484	6.298808098	6.273190022	0.025462495	21.8685741	524.8458252		24	20611.97461
	05	500.1238	859.7531738	3.333713	15.00183	7.55907822	7.560880184	0.018681904	16.06289673	385.5095	6.325993538	6.327999592	0.025684955	22.0832176	529.9971924		24	20634.07617
	06	502.6568	864.1073608	3.338292	14.99372	7.03299809	7.026586056	0.017361712	15.00534153	360.1282	6.45890522	6.452033043	0.026188409	22.6309414	543.1425781		24	20738.57666
	07	501.3027	861.7791748	3.332443	15.00408	7.59326029	7.598209858	0.018774141	16.17820358	388.2769	6.33330822	6.337696552	0.025724329	22.1701164	532.0828247		24	20682.7002
	08	497.552	855.3327026	3.341535	14.98799	8.11616039	8.100622177	0.020015521	17.12084961	410.9004	6.203416824	6.190935612	0.025128642	21.4953747	515.8889771		24	20527.98486
	09	492.5135	846.6710815	3.342555	14.98619	8.11472893	8.095806122	0.020003621	16.94064522	406.5755	6.092288494	6.078199863	0.024671046	20.8907127	501.3771057		24	20320.10596
	10	301.0274	730.5037842	2.914033	13.49043	8.55950642	13.99727345	0.034585334	16.22227859	275.7787	5.89581871	6.376621723	0.025882311	19.8495045	337.4415894	16.61667		12138.53797
	11	496.7092	853.8825684	3.351203	14.97089	5.81279373	5.782523155	0.014287821	12.20257092	292.8617	6.492450714	6.460826397	0.026224092	22.3941174	537.4588013		24	20493.18164
	12	495.8057	852.3288574	3.344674	14.98244	5.95556116	5.932310581	0.014657904	12.49972916	299.9935	6.485881329	6.466760159	0.026248183	22.372921	536.9500732		24	20455.89258
	13	376.6596	777.0096436	3.067765	13.90486	5.9416976	6.859248161	0.01694826	11.96328545	239.2657	5.876449585	5.911169529	0.023993066	20.1567745	403.135498		20	15540.19287
	14	480.7355	826.366272	3.265902	14.83153	10.4838676	16.01232719	0.039564233	21.907938	525.7905	6.326630592	6.564692497	0.026645692	21.673008	520.1522217	23.55		19460.92507
	15	493.4009	848.1964722	3.355209	14.9638	8.35114002	8.299507141	0.020506941	17.39480782	417.4754	6.330764771	6.292121887	0.025539346	21.6631165	519.9147949		24	20356.71533
	16	492.9368	847.3983765	3.354255	14.96549	9.31729126	9.260017395	0.022880234	19.38517952	465.2443	6.210413933	6.17460537	0.025062351	21.2410583	509.7854004		24	20337.56104
	17	492.9066	847.3464355	3.356735	14.9611	10.7608786	10.68837357	0.026409492	22.38409996	537.2184	6.042366028	6.002987385	0.024365772	20.645771	495.4985046		24	20336.31445
	18	492.6485	846.9023438	3.350439	14.97224	8.09438038	8.056018829	0.019905312	16.86115074	404.6676	6.386726856	6.357274055	0.025803784	21.853838	524.4921265		24	20325.65625
	19	496.2501	853.0939331	3.339183	14.99215	8.27514648	8.263300896	0.02041748	17.41878319	418.0508	6.453975677	6.445427895	0.026161604	22.3199615	535.6790771		24	20474.25439
	20	500.4869	860.3765259	3.343508	14.9845	7.92045021	7.899583817	0.019518774	16.79633713	403.1121	6.525678158	6.508602619	0.026418025	22.7298508	545.5164185		24	20649.03662
	21	503.3189	865.2457275	3.347195	14.97797	7.50486565	7.476746559	0.018474	15.98415375	383.6197	6.744918823	6.719989777	0.027276024	23.6030998	566.4743652		24	20765.89746
	22	502.9866	864.6742554	3.355654	14.96301	8.83126926	8.774350166	0.021680228	18.74078751	449.7789	6.605966091	6.565029621	0.02664705	23.0455208	553.0925293		24	20752.18213
	23	503.8191	866.1051636	3.349931	14.97314	9.2678442	9.2267313	0.022797987	19.75264549	474.0635	6.477983952	6.448305607	0.026173275	22.6736584	544.1677856		24	20786.52393
	24	502.0022	862.9834595	3.34122	14.98855	9.86276627	9.84244442	0.024319325	20.98805428	503.7133	6.378778934	6.366492271	0.025841195	22.3014545	535.2349243		24	20711.60303
	25	502.2412	863.3944092	3.337149	14.99575	10.5022049	10.49262047	0.025925834	22.39062881	537.3751	6.364309788	6.359868526	0.025814321	22.2879295	534.9102783		24	20721.46582
	26	501.8573	862.7330322	3.333142	15.00284	9.54130173	9.544122696	0.0235822	20.3505497	488.4132	6.467014313	6.47028017	0.026262475	22.6594257	543.8261719		24	20705.59277
	27	497.7172	855.6159668	3.337275	14.99553	9.08612633	9.075714111	0.022424838	19.18386269	460.4127	6.458111286	6.454259872	0.026197441	22.4187126	538.0490723		24	20534.7832
	28	495.9749	852.6216431	3.357689	14.95941	9.18056202	9.116155624	0.022524763	19.20156288	460.8375	6.445393562	6.401835442	0.025984678	22.1573124	531.7755127		24	20462.91943
	29	497.0167	854.4116821	3.366274	14.94423	10.088685	9.993050575	0.024691459	21.09305382	506.2333	6.282909393	6.223978996	0.025262741	21.5883465	518.1203003		24	20505.88037
	30	495.8404	852.3901978	3.371299	14.93534	10.9675398	10.84468937	0.026795696	22.8294754	547.9074	6.19880724	6.131998539	0.024889417	21.2179966	509.2319031		24	20457.36475
	31	492.9286	847.3840942	3.37187	14.93433	10.6777163	10.56213379	0.026097562	22.10450745	530.5082	6.172893047	6.105024338	0.024779912	20.9990826	503.9779968		24	20337.21826
Sep 02	01	492.7608	847.0960693	3.366847	14.94321	11.4813671	11.37025452	0.028094342	23.79635811	571.1126	6.081478119	6.023617744	0.024449496	20.7145824	497.1499939		24	20330.30566
	02	491.7634	845.3816528	3.353873	14.96616	11.7712145	11.70232677	0.028914854	24.44315338	586.6357	6.099441528	6.065047264	0.02461765	20.8111134	499.4667053		24	20289.15967
	03	493.8323	848.9379272	3.338767	14.99289	9.97671318	9.981742859	0.024663512	20.91488075	460.1274	6.449048042	6.43572998	0.026122231	22.1858692	488.0891113		24	20374.51025
	04	495.7778	852.2816772	3.343062	14.98529	10.4753227	10.44485283	0.025807826	21.97132492	527.3118	6.21693182	6.202291489	0.025174716	21.4627457	515.105896		24	20454.76025
	05	505.2362	868.5421143	3.352856	14.96796	10.0861387	10.02985954	0.024782412	21.52404594	516.5771	6.47687006	6.442035198	0.026147809	22.7143288	545.1439209		24	20845.01074
	06	504.8707	867.9140625	3.343316	14.98484	9.87516594	9.848357201	0.024333924	21.11949921	506.868	6.547460556	6.531095982	0.026509333	23.0084953	552.2039185		24	20829.9375

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	07	509.2362	875.418457	3.353301	14.96717	9.40456867	9.349812508	0.023102079	20.22205353	485.3293	6.810419559	6.773052692	0.0274914	24.0678005	577.6271973		24	21010.04297
	08	509.8984	876.5565186	3.352856	14.96796	11.2203236	11.15774059	0.027569262	24.17268372	580.1444	6.642692566	6.606900692	0.026817003	23.5066338	564.1591797		24	21037.35645
	09	503.6787	865.8642578	3.348088	14.9764	9.61060619	9.573348045	0.02365442	20.50177574	492.0426	6.59022665	6.564142227	0.026643455	23.0732632	553.7583008		24	20780.74219
	10	498.5051	856.9713745	3.338803	14.99282	10.256074	10.24316978	0.025309442	21.67382431	520.1718	6.440305233	6.432596207	0.02610952	22.3793335	537.1040039		24	20567.31299
	11	497.6485	855.4978638	3.34071	14.98945	10.704258	10.68353558	0.026397571	22.5781498	541.8756	6.402625561	6.391396046	0.025942283	22.194191	532.6605835		24	20531.94873
	12	498.6736	857.2595825	3.35006	14.97291	10.8715296	10.81912422	0.026732545	22.90510368	549.7225	6.414708138	6.385653496	0.025918975	22.2237339	533.3696289		24	20574.22998
	13	498.6673	857.249939	3.348087	14.9764	12.6330738	12.59017277	0.031108579	26.65763664	639.7833	6.277503967	6.252160072	0.025377145	21.7558956	522.1414795		24	20573.99854
	14	497.2611	854.8320313	3.347005	14.97831	13.3839502	13.33620453	0.032951947	28.14435768	675.4646	6.29181242	6.268877506	0.025444999	21.7476215	521.9429321		24	20515.96875
	15	497.0997	854.5534058	3.33187	15.00509	12.8597755	12.87038708	0.031800956	27.16641235	651.9939	6.194514751	6.199778557	0.025164517	21.5061874	516.1484985		24	20509.28174
	16	504.6593	867.550415	3.343826	14.98394	11.7030163	11.67196274	0.028839812	25.02889252	600.6934	6.344279289	6.327163696	0.02568157	22.2801132	534.7227173		24	20821.20996
	17	504.3436	867.0072021	3.340965	14.989	12.0689917	12.04524994	0.029762154	25.81320381	619.5169	6.327426434	6.31599474	0.02563622	22.22892	533.4940796		24	20808.17285
	18	499.3517	858.4260254	3.353365	14.96706	12.3504	12.27840805	0.030338274	26.03634644	624.8723	6.18100214	6.14708519	0.024950637	21.4214783	514.1154785		24	20602.22461
	19	494.6346	850.3170776	3.34745	14.97752	13.253583	13.20339966	0.032623772	27.73173714	665.5617	6.084179878	6.061161041	0.024601884	20.9207115	502.0971069		24	20407.60986
	20	494.5084	850.0997314	3.344018	14.9836	13.322279	13.28359604	0.032821879	27.87828255	669.0788	6.096421242	6.079684258	0.024677062	20.9834499	503.6028137		24	20402.39355
	21	324.9084	744.6665039	2.924043	13.59794	15.2759418	22.21863365	0.054899126	31.28031731	563.0457	5.596678734	6.083042622	0.024690701	19.2387161	346.2969055	17.60833		13112.33621
	22	500.4919	860.3859863	3.345988	14.98011	16.5642834	16.50488663	0.040781315	35.09153748	842.1969	6.076866627	6.056504726	0.024582991	21.1519661	507.6471863		24	20649.26367
	23	498.0468	856.1826172	3.337912	14.9944	15.2494249	15.2326498	0.037637796	32.2280159	773.4724	6.028216839	6.022572517	0.024445245	20.9310913	502.3461914		24	20548.38281
	24	500.7361	860.8062134	3.360041	14.95525	12.7917337	12.70927048	0.031402849	27.03871727	648.9292	6.332830906	6.284006119	0.025506413	21.9562206	526.9492798		24	20659.34912
	25	502.5826	863.9799805	3.378103	14.9233	9.88502216	9.755679131	0.024104945	20.83160782	499.9586	6.708511353	6.622657776	0.026880966	23.2245216	557.3884888		24	20735.51953
	26	504.5883	867.4276123	3.369008	14.93939	9.21872139	9.124773026	0.022546062	19.55473328	469.3136	6.893568993	6.823568344	0.027696455	24.0270634	576.6494751		24	20818.2627
	27	507.4151	872.2872925	3.38637	14.90868	7.89660263	7.77647543	0.0192146	16.76223755	402.2937	7.117736816	7.009600639	0.028451538	24.8186378	595.6472778		24	20934.89502
	28	508.9583	874.9415283	3.386688	14.90811	8.27037334	8.14410305	0.020122949	17.61201668	422.6884	7.012489796	6.904884338	0.028026504	24.5217381	588.5217285		24	20998.59668
	29	510.9842	878.4221191	3.35611	14.9622	8.52544498	8.471204758	0.020931173	18.38810921	404.5384	6.963347912	6.91873312	0.0280827	24.6669674	542.6732788		24	21082.13086
	30	512.0193	880.2025146	3.299055	15.06315	9.22497082	9.322893143	0.023035605	20.28052902	486.7327	6.894892693	6.969881058	0.028290333	24.9008961	597.621521		24	21124.86035
Oct 02	01	516.446	887.8108521	3.310439	15.04302	8.07784462	8.139806747	0.020112341	17.85793686	428.5905	7.212173462	7.265541553	0.029490387	26.1827755	628.3865967		24	21307.46045
	02	517.4749	889.5819702	3.320487	15.02522	7.80423212	7.835961819	0.019361587	17.23970032	413.7528	7.426326275	7.459089279	0.03027598	26.9313049	646.3513184		24	21349.96729
	03	517.8848	890.2856445	3.324175	15.0187	8.45336723	8.477861404	0.020947613	18.65647125	447.7553	7.216146946	7.239382744	0.029384209	26.159296	627.8231201		24	21366.85547
	04	516.4949	887.8960571	3.336258	14.99732	7.86162567	7.859356403	0.019419387	17.25226593	414.0544	7.287055016	7.28409481	0.029565699	26.2519875	630.0476685		24	21309.50537
	05	514.7553	884.9064331	3.351712	14.96999	8.63667393	8.592254639	0.021230275	18.7852459	450.8459	7.058434963	7.022481441	0.02850382	25.2284203	605.4821167		24	21237.75439
	06	510.4562	877.5154419	3.349739	14.97348	9.11378956	9.071063042	0.022413367	19.67133713	472.1121	6.764473438	6.734488964	0.027334871	23.9916115	575.7987061		24	21060.37061
	07	506.0082	869.8693237	3.348151	14.97629	8.1415987	8.108778	0.020035684	17.43262482	418.383	6.714711189	6.687842846	0.027145542	23.6149998	566.7600098		24	20876.86377
	08	501.9917	862.9644775	3.36214	14.95154	7.34953642	7.287218094	0.018005721	15.54272079	373.0253	6.832517624	6.777210236	0.027508292	23.7407913	569.7789917		24	20711.14746
	09	501.8344	862.6954346	3.38389	14.91306	7.20470238	7.09901619	0.017540691	15.13375378	363.2101	6.846986771	6.747886658	0.027389258	23.6303158	567.1276245		24	20704.69043
	10	504.8354	867.8526001	3.394764	14.89382	6.8388772	6.716687202	0.016596008	14.40219116	345.6526	6.985619068	6.862364292	0.027853938	24.1757584	580.2182007		24	20828.4624
	11	509.308	875.5413208	3.384971	14.91115	7.68706036	7.575015068	0.018716816	16.38296318	393.1911	6.850642681	6.748313427	0.027390992	23.985651	575.6555786		24	21012.9917
	12	507.6046	872.6131592	3.38745	14.90676	9.24304295	9.098097801	0.022480145	19.61719131	470.8126	6.621864319	6.518918037	0.026459901	23.0902328	554.1655884		24	20942.71582
	13	504.9891	868.1171265	3.383826	14.91317	9.22189808	9.0870924	0.02245295	19.49885368	467.9725	6.622342587	6.526282787	0.026489783	22.9973583	551.9365845		24	20834.81104
	14	504.4806	867.2434082	3.379947	14.92004	8.54875755	8.433335304	0.020837612	18.07479668	433.7951	6.743805885	6.653832436	0.027007503	23.4228916	562.1494141		24	20813.8418
	15	506.1263	870.0723267	3.379311	14.92116	7.86369371	7.758881569	0.019171134	16.68346596	400.4032	6.978149414	6.886182308	0.027950583	24.3197994	583.6751709		24	20881.73584
	16	509.3543	875.621521	3.391584	14.89945	7.6765666	7.5480299	0.01865015	16.33481598	392.0356	7.155733585	7.03614378	0.028559282	25.0080662	600.1936035		24	21014.9165
	17	508.9725	874.9650879	3.390439	14.90147	7.96019745	7.829372406	0.0193453	16.9271698	406.2521	7.087530136	6.970953465	0.028294671	24.7590294	594.2166748		24	20999.16211
	18	328.4151	752.7057495	2.929893	13.39407	5.70330191	9.005998611	0.022252643	12.07987499	217.4378	6.120267868	6.410392284	0.026019411	21.2861366	383.1504517	17.36389		13069.89961
	19	507.7667	872.8917847	3.38688	14.90777	3.59034801	3.534388781	0.008732987	7.626196861	183.0287	6.859864712	6.754436493	0.027415838	23.9323673	574.3768311		24	20949.40283
	20	505.7582	869.4393921	3.385988	14.90935	3.34344506	3.292108297	0.008134346	7.077471733	169.8593	6.900564194	6.796290398	0.027585737	23.9856129	575.6546631		24	20866.54541
	21	504.2997	866.9316406	3.358113	14.95866	3.13014174	3.107230425	0.007677538	6.657948017	159.7908	6.984826088	6.936576366	0.028155137	24.408083	585.7940063		24	20806.35938
	22	507.9913	873.2789307	3.346497	14.97921	3.32055092	3.307842016	0.008173223	7.140548229	171.3732	6.998657703	6.974103928	0.028307455	24.7206669	593.2960205		24	20958.69434
	23	509.7882	876.3676147	3.34071	14.98945	3.48128343	3.47426033	0.008584415	7.527266026	180.6544	6.937606812	6.925055504	0.028108366	24.6350422	591.2410278		24	21032.82275
	24	513.662	883.0267944	3.333268	15.00261	3.72771049	3.72795701	0.00921127	8.137308121	195.2954	6.973536491	6.976708412	0.028318038	25.0058041	600.1392822		24	21192.64307
	25	511.5965	879.4752197	3.332951	15.00317	3.42405081	3.42580843	0.008464703	7.44642067	178.7141	7.067020416	7.071053505	0.028700953	25.2430744	605.8338013		24	21107.40527
	26	509.4669	875.8150024	3.345543	14.9809	3.27762628	3.266473293	0.008071006	7.070752144	169.698	6.996433258	6.973555565	0.028305238	24.7880669	594.9135742		24	21019.56006
	27	509.5962	876.0371094	3.353493	14.96684	3.58653259	3.565238237	0.008809208	7.720654488	185.2957	7.002473831	6.963519573	0.028264483	24.7606506	594.2556152	23.9		20937.28658
	28	510.0329	876.7880249	3.357243	14.9602	3.57747126	3.551761627	0.008775918	7.699985981	184.7997	6.943488121	6.897193909	0.0279953	24.5466175	589.1187744		24	21042.9126
	29	508.3623	873.916687	3.368625	14.94006	3.32738757	3.292558432	0.008135458	7.113240242	170.7178	7.037449837	6.967017651	0.028278701	24.713192	593.1165771		24	20974.00049
	30	509.9288	876.6085205	3.389169	14.90372	3.46109366	3.404219151	0.008411359	7.377157211	177.0518	7.132522106	7.018136024	0.028486183	24.9715919	599.3181763		24	21038.60449
	31	514.7602	884.9158936	3.385797	14.90969	3.58017206	3.525132179	0.008710122	7.710648537	185.0556	7.228390694	7.119473934	0.028897509	25.5721836	613.7324219		24	21237.98145
Nov 02	01	515.824	886.7435913	3.358389	14.95817	3.67095256	3.643844128	0.009003439	7.985251904	191.646	7.251124382	7.200366974	0.029225845	25.9156742	621.9761963		24	21281.84619
	02	82.35999	566.1633301	2.163207	10.97691	10.9254351	21.23720741	0.052474353	23.21961403	139.3177	5.395933151	6.496431828	0.026368599	19.1286488	114.7718887	5.85		3312.055427
	03	514.7307	884.8638916	3.364494	14.94738	3.21116996	3.182473421	0.007863451	6.965391159	167.1694	7.958127975	7.889370441	0.032022476	28.2018452	676.8442993		24	21236.7334
	04	512.9177	881.7468872	3.362416	14.95105	3.49718332	3.467555761	0.00856785	7.562695026	181.5047	7.443443775	7.382017136	0.029963145	26.4191494	634.0595703		24	21161.92529
	05	514.1979	883.9476318	3.354001	14.96594	3.78812408	3.763253689	0.009298479	8.228615761	197.4868	7.304385185	7.263806343	0.029483341	26.0600376	625.440918		24	21214.74316
	06	512.5524	881.1187744	3.360423	14.95457	3.71880746	3.688607454	0.009114045	8.034584999	192.83	7.263685226	7.208738327	0.029259821	25.7828617	618.7886963		24	21146.85059
	07	507.4997	872.4336548	3.364367	14.9476	3.72596121	3.690971375	0.009119878	7.964094639	191.1383	6.982123375	6.920884609	0.028091449	24.5188789	588.453125		24	20938.40771
	08	496.4373	853.4151001	3.376132	14.92679	3.52723122	3.481903315	0.008603305	7.349589825	176.3902	6.588636398	6.507540226	0.026413692	22.5425453	541.0211182		24	20481.9624

Unit 2 - CEMS Data

	09	503.6649	865.8406372	3.386814	14.90789	3.88749051	3.825836658	0.009453115	8.194214821	196.6611	6.676237583	6.573808193	0.026682675	23.1013126	554.4315186	24	20780.17529
	10	514.0219	883.6454468	3.375368	14.92814	4.48193264	4.426990032	0.010938483	9.66847229	232.0433	6.787685394	6.706082344	0.027219562	24.0525703	577.2617188	24	21207.49072
	11	514.1127	883.8013306	3.361377	14.95289	4.87271643	4.83297348	0.011941613	10.55759335	253.3822	6.651436329	6.59875536	0.026783951	23.672617	568.1428223	24	21211.23193
	12	507.4893	872.4147339	3.368754	14.93984	4.14610434	4.104906082	0.010142662	8.863898277	212.7336	6.597062111	6.530739784	0.026507879	23.1296959	555.1127319	24	20937.95361
	13	508.4813	874.1196899	3.386815	14.90789	3.79178095	3.733054161	0.009223862	8.06492424	193.5582	6.730291367	6.626733303	0.026897499	23.5121384	564.2913208	24	20978.87256
	14	509.7994	876.3865967	3.396353	14.89101	3.59750295	3.533182621	0.008730008	7.650040627	183.601	6.815666676	6.690485001	0.027156275	23.8034592	571.28302	24	21033.27832
	15	507.6785	872.7406006	3.389042	14.90395	3.71260715	3.651734114	0.009022933	7.880169868	189.1241	6.693248272	6.586194992	0.026732963	23.334446	560.0266724	24	20945.77441
	16	509.2971	875.5223999	3.392346	14.8981	3.7375679	3.673438311	0.009076562	7.95363903	190.8873	6.815030575	6.700320244	0.02719618	23.8192158	571.6611938	24	21012.5376
	17	512.4148	880.8828125	3.390185	14.90193	3.77795053	3.714834213	0.009178841	8.089104652	194.1385	6.847303391	6.735311508	0.027338216	24.0828381	577.9880981	24	21141.1875
	18	512.8684	881.6619263	3.392241	14.89829	3.98325205	3.914142132	0.009671312	8.530079842	204.7219	6.65890646	6.546252728	0.026570838	23.4293079	562.3034058	24	21159.88623
	19	513.132	882.1152954	3.391458	14.89968	4.26380634	4.190668106	0.010354574	9.140680313	219.3763	6.457475185	6.349388123	0.02577178	22.7347336	545.633606	24	21170.76709
	20	503.9611	866.350769	3.37734	14.92465	3.50545096	3.461023331	0.008551711	7.418738365	178.0497	6.455710888	6.37426424	0.025872756	22.395092	515.0870972	24	20792.41846
	21	498.701	857.3068237	3.379246	14.92128	3.17905498	3.135452986	0.007747272	6.646704674	159.5209	6.625203133	6.539113998	0.026541866	22.7575073	546.1801758	24	20575.36377
	22	500.9065	861.0990601	3.396354	14.89101	3.14821219	3.090793848	0.007636926	6.579734325	157.9136	6.68545866	6.564333439	0.026644217	22.944479	550.6674805	24	20666.37744
	23	510.4425	877.4916992	3.39788	14.88831	3.55346298	3.486196756	0.008613915	7.561355591	181.4725	6.869243145	6.741690636	0.027364116	24.0118217	576.2836914	24	21059.80078
	24	512.017	880.1977539	3.386559	14.90834	3.69352913	3.635945797	0.008983921	7.910376072	189.849	6.86145401	6.756492615	0.027424196	24.1390991	579.3383789	24	21124.74609
	25	509.2476	875.4373169	3.381473	14.91734	3.47492456	3.4262321	0.008465744	7.414597988	177.9503	6.933951855	6.838228226	0.027755953	24.2982082	583.1569824	24	21010.49561
	26	512.9287	881.7657471	3.377595	14.9242	3.6714313	3.623389482	0.008952898	7.897912979	189.5499	6.924412251	6.836763382	0.027749997	24.4697208	587.2733154	24	21162.37793
	27	514.0903	883.7634888	3.3699	14.93781	3.36061573	3.32459116	0.008214609	7.261615276	174.2788	7.088801861	7.016349792	0.02847893	25.1714592	604.1149902	24	21210.32373
	28	512.0332	880.2260742	3.374923	14.92892	3.37365246	3.332127571	0.008233231	7.253115654	174.0748	7.018689156	6.935411453	0.028150404	24.7782955	594.6790771	24	21125.42578
	29	510.4171	877.4491577	3.377084	14.9251	3.17714787	3.136844873	0.007750711	6.803824425	163.2918	7.090868473	7.002355576	0.028422125	24.9405537	598.5733032	24	21058.77979
	30	508.2415	873.7088013	3.38268	14.9152	3.287323	3.240230322	0.008006163	6.996643066	167.9194	6.764950275	6.669145107	0.027069651	23.6510334	567.6248169	24	20969.01123
Dec 02	01	509.668	876.1598511	3.384207	14.9125	3.4242084	3.373158693	0.008334609	7.305593967	175.3343	6.794044971	6.694906712	0.027174225	23.8083534	571.4005127	24	21027.83643
	02	510.662	877.8696289	3.369581	14.93838	3.17651129	3.143303394	0.00776667	6.820885658	163.7013	7.025684357	6.953053474	0.028222021	24.7762699	594.6304932	24	21068.87109
	03	511.3899	879.1210938	3.385416	14.91036	3.12993002	3.082553387	0.007616563	6.697589874	160.7422	6.991979599	6.887597561	0.027956342	24.5780258	589.8726196	24	21098.90625
	04	512.0001	880.1695557	3.388215	14.90541	3.18430161	3.13346076	0.007742348	6.816562176	163.5975	6.972584724	6.86257267	0.027854774	24.5189171	588.4539795	24	21124.06934
	05	510.8735	878.2332153	3.37842	14.92274	3.13501668	3.093300104	0.00764312	6.715553284	161.1733	7.026638508	6.935958862	0.028152633	24.7256126	593.4146729	24	21077.59717
	06	507.9425	873.1940308	3.385798	14.90969	2.72944713	2.688038826	0.006641779	5.802731037	139.2655	7.104223251	6.997310162	0.028401662	24.8010044	595.2241211	24	20956.65674
	07	508.6949	874.487854	3.393683	14.89574	2.97348785	2.921245337	0.007217993	6.313960075	151.535	6.946193218	6.825572491	0.027704574	24.2276287	581.4630737	24	20987.7085
	08	509.8683	876.5047607	3.387578	14.90654	3.24423909	3.193034649	0.00788955	6.917801857	166.0272	6.916940689	6.809154034	0.027637942	24.2258549	581.4204712	24	21036.11426
	09	510.2998	877.2460938	3.382554	14.91543	3.09336281	3.048604965	0.007532683	6.610146523	158.6435	7.003427505	6.904711246	0.028025804	24.586338	590.0720825	24	21053.90625
	10	511.0112	878.4693604	3.381282	14.91768	3.22897673	3.183525324	0.007866056	6.913310528	165.9194	6.854934216	6.760822773	0.027441772	24.1070423	578.5690308	24	21083.26465
	11	511.6239	879.5223389	3.369326	14.93882	3.24932671	3.215147495	0.007944189	6.989544868	167.7491	6.908354759	6.837539196	0.027753159	24.4100075	585.84021	24	21108.53613
	12	512.3707	880.8070068	3.369518	14.93849	3.1141901	3.081984997	0.007615162	6.711223602	161.0694	7.038722038	6.966742992	0.028277583	24.9085007	597.8040161	24	21139.36816
	13	511.8876	879.9758911	3.382808	14.91498	3.05647874	3.011917114	0.007442032	6.551165104	157.228	7.034111023	6.934499264	0.028146712	24.7698708	594.4769287	24	21119.42139
	14	508.915	874.8658447	3.38268	14.9152	2.88159585	2.839617968	0.007016304	6.141866207	147.4048	7.018531322	6.919229031	0.028084738	24.5706615	589.6959229	24	20996.78027
	15	506.3218	870.4077148	3.394	14.89517	2.72563291	2.677159071	0.006614888	5.75941658	138.226	6.941104889	6.820287228	0.02768312	24.0965424	578.3170166	24	20889.78516
	16	506.9093	871.4182129	3.338273	14.99376	2.6738553	2.671345472	0.006600525	5.753435612	138.0825	6.951174736	6.943747997	0.02818425	24.5647335	589.5535889	24	20914.03711
	17	512.9205	881.7516479	3.327427	15.01295	3.15535951	3.162711859	0.007814622	6.895608425	158.599	6.91856432	6.933708191	0.028143501	24.8203564	570.8682251	24	21162.03955
	18	519.3295	892.7699585	3.333396	15.00239	3.88876128	3.890663385	0.009613297	8.584142685	206.0194	6.880373478	6.883005619	0.027937692	24.9417458	598.6019287	24	21426.479
	19	507.6898	872.7594604	3.324874	15.01746	4.44854736	4.452385426	0.011001235	9.399535179	225.5888	7.011375904	7.033614159	0.028549001	24.9578285	598.987915	24	20946.22705
	20	505.4396	868.8916016	3.325573	15.01624	4.08606291	4.099514008	0.010129334	8.623410225	206.9618	6.778940201	6.797124386	0.027589109	23.9984741	575.9633789	24	20853.39844
	21	335.8481	769.732666	2.91466	13.61454	5.7629385	9.140104294	0.022583926	12.04928875	216.8872	6.688656807	7.278816223	0.029544266	23.8815536	429.867981	17.62778	13568.67586
	22	500.4775	860.3621826	3.310057	15.04368	12.0621567	12.16993809	0.030070236	25.68025208	616.326	6.318203449	6.363841057	0.025830422	22.2511959	534.0286865	24	20648.69238
	23	490.7605	843.6578979	3.316797	15.03175	13.1772671	13.2572546	0.03275682	27.22488022	653.3971	6.42011404	6.454090118	0.02619675	22.1683998	532.041626	24	20247.78955
	24	503.7447	865.9776611	3.312346	15.03963	12.6825151	12.80199718	0.031631973	27.18881798	652.5316	6.2592206	6.2983675	0.025564687	22.1732464	532.1578979	24	20783.46387
	25	501.6044	862.298584	3.281566	15.09411	14.296524	14.5253191	0.035890065	30.79261398	739.0228	6.03839016	6.136498928	0.024907671	21.5024376	516.0584717	24	20695.16602
	26	504.9979	868.1311035	3.309866	15.04403	7.17401648	7.274784565	0.017974988	15.4370985	370.4904	6.76256609	6.808539391	0.02763545	24.0203667	576.4887695	24	20835.14648
	27	509.646	876.1221924	3.33683	14.99631	4.26412296	4.261225224	0.010528903	9.227433205	221.4584	6.857956409	6.854059219	0.027820216	24.3741035	584.9785156	24	21026.93262
	28	510.3488	877.3310547	3.322458	15.02174	4.76063442	4.784086227	0.011820828	10.3743763	248.985	6.998180389	7.024299622	0.028511221	25.0123463	600.2963257	24	21055.94531
	29	505.1835	868.4523315	3.333905	15.00149	9.70743465	9.725404739	0.024030153	20.75128746	498.0309	6.356520176	6.355413914	0.025796236	22.4267426	538.2418213	24	20842.85596
	30	509.0902	875.1679077	3.356163	14.96211	8.31966305	8.289775848	0.02048289	17.67611504	424.2267	6.61963892	6.574988365	0.026687484	23.3999996	561.5999756	24	21004.02979
	31	514.0143	883.6312866	3.365193	14.94614	5.90102434	5.859272003	0.01447746	12.66458035	303.9499	6.690068722	6.627111435	0.026899042	23.7986374	571.1672974	24	21207.15088
Jan 03	01	496.8327	854.0952759	3.33276	15.00351	12.7845898	12.80022907	0.031627595	26.90310287	645.6745	5.966212273	5.968896389	0.024227392	20.7109299	497.0622864	24	20498.28662
	02	510.0914	876.8873291	3.35222	14.96909	8.56656647	8.55129528	0.021129055	18.29263878	439.0233	6.482117176	6.446046352	0.026164113	22.9755707	551.4136963	24	21045.2959
	03	515.214	885.6950684	3.386053	14.90924	4.34520531	4.28011179	0.010575566	9.370174408	224.8842	6.940787315	6.835731506	0.027745813	24.5753326	589.8079834	24	21256.68164
	04	513.9097	883.4517822	3.382554	14.91543	6.65159225	6.570158482	0.016233975	14.30511761	343.3228	6.660975456	6.565876961	0.026650509	23.5512924	565.2310181	24	21202.84277
	05	516.096	887.2111816	3.349231	14.97438	6.82838535	6.834961891	0.016888253	14.90911293	357.8187	6.668924332	6.636487961	0.026937099	23.9116135	573.8787231	24	21293.06836
	06	516.3547	887.6550293	3.35419	14.9656	6.27368879	6.249010563	0.015440442	13.59637642	326.313	6.746030331	6.705908298	0.027218878	24.1803207	580.3276978	24	21303.7207
	07	512.2938	880.6748047	3.32691	15.01386	10.1789742	10.21037197	0.025228437	21.9855957	527.6543	6.360971451	6.375506401	0.025877796	22.8307171	547.9371948	24	21136.19531
	08	514.7634	884.9204712	3.35222	14.96909	6.45317841	6.432440758	0.015893687	14.02627373	336.6306	6.745872974	6.709499359	0.027233459	24.1067791	578.5626831	24	21238.09131
	09	513.5826	882.8898315	3.378548	14.92251	4.71452713	4.649294376	0.011487774	10.14698219	243.5276	6.863360405	6.775511742	0.02750138	24.2808247	582.7398071	24	21189.35596
	10	514.841	885.0526123	3.39241	14.89799	5.16763401	5.07817173	0.012547459	11.10835171	266.6004	6.648573875	6.535795212	0.026528396	23.4800034	563.5200806	24	21241.2627

Unit 2 - CEMS Data

	11	515.4534	886.105896	3.381537	14.91722	5.36461544	5.289085388	0.0130686	11.58234119	277.9762	6.588954926	6.498034477	0.026375113	23.3720589	560.9293823		24	21266.5415
	12	516.0107	887.0646973	3.39489	14.8936	5.89403343	5.788247108	0.014301967	12.68822956	304.5175	6.608509064	6.491530895	0.026348738	23.3742371	560.9816895		24	21289.55273
	13	517.8218	890.1768799	3.372252	14.93365	6.14046001	6.070729733	0.014999934	13.35635853	320.5526	6.592453003	6.519035816	0.026460363	23.5565701	565.3577271		24	21364.24512
	14	520.1098	894.111145	3.369962	14.9377	6.84825802	6.786752701	0.016769124	14.98016644	359.524	6.653183937	6.582788944	0.026719125	23.8929825	573.4315796		24	21458.66748
	15	519.5198	893.0957031	3.366211	14.94434	5.87972498	5.824317932	0.01439108	12.85494614	308.5187	6.715188503	6.652526855	0.027002197	24.1156502	578.7755737		24	21434.29688
	16	520.7362	895.1878662	3.35381	14.96628	5.87750149	5.843423843	0.014438284	12.93006706	310.3216	6.687524796	6.64964962	0.026990522	24.1642284	579.9415283		24	21484.50879
	17	521.4393	896.3968506	3.366718	14.94344	6.07098103	6.016386032	0.014865655	13.289258	318.9422	6.887050629	6.821512699	0.027688108	24.8251877	595.8045044		24	21513.52441
	18	522.2009	897.7050781	3.375814	14.92735	5.42137384	5.355722427	0.013233258	11.88257122	285.1817	6.953347206	6.868751526	0.027879845	25.0274506	600.6588135		24	21544.92188
	19	520.5132	894.8052979	3.370026	14.93759	6.3935647	6.33659935	0.015656875	13.97578716	335.4189	6.882758141	6.809628487	0.027639868	24.7387924	593.7310181		24	21475.32715
	20	524.1483	901.0535278	3.365194	14.94614	5.60786152	5.557845116	0.013732667	12.37616253	297.0279	7.123143196	7.058803558	0.028651254	25.8167419	619.6018066		24	21625.28467
	21	520.9094	895.4852905	3.360996	14.95356	5.91136312	5.861828327	0.014483767	12.97143745	311.3145	6.833313942	6.781540394	0.027525846	24.6560955	591.7462769		24	21491.64697
	22	518.2227	890.8665771	3.381473	14.91734	6.26430893	6.176105976	0.0152603	13.59813309	326.3552	6.624725819	6.533445358	0.026518846	23.6283588	567.0805664		24	21380.79785
	23	515.4858	886.1625977	3.374923	14.92893	6.1399827	6.064518929	0.0149846	13.28613758	318.8673	6.529494762	6.451905251	0.02618788	23.2078743	556.9890137		24	21267.90234
	24	514.3926	884.28302	3.373779	14.93095	6.01708889	5.946407795	0.014692763	12.99552536	311.8926	6.449207306	6.374657631	0.025874343	22.8806915	549.1365967		24	21222.79248
	25	515.4811	886.1531372	3.377275	14.92476	5.93600607	5.859867096	0.014478904	12.83563328	308.0552	6.412641525	6.331814289	0.025700454	22.7743168	546.5836182		24	21267.67529
	26	513.2972	882.3986816	3.370916	14.93601	5.82312822	5.75919342	0.014230171	12.56016636	301.444	6.436646461	6.367539406	0.025845459	22.8073463	547.3762817		24	21177.56836
	27	513.1484	882.1435547	3.356927	14.96076	5.35698509	5.320930958	0.013147283	11.60218716	278.4525	6.650799751	6.606868744	0.026816875	23.6580124	567.7922974		24	21171.44531
	28	509.8325	876.4432373	3.3363	14.99725	5.00541639	5.002536297	0.012360571	10.8342123	260.0211	6.65827179	6.65550518	0.027014287	23.6760292	568.2247314		24	21034.6377
	29	508.8766	874.7997437	3.359851	14.95559	5.37208796	5.331594467	0.013173625	11.52428722	276.5829	6.565424919	6.516878128	0.026451595	23.1405334	555.3728027		24	20995.19385
	30	510.9286	878.3278198	3.377022	14.92521	5.96621227	5.890505314	0.014554621	12.78990841	306.9578	6.511847973	6.430250645	0.026100004	22.9242458	550.1818848		24	21079.86768
	31	512.5441	881.1046753	3.36087	14.95379	5.74395275	5.697926998	0.014078788	12.41265392	297.9037	6.598812103	6.547484398	0.026575841	23.417984	562.0316162		24	21146.51221
Feb 03	1	19.33242	113.8154984	0.504971	5.078	21.1463852	46.82751465	0.115704566	41.1206131	287.8443	4.505158424	7.22412014	0.02932227	13.8249187	96.77442932	6.216666		707.5529641
	2	494.3056	849.7502441	3.144777	14.24813	4.88146162	5.01553154	0.012392691	10.8617487	260.6819	7.262255192	7.490176201	0.03040218	26.4872952	635.6950684	23.16111		19681.16043
	3	523.1068	899.2636719	3.331297	15.0061	5.6441083	5.653028965	0.013967862	12.54066849	300.976	7.174812317	7.182407856	0.029152958	26.2245369	629.388916		24	21582.32813
	4	522.2936	897.8656006	3.336958	14.99609	4.92820215	4.923871517	0.012166204	10.93024921	262.326	7.276084423	7.271505833	0.029514592	26.5005417	636.0130005		24	21548.77441
	5	522.3929	898.0357666	3.32602	15.01544	4.71484518	4.727277279	0.011680437	10.49569511	251.8967	7.374339104	7.393932343	0.030011525	26.9515381	646.8369141		24	21552.8584
	6	522.1622	897.6390991	3.320169	15.02579	4.25553894	4.27022171	0.010551129	9.488607407	227.7266	7.612179756	7.64676857	0.03103777	27.856226	668.5493774		24	21543.33838
	7	504.8165	867.819397	3.329962	15.00846	4.00068712	4.0010252	0.009885983	8.507814407	204.1875	7.65478754	7.667062283	0.031120129	27.0290661	648.6976318		24	20827.66553
	8	518.4417	891.2443237	3.334349	15.0007	5.28655386	5.288324356	0.013066716	11.58424759	278.0219	7.122028828	7.122814655	0.028911071	25.7703915	618.4893799		24	21389.86377
	9	516.2146	887.4141846	3.333905	15.00149	6.46638155	6.471321583	0.015989741	13.92823601	334.2777	7.126322269	7.127873421	0.028931599	25.7252541	617.4061279		24	21297.94043
	10	519.1812	892.5147705	3.313343	15.03786	4.66031265	4.688138962	0.011583763	10.35429192	248.503	7.285517693	7.332975388	0.029764112	26.5633755	637.5209961		24	21420.35449
	11	512.9528	881.8082886	3.342299	14.98664	4.26952982	4.25779295	0.010520415	9.284740448	222.8338	7.147785187	7.133096218	0.028952803	25.5309086	612.7418213		24	21163.39893
	12	506.0201	869.8881226	3.363728	14.94872	3.57301831	3.541263819	0.00874997	7.614963531	182.7591	6.949213028	6.889867783	0.027965572	24.3243752	583.7849731		24	20877.31494
	13	511.0249	878.4929199	3.393046	14.89686	4.49782991	4.419172287	0.010919167	9.596335411	230.3121	6.842534542	6.725196362	0.027297175	23.9827785	575.586731		24	21083.83008
	14	515.9237	886.9135132	3.385925	14.90946	5.21962166	5.138761997	0.012697167	11.26839161	270.4414	6.753026962	6.651109695	0.02699645	23.9440117	574.656311		24	21285.92432
	15	513.3461	882.4835815	3.385566	14.9101	5.32577038	5.244223595	0.01295775	11.43938351	274.5452	6.663304806	6.563503265	0.026640855	23.5101662	564.2440186		24	21179.60596
	16	514.7089	884.8262329	3.391647	14.89934	5.33647346	5.245393276	0.012960637	11.47437477	275.385	6.748258114	6.635243893	0.026932042	23.8302135	571.9251099		24	21235.82959
	17	520.8212	895.3341675	3.3699	14.93781	5.61915064	5.560595989	0.013739454	12.30349541	295.2839	6.930929661	6.858727932	0.027839154	24.925621	598.2149048		24	21488.02002
	18	521.1454	895.8916016	3.367419	14.9422	5.83934355	5.781469345	0.014285204	12.80323792	307.2777	6.896587849	6.829788685	0.027721696	24.8355331	596.0527954		24	21501.39844
	19	519.7583	893.5067139	3.334095	15.00116	6.27877378	6.297337055	0.01555985	13.81390858	331.5338	6.959388256	6.960065842	0.028250478	25.2547035	606.112915		24	21444.16113
	20	523.0193	899.1124268	3.340518	14.9898	5.3941865	5.384552002	0.013304479	11.96548748	287.1717	6.981646538	6.970153332	0.028291425	25.4365578	610.477417		24	21578.69824
	21	520.2333	894.3236084	3.360743	14.95401	5.43075323	5.38768816	0.013312229	11.91476822	285.9544	6.97799015	6.924386024	0.028105663	25.1382217	603.3173218		24	21463.7666
	22	515.4507	886.1013184	3.366402	14.944	5.04171848	4.992288113	0.012335259	10.93644238	262.4746	6.95700264	6.891852379	0.0279736	24.7879047	594.909729		24	21266.43164
	23	513.2145	882.256897	3.359278	14.9566	4.33789349	4.304654121	0.010636219	9.38908577	225.3381	7.074811935	7.023742676	0.028508937	25.1531162	603.6748047		24	21174.16553
	24	510.8521	878.1953125	3.335113	14.99935	4.04043245	4.038966179	0.009979726	8.769542694	210.469	7.179740429	7.179226875	0.029140038	25.5903835	614.1691895		24	21076.6875
	25	513.1541	882.1531372	3.334604	15.00025	4.1351881	4.135597229	0.010218495	9.017338753	216.4161	7.193731308	7.194038868	0.029200163	25.7579994	618.1920166		24	21171.67529
	26	517.9257	890.3564453	3.333333	15.0025	4.82152414	4.821805477	0.011914025	10.61236	254.6966	7.120281696	7.123606205	0.02891428	25.7440453	617.8571167		24	21368.55469
	27	520.4399	894.6779175	3.313937	15.03681	4.98543644	5.016767979	0.012395741	11.09276295	266.2263	7.161457539	7.206572056	0.029251033	26.1702175	628.0852051		24	21472.27002
	28	517.8375	890.2053833	3.317879	15.02984	4.31102419	4.332559586	0.010705164	9.531930923	228.7664	7.126321316	7.162569523	0.029072424	25.8801575	621.1237793		24	21364.9292
Mar 03	1	518.3049	891.0081787	3.333968	15.00138	4.02564812	4.028074265	0.009952815	8.870046616	212.8811	7.180376053	7.182561874	0.029153591	25.9766331	623.439209		24	21384.19629
	2	520.4912	894.7675171	3.329454	15.00936	5.17208624	5.18260622	0.012805495	11.459445	275.0267	6.966542721	6.977484703	0.028321195	25.3411617	608.1879272		24	21474.42041
	3	518.1124	890.6778564	3.326465	15.01465	4.75204849	4.766091824	0.01177635	10.49770927	251.945	7.11201334	7.129721642	0.0289391	25.774992	618.5997925		24	21376.26855
	4	512.2343	880.5710449	3.332887	15.00329	6.520432	6.526700974	0.016126567	13.98706532	335.6896	6.979898453	6.983803749	0.028346825	24.9974422	599.9385986		24	21133.70508
	5	507.3269	872.1360474	3.347068	14.9782	8.6397028	8.643652916	0.021357279	18.32949257	439.9078	6.726635456	6.69882822	0.027190128	23.7559509	570.1428223		24	20931.26514
	6	514.7197	884.8449707	3.352857	14.96796	4.97271776	4.943309784	0.012214242	10.81469154	259.5526	7.010899067	6.973451138	0.028304821	25.0464916	601.1157837		24	21236.2793
	7	513.4811	882.7150879	3.338739	14.99294	5.34378767	5.333519936	0.013178388	11.64229202	279.415	6.963362694	6.955551624	0.028232167	24.9195251	598.0686035		24	21185.16211
	8	68.92593	473.9562378	1.821072	9.845962	8.9807148	16.88692093	0.041725319	16.95388412	101.7233	7.327281475	10.96827126	0.044519518	24.4605999	146.7635956	4.880556		2313.170011
	9	512.264	880.6228027	3.339311	14.99193	4.79258776	4.784863472	0.01182274	10.41615963	249.9878	6.559224129	6.550391197	0.026587637	23.4133701	561.9208984		24	21134.94727
	10	515.5826	886.3278809	3.345162	14.98158	5.22661781	5.208178997	0.012868675	11.41067123	273.8561	6.58720541	6.566747189	0.026654022	23.6274338	567.0584106		24	21271.86914
	11	510.1428	876.9768677	3.357943	14.95896	4.71913767	4.68544817	0.011577096	10.15702915	243.7687	6.565584183	6.521048069	0.026468528	23.2148418	557.156189		24	21047.44482
	12	505.7001	869.340271	3.367482	14.94209	4.78384304	4.736055374	0.01170213	10.17571068	244.2171	6.417729378	6.355106354	0.025794996	22.4280701	538.2736816		24	20864.1665
	13	504.6926	867.6070557	3.357434	14.95986	4.67907333	4.646417141	0.011480655	9.963371277	239.1209	6.487363815	6.443356991	0.026153196	22.6935215	544.6445313		24	20822.56934
	14	507.6407	872.6744995	3.338611	14.99316	4.58845282	4.58363533	0.011325525	9.885522842	237.2525	6.577348709	6.569549561	0.026665417	23.2697754	558.4746094		24	20944.18799

Unit 2 - CEMS Data

	15	501.5495	862.2042847	3.340582	14.98967	3.67635798	3.670428038	0.009069126	7.819917679	187.678	6.790864468	6.778841019	0.027514908	23.7266617	569.4398804	24	20692.90283
	16	509.9256	876.6038208	3.340201	14.99035	3.70402241	3.698117971	0.009137539	8.011203766	192.2689	7.119804382	7.107983589	0.028850863	25.2906799	606.9763184	24	21038.4917
	17	516.1071	887.2299805	3.319977	15.02612	4.19464827	4.213338852	0.01041058	9.236359596	221.6726	6.991503239	7.022280216	0.028503001	25.2899456	606.9586792	24	21293.51953
	18	519.2388	892.6139526	3.31648	15.03231	4.7404418	4.765352249	0.011774529	10.51256561	252.3016	6.94794178	6.98659277	0.028358154	25.3132458	607.5178833	24	21422.73486
	19	518.6462	891.593811	3.329962	15.00846	5.14648962	5.153016567	0.012732392	11.35631657	272.5516	6.874809265	6.884792328	0.027944947	24.9161034	597.9865112	24	21398.25146
	20	516.225	887.4330444	3.325256	15.01679	5.02772856	5.041749954	0.012457467	11.05806923	265.3936	6.777510166	6.796989918	0.027588563	24.4829788	587.5914917	24	21298.39307
	21	514.0143	883.6312256	3.325893	15.01566	5.28146696	5.294057369	0.013080884	11.56111622	277.4668	6.714711666	6.733033657	0.027328966	24.1500492	579.6011963	24	21207.14941
	22	71.03032	586.1121826	2.231378	10.68213	7.45879602	12.45570374	0.030776259	15.30451965	76.5226	4.496335983	4.78540802	0.01942368	15.9745102	79.87255096	5	2930.560913
	23	497.0899	854.4934692	3.242458	14.873	5.95444775	7.744248867	0.019134967	12.37610626	297.0266	6.892825603	7.248399258	0.029420804	24.4460449	586.7050781	23.62222	20185.0352
	24	511.9367	880.0608521	3.334328	15.00074	4.58018494	4.579277039	0.011314775	9.960668564	239.056	6.944284439	6.945188522	0.028190091	24.809763	595.4343262	24	21121.46045
	25	514.7772	884.9441528	3.346816	14.97865	5.6304388	5.608252048	0.013857204	12.26699638	294.4079	6.849849224	6.825223923	0.027703172	24.516634	588.3991699	24	21238.65967
	26	512.0553	880.2640381	3.326973	15.01375	5.29227686	5.302466393	0.013101658	11.54136181	276.9927	6.806921959	6.823184013	0.027694896	24.3818493	585.1644287	24	21126.33691
	27	514.0222	883.6452637	3.303698	15.05493	5.18273592	5.248389244	0.012968055	11.41060162	273.8544	7.240633965	7.307081223	0.029659005	26.2186909	629.2485962	24	21207.48633
	28	514.1317	883.8343506	3.337149	14.99575	4.07207012	4.064081192	0.010041784	8.878645897	213.0875	7.346674442	7.342885494	0.029804321	26.3418617	632.2047119	24	21212.02441
	29	517.0907	888.9207764	3.362395	14.95109	5.15237045	5.108018875	0.012621213	11.22434807	269.3843	7.130297184	7.071837425	0.028704159	25.5220051	612.5280762	24	21334.09863
	30	513.1758	882.1908569	3.344208	14.98326	4.74696016	4.731407642	0.01169065	10.32050419	247.6921	6.997385979	6.977434635	0.028320996	24.988308	599.7194214	24	21172.58057
	31	443.7091	762.7713623	2.95673	13.92714	10.6540422	19.22727394	0.047507912	13.35993576	320.6385	6.385771751	6.825637341	0.02770485	21.9301491	526.3236084	22.70556	17319.14855
Apr 03	1	509.3933	875.6877441	3.337276	14.99553	5.03488302	5.129566193	0.012674454	10.52927208	252.7025	7.356213093	7.363566875	0.02988828	26.0523701	625.256897	24	21016.50586
	2	514.6238	884.6796875	3.317498	15.03052	4.89974117	4.930599689	0.012182831	10.70301437	256.8723	7.368138313	7.406260967	0.03006155	26.6078243	638.5877686	24	21232.3125
	3	517.9016	890.3138428	3.313745	15.03715	4.87287712	4.901735783	0.012111526	10.77104855	258.5052	7.517106056	7.565295219	0.030707067	27.3409538	656.1829224	24	21367.53223
	4	513.4118	882.5969849	3.311075	15.04188	6.86876774	6.933992863	0.017132945	14.88532257	357.2477	7.271474838	7.322844028	0.029722976	26.2777958	630.6671143	24	21182.32764
	5	525.5413	903.4478149	3.331361	15.00599	5.35968685	5.36461401	0.013255225	11.97669125	287.4406	7.470046997	7.477725506	0.030351629	27.4206467	658.09552	24	21682.74756
	6	497.7115	892.8068237	3.31515	15.03467	5.11028814	5.138103008	0.012695552	11.34848404	261.0151	7.364991665	7.408643723	0.030071231	26.8480225	617.5045166	24	21427.36377
	7	512.989	881.869751	3.324302	15.01848	6.9946847	7.03259182	0.017376559	15.29423332	367.0616	6.931725025	6.95283556	0.028221125	24.8941917	597.4605713	24	21164.87402
	8	511.2585	878.8944092	3.347196	14.97797	5.82821369	5.803958893	0.014340775	12.61884212	302.8522	6.984030724	6.958184719	0.028242851	24.8222504	595.7340088	24	21093.46582
	9	508.0158	873.3215332	3.346498	14.97921	5.17319775	5.151938438	0.012729739	11.13340569	267.2017	7.056209087	7.032536507	0.028544642	24.9306965	598.3366699	24	20959.7168
	10	508.0802	873.4301758	3.362267	14.95131	5.46127796	5.414096832	0.013377488	11.68986225	280.5567	6.893728256	6.837393761	0.027752554	24.2398911	581.7573853	24	20962.32422
	11	508.8622	874.776123	3.356037	14.96234	5.4677968	5.431924343	0.013421537	11.74607086	281.9057	6.85573101	6.812381744	0.027651032	24.1886044	580.5264893	24	20994.62695
	12	390.9419	806.473938	3.085393	13.87367	4.8426075	6.060992718	0.014975855	10.49415112	209.883	6.893888474	6.937283516	0.028158005	24.3749409	487.4988098	20	16129.47876
	13	411.7109	849.263855	3.267297	14.77101	6.69096279	10.55938911	0.026090786	14.42686176	288.5372	7.101521015	7.422977448	0.030129414	25.0028248	500.056488	19.58611	16633.77619
	14	514.5789	884.604126	3.305542	15.05168	3.20322037	3.230362892	0.007981781	7.06130743	169.4714	7.377042294	7.443744183	0.030213695	26.7274075	641.4578247	24	21230.49902
	15	516.7004	888.2502441	3.318388	15.02895	3.99909878	4.012452126	0.009914214	8.811876297	211.485	7.376088142	7.413568497	0.030091217	26.7290039	641.4960938	24	21318.00586
	16	514.9644	885.2652588	3.316736	15.03186	4.22199202	4.243654251	0.01048549	9.285326958	222.8478	7.406453133	7.447167873	0.030227592	26.7594872	642.2277222	24	21246.36621
	17	516.2173	887.4187622	3.338102	14.99406	4.61452579	4.608270168	0.011386395	10.10719681	242.5727	7.157958984	7.150760651	0.029024497	25.7577629	618.1862793	24	21298.05029
	18	510.3025	877.2508545	3.312729	15.03895	6.37273598	6.415182114	0.015851015	13.80291271	331.2699	7.044444561	7.091434479	0.028783692	25.2681999	606.4368286	24	21054.02051
	19	512.3327	880.7409668	3.325128	15.01701	4.61452484	4.624311924	0.011426033	10.07133198	241.712	7.175765514	7.196923733	0.029211879	25.7272911	617.4550171	24	21137.7832
	20	509.5632	875.9804077	3.331807	15.0052	3.99210119	3.995318651	0.009871879	8.653707504	207.689	7.181807041	7.188169956	0.029176338	25.5581627	613.395874	24	21023.52979
	21	514.1234	883.8201904	3.322141	15.0223	3.66332173	3.676332474	0.009083708	8.030126572	192.723	7.365276337	7.393754959	0.030010801	26.5253296	636.6079102	24	21211.68457
	22	517.4307	889.5064087	3.270884	15.11301	5.73536921	5.895036697	0.014565825	12.92897797	310.2955	7.193572998	7.328886032	0.029747492	26.4663467	635.1923218	24	21348.15381
	23	516.7715	888.3729248	3.33346	15.00228	5.22836637	5.228981018	0.012920083	11.48197556	275.5674	7.155257225	7.157916546	0.029053546	25.8123283	619.4959106	24	21320.9502
	24	512.6378	881.2651978	3.338612	14.99316	5.10690212	5.100003719	0.0126014	11.11217594	266.6922	7.043491364	7.035797119	0.02855788	25.1678963	604.02948	24	21150.36475
	25	513.7054	883.102356	3.330916	15.00677	4.58034372	4.584668159	0.01132808	10.00819111	240.1966	7.223778248	7.232714653	0.02935715	25.9240208	622.1765137	24	21194.45654
	26	517.1041	888.944397	3.326591	15.01443	4.96365595	4.975420475	0.012293579	10.93270397	262.3849	7.262096405	7.279839516	0.029548438	26.2658615	630.3806763	24	21334.66553
	27	514.3323	884.1791382	3.32926	15.0097	4.86588001	4.873850346	0.012042621	10.65211678	255.6508	7.299773216	7.311919689	0.029678641	26.2419701	629.807312	24	21220.29932
	28	513.2891	882.3844604	3.311567	15.041	4.83390379	4.865436077	0.012021821	10.61288071	244.0963	7.153971195	7.204277515	0.029241726	25.7961521	593.3115234	24	21177.22705
	29	510.898	878.2756348	3.305797	15.05122	5.96144009	6.030080795	0.014899491	12.98186111	311.5647	7.157166481	7.217888832	0.029296976	25.7507839	618.0187988	24	21078.61523
	30	501.3185	861.8074951	3.314573	15.03569	7.54079247	7.596447945	0.018769758	15.9506197	382.8149	6.845237732	6.885828972	0.027949158	24.1237659	578.9703979	24	20683.37988
May 03	1	511.3028	878.9699707	3.338484	14.99339	4.3590374	4.352148056	0.010753549	9.456822395	226.9637	7.201204777	7.193475723	0.029197887	25.6637287	615.9295044	24	21095.2793
	2	509.3242	875.5695801	3.33791	14.9944	4.35808229	4.351896286	0.01075294	9.418856621	226.0526	7.074968338	7.06846714	0.028690467	25.1225662	602.9415894	24	21013.66992
	3	506.4585	870.6438599	3.349357	14.97415	4.09607792	4.077472687	0.01007488	8.772708893	210.545	7.052711487	7.022636414	0.028504442	24.8171291	595.611084	24	20895.45264
	4	510.5164	877.6191406	3.348595	14.9755	4.80721378	4.785074234	0.011823256	10.38237286	249.177	7.06431818	7.035952091	0.028558487	25.062479	601.4995117	24	21062.85938
	5	507.3379	872.1550293	3.349275	14.9743	3.37402248	3.357649088	0.008296286	7.240251541	173.766	7.245559692	7.214641094	0.029283788	25.5400753	612.961792	24	20931.7207
	6	506.4842	870.6862183	3.35648	14.96155	3.14376092	3.122351646	0.007714899	6.7215662	161.3176	7.339519978	7.292128086	0.029598299	25.770237	618.4857178	24	20896.46924
	7	507.0089	871.5884399	3.359978	14.95536	3.1251595	3.100067377	0.007659839	6.679932117	160.3184	7.347946644	7.29306221	0.029602092	25.8017254	619.241394	24	20918.12256
	8	508.577	874.2849121	3.363731	14.94872	3.05918121	3.031264544	0.007489837	6.541808605	157.0034	7.532846451	7.46824789	0.030313166	26.5045452	636.1091309	24	20982.83789
	9	470.442	808.7283936	3.115016	14.08251	4.35458422	5.427672386	0.013411012	9.052868843	217.2688	6.932518959	6.989169598	0.028368609	24.3622837	584.6948242	24	19409.48145
	10															0	0
	11	86.98093	598.1081543	2.48372	13.02234	30.0849648	61.12498474	0.151031718	34.25054169	205.5033	7.076081753	8.508443832	0.034535281	21.9732265	131.8393555	5.958333	3563.727563
	12	500.9065	861.098999	3.36443	14.94749	3.47285867	3.441059589	0.008502385	7.328997612	175.8959	7.258756161	7.195033073	0.029204188	25.148695	603.5687256	24	20666.37598
	13	499.2306	858.2181396	3.371234	14.93545	3.42102885	3.383909225	0.008361173	7.182538509	172.3809	7.178946495	7.101369858	0.028824029	24.7370949	593.6903076	24	20597.23535
	14	503.4314	865.4393921	3.370088	14.93748	3.34726119	3.310379982	0.008179491	7.082931995	169.9904	7.26765871	7.192323208	0.029193187	25.2658882	606.3812866	24	20770.54541
	15	501.8438	862.7095947	3.373397	14.93163	3.57047582	3.528386593	0.008718158	7.528301716	180.6792	7.041424751	6.961105824	0.028254716	24.3757782	585.0186768	24	20705.03027
	16	502.7997	864.3529663	3.365575	14.94546	3.8051374	3.769212484	0.009313204	8.055568695	193.3336	7.104859829	7.039999485	0.028574921	24.6994629	592.7871094	24	20744.47119

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	17	499.9889	859.5215454	3.352285	14.96898	3.44169784	3.422401667	0.008456283	7.271587849	174.5181	7.067338467	7.030639648	0.028536942	24.5284081	588.6818237		24	20628.51709
	18	506.7307	871.1112671	3.348024	14.97651	3.7846272	3.768284082	0.009310912	8.115644455	194.7755	7.218055248	7.189536572	0.029181892	25.4207039	610.0969238		24	20906.67041
	19	503.9456	866.3224487	3.354256	14.96549	3.74853706	3.725912094	0.009206217	7.985205173	191.6449	7.113762379	7.072761059	0.028707888	24.8772411	597.053772		24	20791.73877
	20	498.2173	856.4754028	3.357564	14.95964	3.53931451	3.514650345	0.008684215	7.444307327	178.6634	6.921072483	6.874166012	0.027901817	23.8980293	573.5526733		24	20555.40967
	21	494.0579	849.3253174	3.362585	14.95075	3.27857995	3.249931335	0.008030131	6.827544212	163.8611	6.909944057	6.852835178	0.027815251	23.6263752	567.03302		24	20383.80762
	22	490.0088	842.3637695	3.362777	14.95041	3.16585875	3.138510942	0.00775483	6.537709236	156.905	6.804059505	6.747548103	0.02738788	23.0735035	553.7640991		24	20216.73047
	23	487.371	837.829895	3.368563	14.94018	2.9587028	2.928592205	0.007236147	6.066618919	145.5989	6.832040787	6.763730526	0.027453575	23.0000076	552.0001831		24	20107.91748
	24	490.9534	843.9885864	3.375812	14.92735	2.82229376	2.787563801	0.006887687	5.816896439	139.6055	7.068929195	6.983129025	0.028344104	23.9239159	574.1740112		24	20255.72607
	25	497.3596	855.0018921	3.381536	14.91722	3.11434865	3.070846319	0.00758764	6.492317677	155.8156	7.144445896	7.045647144	0.028597858	24.4503078	586.807373		24	20520.04541
	26	494.0471	849.3062134	3.392475	14.89787	3.52675343	3.465868711	0.008563689	7.27751112	174.6603	6.793089867	6.677536488	0.02710372	23.0199909	552.4797974		24	20383.34912
	27	490.7225	843.5918579	3.376449	14.92622	3.42156029	3.377510309	0.008345365	7.050092697	169.2022	6.749156475	6.665982246	0.027056821	22.8344173	548.026001		24	20246.20459
	28	480.3161	825.7019653	3.361058	14.95345	2.90417004	2.878682375	0.007112827	5.880430698	141.1303	6.527427197	6.476607323	0.02628815	21.7074966	520.9799194		24	19816.84717
	29	483.5885	831.3267822	3.355146	14.96391	2.5574255	2.540376663	0.006276921	5.22101593	125.3044	6.906764507	6.865231037	0.02786555	23.1687622	556.050293		24	19951.84277
	30	493.0692	847.625	3.378039	14.92341	3.0952704	3.054437399	0.007547094	6.404645443	153.7115	6.938243866	6.849450588	0.027801491	23.5688076	565.6514282		24	20343
	31	488.8355	840.347168	3.382999	14.91464	3.1758759	3.129032135	0.007731406	6.505481243	156.1315	6.780053616	6.68360424	0.027128343	22.7962799	547.1107178		24	20168.33203
Jun 03	1	485.4526	834.5335693	3.37664	14.92589	2.831038	2.794029951	0.006903667	5.770934105	138.5024	6.822025299	6.737577438	0.027347418	22.8219795	547.727478		24	20028.80566
	2	482.1095	828.7860718	3.366339	14.94411	2.77332664	2.746103764	0.006785245	5.629864693	135.1167	6.740308762	6.67700386	0.027101554	22.4630661	539.1135864		24	19890.86572
	3	481.1076	827.0621948	3.364684	14.94704	2.69081426	2.665711164	0.006586605	5.450128555	130.8031	6.671149254	6.612008572	0.026837736	22.1965923	532.7182007		24	19849.49268
	4	485.4396	834.5099487	3.375495	14.92791	2.8251555	2.790266275	0.006894363	5.755318642	138.1277	6.7091465	6.628292561	0.026903838	22.4526329	538.8632202		24	20028.23877
	5	483.1292	830.538147	3.390249	14.90181	3.0671308	3.015808821	0.007451647	6.190681458	148.5764	6.534900665	6.428062916	0.026091104	21.6717701	520.1224976		24	19932.91553
	6	486.6293	836.5549316	3.395145	14.89315	3.24105954	3.182731152	0.007864091	6.581056595	157.9454	6.593407154	6.476556301	0.026287954	21.9949951	527.8798828		24	20077.31836
	7	485.0744	833.8817749	3.394892	14.8936	3.29288793	3.23402667	0.007990833	6.666456223	159.9949	6.509303093	6.394156456	0.025953492	21.6445007	519.4680176		24	20013.1626
	8	482.7224	829.8391724	3.389804	14.9026	3.42023468	3.363461256	0.00831065	6.899772644	165.5945	6.402623653	6.298733711	0.025566179	21.2168293	509.2039185		24	19916.14014
	9	486.5549	836.4274902	3.374097	14.93039	3.56983876	3.526446581	0.008713365	7.289367199	174.9448	6.586411476	6.51066494	0.026426392	22.1117077	530.6810303		24	20074.25977
	10	498.6266	857.1791992	3.345265	14.98139	4.0497694	4.035639763	0.009971505	8.544587135	187.9809	6.727820396	6.706644535	0.027221868	23.3180771	512.9976807		24	20572.30078
	11	500.3573	860.1546631	3.352538	14.96852	4.22374105	4.200948238	0.010379959	8.935448647	214.4508	6.725203991	6.690041542	0.027154475	23.359375	560.625		24	20643.71191
	12	498.2061	856.4564819	3.374605	14.92949	3.58748627	3.54668498	0.00876337	7.500670433	180.0161	7.039198875	6.95552063	0.028232025	24.1810665	580.3455811		24	20554.95557
	13	497.5409	855.3137817	3.366911	14.9431	4.29147053	4.248491764	0.010497441	8.985777855	215.6587	6.666061878	6.602657795	0.026799783	22.9230328	550.152832		24	20527.53076
	14	494.4341	849.972168	3.363031	14.94996	4.31579399	4.279352665	0.010573683	8.990490913	215.7718	6.54777813	6.49289608	0.026354266	22.3999462	537.5986938		24	20399.33203
	15	495.8269	852.3666992	3.354574	14.96492	4.4487052	4.420790195	0.01092316	9.314835548	223.556	6.688160419	6.648833752	0.026987204	23.0028076	552.0673828		24	20456.80078
	16	491.0826	844.2105103	3.345607	14.98079	4.50721216	4.49119997	0.011097138	9.370864868	224.9008	6.534900188	6.513745785	0.026438888	22.3260212	535.8245239		24	20261.05225
	17	485.7554	835.0531006	3.352285	14.96898	4.63598871	4.610932827	0.011392972	9.520801544	228.4993	6.303100586	6.27034235	0.025450941	21.2534294	510.0823059		24	20041.27441
	18	487.4562	837.9765625	3.354066	14.96583	4.25108624	4.22388649	0.010436648	8.747626305	209.943	6.48227644	6.445753574	0.026162924	21.9258842	526.2211914		24	20111.4375
	19	494.3572	849.8401489	3.352475	14.96864	3.79639292	3.776540041	0.009331308	7.933691978	190.4086	6.842853546	6.806614876	0.027627641	23.4789162	563.4940186		24	20396.16357
	20	466.5546	802.0457153	3.148085	14.02401	3.93200421	5.006737232	0.012370978	8.162554741	195.9013	6.871788979	6.870678902	0.027887654	23.6843128	568.4235229		24	19249.09717
	21	244.9675	842.2363281	3.321248	15.02389	2.86108255	3.300749063	0.008155691	5.67761755	68.13141	8.581029892	8.822425842	0.035809685	29.1575584	349.890686		11.925	10043.66837
	22	506.5823	870.8563843	3.387833	14.90609	2.0404079	2.007815361	0.004961036	4.322504997	103.7401	7.80661726	7.684699059	0.031191733	27.1646042	651.9505005		24	20900.55322
	23	508.9617	874.946106	3.376832	14.92555	1.80113542	1.778112054	0.004393471	3.847228765	92.33349	8.094697952	7.993987083	0.032447111	28.3888302	681.3319092		24	20998.70654
	24	508.8819	874.8091431	3.396673	14.89045	1.76282084	1.729892015	0.004274322	3.740598679	89.77437	7.933646202	7.79184103	0.031626604	27.6811504	664.3475952		24	20995.41943
	25	500.8464	860.9951172	3.399281	14.88584	1.85344255	1.817294955	0.004490285	3.868667364	92.84802	7.434593678	7.293262482	0.029602913	25.4902592	611.7661743		24	20663.88281
	26	496.0522	852.7540283	3.38707	14.90744	1.99334872	1.961299539	0.0048461	4.12786293	99.06871	7.345721245	7.232489586	0.02935623	25.0333462	600.800293		24	20466.09668
	27	494.912	850.7940063	3.377403	14.92454	1.98619413	1.959743738	0.004842257	4.123746395	98.96991	7.346993923	7.25442791	0.029445279	25.053091	601.2741699		24	20419.05615
	28	493.4309	848.2484131	3.389232	14.90361	1.84565246	1.815597534	0.004486091	3.807711601	91.38508	7.402479649	7.283431053	0.02956298	25.0807381	601.9376831		24	20357.96191
	29	496.9749	854.3408203	3.39559	14.89236	1.93961084	1.90396452	0.004704433	4.020960331	96.50305	7.511541843	7.37736845	0.029944297	25.5824795	613.9794922		24	20504.17969
	30	501.093	861.4202271	3.392475	14.89787	2.04374671	2.007263422	0.004959673	4.276287079	102.6309	7.601050377	7.472660542	0.030331075	26.125679	627.0162964		24	20674.08545
Jul 03	1	503.8842	866.2185669	3.385862	14.90958	2.42705822	2.38847208	0.005901586	5.114834309	122.756	7.548903465	7.436378479	0.030183809	26.1484299	627.5623169		24	20789.24561
	2	500.5877	860.5511475	3.397563	14.88888	2.42006326	2.374646664	0.005867426	5.058776379	121.4106	7.451604366	7.31392765	0.029686784	25.5459595	613.1030273		24	20653.22754
	3	500.1214	859.7483521	3.400107	14.88437	2.39573741	2.348849535	0.005803684	4.994502068	119.868	7.381810188	7.239881516	0.029386241	25.2660751	606.3858032		24	20633.96045
	4	498.621	857.1696777	3.405385	14.87504	2.03071046	1.987813711	0.004911613	4.213273525	101.1186	7.427279949	7.273312092	0.02952192	25.3052082	607.3250122		24	20572.07227
	5	497.9367	855.9937744	3.40176	14.88145	1.96123374	1.922077537	0.004749191	4.067383766	97.61721	7.527282715	7.379243374	0.029951891	25.6378384	615.3081055		24	20543.85059
	6	497.9779	856.0645142	3.398135	14.88786	1.89207506	1.856368303	0.00458683	3.928203821	94.27689	7.589443684	7.44803524	0.030231113	25.8797169	621.1132202		24	20545.54834
	7	497.8652	855.8709106	3.395273	14.89293	2.43437004	2.390778303	0.005907284	5.057608604	121.3826	7.237771034	7.109143257	0.028855575	24.6966248	592.7189941		24	20540.90186
	8	503.951	866.3318481	3.381219	14.91779	2.71148252	2.673778772	0.006606537	5.728571892	137.4857	7.468935013	7.366267204	0.029899234	25.903738	621.6896973		24	20791.96436
	9	497.7974	855.7530518	3.384844	14.91138	2.74709368	2.706007481	0.006686172	5.725409031	137.4098	7.170838833	7.065414429	0.028678084	24.5507259	589.2174072		24	20538.07324
	10	494.7827	850.5720825	3.387769	14.9062	2.79049659	2.74546051	0.006783654	5.773351669	138.5604	7.008833408	6.899712563	0.028005512	23.8195457	571.6691284		24	20413.72998
	11	493.4043	848.2011719	3.388342	14.90519	2.42562628	2.38698554	0.005897911	5.010203362	120.2449	7.091663837	6.979568481	0.028329633	24.0315285	576.7567139		24	20356.82813
	12	491.7636	845.3817749	3.391839	14.899	2.2631433	2.224270105	0.005495866	4.648466587	111.5632	7.069723129	6.951053143	0.028213903	23.8506756	572.4161987		24	20289.1626
	13	492.426	846.5200195	3.395338	14.89281	2.32101464	2.278580904	0.00563006	4.768903732	114.4537	7.053506851	6.927866936	0.028119795	23.8036461	571.2874756		24	20316.48047
	14	490.0115	842.3686523	3.387261	14.9071	2.1736362	2.139395475	0.005286152	4.458080292	106.9939	7.098978043	6.989017963	0.028368	23.8985119	573.5643311		24	20216.84766
	15	485.7802	835.0957031	3.403795	14.87785	2.01115489	1.969758272	0.004867001	4.06774044	97.62577	7.017736435	6.875930786	0.027908988	23.3074703	559.3792725		24	20042.29688
	16	486.8242	836.8901978	3.415434	14.85726	2.06711721	2.017566681	0.004985126	4.174480438	100.1875	7.034430027	6.86834383	0.027878195	23.331955	559.9669189		24	20085.36475
	17	485.9699	835.4214478	3.430505	14.8306	1.92848217	1.880805969	0.004647212	3.875080824	93.00194	7.317900181	7.104317188	0.028835995	24.1146126	578.7506714		24	20050.11475
	18	484.4781	832.8570557	3.401252	14.88235	2.27660465	2.230594158	0.005511492	4.592171669	110.2121	6.730504513	6.600178719	0.026789712	22.3115425	535.4769897		24	19988.56934

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	19	486.8267	836.8948975	3.394702	14.89394	2.14963078	2.111089706	0.005216213	4.367275715	104.8146	7.064477921	6.940413475	0.028170716	23.5767288	565.8414917		24	20085.47754
	20	485.7061	834.9680176	3.395147	14.89315	2.00654459	1.970070839	0.004867774	4.067306042	97.61535	7.007082939	6.882537365	0.027935795	23.3282166	559.8771973		24	20039.23242
	21	486.1263	835.6906128	3.40546	14.8749	1.72749662	1.697584033	0.004194496	3.496060371	76.91333	7.403996944	7.241435528	0.02939254	24.5825596	540.8162842		24	20056.57471
	22	483.9698	831.9832764	3.418612	14.85164	1.8127414	1.775402069	0.004386773	3.634711504	87.23308	7.294845581	7.103297234	0.028831845	24.0320377	576.7689209		24	19967.59863
	23	483.1207	830.5239258	3.414669	14.85861	2.03500223	1.987738013	0.004911426	4.077587605	97.8621	6.963522911	6.799033642	0.027596863	22.9282799	550.2786865		24	19932.57422
	24	486.1429	835.7189941	3.434957	14.82273	1.57172143	1.53694582	0.003797581	3.166465282	75.99517	7.652084351	7.410478592	0.030078679	25.1617451	603.881897		24	20057.25586
	25	485.8682	835.2466431	3.417659	14.85332	1.90065956	1.853506684	0.004579759	3.827257156	91.85417	7.026480675	6.856273651	0.0278292	23.2462711	557.9105225		24	20045.91943
	26	485.8896	835.2846069	3.419376	14.85029	2.13277864	2.079265118	0.005137578	4.289713383	102.9531	6.76574564	6.598743916	0.0267839	22.381258	537.1502075		24	20046.83057
	27	482.4616	829.390564	3.414861	14.85828	2.28715205	2.231817484	0.005514515	4.57597208	109.8233	6.656363964	6.500909328	0.026386792	21.884367	525.2247925		24	19905.37354
	28	482.4151	829.3103027	3.40725	14.87174	2.16266656	2.115827084	0.005227916	4.338429928	104.1223	6.669938864	6.528256416	0.026497787	21.9744625	527.387085		24	19903.44727
	29	484.5904	833.0505981	3.429106	14.83307	1.89620793	1.854976535	0.004583392	3.800928354	91.22228	7.376723766	7.158371449	0.0290554	24.24683	581.9238892		24	19993.21436
	30	485.3354	834.3305664	3.434066	14.8243	2.75377202	2.682092667	0.006627082	5.516345978	132.3923	6.90930891	6.700340748	0.027196271	22.7171497	545.2116089		24	20023.93359
	31	487.8272	838.6140137	3.429296	14.83274	2.75583816	2.689090252	0.006644372	5.558617115	133.4068	7.014716148	6.811314106	0.02764672	23.209671	557.0321045		24	20126.73633
Aug 03	1	487.2366	837.5986938	3.438835	14.81586	2.87952781	2.80262351	0.006924896	5.788580894	138.9259	6.95605135	6.735394955	0.027338546	22.9206791	550.0963135		24	20102.36865
	2	268.7502	692.9336548	2.840546	12.93532	8.52387428	18.6925106	0.046186652	14.20120049	227.2192	5.964542866	6.422122955	0.026067	19.5047512	312.0760193	15.00273		10395.92983
	3	492.0856	845.9343262	3.426117	14.83836	2.55027199	2.481378317	0.006131144	5.189257622	124.5422	6.815825939	6.634270668	0.026928101	22.7797241	546.7133789	23.99722		20300.07458
	4	493.4808	848.333374	3.419695	14.84972	1.94978666	1.900489211	0.004695849	3.984825373	95.63581	7.173062801	6.996006489	0.028396359	24.0976868	578.3444824		24	20360.00098
	5	497.1152	854.581665	3.416451	14.85546	1.95471501	1.907031655	0.004712014	4.030032158	96.72077	7.217421055	7.045360565	0.028596688	24.4417496	586.6019897		24	20509.95996
	6	496.2994	853.1790161	3.429233	14.83285	1.95105827	1.897986293	0.004689665	4.002877712	96.06906	7.284350395	7.080453873	0.028739138	24.528101	588.6743774		24	20476.29639
	7	494.9395	850.8411865	3.420268	14.84871	1.91846538	1.869814157	0.004620054	3.934190512	94.42057	7.186419487	7.006859779	0.028440412	24.1998081	580.7954102		24	20420.18848
	8	494.66	850.3596191	3.412826	14.86187	2.01973963	1.9727	0.00487427	4.148054123	99.5533	7.198025227	7.033500195	0.028548559	24.27915	582.699585		24	20408.63086
	9	491.2446	844.4891968	3.41785	14.85299	1.93897498	1.891711712	0.004674159	3.949133873	94.77921	7.089914799	6.917644024	0.028078295	23.7147369	569.1536865		24	20267.74072
	10	490.6625	843.4879761	3.417404	14.85378	1.93484247	1.887459159	0.004663651	3.93589282	94.46143	7.033317566	6.863270283	0.027857592	23.5001507	564.0036011		24	20243.71143
	11	495.2718	851.4125977	3.396737	14.89034	2.19366884	2.152677536	0.005318968	4.531808376	108.7634	7.125529766	6.99604845	0.028396534	24.1776047	580.2625122		24	20433.90234
	12	492.7852	847.1386108	3.40068	14.88336	1.78189957	1.748365402	0.004319971	3.662667036	87.90401	7.331413746	7.189631462	0.029182274	24.7260628	593.4254761		24	20331.32666
	13	492.0685	845.9058838	3.416769	14.8549	1.76186752	1.718949199	0.004247286	3.594998837	86.27997	7.261776924	7.087531567	0.028767854	24.3358784	584.0610962		24	20301.74121
	14	491.5659	845.041748	3.425353	14.83971	1.65757322	1.616946697	0.003995254	3.373143435	80.95544	7.565279484	7.357584953	0.029863987	25.2532883	606.0789185		24	20281.00195
	15	492.3245	846.3452148	3.414289	14.85929	1.76504624	1.723178744	0.004257736	3.605188847	86.52453	7.312334061	7.142379761	0.028990479	24.5359917	588.8637695		24	20312.28516
	16	489.6592	841.7642212	3.40195	14.88111	1.63992536	1.607332945	0.003971499	3.344959974	80.27904	7.311540127	7.167346954	0.029091833	24.490963	587.7830811		24	20202.34131
	17	488.3378	839.4925537	3.403415	14.87852	1.54278624	1.511177063	0.003733912	3.136479616	75.27551	7.336977005	7.189161777	0.02918037	24.4962292	587.9094849		24	20147.82129
	18	486.7722	836.8004761	3.401945	14.88112	1.55694914	1.526255012	0.003771165	3.154637337	69.40202	7.417755604	7.270441532	0.029510278	24.6785049	542.927124		24	20083.21143
	19	488.2113	839.2751465	3.418104	14.85254	1.35931718	1.330695271	0.003287964	2.755420685	66.1301	7.960038662	7.755177498	0.031477768	26.4383965	634.5214844		24	20142.60352
	20	489.931	842.2316895	3.44036	14.81316	1.06487787	1.041771531	0.002574072	2.170707941	52.09699	8.523161888	8.244702339	0.033464741	28.1792927	676.3029785		24	20213.56055
	21	490.2251	842.7369995	3.456262	14.78504	1.06885338	1.039912939	0.002569481	2.158167124	51.79601	8.663859367	8.343191147	0.033864494	28.5623703	685.4968872		24	20225.68799
	22	487.8957	838.7321777	3.408628	14.8693	1.62434518	1.592197299	0.0039341	3.297786236	79.14687	7.380063057	7.213386536	0.029278696	24.5688	589.6511841		24	20129.57227
	23	487.5883	838.203125	3.400806	14.88314	1.88969088	1.852609158	0.004577543	3.83823967	92.11775	6.903267384	6.768990517	0.027474917	23.032959	552.7910156		24	20116.875
	24	484.3076	832.56427	3.401569	14.88179	2.00225163	1.96243751	0.004848914	4.039589405	96.95015	6.764632225	6.631955147	0.026918696	22.4130001	537.9119873		24	19981.54248
	25	483.7473	831.600769	3.425438	14.83956	1.81284857	1.769459128	0.004372088	3.631657839	87.15979	7.184090614	6.984683514	0.0283504	23.5948658	566.2767944		24	19958.41846
	26	485.4371	834.5053101	3.43553	14.82171	1.62895596	1.590019703	0.00392872	3.266619444	78.39886	7.746202946	7.502584457	0.030452538	25.450779	610.8187256		24	20028.12744
	27	487.3486	837.7922974	3.416768	14.8549	2.19637084	2.1464324	0.005303538	4.442739964	106.6258	7.112012863	6.937243938	0.028157841	23.5971031	566.3305054		24	20107.01514
	28	490.8267	843.7713013	3.402714	14.87976	2.22753334	2.182445049	0.005392521	4.552898884	109.2696	7.116307259	6.9743433	0.028308425	23.8847218	573.2332764		24	20250.51123
	29	493.7967	848.8765259	3.399471	14.8855	2.14581466	2.103761196	0.005198105	4.41559267	105.9742	7.188644886	7.05177784	0.028622737	24.2973633	583.1367188		24	20373.03662
	30	490.8737	843.8515625	3.391268	14.90001	2.09525704	2.059676647	0.005089177	4.29631567	103.1116	7.074016094	6.956352711	0.028235417	23.8312798	571.9506836		24	20252.4375
	31	486.9039	837.0271606	3.396672	14.89045	2.1073401	2.0687747	0.005111658	4.281228065	102.7495	6.968610764	6.841555595	0.027769458	23.2433949	557.8414917		24	20088.65186
Sep 03	01	484.4037	832.7293091	3.402968	14.87931	2.04136157	2.000144243	0.00494208	4.1177845	98.82683	7.027593613	6.886718273	0.027952766	23.2765541	558.6373291		24	19985.50342
	02	484.0661	832.1485596	3.387793	14.90616	1.62441754	1.603557706	0.00396217	3.286782026	72.3092	7.732194901	7.600948334	0.0308518	25.6897449	565.1743774		24	19971.56543
	03	481.0136	826.9016113	3.398962	14.8864	1.78285325	1.760698557	0.004350443	3.58835268	86.12046	7.367182732	7.210207462	0.029265784	24.2299786	581.5195313		24	19845.63867
	04	483.5493	831.2606812	3.41626	14.8558	1.72116649	1.688681483	0.0041725	3.462064981	83.08955	7.403911591	7.21267128	0.029275784	24.3609753	584.6633911		24	19950.25635
	05	487.2452	837.612854	3.410664	14.8657	1.78221655	1.750501871	0.004325249	3.615385771	86.76926	7.436502457	7.257537365	0.029457904	24.7062874	592.9509277		24	20102.7085
	06	485.3657	834.3824463	3.379503	14.92083	2.17554426	2.146530867	0.005303782	4.426733971	106.2416	6.708512306	6.61966753	0.02686882	22.420578	538.0938721		24	20025.17871
	07	487.6263	838.269165	3.397818	14.88842	1.86759126	1.831981659	0.004526574	3.797035933	91.12886	6.940629005	6.811798096	0.027648674	23.1802406	556.3258057		24	20118.45996
	08	492.1592	846.0618286	3.391839	14.899	1.72847879	1.697520375	0.004194338	3.551892996	85.24543	7.189280987	7.068080425	0.028688908	24.2748795	582.5971069		24	20305.48389
	09	495.7907	852.3052368	3.393938	14.89529	1.60828793	1.579476237	0.00390267	3.327354908	79.85652	7.468458176	7.338465214	0.029786374	25.3876381	609.3032837		24	20455.32568
	10	490.9068	843.9082031	3.407993	14.87043	1.84358454	1.803055048	0.004455101	3.760900021	90.2616	6.940788746	6.791111946	0.027564708	23.2661285	558.387085	23.93889		20202.22442
	11	486.2633	835.9267578	3.393812	14.89551	1.89938831	1.865185022	0.004608614	3.854317427	92.50362	6.798019886	6.680165291	0.027114375	22.665617	543.9747925		24	20062.24219
	12	484.5303	832.9468384	3.389678	14.90283	1.7154429	1.686873317	0.004168032	3.475105762	83.40254	7.05223465	6.938464642	0.0281628	23.4567585	562.9622192		24	19990.72412
	13	481.8737	828.3797607	3.390758	14.90091	1.54930413	1.523359537	0.003764011	3.118002415	74.83206	7.024254799	6.908555031	0.0280414	23.2324905	557.5797729		24	19881.11426
	14	483.0933	830.4766235	3.399662	14.88516	1.72100663	1.687425017	0.004169394	3.464952946	83.15887	7.000089645	6.866696358	0.027871501	23.1465416	555.5169678		24	19931.43896
	15	484.6838	833.2113647	3.387897	14.90598	1.67055619	1.643739581	0.004061455	3.385518789	81.25245	7.208676338	7.096117496	0.028802704	23.99827	575.9584961		24	19997.07275
	16	480.5055	826.0279541	3.328436	14.79347	2.04549551	2.593791962	0.006408903	4.119635582	98.87125	7.298979759	7.282486916	0.02955918	24.5125084	588.3001709		24	19824.6709
	17	378.7759	744.1092529	3.020912	13.23305	4.62133121	8.440583229	0.02085554	9.099611282	191.0918	6.860441208	6.995502949	0.028394319	22.8362141	479.5605164	19.85833		14776.76977
	18	492.7142	847.0158081	3.427261	14.83634	1.70622206	1.659207106	0.004099674	3.474288702	83.38293	7.426167488	7.224657059	0.029324437	24.8424549	596.2188721		24	20328.37939
	19	490.0327	842.4064941	3.398327	14.88752	1.6486696	1.617004991	0.003995396	3.367247105	80.81393	7.318217278	7.180754185	0.029146247	24.5561714	589.3480835		24	20217.75586

Unit 2 - CEMS Data

	20	134.3544	615.7921143	2.51334	12.19588	12.5624695	31.57382774	0.078014515	23.45724487	211.1152	5.785058975	6.586107731	0.026732622	19.2065048	172.8585358	8.533333	5254.759062
	21	488.8741	840.4133911	3.401442	14.88201	1.48586953	1.456197023	0.003598064	3.025486708	72.61168	7.477519989	7.330348969	0.029753434	25.0099964	600.2399292	24	20169.92139
	22	487.6782	838.3589478	3.385354	14.91047	1.4723562	1.44970417	0.003582017	3.005013227	72.12032	7.440474987	7.328817368	0.029747225	24.9452877	598.6868896	24	20120.61475
	23	488.9729	840.5834351	3.388595	14.90474	1.5556637	1.530354977	0.003781297	3.179404974	76.30572	7.479427338	7.360791206	0.029877003	25.1168003	602.8032227	24	20174.00244
	24	493.319	848.0547485	3.394257	14.89472	1.97538292	1.940069199	0.004793642	4.066892147	97.60541	7.266227722	7.138509274	0.028974775	24.5752621	589.8062744	24	20353.31396
	25	495.2581	851.3890381	3.40265	14.87988	2.25360632	2.20757246	0.005454607	4.646016121	111.5044	7.168294907	7.024372578	0.028511507	24.2762661	582.6303711	24	20433.33691
	26	493.8019	848.8859863	3.387133	14.90732	2.36378217	2.325765371	0.005746645	4.882165909	117.172	7.101362228	6.991176128	0.028376758	24.0917168	578.2011719	24	20373.26367
	27	490.5714	843.3320313	3.39044	14.90147	2.2529695	2.215102911	0.005473214	4.619681835	110.8724	7.01328516	6.897817612	0.027997829	23.6164589	566.7949829	24	20239.96875
	28	486.3841	836.1345215	3.399471	14.8855	1.9542371	1.916568756	0.004735575	3.967082024	95.20997	7.055256844	6.920628548	0.028090395	23.4921074	563.8106079	24	20067.22852
	29	488.6982	840.111084	3.41467	14.85861	1.64230919	1.603223801	0.003961345	3.328956604	79.89496	7.400571346	7.227183342	0.029334687	24.6455631	591.4935303	24	20162.66602
	30	490.7059	843.5635376	3.418104	14.85254	1.873155	1.826586604	0.004513244	3.809691191	91.43259	7.330618858	7.150816441	0.02902472	24.4888668	587.7327881	24	20245.5249
Oct 03	1	492.8052	847.1716309	3.417976	14.85276	1.86075544	1.81486702	0.004484286	3.800289154	91.20694	7.402319908	7.222171783	0.029314354	24.8351574	596.0438232	24	20332.11914
	2	494.2667	849.684021	3.42281	14.84421	1.69366336	1.649312019	0.004075224	3.464823723	83.15577	7.726171017	7.527555943	0.030553883	25.9613037	623.0712891	24	20392.4165
	3	493.9284	849.1031494	3.42726	14.83634	1.60876417	1.564541698	0.00386577	3.284634113	78.83122	7.725693703	7.516852379	0.030510442	25.9130592	621.9133911	24	20378.47559
	4	490.2613	842.7984619	3.421919	14.84579	1.60478997	1.562784553	0.003861423	3.257544041	78.18106	7.426166534	7.236616135	0.029372988	24.7611923	594.2686157	24	20227.16309
	5	489.6887	841.81604	3.433811	14.82475	1.61496544	1.567422867	0.003872885	3.261903763	78.28569	7.482924938	7.266489506	0.029494237	24.8304462	595.9307251	24	20203.58496
	6	489.0414	840.7015381	3.403732	14.87796	1.56027329	1.527411699	0.003774022	3.174947977	76.19875	7.459235668	7.307635784	0.029661255	24.9376335	598.5031738	24	20176.83691
	7	487.3516	837.796875	3.398962	14.8864	1.43658495	1.408834577	0.003481036	2.918154955	70.03572	7.453831196	7.31333065	0.02968437	24.8707256	596.8973999	24	20107.125
	8	487.9895	838.8926392	3.41486	14.85828	1.51464629	1.47761035	0.003650971	3.065074921	73.5618	7.492623329	7.315220356	0.02969202	24.9118538	597.8845215	24	20133.42334
	9	490.7828	843.6957397	3.425545	14.83937	1.48268962	1.442407489	0.003563991	3.009028435	72.21668	7.671004295	7.467295647	0.030309295	25.5752087	613.8049927	24	20248.69775
	10	501.1983	861.5997314	3.406784	14.87256	1.55057585	1.517392039	0.003749266	3.232394218	77.57746	8.076096535	7.905759811	0.032088991	27.649292	663.5830078	24	20678.39355
	11	500.3955	860.2205811	3.409646	14.8675	1.62291372	1.586826205	0.003920827	3.37374711	80.96993	7.953836441	7.780632973	0.031581115	27.1753426	652.2081909	24	20645.29395
	12	498.3404	856.6879272	3.411491	14.86424	1.68110287	1.642802119	0.00405914	3.479269266	83.50246	7.835553169	7.659677982	0.031090176	26.6349239	639.2382202	24	20560.51025
	13	500.9477	861.1698608	3.402968	14.87931	1.74437833	1.709021211	0.004222756	3.63788867	87.30933	8.029672623	7.868751049	0.031938776	27.5050087	660.1201782	24	20668.07666
	14	500.2034	859.8900146	3.346804	14.97867	1.89736307	1.891322613	0.004673197	4.017556667	92.4038	7.990424633	7.960776329	0.032312296	27.7746429	638.8167725	24	20637.36035
	15	498.4259	856.8344727	3.349868	14.97325	2.02784705	2.018358231	0.004987087	4.274965286	102.5992	7.908525944	7.875449657	0.031965967	27.3945961	657.4702759	24	20564.02734
	16	503.239	865.1086426	3.378612	14.9224	2.35154128	2.320001364	0.005732403	4.961921692	119.0861	7.846522808	7.744503498	0.031434465	27.1952381	652.6856689	24	20762.60742
	17	499.7664	859.1390381	3.366975	14.94299	2.27856588	2.256377459	0.0055752	4.791978836	115.0075	7.702323437	7.628635883	0.030964175	26.6086922	638.6085815	24	20619.33691
	18	491.9585	845.717041	3.35222	14.96909	1.94358623	1.932711244	0.004775463	4.046331882	97.11196	7.578314781	7.538647652	0.030598925	25.886755	621.2821045	24	20297.20898
	19	492.7195	847.0252686	3.382427	14.91565	2.01449251	1.9856112	0.004906174	4.157076359	99.76983	7.465914249	7.360575676	0.029876133	25.3091259	607.4190063	24	20328.60645
	20	490.7388	843.6200562	3.38618	14.90901	1.95805371	1.92806673	0.004763985	4.019308567	96.4634	7.393098831	7.281030655	0.029553255	24.9371624	598.4918823	24	20246.88135
	21	490.0441	842.425293	3.371935	14.93421	2.07093167	2.048137426	0.005060667	4.26275301	102.3061	7.384673119	7.302788258	0.029641571	24.9749794	599.3994751	24	20218.20703
	22	492.2638	846.241333	3.364812	14.94681	2.39271617	2.370646715	0.005857539	4.959328175	119.0239	7.383560181	7.317784786	0.029702442	25.1389084	603.3338013	24	20309.79199
	23	496.9591	854.312439	3.369837	14.93793	2.55186081	2.52460885	0.006237961	5.33116293	127.9479	7.520923138	7.442801476	0.030209882	25.8089371	619.4144897	24	20503.49854
	24	494.0932	849.3865356	3.372442	14.93331	2.43071461	2.403239965	0.005938076	5.045594215	121.0943	7.405181408	7.322906017	0.029723212	25.2514954	606.0358887	24	20385.27686
	25	493.9974	849.2213135	3.377912	14.92364	2.62260842	2.588514566	0.006395861	5.432598114	130.3824	7.234750271	7.142166138	0.028989617	24.6223965	590.9375	24	20381.31152
	26	496.1565	852.9334717	3.359343	14.95649	2.66251326	2.641857624	0.006527667	5.571149349	133.7076	7.417263985	7.362820148	0.029885229	25.4926243	611.822998	24	20470.40332
	27	496.2747	853.1364746	3.348087	14.9764	2.46903086	2.458633661	0.006074944	5.185206413	124.445	7.496916771	7.467279911	0.030309238	25.8644714	620.7473145	24	20475.27539
	28	495.5852	851.9509888	3.346115	14.97989	2.20050454	2.192531347	0.005417444	4.617554188	110.8213	7.723151207	7.697258949	0.031242704	26.6211166	638.9067993	24	20446.82373
	29	496.058	852.7634888	3.361379	14.95289	1.95868957	1.943304539	0.004801639	4.09578371	98.29881	8.016318321	7.952954769	0.032280553	27.5298882	660.7172852	24	20466.32373
	30	511.3569	879.0643921	3.388788	14.9044	2.17411375	2.13900876	0.005285195	4.647482872	111.5396	8.414256096	8.28049469	0.03361002	29.548954	709.1749268	24	21097.54541
	31	512.4506	880.9440308	3.380521	14.91903	2.39685035	2.362503767	0.005837421	5.144165993	123.46	8.335399628	8.224744797	0.033383735	29.4099922	705.8397827	24	21142.65674
Total		345,592	600976.3664							195,458					437,294	16603.15	14,260,441
Average		490.8981	853.6596113	3.327908	14.83203	5.69409197	6.050290738	0.014947938	11.95429941	277.6398	7.589315997	7.556761957	0.030669055	26.2784407	621.1559866	22.74404	19534.8503
Ann Avg.		172,796								97,729					218,647	8301.576	7,130,220

6990.412117 mmscf/yr

Fuel Sulfur Content Data

Month	ppm S	gr S/100 scf
Nov-01	<1.0	<0.06
Dec-01	1.1	0.07
Jan-02	<1.0	<0.06
Feb-02	<1.0	<0.06
Mar-02	<1.0	<0.06
Apr-02	<1.0	<0.06
May-02	<1.0	<0.06
Jun-02	<1.0	<0.06
Jul-02	<1.0	<0.06
Aug-02	<1.0	<0.06
Sep-02	<1.0	<0.06
Oct-02	<1.0	<0.06
Nov-02		
Dec-02	<1.0	<0.06
Jan-03	<1.0	<0.06
Feb-03	<1.0	<0.06
Mar-03	<1.0	<0.06
Apr-03	<1.0	<0.06
May-03	<1.0	<0.06
Jun-03	<1.0	<0.06
Jul-03	<1.0	<0.06
Aug-03	<1.0	<0.06
Sep-03	<1.0	<0.06
Oct-03	<1.0	<0.06