

Santa Barbara County
Air Pollution Control District

AUG 27 2007

Certified Mail 7001 2510 0003 2204 8890
Return Receipt Requested

Phil Hosch
BreitBurn Energy Company LP
1555 Orcutt Hill Rd
Orcutt, CA 93455

FID: 10482
Permit: APM 11405 - 02
SSID: 02667

Re: Final Authority to Construct/Permit to Operate and Minor Part 70 Revision 11405 - 02
Fee Due: \$ 354

Dear Mr. Hosch:

Enclosed is the final Authority to Construct/Permit to Operate (ATC/PTO) No. 11405 - 02 for implementing Diatomite Project NOx and ROC BACT levels of control and limiting the sulfur content of fuel gas burned to PUC quality levels on the 23 MMBTU/hr steam generator at BreitBurn Energy Orcutt Hill production field at BreitBurn Energy- Orcutt Hill in Orcutt.

Please carefully review the enclosed documents to ensure that they accurately describe your facility and that the conditions are acceptable to you. Note that your permitted emission limits may, in the future, be used to determine emission fees.

You should become familiar with all APCD rules pertaining to your facility. This permit does not relieve you of any requirements to obtain authority or permits from other governmental agencies.

This permit requires you to:

- Pay a fee of \$354, which is due immediately and is considered late after 30 calendar days from the date stamped on the permit. Pursuant to APCD Rule 210.IV.B, no appeal shall be heard unless all fees have been paid. See the attached invoice for more information.
- Follow the conditions listed on your permit. Pay careful attention to the recordkeeping and reporting requirements.
- Ensure that a copy of the enclosed permit is posted or kept readily available near the permitted equipment.
- Promptly report changes in ownership, operator, or your mailing address to the APCD.

If you are not satisfied with the conditions of this permit, **you have thirty (30) days from the date of this issuance to appeal this permit to the Air Pollution Control District Hearing Board** (ref:

Terry Dressler • Air Pollution Control Officer
260 North San Antonio Road, Suite A • Santa Barbara, CA • 93110 • www.sbapcd.org • 805.961.8800 •
805.961.8801 (fax)

California Health and Safety Code, §42302.1). Any contact with APCD staff to discuss the terms of this permit will not stop or alter the 30-day appeal period.

Please include the facility identification (FID) and permit numbers as shown at the top of this letter on all correspondence regarding this permit. If you have any questions, please contact Al Ronyecz at (805) 961-8877.

Sincerely,



Peter Cantle, Manager
Engineering & Compliance Division

enc: Final ATC/PTO 11405 - 02
Final Permit Evaluation
Invoice # APM 11405 - 02
Air Toxics "Hot Spots" Fact Sheet APCD Form 12B

cc: Orcutt Hill - Steam Generators 10482 Project File NC/SC
ECD Chron File
Accounting (Invoice only)
R9AirPermits SB@EPA.GOV (w/attachments)
Marianne Strange, MF Strange & Assoc (w/ attachments)
Craig Strommen (Cover letter only)
Al Ronyecz (Cover letter only)

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EQUIPMENT OWNER/OPERATOR:

BreitBurn Energy Company

320100

EQUIPMENT LOCATION:

Orcutt Hill Oilfield, Santa Barbara County, California

STATIONARY SOURCE/FACILITY:

BreitBurn Energy – Orcutt Hill
Orcutt Hill Steam Generators

SSID: 2667
FID:10482

AUTHORIZED MODIFICATION:

This permit authorizes a modification to the NO_x concentration emission limit on the 23 MMBtu/hr steam generator from 14 ppmvd at 3% O₂ (0.0175 lb/MMBtu) to 9 ppmvd at 3% O₂ (0.011 lb/MMBtu) and the ROC concentration from 13 ppmvd at 3% O₂ (0.0054 lb/MMBTU) to 8.5 ppmvd at 3% O₂ (0.004 lb/MMBTU). These lower emissions are achieved with a North American low NO_x burner equipped with Flue Gas Recirculation (FGR) currently installed on the generator. In addition, this permit authorizes a change to the sulfur content of the PUC quality gas burned in the generator burner from 150 ppmv to 23 ppmv. Adjustments to the PM/PM10 emission factors are also authorized. Potential to emit (PTE) limits are correspondingly reduced as a result of these modifications. The steam generator is permitted to operate on the Dome and Newlove leases within the BreitBurn Energy – Orcutt Hill stationary source.

PROJECT/PROCESS DESCRIPTION:

The Smithmoon Steel 23 MMBTU/hr natural gas fired steam generator is permitted to operate on the Orcutt Hill field (SSID 2667) for the injection of steam to thermally enhance oil production at wells on the Dome and Newlove leases. Since this steam generator is included as a component of the Diatomite Project located on the Newlove Lease, the generator must comply with NO_x and ROC BACT imposed on Diatomite Project steam generators. The permittee requested a revision to the steam generator NO_x emission standard from 14 ppmv (0.0175 lb/MMBTU) to 9 ppmv (0.011 lb/MMBTU) and a revision to

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the generator ROC emission standard from 13 ppmv (as CH₄) (0.0054 lb/MMBTU) to 8.5 ppmv (as CH₄) (0.004 lb/MMBTU). These lower emissions are achieved with the North American low NO_x burner equipped with FGR currently installed on the generator. The permittee also requested a reduction in the sulfur content for natural gas burned in the generator burner from 150 ppmv to the Diatomite approved sulfur content for PUC quality gas of 23 ppmv to be consistent with the requirements on the Diatomite Project. The permittee also requested adjustments to the PM/PM10 emission factors for consistency with Diatomite Project emission factors.

SECTION 9.A CONDITIONS

Section A lists the applicable standard administrative conditions for all equipment in this permit. Conditions listed in this section are enforceable by the USEPA, the APCD, the State of California and the public. Where any reference contained in this section refers to any other part of this permit, that part of the permit referred to is federally enforceable. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

A.1 Compliance with Permit Conditions:

- (a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.
- (b) This permit does not convey property rights or exclusive privilege of any sort.
- (c) Any permit noncompliance constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.
- (d) It shall not be a defense for the 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 this permit.
- (e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.
- (f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:
 - (i) compliance with the permit, or
 - (ii) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action. [*Re: 40 CFR Part 70.6, APCD Rules 1303.D.1*]
- (g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible.

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- A.2 **Emergency Provisions:** The permittee shall comply with the requirements of the APCD, Rule 505 (Upset/Breakdown rule) and/or APCD Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the APCD, in writing, a “notice of emergency” within 2 days of the emergency. The “notice of emergency” shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. [*Re: 40 CFR 70.6, APCD Rule 1303.F*]
- A.3 **Compliance Plan:**
- (a) The permittee shall comply with all federally-enforceable requirements that become applicable during the permit term, in a timely manner, as identified in the Compliance Plan.
 - (b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards. [*Re: APCD Rule 1302.D.2*]
- A.4 **Right of Entry:** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:
- (a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;
 - (b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;
 - (c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing. [*Re: APCD Rule 1303.D.2*]
- A.5 **Payment of Fees:** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. [*Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6*]
- A.6 **Prompt Reporting of Deviations:** The permittee shall submit a written report to the APCD documenting each and every deviation from the requirements of this permit or any applicable federal requirements within 7 days after discovery of the violation, but not later than 180-days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any,

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and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to APCD in accordance with Rule 505. *Breakdown Conditions*, or Rule 1303.F *Emergency Provisions*. [APCD Rule 1303.D.1, 40 CFR 70.6(a) (3)]

- A.7 **Reporting Requirements/Compliance Certification:** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on APCD forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Monitoring/Compliance Verification Report" condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [Re: APCD Rules 1303.D.1, 1302.D.3, 1303.2.c]
- A.8 **Federally-Enforceable Conditions:** Each federally-enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the APCD-only enforceable section of this permit are federally-enforceable or subject to the public/USEPA review. [Re: CAAA, § 502(b)(6), 40 CFR 70.6]
- A.9 **Recordkeeping Requirements:** Records of required monitoring information shall include the following:
- (a) The date, place as defined in the permit, and time of sampling or measurements;
 - (b) The date(s) analyses were performed;
 - (c) The company or entity that performed the analyses;
 - (d) The analytical techniques or methods used;
 - (e) The results of such analyses; and
 - (f) The operating conditions as existing at the time of sampling or measurement;
- The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by BreitBurn Energy and shall be made available to the APCD upon request. [Re: APCD Rule 1303.D.1.f, 40CFR70.6(a)(3)(ii)(A)]
- A.10 **Conditions for Permit Reopening:** The permit shall be reopened and revised for cause under any of the following circumstances:
- (a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18

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months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30-day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

- (b) Inaccurate Permit Provisions: If the APCD or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
- (c) Applicable Requirement: If the APCD or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally-enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen and revise/revoke/reissue a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists.

If a permit is reopened, the expiration date does not change. Thus, if the permit is reopened, and revised, then it will be reissued with the expiration date applicable to the re-opened permit. [*Re: 40 CFR 70.7, 40 CFR 70.6*]

- A.11 **Grounds for Revocation**: Failure to abide by and faithfully comply with this permit shall constitute grounds for the APCO to petition for permit revocation pursuant to California Health & Safety Code Section 42307 *et seq.*

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SECTION 9.B CONDITIONS

Section B lists the applicable 'generic' permit conditions, including emission standards for all equipment in this permit. Conditions listed in this section are enforceable by the USEPA, the APCD, the State of California and the public. Where any reference contained in this section refers to any other part of this permit, that part of the permit referred to is federally enforceable. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

- B.1 **Circumvention (Rule 301):** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of APCD Rule 303. [*Re: APCD Rule 301*]
- B.2 **Visible Emissions (Rule 302):** BreitBurn Energy shall not discharge into the atmosphere from any single source of emission or air contaminants for a period or periods aggregating more than three minutes in any one hour which is:
- (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
 - (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2.(a) above. [*Re: APCD Rule 302*].
- B.3 **Nuisance (Rule 303):** No pollutant emissions from any source at BreitBurn Energy shall create nuisance conditions. Operations shall not endanger health, safety or comfort, nor shall they damage any property or business. [*Re: APCD Rule 303*]
- B.4 **Specific Contaminants (Rule 309):** BreitBurn Energy shall not discharge into the atmosphere from any single source sulfur compounds and combustion contaminants (particulate matter) in excess of the applicable standards listed in Sections A through E of Rule 309. [*Re: APCD Rule 309*].
- B.5 **Sulfur Content of Fuels (Rule 311):** BreitBurn Energy shall not burn fuels with a sulfur content in excess of 796 ppmvd or 50 gr/100 scf (calculated as H₂S) for gaseous fuel. Compliance with this condition shall be based on annual measurements of the fuel gas using ASTM, or other APCD-approved methods. [*Reference: APCD Rule 311.B*]

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SECTION 9.C REQUIREMENTS AND EQUIPMENT SPECIFIC CONDITIONS

Section C lists conditions affecting specific equipment in this permit. Conditions listed in this section are enforceable by the USEPA, the APCD, the State of California, and the public. Where any reference contained in this section refers to any other part of this permit, that part of the permit referred to is federally enforceable. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

C.1 **External Combustion.** The following equipment is included in this emissions unit category:

Table C.1-1 External Combustion Equipment List

APCD DeviceNo	Device Name
<i>Steam Generator</i>	
104992	Smithmoon Steel Company Generator/North American Burners (23 MMBtu/hr)

- (a) **Emission Limits.** Mass emissions from the steam generator shall not exceed those listed in Tables 5.1-3 and 5.1-4 of this permit. Compliance shall be based on the operational, monitoring, recordkeeping and reporting conditions of this permit as well as through source testing, fuel usage, and the total sulfur content analysis of the PUC quality gas.
- (i) ***Oxides of Nitrogen (NO_x) Concentration Emissions Limits.*** Emissions of NO_x (as NO₂) from the steam generator subject to this permit shall not exceed a NO_x stack concentration of 9 ppmvd at 3% O₂ or a NO_x stack emission rate of 0.011 lb/MMBtu when fired on PUC quality natural gas. Compliance with this condition and Rule 342 .D.1 shall be based on source testing and the monitoring condition of this permit.
- (ii) ***Reactive Organic Compound (ROC) Concentration Emissions Limits.*** Emissions of ROC (as CH₄) from the steam generator subject to this permit shall not exceed a ROC stack concentration of 8.5 ppmvd at 3% O₂ or an ROC stack emission rate of 0.004 lb/MMBtu when fired on PUC quality natural gas. Compliance with this condition and Rule 342 .D.1 shall be based on source testing and the monitoring condition of this permit.
- (iii) ***Carbon Monoxide (CO) Concentration Emissions Limits.*** Emissions of CO from the steam generator subject to this permit shall not exceed a 26 ppmvd at 3% O₂ or a CO stack emission rate of 0.019 lb/MMBTU when fired on PUC quality natural gas. Compliance with this condition and Rule 342.D.1 shall be based on source testing and the monitoring condition of this permit.
- (b) **Operational Limits:** The equipment listed in the Table C.1-1 must be properly maintained in accordance with the equipment manufacturer's/operator's maintenance

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manual to minimize combustion emissions. The following additional operational limits apply:

- (i) *Gaseous Fuel Sulfur Limit.* The steam generator listed in Table C.1-1 shall be fired on purchased PUC quality natural gas. The concentration of sulfur compounds (calculated as H₂S at standard conditions, 60°F and 14.7 psia) in the natural gas fuel burned in this unit shall not exceed 1.36 grains per 100 cubic feet (23 ppmvd)
- (ii) *Combustion Units* - The hourly, daily and annual heat input limits to the steam generator shall not exceed the values listed in Table C.1-2 below. These limits are based on the design rating of the units and the annual heat input value as listed in the permit application. Unless otherwise designated by the Control Officer, the fuel heat content of natural gas for determining compliance equals 1,050 Btu/scf.

Table C.1-2 Heat Input Limits

Combustion Unit	MMBtu/hr	MMBtu/day	MMBtu/yr
Steam Generator (DeviceNo 104992)	23	552	201,480

- (iii) *FGR Operation* – The oxygen (O₂) concentration of the combustion air mix to the steam generator burner shall not exceed 18.8% when the steam generator is operating.
 - (iv) *Plate Restrictor* -- The combustion air intake restrictor plate shall remain bolted in place (per photo in Appendix D) at all times during steam generator operation
- (c) Monitoring: The following source testing and periodic monitoring conditions apply to the steam generator:
- (i) *Fuel Meter* – The steam generator shall be equipped with a dedicated APCD-approved fuel meter that is non-resettable and pressure-corrected to measure the total cubic feet (scf) delivered to the combustion unit. The fuel meter shall be accurate to within five percent (5%) of the full scale reading. The fuel meter/gauge shall be calibrated annually in accordance with the fuel meter manufacturer’s procedures. Fuel monitoring components, manufacturer’s specifications, calibration specifications and the procedures for maintaining fuel use records required by condition d (ii) below shall be included in the *Fuel Use Monitoring Plan for the Diatomite Project Plan* required under ATC 12084 permit condition 6.a.(1) (d).
 - (ii) *FGR Operating Limit Monitoring* - The steam generator burner windbox shall be equipped with an oxygen monitor. The burner windbox operating O₂ shall be continuously monitored and the O₂% value displayed when the steam generator is operating.

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- (iii) *Source Testing* – BreitBurn Energy shall source test the steam generator annually, in accordance with Table 4.1 of this permit for compliance with applicable emission limits. The source test anniversary shall be February or other date if requested by the permittee and approved by the APCD to consolidate the testing of this steam generator with the steam generators that are part of the Diatomite Project. The next test shall be completed by the last day of February 2008. The source testing provisions listed below shall apply:
- (1) BreitBurn shall submit a written source test plan to the APCD for approval at least thirty (30) days prior to initiation of each source test. The source test plan shall be prepared consistent with the APCD's Source Test Procedures Manual (revised May 1990 and any subsequent revisions). BreitBurn shall obtain written APCD approval of the source test plan prior to commencement of source testing. The APCD shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when APCD personnel may observe the test.
 - (2) Source test results shall be submitted to the APCD within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall document BreitBurn's compliance status with mass emission rates in Section 5 and applicable permit conditions and rules. All APCD costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by BreitBurn as provided for by APCD Rule 210.
 - (3) A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain APCD approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the APCD. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the APCD. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without APCD's authorization shall constitute a violation of this permit. If a test is

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postponed due to an emergency, written documentation of the emergency event shall be submitted to the APCD by the close of the business day following the scheduled test day.

- (4) The timelines in (a), (b), and (c) above may be extended for good cause provided a written request is submitted to the APCD at least three (3) days in advance of the deadline, and approval for the extension is granted by the APCD.

Table 4.1: Source Test Parameters
BreitBurn Energy: Orcutt Hill Steam Generator
ATC/PTO 11405-02

Emission & Test Points	Pollutants/Parameters ^(b) ^(c)	Test Methods ^(a) ^(c)
Steam Generator Stack ^(b)	NO _x - ppmv & lb/hr	EPA Method 7E
	ROC - ppmv & lb/hr	EPA Method 18
	CO - ppmv & lb/hr	EPA Method 10
	Stack Gas Flow Rate	EPA Method 2
	O ₂ , CO ₂ , Dry Mole Wt	EPA Method 3
	Moisture Content	EPA Method 4
Stream Generator Fuel Gas	Fuel Gas Flow Rate	Plant gas meter
	Higher Heating Value	ASTM D 1826-88
	Total Sulfur Content ^(d)	ASTM D 1072
Burner Windbox	O ₂	Record O ₂ % values off display

Site Specific Requirements

- a) Alternative methods may be acceptable on a case-by-case basis.
 - b) The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate.
 - c) For NO_x, CO, and O₂ a minimum of three 40-minute runs shall be obtained during each test.
 - d) Total sulfur content fuel samples shall be obtained using EPA Method 18 with Tedlar Bags (or equivalent) equipped with Teflon tubing and fittings. Turnaround time for laboratory analysis of these samples shall be no more than 24 hours from sampling in the field.
 - e) Source testing shall be performed biennially for the steam generator in an "as found" condition.
- (d) Recordkeeping: The steam generator is subject to the recordkeeping requirements listed in Rule 342.1. All records shall be maintained by BreitBurn Energy for a minimum of five (5) years. The following records (electronic or hard copy) shall be maintained by the permittee and shall be made available to the District upon request:
- (i) *Sulfur Content*. The annual measured total sulfur content, in units of ppmvd, of the purchased PUC quality natural gas burned in the steam generator burner.

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- (ii) *Natural Gas Fuel Use* – The total amount of natural gas combusted in the steam generator listed in Table C.1-1 shall be recorded on a daily, monthly, and annual basis in units of standard cubic feet and million Btus (x.xxx format).
- (iii) *Maintenance Logs* - Maintenance logs for the steam generator, emission control systems and fuel flow meters.
- (iv) *FGR Operating Limit Monitoring* - Daily windbox O₂% readings shall be maintained in a log and provided to the APCD upon request.
- (e) Reporting: The equipment listed in this section is subject to all the reporting requirements listed in APCD Rule 342.J. On a semi-annual basis, a report detailing the previous six month’s activities shall be provided to the APCD. The report must list all data required by the *Compliance Verification Reports* condition of this permit.

C.2 **Fugitive Hydrocarbon Emissions Components.** The following equipment are included in this emissions unit category:

		APCD
Device Type	Device Subtype	DeviceNo ¹
<i>Fugitive Components - Gas/Condensate</i>		
Valve	Accessible	105074
Connection	Accessible	105075

Notes:

¹Each APCD DeviceNo is unique, representing a specific piece of equipment (device) identified on permit. In the case of fugitive hydrocarbon components, each APCD DeviceNo represents all permitted fugitive components of a specific "Device Subtype" or fugitive component

- (a) Emission Limits: Mass emissions from the gas/condensate and oil service (sub-total) components listed above shall not exceed the limits listed in Tables 5.1-3 and 5.1-4. Compliance with this condition shall be based on actual component-leak path counts as documented through monitoring, recordkeeping, and reporting conditions in this permit.
- (b) Operational Limits: Operation of the equipment listed in this section shall conform to the requirements listed in APCD Rule 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit. In addition BreitBurn shall meet the following requirements:

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- (i) *I&M Program*: The APCD-approved I&M Plan for the Orcutt Hill Compressor Plant shall be implemented for the life of the project. The Plan, and any subsequent APCD approved revisions, is incorporated by reference as an enforceable part of this permit. An updated Fugitive Emissions Inspection and Maintenance Plan must be submitted to the APCD for review and approval within one calendar quarter whenever there is a change in the component list or diagrams.
 - (ii) *Leak path Count*: The total component-leak path count listed in BreitBurn's most recent I&M component-leak path inventory shall not exceed the total component-leak path count listed in Table 5.1-1 by more than five percent. This five percent range is to allow for minor differences due to component counting methods and does not constitute allowable emissions growth due to the addition of new equipment.
 - (c) Monitoring: The equipment listed in this section is subject to all the monitoring requirements listed in APCD Rule 331.F. The test methods in Rule 331.H shall be used, when applicable.
 - (d) Recordkeeping: The equipment listed in this section is subject to all the recordkeeping requirements listed in APCD Rule 331.G. In addition, BreitBurn shall:
 - (i) *I&M Log* – BreitBurn shall record in a log the following: a record of leaking components found (including name, location, type of component, date of leak detection, the ppmv or drop-per-minute reading, date of repair attempts, method of detection, date of re-inspection and ppmv or drop-per-minute reading following repair); a record of the total components inspected and the total number and percentage found leaking by component type; a record of leaks from critical components; a record of leaks from components that incur five repair actions within a continuous 12-month period; and, a record of component repair actions including dates of component re-inspections. For the purpose of this paragraph, a leaking component is any component which exceeds the applicable limit:
 - (1) greater than or equal to 1,000 ppmv for minor leaks under Rule 331 (includes Accessible/Inaccessible components and Category A components);
 - (e) Reporting: On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the APCD. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit. [Re: APCD Rules 331 and 1303, 40 CFR 70.6]
- C.3 **Fuel Gas Sulfur Limit**: The total sulfur content (calculated as H₂S at standard conditions, 60° F and 14.7 psia) of the purchased PUC quality natural gas fuel burned at the facility shall not exceed 1.36 grains per 100 cubic feet (23 ppmvd). BreitBurn Energy shall measure the total sulfur content annually at a location downstream of the facility purchased gas meter in

AUTHORITY TO CONSTRUCT/PERMIT TO OPERATE 11405-02
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accordance with ASTM-D1072 or an APCD approved equivalent method. Records shall be kept on site and made available for inspection by the APCD upon request.

C.4 **Compliance Verification Reports.** Twice a year, BreitBurn Energy shall submit a compliance verification report to the APCD. Each report shall document compliance with all permits, rule or other statutory requirements during the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and the second report shall cover calendar quarters 3 and 4 (July through December). The reports shall be submitted by March 1st and September 1st each year. Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit and shall document compliance separately for each calendar quarter. These reports shall be in a format approved by the APCD. Compliance with all limitations shall be documented in the submittals. All logs and other basic source data not included in the report shall be made available to the APCD upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *APCD Annual Emissions Inventory* questionnaire should be included in the annual report or submitted electronically via the APCD website. BreitBurn Energy may use the Compliance Verification Report in lieu of the Emissions Inventory questionnaire if the format of the CVR is acceptable to the APCD's Emissions Inventory Group and if BreitBurn Energy submits a statement signed by a responsible official stating that the information and calculations of quantifies of emissions of air pollutants presented in the CVR are accurate and complete to best knowledge of the individual certifying the statement. The report shall include the following information:

- (a) *External Combustion Unit – Steam Generator (Device No. 104992).*
 - (i) The quarterly measured sulfur concentration of the fuel gas calculated as H₂S
 - (ii) The annually analyzed total sulfur content of fuel gas.
 - (iii) The total volume of natural gas combusted in the steam generator, on a daily, monthly, and annual basis in units of standard cubic feet and million BTUs
 - (iv) Days of operation per month.
 - (v) The date and burner windbox oxygen readings in excess of the operational limit.
 - (vi) The windbox oxygen set-point.

- (b) *Fugitive Hydrocarbons.* Rule 331 fugitive hydrocarbon I&M program data (on a quarterly basis):
 - (i) Inspection summary.
 - (ii) Record of leaking components.
 - (iii) Record of leaks from critical components.
 - (iv) Record of leaks from components that incur five repair actions within a continuous 12-month period.
 - (v) Record of component repair actions including dates of component re-inspections.
 - (vi) An updated FHC I&M inventory due to change in component list or diagrams.
 - (vii) Listing of components installed as BACT under APCD Rule 331 and Rule 802 as approved by the APCD.

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Air Pollution Control Officer

AUG 27 2007

Date

Attachments:

- Permit Evaluation for Authority to Construct/Permit to Operate 11405-02

Notes:

- Reevaluation Due Date: March 29, 2009.
- This permit supersedes ATC 11405-01.

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pt70 ap mod - 082307.doc

Table 5.1-1: Operating Equipment Description
 BreitBurn Energy, Orcutt Hill Steam Generator
 ATC/PTO 11405-02

Equipment Item	Description	APCD Device No	Device Specifications			Usage Data		Maximum Operating Schedule				
			Fuel/Feed	%S	Size	Units	Capacity	Units	Load	hr	day	qtr
Fugitive Hydrocarbon Components - CLP Method												
Gas/Condensate Service												
Valve	Accessible	105074	--	--	42 comp-lp	--	--	--	1.0	24	2190	8760
Connection	Accessible	105075	--	--	346 comp-lp	--	--	--	1.0	24	2190	8760
SubTotal:					388 comp-lp							
Combustion - External												
Steam Generator	Steam Generator	104992	FG	0.0023	23 MMBtu/hr	201,480	MMBtu/yr	--	1.0	24	2190	8760

Table 5.1-2: Equipment Emission Factors
 BrentBurn Energy: Orcutt Hill Steam Generator
 ATC/PTO 11405-02

Equipment Item	Description	APCD Device No	Emission Factors						Units
			NOx	ROC	CO	SOx	PM	PM10	
Fugitive Hydrocarbon Components - CLP Method									
Gas/Condensate Service Valve	Accessible	105074	--	0.0183	--	--	--	--	lb/day-clp
Connection	Accessible	105075	--	0.0043	--	--	--	--	lb/day-clp
Combustion - External	Steam Generator	104992	0.011	0.004	0.019	0.004	0.006	0.006	lb/MMBtu

Table 5.1-3: Hourly and Daily Emissions
 BreitBurn Energy, Orcutt Hill Steam Generator
 ATC/PTO 11-05-02

Equipment Item	Description	APCD Device No	NOx		ROC		CO		SOx		PM		PM10		Federal Enforceability
			lb/hr	lb/day											
Fugitive Hydrocarbon Components - CLP Method															
Gas/Condensate Service															
Valve	Accessible	103074	--	--	0.03	0.77	--	--	--	--	--	--	--	--	A
Connection	Accessible	103075	--	--	0.06	1.50	--	--	--	--	--	--	--	--	A
SubTotal:					0.09	2.27									FE
Combustion - External	Steam Generator	104092	0.25	6.05	0.08	1.99	0.44	10.49	0.09	2.04	0.14	3.31	0.14	3.31	FE

Notes:

A - "APCD Only" Emission Limits

FE - "Federally Enforceable" Emission Limits

Table 5.1-4: Quarterly and Annual Emissions
 BreitBurn Energy: Orcutt Hill Steam Generator
 ATC/PTO 11405-02

Equipment Category	Description	APCD Device No	NOx		ROC		CO		SOx		PM		PM10		Federal Enforceability
			TPQ	TPY											
Fugitive Hydrocarbon Components - CLP Method															
Gas/Condensate Service															
Valve	Accessible	103074	--	--	0.04	0.14	--	--	--	--	--	--	--	--	A
Connection	Accessible	103075	--	--	0.07	0.27	--	--	--	--	--	--	--	--	A
SubTotal:					0.10	0.41									FE
Combustion - External	Steam Generator	104992	0.28	1.10	0.09	0.36	0.48	1.91	0.09	0.37	0.15	0.60	0.15	0.60	FE

Notes:

A - "APCD Only" Emission Limits

FE - "Federally Enforceable" Emission Limits

Table 5.2: Total Permitted Facility Emissions
 BreitBurn Energy: Orcutt Hill Steam Generator
 ATC/PTO 11405-02

A. Hourly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	0.25	0.08	0.44	0.09	0.14	0.14
Fugitive Components	--	0.09	--	--	--	--
Totals (lb/hr)	0.25	0.18	0.44	0.09	0.14	0.14

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	6.05	1.99	10.49	2.04	3.31	3.31
Fugitive Components	--	2.27	--	--	--	--
Totals (lb/day)	6.05	4.26	10.49	2.04	3.31	3.31

C. Quarterly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	0.28	0.09	0.48	0.09	0.15	0.15
Fugitive Components	--	0.10	--	--	--	--
Totals (TPQ)	0.28	0.19	0.48	0.09	0.15	0.15

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	1.10	0.36	1.91	0.37	0.60	0.60
Fugitive Components	--	0.41	--	--	--	--
Totals (TPY)	1.10	0.78	1.91	0.37	0.60	0.60

Table 10.4 Santa Barbara County APCD – Equipment List

ATC/PTO Mod 11405 02 / FID: 10482 Orcutt Hill - Steam Generators / SSID: 02667

A PERMITTED EQUIPMENT

1 Portable Steam Generator

<i>Device ID #</i>	104992	<i>Device Name</i>	Portable Steam Generator
<i>Rated Heat Input</i>	23.000 MMBtu/Hour	<i>Physical Size</i>	201480.00 MMBtu/yr
<i>Manufacturer</i>	Smithmoon Steel Company	<i>Operator ID</i>	
<i>Model</i>	14179-65	<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Steam generator will be used on the Dome and Newlove Leases and for use on the Diatomite Project. Unit includes North American, model 4211-21-LE low NOx burners and flue gas recirculation.		

2 Valves - Accessible

<i>Device ID #</i>	105074	<i>Device Name</i>	Valves - Accessible
<i>Rated Heat Input</i>		<i>Physical Size</i>	42.00 Component Leakpath
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

3 Flanges/Connections - Accessible

<i>Device ID #</i>	105075	<i>Device Name</i>	Flanges/Connections - Accessible
<i>Rated Heat Input</i>		<i>Physical Size</i>	346.00 Component Leakpath
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			



PERMIT EVALUATION FOR
 AUTHORITY TO CONSTRUCT/PERMIT TO OPERATE 11405-02
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1.0 INTRODUCTION

1.1 General: The Smithmoon Steel 23 MMBTU/hr natural gas fired steam generator is operated on the Orcutt Hill field (SSID 2667) for the injection of steam to thermally enhance oil production at wells on the Dome and Newlove leases. Since this steam generator is included as a component of the Diatomite thermal enhancement project located on the Newlove Lease, the generator must comply with the NOx and ROC BACT and other limits on Diatomite Project steam generators. The permittee submitted an application for ATC Modification 11405-02 on April 10, 2007 to revise the steam generator NOx emission concentration from 14 ppmv NOx (0.0175 lb/MMBTU) to the Diatomite Project BACT limit of 9 ppmv NOx (0.011 lb/MMBTU) and to revise the generator ROC emission performance standard from 13 ppmvd at 3% O₂ (0.0054 lb/MMBTU) to the Diatomite Project BACT limit of 8.5 ppmvd at 3% O₂ (0.004 lb/MMBTU). The permittee also requested a reduction in the sulfur content limit for natural gas burned in the generator burner from 150 ppmv to the Diatomite approved sulfur content for PUC quality gas of 23 ppmv to be consistent with the requirements on the Diatomite Project. The permittee also requested adjustments to the PM/PM10 emission factors for consistency with Diatomite Project emission factors.

1.2 Permit History: Below is a summary of the New Source Review history of the Orcutt Hill steam generators.

Permit Number	Issuance Date	Permitted Modification
ATC 11405	3/18/2005	This permit authorized the installation of a portable steam generator for use on the Dome and Newlove leases within the BreitBurn Energy – Orcutt Hill stationary source.
ATC 11405 Mod-01	5/16/2005	This permit authorized the steam generator identified in ATC 11405 at the bone-yard west of the Orcutt Hill Field Office, to be installed and fired on propane or natural gas fuel as defined in the SCDP. The steam generator is permitted to operate temporarily as defined in the SCDP condition on the Dome and Newlove leases.
Part 70 Minor Revision (ATC/PTO)	3/29/2006	This permit authorized the operation of the steam generator identified in ATC 11405 at the bone-yard west of the Orcutt Hill

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Permit Number	Issuance Date	Permitted Modification
11405)		Field Office, fired on natural gas fuel. This permit also authorized an increase in the rated heat input and potential to emit of the steam generator, as discovered during source testing completed for ATC 11405 Mod-01 and confirmed by the manufacturer.
Part 70 Minor Revision (ATC/PTO 11405-01)	12/8/2006	This permit modified ATC/PTO 11405 NOx concentration emission limits from 20 ppmvd @3% O ₂ to 14 ppmvd @3% O ₂ .

2.0 PROCESS DESCRIPTION

2.1 One PUC natural gas fired steam generator used to thermally enhance oil production on the Dome and Newlove Leases on the Orcutt Hill production filed stationary source.

3.0 REGULATORY REVIEW

3.1 Rule Exemptions Claimed: None

3.2 Compliance with Applicable Federal Rules and Regulations: This facility is subject to 40 CFR Part 51/52 (*Nonattainment Area Review and Prevention of Significant Deterioration*) and 40 CFR Part 70 (*Operating Permits*).

3.3 Compliance with Applicable State Rules and Regulations:

- Division 26. Air Resources (California Health & Safety Code): The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the APCD. These provisions are APCD-enforceable only.
- California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at the Steam Generators are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are APCD-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.

3.4 Compliance with Applicable Local Rules and Regulations: See Section 9.B permit conditions for the primary APCD Rules applicable to the steam generator. The steam generator is subject to more stringent BACT ROC and NOx emission limits and is expected to operate in compliance with prohibitory Rules. Also, the sulfur content limit is well below the Rule 311 fuel gas limit. Source testing and monitoring will confirm compliance

3.5 Compliance History: This facility does not have a record of enforcement actions to date.

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4.0 ENGINEERING ANALYSIS

4.1 Stationary Combustion Sources:

- 4.1.1 General: The stationary combustion sources associated with the Orcutt Hill Steam Generators consists of a 23 MMBtu/hr field gas fired steam generator. The steam generator will be used for steam injection to thermally enhance oil production in the Diatomite Project located on the Newlove Lease and on the Dome Lease and other locations on the Newlove Lease. The steam generator is fired on PUC quality natural gas fuel.
- 4.1.2 Emission Factors: The emission factors for the 23 MMBtu/hr Smithmoon Steel steam generator are shown in Table 5.1-2. The NO_x, CO, and ROC emission factors are based on burner manufacturer guarantees for the North American Mfg Co. Model 4211-LE Low-NO_x burner equipped with FGR which meets the Rule 342 requirements for NO_x and CO. The PM/PM₁₀ emission factors are based on EPA AP-42. The SO_x emission factor is based on mass balance using a total sulfur content of 23 ppmv for natural gas. This sulfur content was approved by the APCD for use on the Diatomite Project based on sulfur analysis results of Southern California Gas Company utility grade natural gas.
- 4.1.3 Emission Controls: The emission controls for the steam generator includes the use of a North American Low-NO_x burner equipped with Flue Gas Recirculation.
- 4.3 BACT/NSPS/NESHAP/MACT Analyses: The modifications authorized in this ATC-Modification require the permitted 23 MMBTU/hr steam generator to comply with the NO_x and ROC BACT level of control required for the 62.5 MMBTU/hr steam generators permitted under ATC 12084 for the Diatomite Project. The generator burner manufacturer's guarantee of 9 ppmv @ 3% O₂ NO_x and 8.5 ppmv @ 3% O₂ ROC meets the APCD approved BACT level of control for these steam generators. These BACT limits are specified in permit condition C.1. Compliance of the 23 MMBTU/hr steam generator with these NO_x and ROC BACT limits was confirmed at a source test conducted on February 23, 2007 with the generator fired on PUC quality natural gas and the burner combustion controlled by FGR. Generator burner NO_x emissions complied with 9 ppmv @ 3% O₂ when burner windbox oxygen readings were maintained at or below 18.8%. Test results reported negligible ROC and CO emissions.
- 4.4 CEMS/Process Monitoring: A CEM was not required for this project.
- 4.5 Source Testing: Source testing and sampling are required in order to ensure compliance with permitted emission limits, Rule 342 emission standards, and the assumptions that form the basis of this operating permit. The steam generator subject to this permit is required to be source tested annually. See Permit Condition C.1 (c) (iv).

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5.0 EMISSIONS

- 5.1 Emission Calculations: Detailed emission calculation spreadsheets for the fugitive hydrocarbon components and the steam generator may be found in Tables 5.1-3 and 5.1-4 of this permit. These emissions define the Potential to Emit (PTE) for the permitted equipment.
- 5.2 Permitted Emission Limits – Emission Units: This permit modification will result in a decrease in PTE of NO_x, ROC, SO_x, PM, and PM₁₀ due to the permitting action of this modification. CO emissions remain unchanged.
- 5.3 Permitted Emission Limits – Facility Totals: The total PTE for all emission units associated with this facility were analyzed based on reasonable worst-case operating scenarios. The operating characteristics are found in Table 5.1-1 for each emission unit. Table 5.2 shows the total permitted emissions for the facility.
- 5.4 NEI Calculations: Reductions in the NEI as a result of this permit modification are not attributed to the installation of new or modified equipment. NO_x and ROC emission limits were lowered to 9 ppmv NO_x @3% O₂ (0.011 lb/MMBTU) and 8.5 ppmv ROC @3% O₂ (0.004 lb/MMBTU) respectively based on source test verification that the existing North American low NO_x burner with FGR complies with BACT levels of control imposed on the Diatomite Project steam generators. Dedicating the 23 MMBTU/hr steam generator to burning PUC quality natural gas allowed the SO_x emission limits to be based on a lower utility natural gas sulfur content concentration of 23 ppmv instead of a field gas sulfur content of 150 ppmv. PM/PM₁₀ emission factors that are based on EPA AP-42 were revised to agree with those PM/PM₁₀ emission factors used to calculate emission on the Diatomite Project steam generators. For purposes of calculating the facility source NEI, the resultant reductions in steam generator NO_x, ROC, SO_x, and PM/PM₁₀ from the above actions are subtracted from the steam generator emissions in ATC/PTO 11405-01 and reported as a “P2” term. The resulting net emissions increase (NEI) for the Steam Generator facility is equal to the PTE from the steam generator (operating at the level of control under the Diatomite Project) and the fugitive components. The NEI for the facility and the Orcutt Hill stationary source is presented in Attachment B.

6.0 AQIA

- 6.1 General: An Air Quality Impact Analysis was not required for the modifications authorized in this permit.
- 6.2 Health Risk Assessment: An air toxics health risk assessment was not performed for this permitting action.

PERMIT EVALUATION FOR
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7.0 Offset Requirements and ERCs

7.1 Offsets: The modifications allowed in this permit do not trigger offsets. Stationary source NOx and ROC offsets are a requirement of the Diatomite Project under ATC 12084 prior to the initiation of construction of Phase 2 of the Project.

7.2 ERCs: The modifications authorized by this permit do not create emission reduction credits.

8.0 CEQA / LEAD AGENCY

This project is exempt from CEQA pursuant to the Environmental Review Guidelines for the Santa Barbara County APCD (revised November 16, 2000). Appendix A.1 (*APCD Projects Exempt from CEQA*) specifically exempts Permits to Operate. No further action is necessary..

9.0 PUBLIC and AGENCY NOTIFICATION PROCESS/COMMENTS ON DRAFT PERMIT

This project was not subject to public notice. The draft ATC/PTO and Proposed Part 70 Minor Modification was submitted to the permittee and to EPA for review. In a letter dated July 20, 2007, the permittee stated they had no comments. No comments were received from EPA.

10.0 FEE DETERMINATION

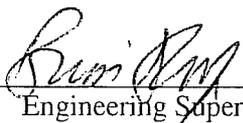
Fees for this permit were assessed pursuant to Schedule A.3 of Rule 210. See Attachment C. The Project Code is 320000 (*Steam Generators*).

11.0 RECOMMENDATION

It is recommended that this permit be granted with the conditions as specified in the permit.

Al Ronyec 
AQ Engineer

8-24-07
Date


Engineering Supervisor

8/24/07
Date

ATTACHMENTS

- A Emission Calculations
- B Facility/Stationary Source NEI
- C Fee Statement
- D Combustion Air Intake Restrictor Plate

ATTACHMENT A
EMISSION CALCULATIONS

FUGITIVE ROC EMISSIONS CALCULATION

ADMINISTRATIVE INFORMATION

Attachment: 10.1
 Company: BreitBurn Energy
 Facility: Steam Generators
 Processed by: LXK
 Date: 2/13/2006
 Path & File Name: \\sbccapcd.org\Shares\Groups\ENGR\WP\770SRCE\PERMITS\O&G-PROD\Braitburn Orcutt\Steam Generators\AP11405\AP11405 FHC Calc - CLP Method (ver 3.0).xls\AP11405(2)

Facility Type: (Choose one) Refinery
 Production Field Offshore Platform

Component:	Specific Type:	APCD Device No.	Count ⁽¹⁾	THC ⁽²⁾ Emission Factor (lb./day-clip)	ROC:THC Ratio	Uncontrolled		Controlled		Controlled	
						ROC Emission (lb./day)	Efficiency	ROC Emission (lb./hr)	ROC Emission (lb./day)	ROC Emission (Tons:Yr)	ROC Emission (Tons:Yr)
Gas Condensate Service	Valve	105074	42	0.295	0.31	3.84	0.80	0.03	0.768	0.035	0.140
	Connection	105075	346	0.07	0.31	7.51	0.80	0.06	1.502	0.069	0.274
	Sub Total		388			11.35		0.09	2.270	0.104	0.414
Oil Service	Valve	105077		0.0041	0.56	0.00	0.80	0.000	0.000	0.000	0.000
	Connection	105078		0.002	0.56	0.00	0.80	0.000	0.000	0.000	0.000
	Sub Total		0			0.000		0.000	0.000	0.000	0.000
Total			388			11.349		0.095	2.270	0.104	0.414

- Notes:
1. Revised Component Counts as provided by RJT on 8/29/05 per AM 11405 inspection.
 2. APCD P&P #6100.060.1998.
 3. APCD P&P #6100.061.1998.
 4. A 80% efficiency is assigned to fugitive components Rule 331 implementation.
 5. Emission Control efficiencies for the "category x" components are identified in "FHC Control Factors (ver 2.0)"

BOILER / STEAM GENERATOR CALCULATION WORKSHEET (ver. 6.0)

DATA

Permit No.	AP11405-02
Owner/Operator	BreitBurn Energy
Facility/Lease	Orcutt Hill
Boiler Type	Steam Generator
Boiler Mfg.	Smithmoon
Boiler Model No.	14179-65
Boiler Serial/ID No.	no data
Boiler Horsepower	no data Bhp
Burner Type	Low-Nox
Burner Mfg.	North American
Burner Model No.	4211-LE
Max. Firing Rate of Burner	23.000 MMBtu/hr
Max. Annual Heat Input	201,480.000 MMBtu/yr
Daily Operating schedule	24 hrs/day
Yearly Load factor (%)	100 %
Fuel Type	PUC Natural Gas
High Heating Value	1,050 Btu/scf
Sulfur Content of Fuel	23.00 pprvrd as H2S
Nitrogen Content of Fuel	- wt. % N
Boiler Classification	Industrial
Firing Type	Other Type
PM Emission Factor	0.0060 lb/MMBtu
PM ₁₀ Emission Factor	0.0060 lb/MMBtu
NO _x Emission Factor	0.0110 lb/MMBtu
SO _x Emission Factor	0.0037 lb/MMBtu
CO Emission Factor	0.0190 lb/MMBtu
ROC Emission Factor	0.0040 lb/MMBtu

RESULTS

	<u>lb/hr</u>	<u>lb/day</u>	<u>TPY</u>
Nitrogen Oxides (as NO ₂)	0.25	6.1	1.11
Sulfur Oxides (as SO ₂)	0.09	2.0	0.37
PM ₁₀	0.14	3.3	0.60
Total Suspended Particulate (PM)	0.14	3.3	0.60
Carbon Monoxide	0.44	10.5	1.91
Reactive Organic Compounds (ROC)	0.09	2.2	0.40
Hourly Heat Release	23.000	MMBtu/hr	
Daily Heat Release	552.000	MMBtu/day	
Annual Heat Release	201,480.000	MMBtu/yr	
Rule 342 Applicability	201.5	Billion Btu/yr	

ATTACHMENT B

FACILITY/STATIONARY SOURCE NEI

Facility Emissions Summary
Orcutt Hill Steam Generators FID 10482

I. This Projects "I" NEI-90

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr										

II. This Facility's "P1s"

Enter all facility "P1" NEI-90s below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 11405 Mod-01	5/16/2005	13.18	2.40	2.81	0.51	34.59	6.31	6.30	1.15	3.15	0.57	3.15	0.57
ATC/PTO 11405	3/29/2006	0.62	0.11	2.44	0.44	-24.10	-4.40	1.98	0.36	0.99	0.18	0.99	0.18
Totals		13.80	2.51	5.25	0.95	10.49	1.91	8.28	1.51	4.14	0.75	4.14	0.75

Notes:
 (1) Facility NEI from IDS.
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

III. This Facility's "P2" NEI-90 Decreases

Enter all facility "P2" NEI-90s below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr										
ATC/PTO 11405-01	12/8/2006	4.14	0.76										
ATC/PTO 11405-02	8/24/2007	3.61	0.66	0.99	0.18			6.24	1.14	0.83	0.15	0.83	0.15
Totals		7.75	1.42	0.99	0.18	0.00	0.00	6.24	1.14	0.83	0.15	0.83	0.15

Notes:
 (1) Facility NEI from IDS.
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

IV. This Facility's Pre-90 "D" Decreases

Enter all facility "D" decreases below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr										
Totals		0.00											

Notes:
 (1) Facility "D" from IDS.
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

V. Calculated This Facility's NEI-90

Table below summarizes facility NEI-90 as equal to: I+ (P1-P2) -D

Term	NOx		ROC		CO		SOx		PM		PM10	
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
Project "I"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P1	13.80	2.51	5.25	0.95	10.49	1.91	8.28	1.51	4.14	0.75	4.14	0.75
P2	7.75	1.42	0.99	0.18	0.00	0.00	6.24	1.14	0.83	0.15	0.83	0.15
D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FNEI-90	6.05	1.09	4.26	0.77	10.49	1.91	2.04	0.37	3.31	0.60	3.31	0.60

Notes:
 (1) Resultant FNEI-90 from above Section I thru IV data.
 (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
 (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

Stationary Source NEI-90 Calculations
 BreitBurn Energy Company LP Orcutt Hill Stationary Source

Facility FNEI-90 at this SSN

Enter all other facility NEI-90s below:

Facility No.	Date Revised	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
3206		0.00	0.00	1.78	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3313		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3314		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3316		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3318		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3319		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3320		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3321		49.50	9.03	52.06	7.44	85.50	15.60	16.66	3.04	27.00	4.93	27.00	4.93
3322		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3323		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3324		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3495		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4104		0.00	0.00	0.55	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4214		11.04	0.23	0.00	0.01	9.27	0.19	0.58	0.01	0.06	0.01	0.06	0.01
10482		6.05	1.09	4.26	0.77	10.49	1.91	2.04	0.37	3.31	0.60	3.31	0.60
1904		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		66.59	10.35	59.25	8.65	105.26	17.70	19.28	3.42	30.37	5.54	30.37	5.54
Notes:		(1) Facility NEI from IDS (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding. (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.											

Calculate This SSN's NEI-90

Table below summarizes Source NEI-90 as equal to sum of each facility's (unless footnoted by an enforceable NEI scenario)

Term	NOx		ROC		CO		SOx		PM		PM10	
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
SSN NEI-90	66.59	10.35	59.25	8.65	105.26	17.70	19.28	3.42	30.37	5.54	30.37	5.54
Notes:		(1) Resultant SSN NEI-90 from above Section I thru IV data. (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding. (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.										

ATTACHMENT C
FEE STATEMENT

ATTACHMENT C

FEE STATEMENT

ATC/PTO No. 11405 - 02

FID: 10482 Orcutt Hill - Steam Generators / SSID: 02667



Santa Barbara County
Air Pollution Control District

Device Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
	Administrative Fee	F.6		354.87			1	1.000		0.00	0.00	354.86
	Device Fee Sub-Totals =											
	Device Fee Total =											
										\$0.00	\$0.00	\$354.86

Permit Fee

Fee Based

354.86

Fee Statement Grand Total = \$354

Notes:

- (1) Fee Schedule Items are listed in APCD Rule 210, Fee Schedule "A".
- (2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

ATTACHMENT D

COMBUSTION AIR INTAKE RESTRICTOR PLATE

