Report

2022 Greenhouse Gas Emissions Verification Report

California State University, San Jose
San Jose, California

Prepared for:
California State University, San Jose

2 August 2023

Project No. 2913716-1200

Locus TECHNOLOGIES

APPENDIX	LIST OF APPENDICES
A	Verification Plan
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CALIFORNIA STATE UNIVERSITY, SAN JOSE
2022 GREENHOUSE GAS VERIFICATION REPORT

1. Facility Overview

1.1 Facility Description

California State University, San Jose (SJSU) is located in San Jose, California. The facility boundary includes all sources at the main campus located west-east between 4th and 10th Street and north-south between San Fernando and San Salvador Streets. Reported sources include one cogeneration unit, three auxiliary boilers located at the cogeneration unit, and 15 utility natural gas meters supplying fuel to campus buildings (boilers, kilns, two 60 kW Tecogens, laboratory equipment, and kitchen equipment).

A topping cycle cogeneration unit is located at the Cooling Plant. The unit provides electricity to the campus to supplement purchases from Pacific Gas and Electric (PG&E) and provides steam for campus heating and cooling. All thermal energy production is consumed onsite. Most of the generated electricity is consumed onsite, but a small portion is provided back to the utility (PG&E). All fuel burned on-site in 2022 was natural gas. All natural gas is supplied by PG&E.

This facility reports their Greenhouse Gas (GHG) emissions to the California Air Resources Board as a cogeneration facility, subject to the requirements in section 95112 of the Greenhouse Gas Mandatory Reporting Regulation. SJSU is also subject to the general requirements in sections 95100 – 95109 and the stationary fuel combustion requirements in 95115.

1.2 Unit Aggregation

SJSU aggregated their sources into three groups. The cogeneration unit was reported under the aggregated source "GP – SJSU Cogen" and PG&E supplies natural gas to this unit through one utility meter. The three auxiliary boilers were reported under the source "GP – Auxiliary Boilers" and PG&E supplies natural gas to this unit through one utility meter.

Natural gas is also supplied to various other campus buildings using 15 utility meters for use in boilers, kilns, laboratory equipment, kitchen equipment, and Tecogens. These additional general stationary combustion sources are grouped in the report as the source labeled "GP – Balance of Campus". The two cogeneration units (Tecogens) are small in size (60 kW, 4.4 therms/hr each), have no generated thermal energy or electricity that leaves the premises of the pool that would play a role in the facility's energy balance, and are not industrial scale in design. ARB confirmed for the 2012 report that these units can be grouped with the stationary combustion units under "GP – Balance of Campus" and do not require reporting under 95112. All natural gas is supplied by PG&E.

A small amount of natural gas consumed at the aggregated source "GP – Balance of Campus" was reported as de minimis emissions. This represents fuel supplied to Duncan Hall. The reporter estimated fuel consumption as the utility meter associated with this building supplies fuel to one small emergency generator (designated as such in an air permit) in addition to other reportable sources.

1.3 Data Acquisition and Calculation Methodologies

1.3.1 Emissions Data

SJSU calculated natural gas emissions for the sources "GP – SJSU Cogen", "GP – Auxiliary Boilers", and "GP – Balance of Campus" based on the Tier 1 methodology using Equation C-1a and C-8a. Natural gas use in therms was determined from monthly invoices from PG&E for sources that were not reported as de minimis. Both of the sources "GP – SJSU Cogen" and "GP – Auxiliary Boilers" are supplied through individual utility meters. DGS invoices track the combined fuel usage, while PG&E invoices provide individual source values. Natural gas consumption for all fuel not designated as de minimis under the source "GP – Balance of campus" was based on 15 utility meters. Many of the invoices did not correspond with the calendar year. SJSU pro-rated the applicable values to correspond with the calendar year.

De minimis emissions from natural gas within the "GP – Balance of Campus" source group were calculated using Tier 1 methodology, but fuel consumption was estimated using alternative methods. For de minimis emissions from natural gas supplied to Duncan Hall, a utility meter exists at this source, but the fuel consumption was estimated due to the exclusion of a small emergency generator. SJSU used equipment specification, operations, and runtime to estimate the fuel consumed during monthly testing.

1.3.2 Product Data

There is no applicable product for this facility.

1.3.3 Generation Data

Electricity provided to PG&E is based on utility meters. SJSU's power purchase agreement with PG&E does not allow them to export power. However, they can incidentally provide the utility with some when their demand does not quite match their production. This occurred in 2022. SJSU gathered this information from online utility tools and cross-checked values with internal meters.

All other electricity generation and disposition values were based on internal meters. Gross generation and parasitic power are both metered. Net generation is determined based on a calculation of gross minus parasitic. Electricity used on-site for industrial purposes is calculated based on net production minus the total exported to the utility. A portion of the produced electricity that is used for on-site industrial processes is used for the production of chilled water in the Cooling Plant. This value is based on the summation of four internal meters that are associated with the various chillers that consume this power.

Total thermal output of the cogeneration unit is determined based on a steam flow meter measuring steam in klb out of the HRSG. The enthalpy of this steam is used to convert the measured value into MMBtu. Then SJSU subtracted the condensate return (using assumptions and a representative enthalpy value) to arrive at the reported value. No steam is provided or sold to other users, so this steam also represents the amount of thermal energy used on-site in industrial processes. A portion of this steam is used in the production of chilled water. SJSU determined this amount based on monthly meter readings at the applicable chiller.

1.3.4 Other Data

Purchased/acquired electricity was calculated in a spreadsheet which collected electricity invoices from 6 meters. None of the invoices corresponded with the calendar month. SJSU prorated the values to correspond with the calendar year.

Purchased/acquired natural gas was calculated as discussed in Section 1.3.1. The "Balance of Campus" purchases include the total purchased natural gas from PG&E at Duncan Hall, which includes the purchased gas used at emergency generators.

1.4 Data Checks Summary

A listing of documents reviewed for this verification, specific data checks, and findings of the final report are provided in the table below.

Source/Data Type	Documents Reviewed	Data Checks/Rationale	Conclusions
General facility information	GHG Monitoring Plan, facility map, air permits, site visit	Reviewed to confirm business operations, facility boundaries and to evaluate conformance with regulations. Evaluated plan against 95105(c). Located each gas and electric meter during the site visit.	No non-conformances or misstatements were identified.
Electricity Purchases/Acquisitions	Spreadsheet calculations, invoices from PG&E, site visit	Electricity invoices reviewed for 6 months. Checked for prorating where applicable.	No non-conformances or misstatements were identified.
Electricity generation and disposition	Internal spreadsheets, energy flow and block diagrams, live data queries during site visit	Electricity production calculation and data processing steps were reviewed. Queried gross, net, and auxiliary electricity generation for 3 months during site visit.	No non-conformances or misstatements were identified.
Steam generation and disposition	Internal spreadsheets, energy flow and block diagrams, live data queries during site visit	Steam production calculation and data processing steps were reviewed. Queried process steam generation for 3 months during site visit	No non-conformances or misstatements were identified.

Source/Data Type	Documents Reviewed	Data Checks/Rationale	Conclusions
Cogeneration unit (GP – SJSU Cogen), Natural gas purchases/acquisitions	Energy flow and block diagrams, nameplate capacity, air permit, PG&E invoices	Checked for required components of the simplified block diagram. Invoices were reviewed for all months for natural gas consumption. Reviewed calculation steps for supplemental fuel fired. Verified fuel meter and nameplate during site visit. Checked air permits.	No non-conformances or misstatements identified.
Cogen Auxiliary Boilers (GP-Auxiliary Boilers), Natural Gas Purchases/Acquisitions	Spreadsheet calculations, natural gas invoices, air permits	Invoices were reviewed for all months for natural gas consumption. Checked air permits to confirm maximum heat input capacity	No non-conformances or misstatements were identified.
Campus Stationary Fuel Combustion Emissions (GP-Balance of Campus), Natural Gas Purchases/Acquisitions	Spreadsheet calculations, natural gas invoices, air permits	Invoices were reviewed for all months. Confirmed proper pro-rating. Viewed all 13 NG meters during site visit.	No non-conformances or misstatements identified.
De minimis - Natural Gas (GP-Balance of Campus)	Spreadsheet calculations, natural gas invoices, Emergency Generator Inspection Report	Invoices were reviewed for the entire year. Checked Emergency Generator Inspection Report to verify run hours. Recalculated emissions using SJSU engineering estimate.	No non-conformances or misstatements identified.

1.5 Measurement Uncertainty Assessment

No measurement uncertainty was identified for the fuel used for all sources except natural gas at Duncan Hall, which was reported as de minimis. The meters that measure natural gas for all sources are maintained by the utility company for billing purposes.

Locus reviewed the calculation methodology for emissions from Duncan Hall reported as de minimis under the "GP – Balance of Campus" source. Emissions from this source account for 0.09% of the total facility emissions. Locus is reasonably assured that emissions from Duncan Hall could not exceed the de minimis threshold and the reported values reasonably estimate emissions from this source.

1.6 Missing Data Substitutions

Missing data substitution was not applied for the 2022 emissions report.

2. Materiality Assessment

2.1 Emissions

Source	Operator Reported (MT CO_2e)	Verifier Calculated (MT CO_2e)	Discrepancy (MT CO_2e)	Difference (%)
GP - SJSU Cogen	20,447.58	20,447.58	0.00	0.00%
GP - Auxiliary Boilers	4,393.01	4,393.01	0.00	0.00%
GP - Balance of Campus (NG)	723.84	723.85	0.01	0.00%
GP - Balance of Campus (de minimis NG)	23.35	23.35	0.00	0.00%
TOTAL	**25,587.78**	**25,587.79**	**0.01**	**0.00%**

Identified discrepancies were all due to rounding in the reporting tool. Based on the verification team's assessment, Locus is reasonably assured that the total facility's covered emissions reported are within ±5% of the true CO_2e emissions.

2.2 Product Data

SJSU does not produce any product required to be reported under 95103(l).

3. Conformance Assessment

Locus assessed the facility's conformance to applicable regulatory methodologies and requirements in the calculation and reporting of the emissions data. Reporting as a cogeneration facility, the facility is subject to the requirements in section 95112 as well as 95115 for stationary combustion sources of the Greenhouse Gas Mandatory Reporting Regulation, in addition to the general requirements in sections 95100 - 95109. The applicable sections of the Greenhouse Gas Mandatory Reporting Regulation are Subparts A and C under 40 CFR Part 98.

3.1 Description of Issues Identified

The facility corrected all non-conformance and misstatement issues identified on the Issues Log (Appendix B).

4. Summary of Findings

4.1 Verification Statement for Emissions

Free of Material Misstatement?	Conforms to the Regulation?	Verification Opinion
Yes	Yes	Positive

Based on Locus' assessment, the Facility's Emissions Data Report is free from material misstatements and conforms to the regulations.

4.2 Verification Statement for Product Data

This facility is not required to report product data, and therefore no verification statement for product data will be issued.

4.3 Additional Findings

No additional findings were identified during the verification of the 2022 emissions report.

APPENDIX A

VERIFICATION PLAN

Verification Plan

FACILITY: California State University, San Jose	**PROJECT NO.:** 2913716-1200
ARB FACILITY ID: 100131	**REPORTING YEAR**: 2022
LEAD VERIFIER: Alan Tuan Jr	
VERIFICATION TEAM MEMBERS: Victor Huanambal Sovero (Independent Reviewer), Nancy-Jeanne LeFevre (Verifier)	

Description of the Facility

California State University, San Jose (SJSU) is located in San Jose, California. The facility boundary includes all sources at the main campus located west-east between 4th and 10th Street and north-south between San Fernando and San Salvador Streets. Reported sources include one cogeneration unit, three auxiliary boilers located at the cogeneration unit, and 15 utility natural gas supplying fuel to campus buildings (boilers, kilns, two 60 kW Tecogens, laboratory equipment, and kitchen equipment).

A topping cycle cogeneration unit is located at the Cooling Plant. The unit provides electricity to the campus to supplement purchases from Pacific Gas and Electric (PG&E) and provides steam for campus heating and cooling. All thermal energy production is consumed onsite. Most of the generated electricity is consumed onsite, but a small portion is provided back to the utility (PG&E). All fuel burned on-site in 2022 was natural gas. All natural gas is supplied by PG&E.

The cogeneration unit is aggregated to the source "GP – SJSU Cogen" and the three auxiliary boilers are aggregated to the source "GP – Auxiliary Boilers". The additional general stationary combustion sources are grouped in the report as the source labeled "GP – Balance of Campus". Natural gas supplied to Duncan Hall listed under "GP – Balance of Campus" is reported as de minimis emissions for the 2022 emission report because a small amount of fuel used by the emergency generator is subtracted from the building's total.

Training or Qualifications of Involved Personnel

Description of training/qualification of personnel involved in developing the emissions data report are described in the reporting entity's GHG Monitoring Plan.

Calculation Methodologies

SJSU calculated natural gas emissions for the sources "GP – SJSU Cogen", "GP – Auxiliary Boilers", and "GP – Balance of Campus" based on the Tier 1 methodology using equation C-1a. Natural gas use in therms was determined from monthly invoices from PG&E for sources that were not reported as de minimis. Both of the sources "GP – SJSU Cogen" and "GP – Auxiliary Boilers" are supplied through individual utility meters. DGS invoices track the combined fuel usage, while PG&E invoices provide individual source meter readings. A total of 15 meters were included in the calculation of natural gas to this facility under the "GP – Balance of Campus" unit. This includes the two Tecogens located at the Aquatic Center. Based on guidance from ARB, these cogeneration units are small in size (60 kW, 4.4 therms/hr each), have no generated thermal energy or electricity that leaves the premises of the pool

that would play a role in the facility's energy balance, and are not industrial scale in design. Therefore, they can be treated as a stationary source aggregated into the "GP – Balance of Campus" group.

De minimis emissions from Duncan Hall were estimated due to the exclusion of a small emergency generator from the invoiced total. The emergency generator was estimated based on equipment specifications, operations and runtime.

There is no applicable product for this facility.

Data Management System

Description of reporting entity's data management system is presented in the reporting entity's GHG Monitoring Plan.

Previous Verifications Reports

Previous verification reports for this reporting entity have been prepared by Locus.

Timeline of Events

Scheduled Completion Date	Task
24 April 2023	Verification Start Date and Kickoff Call
1 May 2023	Send issues log to reporter
23 May 2023	Site Visit
1 May – 6 June 2023	Reporting entity makes corrections to emissions report
28 July 2023	Completion of the Verification Report
30 July 2023	Independent Review
31 July 2023	Issue Verification Statement and Completion of Verification Services
10 August 2023	CARB deadline for submitting the Verification Opinion

Key Data and Documents for Review

The following data and documents will need to be reviewed in order to determine applicability, compliance, and materiality of the 2022 report:

- PG&E Natural Gas invoices

Verification Plan

- PG&E Electricity invoices
- Facility map
- Electricity and thermal generation reports
- Calculation spreadsheets
- Greenhouse Gas Monitoring Plan
- Energy Flow and Block Diagrams
- Air permits
- Site Visit

APPENDIX B

ISSUES LOG

Issues Log

FACILITY: California State University, San Jose
ARB FACILITY ID: 100131
LEAD VERIFIER: Alan Tuan Jr
VERIFICATION TEAM MEMBERS: Victor Huanambal Sovero (Independent Reviewer), Nancy-Jeanne LeFevre (Verifier)

PROJECT NO.: 2913716-1200
REPORTING YEAR: 2022

	Issue	Classification	Description	Reference	Action/Resolution	Date Corrected
1	Account number does not match supporting documentation	misstatement	The reported account numbers/service agreement ID for meter 10023805 (Joe West building) does not match the account number on PG&E invoice.	95115(k)	Account number was updated to match invoice and Cal-EGGRT was updated.	6/6/2023
2	Please provide Air Permits for the entire site, including the cogen, boiler, and emergency NG generators.	non-conformance	Please provide the most recent air permits for the entire site.	98.36(b)(3) 95101(f) 95131(b)(5)	Air permits were provided.	5/23/2023
3	De minimis source appears to be double-counted in GP-Balance of Campus source.	misstatement	The reported total NG usage of 140,782 therms appears to double-count the 4,400 therms for the de minimis source.	95131(b)8)	Calculation error was fixed in the spreadsheet and Cal-EGGRT was updated with the correct value.	6/15/2023
4	Supplemental firing is not reported.	non-conformance	Based on kickoff call, reporter indicated supplemental firing did take place and should be reported.	95115(j) 95112(b)(7)	Cal-EGGRT report was updated with supplemental firing info.	6/6/2023
5	Please provide supporting documentation for gross generation.	additional documentation request	Please provide supporting documentation (FERC reports) to confirm gross generation.	95112(b)(2)	DCS system was queried live during site visit, which resolves this issue.	5/23/2023
6	Please provide supporting documentation for disposition of generated electricity.	non-conformance	To help confirm exported power usage (91MWh), please provide supporting documentation (sales receipts) for disposition of generated electricity.	95112(a)(4)	As reporter explained during the site visit, this energy was not sold, it was inadvertent uncompensated exports to PG&E's grid.	5/23/2023
7	Please provide calibration records for all applicable meters.	non-conformance	Please provide calibration records for all applicable meters including: -Thermal energy (steam) generated -gross/net generation meters -auxiliary load usage meter	95103(k)	Calibration records are not required due to tier 1 calculation method. Reporter only uses revenue grade meter data for emissions calculations. This was discussed during site visit and this issue is resolved.	5/23/2023

Original Submittal Date: 01 May 2023
Revision Number: 1
Last Revised Date: 15 June 2023

Issues Log

FACILITY:	California State University, San Jose	PROJECT NO.:	2913716-1200
ARB FACILITY ID:	100131	REPORTING YEAR:	2022
LEAD VERIFIER:	Alan Tuan Jr		
VERIFICATION TEAM MEMBERS:	Victor Huanambal Sovero (Independent Reviewer), Nancy-Jeanne LeFevre (Verifier)		

Issue	Classification	Description	Reference	Action/Resolution	Date Corrected
Note: This log summarizes the issues in the GHG report identified by the verification team as of the last revision date above. Any issues identified as "non-conformance" or "misstatement", if left unresolved by the verification deadline, would result in an adverse or qualified positive verification statement. Any issues identified as "additional findings" would not prevent the issuance of a positive verification statement.					

APPENDIX C

2022 EMISSIONS REPORT

Facility Name: California State University, San Jose

Facility ARB ID: 100131
Facility Reporting Year: 2022

Confidential Data Indication Set to "No" by Reporter

Certification Statement:

The designated representative or alternate designated representative must sign (i.e., agree to) this certification statement. If you are an agent and you click on "SUBMIT", you are not agreeing to the certification statement, but are submitting the certification statement on behalf of the designated representative or alternate designated representative who is agreeing to the certification statement. An agent is only authorized to make the electronic submission on behalf of the designated representative, not to sign (i.e., agree to) the certification statement.

Facility Representatives

Alternate Designated Representative: Debbie Andres
Designated Representative: Will Watson

Facility Location

Physical Address: One Washington Square
City: San Jose
State / Province: CA
ZIP / Postal Code: 95192
Country:

Latitude: N37 20.16732
Longitude: W121 52.8279

County: SANTA CLARA
Air Basin: SAN FRANCISCO BAY AREA
District: BAY AREA AQMD

Mailing Address: One Washington Square
City: San Jose
State / Province: CA
ZIP / Postal Code: 95192
Country:

Payment Information (required if subject to AB 32 Cost of Implementation Fee Regulation)

Responsible Party for Payment:
Responsible Party Email:
Responsible Party Phone:
Billing Address:
City:
State / Province:
ZIP / Postal Code:
Country:

Owners / Operators

Name:	San Jose State University Trustee's of the California State University

Facility or Entity Total GHG Emissions Summary

CO2 equivalent emissions, excluding biogenic (subparts C – AA):	25,587.780371 Metric Tons
Exempt biogenic CO2 emissions (subparts C – AA):	0 Metric Tons
CO2 equivalent emissions from fuel supplier categories, excluding biogenic (subparts MM – NN):	0 Metric Tons
Exempt biogenic CO2 emissions from fuel supplier categories (subparts MM – NN):	0 Metric Tons
CO2 emissions from CO2 Suppliers (excluding biogenic) (subpart PP):	0 Metric Tons
Exempt biogenic CO2 emissions from CO2 Suppliers (subpart PP):	0 Metric Tons
CO2 equivalent emissions from electric power entities:	0 Metric Tons
Covered CO2 equivalent emissions:	**25,587.780371 Metric Tons**
De Minimis CO2 equivalent emissions:	23.352912 Metric Tons
Maximum allowable De Minimis emissions:	767.633411 Metric Tons

General Facility Reporting Information

NAICS Codes

Primary:	611310 (Colleges, Universities, and Professional Schools)
Second Primary:	
Additional:	

U.S. Parent Companies

Parent Company Name:	Trustee's of the California State University
Address:	401 Golden Shore, Long Beach, CA 90802
Percentage of Ownership Interest:	100%
Country:	UNITED STATES

GHG Report Start Date:	2022-01-01
GHG Report End Date:	2022-12-31
Explanation of any calculation methodology changes during the reporting year:	

EPA e-GGRT Facility IDs

100131

Full or Abbreviated GHG Report:	Full

Company or Entity qualifies for Small Business Status:	No

Electricity Purchases/Acquisitions for Reporting Facilities (95104(d))

Electricity Provider's Name:	Pacific Gas and Electric Company (PG&E)
Provider's ARB ID:	3002
Purchases/Acquisitions:	21,267 MWh

Natural Gas Purchases/Acquisitions for Reporting Facilities [95115(k), 95103(a)(1)]

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	6400506178-9
Purchases/Acquisitions:	1,250.17 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	3168445975-8 000271A
Purchases/Acquisitions:	82,770.1 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	4880418295-3
Purchases/Acquisitions:	2.82 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	4564269832-3
Purchases/Acquisitions:	1,395.63 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural	Yes

gas fuel purchase data with your identified natural gas fuel supplier?	
Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	9817802206-1
Purchases/Acquisitions:	1,057.05 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes
Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	3168445975-8
Purchases/Acquisitions:	385,259.6 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes
Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	0328358199-3
Purchases/Acquisitions:	1,326.05 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes
Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	0203358207-9
Purchases/Acquisitions:	441.86 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes
Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	0078358215-8
Purchases/Acquisitions:	3,867.58 MMBtu

Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	4755418303-9
Purchases/Acquisitions:	324.51 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	4713751639-0
Purchases/Acquisitions:	0.3 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	4564269832-3
Purchases/Acquisitions:	4,383.87 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Natural Gas Supplier Name:	Pacific Gas and Electric Company (PG&E) - Supplier of Natural Gas
Supplier's ARB ID:	104024
Customer Number:	4838752674-1
Purchases/Acquisitions:	30.25 MMBtu
Was this natural gas received directly from an interstate pipeline?	No
Do you grant CARB staff permission to share confidential annual natural gas fuel purchase data with your identified natural gas fuel supplier?	Yes

Cap-and-Trade Facilities: Increases and Decreases in Facility Emissions [95104(f)]:

For facilities subject to Cap-and-Trade requirements: Have total facility emissions increased or decreased more than 5% in relation to the previous data year? [Not applicable for fuel suppliers, CO2 suppliers, electric power entities, and abbreviated reporters.]	No

Note: This section is not subject to the third-party verification requirements

Electricity Generation

Facility has the capacity to generate electricity:	Yes
CEC ID (if applicable):	G0087
EIA ID (if applicable):	10548
FERC QFID (if applicable):	08C030EO1
CAISO ID (if applicable):	NA
Total Facility Nameplate Generating Capacity:	5.785 MW
Facility Type:	Industrial/institutional/commercial facility with electricity generation capacity
Facility's Energy Disposition:	None of the above

Disposition of Generated Electricity [95112(a)(4)]

Generated Electricity for Grid Disposition [95112(a)(4)(A)]

Unit, System Or Group Name	MWh
Retail Provider/Marketer Name	Pacific Gas and Electric Company (PG&E)
Electricity Provided or Sold (MWh)	91
Generated electricity used for other on-site industrial processes that are not in support of or a part of the power generation system:	24,064 MWh

Portion of Generated Electricity used to Produce Cooling Energy For Other End-Users or For On-site Industrial Process Not in Support of the Power Generation System [95112(a)(4)(C)1-2]

Amount of Electricity(MWh)	7,419
User Of Product	Other End-User
Description Of Use	Electricity for Chillers and chilled water system
Reported emissions include emissions from a cogeneration/bigeneration unit:	Yes
Parasitic Steam Use: Generated thermal energy used for supporting power production (excluding steam used directly for generating electricity) [95112(a)(5)(B)]:	

Generated thermal energy for on-site industrial applications not related to electricity generation [95112(a)(5)(C)]: 144,484 MMBtu

Portion of Generated Thermal Energy Used to Produce Cooling Energy or Distilled Water for Other End-Users or For On-Site Industrial Process not in support of the Power Generation System [95112(a)(5)(C)1-2]:

Product Produced: Cooling Energy
Other Product:
User Of Product: On-Site Industrial Process
Description Of Use: Absorber steam usage for producing chilled water
Amount Of Thermal Energy: 6,881 MMBtu

Subpart C: General Stationary Fuel Combustion

Gas Information Details

Gas Name	**Gas Quantity** (Metric Tons)
Methane	0.482108
Exempt Biogenic Carbon dioxide	0
Nitrous Oxide	0.048211
Carbon Dioxide	25,561.360858
Total CO2e	25,587.780371

Total Covered CO2e Emissions: 25,587.780371 (Metric Tons)

Emissions shown above that are claimed as De Minimis (CO2e): 23.352912 Metric Tons

Unit Details

Unit Name: GP- Auxiliary Boilers
Configuration Type: Aggregation of Units
Unit Type: OCS (Other combustion source)
Unit Description: (3) auxiliary boilers in the central plant

Small Unit Aggregation Details

Highest Maximum Rated Heat Input Capacity: 38 mmBtu/hr
Type of Emission Unit for this Group [Note: EGU/EGS must always be separated from other unit types]: Boiler

Electricity Generation Unit Information

Does this configuration have the capacity to generate electricity? No

Emission Details: Configuration-Level Summary (User entered values)

Total exempt annual biogenic CO2 mass emissions (must equal the sum of calculated annual exempt biogenic CO2) (metric tons):	0
Annual CO2 emissions from sorbent (metric tons):	0

Fuel-Specific Emissions Information

Fuel:	**Natural Gas - Natural Gas**
Calculation Methodology:	Tier 1 (Equation C-1a, natural gas billing in therms)
Methodology Start Date:	2013-01-01
Methodology End Date:	2022-12-31
Percentage of Fuel that is Biogenic:	0%

Fuel Emission Details

Total CO2 emissions:	4,388.470702 Metric Tons
Total CH4 emissions:	0.08277 Metric Tons
Total N2O emissions:	0.008277 Metric Tons
Total CH4 emissions CO2e:	2.069253 Metric Tons
Total N2O emissions CO2e:	2.466549 Metric Tons

Equation Inputs

Annual Natural Gas Usage:	827,701 therms
Fuel Specific CO2 Emissions Factor:	53.02 kg CO2/MMBtu
Fuel Specific CH4 Emissions Factor:	0.001 kg CH4/MMBtu
Fuel Specific N2O Emissions Factor:	0.0001 kg N2O/MMBtu

Unit Name:	GP- Balance of Campus
Configuration Type:	Aggregation of Units
Unit Type:	OCS (Other combustion source)
Unit Description:	16 meters identified withing the covered entity boundary

Small Unit Aggregation Details

Highest Maximum Rated Heat Input Capacity:	5.022 mmBtu/hr
Type of Emission Unit for this Group [Note: EGU/EGS must always be separated from other unit types]:	More than one of the above

Fuel	Type of Unit	Percent of Fuel
Natural Gas - Natural Gas	Other (none of the above)	8.9 %
Natural Gas - Natural Gas	Boiler	87.1 %
Natural Gas - Natural Gas	Process heater	4 %

Electricity Generation Unit Information

Does this configuration have the capacity to generate electricity?	No

Emission Details: Configuration-Level Summary (User entered values)

Total exempt annual biogenic CO2 mass emissions (must equal the sum	0

of calculated annual exempt biogenic CO2) (metric tons):

Annual CO2 emissions from sorbent (metric tons): 0

Fuel-Specific Emissions Information

Fuel: **Natural Gas - Natural Gas**

Calculation Methodology: Tier 1 (Equation C-1a, natural gas billing in therms)

Methodology Start Date: 2019-01-01

Methodology End Date: 2022-12-31

Percentage of Fuel that is Biogenic: 0%

Fuel Emission Details

Total CO2 emissions: 23.3288 Metric Tons (Claimed as de minimis)

Total CH4 emissions: 0.00044 Metric Tons (Claimed as de minimis)

Total N2O emissions: 0.000044 Metric Tons (Claimed as de minimis)

Total CH4 emissions CO2e: 0.011 Metric Tons (Claimed as de minimis)

Total N2O emissions CO2e: 0.013112 Metric Tons (Claimed as de minimis)

Equation Inputs

Annual Natural Gas Usage: 4,400 therms

Fuel Specific CO2 Emissions Factor: 53.02 kg CO2/MMBtu

Fuel Specific CH4 Emissions Factor: 0.001 kg CH4/MMBtu

Fuel Specific N2O Emissions Factor: 0.0001 kg N2O/MMBtu

Fuel: **Natural Gas - Natural Gas**

Calculation Methodology: Tier 1 (Equation C-1a, natural gas billing in therms)

Methodology Start Date: 2013-01-01

Methodology End Date: 2022-12-31

Percentage of Fuel that is Biogenic: 0%

Fuel Emission Details

Total CO2 emissions: 723.097364 Metric Tons

Total CH4 emissions: 0.013638 Metric Tons

Total N2O emissions: 0.001364 Metric Tons

Total CH4 emissions CO2e: 0.340955 Metric Tons

Total N2O emissions CO2e: 0.406418 Metric Tons

Equation Inputs

Annual Natural Gas Usage: 136,382 therms

Fuel Specific CO2 Emissions Factor: 53.02 kg CO2/MMBtu

Fuel Specific CH4 Emissions Factor: 0.001 kg CH4/MMBtu

Fuel Specific N2O Emissions Factor: 0.0001 kg N2O/MMBtu

Unit Name: GP- SJSU Cogen

Configuration Type: Aggregation of Units

Unit Type: OCS (Other combustion source)

Unit Description:

Small Unit Aggregation Details

Highest Maximum Rated Heat Input Capacity: 54 mmBtu/hr

Type of Emission Unit for this Group [Note: EGU/EGS must always be separated from other unit types]:	Electricity generating unit/system (EGU/EGS)

Electricity Generation Unit Information

Does this configuration have the capacity to generate electricity?	Yes
Is this configuration a Part 75 unit?	No
Nameplate Generating Capacity:	5.785 MW
Prime Mover Technology:	Combustion Turbine (Single Cycle)
Type of Thermal Energy Generation:	Cogeneration Topping Cycle
95112(b)(2): Gross Generation:	25,399 MWh
95112(b)(2): Net Generation:	24,155 MWh
95112(b)(3): Total Thermal Output (for Cogeneration or Bigeneration):	144,484 MMBtu
95112(b)(8): Other Steam Used for Electricity Generation:	
95112(b)(8): Input Steam to the Steam Turbine (for bottoming cycle cogeneration units only)	
95112(b)(8): Output of the Heat Recovery Steam Generator (for bottoming cycle cogeneration units only)	
95112(b)(7): Supplemental Firing Information	

Fuel Type Percent of the Total Fuel Combusted at This Configuration That Was Used for Supplemental Firing	**Purpose of the Supplemental Firing**
Natural Gas - Natural Gas 13 %	Thermal energy generation

95112(e): Geothermal Steam Utilized:	
The source of geothermal generation:	
95112(f): Stationary Hydrogen Fuel Cell: Fuel Type and Provider (if not reported elsewhere)	
Additional Comments and Information	

Emission Details: Configuration-Level Summary (User entered values)

Total exempt annual biogenic CO2 mass emissions (must equal the sum of calculated annual exempt biogenic CO2) (metric tons):	0
Annual CO2 emissions from sorbent (metric tons):	0

Fuel-Specific Emissions Information

Fuel:	**Natural Gas - Natural Gas**
Calculation Methodology:	Tier 1 (Equation C-1a, natural gas billing in therms)
Methodology Start Date:	2013-01-01
Methodology End Date:	2022-12-31

Percentage of Fuel that is Biogenic:	0%

Fuel Emission Details

Total CO2 emissions:	20,426.463992 Metric Tons
Total CH4 emissions:	0.38526 Metric Tons
Total N2O emissions:	0.038526 Metric Tons
Total CH4 emissions CO2e:	9.63149 Metric Tons
Total N2O emissions CO2e:	11.480736 Metric Tons

Equation Inputs

Annual Natural Gas Usage:	3,852,596 therms
Fuel Specific CO2 Emissions Factor:	53.02 kg CO2/MMBtu
Fuel Specific CH4 Emissions Factor:	0.001 kg CH4/MMBtu
Fuel Specific N2O Emissions Factor:	0.0001 kg N2O/MMBtu

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