DOCKETED	
Docket Number:	23-AFC-01
Project Title:	Morton Bay Geothermal Project (MBGP)
TN #:	250730
Document Title:	Morton Bay Geothermal Project Air Quality Permit Application Completeness Determination
Description:	N/A
Filer:	Jerry Salamy
Organization:	Jacobs
Submitter Role:	Applicant Consultant
Submission Date:	6/23/2023 3:44:31 PM
Docketed Date:	6/23/2023

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

June 22, 2023

Morton Bay Geothermal, LLC
7030 Gentry Rd.
Calipatria, CA 92233

Subject: Permit Application to Construct for the Morton Bay Geothermal Project, located on APN 020-110-007 within the Salton Sea Known Geothermal Resource Area in Imperial County, California.

Dear Jon Trujillo:

The Imperial County Air Pollution Control District (ICAPCD) received a permit application to construct for the Morton Bay Geothermal Project (MBGP) on April 27, 2023. After an initial review of the submitted materials, the ICAPCD deemed the application package incomplete and included a list of identified issues in a letter to the applicant dated May 30, 2023. On June 12, 2023, the applicant responded to this letter and provided additional information. Upon review of the additional information, the ICAPCD is deeming the application complete.

The following issues have been addressed through the applicant's response to the completeness review:

- **BACT Analyses:** The applicant confirmed the BACT analysis for the Elmore North facility is intended to be representative of the MBGP emission sources.
- **Confidential Appendix:** The applicant provided the requested confidential appendix which includes detailed mass balance information.
- **Equipment IDs:** The applicant confirmed that they have not assigned unique IDs to identify equipment.
- **Other Facilities:** The applicant confirmed that no other stationary sources are owned or operated by Morton Bay Geothermal, LLC in California outside of the emissions sources included in the application.
- **Electronic Files:** The applicant provided electronic versions of the emission calculations and modeling files.
- **Storage Tanks/Vessels:** The applicant confirmed that tanks containing toxic air contaminants (TACs), or volatile organic compounds (VOCs) are present and provided emissions calculations and material contents for the tanks. The applicant confirmed that none of the tanks have control devices.
- **Operational Trips:** The applicant explained where in the application's emissions calculations emissions associated with operational onsite and offsite trips are represented.

Please be aware that additional information may be needed during the course of our full engineering evaluation. Your cooperation is key to the timely review of the applications. If you have any questions regarding your permit applications, please contact me at 442-265-1800.

Sincerely,

Jesus A. Ramirez
APC Division Manager

Morton Bay Geothermal LLC
4124 NW Urbandale Drive
Urbandale, IA 50322

Jon Trujillo
General Manager, Geothermal Development

June 12, 2023

Mr. Jesus Ramirez
APC Division Manager
Imperial County Air Pollution Control District
150 South Ninth Street
El Centro, California 92243

RE: Permit Application to Construct the Morton Bay Geothermal Project – Imperial County Air Pollution Control District Incompleteness Determination

Dear Mr. Ramirez:

Morton Bay Geothermal, LLC (the Applicant), an indirect, wholly owned subsidiary of BHE Renewables, LLC, submitted an Imperial County Air Pollution Control District (ICAPCD) Application to Construct (ATC) for the Morton Bay Geothermal Project (MBGP) on April 27, 2023. This application was submitted to ICAPCD in conjunction with an Application for Certification (AFC) that was filed with the California Energy Commission (CEC) on April 18, 2023[1]. In a letter dated May 30, 2023, ICAPCD identified several issues that resulted in an incompleteness determination for the application package.

The Applicant has reviewed each of the completeness issues identified by ICAPCD and provided a response to each issue in the table below, with any necessary additional data attached to this letter. As requested by ICAPCD, Morton Bay Geothermal, LLC does not own or operate any current or planned emission sources other than those included in the MBGP application. Therefore, demonstration of compliance with the Clean Air Act and emission limitations is not currently applicable to Morton Bay Geothermal, LLC.

Issue Topic	Identified Issue	Applicant Response
BACT Analyses	The BACT analysis in Appendix 5.1E of the MBGP application contains the BACT analysis for the Elmore North location. Please clarify whether this analysis is mislabeled, or if the submitted analysis for the Elmore North location is intended to be representative of the Morton Bay location.	The BACT Analysis presented in Appendix 5.1E of the MBGP application is an analysis that was performed for the existing Elmore Facility. This Elmore Facility BACT analysis is considered representative of the proposed geothermal sources at the MBGP and serves as the BACT analysis for the MBGP application.
Confidential Appendix	The application is lacking in detailed mass balance information but refers to a confidential appendix (not supplied) with this information. To help us further track material flows, please	This confidential appendix is included as Attachment A of this letter and is **submitted with the request of remaining confidential** as it contains proprietary information crucial to MBGP's planned operations.

[1] The CEC website for the MBGP proceeding is available at - https://www.energy.ca.gov/powerplant/steam-turbine/morton-bay-geothermal-project-mbgp

Morton Bay Geothermal LLC
4124 NW Urbandale Drive
Urbandale, IA 50322

Jon Trujillo
General Manager, Geothermal Development

	provide a copy of this confidential appendix.	Analytical data accompanying the process flow diagram shown in this confidential appendix are presented in Appendix 5.1A of the ATC.
Equipment IDs	The application did not appear to assign unique equipment IDs. Please confirm that no unique IDs are assigned to identify equipment.	Specific equipment IDs have not been developed for equipment at the MBGP.
Storage Tank Vessels	We noted that the application (e.g., Section 2.3.3.4.15 Yard Tanks) refers to various chemical holding tanks but does not specify the contents of those tanks. Please provide additional information on the chemicals and materials stored in tanks and other storage vessels. Further, if any tanks contain toxic air contaminants (TACs) or volatile organic compounds (VOCs), please provide information on potential emissions and any control devices installed on tanks, if present.	The MBGP will include multiple tanks for storing various liquids, only several of which would be expected to emit VOCs based on the composition of the stored liquid. Emission calculations for these select tanks have been developed and included in Attachment B of this letter. None of the tanks at the MBGP will have emission control devices beyond best business practices.
Other Facilities	Please provide confirmation that all other stationary sources owned or operated by Morton Bay Geothermal in California which are subject to emissions limitations, if any, are either in compliance or on a schedule for compliance with all applicable emissions limitations under the Clean Air Act (CAA) per ICAPCD Rule 207(C)(5)(c).	Morton Bay Geothermal, LLC does not own or operate any current or planned emission sources other than those included in the MBGP application.
Operational Trips	We did not locate information on operational trips, such as worker, vendor, or haul trips associated with facility operations. Please provide this information as applicable to the facility's normal operation.	Emissions associated with operational onsite support vehicles and worker and haul truck trips are included in Appendix 5.1A in the "O&M Emission Calculations" tables of the MBGP ATC as "Onsite Pickup Truck", "Off-Site Pickup Trucks", and "Off-Site Haul Trucks", respectively. Additionally, the Off-Site Haul Truck category is inclusive of operational vendor and haul trips. The miles traveled associated with these trips has been increased to more closely align with vehicle trip data presented in

Morton Bay Geothermal LLC
4124 NW Urbandale Drive
Urbandale, IA 50322

Jon Trujillo
General Manager, Geothermal Development

		Section 5.12.2.1.2 of the AFC. These emission increases do not change Project permitting and significance conclusions. Calculations are included in the electronic files submitted with this letter.
Electronic Files	To facilitate our review and validate the methodology and emissions calculations, please provide electronic versions of the emission calculations and modeling files.	Electronic copies of the air quality and public health modeling files and emission calculations from Appendices 5.1A and 5.1D of the MBGP ATC will be provided via electronic file transfer protocol (ftp) by Jacobs Engineering.

The Applicant looks forward to working with the ICAPCD during its review of these ATC materials and would like to request confirmation that the responses and additional data provided with this letter are adequate for ICAPCD to issue a completeness determination no later than June 26, 2023, thereby allowing the Applicant to fully respond to the CEC's data adequacy review. Please contact Anoop Sukumaran at (760) 348-4275 (email address: Anoop.Sukumaran@calenergy.com) or Andrew Dunavent at (707) 372-7810 (email address: Andrew.Dunavent@jacobs.com) if you have any questions or if you need additional information.

Sincerely,

Anoop Sukumaran
Digitally signed by Anoop Sukumaran
Date: 2023.06.12 09:10:35 -07'00'

Anoop Sukumaran – Director, Environmental Services
on behalf of Jon Trujillo- General Manager, Geothermal Development

cc: Jon Trujillo/BHE Renewables
Linda Poksay/SWCA
Andrew Dunavent/Jacobs
Jerry Salamy/Jacobs

Morton Bay Geothermal LLC
4124 NW Urbandale Drive
Urbandale, IA 50322

Jon Trujillo
General Manager, Geothermal Development

Attachment A: Confidential Appendix

(See Transaction Number 250254)

Morton Bay Geothermal LLC
4124 NW Urbandale Drive
Urbandale, IA 50322

Jon Trujillo
General Manager, Geothermal Development

Attachment B: Tank Emission Calculations

Morton Bay Geothermal Project

ICAPCD Completeness Determination Response

MBGP Tank Emission Calculations

June 2023

Emission Source	Tank Size (gallons)	Annual Throughput (gal/year)	VOC Emission Factor (lbs/1000 gal)	Annual VOC Emissions (TPY)
3.49 MW Diesel Emergency Generator Tank [a]	<10,000	10,950	2.80E-03	1.53E-05
3.49 MW Diesel Emergency Generator Tank [a]	<10,000	10,950	2.80E-03	1.53E-05
3.49 MW Diesel Emergency Generator Tank [a]	<10,000	10,950	2.80E-03	1.53E-05
3.49 MW Diesel Emergency Generator Tank [a]	<10,000	10,950	2.80E-03	1.53E-05
2.7 MW Diesel Emergency Generator Tank [a]	<10,000	8,750	2.80E-03	1.23E-05
Diesel Fire Pump Tank [a]	<10,000	300	2.80E-03	4.20E-07
Used Oil Tank [b]	<10,000	4,000	9.21E-01	1.84E-03
Turbine (TG) Lube Oil Console [b]	<10,000	16,380	9.21E-01	7.54E-03
Above Ground Diesel Fuel Tank for Equipment [a]	10,000	52,850	2.80E-03	7.40E-05
Norms Inhibitor Tank [c]	<10,000	110,000	9.21E-01	5.07E-02

[a] Emission factor based upon South Coast Air Quality Management District's *Supplemental Instructions for Liquid Organic Storage Tanks* (October 2019) for service station diesel above ground tanks. Tank throughputs based on each engine's hourly fuel throughput and annual hours of operation. The above ground diesel fuel tank is used to resupply the individual diesel engine tanks.

[b] Emission factor based upon South Coast Air Quality Management District's *Supplemental Instructions for Liquid Organic Storage Tanks* (October 2019) for service station gasoline above ground tanks. This emission factor is conservative as gasoline is more volatile than the Project tank constituent. The used oil tank and turbine lube reservoir throughput assume one full tank volume every 90 days.

[c] Emission factor based upon South Coast Air Quality Management District's *Supplemental Instructions for Liquid Organic Storage Tanks* (October 2019) for service station gasoline above ground tanks. This emission factor is conservative as gasoline is more volatile than the Project tank constituent. Tank throughput assumes up to 13 deliveries per year.

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

May 30, 2023

Morton Bay Geothermal, LLC
7030 Gentry Rd.
Calipatria, CA 92233

Subject: Permit Application to Construct for the Morton Bay Geothermal Project, located on APN 020-100-007 within the Salton Sea Known Geothermal Resource Area (KGRA) in Imperial County, California.

Dear Jon Trujillo:

The Imperial County Air Pollution Control District (ICAPCD) received a permit application to construct for the Morton Bay Geothermal Project (MBGP) on April 27, 2023. As a first step in our review process, we have briefly evaluated the application to determine whether it is complete and ready for review. Based on our initial review of the submitted materials it has been determined that the application package is incomplete.

The following issues have been identified during the completeness review:

- **BACT Analyses:** The BACT analysis in Appendix 5.1E of the MGBP application contains the BACT analysis for the Elmore North location. Please clarify whether this analysis is mislabeled, or if the submitted analysis for the Elmore North location is intended to be representative of the Black Rock location.

- **Confidential Appendix:** The application is lacking in detailed mass balance information but refers to a confidential appendix (not supplied) with this information. To help us further track material flows, please provide a copy of this confidential appendix.

- **Equipment IDs:** The application did not appear to assign unique equipment IDs. Please confirm that no unique IDs are assigned to identify equipment.

- **Storage Tanks/Vessels:** We noted that the application (e.g., Section 2.3.3.6.15 Yard Tanks) refers to various chemical holding tanks but does not specify the contents of those tanks. Please provide additional information on the chemicals and materials stored in tanks and other storage vessels. Further, if any tanks contain toxic air contaminants (TACs) or volatile organic compounds (VOCs), please provide information on potential emissions and any control devices installed on tanks, if present.

- **Other Facilities:** Please provide confirmation that all other stationary sources owned or operated by Morton Bay Geothermal in California which are subject to emissions limitations, if any, are either in compliance or on a schedule for compliance with all applicable emissions limitations under the Clean Air Act (CAA) per ICAPCD Rule 207(C)(5)(c).

- **Operational Trips:** We did not locate information on operational trips, such as worker, vendor, or haul trips associated with facility operations. Please provide this information as applicable to the facility's normal operation.

In addition to the items identified above required to deem the application complete, we request the following:

- **Electronic Files:** To facilitate our review and validate the methodology and emissions calculations, please provide electronic versions of the emission calculations and modeling files.

Please be aware that additional information may be needed during the course of our full engineering evaluation. Your cooperation is key to the timely review of the application. If you have any questions regarding your permit application, please contact AT 442-265-1800.

Sincerely,

Jesus A. Ramirez
APC Division Manager
ICAPCD

Morton Bay Geothermal LLC
4124 NW Urbandale Drive
Urbandale, IA 50322

Jon Trujillo
General Manager, Geothermal Development

April 24, 2023

Mr. Jesus Ramirez
APC Division Manager
Imperial County Air Pollution Control District
150 South Ninth Street
El Centro, California 92243

RE: Morton Bay Geothermal, LLC Imperial County Air Pollution Control District Permit Application to Construct the Morton Bay Geothermal Project

Dear Mr. Ramirez:

Morton Bay Geothermal, LLC (the Applicant), an indirect, wholly owned subsidiary of BHE Renewables, LLC (BHER), is submitting five copies of the application materials for an Imperial County Air Pollution Control District (ICAPCD) Authority to Construct (ATC) for the Morton Bay Geothermal Project (MBGP). This application is being submitted to ICAPCD in conjunction with an Application for Certification (AFC) that was submitted to the California Energy Commission (CEC) on April 18, 2023[1].

The MBGP will provide an efficient method for meeting power needs in California by providing firm, clean power from a renewable geothermal source. The Project design applies known equipment, operational lessons learned, and corrosion-resistant materials for a planned operational life of 40 years. MBGP's maximum continuous rating is approximately 157 megawatts (MW) gross output, with an expected net output of approximately 140 MW.

The MBGP consists of a proposed geothermal Resource Production Facility, a geothermal-powered Power Generation Facility, and associated facilities. The RPF includes geothermal production wells, pipelines, fluid and steam handling facilities, a solid handling system, a Class Il surface impoundment, a service water pond, a retention basin, process fluid injection pumps, power distribution centers, and injection wells. The RPF also includes steam-polishing equipment designed to provide turbine-quality steam to the PGF. The PGF electrical power is generated using a triple pressure condensing turbine/generator set with a surface condenser, a non-condensable gas (NCG) removal system, an NCG sparger abatement system (located within the cooling tower basin), condensate bio-oxidation abatement systems adjacent to the cooling tower, a heat rejection system cooling tower, and a generator step-up transformer. Heat rejection for the steam turbines will be accomplished with a mechanical draft counterflow wet cooling tower. The PGF also includes a 230 kilovolt substation, power distribution centers, and six emergency standby diesel-fueled engines (five generators and one fire water pump). The project also includes a control building, a service water pond, and other ancillary facilities.

The contents of this application package include the required ICAPCD forms and the following sections from the AFC:

- Section 1.0: Executive Summary
- Section 2.0: Project Description

[1] The CEC website for the project - https://www.energy.ca.gov/powerplant/steam-turbine/morton-bay-geothermal-project-mbgp

Morton Bay Geothermal LLC
4124 NW Urbandale Drive
Urbandale, IA 50322

Jon Trujillo
General Manager, Geothermal Development

- Section 5.1: Air Quality (includes Appendices 5.1A through 5.1E)
- Section 5.9: Public Health (includes Appendices 5.9A through 5.9B)

As described in Sections 5.1 and 5.9 of the AFC, the Applicant conducted a health risk assessment (HRA) and a criteria pollutant air quality impact analysis consistent with the current practice of estimating emissions from the cooling towers, geothermal brine systems, and diesel combustion engines and associated modeling guidelines. Emissions of criteria pollutants, air toxics, and greenhouse gases associated with operation of the MBGP were estimated using emission factors approved by the California Air Resources Board and the U.S. Environmental Protection Agency or representative analytical data from other geothermal power plants in the area, as detailed in Section 5.1 and Appendices 5.1A and 5.1B of the AFC. Section 5.9 of the AFC also summarizes the air toxics emissions used for the HRA. The results of these analyses indicate that MBGP would result in less than significant impacts with respect to air quality and public health. The MBGP is also not expected to require any offsets or emission reduction credits.

Emissions to the air due to MBGP operation will be minimized through the use of high-efficiency drift eliminators and a combination of hydrogen sulfide sparging and bio-oxidation box, which are considered best available control technology for the MBGP's cooling towers and geothermal processes, respectively. The diesel-fired emergency generators will be Tier 4 certified engines, meaning diesel particulate matter and criteria pollutant emissions will be minimized through the use of Tier 4 controls, including selective catalytic reduction, diesel particulate filtration, and a diesel oxidation catalyst.

Attached to this application is a check in the amount of $213.00 for the requisite application filing fee.

The Applicant looks forward to working with the ICAPCD during the review of these application materials and the issuance of the ICAPCD ATC. Please contact Anoop Sukumaran at (760) 348-4275 (email address: Anoop.Sukumaran@calenergy.com) or Andrew Dunavent at (707) 372-7810 (email address: Andrew.Dunavent@jacobs.com) if you have any questions or if you need additional information.

Sincerely,

Jon Trujillo
General Manager, Geothermal Development

AIR POLLUTION CONTROL DISTRICT

150 S 9th Street
El Centro, CA 92243
P. 442.265.1800
F. 442.265.1799

APPLICATION FOR

- [X] Authority to Construction
- [ ] New
- [ ] Amendment
- [ ] Permit to Operate
- [ ] Transfer of Ownership
- [ ] Relocation
- [ ] Name change
- [ ] Emission Credit Banking
- [ ] Change of Permit Conditions
- [ ] Equipment Modification or Addition

PERMIT NUMBER (if any) _____

1. Name of Applicant: **Morton Bay Geothermal, LLC**
2. Responsible Person: **Jon Trujillo**
3. Mailing Address: **7030 Gentry Road**
4. Title: **GM, Geothermal Development**
5. City: **Calipatria** | State: **CA** | Zip Code: **92233**
6. Phone: **(760) 604-0045** | Cell Phone:
7. Type of Organization (Corp., Government, Individual, etc.): **Corporation**
8. Brief Description of Project/Activity: **Geothermal Resource Production and Power Generation Facility**
9. Location of Project/Activity: **APN 020-100-007 Bounded by McDonald Road, Davis Road, and Schrimpf Road**
10. Property Owner: **BHE Renewables, LLC**
11. Person in Charge at Location: **Anoop Sukumaran**
12. Title: **Director**
13. Phone Number: **(760) 348-4275**
14. Anticipated Date of Construction: Start **Apr 01, 2024**
15. Anticipated Life of Project: **40 Years** — Completion **Aug 31, 2026**
16. Estimated Emissions

	Uncontrolled lbs/day	Controlled lbs/day
For largest single pollutant	See Attachments.	See Attachments.
Total for all emissions	See Attachments.	See Attachments.

17. Other Permits Have Been or Will be Obtained From: **Application for Certification was filed with the California Energy Commission on 04/18/23.**
18. Plot plans, flow charts, calculations, equipment description and other information required by "List and Critieria" attached.
19. The information previously submitted with **N/A** is still valid and no changes have been made except as shown on attachement.
20. Request for confidential handling of attached.
21. Total pages attached **817**

"I am familiar with the Rules and Regulations of the Imperial County Air Pollution Control District and I certify that the operation of the plant and/or equipment which is subject to the application will comply with said Rules and Regulations."

4/24/2023
Date


Signature of Responsible Person

OFFICE USE ONLY All payments must be made by Check or Money Order. Cash will not be accepted. An application fee of $213.00 is due upon submission of an application for 2023. Thank you.

Date application submitted: _____ **Amount paid:** _____

Received by: _____ **Receipt Number:** _____

Staff Comments:

150 South Ninth Street
El Centro, CA 92243
(442) 265-1800

IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

NOTICE

An application will not be processed unless ALL fields in "Section A" are complete.

Section A

Company/Agency: **Morton Bay Geothermal, LLC**	Phone Number: **760-348-4275**
Equipment Location: **Morton Bay Geothermal Project**	Existing Permit # (if any):
Engine Manufacturer: **Clarke**	Model Number: **JU6H-UFADP0**
Engine Serial Number: **TBD**	EPA/C.A.R.B. 12-character Engine Family Name: **NJDXL13.5103**
Manufacturer Date: **TBD**	Is unit equipped with a non-resettable hour meter? ☒ Yes ☐ No

Utilization of Engine

- ☐ Electrical Generator _____ Kw
- ☐ Compressor Driver _____ cfm
- ☐ Pump Driver _____ gpm
- ☒ Fire Pump
- ☐ Rental
- ☐ Portable
- ☐ Other _____

Fuel Information — Air to Fuel Ratio _____

- ☐ Natural Gas
- ☐ Gasoline
- ☐ LPG
- ☐ Other _____
- ☐ Digester Gas
- ☐ Landfill Gas
- ☒ Diesel Oil

Engine Size (Manufacturers Rating) BHP@ **316** RPM **2400**

Operating Schedule

1 Hr/Days **1** Days/Week

50 Weeks/Year Maximum Operating Hours **Varies** Hrs/Days

☒ Emergency Only (indicate hours operated for testing & maintenance)

Section B

Is this unit designed to be moved or carried from one location to another, or does it have wheels, skids,

☐ Yes (Portable) ☒ No (Stationary)

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(442) 265-1800

IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

Section C

Engine Description — Number of Cylinders: 6

- ☐ Two Cycle or ☒ Four Cycle
- ☒ Lean Burn or ☐ Rich Burn
- ☒ Turbocharged ☐ Turbocharged/Aftercooled ☐ Naturally Aspirated

Sulfer Content of Disgester Gas, Landfill Gas or Diesel
15 ppm

Maximum Rated Fuel Consumption (Gas/Hr, Cu. Ft/Hr)
6 gal/hr

Average Load Percentage % 100

Energy Recovery From Exhaust ☐ Yes ☒ No If yes, please explain

Emission Control Device ☒ Yes ☐ No If yes, please explain
OEM Manufacturer Certification

Emission Data:

POLLUTANT	EMISSION BEFORE CONTROL Gr/BHP PPM Lb/Day	EMISSION AFTER CONTROL Gr/BHP PPM Lb/Day
NMHC or TOC	N/A	0.07
NOx	N/A	2.56
CO	N/A	0.6
PM10	N/A	0.08
SOx	N/A	<0.00001

☒ Manufacturer Data ☐ Source Test Data

Section D

Stationary Engines Only

Stack Dimensions
Height Above Grade 15 Ft Height Above Building 5 Ft

Exhaust Cross Section
Diameter 6 In Width In Length In

Exhaust Temperature 737 °F Direction of Stack Outlet ☐ Horizontal ☒ Vertical ☐ Other

End of the Stack ☐ Open ☐ Capped ☒ Flapper Valve

Stack Serves
- ☒ Only this equipment
- ☐ Other equipment also

Exhaust Flow 1995 CFM
Total Flow Rate CFM
Exhaust Pressure CFM

Receptor Information. A receptor is a residence or business whose occupants could be exposed to toxic emissions from your facility.

Nearest offsite receptor Hudson Ranch Power Plant
Distance to nearest offsite receptor 1100 feet
Distance to nearest school grounds >10,000 feet

Andrew Dunavent
Name of preparer

4/24/2023
Date

150 South Ninth Street
El Centro, CA 92243
(442) 265-1800

IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

NOTICE

An application will not be processed unless ALL fields in "Section A" are complete.

Section A

Company/Agency: **Morton Bay Geothermal, LLC**	Phone Number: **760-348-4275**
Equipment Location: **Morton Bay Geothermal Project**	Existing Permit # (if any):
Engine Manufacturer: **Kohler**	Model Number: **KD62V12**
Engine Serial Number: **TBD**	EPA/C.A.R.B. 12-character Engine Family Name: **TBD**
Manufacturer Date: **TBD**	Is unit equipped with a non-resettable hour meter? ☒ Yes ☐ No

Utilization of Engine

- ☒ Electrical Generator **2700** Kw
- ☐ Compressor Driver _____ cfm
- ☐ Pump Driver _____ gpm
- ☐ Fire Pump
- ☐ Rental
- ☐ Portable
- ☐ Other _____

Fuel Information

Air to Fuel Ratio _____

- ☐ Natural Gas
- ☐ Gasoline
- ☐ LPG
- ☐ Other _____
- ☐ Digester Gas
- ☐ Landfill Gas
- ☒ Diesel Oil

Engine Size (Manufacturers Rating) BHP@ **3621** RPM **1800**

Operating Schedule

1 Hr/Days **1** Days/Week

50 Weeks/Year Maximum Operating Hours **Varies** Hrs/Days

☒ Emergency Only (indicate hours operated for testing & maintenance)

Section B

Is this unit designed to be moved or carried from one location to another, or does it have wheels, skids,

☐ Yes (Portable) ☒ No (Stationary)

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AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

Section C

Engine Description — Number of Cylinders: 12

- ☐ Two Cycle or ☒ Four Cycle
- ☒ Lean Burn or ☐ Rich Burn
- ☒ Turbocharged ☐ Turbocharged/Aftercooled ☐ Naturally Aspirated

Sulfer Content of Disgester Gas, Landfill Gas or Diesel
15 ppm

Maximum Rated Fuel Consumption (Gas/Hr, Cu. Ft/Hr)
175 gal/hr

Average Load Percentage % 100

Energy Recovery From Exhaust ☐ Yes ☒ No If yes, please explain

Emission Control Device ☒ Yes ☐ No If yes, please explain
Tier 4 Certified Unit with SCR, Diesel Oxidation Catalyst and Diesel Particulate Filter

Emission Data:

POLLUTANT	EMISSION BEFORE CONTROL Gr/BHP PPM Lb/Day	EMISSION AFTER CONTROL Gr/BHP PPM Lb/Day
NMHC or TOC	N/A	0.14
NOx	N/A	0.5
CO	N/A	2.61
PM10	N/A	0.02
SOx	N/A	<0.00001

☒ Manufacturer Data ☐ Source Test Data

Section D

Stationary Engines Only

Stack Dimensions
Height Above Grade 20.5 Ft Height Above Building 6 Ft

Exhaust Cross Section
Diameter 12.6 In Width In Length In

Exhaust Temperature 914 °F Direction of Stack Outlet ☐ Horizontal ☒ Vertical ☐ Other

End of the Stack ☐ Open ☐ Capped ☒ Flapper Valve

Stack Serves
- ☒ Only this equipment
- ☐ Other equipment also

Exhaust Flow 19467 CFM
Total Flow Rate CFM
Exhaust Pressure CFM

Receptor Information. A receptor is a residence or business whose occupants could be exposed to toxic emissions from your facility.

Nearest offsite receptor Hudson Ranch Power Plant
Distance to nearest offsite receptor 1350 feet
Distance to nearest school grounds >10,000 feet

Andrew Dunavent
Name of preparer

4/24/2023
Date

150 South Ninth Street
El Centro, CA 92243
(442) 265-1800

IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

NOTICE

An application will not be processed unless ALL fields in "Section A" are complete.

Section A

Company/Agency: **Morton Bay Geothermal, LLC**	Phone Number: **760-348-4275**
Equipment Location: **Morton Bay Geothermal Project**	Existing Permit # (if any):
Engine Manufacturer: **Kohler**	Model Number: **KD83V16**
Engine Serial Number: **TBD**	EPA/C.A.R.B. 12-character Engine Family Name: **TBD**
Manufacturer Date: **TBD**	Is unit equipped with a non-resettable hour meter? ☒ Yes ☐ No

Utilization of Engine

- ☒ Electrical Generator **3490** Kw
- ☐ Compressor Driver _____ cfm
- ☐ Pump Driver _____ gpm
- ☐ Fire Pump
- ☐ Rental
- ☐ Portable
- ☐ Other _____

Fuel Information

Air to Fuel Ratio _____

- ☐ Natural Gas
- ☐ Gasoline
- ☐ LPG
- ☐ Other _____
- ☐ Digester Gas
- ☐ Landfill Gas
- ☒ Diesel Oil

Engine Size (Manufacturers Rating) BHP@ **4680** RPM **1800**

Operating Schedule

1 Hr/Days **1** Days/Week

50 Weeks/Year Maximum Operating Hours **Varies** Hrs/Days

☒ Emergency Only (indicate hours operated for testing & maintenance)

Section B

Is this unit designed to be moved or carried from one location to another, or does it have wheels, skids,

☐ Yes (Portable) ☒ No (Stationary)

150 South Ninth Street
El Centro, CA 92243
(442) 265-1800

IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

Section C

Engine Description — Number of Cylinders: 16

- ☐ Two Cycle or ☒ Four Cycle
- ☒ Lean Burn or ☐ Rich Burn
- ☒ Turbocharged ☐ Turbocharged/Aftercooled ☐ Naturally Aspirated

Sulfer Content of Disgester Gas, Landfill Gas or Diesel
15 ppm

Maximum Rated Fuel Consumption (Gas/Hr, Cu. Ft/Hr)
219 gal/hr

Average Load Percentage % 100

Energy Recovery From Exhaust ☐ Yes ☒ No If yes, please explain

Emission Control Device ☒ Yes ☐ No If yes, please explain
Tier 4 Certified Unit with SCR, Diesel Oxidation Catalyst and Diesel Particulate Filter

Emission Data:

POLLUTANT	EMISSION BEFORE CONTROL Gr/BHP PPM Lb/Day	EMISSION AFTER CONTROL Gr/BHP PPM Lb/Day
NMHC or TOC	N/A	0.14
NOx	N/A	0.5
CO	N/A	2.61
PM10	N/A	0.02
SOx	N/A	<0.00001

☒ Manufacturer Data ☐ Source Test Data

Section D

Stationary Engines Only

Stack Dimensions
Height Above Grade 20.5 Ft Height Above Building 6 Ft

Exhaust Cross Section
Diameter 12.6 In Width In Length In

Exhaust Temperature 887 °F Direction of Stack Outlet ☐ Horizontal ☒ Vertical ☐ Other

End of the Stack ☐ Open ☐ Capped ☒ Flapper Valve

Stack Serves
- ☒ Only this equipment
- ☐ Other equipment also

Exhaust Flow 23700 CFM
Total Flow Rate CFM
Exhaust Pressure CFM

Receptor Information. A receptor is a residence or business whose occupants could be exposed to toxic emissions from your facility.

Nearest offsite receptor Hudson Ranch Power Plant
Distance to nearest offsite receptor 1950 feet
Distance to nearest school grounds >10,000 feet

Andrew Dunavent
Name of preparer

4/24/2023
Date

150 South Ninth Street
El Centro, CA 92243
(442) 265-1800

IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

NOTICE

An application will not be processed unless ALL fields in "Section A" are complete.

Section A

Company/Agency: **Morton Bay Geothermal, LLC**	Phone Number: **760-348-4275**
Equipment Location: **Morton Bay Geothermal Project**	Existing Permit # (if any):
Engine Manufacturer: **Kohler**	Model Number: **KD83V16**
Engine Serial Number: **TBD**	EPA/C.A.R.B. 12-character Engine Family Name: **TBD**
Manufacturer Date: **TBD**	Is unit equipped with a non-resettable hour meter? ☒ Yes ☐ No

Utilization of Engine

- ☒ Electrical Generator **3490** Kw
- ☐ Compressor Driver _____ cfm
- ☐ Pump Driver _____ gpm
- ☐ Fire Pump
- ☐ Rental
- ☐ Portable
- ☐ Other _____

Fuel Information

Air to Fuel Ratio _____

- ☐ Natural Gas
- ☐ Gasoline
- ☐ LPG
- ☐ Other _____
- ☐ Digester Gas
- ☐ Landfill Gas
- ☒ Diesel Oil

Engine Size (Manufacturers Rating) BHP@ **4680** RPM **1800**

Operating Schedule

1 Hr/Days **1** Days/Week

50 Weeks/Year Maximum Operating Hours **Varies** Hrs/Days

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Section B

Is this unit designed to be moved or carried from one location to another, or does it have wheels, skids,

☐ Yes (Portable) ☒ No (Stationary)

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AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

Section C

Engine Description — Number of Cylinders: 16

- ☐ Two Cycle or ☒ Four Cycle
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Sulfer Content of Disgester Gas, Landfill Gas or Diesel
15 ppm

Maximum Rated Fuel Consumption (Gas/Hr, Cu. Ft/Hr)
219 gal/hr

Average Load Percentage % 100

Energy Recovery From Exhaust ☐ Yes ☒ No If yes, please explain

Emission Control Device ☒ Yes ☐ No If yes, please explain
Tier 4 Certified Unit with SCR, Diesel Oxidation Catalyst and Diesel Particulate Filter

Emission Data:

POLLUTANT	EMISSION BEFORE CONTROL Gr/BHP PPM Lb/Day	EMISSION AFTER CONTROL Gr/BHP PPM Lb/Day
NMHC or TOC	N/A	0.14
NOx	N/A	0.5
CO	N/A	2.61
PM10	N/A	0.02
SOx	N/A	<0.00001

☒ Manufacturer Data ☐ Source Test Data

Section D

Stationary Engines Only

Stack Dimensions
Height Above Grade 20.5 Ft Height Above Building 6 Ft

Exhaust Cross Section
Diameter 12.6 In Width In Length In

Exhaust Temperature 887 °F Direction of Stack Outlet ☐ Horizontal ☒ Vertical ☐ Other

End of the Stack ☐ Open ☐ Capped ☒ Flapper Valve

Stack Serves
- ☒ Only this equipment
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Exhaust Flow 23700 CFM
Total Flow Rate CFM
Exhaust Pressure CFM

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Nearest offsite receptor Hudson Ranch Power Plant
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Andrew Dunavent
Name of preparer

4/24/2023
Date

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IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

NOTICE

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Section A

Company/Agency: **Morton Bay Geothermal, LLC**	Phone Number: **760-348-4275**
Equipment Location: **Morton Bay Geothermal Project**	Existing Permit # (if any):
Engine Manufacturer: **Kohler**	Model Number: **KD83V16**
Engine Serial Number: **TBD**	EPA/C.A.R.B. 12-character Engine Family Name: **TBD**
Manufacturer Date: **TBD**	Is unit equipped with a non-resettable hour meter? ☒ Yes ☐ No

Utilization of Engine

- ☒ Electrical Generator **3490** Kw
- ☐ Compressor Driver _____ cfm
- ☐ Pump Driver _____ gpm
- ☐ Fire Pump
- ☐ Rental
- ☐ Portable
- ☐ Other _____

Fuel Information

Air to Fuel Ratio _____

- ☐ Natural Gas
- ☐ Gasoline
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- ☐ Digester Gas
- ☐ Landfill Gas
- ☒ Diesel Oil

Engine Size (Manufacturers Rating) BHP@ **4680** RPM **1800**

Operating Schedule

1 Hr/Days **1** Days/Week

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Section B

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IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

Section C

Engine Description — Number of Cylinders: 16

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Sulfer Content of Disgester Gas, Landfill Gas or Diesel
15 ppm

Maximum Rated Fuel Consumption (Gas/Hr, Cu. Ft/Hr)
219 gal/hr

Average Load Percentage % 100

Energy Recovery From Exhaust ☐ Yes ☒ No If yes, please explain

Emission Control Device ☒ Yes ☐ No If yes, please explain
Tier 4 Certified Unit with SCR, Diesel Oxidation Catalyst and Diesel Particulate Filter

Emission Data:

POLLUTANT	EMISSION BEFORE CONTROL Gr/BHP PPM Lb/Day	EMISSION AFTER CONTROL Gr/BHP PPM Lb/Day
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Section D

Stationary Engines Only

Stack Dimensions
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Exhaust Temperature 887 °F Direction of Stack Outlet ☐ Horizontal ☒ Vertical ☐ Other

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Stack Serves
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Total Flow Rate CFM
Exhaust Pressure CFM

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Andrew Dunavent
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INTERNAL COMBUSTION ENGINE SUMMARY FORM

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Equipment Location: **Morton Bay Geothermal Project**	Existing Permit # (if any):
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Engine Serial Number: **TBD**	EPA/C.A.R.B. 12-character Engine Family Name: **TBD**
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Fuel Information

Air to Fuel Ratio _____

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IMPERIAL COUNTY
AIR POLLUTION CONTROL DISTRICT

INTERNAL COMBUSTION ENGINE SUMMARY FORM

Section C

Engine Description — Number of Cylinders: 16

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Average Load Percentage % 100

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Emission Control Device ☒ Yes ☐ No If yes, please explain
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