June 15, 2020

Permit Intake Clerk
Alaska Department of Environmental Conservation
Air Permit Program
555 Cordova Street
Anchorage, AK 99501

RE: **Cook Inlet Energy, LLC – Kustatan Production Facility**
Title I Air Quality Permit Application-Alternate Operating Scenario

As directed by the Department, Cook Inlet Energy, LLC (CIE), a Glacier Oil and Gas Company, is respectfully submitting the attached Title I permit application requesting approval for a temporary alternate operating scenario. Due to the unprecedented events surrounding the COVID-19 outbreak, Cook Inlet Energy (CIE) made the decision to shut-in wells at Osprey Platform. With no gas production at the platform, it has become difficult to maintain the required minimum 50% load on the Solar Taurus Turbines (EUs 1 and 2), located at Kustatan Production Facility (KPF). Additionally, due to overheating caused by the current operating conditions, there is concern of imminent unit failure. KPF is currently operating in a warm shut-down mode until a long-term solution can be agreed upon. The facility is dependent on the turbines for power as the facility is not equipped with an alternative power source.

CIE has considered various options and determined that the best resolution is to temporarily install two diesel-fired Cat 3456 generators, currently on the cold stacked Rig 37 in West McArthur River. The units are capable of providing power for the facility until a permanent solution can be agreed upon. The attached application includes emission calculation workbooks that demonstrate that substituting the Solar Taurus Turbines with the Cat 3456 generators will increase NO_X emissions less than 10 tons per year while reducing all of the other criteria pollutants.

CIE expects to be billed according to 18 AAC 50.400(h) for the permit regulatory services pertaining to the Title I permit revision application.

If you have any questions or would like any additional information, please contact Jennifer Henderson by phone at 907-433-3807 or by email at jhenderson@glacieroil.com.

"Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete."

Sincerely,

David Pascal
Chief Operating Officer
Cook Inlet Energy

cc: EPA Region 10, Office of Air Quality, M/S AOQ 107, 1200 Sixth Ave., Seattle, WA 98101

Encl.: Title I Air Quality Permit Application

Alaska Department of Environmental Conservation
Air Quality Minor Permit Application

STATIONARY SOURCE IDENTIFICATION FORM

Section 1 Stationary Source Information

Name: ***Kustatan Production Facility***			SIC: ***1311***
Project Name (if different): ***Alternate Operating Scenario***	Contact: ***Jennifer Henderson***		
Physical Address: West Foreland, Cook Inlet, Alaska	City: ***Anchorage***	State: ***AK***	Zip: ***99503***
	Telephone: ***907-433-3807***		
	E-Mail Address: jhenderson@glacieroil.com		
UTM Coordinates (m) or Latitude/Longitude:	Northing:	Easting:	Zone:
	Latitude: ***60º 43' 28" N***	Longitude: ***151º 45' 36" W***	

Section 2 Legal Owner

Name: ***Cook Inlet Energy, LLC***		
Mailing Address: ***188 W Northern Lights Blvd., Suite 510***		
City: ***Anchorage***	State: ***AK***	Zip: ***99503***
Telephone #: ***907-334-6745***		
E-Mail Address:		

Section 3 Operator *(if different from owner)*

Name:		
City:	State:	Zip:
Telephone #:		
E-Mail Address:		

Section 4 Designated Agent *(for service of process)*

Name: ***Stoel Rives, LLP, Ramona L. Monroe, Attorney***		
Mailing Address: ***600 University Street, Suite 3600***		
City ***Seattle***	State: ***WA***	Zip: ***98101-4109***
Telephone #: ***206-386-7524***		
E-Mail Address:		

Section 5 Billing Contact Person *(if different from owner)*

Name: ***Jennifer Henderson***		
Mailing Address: ***188 W Northern Lights Blvd., Suite 510***		
City: ***Anchorage***	State: ***AK***	Zip: ***99503***
Telephone #: ***907-433-3807***		
E-Mail Address: jhenderson@glacieroil.com		

Section 6 Application Contact

Name: ***Jennifer Henderson, Cook Inlet Energy***			
Mailing Address: ***188 W. Northern Lights Blvd., Suite 510***	City: ***Anchorage***	State: ***AK***	Zip: ***99503***
	Telephone: ***907-433-3807***		
	E-Mail Address: jhenderson@glacieroil.com		

Section 7 Desired Process Method *(Check only one – see 18 AAC 50.542(a) for process descriptions and restrictions)*

☐ Fast track for a permit classification under 18 AAC 50.502 [18 AAC 50.542(b)]

☒ Public comment [18 AAC 50.542(d)]

Section 8 Source Classification(s) *(Check all that apply)*

[18 AAC 50.502(b)]

- ☐ Asphalt Plant [≥ 5 ton per hour]
- ☐ Thermal Soil Remediation Unit [≥ 5 ton per hour]
- ☐ Rock Crusher [≥ 5 ton per hour]
- ☐ Incinerator(s) [total rated capacity ≥ 1000 lb/hour]
- ☐ Coal Preparation Plant
- ☐ Port of Anchorage Facility

If you checked any of the above, is (are) the emission unit(s) ☐ new, ☐ relocated*, or ☐ existing?

[18 AAC 50.502(c)(1)]

New or relocated* stationary source with potential emissions greater than:

- ☐ 40 tons per year (tpy) NOx
- ☐ 40 tpy SO_2
- ☐ 15 tpy PM-10
- ☐ 10 tpy PM-2.5
- ☐ 0.6 tpy lead
- ☐ 100 tpy CO in a nonattainment area

[18 AAC 50.502(c)(2)]

Construction or relocation* of a:

- ☐ Portable oil and gas operation
- ☐ ≥ 10 MMBtu/hr fuel burning equipment in a SO_2 special protection area

* *Relocation does NOT include moving equipment from one place to another within your current stationary source boundary.*

Section 9 Modification Classification(s) (*Check all that apply)*

[18 AAC 50.502(c)(3)]

- ☐ NOx Increase > 10 tpy [and existing PTE > 40 tpy]
- ☐ SO_2 Increase > 10 tpy [and existing PTE > 40 tpy]
- ☐ PM-10 Increase > 10 tpy [and existing PTE > 15 tpy]
- ☐ PM-2.5 Increase > 10 tpy [and existing PTE > 10 tpy]
- ☐ CO Increase > 100 tpy [and existing PTE > 100 tpy in a nonattainment area]

[18 AAC 50.502(c)(4)]

- ☐ NOx Increase > 40 tpy [and existing PTE ≤ 40 tpy]
- ☐ SO_2 Increase > 40 tpy [and existing PTE ≤ 40 tpy]
- ☐ PM-10 Increase > 15 tpy [and existing PTE ≤ 15 tpy]
- ☐ PM-2.5 Increase > 10 tpy [and existing PTE ≤ 10 tpy]
- ☐ CO Increase > 100 tpy [and Existing PTE ≤ 100 tpy in a nonattainment area]

Basis for calculating modification:

- ☐ Projected actual emissions minus baseline actual emissions
- ☐ New potential emissions minus existing potential emissions

Section 10 Permit Action Request (*Check all that apply)*

[18 AAC 50.508]

- ☐ Establish Plant-wide Applicability Limitation (PAL)
- ☐ Establish emission reductions to offset nonattainment pollutant
- ☒ Owner Requested Limit* (ORL)
- ☐ Revise or Rescind Title I Permit Conditions *
  Permit Number: Condition No.
  Date:

**Which to use? See* http://www.dec.state.ak.us/air/ap/docs/orlrtc.pdf

Section 11 Existing Permits and Limits

For an existing stationary source, do you have an existing:
(Check all that apply)

- ☒ Air quality permit Number(s)*: ***AQ0741MSS03***
  AQ0741TVP03, Rev. 1

- ☐ Owner Requested Limit(s) Permit Number(s):
- ☐ Pre-Approved Emission Limit (PAEL) Number(s)**:

** All active construction, Title V, and minor permit numbers.*
***Optional. Please provide this number if possible.*
http://dec.alaska.gov/Applications/Air/airtoolsweb/

Section 12 Project Description

Provide a short narrative describing the project. Discuss the purpose for conducting this project, what emission units/activities will be added/modified under this project (i.e., project scope), and the project timeline. If the project is a modification to an existing stationary source, describe how this project will affect the existing process. Include any other discussion that may assist the Department in understanding your project or processing your application. Include a schedule of construction.

Please use additional copies of this sheet if necessary.

Due to the unprecedented events surrounding the COVID-19 outbreak, Cook Inlet Energy (CIE) made the decision to shut-in wells at Osprey Platform. With no gas production at the platform, it has become difficult to maintain the required load of more than 50% on the Solar Taurus Turbines (EUs 1 and 2), located at Kustatan Production Facility (KPF). Additionally, due to overheating caused by the current operating conditions, there is concern of imminent unit failure. KPF is currently operating in a warm shut-down mode until a long-term solution can be agreed upon. The facility is dependent on the turbines for power as the facility is not equipped with an alternative power source.

In an effort to provide temporary power alternative, CIE is requesting approval to use two portable diesel engines currently located on Rig 37 which is cold stacked at West McArthur River Field. The units are Cat 3456 generator engines, purchased in May 2004 with a rating of 691 hp each. These units would operate successively with the only overlap in operation occurring briefly during startups and shutdowns. Additionally, these units will operate in place of the Solar Taurus Turbines until a permanent solution can be implemented. Numerous alternative options have been considered, but, they were neither practical given the time constraints nor economically feasible due to the assumption that the substitution in power generation is temporary.

Emission calculations are included with this applicataion demonstrating that the temporary generators will increase NO_X emissions by less than 10 tons/yr while significantly reducing CO emissions when compared to the existing Solar turbines.

Section 12 Project Description Continued

For **PALs under Section 10** of this application, include the information listed in 40 C.F.R. 52.21(aa)(3), adopted by reference in 18 AAC 50.040 [18 AAC 50.540(h)].

N/A

For a **limit to establish offsetting emissions under Section 10** of this application, specify the physical or operational limitations necessary to provide actual emission reductions of the nonattainment air pollutant; including [18 AAC 50.540(i)]:

- A calculation of the expected reduction in actual emissions; and

  N/A

- The emission limitation representing that quantity of emission reduction.

  N/A

Section 12 Project Description Continued

For **ORLs under Section 10** of this application [18 AAC 50.540(j)], include:

A description of each proposed limit, including for each air pollutant a calculation of the effect the limit will have on the stationary source's potential to emit and the allowable emissions [18 AAC 50.225(b)(4)];

CIE is requesting approval of an alternative operating scenario in which the Solar Taurus Turbines, EUs 1 and 2, will be shut down and the portable, diesel-fired, Cat 3456 generator engines will be temporarily brought online in their place to power the facility. Similarly to the Solar Tarus Turbines, the Cat engines will operate successively with the only overlap in operation occurring briefly during startups and shutdowns. CIE is requesting a combined NO_X emission limit of 74.4 tpy for the Cat Engines. Each engine is estimated to emit 72.6 tons of NO_X per year and the extra 1.8 tons would allow for the overlap during starutups/shutdowns when swapping between units (The emissions are equivalent to approximately 8,970 combined hours of operation). Currently, Condition 17.1b of KPF's permit, AQ0741TVP03, limits the Solar Turbine NO_X emissions to 64.5 tpy, therefore, the emission increase being requested is 9.9 tpy. All other criteria pollutant emissions are expected to decrease while operating the Cat generators in comparision to the Solar Taurus Turbines.

A description of a verifiable method to attain and maintain each limit, including monitoring and recordkeeping requirements [18 AAC 50.225(b)(5)];

Typically, the Solar Taurus Turbines would be disconnected and/or removed when the generators are brought online. However, the use of the diesel Cat 3456 is intended to be temporary and CIE plans to leave the Solar's in place in hopes of restarting them in the near future and returning to their current operations. CIE will notify ADEC prior to re-starting the Solar Taurus Turbines. In the meantime, to demonstrate compliance with the emission standards, KPF will track monthly operating hours for the Cat generators using an hour meter and the hours will be used to calculate monthly emissions. Additionally, the units will only combust Ultra Low Sulfur Diesel and maintenance on the units will be conducted per the requirements of Table 2d of NESHAP Subpart ZZZZ .

Citation to each requirement that the person seeks to avoid, including an explanation of why the requirement would apply in the absence of the limit and how the limit allows the person to avoid the requirement [18 AAC 50.225(b)(6)];

Due to the unprecedented events surrounding the COVID outbreak, CIE made the decision to shut-in wells at Osprey Platform. Without gas production at the platform, KPF can no longer safely operate the Solar Taurus Turbines (EUs 1 and 2) and is not equipped with an additional power source. Therefore, CIE is submitting this application describing the proposed temporary alternative operating scenario with a self-imposed NO_X emission limit for approval. The intent of the requested NO_X limit is to demonstrate the emission increase will be minimal and to avoid the time required to process a significant modification to the TV Permit due to the imminent potential for failure of the existing permitted sources. In addition, CIE is requesting that ADEC allows the generators to be moved to the facility and operated while approval of this application is pending.

A statement that the owner or operator of the stationary source will be able to comply with each limit [18 AAC 50.225(b)(8)];

See Section 14 for the certification statement and signature of certifying official.

Section 12 Project Description Continued

For **revising or rescinding Title I permit conditions under Section 10** of this application [18 AAC 50.540(k)], include:

An explanation of why the permit term or condition should be revised or rescinded [18 AAC 50.540(k)(2)];

N/A

The effect of revising or revoking the permit term or condition on [18 AAC 50. 540 (k)(3)]:

- Emissions;
  N/A

- Other permit terms;
  N/A

- The underlying ambient demonstration, if any;
  N/A

- Compliance monitoring; and
  N/A

For revising a condition that allows avoidance of a permit classification, the information required for that type of permit, unless the revised condition would also allow the owner or operator to avoid the classification. [18 AAC 50.540(k)(4)]

N/A

Section 13 Other Application Material

The information listed below must be included in your air quality control minor permit application. *Note: These must be attached in order for your application to be complete.*

If required to submit an analysis of ambient air quality under 18 AAC 50.540(c)(2), or if otherwise requested by the Department:

☐ Attached are maps, plans, and/or aerial photographs as necessary to show the locations and distances of
- emissions units, buildings, emitting activities and boundaries of the associated with the stationary source, and
- nearby or adjacent residences, roads, other occupied structures and general topography within 15 kilometers.

(Indicate compass direction and scale on each.)

☐ Attached is a document (e.g., spreadsheet) showing coordinates and elevations of each modeled unit, along with parameters necessary to characterize each unit for dispersion modeling.

☐ Attached is an electronic copy of all modeling files.

Section 14 Certification

This certification applies to the Air Quality Control Minor Permit Application for the _____ (Stationary Source Name)
submitted to the Department on: _____.

Type of Application

☒ Initial Application
☐ Change to Initial Application

The application is **NOT** complete unless the certification of truth, accuracy, and completeness on this form bears the signature of a **Responsible Official**. Responsible Official is defined in 18 AAC 50.990. (18 AAC 50.205)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

"Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete."

Signature:	Date: ***6/15/2020***
Printed Name: ***David Pascal***	Title: ***Chief Operating Officer***

Section 15 Attachments

☒ Attachments Included. List attachments: ***Emission Calculation Tables***

Section 16 Mailing Address

Submit the minor permit application to the Permit Intake Clerk in the Department's Anchorage office. Submitting to a different office will delay processing. The mailing address and phone number for the Anchorage office is:

Permit Intake Clerk
Alaska Department of Environmental Conservation
Air Permit Program
555 Cordova Street
Anchorage, Alaska 99501
(907) 269-6881

Attachment A
Emission Calculations

Table 1. Kustatan Production Facility
Total Potential to Emit Comparison Summary

Emissions Unit Type	Assessable Potential to Emit (tons per year)					
	NO_X	CO	PM_{10}	PM2.5	VOC	SO_2
Current Permitted Potential to Emit	87.0	153.0	6.1	6.1	60.3	37.7
Alternative Operating Scenario Using Cat 3456 Generators	*96.9*	*34.0*	*4.7*	*4.7*	*42.8*	*28.4*
Difference in Potential to Emit	**9.9**	**-119.0**	**-1.4**	**-1.4**	**-17.5**	**-9.3**

Notes:
1. Emission calculations for the Alternative Operating Scenario were based on 8,970 combined hours of operation on the Cat 3456 generator engines.
2. Solar Taurus Turbines NO_X and CO are based on allowable operation for all units based on maximum operation or Federally-enforceable permit operating limits, where applicable.
3. Regulated air pollutant calculations based on AP-42 emission factors, BACT emission rates, manufacturer's data, and mass balances, as shown in accompanying spreadsheets.

Table 2. Kustatan Production Facility
Comparison of Potential to Emit for Solar Taurus Turbines and Cat 3456 Generators

Emissions Unit Type	Assessable Potential to Emit (tons per year)					
	NO_X	CO	PM_{10}	PM2.5	VOC	SO_2
Solar Taurus Turbines Combined Potential to Emit	64.5	136.0	3.6	3.6	19.7	9.4
Cat 3456 Generators Combined Emissions (8,970 Total Operating Hours)	*74.4*	*17.0*	*2.2*	*2.2*	*2.2*	*0.03*
Difference in Potential to Emit	**9.9**	**-119.0**	**-1.4**	**-1.4**	**-17.5**	**-9.3**

Notes:
1. Emission calculations for the Alternative Operating Scenario were based on 8,970 combined hours of operation on the Cat 3456 generator engines.
2. Solar Taurus Turbines NO_X and CO are based on allowable operation for all units based on maximum operation or Federally-enforceable permit operating limits, where applicable.
3. Regulated air pollutant calculations based on AP-42 emission factors, BACT emission rates, manufacturer's data, and mass balances, as shown in accompanying spreadsheets.

Table 3. Kustatan Production Facility - Nitrogen Oxides (NO_X) Potential to Emit Calculations

Emission Unit ID	Emission Unit Description	Factor Reference	NO_X Emission Factor	Unit Rating	Fuel Type	Allowable Operation	NO_X Emissions
Regulated Significant Units							
1	Turbine Generator #1	Dec 2014 Source Test	3.9 lb/hr	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	64.5 tpy[1]
2	Turbine Generator #2	Dec 2014 Source Test	4.1 lb/hr	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	
3	Heater Treater #1	May 2003 Source Test	0.51 lb/hr	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	2.2 tpy
4	Heater Treater #2	May 2003 Source Test	0.51 lb/hr	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	2.2 tpy
5	Heater Treater #3	May 2003 Source Test	0.51 lb/hr	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	2.2 tpy
6	Crude Heater #1	May 2003 Source Test	0.68 lb/hr	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	3.0 tpy
7	Crude Heater #2	May 2003 Source Test	0.68 lb/hr	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	3.0 tpy
8	Crude Heater #3	May 2003 Source Test	0.68 lb/hr	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	3.0 tpy
9	Fire Water Pump	Table 3.3-1, AP-42	0.031 lb/hp-hr	200.0 hp	Diesel	500 hrs/yr[1]	1.6 tpy
9a	Emergency Generator	Vendor Data	7.74 lb/hr	320.0 kW	Diesel	500 hrs/yr[1]	1.9 tpy
10	Process Flare	Table 13.5-1, AP-42	0.068 lb/MMBtu	0.8 MMBtu/hr	Raw Fuel Gas	70 MMscf/yr[1]	3.1 tpy
10a	Small Space Heaters	Vendor Data	20 lb/kgal	0.5 MMBtu/hr	Diesel	8,760 hrs/yr	0.3 tpy
12	Crude Tank No. 1	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
13	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
14	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
15	Slop Oil Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
16	Produced Water Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
Proposed Temporary Generator Engines							
	Diesel Generator	***Table 3.4-1, AP-42***	***0.024 lb/hp-hr***	***691 hp***	***Diesel***	***8,970 hrs/yr***	***74.4 tpy***
	Diesel Generator	***Table 3.4-1, AP-42***	***0.024 lb/hp-hr***	***691 hp***	***Diesel***		
						Current Permitted Total Potential to Emit NO_X Emissions:	**87.0 tpy**
						Alternative Scenario Potential to Emit NO_X Emissions:	**96.9 tpy**

Notes:
1. Allowable operation for all units based on maximum operation or Federally-enforceable permit operating limits, where applicable.
2. Diesel fuel heating value: 137,000 Btu/gal (HHV) Default No. 2 Distillate Fuel Oil
3. Raw fuel gas heating value: 1,301 Btu/scf (HHV) Kustatan Raw Fuel Gas analysis

Table 4. Kustatan Production Facility - Assessable Carbon Monoxide (CO) Potential to Emit Calculations

Emission Unit ID	Emission Unit Description	Reference	CO Emission Factor	Unit Rating	Fuel Type	Allowable Operation	CO Emissions
Regulated Significant Units							
1	Turbine Generator #1	Dec 2014 Source Test	0.19 lb/hr	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	136.0 tpy[1]
2	Turbine Generator #2	Dec 2014 Source Test	0.22 lb/hr	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	
3	Heater Treater #1	May 2003 Source Test	0.05 lb/hr	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.2 tpy
4	Heater Treater #2	May 2003 Source Test	0.05 lb/hr	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.2 tpy
5	Heater Treater #3	May 2003 Source Test	0.05 lb/hr	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.2 tpy
6	Crude Heater #1	May 2003 Source Test	0.11 lb/hr	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.5 tpy
7	Crude Heater #2	May 2003 Source Test	0.11 lb/hr	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.5 tpy
8	Crude Heater #3	May 2003 Source Test	0.11 lb/hr	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.5 tpy
9	Fire Water Pump	Table 3.3-1, AP-42	0.00668 lb/hp-hr	200.0 hp	Diesel	500 hrs/yr[1]	0.3 tpy
9a	Emergency Generator	Vendor Data	1.47 lb/hr	320.0 kW	Diesel	500 hrs/yr[1]	0.4 tpy
10	Process Flare	Table 13.5-2, AP-42	0.31 lb/MMBtu	0.8 MMBtu/hr	Raw Fuel Gas	70 MMscf/yr[1]	14.1 tpy
10a	Small Space Heaters	Table 1.3-1, AP-42	5 lb/kgal	0.5 MMBtu/hr	Diesel	8,760 hr/yr	0.1 tpy
12	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
13	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
14	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
15	Slop Oil Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
16	Produced Water Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
Proposed Temporary Generator Engines							
	Diesel Generator	***Table 3.4-1, AP-42***	***0.0055 lb/hp-hr***	***691 hp***	***Diesel***	***8,970 hrs/yr***	***17.0 tpy***
	Diesel Generator	***Table 3.4-1, AP-42***	***0.0055 lb/hp-hr***	***691 hp***	***Diesel***		
						Current Permitted Total Potential to Emit NO_X Emissions:	**153.0 tpy**
						Alternative Scenario Potential to Emit NO_X Emissions:	**34.0 tpy**

Notes:
1. Allowable operation for all units based on maximum operation or Federally-enforceable permit operating limits, where applicable.
2. Diesel fuel heating value: 137,000 Btu/gal (HHV) Default No. 2 Distillate Fuel Oil
3. Raw fuel gas heating value: 1,301 Btu/scf (HHV) Kustatan Raw Fuel Gas analysis

Table 5. Kustatan Production Facility - Assessable Particulate Matter ($PM_{10}/PM_{2.5}$) Potential to Emit Calculations

Emission Unit ID	Emission Unit Description	Factor Reference	$PM_{10}/PM_{2.5}$ Emission Factor	Unit Rating	Fuel Type	Allowable Operation	$PM_{10}/PM_{2.5}$ Emissions
Regulated Significant Units							
1	Turbine Generator #1	Table 3.1-2a, AP-42	0.0066 lb/MMBtu	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	1.8 tpy
2	Turbine Generator #2	Table 3.1-2a, AP-42	0.0066 lb/MMBtu	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	1.8 tpy
3	Heater Treater #1	Table 1.4-2, AP-42	7.6 lb/MMscf	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.16 tpy
4	Heater Treater #2	Table 1.4-2, AP-42	7.6 lb/MMscf	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.16 tpy
5	Heater Treater #3	Table 1.4-2, AP-42	7.6 lb/MMscf	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.16 tpy
6	Crude Heater #1	Table 1.4-2, AP-42	7.6 lb/MMscf	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.20 tpy
7	Crude Heater #2	Table 1.4-2, AP-42	7.6 lb/MMscf	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.20 tpy
8	Crude Heater #3	Table 1.4-2, AP-42	7.6 lb/MMscf	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.20 tpy
9	Fire Water Pump	Table 3.3-1, AP-42	0.0022 lb/hp-hr	200 hp	Diesel	500 hrs/yr[1]	0.11 tpy
9a	Emergency Generator	Vendor Data	0.16 lb/hr	320 kW	Diesel	500 hrs/yr[1]	0.04 tpy
10	Process Flare	Table 13.5-1, AP-42	40 µg/L	0.8 MMBtu/hr	Raw Fuel Gas	70 MMscf/yr[1]	1.2 tpy
10a	Small Space Heaters	Table 1.3-1, AP-42	2 lb/kgal	0.5 MMBtu/hr	Diesel	8,760 hr/yr	0.03 tpy
12	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
13	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
14	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
15	Slop Oil Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
16	Produced Water Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
Proposed Temporary Generator Engines							
	Diesel Generator	***Table 3.4-1, AP-42***	***0.0007 lb/hp-hr***	***691 hp***	***Diesel***	***8,970 hrs/yr***	***2.2 tpy***
	Diesel Generator	***Table 3.4-1, AP-42***	***0.0007 lb/hp-hr***	***691 hp***	***Diesel***		
						Current Permitted Total Potential to Emit $PM_{10}/PM_{2.5}$ Emissions	**6.1 tpy**
						Alternative Scenario Potential to Emit $PM_{10}/PM_{2.5}$ Emissions	**4.7 tpy**

Notes:
1. Allowable operation for all units based on maximum operation or Federally-enforceable permit operating limits, where applicable.
2. Diesel fuel heating value: 137,000 Btu/gal (HHV) Default No. 2 Distillate Fuel Oil
3. Raw fuel gas heating value: 1,301 Btu/scf (HHV) Kustatan Raw Fuel Gas analysis

Table-6. Kustatan Production Facility - Assessable Volatile Organic Compound (VOC) Potential to Emit Calculations

Emission Unit ID	Emission Unit Description	Factor Reference	VOC Emission Factor	Unit Rating	Fuel Type	Allowable Operation	VOC Emissions
Regulated Significant Units							
1	Turbine Generator #1	Vendor Data	2.244 lb/hr	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	9.8 tpy
2	Turbine Generator #2	Vendor Data	2.244 lb/hr	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	9.8 tpy
3	Heater Treater #1	Table 1.4-2, AP-42	5.5 lb/MMscf	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.1 tpy
4	Heater Treater #2	Table 1.4-2, AP-42	5.5 lb/MMscf	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.1 tpy
5	Heater Treater #3	Table 1.4-2, AP-42	5.5 lb/MMscf	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.1 tpy
6	Crude Heater #1	Table 1.4-2, AP-42	5.5 lb/MMscf	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.1 tpy
7	Crude Heater #2	Table 1.4-2, AP-42	5.5 lb/MMscf	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.1 tpy
8	Crude Heater #3	Table 1.4-2, AP-42	5.5 lb/MMscf	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	0.1 tpy
9	Fire Water Pump	Table 3.3-1, AP-42	0.00247 lb/hp-hr	200 hp	Diesel	500 hrs/yr[1]	0.12 tpy
9a	Emergency Generator	Vendor Data	0.09 lb/hr	320 kW	Diesel	500 hrs/yr[1]	0.02 tpy
10	Process Flare	Table 13.5-2, AP-42	0.66 lb/MMBtu	0.8 MMBtu/hr	Raw Fuel Gas	70 MMscf/yr[1]	30.1 tpy
10a	Small Space Heaters	Table 1.3-3, AP-42	0.34 lb/kgal	0.5 MMBtu/hr	Diesel	8,760 hrs/yr	0.01 tpy
12	Crude Storage Tank	TANKS 4.0	N A	10,000 bbls	N/A	8,760 hrs/yr	1.0 tpy
13	Crude Storage Tank	TANKS 4.0	N A	10,000 bbls	N/A	8,760 hrs/yr	1.0 tpy
14	Crude Storage Tank	TANKS 4.0	N A	10,000 bbls	N/A	8,760 hrs/yr	1.0 tpy
15	Slop Oil Tank	TANKS 4.0	N A	10,000 bbls	N/A	8,760 hrs/yr	3.7 tpy
16	Produced Water Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	0.0 tpy
Proposed Temporary Generator Engines							
	Diesel Generator	***Table 3.4-1, AP-42***	***0.0007 lb/hp-hr***	***691 hp***	***Diesel***	***8,970 hrs/yr***	***2.2 tpy***
	Diesel Generator	***Table 3.4-1, AP-42***	***0.0007 lb/hp-hr***	***691 hp***	***Diesel***		
						Current Permitted Total Potential to Emit VOC Emissions:	**57.4 tpy**
						Alternative Scenario Potential to Emit VOC Emissions:	**39.9 tpy**

Notes:
1. Allowable operation for unit based on maximum operation or Federally-enforceable permit operating limits, where applicable.
2. Diesel fuel heating value: 137,000 Btu/gal (HHV) Default No. 2 Distillate Fuel Oil
3. Raw fuel gas heating value: 1,301.0 Btu/scf (HHV) Kustatan Raw Fuel Gas analysis
4. Emissions for crude tanks, slop oil tank, and produced water tank are reduced by 95 percent to reflect VOC controls (AQ0741TVP02, Condition 13).
5. VOC emissions from the produced water and utility tanks are assumed to be negligible.

Table 7. Kustatan Production Site - Assessable Sulfur Dioxide (SO_2) Potential to Emit Calculations

Emission Unit ID	Emission Unit Description	Factor Reference	SO_2 Emission Factor	Unit Rating	Fuel Type	Allowable Operation		SO_2 Emissions
Regulated Significant Units								
1	Turbine Generator #1	Mass Balance	100 ppmv H_2S	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	554916554 scf/yr	4.7 tpy
2	Turbine Generator #2	Mass Balance	100 ppmv H_2S	62.3 MMBtu/hr	Lean Fuel Gas	8,760 hrs/yr	554916554 scf/yr	4.7 tpy
3	Heater Treater #1	Mass Balance	700 ppmv H_2S	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	55420408 scf/yr	3.3 tpy
4	Heater Treater #2	Mass Balance	700 ppmv H_2S	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	55420408 scf/yr	3.3 tpy
5	Heater Treater #3	Mass Balance	700 ppmv H_2S	6.2 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	55420408 scf/yr	3.3 tpy
6	Crude Heater #1	Mass Balance	700 ppmv H_2S	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	71510204 scf/yr	4.2 tpy
7	Crude Heater #2	Mass Balance	700 ppmv H_2S	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	71510204 scf/yr	4.2 tpy
8	Crude Heater #3	Mass Balance	700 ppmv H_2S	8.0 MMBtu/hr	Raw Fuel Gas	8,760 hrs/yr	71510204 scf/yr	4.2 tpy
9	Fire Water Pump	Mass Balance	0.5 Wt%S	200 hp	Diesel	500 hrs/yr[1]	4100 gal/yr	0.1 tpy
9a	Emergency Generator	Mass Balance	0.5 Wt%S	320 kW	Diesel	500 hrs/yr[1]	13050 gal/yr	0.5 tpy
10	Process Flare	Mass Balance	700 ppmv H_2S	0.8 MMBtu/hr	Raw Fuel Gas	70 MMscf/yr[1]	70000000 scf/yr	4.1 tpy
10a	Small Space Heaters	Mass Balance	0.5 Wt%S	0.5 MMBtu/hr	Diesel	8,760 hrs/yr	31971 gal/yr	1.1 tpy
12	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	N A	0.0 tpy
13	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	N A	0.0 tpy
14	Crude Storage Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	N A	0.0 tpy
15	Slop Oil Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	N A	0.0 tpy
16	Produced Water Tank	Not Applicable	N A	10,000 bbls	N/A	8,760 hrs/yr	N A	0.0 tpy
Nonroad Engines								
	Diesel Generator	***Table 3.4-1, AP-42***	***15 ppmw S***	***691 hp***	***Diesel***	***8,970 hrs/yr***	***316700 gal/yr***	***0.0328 tpy***
	Diesel Generator	***Table 3.4-1, AP-42***	***15 ppmw S***	***691 hp***	***Diesel***			
							Total Potential to Emit SO_2 Emissions:	**37.7 tpy**
							Alternative Scenario Potential to Emit SO_2 Emissions:	**28.4 tpy**

Notes:
1. Allowable operation for all units based on maximum operation or Federally-enforceable permit operating limits, where applicable.
2. Diesel fuel heating value: 137,000 Btu/gal (HHV) Default No. 2 Distillate Fuel Oil
3. Firewater pump fuel consumption: 8.2 gal/hour Vendor Data
4. Emgen Engine fuel consumption: 26.1 gal/hour Vendor Data
5. Lean Fuel Gas Heating Value: 983 Btu/scf (HHV)
6. Raw fuel gas heating value: 980 Btu/scf (HHV)
7. Engine assumed heat rate: 7,000 Btu/hp-hr