Alaska Department of Environmental Conservation
Air Permits Program

TECHNICAL ANALYSIS REPORT
For the terms and conditions of
Minor Permit AQ0982MSS12

Issued to Furie Operating Alaska, LLC
For the Kitchen Lights Unit

Preliminary – April 10, 2026

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1. INTRODUCTION

This Technical Analysis Report (TAR) provides the Alaska Department of Environmental Conservation's (Department's) basis for issuing Minor Permit AQ0982MSS12 to Furie Operating Alaska, LLC (Furie) for the Kitchen Lights Unit (KLU). The Department is issuing this permit under 18 AAC 50.508(6) to revise the terms or conditions previously established in Minor Permit AQ0982MSS11. This permit also carries forward classifications of 18 AAC 50.502(c)(2)(A) for relocation of a portable oil and gas operation and 18 AAC 50.508(5) for establishing owner requested limits (ORLs) carried forward from Minor Permits AQ0982MSS10 and AQ0982MSS10 Revision 1.

2. STATIONARY SOURCE DESCRIPTION

The existing KLU stationary source includes the Drill Rig (authorized by Minor Permit AQ0982MSS10) and the Platform (Allegra Leigh Platform [ALP]) (authorized by Minor Permit AQ0982MSS11). The SIC code for this stationary source is 1382 – Oil and Gas Field Exploration Services. The emissions unit (EU) inventory consists of combustion units (rig engines, crane engines, and temporary well testing flare), temporary well servicing and testing equipment (pumps, power packs, pump skids, well test equipment boilers/heaters, and cement pumps), storage tanks, and two lifeboat engines, all of which are listed in Table 1 and Table 2 of this permit.

3. PERMIT HISTORY RELEVANT TO PROJECT

Platform:

Minor Permit AQ0982MSS06 authorized installation and operation of an offshore natural gas platform (previously called Platform A) as a standalone permit. The permit also established ORLs for EU IDs 3a and 6 to limit NO_X emissions to avoid minor permitting under 18 AAC 50.502(c)(1). The Department issued this permit on June 3, 2014. This permit was rescinded by Minor Permit AQ0982MSS11.

Minor Permit AQ0982MSS11 authorized the replacement of the generators (EU IDs 1, 2, and 3 with EU IDs 1a, 2a, and 3a) and integrate the new EUs into the existing ORLs, as well as the operations of EU IDs 1a and 2a with an emPact control device to control NO_X and CO emissions to avoid minor permitting under 18 AAC 50.502(c)(1). The Department issued this permit on February 15, 2019.

Drill Rig:

Minor Permit AQ0982MSS08 established the cumulative drill rig NRE limit of 7,500 bhp for the Yost Drill Rig to protect the Alaska Ambient Air Quality Standards (AAAQS). This limit was then revised in Minor Permit AQ0982MSS10 to 7,635 bhp for the replacement of the Yost Drill Rig with the Drill Rig 151 (formerly called Spartan 151 Drill Rig), as well as expanding the limit to apply to all NREs in the permit. The Department issued this permit on April 27, 2016. This permit was rescinded by Minor Permit AQ0982MSS10.

Minor Permit AQ0982MSS10 also carries over the AAAQS requirements and limits to avoid Title V permitting under 18 AAC 50.326 from Minor Permit AQ0982MSS08 for the drill rig EUs. The Department issued this permit on June 21, 2018.

Minor Permit AQ0982MSS10 Revision 1 revised the NRE tracking requirements in Condition 11 of Minor Permit AQ0982MSS10 by introducing requirements to provide records of when

each activity (drilling, testing/casing, and cementing) is conducted as evidence that the NRE limit is not exceeded. For any drilling activities not classified under the three scenarios, Furie is required to revert to tracking the operation status of every NRE onboard. The Department issued this permit on August 14, 2024.

4. APPLICATION DESCRIPTION

Furie submitted a minor permit application under 18 AAC 50.508(6) on October 23, 2025 to revise terms and conditions of Minor Permit AQ0982MSS11. The requested changes are as follows:

- Administrative amendment to the KLU by changing the name of the Julius R. Platform (JRP) to the Allegra Leigh Platform (ALP).
- Removal of Condition 10 in Minor Permit AQ0982MSS11, since EU IDs 1, 2, and 3 have already been removed from the platform.
- Replace EU ID 5, a 1.2 MMBtu/hr natural gas inline heater (not installed) with EU ID 5a, a new 1.5 MMBtu/hr natural gas line heater that will be used as a well line heater.
- Add EU ID 8, a new 5 MMBtu/hr natural gas heater that is anticipated to be installed at the platform sometime in Spring 2026.

5. CLASSIFICATION FINDINGS

Based on the review of the application, the Department finds that Minor Permit AQ0982MSS12 is classified under:

1. 18 AAC 50.508(5) for establishing or revising an ORL to avoid one or more permit classifications under AS 46.14.130.
2. 18 AAC 50.508(6) to revise or rescind terms and conditions of a Title I permit; and
3. 18 AAC 50.502(c)(2)(A) for the relocation of a portable oil and gas operation.

6. APPLICATION REVIEW FINDINGS

Following are the Department's findings based on the review of the minor permit application:

1. Furie's minor permit application for the KLU contains the elements listed in 18 AAC 50.540.
2. The Department added a footnote for the platform EUs (Table 1) to clarify that the current name of the platform at the time of permit issuance is ALP, and is subject to change.
3. EU IDs 3a and 6 have potential emissions that exceed the thresholds in 18 AAC 50.326(e). However, as long as actual emissions do not exceed the 50.326(e) thresholds per rolling 12-month period, the EUs will not be subject to more extensive visible emissions and particulate matter monitoring, recordkeeping, and reporting (MR&R) requirements in Conditions 8 through 10 and 13 through 15.
4. The Department has updated the emissions unit inventory in Table 1 and Table 2 to reflect the current EUs authorized at the stationary source as a result of this permit action.

5. The revisions in this permit as a result of replacing EU ID 5 with 5a and adding EU ID 8 will result in slight changes to the stationary source's potential-to-emit (PTE). The changes in PTE are compared to the minor permit thresholds in 18 AAC 50.502(c)(4), since the KLU is an existing stationary source with thresholds less than 18 AAC 50.502(c)(1). See Table A.
6. EU IDs 1, 2, and 3 are removed from the ORLs carried over from Minor Permit AQ0982MSS11.
7. EU ID 5a (which replaces EU ID 5) is subject to the same ORL carried over from Minor Permit AQ0982MSS11. See Condition 26.1.
8. The ambient demonstration originally submitted in support of Minor Permit AQ0982MSS08, which was also used in support of Minor Permit AQ0982MSS10, is still valid for this stationary source, as of issuance of this permit.
9. The cumulative operating NRE horsepower limit remains unchanged from the limit established in Condition 11.1 of Minor Permit AQ0982MSS10, established to protect the AAAQS. As currently stated in Condition 19.1, "the cumulative NRE rating shall not exceed 7,635 operating brake horsepower (bhp) except during startup, shutdown, and maintenance activities for periods not to exceed one hour per calendar day."
10. For permit hygiene purposes, the Department incorporated conditions from Minor Permits AQ0982MSS10 and AQ0982MSS10 Rev. 1 as described in Table B and Table C. These two minor permits, along with Minor Permit AQ0982MSS11 are rescinded upon issuance of Minor Permit AQ0982MSS12.

7. EMISSIONS SUMMARY AND PERMIT

Table A shows the emissions summary with assessable emissions from the stationary source. The Department notes the changes in KLU's PTE, as shown below.

Table A – Emissions Summary and Permit Applicability, tons per year (TPY)

Parameter	NO_X	CO	VOC	$PM_{2.5}$	PM_{10}	SO_2
PTE (before modification)						
Assessable Emissions from Drill Rig (AQ0982MSS10)	12.12	41.49	74.87	3.99	3.99	5.61
Assessable Emissions from Platform (AQ0982MSS11)	23.82	18.69	5.39	0.72	0.72	0.04
Assessable Emissions	35.94	60.18	80.26	4.71		5.65
Total Assessable (without drill rig)	48.66					
Total Assessable (with drill rig)[1, 2]	186.74					
PTE (after modification, replace EU ID 5 with 5a, add EU ID 8)						
Assessable Emissions from Platform (AQ0982MSS12)	26.10	20.60	5.51	0.89	0.89	0.05
Change in PTE	+2.28	+1.91	+0.13	+0.16	+0.16	+0.01
18 AAC 50.502(c)(4) Minor Permit	40	N/A[3]	N/A	10	15	40

Parameter	NO_X	CO	VOC	$PM_{2.5}$	PM_{10}	SO_2
Thresholds						
502(c)(4) Applicable?	No	No	No	No	No	No
Total Assessable (without drill rig)	53.15					
Total Assessable (with drill rig)[1, 2]	191.23					

Notes:

1. Assessable emissions include fugitive emissions but do not include nonroad engines. Fugitive emissions are not included in the table because the stationary source does not engage in major fugitive-emitting operations.
2. PM_{10} emissions include $PM_{2.5}$ emissions. Therefore, $PM_{2.5}$ is not counted in total assessable emissions.
3. CO threshold under 18 AAC 50.502(c)(4) is only applicable to a stationary source within 10 kilometers of a CO nonattainment area. The threshold of 100 TPY is not included in this permit because it is not applicable to the KLU.

8. REVISIONS TO PERMIT CONDITIONS

Table B below lists the requirements carried over from Minor Permit AQ0982MSS10 into Minor Permit AQ0982MSS12.

Table B – Comparison of AQ0982MSS10 to AQ0982MSS12 Conditions[15]

Permit AQ0982MSS10 Condition No.	Description of Requirement	Permit AQ0982MSS12 Condition No.	How Condition was Revised
3	Drill Rig Location and Operation	3	Revised MR&R to specify reporting of drill rig location to Air Online Services and requirements anytime a new drill rig is operated at the KLU with the specifications and changes to emissions when compared to the Yost Drill Rig in Condition 3.1. Added Condition 3.2 to include MR&R requirements for instances when a drill rig is not included at the KLU. Revised Condition 3.3 to streamline. Replaced NRE reference with the updated citation (40 C.F.R. 1068.30).
Section 3	Visible Emissions Standard and MR&R for EU IDs 66 and 73	7 through 11	Expanded MR&R for EU IDs 66 and 73. Added MR&R pertaining to portable flares used for well-testing, applicable to EU ID 66.
Section 3	PM Emissions Standard and MR&R for EU IDs 66 and 73	12 through 15	Expanded MR&R for EU IDs 66 and 73.

[15] This table does not include all standard and general conditions.

Permit AQ0982MSS10 Condition No.	Description of Requirement	Permit AQ0982MSS12 Condition No.	How Condition was Revised
Section 3	SO_2 Emissions Standard and MR&R for EU IDs 66 and 73	16 through 18	Expanded MR&R and cross-referenced applicable requirements (AAAQS and ORLs) for EU IDs 66 and 73.
12	AAAQS protection requirements – 24-hour PM_{10}, and 1-hour, 3-hour, and 24-hour SO_2	20	Same requirements, with a slight rewording for clarity. Added ±5 percent accuracy, based on common instrumentation for fuel gas flow.
13	AAAQS protection requirements – Annual NO_2, SO_2, and $PM_{2.5}$	21	Same requirements, combined Condition 13.1 and 13.2 (Condition 21.1) and a slight rewording for clarity. Added EE/PD reporting requirement in Condition 21.3 for requirements not being met for clarity.
14	AAAQS protection requirements – 1-hour, 3-hour, and 24-hour SO_2	22	Same requirements, cross-referenced Table 2 (Drill Rig EUs). Added EE/PD reporting requirement in Conditions 22.1d and 22.2c for requirements not being met for clarity.
15 & 16	ORLs for EU ID 66 to avoid Title V permitting under 18 AAC 50.326	23	Combined Conditions 15 and 16 to streamline, same EU.

Table C below lists the requirements carried over from Minor Permit AQ0982MSS10 Revision 1 into Minor Permit AQ0982MSS12.

Table C – Comparison of AQ0982MSS10 Revision 1 to AQ0982MSS12 Conditions[16]

Permit AQ0982MSS10 Revision 1 Condition No.	Description of Requirement	Permit AQ0982MSS12 Condition No.	How Condition was Revised
Section 1	Emissions Unit Inventory	Table 2	No change.
Section 2	Fee Requirements	Section 2	Updated PTE to 191.23 TPY (with drill rig) and 53.15 TPY (without drill rig).
6.1 & 6.2	Visible Emissions and PM MR&R for EU ID 73	7.3 & 12.3	No change.

[16] This table does not include all standard and general conditions.

Permit AQ0982MSS10 Revision 1 Condition No.	Description of Requirement	Permit AQ0982MSS12 Condition No.	How Condition was Revised
8	NRE MR&R to protect the AAAQS	19	No change, except cross-referencing Table 2 (Drill Rig EUs) and corrected a typo in Condition 19.1b.

Table D below lists the requirements carried over from Minor Permit AQ0982MSS11 into Minor Permit AQ0982MSS12.

Table D – Comparison of AQ0982MSS11 to AQ0982MSS12 Conditions[17]

Permit AQ0982MSS11 Condition No.	Description of Requirement	Permit AQ0982MSS12 Condition No.	How Condition was Revised
Section 1	Emissions Unit Inventory	Table 1	Removed EU IDs 1, 2, and 3.
Section 2	Fee Requirements	Section 2	Updated PTE to 191.23 TPY (with drill rig) and 53.15 TPY (without drill rig).
Section 3	Visible Emissions Standard and MR&R	7 through 11	Expanded MR&R for EU IDs 1a and 2a. Added MR&R for EU ID 3a and 6 that could become significant, based on SPC IX. Added MR&R for EU IDs 4, 5a, and 8.
Section 3	PM Emissions Standard and MR&R	12 through 15	Expanded MR&R for EU IDs 1a and 2a. Added MR&R for EU IDs 3a and 6 that could become significant, based on SPC IX. Added MR&R for EU IDs 4, 5a, and 8.
Section 3	SO_2 Emissions Standard and MR&R	16 through 18	Expanded MR&R and cross-reference applicable requirements (AAAQS and ORLs) for EU IDs 1a, 2a, 3a, and 6. Added MR&R for EU IDs 4, 5a, and 8.

[17] This table does not include all standard and general conditions.

Permit AQ0982MSS11 Condition No.	Description of Requirement	Permit AQ0982MSS12 Condition No.	How Condition was Revised
9	Operational limit to avoid classification under 18 AAC 50.502(c)(4) for NO_X	24	Same requirements, except as follows: Removed EU ID 3. Added heading "NO_X Limit, EU IDs 3a and 6." and streamlined MR&R for clarity.
10	Notification of removal of EU IDs 1, 2, and 3	None	Requirement not carried over, EUs already removed.
11	Operate emPact control on EU IDs 1a and 2a to limit NO_X emissions.	25	Same requirements, slight rewording to streamline. Requirement to report deviations for EU IDs 1a or 2a operating without an emPact system already specified in Condition 25.1. Added "NO_X Limit, EU IDs 1a and 2a" for clarity.
12	SO_2 avoidance limits for EU IDs 1 – 6.	26	Same requirements, except as follows: Removed EU IDs 1, 2, 3, and 5. Condition 12.1 not carried over, references completed requirement. Revised for clarity, as follows: Added "SO_2 Limit, EU IDs 1a – 6" heading in Condition 26. Revised heading in Condition 26.1 to "Fuel Gas Sulfur Content, EU IDs 1a, 2a, 4, and 5a." and "Liquid Fuel Sulfur Content, EU IDs 3a and 6." in Condition 26.2. Streamlined MR&R.
None	Regional Haze Visibility Protection Area Requirements	33	Added Regional Haze Visibility Area requirements under 18 AAC 50.265(4)(B) for units in the Regional Haze Visibility Protection Area, which is in Figure III.K.13 H-1 in the State Air Quality Control Plan.

9. PERMIT ADMINISTRATION

Minor Permit AQ0982MSS12 rescinds Minor Permits AQ0982MSS10, AQ0982MSS10 Revision 1, and AQ0982MSS11. Furie Operating Alaska, LLC may operate in accordance with Minor Permit AQ0982MSS12 upon issuance.

10. PERMIT CONDITIONS

The bases for the standard and general conditions imposed in Minor Permit AQ0982MSS12 are described below.

Cover Page

18 AAC 50.544(a)(1) requires the Department to identify the stationary source, Permittee, and contact information. The Department provided this information on the cover page of the permit.

Section 1: Emissions Unit Inventory

The EUs authorized and/or restricted by this permit are listed in Table 1 and Table 2 of the permit. Unless otherwise noted in the permit, the information in Table 1 and Table 2 is for identification purposes only.

Condition 1 is a general requirement to comply with AS 46.14 and 18 AAC 50 when installing a replacement EU.

Condition 3 is a requirement carried over from Minor Permit AQ0982MSS10 to notify the Department any time the drill rig is relocated at a location authorized by the permit and to provide a summary of the drilling operations during the reporting period (including if the drill rig is at the KLU). Furie is also required to notify the Department of the changes in emissions compared to the Yost Drill Rig and provide the specifications anytime a new drill rig is brought onto the KLU.

Section 2: Fee Requirements

18 AAC 50.544(a)(2) requires the Department to include a requirement to pay fees in accordance with 18 AAC 50.400-499 in each minor permit issued under 18 AAC 50.542. The Department used the Standard Permit Condition (SPC) I language for Minor Permit AQ0982MSS12. However, the Department modified the condition by removing the requirement to only pay for emissions of each air pollutant in quantities of 10 tons per year or greater, to be consistent with the updates to the emission fees in 18 AAC 50.410(a) that went into effect September 7, 2022. The Department is in the process of incorporating these updates into SPC I.

Section 3: State Emissions Standards

Conditions 7 through 11, Visible Emissions Standards and MR&R

Visible emissions, excluding condensed water vapor, from an industrial process or fuel-burning equipment may not reduce visibility through the effluent by more than 20 percent averaged over six consecutive minutes, under 18 AAC 50.055(a)(1). Per 18 AAC 50.990(39), “fuel-burning equipment” does not include mobile internal combustion engines (e.g., NREs).

The Department has included monitoring, recordkeeping, and reporting requirements to ensure continued compliance with the VE standards using Standard Permit Condition (SPC) IX language, except for removing VE monitoring plan (SPC IX Conditions 2.2 and 4.1), since it has not been established for EU ID 3a or 66 and specifying an initial Method 9 demonstration for EU ID 66 (SPC IX Condition 5.1a) within 12 months of the first flare event after becoming fully operational.

Diesel fired engines and boilers have the tendency to exceed the VE standards. As such, the Department has included a requirement to perform Method 9 testing as well as recordkeeping and reporting requirements in Condition 7 to demonstrate continued compliance with the standard.

SPC IX also provides specific monitoring exceptions, as well as monitoring triggers, for emissions units that are potentially insignificant due to actual or potential emissions but are significant per 18 AAC 50.326(d)(1), as indicated in Conditions 7.1 through 7.4.

For the natural gas (NG) fired EUs, the monitoring for visible emissions is waved; i.e., no Method 9 or Smoke/No Smoke Observations is required. The Department has found that natural gas fuel burning equipment inherently has visible emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

The Permittee must state in each operating report whether only NG were used in the equipment during the period covered by the report.

Flares (EU ID 66):

Monitoring for flares requires Method 9 observations of scheduled daylight flaring events lasting more than one hour. The Permittee must report the results of these observations to the Department.

For EU ID 66, the Permittee is required to conduct an initial visible emissions observation within 12 months of the first flare event after becoming fully operational, and a subsequent visible emissions observation within 14 months, but not earlier than three months, after the preceding flare event visible emissions observation.

Conditions 12 through 15, Particulate Matter (PM) Emissions Standard and MR&R

PM emitted from an industrial process or fuel burning equipment may not exceed 0.05 grains per cubic foot of exhaust gas (gr/dscf), averaged over three hours, under 18 AAC 50.055(b).

Experience has shown there is a correlation between opacity and PM. Twenty percent VE would normally comply with the 0.05 gr/dscf. As such, compliance with the opacity limits is included as a surrogate method of assuring compliance with the PM standard.

For the NG fired EUs, the monitoring for PM emissions is waived; i.e., no source testing will be required. The Department has found that NG fuel burning equipment inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

The Permittee must state in each operating report whether only NG were used in the equipment during the period covered by the report.

As indicated in Conditions 12.1 and 12.2, as long as EU IDs 3a and 6 have actual emissions below the significant emissions thresholds in 18 AAC 50.326(e), monitoring shall consist of an annual compliance certification based on reasonable inquiry. If EU IDs 3a and 6 have actual emissions that exceed the significant emissions thresholds, then Conditions 13 through 15 will apply. The Department modified the language from SPC IX to specify the stack diameter reporting requirement within 30 calendar days in Condition 14.1 for EU IDs 3a and 6 if the thresholds under 18 AAC 50.326(e) are exceeded.

The Permittee must establish by visual observations, which may be supplemented by other means (e.g., a defined stationary source operation and maintenance program), that the stationary source is in continuous compliance with the state's emissions standard for PM. PM source testing is triggered if the result of any Method 9 observation results in an 18-minute opacity greater than 20 percent opacity, as specified in Condition 13.1. No source testing will be required as long as a PM source test on the effected EU has shown compliance with the PM standard during this permit term or corrective action was taken to reduce visible emissions and succeeding Method 9 observations show compliance with the visible emissions standard of no more than 20 percent opacity, as specified in Condition 13.3.

Monitoring of flares for PM is waived; i.e., no source testing is required, because of the difficulty and questionable results these tests produce when applied to flares. Compliance with the state visible emissions standard serves as surrogate compliance demonstration for the state particulate matter emissions standard.

Conditions 16 through 18, Sulfur Compound Emissions Standard and MR&R

Sulfur compound emissions from an industrial process or fuel burning equipment may not exceed 500 ppm averaged over a period of three hours, under 18 AAC 50.055(c).

Calculations show that fuel oil with sulfur content less than 0.74 percent by weight will comply with the state emissions standard. Calculations show that natural gas with a sulfur content less than 4,000 parts per million by volume will comply with the state standards.

Diesel fuel grades that require less than 0.5 percent fuel sulfur will meet the state emissions standard. Since pipeline quality gas contains less than 100 ppmv, burning pipeline quality gas would comply with the standard. The permit contains appropriate monitoring for compliance with the standard.

The MR&R for compliance with the state sulfur compound emissions are streamlined by requiring compliance with the more stringent limits in Conditions 22.1 and 26.2 (ULSD) and Conditions 22.2 and 26.1 (250 ppmv and 2000 gr/dscf for NG, respectively), rather than have two sets of MR&R. For NG fired EUs (EU IDs 8, 66, and 73) that are not subject to a limit, MR&R in Conditions 17.2 , 22.2a, and 22.2b apply.

Section 4: Ambient Air Quality Protection Requirements

18 AAC 50.544(a)(6) requires the Department to include conditions to protect air quality, when warranted. The conditions below describe the AAAQS requirements carried over from Minor Permits AQ0982MSS10, AQ0982MSS10 Revision 1, and AQ0982MSS11.

Condition 19, Cumulative NRE limit

Minor Permit AQ0982MSS12 carries forward the revised NRE MR&R from Minor Permit AQ0982MSS10 Revision 1 with a cumulative NRE limit of 7,635 bhp. Therefore, the ambient air quality analysis used in support of Minor Permit AQ0982MSS10 is still valid for this permit.

The cumulative operating NRE horsepower (hp) on board consists of three operating scenarios: 6,767 bhp during drilling, 6,788 bhp during cementing, and 5,995 bhp during support (testing/casting) operations. These estimates are based on the engines that Furie identified would be operated during each of these three operating scenarios. During

operations not defined as drilling, support (testing/casing), or cementing, the Permittee will be required to track the operational status of every engine on board as described in Condition 19.1a(ii).

Conditions 20 through 22, Requirements to Protect AAAQS

Condition 20 requires EU ID 66 to flare no more than 25 MMscf/day in order to protect the 24-hour PM_{10} AAAQS, and the 1-hour, 3-hour, and 24-hour SO_2 AAAQS with MR&R. Condition 21 requires EU ID 66 to consume no more than 250 MMscf per rolling 12-month period to protect the annual NO_2, SO_2, and $PM_{2.5}$ AAAQS with MR&R. Condition 22 contains requirements for the drill rig EUs in Table 2 to burn ULSD and EU ID 66 to not exceed 250 ppmv to protect the 1-hour, 3-hour, 24-hour, and annual SO_2 AAAQS with MR&R.

These conditions were originally established in Minor Permit AQ0982MSS08 for the Yost Drill Rig and are carried over into Minor Permit AQ0982MSS11. As long as the drill rig has similar or fewer emissions of criteria pollutants when compared to the Yost Drill Rig and the cumulative operating NRE limit of 7,635 hp is met, the ambient air quality analysis in Minor Permit AQ0982MSS08 remains valid. Additional information regarding the ambient air conditions that were carried from Minor Permit AQ0982MSS08 may be found in Appendix B of the TAR for Minor Permit AQ0982MSS08.

Section 5: Owner Requested Limits (ORLs)

18 AAC 50.544(h) describes the requirements for a permit classified under 18 AAC 50.508(5). This permit describes the ORLs, including specific testing, monitoring, recordkeeping, and reporting requirements; it lists all equipment covered by the ORLs; and describes the classification that the limit allows the applicant to avoid. The conditions below describe the ORLs carried over from Minor Permits AQ0982MSS10 and AQ0982MSS11. Note that Conditions 24 through 26 were previously established ORLs to avoid permitting under 18 AAC 50.502(c)(1) for a new stationary source and have therefore been carried forward into Minor Permit AQ0982MSS12 as such.

Condition 23, ORL to avoid Title V Permitting under 18 AAC 50.326 for VOC and CO.

Condition 23 cross-references Condition 21 to limit flaring from EU ID 66 that allows Furie to avoid classification as a Title V major source under 18 AAC 50.326, therefore allowing the KLU to be classified as a minor source for permitting purposes.

Condition 24, NO_X Limit, EU IDs 3a and 6

Condition 24 contains an operational limit on each of EU IDs 3a and 6 to no more than 4,000 hours per rolling 12-month period to avoid classification under 18 AAC 50.502(c)(1) by limiting NO_X emissions to 14.9 TPY. Furie is required to use a dedicated hour meter to track the hours of operation of these EUs.

Condition 25, NO_X Limit, EU IDs 1a and 2a

Condition 25 requires Furie to install, maintain, and operate an emPact control system for calculating PTE on EU IDs 1a and 2a to continue avoiding classification under 18 AAC 50.502(c)(1) by liming the NO_X and CO PTE. EU IDs 1a and 2a use the emission factors from the emPact control system to calculate PTE.

Condition 26, SO_2 Limit, EU IDs 1a – 6

Condition 26 carries over the requirement for the fuel gas sulfur content of EU IDs 1a, 2a, 4, and 5a to not exceed 2000 grains/MMscf for natural gas, and for EU IDs 3a and 6 to fire ULSD, with MR&R to continue avoiding classification under 18 AAC 50.502(c)(1) for SO_2.

Section 6: General Recordkeeping, Reporting, and Certification Requirements

Condition 27, Recordkeeping Requirements

The condition restates the regulatory requirements for recordkeeping, and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide evidence of compliance with this requirement.

Condition 28, Certification

18 AAC 50.205 requires the Permittee to certify any permit application, report, affirmation, or compliance certification submitted to the Department. The Department used the language in Standard Permit Condition (SPC) XVII. This requirement is reiterated as a standard permit condition in 18 AAC 50.345(j).

Condition 29, Submittals

Condition 29 clarifies where the Permittee should send their reports, certifications, and other submittals required by the permit. The Department used the language in SPC XVII. The Department included this condition from a practical perspective rather than a regulatory obligation.

Condition 30, Information Requests

AS 46.14.020(b) allows the Department to obtain a wide variety of emissions, design and operational information from the owner and operator of a stationary source. This statutory provision is reiterated as a standard permit condition in 18 AAC 50.345(i). The Department used the standard language in Minor Permit AQ0982MSS12.

Condition 31 and Section 11, Excess Emission and Permit Deviation Reports

This condition reiterates the notification requirements in 18 AAC 50.235(a)(2) and 18 AAC 50.240 regarding unavoidable emergencies, malfunctions, and excess emissions. Also, the Permittee is required to notify the Department when emissions or operations deviate from the requirements of the permit. The Department used the language in SPCs III and IV, except as follows:

The Department has modified Condition 31.3 and the Notification Form in Section 11 to reflect the electronic submittal requirements in 18 AAC 50.270 using the Department's online form to submit notification of excess emissions and permit deviations beginning September 7, 2023. The electronic notification form is found at the Division of Air Quality's Air Online Services (AOS) system webpage http://dec.alaska.gov/applications/air/airtoolsweb using the Permittee Portal option. Submittal through other methods may be allowed only upon written Department approval. Beyond as noted, the Department has determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3).

Condition 32, Operating Reports

The Department mostly used the SPC VII language for the operating report condition. However, the Department modified or eliminated the Title V only aspects in order to make the language applicable for a minor permit.

Condition 33, Regional Haze Visibility Protection Area

Condition 33 contains requirements from 18 AAC 50.265(1) and 50.265(4)(B) for stationary sources located in the Regional Haze Visibility Protection Area (RHVPA), as specified in 18 AAC 50.025(a)(4), which is shown in Figure III.K.13 H-1 of the July 5, 2022 Amendments to the: State Air Quality Control Plan (Regional Haze SIP)[18] and adopted by reference in 18 AAC 50.030. Condition 33.1 contains the requirements from 18 AAC 50.265(1) which require Permittees to maintain onsite for 10 years, records of any maintenance to any significant emissions unit that has or may have an effect on any emission that affects visibility of Class I areas. Condition 33.2 contains the requirements from 18 AAC 50.265(4)(B) which requires Permittee's to report a best estimate of the projected equipment life in the first operating report required in Condition 32 after a new significant emissions unit is installed (i.e., significant EUs installed after July 5, 2022) at the stationary source.

Condition 34, Annual Affirmation

The Permittee shall submit to the Department by March 31 of each year, an affirmation certified according to Condition 28 of whether the stationary source is still accurately described by the application and this permit, and whether any changes have been made to the stationary source that would trigger the requirement for a new permit under 18 AAC 50.

Condition 35, Air Pollution Prohibited

18 AAC 50.110 prohibits any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property. Condition 35 reiterates this prohibition as a permit condition. The Department used the SPC II language for Minor Permit AQ0982MSS12.

Condition 36, Triennial Emission Inventory Reporting

This condition requires the Permittee to submit emissions data to the state so the state is able to satisfy the federal requirement to submit emission inventory data from point sources to the EPA as required under 40 C.F.R. 51.15 and 51.321. The federal emission inventory requirement applies to sources defined as point sources in 40 C.F.R. 51.50. Under 18 AAC 50.275, the state also requires reporting of emissions triennially for stationary sources with an air quality permit, regardless of permit classification. This includes sources that do not meet the federal emission thresholds in Table 1 to Appendix A of 40 C.F.R. 51 Subpart A. The state must report emissions data as described in 40 C.F.R. 51.15 and the data elements in Tables 2a and 2b to Appendix A of 40 C.F.R. 51 Subpart A to EPA.

The Department modified the language in SPC XV for the permit condition by lowering the thresholds that require reporting to include all stationary sources regardless of permit

[18] The July 5, 2022 Amendments to: State Air Quality Control Plan for the Regional Haze SIP can be found at the following website: https://dec.alaska.gov/media/25964/section-iii-k-13-second-implementation-period-combined-sip-section-adopted-07-05-22.pdf.

classification (excluding ORLs and PAELs) to capture the new requirements found in 18 AAC 50.275, effective September 7, 2022.

As of the issue date of this permit, the KLU is required to report triennially.

Condition 37, Consistency of Reporting Methodologies

Condition 37 is from 18 AAC 50.275(a) and requires all stationary sources, regardless of permit classification (with the exception of owner requested limits (ORLs) issued under 18 AAC 50.225 and preapproved emission limits (PAELs) issued under 18 AAC 50.230), to report actual emissions to the state so that the state can meet its obligation under 40 C.F.R. 51. Condition 37.1 is from 18 AAC 50.275(b) and requires consistency on the stationary sources' actual emissions reports submitted for NEI and the state's assessable emissions.

The regulation was added to 18 AAC 50 on September 7, 2022, to include all stationary sources required to report actual emissions for the purpose of federal emissions inventory and to avoid inconsistencies in actual emissions reports submitted. When reporting actual emissions under Condition 36 or assessable emissions under Condition 5.2, consistent emission factors and calculation methods shall be used for all reporting requirements for the stationary source.

Section 7: Standard Permit Conditions

Conditions 38 – 43, Standard Permit Conditions

18 AAC 50.544(a)(5) requires each minor permit issued under 18 AAC 50.542 to contain the standard permit conditions in 18 AAC 50.345, as applicable. 18 AAC 50.345(a) clarifies that subparts (c)(1) and (2), and (d)-(o), may be applicable for a minor permit.

The Department included the minor permit-related standard conditions of 18 AAC 50.345 in Minor Permit AQ0982MSS12. The Department incorporated these standard conditions as follows:

- 18 AAC 50.345(c)(1) and (2) is incorporated as Condition 38 of Section 7 (Standard Permit Conditions);
- 18 AAC 50.345(d)-(h) is incorporated as Conditions 39 through 43, respectively, of Section 7 (Standard Permit Conditions);
- As previously discussed, 18 AAC 50.345(i) is incorporated as Condition 30 and 18 AAC 50.345(j) is incorporated as Condition 28 of Section 6 (Recordkeeping, Reporting, and Certification Requirements); and
- 18 AAC 50.345(k) is incorporated as Condition 44 and 18 AAC 50.345(l)-(o) is incorporated as Conditions 47 through 52, respectively, of Section 8 (General Source Test Requirements). See the following discussion.

Section 8: General Source Test Requirements

AS 46.14.180 states that monitoring requirements must be, "based on test methods, analytical procedures, and statistical conventions approved by the federal administrator or the department or otherwise generally accepted as scientifically competent." The Department incorporated this requirement as follows:

- Condition 45 requires the Permittee to conduct their source tests under conditions that reflects the actual discharge to ambient air; and
- Condition 46 requires the Permittee to use specific EPA reference methods when conducting a source test.

Section 8 also includes the previously discussed standard conditions for source testing.

APPENDIX A: Emissions Calculations

Table A-1 presents details of the EUs, their characteristics, and emissions. Potential emissions are estimated using maximum annual operation for all fuel burning equipment as defined in 18 AAC 50.990(39) subject to any operating limits.

Table A-1 – Emissions Summary, in Tons Per Year (TPY)

EU ID	EU Description	Rating		Max Allowable Operation		NO_X & CO EF Units	NO_X		CO		VOC EF Units	VOC		$PM_{2.5}$, PM_{10} EF Units	$PM_{2.5}$ / PM_{10}		SO_2
							EF[1]	PTE	EF[1]	PTE		EF[2]	PTE		EF[3]	PTE	PTE[4]
Platform Units																	
1a	Generator	402	hp	2.80E-06	MMscf/hr	g/hp-hr	0.5	1.94	1	3.87	g/hp-hr	0.31	1.20	lb/MMBtu	7.7 E-05	4E-04	0.01
2a	Generator	402	hp	2.80E-06	MMscf/hr	g/hp-hr	0.5	1.94	1	3.87	g/hp-hr	0.31	1.20	lb/MMBtu	7.7 E-05	4E-04	0.01
3a	Auxiliary Generator	274	kW	4,000	hrs/yr	lb/hr	5.02	10.04	1.16	2.32	lb/hr	0.13	0.26	lb/hr	0.1	0.20	0.01
4	Heater	1.2	MMBtu/hr	8,760	hrs/yr	lb/MMscf	100	0.52	84	0.43	lb/MMscf	5.5	0.03	lb/MMscf	7.6	0.04	1.47E-03
5a	Heater	1.5	MMBtu/hr	8,760	hrs/yr	lb/MMscf	100	0.64	84	0.54	lb/MMscf	5.5	0.04	lb/MMscf	7.6	0.04	1.84E-03
6	Platform Crane	403	kW	4,000	hrs/yr	g/kWh	5	8.88	4.38	7.76	lb/hp-hr	2.47 E-03	2.67	g/kWh	0.25	0.44	0.01
8	Heater	5	MMBtu/hr	8,760	hrs/yr	lb/MMscf	100	2.15	84	1.80	lb/MMscf	5.5	0.12	lb/MMscf	7.6	0.16	0.013
Total PTE of Platform Units[6]								**26.10**		**20.60**			**5.51**			**0.89**	**0.05**
Total Overall PTE (no drill rig)[6]						**53.15**											
Drill Rig Units																	
66	Temporary Well Flare	160	MMscf	250	MMscf/yr	lb/MMBtu	0.068	8.93	0.31	40.69	lb/MMBtu	0.57	74.81	lb/MMBtu	0.0264	3.47	5.57
73	Well Test Equipment Boilers/Heaters	5	MMBtu/hr	319,648[5]	gal/yr	lb/kgal	20	3.20	5	0.80	lb/kgal	3.40 E-01	0.05	lb/kgal	3.3	0.53	0.03
Total PTE of Drill Rig Units[6]								**12.12**		**41.49**			**74.87**			**3.99**	**5.61**
Total PTE (with drill rig)[6]								**38.22**		**62.09**			**80.38**			**4.88**	**5.66**

EU ID	EU Description	Rating	Max Allowable Operation	NO_X & CO EF Units	NO_X		CO		VOC EF Units	VOC		$PM_{2.5}$, PM_{10} EF Units	$PM_{2.5}$ / PM_{10}		SO_2
					EF[1]	PTE	EF[1]	PTE		EF[2]	PTE		EF[3]	PTE	PTE[4]
Total Overall PTE (with drill rig)[6]				**191.23**											

Notes:

1 NO_X and CO Emissions Factors (EFs) are from the following: a) Vendor data for EU IDs 1a through 3a; b) EPA AP-42 Table 1.4-1 for EU IDs 4, 5a, and 8; c) Table 3 to Appendix I 40 C.F.R. 1039 (Tier 3) with 1.25 not-to-exceed (NRE) for EU ID 6; and d) EPA AP-42 Table 13.5-1 and Table 1.3-1 for EU IDs 66 and 73, respectively.

2 VOC EFs are from the following: a) Vendor data for EU IDs 1a through 3a; b) EPA AP-42 Table 1.4-2 for EU IDs 4, 5a, and 8; c) EPA AP-42 Table 3.3-1 for EU ID 6; d) EPA AP-42 Table 1.1-3 for EU ID 66; and e) EPA AP-42 Table 1.3-3 for EU ID 73.

3 $PM_{10}/PM_{2.5}$ EFs are from the following: a) EPA AP-42 Table 3.2-2 for EU IDs 1a and 2a; b) Vendor data for EU ID 3a; c) EPA AP-42 Table 1.4-2 for EU IDs 4, 5a, and 8; d) Table 3 to Appendix I 40 C.F.R. 1039 (Tier 3) with 1.25 NRE for EU ID 6; e) EPA AP-42 Table 13.5-2 for EU ID 66; and f) EPA AP-42 Table 1.3-2 (Condensable PM, No. 2 oil – 1.3 lb/kgal), 7 (Filterable PM, Distillate Oil – 2 lb/kgal) for EU ID 73.

4 SO_2 EFs are from the following: a) 2,000 grains/MMscf natural gas sulfur content for EU IDs 1a, 2a, 4, and 5a; b) Mass balance (15 ppmw S (ULSD)) for EU IDs 3a and 6; c) EPA AP-42 Table 1.4-2 for EU ID 8; d) EPA AP-42 Table 1.1-3 for EU ID 66; and e) EPA AP-42 Table 1.3-1 for EU ID 73 (ULSD).

5 Assumes 137,030 Btu/gal diesel, 1,000,000 Btu/MMBtu, and operations of 8,760 hrs/yr.

6 PTE does not include non-road engines.