

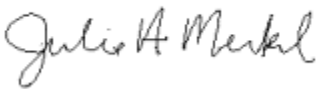
January 6, 2022

Ken Parker, VP, Facilities Engineering and Operations
Crusoe Energy Systems, Inc.
1641 California St, Suite 400
Denver, CO 80202

Dear Mr. Parker:

Montana Air Quality Permit #5265-00 is deemed final as of December 24, 2021, by the Department of Environmental Quality (Department). This permit is for a Generator Site. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,



Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626



John P. Proulx
Environmental Scientist 2
Air Quality Bureau
(406) 444-5391

JM:JPP
Enclosure

Montana Department of Environmental Quality
Air, Energy & Mining Division

Montana Air Quality Permit #5265-00

Crusoe Energy Systems, Inc.
1641 California St., Ste 400
Denver, CO 80202

December 24, 2021



MONTANA AIR QUALITY PERMIT

Issued To: Crusoe Energy Systems, Inc.
1641 California St. Suite 400
Denver, CO 80202

MAQP: #5265-00
Application Complete: 10/13/2021
Preliminary Determination Issued: 11/5/2021
Department's Decision Issued: 12/8/2021
Permit Final: 12/24/2021

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Crusoe Energy Systems, Inc. (Crusoe), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Permitted Equipment

Crusoe proposes to install and operate multiple Waukesha 9394 GSI engines.

The engines would be used to generate electricity through the combustion of gas that would otherwise be flared from an existing oil and gas facility. Each engine utilizes an air fuel ratio controller and a three-way catalyst to reduce emissions.

B. Plant Location

This facility is to be located approximately 11.3 miles southeast of Bainville, Montana, in Section 21, Township 26 North, Range 59 East, in Richland County, 47.99716°N, latitude and -104.1072°W, longitude, and is known as the Kai Pad.

Section II: Conditions and Limitations

A. Emission Limitations

1. Crusoe shall not have on site more than ten (10) natural gas-fired generator engines (ARM 17.8.749).
2. Emissions from each individual Waukesha 9394 GSI engine at the Kai Pad shall not exceed the following (ARM 17.8.752):

Particulate Matter (PM), PM₁₀, PM_{2.5} – 0.83 lb/hr
SO₂ – 0.08 lb/hr
NO_x – 0.15 gr/bhp-hr
CO – 0.30 gr/bhp-hr
VOC – 0.010 gr/bhp-hr

3. Crusoe shall operate and maintain a non-selective catalytic reduction (NSCR) unit and an air/fuel ratio (AFR) controller within the parameters recommended by the equipment manufacturer on each Waukesha 9394 GSI engine (ARM 17.8.752).

4. Crusoe shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
5. Crusoe shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
6. Crusoe shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precaution limitation in Section II.A.4 (ARM 17.8.749).
7. Crusoe shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in Title 40 Code of Federal Regulations (CFR) 60, Subpart A, Subpart JJJJ, ARM 17.8.340 and 40 CFR 60, Subpart(s) A and JJJJ).
8. Crusoe shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR 63, Subpart A, Subpart ZZZZ (ARM 17.8.340 and 40 CFR 63, Subpart(s) A and ZZZZ).

B. Testing Requirements

1. Crusoe shall demonstrate compliance with the permit limits in Section II.A.1 via source testing within 180 days after equipment commencement. Source testing shall be conducted for NO_x, CO, and VOCs simultaneously. Compliance test results are determined by the average of three 1-hour or longer runs. Results shall be submitted to the Montana Department of Environmental Quality (Department) to demonstrate compliance with the emission limitations in Section II.A.2 (ARM 17.8.105 and ARM 17.8.749).
2. Following the calendar date of the initial compliance demonstration, compliance with the applicable emission limits shall be demonstrated via source testing for NO_x, CO, and VOCs simultaneously within 8,760 operating hours or 3 years, whichever comes first. Source testing shall follow the applicable methods defined in 40 CFR 60 Subpart JJJJ, or equivalent methods as approved in writing by the Department. Future compliance demonstration shall be required at this same frequency for each engine on site from the date of the last compliance demonstration (ARM 17.8.105, ARM 17.8.749, ARM 17.8.340, 40 CFR 60 Subpart JJJJ, and 40 CFR 60 Subpart KKKK).
3. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Crusoe shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation.

The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

2. All records compiled in accordance with this permit must be maintained by Crusoe as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request. These records may be stored at a location other than the plant site upon approval by the Department (ARM 17.8.749).
3. Crusoe shall annually certify that the Kraken Central Site emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emissions inventory information (ARM 17.8.749 and ARM 17.8.1204).

D. Notification

1. Crusoe shall notify the Department in writing of the date of commencement of operation of any emitting source within 30-days following the date of commencement.

SECTION III: General Conditions

- A. Inspection – Crusoe shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Crusoe fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Crusoe of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department’s decision on the application is final 16 days after the Department’s decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Crusoe may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit – Construction or installation must begin, or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis
Crusoe Energy Systems, Inc. – Kai Pad
MAQP #5265-00

I. Introduction/Process Description

Crusoe Energy Systems, Inc., (Crusoe) proposes to operate generator engines at an existing oil and gas well. The facility is located 11.3 miles southeast of Bainville, Montana, in Section 21, Township 26 North, Range 59 East, in Richland County, 47.99712°N, latitude and - 104.1072°W, longitude, and is known as the Kai Pad.

A. Permitted Equipment

Crusoe proposes to install ten (10) 2,500 brake horsepower (bhp) Waukesha 9394 GSI generator engines at the Kai Site.

B. Source Description

Crusoe plans to install and operate ten (10) 2,500 bhp Waukesha 9394 GSI generator engines for the purpose of generating electricity to power local data farms. The engines will utilize well gas that would otherwise be flared to the atmosphere.

C. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

Crusoe shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀
11. ARM 17.8.230 Fluoride in Forage

Crusoe must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter.

- (2) Under this rule, Crusoe shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
 4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
 5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.
 6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
 7. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
 8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Crusoe is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.
 - a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:
 - b. 40 CFR 60, Subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. The proposed engines will be ordered after June 12, 2006, and manufactured after either July 1, 2007 and July 2, 2008, as applicable based on horsepower. Therefore, the engines operated at this facility are subject to this regulation.
 10. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:

- a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAP Subpart as listed below:
 - b. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Subpart ZZZZ applies to the new reciprocating engines but compliance with Subpart ZZZZ is demonstrated by compliance with 40 CFR 60 Subpart JJJJ.
- D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:
1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Crusoe submitted the appropriate permit application fee for the current permit action.
 2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.
- E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Crusoe has a PTE greater than 25 tons per year of Oxides of Nitrogen (NO_x) and Carbon Monoxide (CO); therefore, an air quality permit is required.
 3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
 4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. Crusoe submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Crusoe submitted an affidavit of publication of public notice for the *October 13, 2021* issue of the *Sidney Herald*, a newspaper of general circulation in the Town of Sidney in Richland County, as proof of compliance with the public notice requirements.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Crusoe of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.
16. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, Montana Code Annotated (MCA).
17. ARM 17.8.771 Mercury Emission Standards for Mercury-Emitting Generating Units. This rule identifies mercury emission limitation requirements, mercury control strategy requirements, and application requirements for mercury-emitting generating units.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

- c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #5265-00 for Crusoe, the following conclusions were made:
- a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is subject to current NSPS (40 CFR 60, Subparts A and JJJJ).
 - e. This facility is subject to current NESHAP (40 CFR 63, Subparts A and ZZZZ).
 - f. This source is not a Title IV affected source.
 - g. This source is not a solid waste combustion unit.
 - h. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that Crusoe will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Crusoe will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. Crusoe shall install on the new or modified source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT analysis was submitted by Crusoe in permit application #5265-00, addressing some available methods of controlling pollutant emissions from the Kai Pad. The following control options have been reviewed by the Department to make the BACT determination,

NO_x

The following options were reviewed for NO_x control.

- Water/steam injection
- Dry low NO_x combustion
- Selective catalytic reduction (SCR)
- Selective non-catalytic reduction (SNCR)
- Non-selective catalytic reduction (NSCR)

Oxidation catalyst
EMx catalyst system

Waukesha Engines – Both the water/steam injection and the dry low NO_x combustion are technologies that would require modifications to the existing engines and are considered technically infeasible for the proposed engines. SCR and SNCR require specific exhaust temperatures for optimal destruction and the exhaust temperatures for the proposed engines are not within the required range for either SCR or SNCR. They are deemed technically infeasible since the exhaust temperature from the proposed engines would be below the recommended ranges. Oxidation catalyst is best suited for lean burn engines and therefore is also eliminated from consideration due to the proposed Waukesha engines being four-stroke rich-burn (4SRB).

The two remaining identified technologies include NSCR and EMx catalyst. Each of these are considered feasible. EMx is able to operate at the exhaust temperature from the proposed engines, but the costs associated with EMx are more than the costs associated with a non-selective catalyst.

The NSCR is estimated to provide up to 90 percent emission reduction. Therefore, NSCR with air fuel ratio controller (AFR) is selected as BACT for NO_x for the Waukesha engines.

VOC and CO Emissions

VOC and CO emissions primarily occur as the result of incomplete combustion. Similar to NO_x control, catalysts that react with CO and VOC's can be used to convert these pollutants to CO₂.

Finding the optimum point in a slightly rich environment can produce very high destruction efficiencies for both CO, VOC's, and NO_x at the same time. Just as for NO_x, the use of an AFR is necessary to control the concentration in a slightly rich environment. Therefore, employing NSCR which uses a 3-way catalyst to treat CO, VOC's and NO_x is selected as BACT for the Waukesha engines.

Emission levels associated with NSCR and an AFR for the proposed Waukesha engine models for each pollutant are proposed as follows:

Waukesha 9394 GSI Engine

PM, PM₁₀, PM_{2.5} – 0.83 lb/hr

SO₂ – 0.08 lb/hr

NO_x – 0.15 gr/bhp-hr

CO – 0.30 gr/bhp-hr

VOC – 0.10 gr/bhp-hr

HAPs – 0.24 lb/hr

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

CONTROLLED	tons/year							
	PM	PM₁₀	PM_{2.5}	NO_x	CO	VOC	SO₂	HAPs
2,500 bhp Compressor Engine (combined)	16.64	16.64	16.64	36.21	72.42	2.41	3.50	10.51
Total Emissions	16.64	16.64	16.64	36.21	72.42	2.41	3.50	10.51

Calculations:

Waukesha Engine(s), 25000 (AOS 2)

Note: Emissions are based on the power output of the engine (10 hp).

Operational Capacity of Engine = 10 engines 10 engines
 Brake horsepower 25000 bhp
 Pounds per gram 0.002204 lb/gr
 Hours of Operation = 8,760.00 hr/yr 8760 hr/yr

PM Emissions:

PM Emissions = 16.64 ton/yr (Assume all PM < 1.0 um) 16.64 ton/yr

PM-10 Emissions:

Emission Factor = 0.38 lb/hr (BACT) 0.38 lb/hr

Calculation: ((10 engines) * (8,760 hr/yr) * (0.38 lb/hr) * (8,760 hr/yr) * (ton/2000 lb) = 16.644 ton/yr 16.64 ton/yr

PM2.5 Emissions

Emission Factor = 0.38 lb/hr (BACT) 0.38 lb/hr

Calculation: ((10 engines) * (8,760 hr/yr) * (0.38 lb/hr) * (8,760 hr/yr) * (ton/2000 lb) = 16.644 ton/yr 16.64 ton/yr

NOx Emissions:

Emission Factor = 0.15 gr/bhp-hr (BACT) 0.15 gr/bhp-hr

Calculation: ((0.15 gr/bhp-hr) * (25,000 hp) * (8,760 hr/yr) * (0.0022 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 36.21 ton/yr 36.21 ton/yr

CO Emissions:

Emission Factor = 0.3 gr/bhp-hr (BACT) 0.3 gr/bhp-hr

Calculation: ((0.30 gr/bhp-hr) * (25,000 hp) * (8,760 hr/yr) * (0.0022 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 72.42 ton/yr 72.42 ton/yr

VOC Emissions:

Emission Factor = 0.01 gr/bhp-hr (BACT) 0.01 gr/bhp-hr

Calculation: ((0.01 gr/bhp-hr) * (25,000 hp) * (8,760 hr/yr) * (0.0022 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 2.41 ton/yr 2.41 ton/yr

SO_x Emissions:

Emission Factor = 0.08 lb/hr (BACT) 0.08 lb/hr

Calculation: ((10 engines) * (8,760 hr/yr) * (0.08 lb/hr) * (8,760 hr/yr) * (ton/2000 lb) = 3.504 ton/yr 3.50 ton/yr

HAPs Emissions

Emission Factor = 0.24 lb/hr 0.24 lb/hr

Calculation: ((10 engines) * (8,760 hr/yr) * (0.24 lb/hr) * (8,760 hr/yr) * (ton/2000 lb) = 0.000 ton/yr 10.51 ton/yr

V. Existing Air Quality

Richland County is currently designated as attainment/unclassifiable for all pollutants.

VI. Ambient Air Impact Analysis

The Department determined, based on amount of allowable emission, that the impacts from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

Crusoe Energy Systems, Inc.

**FINAL Environmental Assessment for the
Final Montana Air Quality Permit #5265-00**

Montana Department of Environmental Quality
Air Quality Bureau
Air Permitting Services Section
ENVIRONMENTAL ASSESSMENT

APPLICANT: Crusoe Energy Development, Inc.		
SITE NAME: Kai Pad		
PROPOSED PERMIT NUMBER: Montana Air Quality Permit Number 5265-00		
APPLICATION DATE: October 4, 2021		
APPLICATION COMPLETE DATE: October 13, 2021		
LOCATION: Section 21, Township 26 North, Range 59 East		COUNTY: Richland
PROPERTY OWNERSHIP:	FEDERAL ____ STATE ____ PRIVATE <u>X</u> __	
EA PREPARER:	John P. Proulx	
EA Draft Date	EA Final Date	Permit Final Date
November 5, 2021	December 8, 2021	December 24, 2021

COMPLIANCE WITH THE MONTANA ENVIRONMENTAL POLICY ACT

The Montana Department of Environmental Quality (DEQ) prepared this Environmental Assessment (EA) in accordance with requirements of the Montana Environmental Policy Act (MEPA). An EA functions to determine the need to prepare an EIS through an initial evaluation and determination of the significance of impacts associated with the proposed action. However, an agency is required to prepare an EA whenever statutory requirements do not allow sufficient time for the agency to prepare an EIS. This document may disclose impacts over which DEQ has no regulatory authority.

COMPLIANCE WITH THE CLEAN AIR ACT OF MONTANA

The state law that regulates air quality permitting in Montana is the Clean Air Act of Montana (. § 75-2-201, et seq., Montana Code Annotated (MCA). DEQ may not approve a proposed project contained in an application for an air quality permit unless the project complies with the requirements set forth in the Clean Air Act of Montana and the administrative rules adopted thereunder. DEQ's approval of an air quality permit application does not relieve the Crusoe Energy Systems, Inc. (Crusoe), from complying with any other applicable federal, state, or county laws, regulations, or ordinances. Crusoe is responsible for obtaining any other permits, licenses, approvals, that are required for any part of the proposed project. DEQ will decide whether to approve the permit in accordance with the requirements of the Clean Air Act of Montana. DEQ may not withhold, deny, or impose conditions on the permit based on the information contained in this Environmental Assessment. § 75-1-201(4), MCA.

SUMMARY OF THE PROPOSED ACTION: Crusoe has applied for a new Montana air quality permit under the Clean Air Act of Montana for the installation of ten (10) 2,500 brake horsepower (bhp) Waukesha 9394 GSI engines for the purpose of generating electricity from gas that would otherwise be flared to the atmosphere. The proposed action would be located in Section 21, Township 26 North, Range 59 East, Richland County, 47.99716°N, latitude and -104.1072°W, longitude. All information included in the EA is derived from the permit application, discussions with the applicant, analysis of aerial photography, topographic maps, and other research tools.

PURPOSE AND BENEFIT FOR PROPOSED ACTION: DEQ's purpose in conducting this environmental review is to act upon Crusoe's air quality permit application to authorize ten (10) 2,500 bhp engines and the air contaminants in connection with the before mentioned equipment. DEQ's action on the permit application is governed by the Clean Air Act of Montana, § 75-2-201, et seq., Montana Code Annotated (MCA) and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*

The benefits of the proposed action include: Crusoe is proposing to install the generators for the purpose of capturing well gas that would otherwise be flared to the atmosphere and using it to produce energy for local data farms while simultaneously reducing the load on local electrical infrastructure.

REGULATORY RESPONSIBILITIES: In accordance with ARM 17.4.609(3)(c), DEQ must list any federal, state, or local authorities that have concurrent or additional jurisdiction or environmental review responsibility for the proposed action and the permits, licenses, and other authorizations required.

Crusoe must conduct its operations according to the terms of its permit. Crusoe further agrees to be legally bound by the permit, The Clean Air Act of § 75-2-201, et seq., Montana Code Annotated (MCA) and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*

Crusoe must cooperate fully with, and follow the directives of any federal, state, or local entity that may have authority over Crusoe’s generating operations. These permits, licenses, and other authorizations may include: Richland County and DEQ AQB (air quality).

Table 1: Proposed Action Details

Summary of Proposed Action	
General Overview	<p>Crusoe’s air quality permit application consists of the following equipment:</p> <ul style="list-style-type: none"> • ten (10) 2,500 bhp generator engines <p>The facility would be permitted to operate until Crusoe requested permit revocation or until the permit were revoked by DEQ due to gross non-compliance with the permit conditions.</p>
Proposed Action Estimated Disturbance	
Disturbance	Minimal disturbance is estimated with the current permit action.
Proposed Action	
Duration	<p>Construction: Construction or commencement would start within three years of issuance of the final air quality permit.</p> <p>Construction Period: The construction period could begin as soon as the air quality permit (and any other permits identified in this EA) were in place.</p> <p>Operation Life: Until permit is either revoked at the request of the permittee or the Department has determined the need for revocation.</p>
Construction Equipment	Cranes, delivery trucks, various other types of smaller equipment
Personnel Onsite	<p>Construction: Various number of installation personnel depending on which piece of equipment is being installed.</p> <p>Operations: Current number of employees.</p>
Location and Analysis Area	<p>Location: Section 15, Township 27 North, Range 57 East, in Roosevelt County, MT</p> <p>Analysis Area: The area being analyzed as part of this environmental review includes the immediate project area (Figure 1), as well as neighboring lands surrounding the analysis area, as reasonably appropriate for the impacts being considered.</p>
Air Quality	This EA will be attached to the Air Quality Permit which would include all enforceable conditions for operation of the emitting units
Conditions incorporated into the Proposed Action	The conditions developed in the Preliminary Determination of the Montana Air Quality Permit dated October 29, 2021, set forth in Sections II.A-D.

Figure 1: Map of general location of the proposed project.



EVALUATION AND SUMMARY OF POTENTIAL IMPACTS TO THE PHYSICAL AND HUMAN ENVIRONMENT IN THE AREA AFFECTED BY THE PROPOSED PROJECT:

The impact analysis will identify and evaluate direct and secondary impacts. Direct impacts are those that occur at the same time and place as the action that triggers the effect. Secondary impacts means “a further impact to the human environment that may be stimulated or induced by or otherwise result from a direct impact of the action.” ARM 17.4.603(18). Where impacts are expected to occur, the impacts analysis estimates the duration and intensity of the impact.

The duration of an impact is quantified as follows:

- **Short-term:** Short-term impacts are defined as those impacts that would not last longer than the proposed operation of the site.
- **Long-term:** Long-term impacts are defined as impacts that would remain or occur following shutdown of the proposed facility.

The severity of an impact is measured using the following:

- **No impact:** There would be no change from current conditions.
- **Negligible:** An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- **Minor:** The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- **Moderate:** The effect would be easily identifiable and would change the function or integrity of the resource.

- **Major:** The effect would alter the resource.

1. TOPOGRAPHY, GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Direct Impacts:

Proposed Action: Negligible impacts to topography, geology, stability, and moisture would be expected because the proposed project would occur near an already existing facility with minor disturbances due to equipment installation.

Secondary Impacts:

Proposed Action: No secondary impacts to topography, geology, stability, and moisture are anticipated with the proposed action.

2. WATER QUALITY, QUANTITY, AND DISTRIBUTION:

Direct Impacts:

Proposed Action: No primary impacts to water quality, quantity, and distribution would be expected because the proposed project would occur near an already existing facility. Water is not required for normal operation of the proposed equipment.

Secondary Impacts:

Proposed Action: No secondary impacts are anticipated with the proposed action.

3. AIR QUALITY:

Direct Impacts:

Proposed Action: Minor impacts to air quality would be expected with the proposed action due to an increase in the facility's potential to emit air pollutants and minor construction activities.

Secondary Impacts:

Proposed Action: Negligible impacts could be expected with the proposed action in the event of equipment malfunction.

4. VEGETATION COVER, QUANTITY AND QUALITY:

Direct Impacts:

Proposed Action: Negligible impacts are expected with the proposed permit action due to installation of new equipment near an existing facility.

Secondary Impacts:

Proposed Action: Negligible impacts to land disturbance at the site may result in propagation of noxious weeds.

5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Direct Impacts:

Proposed Action: No primary impacts to terrestrial, avian, and aquatic life and habitats stimulated or induced by the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to terrestrial, avian and aquatic life and habitats stimulated or induced by the direct impacts analyzed above would be anticipated for the proposed action.

6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Direct Impacts:

Proposed Action: No primary impacts to unique, endangered, fragile, or limited environmental resources that could be stimulated or induced by the direct impacts analyzed above would be expected.

Secondary Impacts:

Proposed Action: No secondary impacts to unique, endangered, fragile, or limited environmental resources that could be stimulated or induced by the direct impacts analyzed above would be expected.

7. HISTORICAL AND ARCHAEOLOGICAL SITES:

Direct Impacts:

Proposed Action: No primary impacts to historical and archaeological sites are anticipated with the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to historical and archaeological sites are anticipated with the proposed action.

8. SAGE GROUSE EXECUTIVE ORDER:

The current permit action is not located in the Greater Sage Grouse habitat area.

9. AESTHETICS:

Direct Impacts:

Proposed Action: Negligible impacts may be associated with the current permit application due to the installation of new equipment near an already existing facility.

Secondary Impacts:

Proposed Action: No secondary impacts to aesthetics and noise are anticipated with the proposed action.

10. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Direct Impacts:

Proposed Action: Negligible impacts to air and energy resources associated with the operational needs of the proposed equipment are anticipated. No primary impacts to land and water are expected with the proposed permitting action.

Secondary Impacts:

Proposed Action: No secondary impacts to land, water, air or energy resources are anticipated with the proposed action.

11. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:

Direct Impacts:

Proposed Actions: No primary impacts to other environmental resources are anticipated as a result of the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to other environmental resources are anticipated as a result of the proposed action.

12. HUMAN HEALTH AND SAFETY:

Direct Impacts:

Proposed Action: Impacts to human health and safety are anticipated to be short-term and minor as a result of this project.

Secondary Impacts:

Proposed Action: No secondary impacts to human health and safety are anticipated as a result of the proposed action.

13. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:

Direct Impacts:

Proposed Action: Negligible industrial impacts are anticipated due to construction and installation of new equipment. No impacts to commercial and agricultural activities are anticipated.

Secondary Impacts:

Proposed Action: No secondary impacts to industrial, commercial, water conveyance structures, and agricultural activities and production are anticipated as a result of the proposed action.

14. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Direct Impacts:

Proposed Action: No impacts to quantity and distribution of employment are anticipated for the proposed action.

Secondary Impacts:

Proposed Action: Negligible increases in in distribution of employment are anticipated as a result of the proposed action.

15. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Direct Impacts:

Proposed Action: Local, state and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, from the companies, employees, or landowners benefitting from this operation.

Secondary Impacts:

Proposed Action: No secondary impacts to local and state tax base and tax revenues are anticipated as a result of the proposed action.

16. DEMAND FOR GOVERNMENT SERVICES:

Direct Impacts:

Proposed Action: Minor impacts are anticipated for demand for government services. The air quality permit and physical site associated with the current permit action will require inspections from state government representatives to ensure the facility is operating within the limits and conditions listed in the air quality permit.

Secondary Impacts:

Proposed Action: No secondary impacts are anticipated with the proposed action.

17. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

Direct Impacts:

Proposed Action: No primary impacts to the locally adopted environmental plans and goals are anticipated as a result of the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to the locally adopted environmental plans and goals are anticipated as a result of the proposed action.

18. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Direct Impacts:

Proposed Action: No primary impacts to access and quality of recreational and wilderness activities are anticipated as a result of the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to access and quality of recreational and wilderness activities are anticipated as a result of the proposed action.

19. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Direct Impacts:

Proposed Action: No primary impacts to density and distribution of population and housing are anticipated as a result of the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed action.

20. SOCIAL STRUCTURES AND MORES:

Direct Impacts:

Proposed Action: No primary impacts anticipated to social structures and mores are anticipated as a result of the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to social structures and mores are anticipated as a result of the proposed action.

21. CULTURAL UNIQUENESS AND DIVERSITY:

Direct Impacts:

Proposed Action: No primary impacts anticipated to cultural uniqueness and diversity are anticipated from the proposed action.

Secondary Impacts:

Proposed Action: No secondary impacts to cultural uniqueness and diversity are anticipated as a result of the proposed action.

22. PRIVATE PROPERTY IMPACTS:

The Department is not regulating the use of private property under any regulatory statutes that have been adopted pursuant to the police power of the state. Therefore no further analysis is required.

23. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Due to the nature of the proposed action, no further direct or secondary impacts are anticipated from this project.

ADDITIONAL ALTERNATIVES CONSIDERED:

No Action Alternative: In addition to the proposed action, DEQ is considering a "no action" alternative. The "no action" alternative would deny the approval of the proposed action. The applicant would lack the authority to conduct the proposed activity. Any potential impacts that would result from the proposed action would not occur. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

If the applicant demonstrates compliance with all applicable rules and regulations as required for approval, the "no action" alternative would not be appropriate. Pursuant to, § 75-1-201(4)(a), (MCA) DEQ "may not withhold, deny, or impose conditions on any permit or other authority to act based on" an environmental assessment.

CUMULATIVE IMPACTS:

Cumulative impacts are the collective impacts on the human environment within the borders of Montana of the proposed action when considered in conjunction with other past and present actions related to the proposed action by location and generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures. This environmental review analyzes the proposed action submitted by the Crusoe.

DEQ considered potential impacts related to this project and potential secondary impacts. Due to the limited activities in the analysis area, cumulative impacts related to this project would be minor and short-term.

PUBLIC INVOLVEMENT:

Scoping for this proposed action consisted of internal efforts to identify substantive issues and/or concerns related to the proposed operation. Internal scoping consisted of internal review of the environmental assessment document by DEQ Air Permitting staff.

Internal efforts also included queries to the following websites/ databases/ personnel:

- Montana State Historic Preservation Office
- Montana Department of Environmental Quality (DEQ)
- Montana Natural Heritage Program

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION:

The proposed project would be fully located on privately-owned land. All applicable local, state, and federal rules must be adhered to, which, at some level, may also include other local, state, federal, or tribal agency jurisdiction. Other governmental agencies which may have overlapping or sole jurisdiction include, but may not be limited to: Richland County, OSHA (worker safety), DEQ AQB (air quality) and Water Protection Bureau (groundwater and surface water discharge; stormwater),

DNRC (water rights), and MDT (road access).

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

Under ARM 17.4.608, DEQ is required to determine the significance of impacts associated with the proposed action. This determination is the basis for the agency's decision concerning the need to prepare an environmental impact statement and also refers to DEQ's evaluation of individual and cumulative impacts. DEQ is required to consider the following criteria in determining the significance of each impact on the quality of the human environment:

1. The severity, duration, geographic extent, and frequency of the occurrence of the impact;

“Severity” is analyzed as the density of the potential impact while “extent” is described as the area where the impact is likely to occur. An example could be that a project may propagate ten noxious weeds on a surface area of 1 square foot. In this case, the impact may be a high severity over a low extent. If those ten noxious weeds were located over ten acres there may be a low severity over a larger extent.

“Duration” is analyzed as the time period in which the impact may occur while “frequency” is analyzed as how often the impact may occur. For example, an operation that occurs throughout the night may have impacts associated with lighting that occur every night (frequency) over the course of the one season project (duration).

2. The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
3. Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
4. The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
5. The importance to the state and to society of each environmental resource or value that would be affected;
6. Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
7. Potential conflict with local, state, or federal laws, requirements, or formal plans.

The significance determination is made by giving weight to these criteria in their totality. For example, impacts with moderate or major severity may be determined to be not significant if the duration of the impacts is considered to be short-term. As another example, however, moderate or major impacts of short-term duration may be considered to be significant if the quantity and quality of the resource is limited and/or the resource is considered to be unique or fragile. As a final example, moderate or major impacts to a resource may be determined to be not significant if the

quantity of that resource is high or the quality of the resource is not unique or fragile.

Pursuant to ARM 17.4.607, preparation of an environmental assessment is the appropriate level of environmental review under MEPA if statutory requirements do not allow sufficient time for an agency to prepare an environmental impact statement. An agency determines whether sufficient time is available to prepare an environmental impact statement by comparing statutory requirements that establish when the agency must make its decision on the proposed action with the time required to obtain public review of an environmental impact statement plus a reasonable period to prepare a draft environmental review and, if required, a final environmental impact statement.

SIGNIFICANCE DETERMINATION

The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed action would be limited. Crusoe proposes to construct and operate the proposed action on private land located in Section 15, Township 27 North, Range 57 East, in Roosevelt County, Montana.

DEQ has not identified any significant impacts associated with the proposed action for any environmental resource. Approving Crusoe's Air Quality Application would not set precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If Crusoe submits another permit application, DEQ is not committed to approve those applications. DEQ would conduct a new environmental review for any subsequent air quality permit applications sought by Crusoe. DEQ would make a decision on Crusoe's subsequent application based on the criteria set forth in the Clean Air Act of Montana.

DEQ's issuance of an Air Quality Permit to Crusoe for this proposed operation does not set a precedent for DEQ's review of other applications, including the level of environmental review. The level of environmental review decision is made based on a case-specific consideration of the criteria set forth in ARM 17.4.608.

DEQ does not believe that the proposed action has any growth-inducing or growth-inhibiting aspects or that it conflicts with any local, state, or federal laws, requirements, or formal plans. Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed state action is not predicted to significantly impact the quality of the human environment. Therefore, at this time, preparation of an environmental assessment is determined to be the appropriate level of environmental review under the Montana Environmental Protection Act.

Environmental Assessment and Significance Determination Prepared By:

<u>John P. Proulx</u>	<u>Environmental Scientist 2</u>
Name	Title

EA Reviewed By:

<u>Ed Warner</u>	<u>Lead Engineer</u>
Name	Title

Responses to Substantive Comments are located in the Permit Analysis Section of the Air Quality Permit.