



Town of Erie

645 Holbrook Street
Erie, CO 80516

Meeting Agenda Planning Commission

Wednesday, September 2,
2026

6:30 PM

Council Chambers

In Person Meeting
[Watch or Comment Virtually](#)
[Sign Up for Public Comment](#)

I. Call Meeting to Order and Pledge of Allegiance

II. Roll Call

III. Approval of the Agenda

IV. Approval of Minutes

A. Approval of Minutes for the Aug. 19, 2026 Planning Commission Meeting

V. Public Comments

This agenda item provides the public an opportunity to discuss items other than items that are on the agenda. The Planning Commission is not prepared to decide on matters brought up at this time, but if warranted, will place them on a future agenda.

VI. General Business

A. A Resolution Recommending Town Council Revise Title 10, Chapter 12 - Regulations for Oil and Gas Operations

VII. Staff Reports

This agenda item is reserved for specific items from Staff requiring Commission direction or just relaying important information.

VIII. Commissioner Reports and Discussion Items

This agenda item is for all Planning Commission reports and items of information as well as Commission discussion items, not listed on the agenda.

IX. Adjournment

Translation Services

Persons planning to attend the meeting who need sign language interpretation, translation services, assisted listening systems, Braille, taped material, or other accommodation should [email the Town Clerk's Office](#) or call 303-926-2710. Please submit requests at least 48 hours prior to the meeting.

Si requiere una copia en español de esta publicación o necesita un intérprete durante la reunión del Consejo, por favor [llame a la Ciudad](#) 303-926-2710. Por favor envíe sus solicitudes al menos 48 horas antes de la reunión.



Town of Erie

645 Holbrook Street
Erie, CO 80516

Planning Commission

Meeting Date: 9/2/2026

File #: 2026-192

Subject:

Approval of Minutes for the Aug. 19, 2026 Planning Commission Meeting

Department: Planning - Land Use,

Presenter(s): Jaime Medina, Planning Technician

Time Estimate:

Fiscal Summary:

Cost as Recommended:

Balance Available:

Fund:

Line Item Number:

New Appropriation Required:

Policy Issues:

Staff Recommendation:

Summary/Key Points:

Background of Subject Matter:

Attachments:

1. Minutes



Town of Erie

645 Holbrook Street
Erie, CO 80516

Meeting Minutes Planning Commission

Wednesday, August 19, 2026

6:30 PM

Council Chambers

In Person Meeting
[Watch or Comment Virtually](#)
[Sign Up for Public Comment](#)

I. Call Meeting to Order and Pledge of Allegiance

Chair Sawusch called the meeting to order at 06:31 PM

II. Roll Call

The following Roll Call was conducted:

Present: 6 - Commissioners Booth, Braudes, Hemphill, Leef, Schatz, Dreckman (Vice Chair), Sawusch (Chair)

Absent: 1 - Commissioner Hemphill

III. Approval of the Agenda

Vice Chair Dreckman made a motion to approve the agenda for the August 19, 2026 Planning Commission Meeting. Commissioner Braudes seconded the motion. The motion carried unanimously.

IV. Approval of Minutes

- A. Approval of Minutes for the July 15, 2026 Planning Commission Meeting
Commissioner Braudes made a motion to approve the minutes of the July 15, 2026 Planning Commission Meeting. Vice Chair Dreckman seconded the motion. The motion carried unanimously.

V. Public Comments

- A. General Public Comments
There was no general public comment.

VI. General Business

- A. PUBLIC HEARING: A Resolution of the Planning Commission of the Town of Erie Recommending Approval of the Vista Ridge PD Amendment No. 9 for the Golf Course Maintenance Facility
Harry Brennan, Senior Planner, delivered a presentation on behalf of staff in support of Vista Ridge PD Amendment No. 9 for the Golf Course Maintenance Facility. Harry Brennan outlined the criteria for approval and how this proposal meets the criteria for approval.

Matt Schalk and Heidi Majerik delivered a presentation on behalf of the applicants. The

applicant also outlined how the criteria is being met for approval.

Public Comment:

Thirteen people spoke in favor, while three spoke in opposition of the proposal. Those in favor highlighted the blighted condition and history of the property but stated the amendment would help bring it into compliance. Many also spoke to the community benefit of the course. Those speaking in opposition also highlighted the history of non-conformance of the property and its continued blighted nature. They also express concern about the site conditions.

Commissioners question the applicant and staff about the proposal. Questions and answers included:

Question: Does the plan propose changes to the parcel south of Sunset Drive?

Answer: No, other than updating its area number in the PD.

Question: How will sidewalks, screening, fencing, lighting, stormwater, subsidence, property lines, utilities, and access be addressed?

Answer: These items will be addressed through the PD, UDC, site plan review (SPR), and subdivision processes. The applicant will also continue working with the community on sight lines and screening.

Question: Were alternative sites considered, and why was this site selected?

Answer: Yes. Staff reviewed at least four to five alternatives, but they were considered unsuitable due to access, utility, and cost concerns. The proposed site provides preferred access for golf-course maintenance operations.

Question: Is the maintenance facility being relocated?

Answer: No. The existing maintenance facility has remained in its current location.

Question: What would approval of the PD amendment accomplish?

Answer: It would resolve the existing zoning-use issue and allow the applicant to proceed with required site improvements and design review.

The Public Hearing portion of the hearing item closed at 8:25 P.M.

Commissioner's Deliberation:

There were some concerns with the proposal, which included: drainage, lighting, and general site design. Commissioners were reminded about the distinction between the zoning review and site plan items. Commissioners also noted that they would like to see their concerns addressed in the Site Plan process, with general support and understanding that the PD Amendment meets the approval criteria.

Commissioner Braudes made a motion to approve Vista Ridge PD Amendment No. 9 for the Golf Course Maintenance Facility, as recommended by staff. Vice Chair Dreckman seconded the motion. The motion carried 6-0 with the following vote:

Ayes: 6 - Commissioners Booth, Braudes, Leef, Schatz, Dreckman (Vice Chair), Sawusch (Chair)

Nays: 0

Chair Sawusch called for a 5 minute recess prior to beginning the next meeting item.

B. PUBLIC HEARING: A Resolution of the Planning Commission of the Town of Erie Recommending that the Town Council Adopt a Resolution Amending the 2024 Elevate Erie Comprehensive Plan

Josh Campbell, Senior Strategic Planner, provided a presentation outlining the history of Comprehensive Plan Updates, and the amendments currently under consideration. The amendment under consideration makes changes to certain policy goals within the plan, and makes changes to future land use categories of select properties.

Public Comment:

2 members of the public spoke against aspects of the resolution, particularly concerns about increased traffic and density.

Commissioners question staff on the proposed changes. Questions and answers included:

Q: What was the original density range before the proposed amendment?

A: The original density range was 8 to 18 units per acre.

Q: Can the property near Arapahoe Road have split land uses?

A: Yes, split land uses are possible.

Q: Can land uses be split without identifying the specific properties?

A: No, the specific properties must be identified.

Q: How does staff determine proposed future land uses?

A: Staff considers the proposed density and intensity in relation to surrounding uses and available infrastructure.

Q: Is the amendment legislative or quasi-judicial?

A: It is a legislative action. Staff reviewed all properties, although only a few are proposed for adjustment.

Q: Why was the original higher-density designation established?

A: It was intended to support a diversity of housing options.

Q: Can the area accommodate the infrastructure and utility needs associated with higher density?

A: Yes, the area can accommodate the anticipated infrastructure and utility needs.

Commissioner Deliberation:

Chair Sawusch closed the public hearing portion of the meeting and opened deliberation. The Planning Commission's deliberations focused primarily on the property at Arapahoe Road and 111th Street, with discussion centered on whether the land use map changes should be separated from the other proposed Comprehensive Plan amendments. Significant discussion occurred regarding the land use map changes and the appropriate path forward.

The Planning Commission determined that the UDC does not explicitly allow a recommendation for approval with conditions on the subject item.

Commissioner Booth made a motion to approve the resolution, which recommends that Town Council adopts an amendment to the 2024 Elevate Erie Comprehensive Plan, as recommended by staff. Vice Chair Dreckman seconded the motion. The motion carried 5-1 with the following vote:

Ayes: 5 - Commissioners Booth, Leef, Schatz, Dreckman (Vice Chair), Sawusch (Chair)

Nays: 1 - Commissioner Braudes

VII. Staff Reports

Staff had nothing new to report.

VIII. Commissioner Reports and Discussion Items

Chair Sawusch reminded the Commission to complete their cybersecurity training.

IX. Adjournment

Commissioner Booth made a motion to adjourn the meeting. Vice Chair Dreckman seconded the motion. Chair Sawusch adjourned the meeting at 9:48 P.M.



Town of Erie

645 Holbrook Street
Erie, CO 80516

Planning Commission

Meeting Date: 9/2/2026

File #: 2026-202

Subject:

A Resolution Recommending Town Council Revise Title 10, Chapter 12 - Regulations for Oil and Gas Operations

Department: Environmental Services,
Town Attorney

Presenter(s): David Frank, Director of Environmental Services
Ben Kellond
Eliot Schaefer, Deputy Town Attorney
Torie Jarvis

Time Estimate: 45

Fiscal Summary:

Cost as Recommended:

Balance Available:

Fund:

Line Item Number:

New Appropriation Required:

Policy Issues:

Resident Health and Safety, Environmental Protection, Fiscal Responsibility, Land Use, Permitting and Compliance.

Staff Recommendation:

Staff recommend that the Planning Commission adopt the Resolution.

Summary/Key Points:

The proposed revisions to Title 10, Chapter 12 span all sections and seek to improve language around existing regulations and fill gaps in the Town of Erie's regulation of oil and gas. A summary of the proposed changes are outlined in an attached Staff Report.

Background of Subject Matter:

Title 10, Chapter 12 - Regulations for Oil and Gas Operations has not been updated since its initial drafting and adoption in 2020. There have been significant changes to both State of Colorado Energy and Carbon Management (ECMC) regulations regarding local government regulatory authority and the scope of the Town of Erie's regulation and oversight of oil and gas operations.

Town staff and oil and gas legal counsel have identified areas of Chapter 12 needing amendment to match the current regulatory environment, inspection of facilities, and changes in industry standards and best management practices.

Attachments:

1. Staff Report
2. Staff Presentation
3. Resolution
4. Ordinance
5. Comparison - Current vs. Updated Oil and Gas Regulations

**TOWN OF ERIE
PLANNING COMMISSION MEETING
September 2, 2026**

SUBJECT: **Resolution P26-15**
A Resolution of the Planning Commission of the Town of Erie
Recommending that the Town Council Adopt an Ordinance
Amending Title 10, Chapter 12 of the Erie Municipal Code
Regarding Oil and Gas regulations

PURPOSE: Unified Development Code amendment to revise Title 10,
Chapter 12 oil and gas regulations

CODE REVIEW: Erie Municipal Code, Title 10, Chapter 12

DEPARTMENT: Environmental Services

PRESENTER: David Frank, Director of Environmental Services
Ben Kellond, Environmental Analyst

STAFF RECOMMENDATION:

Staff recommend that the Planning Commission adopt the resolution, recommending the Town Council adopt an ordinance amending Title 10, Chapter 12 of the Erie Municipal Code regarding updates and revisions to Regulations for Oil and Gas Operations

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Town staff and oil and gas counsel identified areas of the Erie Municipal Code within Title 10, Chapter 12 that require amendment to match current regulatory and industry standards and further codify the Town's new inspection program.

Title 10, Chapter 12 was last updated in 2020, and since then there have been significant changes to the scope of the Town's regulation of oil and gas. The Town now employs a full-time Environmental Analyst who oversees all oil and gas operations and conducts quarterly inspections of all active facilities within its municipal boundaries.

PROPOSED CHANGES:

The proposed revisions to Title 10, Chapter 12 span all sections and seek to improve language around existing regulations and fill gaps in the Town's regulation of oil and gas. A brief outline of the proposed changes is as follows:

- **10-12-1:** Revised definitions to fit current regulations.
 - Revised the definition of a water body to more accurately capture the desired protections for new operations.
 - Changed the term “Director” to reflect the Director of Environmental Services.
- **10-12-2:** Revised permit application process for new facilities and substantial modifications.
 - Refined language to better reflect current policy and code regarding zoning, cumulative impacts, air quality modeling, and traffic analyses.
- **10-12-3:** Revised minor modification process and notification requirements to improve accuracy, increase compliance, and match current program procedures.
- **10-12-4:** Revised permit review standards for new oil and gas operations and those that have undergone substantial modification.
 - Added language regarding cumulative impacts and liquids unloading.
 - Added significant language outlining limitations and conditions for venting and flaring.
 - Refined and reinforced requirements for water quality analytes, stormwater, and spills.
- **10-12-5:** Revised financial guarantee language to match current regulatory and industry standards.
 - Fill gaps in current landscape regarding plugging and abandonment of wells, surface locations and associated infrastructure.
- **10-12-6:** Added new section to better define permit issuance, transfer, and term.
- **10-12-7:** Added new section to better define the process and requirements for well and pipeline abandonment and decommissioning.
- **10-12-8:** Added new section to establish an improved annual oil and gas registration requirement, inclusive of a registration fee.
 - Fee to be established by ordinance with fee schedule.
 - Potential revenue of ~\$150,000 to ~\$200,000 per year to support costs associated with Erie’s oil and gas inspection program, air quality monitoring program, and oil and gas oversight.
- **10-12-9:** Added new section to consolidate and refine operator inspection and monitoring requirements.

- **10-12-10:** Revised section to include comprehensive operational requirements for all oil and gas locations.
 - o Established framework for inspection program criteria and to hold facilities to minimum operational standard.
- **10-12-11:** Revised section to clarify enforcement authority and connect with existing UDC and municipal code enforcement procedures. Revised notification timelines not addressed above to match current program and to improve data accuracy.

The Town Council public hearing for the proposed UDC amendments is scheduled for Oct. 13, 2026.

Approval Criteria

Section 10-7-18(C)(9) of the Erie Municipal Code states the following approval criteria when considering amendments to the text of the UDC:

1. The proposed amendment will promote the public health, safety, and general welfare; and
2. The proposed amendment is generally consistent with the Town's Comprehensive Master Plan and the stated purposes of this UDC; and
3. The proposed amendment is necessary or desirable because of changing conditions, new planning concepts, or other social or economic conditions.

Staff find these amendments necessary, as detailed below, and recommend that the Planning Commission adopt Resolution No. P26-15 recommending that the Town Council adopt an ordinance, amending Title 10, Chapter 12 of the Erie Municipal Code regarding the regulation of oil and gas.

Enacting the proposed changes to Title 10, Chapter 12 will:

- Increase environmental protection from all oil and gas operations.
- Facilitate more effective management, reporting, and notification of ongoing oil and gas operations.
- Align Chapter 12 with the rest of the Unified Development Code.
- Establish a stronger framework for the Town's oil and gas inspection program.
- Facilitate the registration of existing facilities and the collection of annual registration fees.

UDC Updates – Oil and Gas Regulations

Erie Planning Commission

Sept. 2, 2026

David Frank, Director of Environmental Services

Ben Kellond, Environmental Analyst

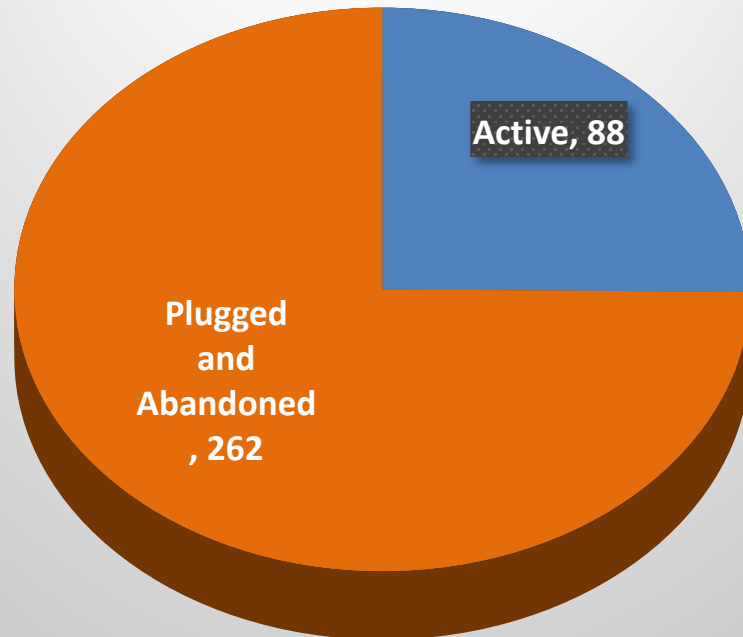
Agenda

1. Overview of Erie Oil & Gas
2. Purpose
3. Permitting Process & New Facilities
4. Existing Operations
5. Registration and Fees
6. General Operations
7. Approval Criteria and Recommendation

Erie Oil & Gas - Overview

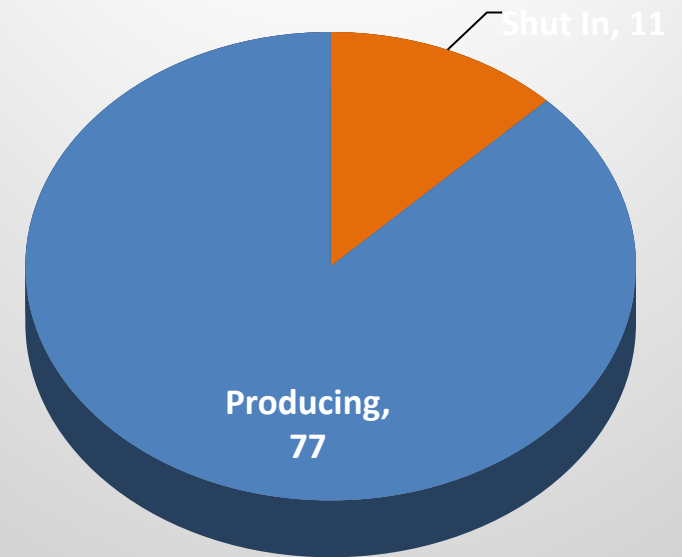
Total Wells: 350

Well Status



■ Active ■ Plugged and Abandoned

Active Well Breakdown

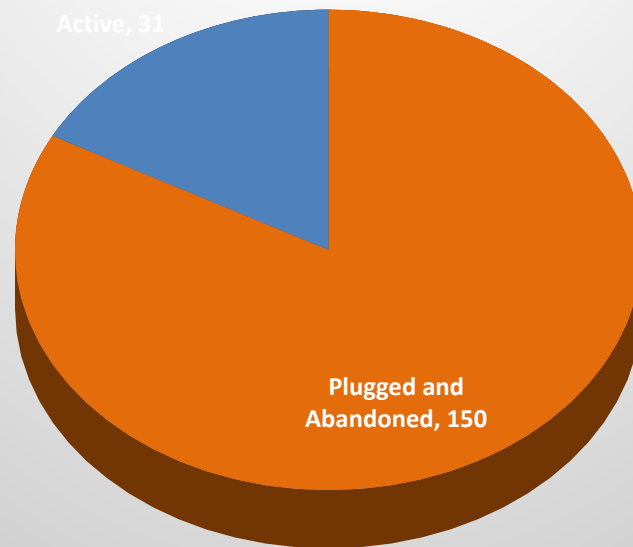


■ Shut In ■ Producing

Erie Oil & Gas - Overview

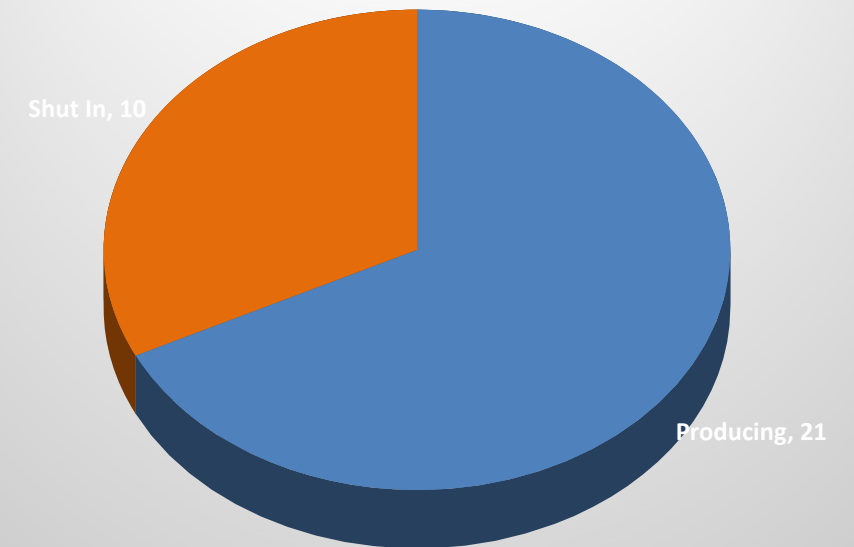
- **Total Facilities: 181**

Facility Status



Plugged and Abandoned Active

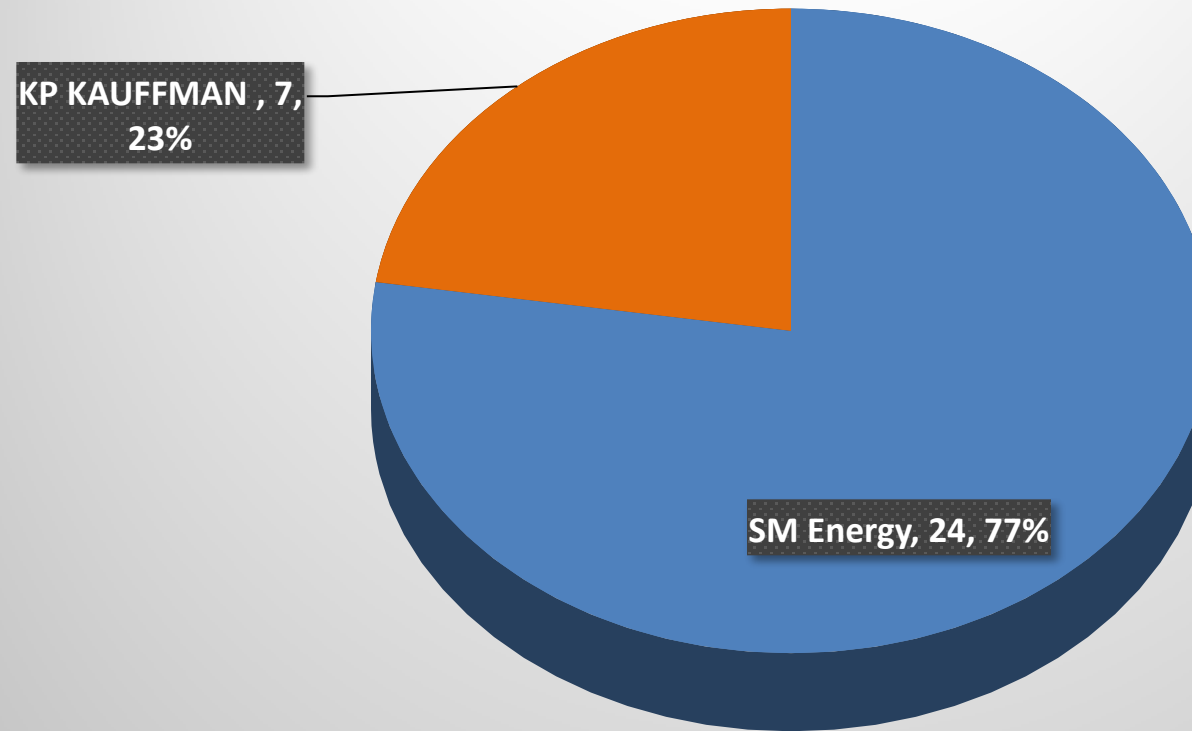
Active Facility Breakdown



Producing Shut In

Erie Oil & Gas - Overview

Active Facilities vs Operator

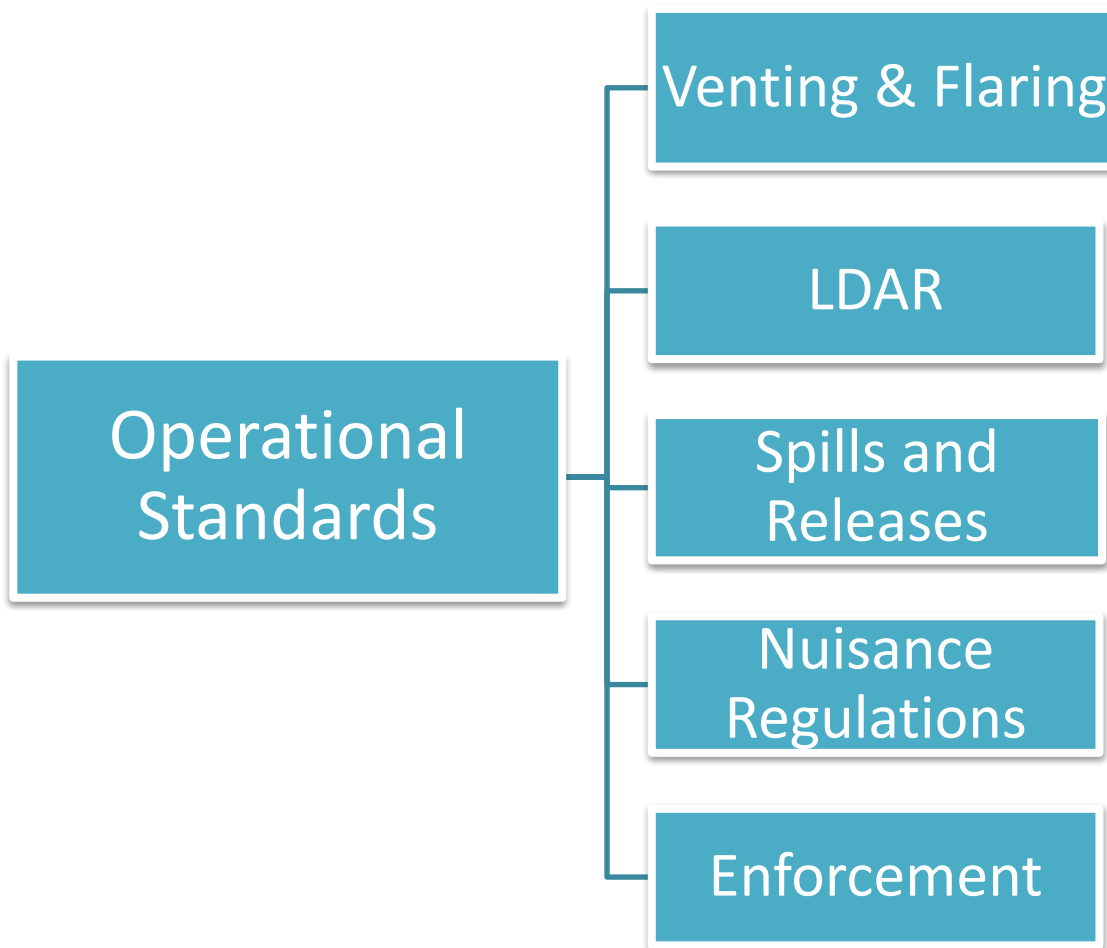




Permitting & New Facilities

Homogenization with UDC	Venting & Flaring	Financial Guarantees	Permits
• Zoning • Traffic • Stormwater	• Restrictions • Director Approval • Notifications	• Remediation Costs • Inactive Wells	• Issuance • Transfer • Term

Existing Operations



Registration and Fees

Jurisdiction	Per Site	Per Well	Inspection Frequency
Town of Erie	\$0	\$ 2,500	4x/year
ECMC	\$0	\$0	Max 1x/year
Weld County	\$0	\$0	--
Boulder County	\$0	\$2,083	2-3x/year
Adams County	\$0	\$358.09	1x/year
Town of Frederick	\$400	\$400	2x/year
Arapahoe County	\$1,500	\$750	2x/year
City of Aurora	\$3,000	\$1,500	4x/year
City and County of Broomfield	\$0	\$1,639.64	4x/year

Anticipated revenue exceeding \$150,000/yr would support oil and gas inspections, air quality monitoring, and oil and gas oversight by the Town.

Approval Criteria – 10-7-18

- a. The proposed amendment will promote the public health, safety, and general welfare;
- b. The proposed amendment is generally consistent with the Town's Comprehensive Master Plan and the stated purposes of this UDC; and
- c. The proposed amendment is necessary or desirable because of changing conditions, new planning concepts, or other social or economic conditions.



Public Notice

Neighborhood Meeting: Not Applicable

PUBLIC NOTICE OF HEARING

Public Hearing is not required at Planning Commission for UDC changes



Next Steps

The Town Council public hearing for these amendments is scheduled for Oct. 13, 2026



Staff Recommendation

Adoption of Resolution P26-15

**Recommending the Town Council Adopt an Ordinance Amending
Chapter 12 of Title 10 of the Erie Municipal Code**

Questions & Discussion

**Town of Erie
Planning Commission
Resolution No. P26-15**

**A Resolution of the Planning Commission of the Town of Erie
Recommending that the Town Council Adopt an Ordinance Repealing
and Reenacting Chapter 12 of Title 10 of the Erie Municipal Code Related
to the Regulation of Oil and Gas Operations**

Whereas, the Town of Erie regulates certain aspects of oil and gas operations pursuant to the provisions set forth in Chapter 12 of Title 10 of the Erie Municipal Code; and

Whereas, the Town is considering repealing and replacing Chapter 12 of Title 10 of the Erie Municipal Code to revise and update the Town's regulatory framework applicable to oil and gas operations;

Whereas, the Planning Commission wishes to recommend that Town Council adopt the proposed ordinance repealing and reenacting Chapter 12 of Title 10 of the Erie Municipal Code.

Now, Therefore be it resolved by the Planning Commission of the Town of Erie, Colorado, that:

Section 1. Findings. The Planning Commission of the Town of Erie hereby find and determines that the ordinance amending Chapter 12 of Title 10 of the Erie Municipal Code, as attached hereto, meets the approval criteria as specified in § 10-7-18(C)(9) as follows:

- a. The proposed amendment will promote the public health, safety, and general welfare;
- b. The proposed amendment is generally consistent with the town's comprehensive master plan and the stated purposes of this UDC; and
- c. The proposed amendment is necessary or desirable because of changing conditions, new planning concepts, or other social or economic conditions.

Section 2. Decision. Based on the foregoing findings, the Planning Commission hereby recommends that the Town Council adopt the ordinance amending Chapter 12 of Title 10 of the Erie Municipal Code.

Adopted this 2nd day of September, 2026.

Andrew Sawusch, Chair

Attest:

Melinda Helmer, Secretary

**Town of Erie
Ordinance No. __-2026**

**An Ordinance of the Town Council of the Town of Erie Repealing
and Reenacting Chapter 12 of Title 10 of the Erie Municipal Code
Regarding the Regulation of Oil and Gas Operations**

Whereas, the Town of Erie regulates certain aspects of oil and gas operations pursuant to the provisions set forth in Chapter 12 of Title 10 of the Erie Municipal Code; and

Whereas, the Town Council for the Town of Erie desires to repeal and reenact Chapter 12 of Title 10 of the Erie Municipal Code as set forth herein.

Now Therefore be it Ordained by the Town Council of the Town of Erie, Colorado, as follows:

Section 1. Chapter 12 of Title 10 of the Erie Municipal Code is hereby repealed in its entirety and reenacted as follows:

10-12-1 General provisions.

- A. *Title and citation:* These regulations are titled and may be cited as the "Regulations for Oil and Gas Operations" or, herein, "these regulations."
- B. *Purpose:* The purpose of these regulations is to protect public health, safety, welfare and the environment by using the town's police power to:
 - 1. Regulate the surface impacts of oil and gas operations in a reasonable manner to address matters specified in C.R.S. § 29-20-104(1)(h) and to protect and minimize adverse impacts to public health, safety, welfare, and the environment.
 - 2. Implement such requirements that are necessary and reasonable to avoid adverse impacts from oil and gas operations and to minimize and mitigate the extent and severity of those impacts that cannot be avoided.
 - 3. The town reserves the right to deny any application that does not meet all standards set forth herein.
- C. *Authority:* This section is adopted pursuant to C.R.S. §§ 29-20-101 et seq., 31-15-401, and 34-60-101 et seq.
- D. *Oil and gas permit or activity notice required:*
 - 1. No person shall engage in, cause, allow, or conduct any oil and gas operation or substantial modification of an existing operation prior to obtaining an oil and gas permit following notice and public hearing under these regulations unless the operation falls within one of the exemptions in section 10-12-1 F.

2. No person shall make a minor modification to existing oil and gas operations within the municipal boundaries prior to filing an Activity Notice and obtaining an order pursuant to section 10-12-3 of these regulations.

E. *Applicability:*

1. These regulations shall apply to oil and gas operations wholly or partially within the corporate boundaries of the town.
2. If any provisions of these regulations conflict with any other applicable provision of the UDC, these regulations shall control.

F. *Severability:* If any section, clause, provision, or portion of these regulations should be found to be unconstitutional or otherwise invalid by a court of competent jurisdiction, the remainder of these regulations shall not be affected thereby and is hereby declared to be necessary for the public health, safety and welfare.

G. *Definitions:*

The following words, terms and phrases, when used in this Chapter of the UDC, shall have the meanings ascribed to them in this section:

Ambient noise level: The all-encompassing noise level associated with a given environment, being a composite of sounds from all sources at the location, constituting the normal and existing level of environmental noise at a given location.

AQCC: Colorado Department of Public Health and Environment, Air Quality Control Commission.

Building unit: Building or structure designed for use as a place of residency by a person, a family, or families. The term includes manufactured, mobile, and modular homes, except to the extent that any such manufactured, mobile, or modular home is intended for temporary occupancy or for business purposes.

CDPHE: Colorado Department of Public Health and Environment.

Closed loop drilling process or system: A closed loop mud drilling system typically consists of steel tanks for mud mixing and storage, and the use of solids removal equipment, which normally includes some combination of shale shakers, mud cleaners and centrifuges sitting on top of the mud tanks. This equipment separates drill cutting solids from the mud stream coming out of the wellbore while retaining the water or fluid portion to be reused to continue drilling the wellbore. The solids are placed in containment, either a shallow lined pit or an above-ground container, provided on location. The system differs from conventional drilling, where a reserve pit is used to allow gravitational settling of the solids from the mud, which can then be reused. A closed loop drilling system does not include use of a conventional reserve drilling pit.

Completion:

1. An oil well shall be considered completed when the first new oil is produced through wellhead equipment into lease tanks from the ultimate producing interval after the production string has been run.

2. A gas well shall be considered completed when the well is capable of producing gas through wellhead equipment from the ultimate producing zone after the production string has been run.
3. A dry hole shall be considered completed when all provisions of plugging are complied with as set out in these rules.
4. Any well not previously defined as an oil or gas well shall be considered completed 90 days after reaching total depth.
5. If approved by ECMC, a well that requires extensive testing shall be considered completed when the drilling rig is released or six months after reaching total depth, whichever is later.

Crude oil transfer line: A piping system that is not regulated or subject to regulation by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to 49 C.F.R. § 195 Subpart A, and that transfers crude oil, crude oil emulsion or condensate from more than one well site or production facility to a production facility with permanent storage capacity greater than 25,000 barrels of crude oil or condensate or a PHMSA gathering system. 49 C.F.R. § 195 Subpart A, in existence as of the date of this regulation and not including later amendments, is available for public inspection during normal business hours from the public room administrator at the office of the commission, 1120 Lincoln Street, Suite 801, Denver, Colorado 80203. Additionally, 49 C.F.R. § 195 Subpart A may be found at <https://www.phmsa.dot.gov>.

Decibel (dB): A unit for measuring the intensity of a sound by comparing it with a given level on a logarithmic scale.

Degradation or degrade: Lowering in grade or desirability; lessening in quality. The act or process of degrading.

ES Director: Director of Environmental Services or designee.

ECMC: Energy and Carbon Management Commission (formerly the Colorado Oil and Gas Conservation Commission)

EPA: United States Environmental Protection Agency.

Expansive soils and rocks: Any mineral, clay, rock or other type of geologic deposit having the property of absorbing water with an accompanying swelling to several times their original volume.

Exploration and production waste: Those wastes associated with oil and gas operations to locate or remove oil or gas from the ground or to remove impurities from such substances and which are uniquely associated with and intrinsic to oil and gas exploration, development or production activities that are exempt from regulation under the Resource Conservation and Recovery Act (RCRA).

Flaring: The combustion of natural gas during upstream oil and gas operations, excluding gas that is intentionally used for onsite processes. Use of the combustion

equipment to control emissions from tanks pursuant to AQCC Regulation No. 7, 5 C.C.R. § 1001-9, Part D, Sections I.D or II.C, as incorporated by reference in Rule 901.b, is not flaring

Flowlines: A segment of pipe transferring oil, gas, or condensate between a wellhead and processing equipment to the load point or point of delivery to a U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration or Colorado Public Utilities Commission regulated gathering line or a segment of pipe transferring produced water between a wellhead and the point of disposal, discharge, or loading. This definition of flowline does not include a gathering line.

Geologic hazard area: An area which contains or is directly affected by a geologic hazard.

Geologic hazards: A geologic phenomenon which is adverse to past, current, or foreseeable construction or land use and which constitutes a hazard to public health and safety or property if not avoided. The term includes but is not limited to:

1. Landslides, rock falls, mudflows, and unstable or potentially unstable slopes
2. Seismic effects
3. Radioactivity
4. Coal mines
5. Areas of ground subsidence
6. Expansive rocks or soils

Ground subsidence: A process characterized by the downward displacement of surface material caused by natural phenomena such as removal of underground fluids, natural consolidation, or dissolution of underground minerals or by man-made phenomena such as underground mining.

Groundwater: Subsurface waters in a zone of saturation.

Hydraulic fracturing or hydraulic fracturing treatment: All stages of the treatment of a well by the application of hydraulic fracturing fluid under pressure that are expressly designed to initiate or propagate fractures in a target geologic formation to enhance production of oil and natural gas.

Hydraulic fracturing fluid: The fluid, including the applicable base fluid and all hydraulic fracturing additives, used to perform a hydraulic fracturing treatment.

Inactive Well: As defined by ECMC Rule 100, any of the following is an Inactive Well:

1. A Well that has been shut-in and has not produced for a period of 12 consecutive months;
2. A Well that has been temporarily abandoned for a period of 6 consecutive months;

3. A Class II UIC Well or a Geothermal Injection Well which has not been utilized for a period of 12 consecutive months; or
4. A Suspended Operations Well or a Waiting on Completion Well with no activity other than monthly Bradenhead monitoring for more than 24 consecutive months.

An Inactive Well does not mean: a Well that is completed for fewer than 12 months; a Class II UIC Well that is completed for fewer than 12 months; a Well used for the purpose of monitoring or observing an oil, gas, or groundwater reservoir; a Stratigraphic Well; or a Well designated as Out of Service.

LACT ("Lease Automated Custody Transfer"): The transfer of produced crude oil or condensate, after processing or treating in the producing operations, from storage vessels or automated transfer facilities to pipelines or any other form of transportation.

Linear feature: A road or pipeline that is necessary to cross a water body or connect or access a well or gathering line.

LGD (Local Government Designee): The office designated to receive, on behalf of the local government, copies of all documents required to be filed with the local governmental designee pursuant to ECMC rules. The town's LGD is the ES Director.

Mitigation: The following actions, in order of preference:

1. Avoiding adverse impacts: Avoiding an adverse impact by not taking a certain action or parts of an action; or
2. Minimizing adverse impacts: Minimizing adverse impacts to protect public health, safety, and welfare and the environment, and mitigating the extent and severity of those impacts that cannot be avoided; or
3. Rectifying impacts: Repairing, rehabilitating, or restoring the impacted area, facility or service; or
4. Reducing or eliminating impacts: Reducing or eliminating the impact over time by preservation and maintenance operations; and
5. Other provisions for addressing impacts: replacing or providing equivalent biological, social, environmental and physical conditions, or a combination thereof.

Modification:

1. Substantial modification. The addition of new wells; any changes that significantly alter the nature, character or extent of land use impacts of the existing operation; or changes that will result in an increase in hydrocarbon emissions. Re-fracking of an existing well is a substantial modification. The ES Director, in their sole discretion, shall determine whether an activity is a substantial modification.

2. Minor modification. Any change to the existing operation that is not a substantial modification.

Oil and gas operation: Exploration for oil or gas, including, but not limited to, conventional oil and gas and coalbed methane gas; the siting, drilling, redrilling, deepening, completion, recompletion, reworking, fracturing, refracturing, closure or abandonment, shutting-in oil or gas wells and returning wells to production; pumping stations; production facilities and operations including the installation of flow lines; accessory equipment; construction site preparation, reclamation and related activities associated with the development of oil and gas resources, including their impacts on or construction of access roads and easements; and substantial modification to existing operations.

Oil and gas facility: Equipment or improvements used or installed at an oil and gas location for the exploration, production, withdrawal, treatment, or processing of crude oil, condensate, E&P waste, or gas.

Operation(s): Oil and gas operation(s).

Operator: The individual, company, trust, or foundation responsible for the exploration, development, and production of an oil or gas well or lease. Generally, it is the oil company by whom the drilling contractor is engaged.

Pigging: A natural gas pipeline maintenance activity that utilizes a projectile known as a "pig" to clean residual liquid from the pipeline.

Permit: Town of Erie Oil and Gas Permit issued pursuant to the provisions of this chapter 12.

Pipelines: Flowlines for oil and gas wells.

Pit: Any natural or man-made depression in the ground used for oil or gas exploration or production purposes. A pit does not include steel, fiberglass, concrete or other similar vessels which do not release their contents to surrounding soils.

Pitless: Pitless with respect to drilling means there is no pit regardless of size or function. This includes conventional reserve drilling pits and drilling cutting pits, but does not include flare pits, which may be utilized to contain necessary flaring during the drilling, completion, or up-set conditions.

Production facilities: All storage, separation, treating, dehydration, artificial lift, power supply, compression, pumping, metering, monitoring, flowline, and other equipment directly associated with oil wells, gas wells, or injection wells.

Protected use: A residence; occupied commercial or institutional building or school; or public park, fields or outside activity areas.

Regulation(s): The Town of Erie Oil and Gas Regulations set forth in Chapter 12 of the UDC.

Reference area: An area either (1) on a portion of the site that will not be disturbed by oil and gas operations, if that is the desired final reclamation; or (2) another location

that is undisturbed by oil and gas operations and proximate and similar to a proposed oil and gas location in terms of vegetative potential and management, owned by a person who agrees to allow periodic access to it for the purpose of providing baseline information for reclamation standards, and intended to reflect the desired final reclamation.

Seismic effects: Direct and indirect effects caused by a natural earthquake or a man-made phenomenon, including, but not limited to, exploration and test drilling.

Shut-in well: A well which is capable of production or injection by opening valves, activating existing equipment or supplying a power source.

Significant: Noteworthy.

Significantly degrade: To lower in grade or desirability to a significant as opposed to trifling degree.

Spill: The unauthorized, accidental or sudden discharge of chemicals, oil, petroleum product, exploration and production waste, or other hazardous substances.

Substantial modification: See modification.

Subsurface facility: Flowlines and all other subsurface facilities of oil and gas operations.

Temporarily abandoned well:

1. A well that has all downhole completed intervals isolated with a plug set above the highest perforation such that the well cannot produce without removing a plug; or
2. A well which is incapable of production or injection without the addition of one or more pieces of wellhead or other equipment, including valves, tubing, rods, pumps, heater-treaters, separators, dehydrators, compressors, piping or tanks.

UDC: Town of Erie Unified Development Code.

Venting:

1. The emission of gas from devices, such as pneumatic devices and pneumatic pumps, that are designed to emit as part of normal operations if such emissions are not prohibited by AQCC Regulation No 7, as incorporated by reference in Rule 901.b;
2. Unintentional leaks that are not the result of inadequate equipment design; and
3. Natural gas escaping from, or downstream of, a tank unless: 1) there is no separation occurring at equipment upstream of the tank; 2) the separation equipment is not sufficiently sized to capture the entrained gas; or 3) the natural gas is sent to the tank during circumstances when the gas cannot be sent to the gathering line or the combustion equipment used to flare the gas is not operating.

VOC emissions: Volatile organic compounds in oil and gas operations that have the potential to be released into the atmosphere and/or ground.

Waterbody:

1. Any streams, rivers, lakes, ponds, stormwater ditches, wetlands, riparian areas, or aquatic habitats which are contained in or flow in or through the town excluding roadway ditches, water in sewage systems, water in treatment works of disposal systems, water in potable water distribution systems, stock ponds or irrigation ditches not discharging to live streams, and all water withdrawn for use until use and treatment have been completed.
2. Waterbodies that fall within this definition are subject to these regulations, whether or not water bodies are subject to the U.S. Army Corps of Engineers' jurisdiction or the Colorado Water Quality Control Division jurisdiction.

Water source: Water wells that are registered with Colorado Division of Water Resources, including household, domestic, livestock, irrigation, municipal/public, and commercial wells, permitted or adjudicated springs, or monitoring wells installed for the purpose of complying with groundwater baseline sampling and monitoring requirements under ECMC Rules 318 A.e.(4), 608, or 609.

Waste: See "exploration and production waste."

Well (oil and gas): An oil or gas well, a hole drilled for the purpose of producing oil or gas, a well into which fluids are injected, a stratigraphic well, a gas storage well, or a well used for the purpose of monitoring or observing a reservoir.

Wildlife habitat: A natural or man-made environment that contains the elements of food, shelter, water, and space in a combination and quantity necessary to sustain one or more wildlife or plant species at stable population levels in historically-used habitats. Sensitive wildlife habitat areas include, but are not limited to, nesting, brood-rearing areas, rookeries, leas, migration corridors, calving and fawning grounds for big game.

WQCD: Colorado Department of Public Health and Environment, Water Quality Control Division.

10-12-2 Permit application process for new oil and gas operations and substantial modifications.

A. *Compliance with zoning—Rezoning application:*

1. New oil and gas operations or substantial modifications to existing oil and gas operations shall only be permitted if they are located wholly on parcels located in the Heavy Industrial zone district.
2. A request to rezone property for an oil and gas operation may be processed prior to or together with the processing of an oil and gas permit under these regulations. Any rezoning request is subject to UDC Section 10-7-5.

B. *Pre-application conference:*

1. *Pre-application conference:* Prior to submitting an application for a Permit, an applicant shall meet with the ES Director to discuss the proposed operation or substantial modification. The purpose of the pre-application conference includes, without limitation:
 - a. To discuss the location and nature of the proposed operations, including the size, number of wells and production facilities, miles of flowlines, and phases of the operation.
 - b. To explain the application submittal requirements, the nature of materials that will be responsive to those requirements, and waivers of any materials that would not be necessary in determining whether the application complies with town requirements;
 - c. To discuss state terms and conditions imposed on the proposed operation;
 - d. To identify site-specific concerns and issues that bear on the proposed operation;
 - e. To discuss projected impacts and potential mitigation;
 - f. To discuss the town oil and gas operations standards in section 10-12-4 that must be satisfied for Permit approval.
 2. *Pre-application materials:* At or before the pre-application conference, the applicant shall provide the ES Director with information that is sufficient for determining the location and nature of the proposed operation, the degree of impacts associated with the operation, and mitigation proposed to offset such impacts.
- C. *Permit application submittal:* The applicant shall submit the Permit application materials to the ES Director. The Permit application materials are set forth in section 10-12-2 E.
- D. *Permit application fee:* The applicant is responsible for all costs of reviewing and processing the Permit application.
1. *Fee requirement:* The Permit application shall be accompanied by the application fees as established by resolution of town council.
 2. *Payment of additional costs:* Additional costs for reviewing and processing the Permit application include, but are not limited to, the costs of legal, consultant, and referral agency review of the Permit application, the pre-application conference, completeness determination, and all hearings and meetings on the Permit application. Such costs are in addition to the application fees paid pursuant to D.1 above and shall be billed to the applicant. All additional costs must be paid in full prior to final action by the town council on the Permit application.
- E. *Permit application materials for operations and substantial modifications:* The ES Director may waive any part of the Permit application material requirements when

the information would not be relevant to determining whether the proposed operation or substantial modification complies with the oil and gas operations standards in section 10-12-4. The ES Director may also accept materials submitted to the ECMC, County, or another regulatory agency that are responsive to these requirements.

1. *Application form:* Completed land use application form including the operator's name and address and, if a type of entity, the name and address of the registered agent of the operator; any other person that the operator designates to receive notice, and a person designated by the operator to serve as an on-site contact.
2. *Financial qualifications and technical expertise:* Documentation of the applicant's financial qualifications and technical expertise and capability to construct and operate the proposed operation or substantial modification in compliance with all conditions of approval, including:
 - a. Evidence that the operator is registered with the ECMC.
 - b. A certified list of all instances within the past ten years where the ECMC, other state or federal agency, municipality, or county found that the operator has not complied with applicable federal, state, or local requirements with respect to drilling, operation, or decommissioning of a well or operation of an oil and gas facility or pipeline. The list shall identify the date of the determination, the entity or agency making the determination, the nature of the noncompliance, and, if applicable, the final resolution of the issue and procedural or policy changes that were implemented to prevent future infractions and which adequately demonstrate effectiveness. If no such instances of non-compliance exist, the operator shall certify to that effect.
 - c. A list of all incidents that are reportable to state or federal agencies (such as accidents, spills, releases, and injuries) within the past ten years that occurred at facilities owned or operated by operator, operator's legacy companies, or a subsidiary of operator, including events involving contractors. Operator shall also list any root causes analysis conducted and corrective actions taken in response to the incidents, including internal changes to corporate practices or procedures, such as modifications to safety management plans.
3. *Insurance:* Evidence of liability insurance covering both the operator and the Town of Erie with minimum limits of \$1,000,000 Each Occurrence, \$2,000,000 General Aggregate, and \$2,000,000 Products Completed Operations Aggregate, or such greater amount that the town determines to be necessary based on the scope of the oil and gas operation.
4. *Summary of proposed oil and gas operation:* Summary of operation, including: the method, schedule, and duration of time for drilling, completion, production,

and decommissioning; a list of all proposed oil and gas equipment to be installed and estimated timeline; hours of operation; number of employees on site on a daily basis; types of vehicles and equipment.

5. *Topographic map:*

- a. *Location of proposed operation:* The location of the operation including well pads, tanks, roads, pipelines and gathering systems, and related features on a United States Geological Survey quadrangle map or on a recorded plat if the operation is within an approved subdivision, with the location highlighted so that it is easy to see.
- b. *Topography:* Existing and proposed topography at intervals established by the ES Director as necessary to portray the direction and slope of the area affected by the operation.
- c. *Transportation and roads:* All public and private roads that traverse and/or provide access to the operation.
- d. *Easements:* Easements recorded or historically used that provide access to or across, or other use of, the property.
- e. *Municipal and subdivision boundaries:* Municipal or subdivision boundaries within one mile of the well pad, tanks, gathering lines, storage areas, or any other ancillary feature of the operation.
- f. *Existing structures:* All residences and occupied buildings, including educational facilities, child care centers, medical centers, and senior living facilities, within one mile of the well pad, tanks, gathering lines, storage areas, or any other ancillary feature of the operation.
- g. *Other operations:* Location of other operations within one mile of the site.
- h. *Distances between well or surface equipment and nearest building unit:* Shortest distance between any proposed well or production equipment on the well pad and the nearest exterior wall of an existing building unit.

6. *Current aerial photo:* Current aerial photo that shows the location of the operation and the shortest distance between any proposed well or production equipment on the well pad and the nearest exterior wall of an existing building unit, displayed at the same scale as the topographic map to facilitate use as an overlay.

7. *Site preparation plan:* Plan for site preparation, mobilization, and demobilization.

8. *Property rights, permits, and other approvals:*

- a. Description and documentation of property rights, easements, and rights-of-way agreements that are necessary for or that will be affected by the proposed operation.

- b. List of all federal, state, and county permits and approvals that have been or will be required for the proposed operation.
 - c. Description of all mitigation and financial security required by federal, state, and local authorities; and copies of any draft or final environmental assessments or impact statements prepared for the proposed operation.
9. *Reports/studies/plans:* The following reports, studies, and plans shall be prepared to adequately portray the physical characteristics of the property.
- a. *Community outreach plan:* A plan that describes how the operator will conduct neighborhood meeting(s) and use other techniques to provide the public with information and listen to concerns about the oil and gas operation.
 - b. *Cumulative impact analysis:* An analysis describing the existing and approved oil and gas operations and all other land uses and known emission sources that would impact the town collectively with the oil and gas operation; a description of the adverse impacts to public health, safety, and the environment from all current and planned operations; and an analysis of whether the operation and associated mitigation efforts will contribute to these adverse impacts.
 - i. Where the operation will contribute to existing impacts, a cumulative impact mitigation plan is required.
 - ii. The cumulative impact analysis shall at minimum assess cumulative impacts to air quality; water quality and quantity; wildlife and wildlife habitat; nuisance impacts such as noise and odor; land use patterns; and traffic.
 - iii. The applicant shall provide all information required by the ECMC in Form 2A, as well as the above analysis that includes other land uses and known emission sources. The areas and uses requiring evaluation may extend beyond those default areas of evaluation required by the ECMC.
 - c. *Alternative site analysis:* An analysis of alternative sites from which the minerals can be accessed that includes, for each site:
 - i. Location;
 - ii. Zoning;
 - iii. Natural and manmade features;
 - iv. Water source;
 - v. Distance of proposed pad to residences, occupied buildings, parks and open space; water bodies; floodplains; and roadways.

- vi. Justification of a preferred alternative site and/or reason why a site is not proposed as a viable alternative.
- vii. Materials submitted to the ECMC to satisfy the alternative location analysis requirement.
- d. *Geologic and natural hazards assessment and mitigation plan.*
 - i. *Geologic and natural hazards report:* A report detailing the natural and geological characteristics on-site, and within one mile of the site, prepared by a registered engineer or geotechnical consultant. The report shall include a geotechnical assessment of all geologic hazards that have the potential to affect the oil and gas operation, and which may be destabilized or exacerbated by the oil and gas operation. The geotechnical assessment shall include, without limitation:
 - (A) Determination if mining exists under the site;
 - (B) Determination if void space is still present underground;
 - (C) Determination if subsidence has taken place (from drill hole data and surface evidence, Colorado Geological Survey mine subsidence history);
 - (D) Determination of how the subsidence hazard can affect the operation and whether the oil and gas operation will exacerbate subsidence;
 - (E) Determination of areas where construction or other disturbance should not occur;
 - (F) Identification of expansive soils or rocks, including any type of geologic deposit having the property of absorbing water with accompanying swelling.
 - ii. *Geologic and natural hazard mitigation plan:* A plan for mitigating impacts to the operation from geologic and natural hazards and impacts of the operation on geologic and natural hazards. The plan shall demonstrate compliance with the standards in section 10-12-4.
- e. *Air quality modeling, monitoring and mitigation:*
 - i. *Air quality modeling plan:* A plan for dispersion modeling to be conducted by a third-party consultant approved by the town that shows compliance with National Ambient Air Quality Standards and provides air quality impact studies for drilling, completions, and production operations based upon proposed equipment use and operational phases.
 - ii. *Air quality monitoring plan:* A monitoring plan that provides for:

- (A) Pre-construction baseline ambient air quality testing, completed by a consultant approved by the town for 15—90 days, but no more than 90 days prior to construction, for areas located within 500 feet of the well sites if approval from surrounding surface owners can be obtained.
 - (B) Air quality monitoring program conducted by a consultant mutually agreed to by both the operator and the town and paid for by operator. The program will require monitoring for all potential emissions, including, but not limited to, Methane (CH₄), VOCs, Hazardous Air Pollutants (HAPs), Oxides of Nitrogen (NO_x), Particulate Matter (PM₁₀), Fine Particulate Matter (PM_{2.5}), and Carbon Monoxide (CO). All monitor locations are to be approved by the town and may be co-located with town-owned monitors.
 - (C) Continuous air quality monitoring for areas within one mile of the operation. Operator will submit monthly air quality monitoring reports to the ES Director during drilling and completion and quarterly reports for the duration of all oil and gas operations.
 - (D) Additional monitoring as needed to respond to emergency events such as spills, process upsets, or accidental releases. Operator will provide access to the well sites to the town's third-party inspector as needed to allow air sampling to occur.
 - (E) Compliance with EPA, CDPHE, and ECMC standards for emissions and odors. If these standards become more stringent in the future, the operator will update its air quality mitigation plan to comply with the more stringent standards.
 - (F) Compliance with 2019 CDC Agency for Toxic Substances and Disease Registry and US EPA Integrated Risk Information System ambient air quality guidelines. If these guidelines become more stringent in the future with more restrictive guidelines for benzene, toluene, ethylbenzene and xylene (BTEX), and other air toxins, the operator will update its air quality mitigation plan to comply with the revised guidelines.
 - (G) Measurable mitigation steps or actions that will be taken on air quality action days to assist in reducing emissions.
- iii. *Venting and Flaring*: Description of how any proposed venting and flaring will comply with the standards in Section 10-12-4(G)(2).
 - iv. *Leak detection and repair (LDAR) program*: A leak detection and repair program using modern leak detection technologies for

equipment used in the operation that demonstrates compliance with the requirements of the oil and gas operation standards in 10-12-4. The program shall provide for:

- (A) A minimum of monthly inspections with more frequent inspections based on the design and size of the facility. Notice provided to the ES Director five business days prior to an LDAR inspection of facilities to give the town the opportunity to observe the inspection.
- (B) Detailed recordkeeping of inspections for leaking components.
- (C) If an infrared (IR) camera is used, retention of an infrared image or video of all leaking components before and after repair, with records maintained for two years and available to the town upon request.
- (D) Immediately reporting to the ES Director any leaks discovered by the operator, including any leaks that are reported to operator by a member of the public. Operator shall repair leaks within 48 hours. If the town determines that the leak presents an imminent threat to persons or property, the operator shall notify residents within one-half mile of the leak and may not operate the affected component, equipment, or flowline segment until the operator has corrected the problem and the town agrees that the affected component, equipment, or flowline segment no longer poses a hazard to persons or property. In the event of leaks that the town believes do not pose an immediate hazard to persons or property, if more than 48 hours repair time is needed after a leak is discovered, operator shall contact the ES Director and provide an explanation of why more time is required.
- (E) Continuous monitoring to detect leaks or measure hydrocarbon emissions and to monitor meteorological data. Any continuous monitoring system shall be able to alert the operator of increases in air contaminant concentrations.
- (F) Monthly LDAR report provided to ES Director, organized by facility, detailing the inspection results, any associated repairs, and any outstanding leaks. Operator will also provide a copy of all reports submitted to the AQCC, including monthly downtime reports and semi-annual control equipment status reports for production facilities located within town limits. The town will make this information

available on its website, or may provide a link for such information from town's website to operator's website.

- v. *Odor management plan:* A plan to minimize and mitigate the emission of detectable odors by the oil and gas operation and to ensure that the operation will not create a public nuisance as set forth in section 5-1-6 H of the Municipal Code. The plan shall demonstrate compliance with the oil and gas standards in section 10-12-4 and provide for a timely response to odor complaints from the community and for identifying and implementing additional odor control measures necessary to control odors emanating from the operation.
- f. *Electrification plan:* A plan identifying all sources of electricity that will be supplied and used during all phases of development including, drilling, completions, and operations.
- g. *Dust suppression plan:* A plan that ensures:
 - i. Dust associated with on-site activities and traffic on access roads will be minimized throughout construction, drilling, and operational activities such that there are no visible dust emissions from access roads or the site to the extent practical, given wind conditions.
 - ii. Operator will not conduct dust suppression activities within 300 feet of surface water unless the dust suppressant is water.
 - iii. Safety data sheets will be submitted for any chemical-based suppressant.
- h. *Water quality impact assessment, monitoring, and mitigation plan:* A plan that includes all the following requirements
 - i. *Assessment:* An assessment of the impacts to water quality, including the following considerations:
 - (A) Changes to existing water quality, including patterns of water circulation, temperature, conditions of the substrate, extent and persistence of suspended particulates, and clarity, odor, color, or taste of water;
 - (B) Applicable narrative and numeric water quality standards;
 - (C) Changes in point and nonpoint source pollution loads;
 - (D) Increase in erosion;
 - (E) Changes in sediment loading to waterbodies;
 - (F) Changes in stream channel or shoreline stability;
 - (G) Changes in stormwater runoff flows;
 - (H) Changes in trophic status or in eutrophication rates in lakes and reservoirs;

- (I) Changes in the capacity or functioning of streams, lakes, or reservoirs;
 - (J) Changes in flushing flows;
 - (K) Changes in dilution rates of mine waste, agricultural runoff, and other unregulated sources of pollutants;
 - (L) Identification of all surface and subsurface water bodies. An inventory and location of all water bodies, as well as domestic and commercial water wells within one mile of the operation;
 - (M) Identification of intakes. Identification of intake(s) for public drinking water supply.
- ii. *Water quality monitoring and mitigation:* For surface and groundwater, a plan that establishes a baseline and a process for monitoring changes to water quality and the aquatic environment within one mile of the oil and gas operation to demonstrate the effectiveness of mitigation. The plan shall demonstrate compliance with the oil and gas operation standards in section 10-12-4 and include:
- (A) Key stream segments, other water bodies, and groundwater to be monitored.
 - (B) Locations for and frequency of sampling and monitoring to establish baseline of existing conditions prior to the operation, including existing water quality, aquatic life and macro-invertebrates, and groundwater data.
 - (C) Key indicators of water quality and stream health, and threshold levels that will be monitored to detect changes in water quality and health of the aquatic environment.
 - (D) Locations for and frequency of sampling and monitoring for key indicators of water quality and stream health, including, but not limited to, constituents regulated by the Colorado Water Quality Control Commission, and constituents associated with the operation.
 - (E) Locations for and frequency of sampling and monitoring to measure effectiveness of water quality mitigation during the life of the operation.
 - (F) Mitigation steps that will be implemented to avoid degradation of water bodies if monitoring of key indicators reveals degradation.

- i. *Stormwater management plan:* A site-specific stormwater plan to minimize impacts to surface waters from erosion, sediment, and other sources of nonpoint pollution and that demonstrates compliance with the oil and gas operation standards in section 10-12-4.
- j. *Water supply plan:* A plan prepared by a certified professional engineer that demonstrates compliance with the applicable oil and gas operation standards in section 10-12-4 and includes:
 - i. Description of the physical source of the water that the operator proposes to use to serve each phase of the operation;
 - ii. List of all available physical sources of water other than Erie municipal water for the operation, and if multiple sources are available, analysis to determine which source is least detrimental to the environment;
 - iii. Amount of water needed for each phase of the operation;
 - iv. Proof that the source of water supply is physically and legally available and dependable for each phase of the operation;
 - v. Description of how water will be delivered to the site for each phase of the operation;
 - vi. Description of water efficiency methods; and
 - vii. Amount of wastewater produced, and disposal plans for wastewater.
- k. *Spill release response and reporting plan:* A plan that demonstrates compliance with the oil and gas operation standards in section 10-12-4 and includes:
 - i. Location of storage areas for equipment, fuel, lubricants, chemicals, and waste during both construction and operation.
 - ii. Measures, procedures, and protocols for spill prevention, storage, and containment.
 - iii. An electronic monitoring program to aid in discovery of spills and releases.
 - iv. Measures, procedures, and protocols for clean-up and description of the financial security for these provisions.
 - v. Measures, procedures, and protocols for reporting spills and storage to town, county, state, and federal officials in compliance with the oil and gas operation standards in section 10-12-4.
 - vi. Provisions establishing that the town may undertake prevention, control, countermeasures, containment, and clean-up measures if the permittee fails to comply with its obligations under the spill release, response, and reporting plan, and that the permittee will pay all costs incurred by the town for any such measures.

- vii. Maintenance of safety data sheets (SDS).
- viii. Baseline assessment of conditions of the soils within the area covered by the spill release response and reporting plan.
- ix. Plan for monitoring conditions of the soil for the duration of oil and gas operations and for post-operation sampling of the soil.
- l. *Wastewater and waste management plan:* A plan that identifies the amount of wastewater produced by the oil and gas operation and disposal plans for wastewater that demonstrates compliance with the oil and gas operation standards in section 10-12-4. The plan shall ensure that:
 - i. All fluids will be contained and there will be no discharge of fluids outside secondary containment structures. Accidental discharge of fluids within secondary containment structures will be cleaned and disposed of immediately.
 - ii. Waste will be stored in tanks, transported by tanker trucks and/or pipelines, and disposed of at licensed disposal or recycling sites.
 - iii. Disposal of wastewater within the town limits is prohibited.
 - iv. Land treatment of oil-impacted or contaminated drill cuttings within the town limits is prohibited.
- m. *Chemicals and hydraulic fracturing fluids disposal and reporting plan:* A plan for disposal and reporting of chemicals and hydraulic fracturing fluids, that includes:
 - i. Safety data sheets (SDS) for the chemicals used in the operation.
 - ii. Chemical abstract service (CAS) registry numbers for every chemical used in the operation, if available, other than those protected as trade secrets.
 - iii. Provision for reporting to the town the chemicals, other than those protected as a trade secret, that will be stored and used during any hydraulic fracturing event, along with the maximum quantity that will be present on-site at any one time.
- n. *Emergency response plan:* A plan prepared in consultation with the public works department, planning and development department, fire department, and police department that addresses events such as explosions, fires, gas or water pipeline leaks or ruptures, leaks from well casings and pits, tank leaks or ruptures, hydrogen sulfide or other toxic gas emissions, transportation of hazardous material, and vehicle accidents or spills. The plan shall be updated on an annual basis, after an incident occurs, or when changes are made to facility operations, personnel, or other content covered in the plans. The plan shall include:

- i. Proof of adequate personnel, supplies, and funding to immediately implement the emergency response plan at all times during construction and operations.
 - ii. Adequate provisions to ensure operator will cover all costs associated with ongoing training of employees and first responders, response and remediation, including any additional onsite and regional specialized equipment and supplies necessary to respond to any emergency incident at its facilities.
 - iii. Operator shall immediately notify the town, surrounding communities, and any nearby schools, hospitals, and long-term care facilities of an emergency event
 - iv. Operator shall maintain onsite storage of aqueous film forming foam (which shall not contain PFAS), absorption boom, and granulated materials for ready deployment in case of leaks or other emergencies. Operator shall notify first responders of the location of such materials.
 - v. Coordination with the *[Fire Department]* regarding evacuation routes. Evacuation routes will include any schools, hospitals, and long-term care facilities that are within proximity to the oil and gas facility, based on guidance from the *[Fire Department]*.
 - vi. If no fire hydrant connected to the town's water system or alternative approved of by the town exists within 1,000 feet from the oil and gas operation, operator shall install fire hydrant at its own cost, or reimburse the town for the cost of installing a fire hydrant.
- o. *Noise:*
- i. *Ambient noise baseline survey:* An ambient noise survey for each well site at baseline and during drilling, hydraulic fracturing, flowback, and operations prepared by a qualified consultant approved by the town.
 - ii. *Noise mitigation and monitoring plan:* A plan detailing how each phase of the operation will comply with the maximum permissible noise levels and mitigation requirements in section 10-12-4. The plan shall:
 - (A) Identify oil and gas operation sources of noise by phase;
 - (B) Document the ambient noise level prior to construction of any wellhead, compressor or compression facility; and
 - (C) Detail how noise impacts will be mitigated and monitored. In determining noise mitigation and monitoring, specific site characteristics shall be considered, including, but not limited to:
 - (1) Nature and proximity of adjacent development;

- (2) Seasonal and prevailing weather patterns, including wind directions;
 - (3) Vegetative cover on and adjacent to the site; and
 - (4) Topography.
- p. *Lighting study*: A plan that demonstrates compliance with the oil and gas operation standards in section 10-12-4.
- q. *Operations plan*: A plan including the method and anticipated schedule for drilling, completion, transporting, production and post-operation, and a description of future oil and gas operations.
- r. *Vegetation and weed management plan*: A written description of the species, character and, density of existing vegetation on the site, a summary of the potential impacts to vegetation as a result of the operation, and proposed mitigation to address these impacts. The plan shall include any ECMC required interim and final reclamation procedures.
- s. *Reclamation plan*: A plan for interim reclamation and revegetation of the site and final reclamation of the site in compliance with the oil and gas operation standards in section 10-12-4. The plan shall include the locations of any proposed reference areas to be used as guides for interim and final reclamation.
- t. *Grading, drainage, and erosion control plan*: A plan that identifies existing (dashed lines) and proposed (solid lines) contours, at two-foot intervals, and the methods for controlling and minimizing erosion during construction and operational phases of the operation.
- u. *Traffic Analysis*:
 - i. *Traffic impact assessment (TIA)*: A study prepared by a certified professional traffic operations engineer (PTOE) and completed consistent with the Town of Erie Engineering Standards and Specifications, as may be amended.
 - (A) *Existing conditions*: Description of the baseline condition of road segments to be affected by the oil and gas operation, including the existing physical condition, trips generated by vehicle type on average and at peak times, and the existing level of service.
 - (B) *Proposed conditions*: For each phase of the operation, a description of average and peak time site trip generation and load impact for each affected road segment by vehicle type.
 - (C) *Future conditions*: Description by vehicle type of the total future traffic projected for the roads that will be affected by the oil and gas operation.

- (D) *Evaluation*: Assessment of impacts to the level of service and physical condition of each affected road segment for each phase of the operation.
 - (E) *Mitigation*: For each phase of the operation, proposed mitigation including road improvements and repairs, funding, traffic signals, and other measures to ensure that the physical condition and the level of service for each affected road segment are not degraded during any phase of the operation.
- ii. *Traffic management plan*: A plan describing traffic delays, road closures, frequent turns and stopping, and similar impacts to traffic movement and safety; and measures to mitigate adverse impacts for each phase of the operation.
- iii. *Access road plan*: A plan sufficient to demonstrate compliance with the oil and gas operation standards for access roads in section 10-12-4.
- v. *Flowline management plan*: A plan that includes:
 - i. Description of how the operator intends to adhere to the integrity management procedures listed in ECMC Rule 1104.c—f.
 - ii. A copy of the leak protection and monitoring plan required by ECMC Rule 1104.g, as applicable.
 - iii. A map at a scale of "one inch equals 250 feet" (1" = 250') or such scale as required by ECMC showing the location of all existing and proposed flowlines associated with the oil and gas operation. For each existing and proposed flowline, the map shall denote its size and the maximum pressure at which it is or will be operated; its depth from the surface; and, if existing, whether it was constructed or installed before October 31, 2017, and whether it is in use, abandoned, or shut-in.
 - iv. Description of the measures planned to minimize land disturbance and impacts to vegetation.
- w. *Wildlife and wildlife habitat assessment*: An assessment of existing wildlife and wildlife habitat, including:
 - i. Analysis of existing wildlife and wildlife habitat;
 - ii. Map indicating the location of habitat in relationship to the oil and gas operation; and
 - iii. Description of the impacts and net effect of the operation on wildlife and wildlife habitat, and proposed mitigation.
- x. *Cultural, historical, and archeological survey*: A survey that includes:

- i. Assessment of cultural, historical, and archaeological resources in and around the site of the operation, and proposed mitigation measures.
 - ii. Approval from the State Historic Preservation Office regarding any historical or cultural resources potentially affected by the oil and gas operation. Operator shall provide a copy of such approval to the ES Director, in consultation with the surface owner and subject to any confidentiality requirements.
 - y. *Public services and facilities impact assessment:* A description of existing levels, demand for, adequacy of, and the operational costs of public services affected by the operation; a description of the increase in demand on those services and a plan for mitigating the impacts to public services and facilities.
 - z. *Additional information:* Additional information that the ES Director deems necessary to evaluate whether the application complies with the oil and gas operation standards in section 10.2.4.
- F. *Determination of completeness:* The determination of completeness is a determination by the ES Director that all of the required materials have been submitted and that the documents are responsive to the Permit application requirements in section 10-12-2 E.
- 1. *Application is not complete:* If the ES Director determines that the application is not complete, the ES Director shall inform the applicant in writing of the deficiencies and shall take no further action on the application until the deficiencies are remedied. If the applicant fails to correct the deficiencies within 30 calendar days after the notice that the application is incomplete, the application shall be considered withdrawn unless the applicant requests more time to ensure that the materials are as complete as possible.
 - 2. *Application is complete:* If the ES Director determines that the application is complete, the ES Director shall date the application and notify the applicant in writing. The completed application shall be posted on the town's oil and gas website.
 - 3. *Completeness is not a determination of compliance:* A determination that an application is complete shall not constitute a determination that it complies with the oil and gas operation standards in section 10.2.4.
- G. *Permit review and decision:*
- 1. *Referral of application:*
 - a. *Technical and legal consultants and state, local, and federal agencies:* The ES Director may send a copy of the complete application to technical and legal consultants retained by the town, and any local, state, or federal agency that may have expertise or an interest in impacts that may be associated with the operation.

- b. *Colorado geological survey:* The ES Director shall send a copy of the complete application to the Colorado Geological Survey for recommendations if the oil and gas operation is proposed to be located in a designated geologic hazard area.
- c. *Comment period:* The comment period for referral agency review shall be 30 calendar days from the date of determination of completeness.
- d. *Cost of consultant and referral agency reviews:* The applicant shall be responsible for the costs of all consultant and referral agency reviews.
- 2. *Neighborhood meeting:* Neighborhood meeting(s) shall be held in accordance with the approved community outreach plan.
- 3. *Public hearing and recommendation by planning commission:*
 - a. *Public notice:*
 - i. *Published notice:* Not less than 15 calendar days prior to the date of the public hearing, the ES Director shall publish a notice of public hearing on the Permit application. The notice shall be published once in a newspaper having general circulation in the area. The notice shall include the information in subsection 3.a.iv, below. The applicant shall be responsible for the cost of publication.
 - ii. *Written notice of planning commission hearing to property owners and occupants:* Not less than 15 calendar days prior to the date of the public hearing, the ES Director shall mail written notice of the public hearing to the owners and occupants of property described in subsection 3.a.v, below. The applicant shall provide a stamped and addressed envelope for each party to be notified.
 - iii. *Posted notice:* Fifteen days prior to the public hearing, the applicant shall post a sign, provided by the town, at the site of the operation giving notice to the general public of the planning commission hearing. The applicant is responsible for filling out the sign, posting the sign, checking on the sign to make sure it remains in place, and to remove the sign within two days after the final decision on the Permit application. For parcels of land exceeding ten acres in size, two signs shall be posted. Such signs shall be posted on the subject property in a manner and at a location or locations reasonably calculated by the town to afford the best notice to the public. Prior to the hearing, the applicant shall submit to the ES Director a notarized affidavit on a form provided by the town, stating that the posting requirements for the hearing notice have been met.
 - iv. *Notice:* The notice of public hearing shall include:
 - (A) Date, time, and place of the hearing;

- (B) Description of the property involved in the application by street address or by legal description and nearest cross street;
 - (C) Description of the purpose of the hearing and that interested parties can come to the meeting and speak on the matter;
 - (D) Information on how to obtain additional information on the operation and to comment on the proposed operation; and
 - (E) Contact information for the operator, including phone number and office hours.
- v. *Extent of notice:* The list of property owners to be notified shall include the following persons and shall be compiled by the applicant using the most current record of property owners on file with the county assessor.
 - (A) Owners of record and occupants of property within one mile of the site of the operation and any homeowners associations representing owners in the area.
 - (B) The LGD of municipalities and counties within one mile of the site of the operation.
 - (C) The ECMC Director.
 - (D) Additional persons or geographic areas that the ES Director may designate.
- vi. *Validity of notice:* The applicant is responsible for the accuracy of the list of property owners and occupants to whom written notice is provided. If the applicant makes reasonable good faith efforts to accomplish the notice responsibilities identified above, then the failure of any property owner or occupant to receive notice shall not affect the validity of the decision.
- b. *Staff report to planning commission:*
 - i. The ES Director shall prepare a report in consultation with appropriate staff members and consultants, taking into account the application, written comments from the public, issues raised by referral agencies and consultants, terms and conditions imposed by state agencies, probability of compliance with the oil and gas operation standards, and any other available information on the record.
 - ii. The ES Director shall submit the staff report to the applicant and to the planning commission. A copy of the staff report shall also be available for public review prior to the hearing.

- c. *Planning commission hearing and recommendations:* The planning commission shall consider the Permit application at a public hearing following proper public notice. The role of the planning commission is to formulate a recommendation for the town council.
 - i. *Recommend approval of Permit application:* If the operation satisfies all the oil and gas operation standards, the planning commission may recommend that the Permit application be approved.
 - ii. *Recommend denial or conditional approval of permit application:* If the operation fails to satisfy one or more oil and gas operation standards, the planning commission shall recommend that the Permit application be denied; or the planning commission may recommend approval with conditions determined necessary for compliance with the oil and gas operation standards.
- 4. *Public hearing and decision by town council:*
 - a. *Public notice:*
 - i. *Published notice:* Not less than 15 calendar days prior to the date of the public hearing, the ES Director shall publish a notice of public hearing on the Permit application. The notice shall be published once in a newspaper having general circulation in the area. The notice shall include the information in subsection 4.a.iv, below. The applicant shall be responsible for the cost of publication.
 - ii. *Written notice of town council's hearing to property owners and occupants:* Not less than 15 calendar days prior to the date of the public hearing, the ES Director shall mail written notice of the public hearing to the owners and occupants of property described in subsection 4.a.v., below. The applicant shall provide a stamped and addressed envelope for each party to be notified.
 - iii. *Posted notice:* Fifteen days prior to the public hearing, the applicant shall post a sign at the site of the operation giving notice to the general public of the town council hearing. The town will provide the signs for posting. The applicant is responsible for filling out the signs, posting the signs, checking on the signs to make sure they remain in place, and to remove the signs within two days after the final decision on the Permit application. For parcels of land exceeding ten acres in size, two signs shall be posted. Such signs shall be posted on the subject property in a manner and at a location or locations reasonably calculated by the town to afford the best notice to the public. Prior to the hearing, the applicant shall submit to the ES Director a notarized affidavit on a form provided by the town, stating that the posting requirements for the hearing notice have been met.
 - iv. *Notice of hearing:* The notice of public hearing shall include:

- (A) Date, time, and place of the hearing;
 - (B) Description of the property involved in the application by street address or by legal description and nearest cross street;
 - (C) Description of the purpose of the hearing and that interested parties can come to the meeting and speak on the matter;
 - (D) Information on how to obtain additional information on the operation and to comment on the proposed operation; and
 - (E) Contact information for the operator, including phone number and office hours.
- v. *Extent of notice:* The list of property owners to be notified shall include the following persons and shall be compiled by the applicant using the most current record of property owners on file with the county assessor.
 - (A) Owners of record and occupants of property within one mile of the site of the operation and any homeowners' associations representing owners in the area.
 - (B) The LGD of municipalities and counties within one mile of the site of the operation.
 - (C) The ECMC ES Director.
 - (D) Additional persons or geographic areas that the ES Director may designate.
- vi. *Validity of notice:* The applicant is responsible for the accuracy of the list of property owners and occupants to whom written notice is provided. If the applicant makes reasonable good faith efforts to accomplish the notice responsibilities identified above, then the failure of any property owner or occupant to receive notice shall not affect the validity of the decision.
- b. *Application review and staff report:*
 - i. *ES Director review and staff report:* The ES Director, in consultation with relevant staff members and consultants, shall prepare a report taking into account the application, planning commission recommendation, review comments, issues raised by referral agencies and consultants, terms and conditions imposed by state agencies, probability of compliance with the oil and gas operation standards, and any other available information on the record.
 - ii. *Distribution of staff report:* The ES Director shall submit the staff report to the applicant and to the town council. A copy of the staff report shall also be available for public review prior to the hearing.

- c. *Permit decision by town council:* The town council shall approve, approve with conditions, or deny the Permit application based on all the evidence on the record.
 - i. *Approval of Permit application:* If the operation satisfies all the oil and gas operation standards, the town council may approve the Permit.
 - ii. *Denial or conditional approval of permit application:* If the operation fails to satisfy one or more oil and gas operation standards, the town council shall deny the Permit; or the town council may approve the Permit with conditions determined to be necessary for compliance with the oil and gas operation standards.
- d. *Documentation of council members' decision:* The town council's decision shall be documented in writing and contain the following:
 - i. *Description of project:* Brief discussion of the operation;
 - ii. *Issues:* Description of issues raised by the planning commission, affected property owners, referral agencies, and consultants;
 - iii. *Conditions imposed by the state:* Description of terms, conditions, and requirements imposed on the operation by state agencies;
 - iv. *Impacts and mitigation:* Description of impacts of the operation, proposed mitigation, and whether each approval standard has been satisfied; and
 - v. *Conditions of approval:* Conditions of approval, if any, necessary to ensure compliance with approval standards.
 - vi. *Basis for denial:* If the trustees determine that the Permit application must be denied, a statement explaining the standards that the application failed to satisfy.

10-12-3 Activity notice for minor modification to an existing oil and gas operation.

- A. *Activity notice required for minor modification:* An activity notice is required prior to making any minor modification to an existing oil and gas operation.
- B. *Activity notice materials:*
 - 1. The name, address, and telephone number of the operator.
 - 2. Narrative description of the existing operation and the proposed modification, and site plan with sufficient detail to show the extent of the modification proposed.
 - 3. The LGD of municipalities and counties within one mile of the boundaries of the area of the operation.

- C. *Activity notice review and decision by ES Director:* Within five working days after the activity notice is deemed complete by the ES Director, the ES Director shall determine whether the activity notice shows that the proposed activity can be conducted in accordance with the requirements of these regulations.
1. If the activity notice shows that the proposed modification of an existing oil and gas operation does not constitute a substantial modification as defined in section 10-12-1 H, the ES Director shall provide the operator with a written order approving or approving with conditions the minor modification. Conditions may be imposed as necessary to protect public health, safety, welfare, and the environment.
 2. If the activity notice shows that the proposed modification of an existing oil and gas operation does not qualify as a minor modification, the ES Director shall prohibit the proposed modification and require the operator to submit a
n application for a Permit under these regulations.
- D. *Public notice:*
1. *Written notice:* Not less than 15 days ahead of the date the activity will begin, the operator shall deliver all materials outlined in Section 10-12-3 A to the ES Director. As soon as it is feasible, but not less than 24 hours before the activity begins, the ES Director shall issue a written notification to persons registered with the ES Director.
 2. *Validity of notice:* The operator is responsible for the accuracy of all materials provided to the ES Director. If the ES Director makes reasonable, good faith efforts to accomplish the notice responsibilities identified above, then the failure of any property owner or occupant to receive notice shall not affect the validity of the public notice.

10-12-4 Standards for new oil and gas operations and substantial modifications.

The following standards apply to review of a permit application for new oil and gas operations and substantive modifications. The burden of proof is on the applicant to demonstrate that the oil and gas operation complies with these standards. These standards are in addition to any state or federal standards that may apply. In the event of a conflict between these standards and another applicable standard, the more stringent standard shall apply.

- A. *Expertise and financial capability:* The applicant has the necessary expertise and financial capability to conduct the operation in compliance with the requirements and conditions of these regulations.
- B. *Property rights and easements:* The applicant will obtain all property rights and easements necessary for the oil and gas operation prior to site disturbance.

C. *Location standards:*

1. The operation is located within a zone district that allows heavy industrial uses.
2. The operation is located at the site from which the minerals can be accessed with the least adverse impact to public health, safety, welfare, and the environment in compliance with all applicable standards in this section 10-12-4.
3. Any type of well pad and above-ground production facility shall be located at least 2,000 feet from the boundary line of platted residential lots or parks, sports fields and playgrounds, or other outside activity areas and any occupied structure. Measurement shall be taken from the edge of the disturbed area to the boundary line. The town may decide that a different setback is more appropriate based on the *Alternative Site Analysis*.
4. The operation shall be at least 500 feet from any surface water body.
5. The operation shall be at least 500 feet from any domestic or commercial water wells or irrigation wells.
6. The operation is not located within a floodway district as defined in section 10-2-7 C.4 of the UDC.

D. *Minimal site disturbance:* The oil and gas operation shall be located and constructed in a manner that does not cause site disturbance unnecessary for the areal extent of the operation and that minimizes the amount of cut and fill:

1. Multi-well drill pads and consolidated facilities shall be used to minimize surface disturbance.
2. Pad dimensions shall be the minimum size necessary to accommodate operational needs while minimizing surface disturbance.
3. Structures and surface equipment shall be the minimum size necessary to satisfy present and future operational needs.
4. The operation shall be located in a manner to minimize impacts on surrounding uses, and achieve compatibility with the natural topography and existing vegetation.

E. *Cumulative impacts.* The oil and gas operation shall not have a significant cumulative adverse impact on town public health, safety, welfare, the environment, and wildlife, when considered collectively with other land uses and sources of emissions.

F. *Geologic and natural hazards:*

1. The oil and gas operation shall not be subject to risk from natural or geologic hazards.

2. The oil and gas operation shall not initiate or intensify natural or geologic hazards.
 3. For oil and gas operations located in an area where geologic and natural hazards occur, the oil and gas operation shall be conducted in compliance with the recommendations of the Colorado Geological Survey.
- G. *Air quality:* Oil and gas operations shall not significantly degrade air quality and shall prevent adverse impacts to public health, safety and welfare, and the environment.
1. *Minimization of emissions:*
 - a. Use of closed loop, pitless drilling, completions, and production systems without permanent on-site storage tanks for containment and/or recycling of all drilling, completion, flowback, and produced fluids.
 - b. Use Tier 4 fracturing pumps and Liberty Quiet Fleet or comparable technology and Tier 4 diesel engines.
 - c. Utilize pipelines for all transportation of gas and fluids from production facilities whenever available.
 - i. Any pipeline infrastructure for fresh water shall be constructed and placed into service prior to spudding for delivery of all fresh water to be used during the drilling, completion, production, and operations phases.
 - ii. Any pipeline infrastructure for produced water, natural gas, crude oil, and condensate will be constructed and placed into service prior to the start of any fluid flow from any wellbore.
 - d. Demonstrate hydrocarbon destruction or control efficiency by using an enclosed combustion device that complies with a design destruction efficiency of 98 percent or better.
 - e. Reduce emissions of the natural gas byproduct associated with oil and gas well production. Emission reduction includes prohibiting uncontrolled venting in compliance with AQCC Regulation 7 Section XII.C.1.
 - f. Implement best management practices during liquids unloading and well swabbing, including use of a combustion device capable of achieving at least 95 percent emissions reduction and unloading through a separator.
 - g. Implement "tankless" production techniques.
 - h. Obtain electrification from the power grid or from renewable sources for all permanent equipment that can be electrified. All equipment that is not electrically operated shall use quiet design mufflers (also

referred to as hospital grade or dual dissipative) or equivalent; or acoustically insulated housing or covers to enclose the motor or engine.

- i. Install, calibrate, operate, and maintain any flare, auto ignition system, recorder, vapor recovery device, or other equipment used to meet the hydrocarbon destruction or control efficiency requirement in accordance with the manufacturer's recommendations, instructions, and operating manuals.
- j. Use of telemetric control and monitoring systems, including surveillance monitors to detect when pilot lights on control devices are extinguished.
- k. Use of zero-emission gas processing dehydrators.
- l. Reduce or eliminate emissions from oil and gas maintenance activities such as pigging or blowdowns.
 - i. If any maintenance activity will involve the intentional venting of gas from a well tank, compressor, or flowline, beyond routine pipeline maintenance activity and pigging, the operator shall provide 48-hour advance written notice to the ES Director of such proposed venting. Such notice shall identify the duration and nature of the venting event, a description as to why venting is necessary, a description of what vapors will likely be vented, what steps will be taken to limit the duration of venting, and what steps the operator proposes to undertake to minimize similar events in the future.
 - ii. If emergency venting is required, or if accidental venting occurs, operator shall provide notice to ES Director of such event as soon as possible, but in no event longer than 24 hours from the time of the event, with the information listed above and with an explanation as to the cause and how the event will be avoided in the future.
- m. Participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at the well pad site.
- n. Centralize compression facilities within a well site.
- o. Vent exhaust from all stationary engines, motors, chillers, and other mechanized equipment up or in a direction away from the closest occupied structures to such equipment.
- p. Use of a pressure-suitable separator and/or vapor recovery unit (VRU) when appropriate.
- q. Construct flowline infrastructure prior to beginning production.

- r. Use of dry seals on centrifugal compressors.
- s. Route emissions from rod-packing and other components on reciprocating compressors to vapor collection systems.
- t. Use of emission reduction measures to respond to air quality action day advisories posted by the Colorado Department of Public Health and Environment for the Front Range Area. Emission reduction measures will be implemented to the maximum extent practicable for the duration of an air quality action day advisory and will include:
 - i. Minimize vehicle and engine idling;
 - ii. Reduce truck traffic and worker traffic;
 - iii. Delay vehicle refueling;
 - iv. Suspend or delay use of fossil fuel powered ancillary equipment; and
 - v. Postpone construction activities
 - vi. Within 30 days following the conclusion of each annual air quality action day season, operator shall submit a report to the ES Director that details which measures it implemented during any action day advisories.
- u. Establish shutdown protocols, approved by the town, with notification and inspection provisions to ensure safe shutdown and timely notification to affected neighborhoods.
- v. Conduct ongoing maintenance checks of all equipment to minimize the potential for gaseous or liquid leaks.
- w. Minimize truck traffic to and from the site.
- x. Hydrocarbon control of 98 percent or better for crude oil, condensate, and produced water tanks with uncontrolled actual emissions of VOCs greater than two TPY VOCs.
- y. Consolidate product treatment and storage facilities within a well pad site.
- z. Use of EPA reduced emission completions for wells. Daily logs documenting reduced emission completions provided to the ES Director upon request.
- aa. Use of no-bleed pneumatic devices. This requirement can be met by replacing natural gas with electricity or instrument air, or routing the discharge emissions to a closed loop-system or process.
- bb. Conduct root cause analysis for any grade 1 gas leaks.
- cc. Use of automated tank gauging.

- dd. For operators with existing oil and gas operations in the Town of Erie, demonstrate that the operation will not result in any increase of volatile organic compounds (VOCs) from operator's existing and planned operations in the town. Operator may include anticipated reductions from plugging and abandoning existing wells located in town when modeling total VOCs from existing and future operations and related activities.
- ee. Comply with all OSHA work practice requirements with respect to benzene.
- ff. Construct flowline infrastructure prior to beginning production.
- gg. Use of other best management practices to control emissions as they become available.

2. *Venting and Flaring:*

- a. Venting and flaring are prohibited other than during emergencies, for safety reasons, or if otherwise approved in writing by the ES Director.
 - i. Non-emergency venting or flaring, such as for safety reasons, must be approved in writing by the ES Director as soon as practicable or at least 2 hours prior.
 - ii. The operator shall report all emergency venting or flaring to the ES Director concurrently with reporting to the ECMC.
- b. If flaring is required, all flares, thermal oxidizers, or combustion devices shall be designed and operated as follows:
 - i. Flaring shall be done with a flare that has a manufacturer specification of 98 percent destruction removal efficiency or better.
 - ii. Flare and/or combustor shall be fired with natural gas.
 - iii. Flare and/or combustor shall be designed and operated in a manner that will ensure no visible emissions during normal operation.
 - iv. No visible emissions of smoke for any period or periods of duration greater than or equal to one minute in any 15-minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.
 - v. Flare and/or combustor shall be operated with a flame present at all times when emissions may be vented to it.
 - vi. All combustion devices shall be equipped with an operating auto-igniter.

- vii. If using a pilot flame ignition system, the presence of a pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame. A pilot flame shall be maintained at all times in the flare's pilot light burner. A telemetry system shall be in place to monitor pilot flame and shall activate a visible and audible alarm in the case that the pilot goes out.
- viii. If using an electric arc ignition system, the arcing of the electric arc ignition system shall pulse continually, and a device shall be installed and used to continuously monitor the electric arc ignition system.
- ix. Flare, auto ignition system, recorder, vapor recovery device, or other equipment used to meet the hydrocarbon destruction or control efficiency requirement shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

3. *Leak detection and repair (LDAR):*

- a. Operations shall be conducted in conformance with the leak detection and repair plan.
- b. If the town determines that the leak presents an immediate hazard to persons or property, the operator may not operate the affected component, equipment, or flowline segment until the operator has corrected the problem and the town agrees that the affected component, equipment, or flowline segment no longer poses a hazard to persons or property. In the event of leaks that the town believes do not pose an immediate hazard to persons or property, if more than 48 hours repair time is needed after a leak is discovered, operator shall contact the ES Director and provide an explanation of why more time is required. Continuous monitoring to detect leaks or measure hydrocarbon emissions and monitor meteorological data shall be required. Any continuous monitoring system shall be able to alert the operator of increases in air contaminant concentrations. Operator shall provide detailed recordkeeping of the inspections for leaking components.

4. *Well completion:* For each well completion operation with hydraulic fracturing, the operator shall control emissions by the following procedures.

- a. For the duration of flowback, route the recovered liquids into one or more storage vessels or re-inject the recovered liquids into the well or another well, and route the recovered gas into a gas flowline or

collection system, re-inject the recovered gas into the well or another well, use the recovered gas as an onsite fuel source, or use the recovered gas for another useful purpose that a purchased fuel or raw material would serve, with no direct release to the atmosphere.

5. *Compliance:*

- a. Operator will submit annual reports to the ES Director certifying:
 - i. Compliance with these air quality requirements and documenting any periods of material non-compliance, including the date and duration of each such deviation, and a compliance plan and schedule to achieve compliance, and
 - ii. Equipment at the well sites continues to operate within its design parameters, and if not, what steps will be taken to modify the equipment to enable the equipment to operate within its design parameters.
- b. The annual report shall contain a certification as to the truth, accuracy, and completeness of the reports, signed by a responsible corporate official. The operator will also provide the ES Director with a copy of any self-reporting submissions that operator provides to the CDPHE due to any incidence of non-compliance with any CDPHE air quality rules or regulations.

H. *Odor management:*

1. Operations shall be conducted in conformance with the odor management plan.
2. Use of D-822 is prohibited unless its use is required by ECMC. In comments on the Form 2A the ES Director shall request that the ECMC only approve mud types that are water-based and low-odor type fluids.
3. The operator shall notify the ES Director no later than 24 hours after receiving an odor complaint.
4. Operator shall conduct drive-by inspections through neighborhoods at various times to hear, smell, and see what is going on during each phase of operations.
5. No emission of odorous gases or other odorous matter shall be permitted in such quantities as to be readily detectable when diluted in the ratio of one volume of odorous air to four volumes of clean air.
6. Any process which may involve the creation or emission of any odors shall be provided with a secondary safeguard system so that control will be maintained if the primary safeguard system should fail.

7. Filtration systems or additives to minimize odors from drilling and fracturing fluids may be used, except that operators shall not mask odors by using masking fragrances.
 8. Drill cuttings shall be covered to prevent odor while being transported by truck.
- I. *Dust suppression:* Operations shall be conducted in conformance with the dust suppression plan.
 - J. *Water quality:* The oil and gas operation shall not cause significant degradation of water quality of affected water bodies and water wells. The operator shall implement the required water quality monitoring and mitigation plan to achieve the standard.
 1. *Determination of significant degradation of water quality:* Determination of whether the operation will cause significant degradation to water quality may include, but is not limited to, the following considerations:
 - a. Applicable narrative and numeric water quality standards.
 - b. Changes in point and nonpoint source pollution loads.
 - c. Increase in erosion and sediment loads.
 - d. Changes in stream channel or shoreline stability.
 - e. Changes in stormwater runoff flows.
 - f. Changes in quality of groundwater.
 - g. Certification. The operator shall submit annual reports to the ES Director certifying compliance with water quality standards, documenting any non-compliance, including its date and duration. A compliance plan is required for all instances of non-compliance.
 2. *Water wells:* The oil and gas operation shall not cause water quality or water pressure of any public or private water wells to go below pre-project levels. The operator shall submit monthly reports to the ES Director certifying that the operation has not caused water quality or pressure of public and private wells to go below pre-project levels, or documenting non-compliance, including the date and duration. A compliance plan is required for all instances of non-compliance.
 3. *Water source sampling and testing:* Using records of the Colorado Division of Water Resources, Operator shall identify and sample all documented water sources located within one-half mile of the projected track of the borehole of a proposed well and within one-half mile of the radius of the proposed well pad site. All sampling must be conducted by third-party consultant approved of by the town. The operator shall provide all water source test results to the ES Director and maintain records of such results. Requirements for sampling include:

- a. Collection of initial baseline samples and subsequent monitoring samples from all available water sources within one-half mile of the well pad site.
- b. Initial collection and testing of baseline samples from available water sources shall occur within 12 months prior to the commencement of drilling a well, or within 12 months prior to the re-stimulation of an existing well for which no samples were collected and tested during the previous 12 months.
- c. Collection and testing of post-stimulation samples from available water sources within the following time frames:
 - i. One sample within six months after completion;
 - ii. One sample between 12 and 18 months after completion; and
 - iii. One sample between 60 and 72 months after completion.
- d. For multi-well pads, monthly collection and testing during active drilling and completion.
- e. Collection of samples from at least one up-gradient and two down-gradient water sources within a one-half mile radius of the well pad site. If no such water sources are available, operator shall collect samples from additional water sources within a radius of up to one mile from the well pad site until samples from a total of at least one up-gradient and two downgradient water sources are collected. Operator shall give priority to the selection of water sources closest to the well pad site.
- f. Operator may rely on existing groundwater sampling data collected from any water source within the radii described above, provided the data was collected within the 12 months preceding the commencement of drilling the well, the data includes measurement of all of the constituents measured in Table 1, and there has been no significant oil and gas activity within a one-mile radius in the time period between the original sampling and the commencement of drilling the well.
- g. Operator shall make reasonable efforts to obtain the consent of the owner of the water source. If the operator is unable to locate and obtain permission from the surface owner of the water source, the operator shall advise the ES Director that the applicant could not obtain access to the water source from the surface owner.
- h. Testing for the analytes listed in Table 1, and subsequent testing as necessary or appropriate.

- i. Use of standard industry procedures in collecting samples, consistent with the ECMC model sampling and analysis plan.
- j. Reporting the location of the water source using a GPS with sub-meter resolution.
- k. Reporting damaged or unsanitary well conditions, adjacent potential pollution sources, odor, water color, sediment, bubbles, and effervescence discovered through field observations.
- l. Providing copies of all test results described above to the ES Director, the ECMC, and the water source owners within three months after collecting the samples.
- m. Additional measures to be required if sampling shows water contamination, including:
 - i. If free gas or a dissolved methane concentration level greater than one milligram per liter (mg/l) is detected in a water source, determination of the gas type using gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen).
 - ii. If the test results indicate thermogenic or a mixture of thermogenic and biogenic gas, an action plan to determine the source of the gas.
 - iii. Immediate notification to the ES Director, the ECMC, and the owner of the water source if the methane concentration increases by more than five mg/l between sampling periods, or increases to more than ten mg/l.
 - iv. Immediate notification to the ES Director, the ECMC, and the owner of the water source if BTEX and/or TPH are detected as a result of testing. Such detections may result in required subsequent sampling for additional analytes.
 - v. Further water source sampling in response to complaints from water source owners.
 - vi. Timely production and distribution of test results, well location, and analytical data in electronic deliverable format to the ES Director, the ECMC, and the water source owners.
- n. All abandoned well assessments and water source testing shall be conducted by the operator or if requested by a surface owner, by a qualified independent professional consultant approved by the town at the operator's expense.

Table 1. Water Quality Analytes

GENERAL WATER QUALITY	Alkalinity Conductivity TDS & TSS BOD & COD Specific Gravity pH Dissolved Organic Carbon (or Total Organic Carbon) Bacteria Hydrogen Sulfide
MAJOR IONS	Bicarbonate Bromide Calcium Chloride Fluoride Magnesium Potassium Sodium Sulfate Nitrate + Nitrite as N (total)
METALS	Arsenic Barium Boron Chromium Copper Iron Lead Manganese Selenium Strontium
DISSOLVED GASES AND VOLATILE ORGANIC COMPOUNDS	Methane Ethane Propane BTEX as Benzene, Toluene, Ethylbenzene, Xylenes Naphthalene 1,2,4-TMB 1,3,5-TMB Total Petroleum Hydrocarbons (TPH)
OTHER	Water Level Stable isotopes of water (Oxygen, Hydrogen, Carbon) Phosphorus

- K. *Groundwater baseline sampling and monitoring, greater Wattenberg area wells:* Operator shall provide the ES Director with copies of the results of tests performed by Operator on Greater Wattenberg Area wells within the town limits under ECMC Rule 318A.f,
- L. *Stormwater:*
1. Operation shall be conducted in conformance with the stormwater management plan.
 2. Stormwater infrastructure shall be maintained in effective operating condition, and the operator shall implement Best Management Practices as recommended by a stormwater inspector as soon as possible.
 3. Results of stormwater inspections required by CDPHE-WQCD shall be provided to the ES Director.
 4. Final stabilization measures must be implemented in accordance with town standards and Specifications as soon as construction activities cease.
 5. Once the well pad or production facility has reached final stabilization as defined by CDPHE, the well pad or production facility must develop and implement a post-construction stormwater program as defined by ECMC Rule 1002.f.
- M. *Water supply:*
1. The water supply is the least detrimental to the environment among the available sources and adequate to meet the needs of the oil and gas operation.
 2. The water supply is legally and physically available, dependable, and sustainable. Reuse and recycling will be implemented.
 3. The operation shall not use water from the town's municipal water supply unless approved by the town council.
 4. The operation shall be conducted in conformance with the water supply plan.
- N. *Spill release response and reporting:* The operator shall demonstrate the ability to control and contain all spills and releases of exploration and production waste, including produced fluids, immediately upon discovery in conformance with the spill release response and reporting plan.
1. Operators shall conduct visual inspections for liquid leaks at least every 30 days.
 2. Spills and releases shall be contained, investigated, and cleaned up as soon as possible or immediately in emergency situations.
 3. All employees performing spill clean-up shall be qualified in accordance with applicable state and federal requirements.

4. Copies of Form 19 Spill Release Report and Form 27 Site Investigation and Remediation Workplan (both initial and supplemental report), Form 23 Loss of Well Control Report, and all associated materials and analyses shall be submitted to the ES Director at the same time they are submitted to the ECMC, including the topographic map showing location of the spill and any information relating to initial mitigation, site investigation, and remediation that accompany the report.
 5. Spills and releases outside of containment which exceed one barrel of exploration and production waste or produced fluids shall be reported to the ES Director within 24 hours.
 6. Spills and releases of any size which impact or threaten to impact any waters of the state, residences or occupied structures, livestock, or public byways shall be verbally reported to the ES Director within 24 hours, with a follow-up written notice within 48 hours.
 7. Spills and releases of any size which impact or threaten to impact any water supply area shall be verbally reported to the Colorado Environmental Spill Reporting Hotline at 1-877-518-5608, and to the ES Director immediately after discovery.
 8. Spills and releases that impact or threaten to impact a water supply intake shall be reported immediately to the ES Director, and to the owner of the intake if the town is not the owner of the intake.
 9. Spills, chemical spills, and releases shall be reported in compliance with applicable state and federal laws. Applicant will provide the ES Director with a copy of any self-reporting submissions that the applicant provides to any agency.
- O. *Use of steel-rim berms:* The oil and gas operation shall use steel rim berms or some other state-of-the-art technology that has the capacity to contain 150 percent of the largest storage tank.
- P. *Vehicle and equipment fueling and maintenance:* Routine field maintenance of vehicles or mobile machinery shall not be performed within 500 feet of any water body. All fueling must occur over impervious material.
- Q. *Fuel storage areas:* The oil and gas operation includes measures to contain fuel in fuel storage areas to prevent release to any water body. Inventory management or leak detection plans may be required.
- R. *Wastewater and waste management:* Wastewater and waste shall be managed in a manner that does not cause pollution of water and soil. The operation shall be conducted in conformance with the wastewater and waste management plan.
- S. *Use of underground wastewater injection wells prohibited:* Class II underground wastewater injection wells within the town limits are prohibited.

- T. *Disposal of hydraulic fracturing fluid:* The operator shall demonstrate the ability to and shall dispose of all hydraulic fracturing fluids in accordance with the chemicals and hydraulic fracturing fluids disposal and reporting plan.
- U. *Hazardous materials:*
1. The oil and gas operation includes measures to contain all hazardous materials in storage areas to prevent release to any water body. Inventory management and leak detection systems are required.
 2. Full disclosure, consistent with ECMC requirements, including material safety data sheets of all hazardous materials that will be transported on any public or private roadway within the town for the oil and gas operation, shall be provided to the ES Director. This information will be treated as confidential and will be shared with other emergency response personnel only on an as-needed basis.
 3. The area 25 feet around anything flammable shall be kept free of dry grass or weeds, conform to ECMC safety standards, and applicable fire code.
- V. *Chemical disclosure and storage:* Prior to bringing hydraulic fracturing chemicals onto the property, the operator shall make available to the town, in table format, the name, Chemical Abstracts Service (CAS) number, storage, containment, and disposal method for such chemicals to be used on the well site, which the town may make available to the public as public records. Fracturing chemicals shall be uploaded onto the FracFocus website within 60 days of the completion of fracturing operations. The operator shall not permanently store fracturing chemicals, flowback from hydraulic fracturing, or produced water in the town limits. Operator shall remove all hydraulic fracturing chemicals at a well site within 30 days following the completion of hydraulic fracturing at that well site.

The following chemicals will not be added to the hydraulic fracturing fluids used at the well sites:

Ingredient Name	CAS#
Benzene	71-43-2
Lead	7439-92-1
Mercury	7439-97-6
Arsenic	740-38-2
Cadmium	7440-43-9
Chromium	7440-47-3
Ethyl benzene	100-41-4
Xylenes	1330-20-7
1,3,5-trimethylbenzene	108-67-8
1,4-dioxane	123-91-1

1-butanol	71-36-3
2-butoxyethanol	111-76-2
N,N-dimethylformamide	68-12-2
2-ethylhexanol	104-76-7
2-mercaptoethanol	60-24-2
benzene, 1, 1'-oxybis-, tetrapropylene derivatives, sulfonated, sodium salts (BOTS)	119345-04-9
butyl glycidyl ether	8/6/2426
polysorbate 80	9005-65-6
quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides (QAC)	61789-77-3
bis hexamethylene triamine penta methylene phosphonic acid (BMPA)	35657-77-3
diethylenetriamine penta (methylene-phosphonic acid)(DMPA)	15827-60-8
FD&C blue no. 1	3844-45-9
Tetrakis(triethanolaminate) zirconium(IV) (TTZ)	101033-44-7

- W. *Risk analysis:* Operator shall submit a risk analysis and site-specific detailed quantitative and qualitative risk assessment and management plan for pipelines and oil and gas facilities. Plan must identify risks, include qualitative and quantitative risk assessment, list methods of risk avoidance and control that implement techniques to prevent accidents and losses, and reduce the impact or cost of an accident or loss after it occurs.
- X. *Review of operations:* Operator shall review its operations every five years and retrofit with new beneficial technology if feasible, in consultation with the ES Director.
- Y. *Emergency preparedness and response:* Oil and gas operations shall avoid risks of emergency situations such as explosions, fires, gas, oil, or water pipeline leaks, ruptures, hydrogen sulfide, or other toxic gas or fluid emissions, and hazardous material vehicle accidents or spills. Oil and gas operations shall ensure that, in the event of an emergency, adequate practices, procedures, and infrastructure are in place to protect public health and safety and repair damage caused by emergencies. The oil and gas operation shall be conducted in accordance with the emergency response plan.
- Z. *Noise:*
1. No well shall be drilled, re-drilled, or any equipment operated in such a manner so as to create any noise which causes exterior noise level that:
 - a. Exceeds the ambient noise level by more than five decibels during daytime hours and more than three decibels during nighttime hours;

- b. Exceeds the ambient noise level by more than ten decibels over the daytime average ambient noise level during fracturing operations during daytime hours. No fracturing shall be allowed during nighttime hours except for flowback operations related to fracturing as provided in subsection 1.c. below unless a waiver is granted by the ES Director.
- c. Exceeds the ambient noise level by more than three decibels during flowback operations during nighttime hours;
- d. Creates pure tones where one-third octave band sound-pressure level in the band with the tone exceeds the arithmetic average of the sound-pressure levels of two contiguous one-third octave bands by five dB for center frequencies of 500 Hertz and above, and by eight dB for center frequencies between 160 and 400 Hertz, and by 15 dB for center frequencies less than or equal to 125 Hertz; or
- e. Creates low-frequency outdoor noise levels that exceed the following dB levels:

16 Hz octave band	65 dB
31.5 Hz octave band	65 dB
64 Hz octave band	65 dB

- 2. The point of compliance for noise shall be the property line of the protected use or no less than 25 feet from the exterior wall of any protected use structure closest to the working pad surface, whichever is closer.
- 3. The operator shall establish and report to the ES Director a continuous 72-hour pre-drilling ambient noise level prior to the issuance of a Permit. The 72-hour time span shall include at least one 24-hour reading during either a Saturday or Sunday. The operator shall use the prior established ambient noise level for the installation of any new noise generation equipment unless the operator can demonstrate that the increase in the ambient noise level is not associated with drilling and production activities located either on-site or off-site.
- 4. Adjustments to the noise standards set forth above in subsection 1.a, 1.b, and 1.c. of this section may be permitted intermittently in accordance with the following:

Permitted Increase (dBA)	Duration of Increase (minutes)*
10	5
15	1
20	Less than 1

* Cumulative minutes during any one hour
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5. All workover operations shall be restricted to daytime hours.
6. Uploading of pipes and other tubular goods restricted to daytime hours of 8:00 a.m. - 6:00 p.m.
7. The exterior noise level generated by the drilling, redrilling, or other operations of all wells located within 600 feet of a protected use shall be continuously monitored to ensure compliance. The cost of such monitoring shall be borne by the operator. If a complaint is received by either the operator or the town, the operator shall, within 24 hours of notice of the complaint, continuously monitor for a 72-hour period the exterior noise level generated by the drilling, redrilling, or other operations to ensure compliance. At the request of the town, the operator shall monitor the exterior noise level at the source of the complaint.
8. Acoustical blankets, sound walls, mufflers, or other alternative methods as approved by the town may be used to ensure compliance. All soundproofing shall comply with accepted industry standards and be subject to approval by the fire district.
9. The sound level meter used in conducting noise evaluations shall meet the American National Standard Institute's Standard for sound meters or an instrument and the associated recording and analyzing equipment, which will provide equivalent data.
10. The operator shall verify compliance with the requirements of this section 10-12-4 Y. and the noise mitigation and monitoring plan after the installation of the noise-generating equipment.
11. If the operator is in compliance with the approved noise mitigation and monitoring plan and a violation still occurs, the operator shall be notified of noncompliance and given 24 hours to correct the violation from an identified source before a notice of violation and enforcement measures under section 10-12-7 are triggered. Additional extensions of the 24-hour period may be granted in the event that the source of the violation cannot be identified after reasonable diligence by the operator.

AA. *Vibration:*

1. No vibration shall be transmitted through the ground that is discernible without the aid of instruments measured at 500 feet from the abutting residential or commercial development.
2. No vibration shall exceed 0.002g peak at up to 50 cps frequency measured at 500 feet from the abutting residential or commercial development. Vibrations recurring at higher than 50 cps frequency or a periodic vibrator shall not induce accelerations exceeding 0.001g.

3. Single impulse period vibrations occurring at an average interval greater than five minutes shall not induce accelerations exceeding .01g.
 4. Operator shall conduct continuous seismic monitoring during fracking operations.
 - a. Seismic events greater than 2.0 on Richter scale shall be reported to ES Director and to ECMC.
 - b. If a seismic event occurs, the town may stop operations immediately, and operator can only resume work once the town is satisfied with the actions taken to reduce the likelihood of further seismicity.
 - c. Operations shall be immediately suspended for any seismic event measuring 4.0 or above on the Richter scale. Operator may only resume work once the town is satisfied with the actions taken to reduce the likelihood of further seismicity.
- BB. *Visual quality:* The oil and gas operation shall not cause significant degradation to the scenic attributes and character of the town.
1. Facilities shall be painted in a uniform, non-contrasting, non-reflective color, to blend with the surrounding landscape and with colors that match the land rather than the sky. The color should be slightly darker than the surrounding landscape.
 2. The oil and gas operation shall be buffered from sensitive visual areas by providing landscaping along the perimeter of the site between the surface equipment and the sensitive visual area.
 3. The oil and gas operation shall be constructed in a manner to minimize the removal of and damage to existing trees and vegetation. If the operation requires clearing trees or vegetation, the edges of the cleared vegetation should be feathered and thinned, and the vegetation should be mowed or brushhogged while leaving root structure intact, instead of scraping the surface.
 4. The oil and gas operation shall be sited away from prominent natural features and visual, scenic, and environmental resources such as distinctive rock and landforms, rivers and streams, and distinctive vegetative patterns.
 5. The oil and gas operation shall use low-profile tanks or less visually intrusive equipment.
- CC. *General operations and maintenance requirements:*
1. The operator shall at all times keep the well sites, roads, rights-of-way, facility locations, and other oil and gas operation areas safe and in good order, free of noxious weeds, litter, and debris.

- a. The operator shall be responsible for ongoing weed control at all locations disturbed by the operation and along access roads during construction and operation, until abandonment and final reclamation is completed.
 - b. The operator shall utilize vehicle tracking control practices to control potential sediment discharges from unpaved surfaces. Such practices may include road and pad design and maintenance to minimize rutting and tracking, controlling site access, street sweeping or scraping, tracking pads, and wash racks. Traction chains from heavy equipment shall be removed before entering a public roadway.
 - 2. The operator shall dispose of all water, unused equipment, litter, sewage, waste, chemicals, and debris from the site at an approved disposal site.
 - a. All equipment used for drilling, re-drilling, and maintenance shall be removed from the well pad site within 30 days after completion of the work, unless otherwise agreed to by the surface owner. Permanent storage of equipment on well pad sites shall not be allowed.
 - b. Materials and trash shall not be buried on-site.
 - c. Open burning of trash, debris, or flammable materials on-site is prohibited.
 - 3. The operator shall promptly reclaim and reseed all disturbed sites in conformance with the reclamation plan.
 - 4. All mechanized equipment associated with the operation shall be anchored to minimize transmission of vibrations through the ground.
 - 5. Open-ended discharge valves on all storage tanks, pipelines, and other containers shall be secured where the operation site is unattended or is accessible to the general public. Open-ended discharge valves shall be placed within the interior of the tank secondary containment.
 - 6. Above-ground oil and gas well facilities shall be fenced with wrought iron fencing or Ameristar Impasse or Stronghold fencing or approved equivalent, as determined by the ES Director. The fencing color shall be bronze unless the ES Director approves black fencing. Black fencing will only be approved by the ES Director if fencing or site furnishings in the adjacent developments have approved black elements.
 - 7. The operator will install downcast lighting or some other form of lighting that mitigates light pollution and spill-over onto adjacent properties; provided, however, that operator may still use lighting that is necessary for public and occupational safety.
- DD. *Grading, drainage, and erosion control:* The oil and gas operation shall be conducted in accordance with the grading, drainage, and erosion control plan.

EE. *Use of existing roads:* Unless traffic safety, visual or noise concerns, or other adverse surface impacts clearly dictate otherwise, existing roads on or near the site of the oil and gas operation shall be used in order to minimize land disturbance.

FF. *Transportation, roads, and access standards:*

1. *Compliance with town standards:* All public roads shall be constructed and maintained in compliance with town standards as necessary to accommodate the traffic and equipment related to oil and gas operations and emergency vehicles.
2. *Access to public roads:*
 - a. Access points to public roads shall be located, improved, and maintained to assure adequate capacity for efficient movement of existing and projected traffic volumes and to minimize traffic hazards.
 - b. Access roads shall be improved a minimum distance of 200 feet on the access road from the point of connection to a public road. The access road shall be improved as a hard surface (concrete or asphalt) for the first 100 feet from the public road and then improved as a crushed surface (concrete or asphalt) for 100 feet past the hard surface in the appropriate depth to support the weight load requirements of the vehicles accessing the well and production facilities.
 - c. If an access road intersects with a pedestrian trail or walk, the operator shall pave the access road as a hard surface (concrete or asphalt) a distance of 100 feet either side of the trail or walk and, if necessary, replace the trail or walk to address the weight load requirements of the vehicles accessing the well and production facilities.
 - d. Temporary access roads associated with the oil and gas operation shall be reclaimed and revegetated to the original state within 60 days after discontinued use of the temporary access roads.
3. *Implementation of traffic management plan*
 - a. The operator shall implement the approved traffic management plan.
 - b. Use of public roads by Class 7 vehicles or above shall be prohibited during the hours of 7:00—9:00 a.m. and 3:00—6:00 p.m. during weekdays.
 - c. Idling or parking on shoulders of roads shall be prohibited.
4. *Road repairs:*
 - a. The operator shall arrange for a qualified outside consultant to perform a road impact study for all public roads that are used to

access the oil and gas operation. The consultant shall conduct the first part of the study prior to operations and the second part of the study after the operator completes all drilling and hydraulic fracturing. The operator and the town shall use these studies to determine the extent of any damage accruing to the road during the study period. The operator shall either promptly pay the town to repair such damage or arrange for and pay the cost of such repairs itself, whichever the town prefers.

- b. The operator shall maintain financial assurance to secure its road repair obligations. The amount of such financial assurance shall equal the town's annual road maintenance budget as of the date of Permit approval, multiplied by the percentage yielded by dividing the total number of town road miles as of the date of Permit approval into the number of such road miles that the operator will use to access the oil and gas operation. The operator shall select the form of such financial assurance and shall maintain such assurance.
- c. If the projected use of public roads as a result of the oil and gas operation will result in a need for an increase in roadway maintenance, the operator shall enter into an agreement with the town whereby the operator provides for private maintenance or reimburses the town for such increased costs and/or provides a bond or other financial assurance in an amount acceptable to the town to cover the costs of mitigating impacts to public roads.

GG. *Flowlines and pipelines:* Operator shall comply with the requirements for flowlines set forth in ECMC Rules 1101 through 1105, which address: registration, construction standards, design, installation, reclamation, inspection, maintenance, repair, operation, and integrity management of flowlines; pressure testing; leak protection, detection, and monitoring; and data sharing with local government.

- 1. Off-location flow lines and crude oil transfer lines shall be sited to avoid areas containing existing or proposed residential, commercial, and industrial buildings; places of public assembly; surface water bodies; and open space.
- 2. Without compromising pipeline integrity and safety, applicant shall share existing pipeline rights-of-way and consolidate new corridors for pipeline rights-of-way to minimize impact.
- 3. Operator shall comply with Permit and easement processes for all crude oil transfer lines and off-location flowlines installed in town-owned property or rights-of-way.
- 4. Flowlines and crude oil transfer lines shall be located a minimum of 150 feet away from residential, commercial, and industrial buildings, as well as

the high-water mark of any surface water body, unless technically infeasible, in which case pipelines must be constructed in the next most protective location. This distance shall be measured from the nearest edge of the pipeline/flowline. Setbacks from sensitive environmental features will be determined on a case-by-case basis in consideration of the size and type of pipeline proposed and features of the proposed site.

5. Operator shall conduct at least two forms of leak detection/integrity management inspections in order to identify flowline leaks or integrity issues.
 6. Operator shall make available to the town's third-party inspector, upon request, all records required to be kept by ECMC.
 7. Buried pipelines shall have a minimum of four feet cover.
 8. Operator shall notify the town 30 days prior to any flowline abandonment activities and must receive final approval from town prior to proceeding with any type of flowline abandonment, whether in place or removal.
 9. Operator's emergency response plan must address pipeline spills and ruptures.
 10. Operations shall be conducted in conformance with the flowline management plan.
- HH. *Floodplain, wetlands, and riparian areas:* The oil and gas operation shall not have a significant adverse effect on the floodplain and shall not significantly degrade wetlands and riparian areas. Oil and gas operations conducted within the floodplain overlay district shall comply with section 10-2-7 C. of the UDC.
- II. *Natural resource areas:* The oil and gas operation shall not cause significant degradation of natural landmarks, rare plant species, riparian corridors, or other sensitive areas.
- JJ. *Wildlife:* The oil and gas operation shall not cause significant degradation of wildlife or wildlife habitat.
- KK. *Historical and cultural resources:* The oil and gas operation shall not cause significant degradation to resources of historic, cultural, paleontological, or archeological importance.
- LL. *Public services and facilities:* The oil and gas operation shall not have a significant adverse effect on the capability of the town to provide municipal services or the capacity of the service delivery systems.
- MM. *Seismic testing:* Seismic testing within the municipal boundaries is prohibited unless approved by the town council following a public hearing. Approval of the proposed testing shall be based on the council's determination that the testing will be conducted in a manner that adequately protects public health,

safety, welfare, and the environment. Prior to the public hearing, applicant shall submit its plan for seismic testing to the ES Director.

NN. *ECMC Compliance*: The oil and gas operation shall comply with all applicable ECMC Rules.

OO. *Reports and Plans*: The oil and gas operation will comply with all reports and plans required as application materials in Section 10-12-2(E).

10-12-5 Financial guarantee.

Prior to conducting any surface disturbance in connection with the oil and gas operation, the operator will provide evidence of financial guarantee in a form acceptable to the town to ensure that the oil and gas operation will comply with these regulations and all conditions of approval imposed by the town council. The final amount of such financial guarantee shall be calculated by the ES Director following final approval of the Permit application.

A. *Purpose of guarantee*: The purpose of the financial guarantee is to ensure that the operator will:

1. Secure the wells, well sites, associated well site lands, and infrastructure; plug and abandon all wells in compliance with state law, and reclaim the well site in compliance with state law;
2. Perform all requirements of the Permit;
3. Guarantee that if an operator fails to meet Permit obligations, the guarantee will be available to cover costs to complete such obligations and protect public health, safety, welfare, and the environment.

B. *Amount of guarantee*:

1. In determining the amount of the financial guarantee, the ES Director shall consider:
 - a. The operator's estimated cost of performing all mitigation requirements and Permit conditions in connection with the oil and gas operation.
 - b. Estimated additional cost to the town of bringing in personnel and equipment to accomplish any unperformed purpose of the financial guarantee.
 - c. The operator's estimated cost of plugging and abandoning all wells and removing all flowlines and pipelines associated with the operation.
 - d. The operator's estimated cost of plugging and abandoning all Inactive Wells and removing all flowlines and pipelines under control of the operator within the town limits, if such wells, flowlines, and pipelines do not already have existing financial assurances associated with their

decommissioning, whether or not the wells, flowlines, and pipelines are associated with the permitted operation.

- e. The amount of bonding provided to the ECMC.
 - f. The amount of the financial guarantee shall be adjusted annually on January 1 for inflation.¹
2. The ES Director may review the financial guarantee for adequacy at any time. If the ES Director determines that the financial guarantee is insufficient to perform the purpose of the guarantee, the ES Director shall provide the permittee with written notice to increase the financial guarantee.
- a. The permittee shall post the additional guarantee within 60 days from the date of the written notice. If the amount of increased financial guarantee has not been provided within 60 days from the date of the written notice, the ES Director may schedule a hearing before the town council for possible revocation of the Permit pursuant to section 10-12-7 of these regulations.
 - b. If the permittee disagrees with the notice to increase the financial guarantee, the ES Director shall schedule a hearing on the matter by the town council.

C. *Form of guarantee:*

- 1. The guarantee shall be in a form or combination of forms acceptable to the town.
- 2. The guarantee shall not be a substitute for any bonding required by the state regulatory agencies for plugging and abandoning wells. The operator shall comply with all state regulatory agencies' bonding requirements.
- 3. The operator shall notify the ES Director, within five business days, if operator:
 - a. Files for protection under the bankruptcy laws;
 - b. Makes an assignment for the benefit of creditors;
 - c. Appoints or suffers appointment of a receiver or trustee over its property;
 - d. Files a petition under any bankruptcy or insolvency act or has any such petition filed against it which is not discharged within 90 days of the filing thereof.

¹ Inflation means the annual percentage change in United States Department of Labor, Bureau of Labor Statistics Consumer Price Index, all items, all urban consumers, or its successor index.

4. Notifications pursuant to subparagraph C.3, above, shall not be a condition to the city's use of any financial guarantee.
- D. *Release of guarantee:* The financial guarantee shall be released within seven business days after receipt of written request for release of guarantee to the ES Director, based on one of the following conditions:
1. The Permit has been surrendered to the council before commencement of any physical activity on the site of the operation.
 2. The operation has been abandoned, and the site has been returned to its original condition or to a condition acceptable to the town.
 3. A phase or phases of the operation have been satisfactorily completed, allowing for partial release of the financial guarantee consistent with phasing and as determined appropriate by the town.
 4. The applicable guaranteed conditions have been satisfied.
- E. *Forfeiture of guarantee:*
1. If the council determines that a financial guarantee should be forfeited because of any violation of the Permit or these regulations, the council shall provide written notice to the surety and the operator that the financial guarantee will be forfeited unless the operator requests a hearing by the council within 30 days after operator's receipt of notice.
 2. If a request for hearing is not made by the operator the council shall order the financial guarantee forfeited.
 3. The council shall hold a hearing within 30 days after receipt of the operator's written request for hearing. At the hearing, the operator may present statements, documents, and other information for the council's consideration with respect to the alleged violation. At the conclusion of the hearing, the council shall either withdraw the notice of violation or order the financial guarantee forfeited.
 4. If the forfeiture results in inadequate revenue to cover the costs of accomplishing the purposes of the financial guarantee, the town attorney shall take such steps as deemed proper to recover such costs, where recovery is deemed possible, including costs and attorney fees.
- F. *Substitute guarantee:* If the surety or the surety holder suspends, cancels, or revokes an operator's guarantee filed pursuant to this section, the operator shall substitute a good and sufficient guarantee from a surety licensed to do business in Colorado within 28 days of receiving notice of suspension, cancellation, or revocation. The town attorney, in consultation with the ES Director, may extend the period for receiving the substitute guarantee if the operator submits a written request detailing the need for such extension. If the permittee fails to make substitution in accordance with this section, the council shall suspend the Permit until proper substitution has been made.

- G. *Liability for claim:* The town shall not be liable to the operator or any surety, grantor, or financial institution for consequential damages arising from the town's exercise of its rights under paragraph E, above, including, without limitation, a claim for impairment of bonding capacity.

10-12-6 Permit issuance, term, transfer.

A. *Permit Issuance:*

1. Any Permit shall be issued in writing and approved by resolution of the Town Council.
2. The Permittee shall comply with all terms and conditions established in the Permit.
3. The Permit is valid only for the construction and operation of the oil and gas operation as described in the application, together with the conditions of approval imposed by the town council. Material changes in the construction or operation of the oil and gas operation from that described in the application shall be a violation of the permit unless the operator obtains approval of a major or minor permit modification.
4. Permits issued pursuant to these regulations shall encompass the right of the operator, its agents, employees, subcontractors, independent contractors, or any other person to perform that work reasonably necessary to conduct the activities authorized by the Permit, subject to all other applicable town regulations and requirements. The operator is financially liable for the activities of all contractors, subcontractors, employees, and agents in carrying out the permitted activity.
5. A Permit under these regulations shall satisfy the requirement of section 34-60-106(1)(f)(I)(A) of the Colorado Oil and Gas Conservation Act, as may be amended.

- B. *Term:* A Permit shall lapse three years from the date of its approval if the ECMC has not issued final approvals to drill for the oil and gas operation covered by the Permit.

- C. *Transfer of permits:* A Permit may be transferred only with the written consent of the town council. The town council must ensure, in approving any transfer, that:

1. The proposed transferee can and will comply with all the requirements, terms, and conditions contained in the Permit and these regulations;
2. Such requirements, terms, and conditions remain sufficient to protect the health, welfare, and safety of the public; and
3. An adequate guarantee of financial security can be made.

10-12-7 Well and pipeline abandonment and decommissioning.

All oil and gas operations, including those existing at the effective date of these regulations, shall comply with following.

A. *Wells.*

1. Within 6 months of any well located within the town becoming an Inactive Well, the operator shall plug the well and decommission associated flowlines unless another timeline is approved by the ECMC and agreed to by the ES Director in writing.
2. Unless the surface owner otherwise makes a written request to the ES Director, the operator must leave onsite a permanent physical marker of the well location.

B. *Pipelines and flowlines.* Once permanently removed from service, all flowlines or fresh, produced, or associated wastewater pipelines shall be removed unless abandoning them in place is authorized in writing by the ES Director.

C. *ES Director approval.*

1. An operator may not commence activities to plug, abandon, or otherwise decommission an oil and gas well, flowline, or associated fresh, produced, or wastewater pipeline until the ES Director has reviewed and provided written approval for such activity.
2. The operator shall submit a request to the ES Director for approval to plug, abandon, or otherwise decommission an oil and gas well, flowline, or associated fresh, produced, or wastewater pipeline. The request shall include, at a minimum, the surveyed coordinates of the decommissioned well or facility, planned or proposed access route(s), planned duration of activities, planned hours of operation, and a list of equipment to be utilized at the site.
3. As part of the approval, the ES Director may impose conditions to minimize impacts of surface activities related to plugging and abandonment, including, without limitation, timing limitations and reclamation and revegetation requirements.

D. *Notice to ES Director, property owners, and residents.*

1. The operator shall submit any ECMC reports or notices, including the Notice of Intent to Abandon, to the ES Director concurrently with its submittal to ECMC.
2. At least seven (7) days prior to commencement of decommissioning or plugging operations, the operator shall send notice to the ES Director and to all property owners and current residents within one-half (1/2) mile of the oil and gas facility, well, or site being decommissioned or plugged and abandoned.

3. Within 30 days after plugging and abandonment, the operator shall provide the ES Director with the surveyed coordinates of the decommissioned, plugged, or abandoned well, photographs of the welded cap on the well with API number, and the onsite permanent physical marker of the well location.

10-12-8 Operator Registration

All oil and gas operations, including wells that are shut-in and wells that are temporarily abandoned, must be registered with the town. The registration must be renewed annually together with the annual registration fee.

- A. Operators that have not already registered their operations with the town as of the effective date of these regulations shall register in accordance with the following within 90 days of the effective date of these regulations.
- B. Operators seeking a Permit or activity notice pursuant to these regulations must submit registration materials at least 14 days prior to the pre-application conference in Section 10-12-2(B).
- C. Operators shall maintain active registration until the town has approved final reclamation, plugging and abandonment, or decommissioning.
- D. *Registration materials:* For the initial registration, operators shall submit the following registration materials and all applicable fees to the ES Director.
 1. Completed oil and gas operation registration form.
 2. Initial registration fee in the amount established by resolution of Town Council.
 3. Map of all production facilities with equipment clearly marked.
 4. Copy of maps and flowline records submitted to ECMC.
 5. Copy of the emergency response plan.
 6. Copy of current spill prevention, control, and countermeasure (SPCC) plan.
 7. For shut-in wells:
 - a. A map at a scale designated by the town showing the location, including GPS location, of each shut-in well and denoting the age; size, and the maximum pressure at which it is operated; and its depth from the surface.
 - b. Copy of the most recent mechanical integrity test report submitted to ECMC for each shut-in well.
 8. For temporarily abandoned wells:
 - a. A map at a scale designated by the town showing the location, including GPS location, of temporarily abandoned wells.

- b. Copy of the most recent mechanical integrity test report submitted to ECMC for each temporarily abandoned well.
- 9. A copy of the gas capture plan approved by ECMC.
- E. *Renewal materials:* For the annual renewal, operators shall submit the following materials and all applicable fees to the ES Director.
 - 1. Annual registration fee in the amount established by resolution of Town Council.
 - 2. Emissions record from previous calendar year.
 - 3. Copy of most recent operator's monthly report of operations as submitted to ECMC.
 - 4. Copy of the most recent mechanical integrity test report, as submitted to ECMC, for each shut-in or temporarily abandoned well.
 - 5. Any registration materials that have been changed or updated.

10-12-9 Operator inspection and monitoring.

All oil and gas operations, including those existing at the effective date of these regulations, shall comply with following.

- A. *Bradenhead monitoring, testing, reporting.* Operators shall conduct Bradenhead monitoring, testing, and report in compliance with ECMC Rule 419. Valves used for annular pressure monitoring shall remain exposed to allow for visual inspection. The operator shall take Bradenhead pressure readings on a monthly basis, or a different frequency if required by the ECMC, and report those readings to the ES Director with the same frequency as reporting to the ECMC. Such readings shall include the date, time, and pressure of each reading, and the type of fluid reported.
- B. *Monitoring nearby plugged, decommissioned, abandoned wells.* Prior to any hydraulic fracturing, and at specified periods following hydraulic fracturing, operators must monitor and assess any oil and gas wells that are plugged, abandoned, or otherwise decommissioned within one-quarter mile of the projected track of the borehole of a proposed well.
 - 1. Operator shall obtain permission from each surface owner who has an abandoned well on the surface owner's property to access the property in order to test the abandoned well. If a surface owner has not provided permission to access after 30 days from receiving notice, the applicant shall not be required to test the abandoned well.
 - 2. The assessment shall include:
 - a. Identification of all abandoned wells located within one-quarter mile of the projected track of the borehole of a proposed well

based upon examination of ECMC and other publicly available records.

- b. Risk assessment of leaking gas or water to the ground surface or into subsurface water resources, taking into account plugging and cementing procedures described in any recompletion or plugged and abandoned report filed with the ECMC.
 - c. Initial and monthly soil gas surveys from various depths and at various distances, depending on results of risk assessment, of the abandoned well prior to hydraulic fracturing.
 - d. Soil gas surveys from various depths and at various distances, depending on results of risk assessment, of the abandoned well within one year and then every three years after production has commenced.
3. Operator shall notify the ES Director and ECMC of the results of the assessment. Results of the soil gas survey shall be provided to the ES Director and the ECMC within three weeks of conducting the survey or advising the ES Director that access to the abandoned wells could not be obtained from the surface owner.
 4. If contamination is detected during any soils testing, operations shall cease until the cause of the contamination is detected and resolved, and the town has given its approval for additional operations to continue.

10-12-10 Operational requirements for all oil and gas operations.

All oil and gas operations, including those existing at the effective date of these regulations, shall comply with following requirements.

A. Air quality requirements:

1. Minimization of emissions:

- a. Utilize pipelines for all transportation of gas and fluids from production facilities whenever available.
- b. Implement best management practices during liquids unloading and well swabbing, such as the use of a combustion device capable of achieving at least 95 percent emissions reduction and unloading through a separator.
- c. Use emission reduction measures to respond to air quality action day advisories posted by the Colorado Department of Public Health and Environment for the Front Range Area, including:
 - i. Minimize vehicle and engine idling;
 - ii. Reduce truck traffic and worker traffic;
 - iii. Delay vehicle refueling;

- iv. Suspend or delay use of fossil fuel powered ancillary equipment; and
 - v. Postpone construction activities.
 - d. Within 30 days following the conclusion of each annual air quality action day season, operator shall submit a report to the ES Director that detail which measures it implemented during any action day advisories.
2. *Venting and Flaring:*
- a. Venting and flaring are prohibited other than during emergencies, for safety reasons, or if otherwise approved in writing by the ES Director.
 - i. Non-emergency venting or flaring, such as for safety reasons, must be approved in writing by the ES Director as soon as practicable or at least 2 hours prior.
 - ii. The operator shall report all emergency venting or flaring to the ES Director concurrently with reporting to the ECMC.
 - b. To the extent practicable, if flaring is required, all flares, thermal oxidizers, or combustion devices shall be designed and operated as follows:
 - i. Flaring shall be done with a flare that has a manufacturer specification of 98 percent destruction removal efficiency or better.
 - ii. Flare and/or combustor shall be fired with natural gas.
 - iii. Flare and/or combustor shall be designed and operated in a manner that will ensure no visible emissions during normal operation.
 - iv. No visible emissions of smoke for any period or periods of duration greater than or equal to one minute in any 15-minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.
 - iv. Flare and/or combustor shall be operated with a flame present at all times when emissions may be vented to it.
 - v. All combustion devices shall be equipped with an operating auto-igniter.
 - vi. If using a pilot flame ignition system, the presence of a pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame. A pilot

flame shall be maintained at all times in the flare's pilot light burner. A telemetry system shall be in place to monitor pilot flame and shall activate a visible and audible alarm in the case that the pilot goes out.

- vii. If using an electric arc ignition system, the arcing of the electric arc ignition system shall pulse continually and a device shall be installed and used to continuously monitor the electric arc ignition system.
- viii. Flare, auto ignition system, recorder, vapor recovery device, or other equipment used to meet the hydrocarbon destruction or control efficiency requirement shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

3. *Leak detection and repair (LDAR):*

- a. Operators shall conduct a leak detection and repair program that requires at least quarterly inspections, or as otherwise required in a Town Permit or agreed to by the ES Director, and uses modern leak detection technologies for all equipment in operation.
- b. If the town determines that the leak presents an immediate hazard to persons or property, the operator may not operate the affected component, equipment, or flowline segment until the operator has corrected the problem and the town agrees that the affected component, equipment, or flowline segment no longer poses a hazard to persons or property. In the event of leaks that the town believes do not pose an immediate hazard to persons or property, if more than 48 hours repair time is needed after a leak is discovered, operator shall contact the ES Director and provide an explanation of why more time is required. Continuous monitoring to detect leaks or measure hydrocarbon emissions and monitor meteorological data shall be required. Any continuous monitoring system shall be able to alert the operator of increases in air contaminant concentrations. Operator shall provide detailed recordkeeping of the inspections for leaking components.

B. *General operations and maintenance requirements:*

- 1. The operator shall, at all times keep the well sites, roads, rights-of-way, facility locations, and other oil and gas operation areas safe and in good order, free of noxious weeds, litter, and debris.
 - a. The operator shall be responsible for ongoing weed control at all locations disturbed by the operation and along access roads during

construction and operation, until abandonment and final reclamation is completed.

- b. The operator shall utilize vehicle tracking control practices to control potential sediment discharges from unpaved surfaces. Such practices may include road and pad design and maintenance to minimize rutting and tracking, controlling site access, street sweeping or scraping, tracking pads, and wash racks. Traction chains from heavy equipment shall be removed before entering a public roadway.
2. The operator shall dispose of all water, unused equipment, litter, sewage, waste, chemicals, and debris from the site at an approved disposal site.
3. All equipment used for maintenance shall be removed from the well pad site within 30 days after completion of the work, unless otherwise agreed to by the surface owner. Permanent storage of equipment on well pad sites shall not be allowed.
4. Materials and trash shall not be buried on-site.
5. Open burning of trash, debris, or flammable materials on-site is prohibited.

C. *Odor management:*

1. The operator shall notify the ES Director no later than 24 hours after receiving an odor complaint.
2. Operator shall conduct drive-by inspections through neighborhoods at various times to hear, smell, and see what is going on during each phase of operations.
3. No emission of odorous gases or other odorous matter shall be permitted in such quantities as to be readily detectable when diluted in the ratio of one volume of odorous air to four volumes of clean air.
4. Filtration systems or additives to minimize odors from drilling and fracturing fluids may be used, except that operators shall not mask odors by using masking fragrances.

D. *Water quality:* The oil and gas operation shall not cause significant degradation of water quality of affected water bodies and water wells.

E. *Stormwater:*

1. Operators shall consult with the ES Director for any operations with expected surface disturbance outside of the existing production facility to determine whether a stormwater permit may be required.
2. Stormwater infrastructure shall be maintained in effective operating condition, and the operator shall implement Best Management Practices as recommended by a stormwater inspector as soon as possible.

3. Results of stormwater inspections required by CDPHE-WQCD shall be made available to the ES Director upon request.
- F. *Spill release response and reporting:* The operator shall demonstrate the ability to control and contain all spills and releases of exploration and production waste, including produced fluids, immediately upon discovery in conformance with the spill release response and reporting plan.
1. Operators shall conduct visual inspections for liquid leaks at least every 30 days.
 2. Spills and releases shall be contained, investigated, and cleaned up as soon as possible or immediately in emergency situations.
 3. All employees performing spill clean-up shall be qualified in accordance with applicable state and federal requirements.
 4. Copies of Form 19 Spill Release Report and Form 27 Site Investigation and Remediation Workplan (both initial and supplemental report), Form 23 Loss of Well Control Report, and all associated materials and analyses shall be submitted to the ES Director at the same time they are submitted to the ECMC, including the topographic map showing location of the spill and any information relating to initial mitigation, site investigation, and remediation that accompany the report.
 5. Spills and releases outside of containment which exceed one barrel of exploration and production waste or produced fluids shall be reported to the ES Director within 24 hours.
 6. Spills and releases of any size which impact or threaten to impact any waters of the state, residences or occupied structures, livestock, or public byways shall be verbally reported to the ES Director within 24 hours, with a follow-up written notice within 48 hours.
 7. Spills and releases of any size which impact or threaten to impact any water supply area shall be verbally reported to the Colorado Environmental Spill Reporting Hotline at 1-877-518-5608, and to the ES Director immediately after discovery.
 8. Spills and releases that impact or threaten to impact a water supply intake shall be reported immediately to the ES Director, and to the owner of the intake if the town is not the owner of the intake.
 9. Spills, chemical spills, and releases shall be reported in compliance with applicable state and federal laws. Operator will provide the ES Director with a copy of any self-reporting submissions that the applicant provides to any agency.
 10. The town may undertake prevention, control, countermeasures, containment, and clean-up measures if the operator fails to comply with

its obligations under 10-12-6.D.7 and the operator will pay all costs incurred by the town for any such measures.

G. *Hazardous materials:*

1. The oil and gas operation shall undertake measures to contain all hazardous materials in storage areas to prevent release to any water body. Inventory management and leak detection systems are required.
2. Full disclosure, consistent with ECMC requirements, including material safety data sheets of all hazardous materials that will be transported on any public or private roadway within the town for the oil and gas operation, shall be provided to the ES Director. This information will be treated as confidential and will be shared with other emergency response personnel only on an as-needed basis.
3. The area 25 feet around anything flammable shall be kept free of dry grass or weeds, and all areas shall conform to ECMC safety standards and applicable fire code(s).

H. *Noise:*

1. Unless an operator demonstrates that it is impossible to modify existing equipment to satisfy the following requirements, no equipment shall be operated in such a manner so as to create any noise which causes exterior noise level that:
 - a. Exceeds the ambient noise level by more than five decibels during daytime hours and more than three decibels during nighttime hours;
 - b. Creates pure tones where one-third octave band sound-pressure level in the band with the tone exceeds the arithmetic average of the sound-pressure levels of two contiguous one-third octave bands by five dB for center frequencies of 500 Hertz and above, and by eight dB for center frequencies between 160 and 400 Hertz, and by 15 dB for center frequencies less than or equal to 125 Hertz; or
 - c. Creates low-frequency outdoor noise levels that exceed the following dB levels:

16 Hz octave band	65 dB
31.5 Hz octave band	65 dB
64 Hz octave band	65 dB

- d. Adjustments to the noise standards as set forth above in subsection 1.a, 1.b, and 1.c. of this section may be permitted intermittently in accordance with the following:

Permitted Increase (dBA)	Duration of Increase (minutes)*
-------------------------------------	--

10	5
15	1
20	Less than 1
* Cumulative minutes during any one hour	

2. The point of compliance for noise shall be the property line of the protected use or no less than 25 feet from the exterior wall of any protected use structure closest to the working pad surface, whichever is closer.
3. All workover operations shall be restricted to daytime hours.
4. Uploading of pipes and other tubular goods restricted to daytime hours of 8:00 a.m.—6:00 p.m.
5. Acoustical blankets, sound walls, mufflers or other alternative methods as approved by the town may be used to ensure compliance. All soundproofing shall comply with accepted industry standards and be subject to approval by the fire district.
6. The sound level meter used in conducting noise evaluations shall meet the American National Standard Institute's standard for sound meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

I. *Vibration:*

1. No vibration shall be transmitted through the ground that is discernible without the aid of instruments measured at 500 feet from the abutting residential or commercial development.
2. No vibration shall exceed 0.002g peak at up to 50 cps frequency measured at 500 feet from the abutting residential or commercial development. Vibrations recurring at higher than 50 cps frequency or a periodic vibrator shall not induce accelerations exceeding 0.001g.
3. Single impulse period vibrations occurring at an average interval greater than five minutes shall not induce accelerations exceeding .01g.

J. *Visual quality:* When facilities are painted, the paint shall be a uniform, non-contrasting, non-reflective color, to blend with the surrounding landscape and with colors that match the land rather than the sky. The color should be slightly darker than the surrounding landscape.

K. *Floodplain, wetlands, and riparian areas:* The oil and gas operation shall not have a significant adverse effect on the floodplain and shall not significantly degrade wetlands and riparian areas. Oil and gas operations conducted within the floodplain overlay district shall comply with section 10-2-7 C. of the UDC.

- L. *Natural resource areas:* The oil and gas operation shall not cause significant degradation of natural landmarks, rare plant species, riparian corridors, or other sensitive areas.
- M. *Wildlife:* The oil and gas operation shall not cause significant degradation of wildlife or wildlife habitat.
- N. *Historical and cultural resources:* The oil and gas operation shall not cause significant degradation to resources of historic, cultural, paleontological, or archeological importance.
- O. *Public services and facilities:* The oil and gas operation shall not have a significant adverse effect on the capability of the town to provide municipal services or the capacity of the service delivery systems.
- P. *Enforcement.* Violations of this section are subject to the enforcement mechanisms in Section 10-12-11.

10-12-11 Enforcement, penalties, and inspections.

- A. *Unlawful to violate these regulations:* Any operator or person who violates these Regulations is subject to criminal or civil liability and penalties as set forth in the UDC and municipal code. Each day during which such violation continues shall be deemed a separate offense.
- B. *Inspection and notifications:*
 - 1. *Inspection:*
 - a. The Town may enter and inspect any property associated with an oil and gas operation that is subject to these regulations at reasonable hours for the purpose of determining compliance with applicable laws and regulations. The Town will attempt to provide reasonable notice of inspections, but reserves the right to conduct unannounced inspections.
 - b. Upon request, the operator shall make available to the Town all records for the operation required to be maintained by the town or by state or federal agencies.
 - 2. *Notification to ES Director:* In addition to any notice required by state law, operators shall provide the following notices to the ES Director:
 - a. Ten (10) days prior to removal of any tank or other equipment;
 - b. Ten (10) days prior to planned maintenance activities and workover activities; and
 - c. Five (5) days following maintenance activities taken in response to emergencies.

Section 2. Severability. If any article, Section, paragraph, sentence, clause, or phrase of this Ordinance is held to be unconstitutional or invalid for any reason, such decision shall not affect the validity or constitutionality of the remaining portions of this

Ordinance. The Town Council hereby declares that it would have passed this Ordinance and each part or parts hereof irrespective of the fact that any one, or part, or parts be declared unconstitutional or invalid.

Section 3. Safety. The Town Council finds that the adoption of this Ordinance is necessary for the protection of the public health, safety and welfare.

Section 4. Effective Date. This Ordinance shall take effect 10 days after publication following adoption.

Introduced, Read, Passed, and Ordered Published this ____ day of _____, 2026.

Andrew J. Moore, Mayor

Attest:

Debbie Stamp, Town Clerk

COMPARISON BETWEEN EXISTING
CHAPTER 12 OF TITLE 10
AND PROPOSED AMENDMENTS

10-12-1 General provisions.

- A. *Title and citation:* These regulations are titled and may be cited as the "Regulations for Oil and Gas Operations:" ~~"~~ or, herein, "these regulations."
- B. *Purpose:* The purpose of these regulations is to protect public health, safety, welfare and the environment by using the town's police power to:
1. Regulate the surface impacts of oil and gas operations in a reasonable manner to address matters specified in C.R.S. § 29-20-104(1)(h) and to protect and minimize adverse impacts to public health, safety, welfare, and the environment.
 2. Implement such requirements that are necessary and reasonable to avoid adverse impacts from oil and gas operations and to minimize and mitigate the extent and severity of those impacts that cannot be avoided.
 3. The town reserves the right to deny any application that does not meet all standards set forth herein.
- C. *Authority:* This section is adopted pursuant to C.R.S. §§ 29-20-101 et seq., 31-15-401, and 34-60-101 et seq.
- D. *Oil and gas permit or activity notice required:*
1. No person shall engage in, cause, allow, or conduct any oil and gas operation or ~~substantially modify~~substantial modification of an existing operation prior to obtaining an oil and gas permit following notice and public hearing under these regulations unless the operation falls within one of the exemptions in section 10-12-1 F.
 2. No person shall make a minor modification to existing oil and gas operations within the municipal boundaries prior to filing an ~~activity notice~~Activity Notice and obtaining an order pursuant to section 10-12-3 of these regulations.
- E. *Applicability:*
1. ~~Oil and gas operations existing at the effective date of these regulations are subject to the requirements in section 10-12-6 of these regulations.~~
 2. ~~New or substantial modifications~~These regulations shall apply to oil and gas operations wholly or partially within the ~~municipal~~corporate boundaries ~~are subject to the permit requirements of these regulations. of the town.~~
 32. If any provisions of these regulations ~~conflicts~~conflict with any other applicable provision of the UDC, these regulations shall control.

4. ~~Oil and gas permits issued pursuant to these regulations shall encompass within its authorization the right of the operator, its agents, employees, subcontractors, independent contractors, or any other person to perform that work reasonably necessary to conduct the activities authorized by the permit, subject to all other applicable town regulations and requirements. ~~The operator is financially liable for the activities of all contractors, subcontractors, employees, and agents in carrying out the permitted activity.~~~~
 5. ~~A final decision under these regulations shall satisfy the requirement of section 34-60-106(f)(I)(A) of the Colorado Oil and Gas Conservation Act.~~
 6. ~~A permit issued under these regulations shall expire three years from the date of its approval if the COGCC has not issued final approvals to drill for the oil and gas operation covered by the permit.~~
- F. ~~*Exemption from these regulations:* Oil and gas operations that are being conducted pursuant to approved permits as of the effective date of these regulations or that are located within territory which thereafter is annexed to the town may continue operating without the issuance of an oil and gas permit under these regulations, but shall comply with the requirements of section 10-12-6 of these regulations.~~
- G. *Severability:* If any section, clause, provision, or portion of these regulations should be found to be unconstitutional or otherwise invalid by a court of competent jurisdiction, the remainder of these regulations shall not be affected thereby and is hereby declared to be necessary for the public health, safety and welfare.

HG. *Definitions:*

The following words, terms and phrases, when used in this Chapter of the UDC, shall have the meanings ascribed to them in this section:

Ambient noise level: The all-encompassing noise level associated with a given environment, being a composite of sounds from all sources at the location, constituting the normal and existing level of environmental noise at a given location.

AQCC: Colorado Department of Public Health and Environment, Air Quality Control Commission.

Building unit: Building or structure designed for use as a place of residency by a person, a family, or families. The term includes manufactured, mobile, and modular homes, except to the extent that any such manufactured, mobile, or modular home is intended for temporary occupancy or for business purposes.

CDPHE: Colorado Department of Public Health and Environment.

Closed loop drilling process or system: A closed loop mud drilling system typically consists of steel tanks for mud mixing and storage, and the use of solids removal equipment, which normally includes some combination of shale shakers, mud cleaners and centrifuges sitting on top of the mud tanks. This equipment separates drill cutting solids from the mud stream coming out of the wellbore while retaining the water or fluid portion to be reused to continue drilling the well bore~~wellbore~~. The solids are

placed in containment, either a shallow lined pit or an above-ground container, provided on location. The system differs from conventional drilling, where a reserve pit is used to allow gravitational settling of the solids from the mud, which can then be reused. A closed loop drilling system does not include use of a conventional reserve drilling pit.

~~COGCC: Colorado Oil and Gas Conservation Commission.~~

Completion:

1. An oil well shall be considered completed when the first new oil is produced through wellhead equipment into lease tanks from the ultimate producing interval after the production string has been run.
2. A gas well shall be considered completed when the well is capable of producing gas through wellhead equipment from the ultimate producing zone after the production string has been run.
3. A dry hole shall be considered completed when all provisions of plugging are complied with as set out in these rules.
4. Any well not previously defined as an oil or gas well, shall be considered completed 90 days after reaching total depth.
5. If approved by ~~COGCC~~ECMC, a well that requires extensive testing shall be considered completed when the drilling rig is released or six months after reaching total depth, whichever is later.

Crude oil transfer line: A piping system that is not regulated or subject to regulation by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to 49 C.F.R. § 195 Subpart A, and that transfers crude oil, crude oil emulsion or condensate from more than one well site or production facility to a production facility with permanent storage capacity greater than 25,000 barrels of crude oil or condensate or a PHMSA gathering system. 49 C.F.R. § 195 Subpart A, in existence as of the date of this regulation and not including later amendments, is available for public inspection during normal business hours from the public room administrator at the office of the commission, 1120 Lincoln Street, Suite 801, Denver, Colorado 80203. Additionally, 49 C.F.R. § 195 Subpart A may be found at <https://www.phmsa.dot.gov>.

Decibel (dB): A unit for measuring the intensity of a sound by comparing it with a given level on a logarithmic scale.

Degradation or degrade: Lowering in grade or desirability; lessening in quality. The act or process of degrading.

ES Director: ~~Planning and development director~~[Director of Environmental Services](#) or designee.

[ECMC: Energy and Carbon Management Commission \(formerly the Colorado Oil and Gas Conservation Commission\)](#)

EPA: United States Environmental Protection Agency.

Expansive soils and rocks: Any mineral, clay, rock or other type of geologic deposit having the property of absorbing water with an accompanying swelling to several times their original volume.

Exploration and production waste: Those wastes associated with oil and gas operations to locate or remove oil or gas from the ground or to remove impurities from such substances and which are uniquely associated with and intrinsic to oil and gas exploration, development or production activities that are exempt from regulation under the Resource Conservation and Recovery Act (RCRA).

Flaring: The combustion of natural gas during upstream oil and gas operations, excluding gas that is intentionally used for onsite processes. Use of the combustion equipment to control emissions from tanks pursuant to AQCC Regulation No. 7, 5 C.C.R. § 1001-9, Part D, Sections I.D or II.C, as incorporated by reference in Rule 901.b, is not flaring

Flowlines: A segment of pipe transferring oil, gas, or condensate between a wellhead and processing equipment to the load point or point of delivery to a U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration or Colorado Public Utilities Commission regulated gathering line or a segment of pipe transferring produced water between a wellhead and the point of disposal, discharge, or loading. This definition of flowline does not include a gathering line.

Geologic hazard area: An area which contains or is directly affected by a geologic hazard.

Geologic hazards: A geologic phenomenon which is adverse to past, current, or foreseeable construction or land use and which constitutes a hazard to public health and safety or property if not avoided. The term includes but is not limited to:

1. Landslides, rock falls, mudflows, and unstable or potentially unstable slopes
2. Seismic effects
3. Radioactivity
4. Coal mines
5. Areas of ground subsidence
6. Expansive rocks or soils

Ground subsidence: A process characterized by the downward displacement of surface material caused by natural phenomena such as removal of underground fluids, natural consolidation, or dissolution of underground minerals or by man-made phenomena such as underground mining.

Groundwater: Subsurface waters in a zone of saturation.

Hydraulic fracturing or hydraulic fracturing treatment: All stages of the treatment of a well by the application of hydraulic fracturing fluid under pressure that are expressly

designed to initiate or propagate fractures in a target geologic formation to enhance production of oil and natural gas.

Hydraulic fracturing fluid: The fluid, including the applicable base fluid and all hydraulic fracturing additives, used to perform a hydraulic fracturing treatment.

Inactive Well: As defined by ECMC Rule 100, any of the following is an Inactive Well:

1. A Well that has been shut-in and has not produced for a period of 12 consecutive months;
2. A Well that has been temporarily abandoned for a period of 6 consecutive months;
3. A Class II UIC Well or a Geothermal Injection Well which has not been utilized for a period of 12 consecutive months; or
4. A Suspended Operations Well or a Waiting on Completion Well with no activity other than monthly Bradenhead monitoring for more than 24 consecutive months.

An Inactive Well does not mean: a Well that is completed for fewer than 12 months; a Class II UIC Well that is completed for fewer than 12 months; a Well used for the purpose of monitoring or observing an oil, gas, or groundwater reservoir; a Stratigraphic Well; or a Well designated as Out of Service.

LACT ("Lease Automated Custody Transfer"): The transfer of produced crude oil or condensate, after processing or treating in the producing operations, from storage vessels or automated transfer facilities to pipelines or any other form of transportation.

Linear feature: A road or pipeline that is necessary to cross a water body or connect or access a well or gathering line.

LGD (Local Government Designee): The office designated to receive, on behalf of the local government, copies of all documents required to be filed with the local governmental designee pursuant to ~~ECMC~~ECMC rules. The town's LGD is the ES Director.

Mitigation: The following actions, in order of preference:

1. Avoiding adverse impacts: Avoiding an adverse impact by not taking a certain action or parts of an action; or
2. Minimizing adverse impacts: Minimizing adverse impacts to protect public health, safety, and welfare and the environment, and mitigating the extent and severity of those impacts that cannot be avoided; or
3. Rectifying impacts: Repairing, rehabilitating, or restoring the impacted area, facility or service; or
4. Reducing or eliminating impacts: Reducing or eliminating the impact over time by preservation and maintenance operations; and

5. Other provisions for addressing impacts: replacing or providing equivalent biological, social, environmental and physical conditions, or a combination thereof.

Modification:

1. Substantial modification. The addition of new wells; any changes that significantly alter the nature, character or extent of land use impacts of the existing operation; or changes that will result in an increase in hydrocarbon emissions. Re-fracking of an existing well is a substantial modification. [The ES Director, in their sole discretion, shall determine whether an activity is a substantial modification.](#)
2. Minor modification. Any change to the existing operation that is not a [substantial modification.](#)

Oil and gas ~~operation~~operation: Exploration for oil or gas, including, but not limited to, conventional oil and gas and coalbed methane gas; the siting, drilling, redrilling, deepening, completion, recompletion, reworking, fracturing, refracturing, closure or abandonment, shutting-in oil or gas wells and returning wells to production; pumping stations; production facilities and operations including the installation of flow lines; accessory equipment; construction site preparation, reclamation and related activities associated with the development of oil and gas resources, including their impacts on or construction of access roads and easements; and substantial modification to existing operations.

Oil and gas facility: [Equipment or improvements used or installed at an oil and gas location for the exploration, production, withdrawal, treatment, or processing of crude oil, condensate, E&P waste, or gas.](#)

Operation(s): Oil and gas operation(s).

Operator: The individual, company, trust, or foundation responsible for the exploration, development, and production of an oil or gas well or lease. Generally, it is the oil company by whom the drilling contractor is engaged.

Pigging: A natural gas pipeline maintenance activity that utilizes a projectile known as a "pig" to clean residual liquid from the pipeline.

Permit: Town of Erie Oil and Gas Permit issued pursuant to the provisions of this chapter 12.

Pipelines: Flowlines for oil and gas wells.

Pit: Any natural or man-made depression in the ground used for oil or gas exploration or production purposes. A pit does not include steel, fiberglass, concrete or other similar vessels which do not release their contents to surrounding soils.

Pitless: Pitless with respect to drilling means there is no pit regardless of size or function. This includes conventional reserve drilling pits and drilling cutting pits, but

does not include flare pits, which may be utilized to contain necessary flaring during the drilling, completion, or up-set conditions.

Production facilities: All storage, separation, treating, dehydration, artificial lift, power supply, compression, pumping, metering, monitoring, flowline, and other equipment directly associated with oil wells, gas wells, or injection wells.

Protected use: A residence; occupied commercial or institutional building or school; or public park, fields or outside activity areas.

Regulation(s): The Town of Erie Oil and Gas Regulations set forth in ~~chapter~~[Chapter](#) 12 of the UDC.

Reference area: An area either (1) on a portion of the site that will not be disturbed by oil and gas operations, if that is the desired final reclamation; or (2) another location that is undisturbed by oil and gas operations and proximate and similar to a proposed oil and gas location in terms of vegetative potential and management, owned by a person who agrees to allow periodic access to it for the purpose of providing baseline information for reclamation standards, and intended to reflect the desired final reclamation.

Seismic effects: Direct and indirect effects caused by a natural earthquake or a man-made phenomenon, including, but not limited to, exploration and test drilling.

Shut-in well: A well which is capable of production or injection by opening valves, activating existing equipment or supplying a power source.

Significant: Noteworthy.

Significantly degrade: To lower in grade or desirability to a significant as opposed to trifling degree.

Spill: The unauthorized, accidental or sudden discharge of chemicals, oil, petroleum product, exploration and production waste, or other hazardous substances.

Substantial modification: [See modification.](#)

Subsurface facility: Flowlines and all other subsurface facilities of oil and gas operations.

Temporarily abandoned well:

1. A well that has all downhole completed intervals isolated with a plug set above the highest perforation such that the well cannot produce without removing a plug; or
2. A well which is incapable of production or injection without the addition of one or more pieces of wellhead or other equipment, including valves, tubing, rods, pumps, heater-treaters, separators, dehydrators, compressors, piping or tanks.

UDC: Town of Erie Unified Development Code.

Venting:

1. The emission of gas from devices, such as pneumatic devices and pneumatic pumps, that are designed to emit as part of normal operations if such emissions are not prohibited by AQCC Regulation No 7, as incorporated by reference in Rule 901.b;
2. Unintentional leaks that are not the result of inadequate equipment design; and
3. Natural gas escaping from, or downstream of, a tank unless: 1) there is no separation occurring at equipment upstream of the tank; 2) the separation equipment is not sufficiently sized to capture the entrained gas; or 3) the natural gas is sent to the tank during circumstances when the gas cannot be sent to the gathering line or the combustion equipment used to flare the gas is not operating.

VOC emissions: Volatile organic compounds in oil and gas operations that have the potential to be released into the atmosphere and/or ground.

~~*Water body:*~~ *Waterbody:*

1. Any surface waters streams, rivers, lakes, ponds, stormwater ditches, wetlands, riparian areas, or aquatic habitats which are contained in or flow in or through the town, including: Coal Creek, Boulder Creek, Erie Lake, Erie Reuse Reservoir, Thomas Reservoir, Prince Lake #2, and any excluding roadway ditches, water in sewage systems, water in treatment works of disposal systems, water in potable water distribution systems, stock ponds or irrigation ditches; not discharging to live streams, and all water withdrawn for use until use and treatment have been completed.
2. Waterbodies that fall within this definition are subject to these regulations, whether or not waterbodies are subject to the U.S. Army Corps of Engineers' jurisdiction or the Colorado Water Quality Control Division jurisdiction.

Water source: Water wells that are registered with Colorado Division of Water Resources, including household, domestic, livestock, irrigation, municipal/public, and commercial wells, permitted or adjudicated springs, or monitoring wells installed for the purpose of complying with groundwater baseline sampling and monitoring requirements under COGCC/ECMC Rules ~~318A~~318 A.e.(4), 608, or 609.

Waste: See "exploration and production waste."

Well (oil and gas): An oil or gas well, a hole drilled for the purpose of producing oil or gas, a well into which fluids are injected, a stratigraphic well, a gas storage well, or a well used for the purpose of monitoring or observing a reservoir.

Wildlife habitat: A natural or man-made environment that contains the elements of food, shelter, water, and space in a combination and quantity necessary to sustain one or more wildlife or plant species at stable population levels in historically-used habitats. Sensitive wildlife habitat areas include, but are not limited to, nesting, brood-rearing areas, rookeries, leaks, migration corridors, calving and fawning grounds for big game.

10-12-2 Permit application process for new ~~or modified~~ oil and gas operations and substantial modifications.

A. *Compliance with zoning—Rezoning application: ~~No~~*

1. New oil and gas operations or substantial modifications to existing oil and gas operations shall only be permitted if they are located wholly on parcels located in the Heavy Industrial zone district.
2. A request to rezone property for an oil and gas operation may be processed prior to or together with the processing of an oil and gas permit ~~will be finally approved~~ under these regulations ~~unless the property where the operation will be located is zoned as heavy industrial (HI) under section 10-7-5 of the UDC. Where. Any rezoning is required, the town will work with the applicant to coordinate public notices and hearings for rezoning with the requirements of these regulations~~ request is subject to UDC Section 10-7-5.

B. *Pre-application conference:*

1. *Pre-application conference:* Prior to submitting an application for ~~an oil and gas permit~~ Permit, an applicant shall meet with the ~~director and the LGDES Director~~ to discuss the proposed ~~oil and gas~~ operation or substantial modification. The purpose of the pre-application conference includes, without limitation:
 - a. To discuss the location and nature of the proposed ~~oil and gas~~ operations, including the size, number of wells and production facilities, miles of flowlines, and phases of the operation.
 - b. To explain the application submittal requirements, the nature of materials that will be responsive to those requirements, and waivers of any materials that would not be necessary in determining whether the application complies with town requirements;
 - c. To discuss state terms and conditions imposed on the proposed ~~oil and gas~~ operation;
 - d. To identify site-specific concerns and issues that bear on the proposed ~~oil and gas~~ operation;
 - e. To discuss projected impacts and potential mitigation;
 - f. To discuss the town oil and gas operations standards in section 10-12-4 that must be satisfied for ~~permit~~ Permit approval.
2. *Pre-application materials:* At or before the pre-application conference, the applicant shall provide the ~~director~~ ES Director with information that is sufficient for determining the location and nature of the proposed ~~oil and gas~~ operation,

the degree of impacts associated with the operation, and mitigation proposed to offset such impacts.

- C. *Permit application submittal:* The applicant shall submit the Permit application materials to the ~~director~~[ES Director](#). The ~~permit~~[Permit](#) application materials are set forth in section 10-12-2 E.
- D. *Permit application fee:* The applicant is responsible for all costs of reviewing and processing the ~~permit~~[Permit](#) application.
 - 1. *Fee requirement:* The ~~permit~~[Permit](#) application shall be accompanied by the application fees ~~set forth in section 2-10-5~~[as established by resolution of the Municipal Code town council](#).
 - 2. *Payment of additional costs:* Additional costs for reviewing and processing the ~~permit~~[Permit](#) application include, but are not limited to, the costs of legal, consultant, and referral agency review of the ~~permit~~[Permit](#) application, the pre-application conference, completeness determination, and all hearings and meetings on the ~~permit~~[Permit](#) application. Such costs are in addition to the application fees paid pursuant to D.1 above and shall be billed to the applicant. All additional costs must be paid in full prior to final action by the town council on the ~~permit~~[Permit](#) application.
- E. *Permit application materials for ~~oil and gas~~ operations [and substantial modifications](#):* The ~~director, in consultation with the LGD,~~[ES Director](#) may waive any part of the ~~permit~~[Permit](#) application material requirements when the information would not be relevant to determining whether the proposed ~~oil and gas~~ operation [or substantial modification](#) complies with the oil and gas operations standards in section 10-12-4. [The ES Director may also accept materials submitted to the ECMC, County, or another regulatory agency that are responsive to these requirements.](#)
 - 1. *Application form:* Completed land use application form including the operator's name and address and, if a type of entity, the name and address of the registered agent of the operator; any other person that the operator designates to receive notice, and a person designated by the operator to serve as an on-site contact.
 - 2. *Financial qualifications and technical expertise:* Documentation of the applicant's financial qualifications and technical expertise and capability to construct and operate the proposed ~~oil and gas~~ operation [or substantial modification](#) in compliance with all conditions of approval, including:
 - a. Evidence that the operator is registered with the ~~COGCC~~[ECMC](#).
 - b. A certified list of all instances within the past ten years where the ~~COGCC~~[ECMC](#), other state or federal agency, municipality, or county found that the operator has not complied with applicable federal, state, or local requirements with respect to drilling, operation, or decommissioning of a well or operation of [an](#) oil and gas facility or pipeline. The list shall identify

the date of the determination, the entity or agency making the determination, the nature of the noncompliance, and, if applicable, the final resolution of the issue and procedural or policy changes that were implemented to prevent future infractions and which adequately demonstrate effectiveness. If no such instances of non-compliance exist, the operator shall certify to that effect.

- c. A list of all ~~near-misses-and~~ incidents that are reportable to state or federal agencies (such as accidents, spills, releases, and injuries) within the past ten years that occurred at facilities owned or operated by operator, operator's legacy companies, or a subsidiary of operator, including events involving contractors. Operator shall also list any root causes analysis conducted and corrective actions taken in response to the ~~near-misses-and~~ incidents, including internal changes to corporate practices or procedures, such as modifications to safety management plans.
3. *Insurance:* Evidence of liability insurance covering both the operator and the Town of Erie ~~in the amount of \$2,000,000.00~~ with minimum limits of \$1,000,000 Each Occurrence, \$2,000,000 General Aggregate, and \$2,000,000 Products Completed Operations Aggregate, or such greater amount that the town determines to be necessary based on the scope of the oil and gas operation.
4. *Summary of proposed oil and gas operation:* Summary of ~~proposed oil and gas~~ operation, including: the method, schedule, and duration of time for drilling, completion, production, and decommissioning; a list of all proposed oil and gas ~~facilities~~ equipment to be installed and estimated timeline; hours of operation; number of employees on site on a daily basis; types of vehicles and equipment.
5. *Topographic map:*
 - a. *Location of proposed ~~oil and gas~~ operation:* The location of the ~~proposed Oil and Gas Operation~~ operation including well pads, tanks, roads, pipelines and gathering systems, and related features on a United States Geological Survey quadrangle map or on a recorded plat if the ~~proposed Oil and Gas Operation~~ operation is within an approved subdivision, with the location highlighted so that it is easy to see.
 - b. *Topography:* Existing and proposed topography at intervals established by the ~~director~~ ES Director as necessary to portray the direction and slope of the area affected by the ~~proposed oil and gas~~ operation.
 - c. *Transportation and roads:* All public and private roads that traverse and/or provide access to the ~~proposed oil and gas~~ operation.
 - d. *Easements:* Easements recorded or historically used that provide access to or across, or other use of, the property.

- e. *Municipal and subdivision boundaries:* Municipal or subdivision boundaries within one mile of the well pad, tanks, gathering lines, storage areas, or any other ancillary feature of the ~~proposed oil and gas~~ operation.
 - f. *Existing structures:* All residences and occupied buildings, including educational facilities, child care centers, medical centers, and senior living facilities, within one mile of the well pad, tanks, gathering lines, storage areas, or any other ancillary feature of the ~~proposed oil and gas~~ operation.
 - g. *Other operations:* Location of other ~~oil and gas~~ operations within one mile of the site.
 - h. *Distances between well or surface equipment and nearest building unit:* Shortest distance between any proposed well or production equipment on the well pad and the nearest exterior wall of an existing building unit.
6. *Current aerial photo:* Current aerial photo that shows the location of the ~~proposed oil and gas~~ operation and the shortest distance between any proposed well or production equipment on the well pad and the nearest exterior wall of an existing building unit, displayed at the same scale as the topographic map to facilitate use as an overlay.
7. *Site preparation plan:* Plan for site preparation, mobilization, and demobilization.
8. *Property rights, permits, and other approvals:*
- a. Description and documentation of property rights, easements, and rights-of-way agreements that are necessary for or that will be affected by the proposed operation.
 - b. List of all federal, state, and county permits and approvals that have been or will be required for the proposed operation.
 - c. Description of all mitigation and financial security required by federal, state, and local authorities; and copies of any draft or final environmental assessments or impact statements prepared for the proposed operation.
9. *Reports/studies/plans:* The following reports, studies, and plans shall be prepared to adequately portray the physical characteristics of the property.
- a. *Community outreach plan:* A plan that describes how the operator will conduct neighborhood meeting(s) and use other techniques to provide the public with information and listen to concerns about the oil and gas operation.
 - b. *Cumulative impact analysis:* An analysis describing the existing and approved oil and gas operations within and all other land uses and known emission sources that would impact the Town of Erietown collectively with the oil and gas operation; a description of ~~and~~ the adverse impacts to public health, safety, and the environment from ~~the existing all current~~ and

~~approved oil and gas planned~~ operations; and an analysis of whether the ~~proposed oil and gas operation~~ and associated mitigation efforts will contribute to these adverse impacts. ~~Where the proposed oil and gas operation will contribute to existing impacts, a cumulative impact mitigation plan is required.~~

- i. Where the operation will contribute to existing impacts, a cumulative impact mitigation plan is required.
- ii. The cumulative impact analysis shall at minimum assess cumulative impacts to air quality; water quality and quantity; wildlife and wildlife habitat; nuisance impacts such as noise and odor; land use patterns; and traffic.
- iii. The applicant shall provide all information required by the ECMC in Form 2A, as well as the above analysis that includes other land uses and known emission sources. The areas and uses requiring evaluation may extend beyond those default areas of evaluation required by the ECMC.

- c. *Alternative site analysis:* An analysis of alternative sites from which the minerals can be accessed that includes, for each site:
 - i. Location;
 - ii. Zoning;
 - iii. Natural and manmade features;
 - iv. Water source;
 - v. Distance of proposed pad to residences, occupied buildings, parks and open space; water bodies; floodplains; and roadways.
 - vi. Justification of a preferred alternative site and/or reason why a site is not proposed as a viable alternative.
 - vii. Materials submitted to the ~~COGCC~~ECMC to satisfy the alternative location analysis requirement.
- d. *Geologic and natural hazards assessment and mitigation plan.*
 - i. *Geologic and natural hazards report:* A report detailing the natural and geological characteristics on-site, and within one mile of the site, prepared by a registered engineer or geotechnical consultant. The report shall include a geotechnical assessment of all geologic hazards that have the potential to affect the oil and gas operation, and which may be ~~de-stabilized~~destabilized or exacerbated by the oil and gas operation. The geotechnical assessment shall include, without limitation:

(A) Determination if mining exists under the site;

- (B) Determination if void space is still present underground;
 - (C) Determination if subsidence has taken place (from drill hole data and surface evidence, Colorado Geological Survey mine subsidence history);
 - (D) Determination of how the subsidence hazard can affect ~~proposed oil and gas~~the operation and whether the oil and gas operation will exacerbate subsidence;
 - (E) Determination of areas where construction or other disturbance should not occur;
 - (F) Identification of expansive soils or rocks, including any type of geologic deposit having the property of absorbing water with accompanying swelling.
- ii. *Geologic and natural hazard mitigation plan:* A plan for mitigating impacts to the ~~proposed oil and gas~~ operation from geologic and natural hazards and impacts of the ~~proposed oil and gas~~ operation on geologic and natural hazards. The plan shall demonstrate compliance with the standards in section 10-12-4.
- e. *Air quality modeling, monitoring and mitigation:*
- i. *Air quality modeling plan:* A plan for dispersion modeling to be conducted by a third-party consultant approved by the town that shows compliance with National Ambient Air Quality Standards and provides for facility emissions inventories and air quality impact studies for drilling, completions, and production operations based upon proposed equipment use and operational phases, ~~and any emissions reductions associated with plugging and abandonment.~~
 - ii. *Air quality monitoring plan:* A monitoring plan that provides for:
 - (A) Pre-construction baseline ambient air quality testing, completed by a consultant approved by the town for 15—90 days, but no more than 90 days prior to construction, for areas located within 500 feet of the well sites if approval from surrounding surface owners can be obtained.
 - (B) Air quality monitoring program conducted by a consultant mutually agreed to by both the operator and the town and paid for by operator. The program will require monitoring for all potential emissions, including, but not limited to, ~~methane;~~Methane (CH₄), VOCs, Hazardous Air Pollutants (HAPs), Oxides of Nitrogen (NO_x), Particulate Matter (~~PM₁₀~~), Fine Particulate Matter (PM 2.5), and Carbon Monoxide (~~CO~~). All monitor locations are to be approved by

the town and methane (CH₄), may be co-located with town-owned monitors.

- (C) Continuous air quality monitoring for areas within one mile of the operation. Operator will submit monthly air quality monitoring reports to the LGDES Director during drilling and completion and quarterly reports after completion for the duration of all oil and gas operations.
- (D) Additional monitoring as needed to respond to emergency events such as spills, process upsets, or accidental releases. Operator will provide access to the well sites to the town's third-party inspector as needed to allow air sampling to occur.

~~(E)iii. Air quality mitigation plan: A plan that demonstrates compliance with the oil and gas operation standards in section 10-12-4 and that includes:~~

- ~~(A)~~ Compliance with EPA, CDPHE, and ~~COGCC~~ ECMC standards for emissions and odors. If these standards become more stringent in the future, the operator will update its air quality mitigation plan to comply with the more stringent standards.
- ~~(B)~~ Compliance with 2019 CDC Agency for Toxic Substances and Disease Registry and US EPA Integrated Risk Information System ambient air quality guidelines. If these guidelines become more stringent in the future with more restrictive guidelines for benzene, toluene, ethylbenzene and xylene (BTEX), and other air toxins, the operator will update its air quality mitigation plan to comply with the revised guidelines.
- ~~(C)~~ Measurable mitigation steps or actions that will be taken on air quality action days to assist in reducing emissions.

~~iii. Venting and Flaring~~iv. Operational best practices: Description of operational best practices used to minimize how any proposed venting during maintenance and repair activity and flaring will comply with the standards in Section 10-12-4(G)(2).

~~v.~~iv. Leak detection and repair (LDAR) program (LDAR): A leak detection and repair program using modern leak detection technologies for equipment used in the operation that demonstrates compliance with the requirements of the oil and gas operation standards in 10-12-4. The program shall provide for:

- (A) A minimum of monthly inspections with more frequent inspections based on the design and size of the facility. Notice provided to the LGDES Director five business days

prior to an LDAR inspection of facilities to give the town the opportunity to observe the inspection.

- (B) Detailed recordkeeping of inspections for leaking components.
- (C) If an infrared (IR) camera is used, retention of an infrared image or video of all leaking components before and after repair, with records maintained for two years and available to the town upon request.
- (D) Immediately reporting to the [LGDES Director](#) any leaks discovered by the operator, including any leaks that are reported to operator by a member of the public. Operator shall repair leaks within 48 hours. If the town determines that the leak presents an imminent threat to persons or property, the operator shall notify residents within one-half mile of the leak and may not operate the affected component, equipment, or flowline segment until the operator has corrected the problem and the town agrees that the affected component, equipment, or flowline segment no longer poses a hazard to persons or property. In the event of leaks that the town believes do not pose an immediate hazard to persons or property, if more than 48 hours repair time is needed after a leak is discovered, operator shall contact the [LGDES Director](#) and provide an explanation of why more time is required.
- (E) Continuous monitoring to detect leaks or measure hydrocarbon emissions and to monitor meteorological data. Any continuous monitoring system shall be able to alert the operator of increases in air contaminant concentrations.
- (F) Monthly LDAR report provided to [LGDES Director](#), organized by facility, detailing the inspection results, any associated repairs, and any outstanding leaks. Operator will also provide a copy of all reports submitted to the AQCC, including monthly downtime reports and semi-annual control equipment status reports for production facilities located within town limits. The town will make this information available on its website, or may provide a link for such information from town's website to operator's website.

[viy](#). *Odor management plan*: A plan to minimize and mitigate the emission of detectable odors by the oil and gas operation and to ensure that the operation will not create a public nuisance as set forth in section 5-1-6 H of the Municipal Code. The plan shall demonstrate compliance with the oil and gas standards in section 10-12-4 and

provide for a timely response to odor complaints from the community and for identifying and implementing additional odor control measures necessary to control odors emanating from the operation.

- f. *Electrification plan*: A plan identifying all sources of electricity that will be supplied and used during all phases of development including drilling, completions, and operations.
- g. *Dust suppression plan*: A plan that ensures:
 - i. Dust associated with on-site activities and traffic on access roads will be minimized throughout construction, drilling and operational activities such that there are no visible dust emissions from access roads or the site to the extent practical given wind conditions.
 - ii. Operator will not conduct dust suppression activities within 300 feet of surface water unless the dust suppressant is water.
 - iii. Safety data sheets will be submitted for any chemical-based suppressant.
- h. *Water quality impact assessment, monitoring and mitigation plan*: A plan that includes [all the following requirements](#)
 - i. *Assessment*: An assessment of the impacts to water quality including the following considerations:
 - (A) Changes to existing water quality, including patterns of water circulation, temperature, conditions of the substrate, extent and persistence of suspended particulates and clarity, odor, color or taste of water;
 - (B) Applicable narrative and numeric water quality standards;
 - (C) Changes in point and nonpoint source pollution loads;
 - (D) Increase in erosion;
 - (E) Changes in sediment loading to waterbodies;
 - (F) Changes in stream channel or shoreline stability;
 - (G) Changes in stormwater runoff flows;
 - (H) Changes in trophic status or in eutrophication rates in lakes and reservoirs;
 - (I) Changes in the capacity or functioning of streams, lakes, or reservoirs;
 - (J) Changes in flushing flows;
 - (K) Changes in dilution rates of mine waste, agricultural runoff, and other unregulated sources of pollutants;

- (L) Identification of all surface and subsurface water bodies. An inventory and location of all water bodies, as well as domestic and commercial water wells within one mile of the ~~proposed oil and gas~~ operation;
 - (M) Identification of intakes. Identification of intake(s) for public drinking water supply.
- ii. *Water quality monitoring and mitigation:* For surface and groundwater, a plan that establishes a baseline and a process for monitoring changes to water quality and the aquatic environment within one mile of the oil and gas operation to demonstrate the effectiveness of mitigation. The plan shall demonstrate compliance with the oil and gas operation standards in section 10-12-4 and include:
 - (A) Key stream segments, other water bodies, and groundwater to be monitored.
 - (B) Locations for and frequency of sampling and monitoring to establish baseline of existing conditions prior to the ~~proposed oil and gas~~ operation, including existing water quality, aquatic life and macro-invertebrates, and groundwater data.
 - (C) Key indicators of water quality and stream health, and threshold levels that will be monitored to detect changes in water quality and health of the aquatic environment.
 - (D) Locations for and frequency of sampling and monitoring for key indicators of water quality and stream health, including, but not limited to, constituents regulated by the Colorado Water Quality Control Commission, and constituents associated with the ~~proposed oil and gas~~ operation.
 - (E) Locations for and frequency of sampling and monitoring to measure effectiveness of water quality mitigation during the life of the ~~proposed oil and gas~~ operation.
 - (F) Mitigation steps that will be implemented to avoid degradation of water bodies if monitoring of key indicators reveals degradation.
- i. *Stormwater management plan:* A site-specific stormwater plan to minimize impacts to surface waters from erosion, sediment, and other sources of nonpoint pollution and that demonstrates compliance with the oil and gas operation standards in section 10-12-4. ~~The stormwater management plan required by CDPHE may be provided to establish compliance with this provision.~~

- j. *Water supply plan:* A plan prepared by a certified professional engineer that demonstrates compliance with the applicable oil and gas operation standards in section 10-12-4 and includes:
- i. Description of the physical source of the water that the operator proposes to use to serve each phase of the operation;
 - ii. List of all available physical sources of water other than Erie municipal water for the operation, and if multiple sources are available, analysis to determine which source is least detrimental to the environment;
 - iii. Amount of water needed for each phase of the operation;
 - iv. Proof that the source of water supply is physically and legally available and dependable for each phase of the operation;
 - v. Description of how water will be delivered to the site for each phase of the operation;
 - vi. Description of water efficiency methods; and
 - vii. Amount of wastewater produced, and disposal plans for wastewater.
- k. *Spill release response and reporting plan:* A plan that demonstrates compliance with the oil and gas operation standards in section 10-12-4 and includes:
- i. Location of storage areas for equipment, fuel, lubricants, chemicals, and waste during both construction and operation.
 - ii. Measures, procedures, and protocols for spill prevention, storage, and containment.
 - iii. An electronic monitoring program to [aideaid](#) in discovery of spills and releases.
 - iv. Measures, procedures, and protocols for clean-up and description of the financial security for these provisions.
 - v. Measures, procedures, and protocols for reporting spills and storage to town, county, state, and federal officials in compliance with the oil and gas operation standards in section 10-12-4.
 - vi. Provisions establishing that the town, ~~or its designee,~~ may undertake prevention, control, countermeasures, containment, and clean-up measures if the permittee fails to comply with its obligations under the spill release, response, and reporting plan, and that the permittee will pay all costs incurred by the town for any such measures.
 - vii. Maintenance of ~~material~~ safety data sheets ([MSDS](#)SDS).
 - viii. Baseline assessment of conditions of the soils within the area covered by the spill release response and reporting plan.

- ix. Plan for monitoring conditions of the soil for the duration of oil and gas operations and for post-operation sampling of the soil.
- l. *Wastewater and waste management plan:* A plan that identifies the amount of wastewater produced by the oil and gas operation and disposal plans for wastewater that demonstrates compliance with the oil and gas operation standards in section 10-12-4. The plan shall ensure that:
 - i. All fluids will be contained and there will be no discharge of fluids outside secondary containment structures. Accidental discharge of fluids within secondary containment structures will be cleaned and disposed of immediately.
 - ii. Waste will be stored in tanks, transported by tanker trucks and/or pipelines, and disposed of at licensed disposal or recycling sites.
 - iii. Disposal of wastewater within the town limits is prohibited.
 - iv. Land treatment of oil-impacted or contaminated drill cuttings within the town limits is prohibited.
- m. *Chemicals and hydraulic fracturing fluids disposal and reporting plan:* A plan for disposal and reporting of chemicals and hydraulic fracturing fluids, that includes:
 - i. ~~Material safety~~[Safety](#) data sheets (~~MSDS~~[SDS](#)) for the chemicals used in the ~~proposed oil and gas~~ operation.
 - ii. Chemical abstract service ([CAS](#)) registry numbers for every chemical used in the ~~proposed oil and gas~~ operation, if available, other than those protected as trade secrets.
 - iii. Provision for reporting to the town the chemicals, other than those protected as a trade secret, that will be stored and used during any hydraulic fracturing event, along with the maximum quantity that will be present on-site at any one time.
- n. *Emergency response plan:* A plan prepared in consultation with the public works department, planning and development department, fire department, and police department that addresses events such as explosions, fires, gas or water pipeline leaks or ruptures, leaks from well casings and pits, tank leaks or ruptures, hydrogen sulfide or other toxic gas emissions, transportation of hazardous material, and vehicle accidents or spills. The plan shall be updated on an annual basis, after an incident occurs, or when changes are made to facility operations, personnel, or other content covered in the plans. The plan shall include:
 - i. Proof of adequate personnel, supplies, and funding to immediately implement the emergency response plan at all times during construction and operations.

- ii. Adequate provisions to ensure operator will cover all costs associated with ongoing training of employees and first responders, response and remediation, including any additional onsite and regional specialized equipment and supplies necessary to respond to any emergency incident at its facilities.
 - iii. Operator shall immediately notify the town, surrounding communities, and any nearby schools, hospitals, and long-term care facilities of an emergency event
 - iv. Operator shall maintain onsite storage of aqueous film forming foam (which shall not contain PFAS), absorption boom, and granulated materials for ready deployment in case of leaks or other emergencies. Operator shall notify first responders of the location of such materials.
 - v. Coordination with the *[Fire Department]* regarding evacuation routes. Evacuation routes will include any schools, hospitals, and long-term care facilities that are within proximity to the oil and gas facility, based on guidance from the *[Fire Department]*.
 - vi. If no fire hydrant connected to the town's water system or alternative approved of by the town exists within 1,000 feet from the oil and gas operation, operator shall install fire hydrant at its own cost, or reimburse the town for the cost of installing a fire hydrant.
- o. *Noise:*
- i. *Ambient noise baseline survey:* An ambient noise survey for each well site at baseline and during drilling, hydraulic fracturing, flowback, and operations prepared by a qualified consultant approved by the town.
 - ii. *Noise mitigation and monitoring plan:* A plan detailing how each phase of the operation will comply with the maximum permissible noise levels and mitigation requirements in section 10-12-4. The plan shall:
 - (A) Identify oil and gas operation sources of noise by phase;
 - (B) Document the ambient noise level prior to construction of any wellhead, compressor or compression facility; and
 - (C) Detail how noise impacts will be mitigated and monitored. In determining noise mitigation and monitoring, specific site characteristics shall be considered, including, but not limited to:
 - (1) Nature and proximity of adjacent development;
 - (2) Seasonal and prevailing weather patterns, including wind directions;
 - (3) Vegetative cover on and adjacent to the site; and

(4) Topography.

- p. *Lighting study*: A plan that demonstrates compliance with the oil and gas operation standards in section 10-12-4.
- q. *Operations plan*: A plan including the method and anticipated schedule for drilling, completion, transporting, production and post-operation, and a description of future oil and gas operations.
- r. *Vegetation and weed management plan*: A written description of the species, character and density of existing vegetation on the site, a summary of the potential impacts to vegetation as a result of the ~~proposed oil and gas~~ operation, and proposed mitigation to address these impacts. The plan shall include any ~~COGCC~~ECMC required interim and final reclamation procedures.
- s. *Reclamation plan*: A plan for interim reclamation and revegetation of the site and final reclamation of the site in compliance with the oil and gas operation standards in section 10-12-4. The plan shall include the locations of any proposed reference areas to be used as guides for interim and final reclamation.
- t. *Grading, drainage, and erosion control plan*: A plan that identifies existing (dashed lines) and proposed (solid lines) contours, at two-foot intervals, and the methods for controlling and minimizing erosion during construction and operational phases of the ~~proposed oil and gas~~ operation.
- u. *Traffic ~~management and access~~ Analysis*:
 - i. *Traffic impact ~~study~~ assessment (TIA)*: A study prepared by a certified professional traffic operations engineer that includes at a minimum: (PTOE) and completed consistent with the Town of Erie Engineering Standards and Specifications, as may be amended.
 - (A) *Existing conditions*: Description of the baseline condition of road segments to be affected by the oil and gas operation, including the existing physical condition, trips generated by vehicle type on ~~the~~ average and at peak times, and the existing level of service.
 - (B) *Proposed conditions*: For each phase of the operation, a description of average and peak time site trip generation and load impact for each affected road segment by vehicle type.
 - (C) *Future conditions*: Description by vehicle type of the total future traffic projected for the roads that will be affected by the oil and gas operation.

- (D) *Evaluation*: Assessment of impacts to the level of service and physical condition of each affected road segment for each phase of the operation.
 - (E) *Mitigation*: For each phase of the operation, proposed mitigation including road improvements and repairs, funding, traffic signals, and other measures to ensure that the physical condition and the level of service for each affected road segment [isare](#) not degraded during any phase of the operation.
- ii. *Traffic management plan*: A plan describing traffic delays, road closures, frequent turns and stopping, and similar impacts to traffic movement and safety; and measures to mitigate adverse impacts for each phase of the operation.
- iii. *Access road plan*: A plan sufficient to demonstrate compliance with the oil and gas operation standards for access roads in section 10-12-4.
- v. *Flowline management plan*: A plan that includes:
 - i. Description of how the operator intends to adhere to the integrity management procedures listed in [COGCC/ECMC](#) Rule 1104.c—f.
 - ii. A copy of the leak protection and monitoring plan required by [COGCC/ECMC](#) Rule 1104.g, as applicable.
 - iii. A map at a scale of "one inch equals 250 feet" (1" = 250') or such scale as required by [COGCC/ECMC](#) showing the location of all existing and proposed flowlines associated with the oil and gas operation. For each existing and proposed flowline, the map shall denote its size and the maximum pressure at which it is or will be operated; its depth from the surface; and, if existing, whether it was constructed or installed before October 31, 2017, and whether it is in use, abandoned, or shut-in.
 - iv. Description of the measures planned to minimize land disturbance and impacts to vegetation.
- w. *Wildlife and wildlife habitat assessment*: An assessment of existing wildlife and wildlife habitat, including:
 - i. Analysis of existing wildlife and wildlife habitat;
 - ii. Map indicating the location of habitat in relationship to the oil and gas operation; and
 - iii. Description of the impacts and net effect of the operation on wildlife and wildlife habitat, and proposed mitigation.
- x. *Cultural, historical, and archeological survey*: A survey that includes:

- i. Assessment of cultural, historical, and archaeological resources in and around the site of the ~~proposed oil and gas~~ operation, and proposed mitigation measures.
 - ii. Approval from the State Historic Preservation Office regarding any historical or cultural resources potentially affected by the oil and gas operation. Operator shall provide a copy of such approval to the ~~director~~ES Director, in consultation with the surface owner and subject to any confidentiality requirements.
 - y. *Public services and facilities impact assessment:* A description of existing levels, demand for, adequacy of, and the operational costs of public services affected by the ~~proposed oil and gas~~ operation; a description of the increase in demand on those services and a plan for mitigating the impacts to public services and facilities.
 - z. *Additional information:* Additional information that the ES Director deems necessary to evaluate whether the application complies with the oil and gas operation standards in section 10.2.4.
- F. *Determination of completeness:* The determination of completeness is a determination by the ~~director~~ES Director that all of the required materials have been submitted and that the documents are responsive to the ~~permit~~Permit application requirements in section 10-12-2 E.
 - 1. *Application is not complete:* If the ~~director~~ES Director determines that the application is not complete, the ~~director~~ES Director shall inform the applicant in writing of the deficiencies and shall take no further action on the application until the deficiencies are remedied. If the applicant fails to correct the deficiencies within 30 calendar days after the notice that the application is incomplete, the application shall be considered withdrawn unless the applicant requests more time to ensure that the materials are as complete as possible.
 - 2. *Application is complete:* If the ~~director~~ES Director determines that the application is complete, the ~~director~~ES Director shall date the application and notify the applicant in writing. The completed application shall be posted on the town's oil and gas website.
 - 3. *Completeness is not a determination of compliance:* A determination that an application is complete shall not constitute a determination that it complies with the oil and gas operation standards in section 10.2.4.
- G. *Permit review and decision:*
 - 1. *Referral of application:*
 - a. *Technical and legal consultants and state, local, and federal agencies:* The ~~director~~ES Director may send a copy of the complete application to technical and legal consultants retained by the town, and any local, state,

or federal agency that may have expertise or an interest in impacts that may be associated with the ~~proposed oil and gas~~ operation.

- b. *Colorado geological survey:* The ~~director~~ES Director shall send a copy of the complete application to the Colorado Geological Survey for recommendations if the oil and gas operation is proposed to be located in a designated geologic hazard area.
 - c. *Comment period:* The comment period for referral agency review shall be 30 calendar days from the date of determination of completeness.
 - d. *Cost of consultant and referral agency reviews:* The applicant shall be responsible for the costs of all consultant and referral agency reviews.
2. *Neighborhood meeting:* Neighborhood meeting(s) shall be held in accordance with the approved community outreach plan.
 3. *Public hearing and recommendation by planning commission:*
 - a. *Public notice:*
 - i. *Published notice:* Not less than 15 calendar days prior to the date of the public hearing, the ~~director~~ES Director shall publish a notice of public hearing on the ~~permit~~Permit application. The notice shall be published once in a newspaper having general circulation in the area. The notice shall include the information in subsection 3.a.iv, below. The applicant shall be responsible for the cost of publication.
 - ii. *Written notice of planning commission hearing to property owners and occupants:* Not less than 15 calendar days prior to the date of the public hearing, the ~~director~~ES Director shall mail written notice of the public hearing to the owners and occupants of property described in subsection 3.a.v, below. The applicant shall provide a stamped and addressed envelope for each party to be notified.
 - iii. *Posted notice:* Fifteen days prior to the public hearing, the applicant shall post a sign, provided by the town, at the site of the ~~proposed oil and gas~~ operation giving notice to the general public of the planning commission hearing. The applicant is responsible for filling out the sign, posting the sign, checking on the sign to make sure it remains in place, and to remove the sign within two days after the final decision on the ~~permit~~Permit application. For parcels of land exceeding ten acres in size, two signs shall be posted. Such signs shall be posted on the subject property in a manner and at a location or locations reasonably calculated by the town to afford the best notice to the public. Prior to the hearing, the applicant shall submit to the ~~director~~ES Director a notarized affidavit on a form provided by the town, stating that the posting requirements for the hearing notice have been met.

- iv. *Notice:* The notice of public hearing shall include:
 - (A) Date, time, and place of the hearing;
 - (B) Description of the property involved in the application by street address or by legal description and nearest cross street;
 - (C) Description of the purpose of the hearing and that interested parties can come to the meeting and speak on the matter;
 - (D) Information on how to obtain additional information on the ~~proposed oil and gas~~ operation and to comment on the proposed operation; and
 - (E) Contact information for the operator, including phone number and office hours.
 - v. *Extent of notice:* The list of property owners to be notified shall include the following persons and shall be compiled by the applicant using the most current record of property owners on file with the county assessor.
 - (A) Owners of record and occupants of property within one mile of the site of the ~~proposed oil and gas~~ operation and any homeowners associations representing owners in the area.
 - (B) The LGD of municipalities and counties within one mile of the site of the ~~proposed oil and gas~~ operation.
 - (C) The ~~ECMC ES Director of the Colorado Oil and Gas Conservation Commission.~~
 - (D) Additional persons or geographic areas that the ~~ES~~ Director may designate.
 - vi. *Validity of notice:* The applicant is responsible for the accuracy of the list of property owners and occupants to whom written notice is provided. If the applicant makes reasonable good faith efforts to accomplish the notice responsibilities identified above, then the failure of any property owner or occupant to receive notice shall not affect the validity of the decision.
- b. ~~Application review and staff~~Staff ~~report to planning commission:~~
- i. ~~The ES~~ Director ~~review and staff report: The director~~ shall prepare a report in consultation with ~~the LGD and other~~ appropriate staff members and consultants, taking into account the application, written comments from the public, issues raised by referral agencies and consultants, terms and conditions imposed by state agencies, probability of compliance with the oil and gas operation standards, and any other available information on the record.

- ~~ii.~~ *ii. Distribution of staff report:* ~~No less than seven calendar days prior to the date of the public hearing, the director~~The ES Director shall submit the staff report to the applicant and to the planning commission. A copy of the staff report shall also be available for public review prior to the hearing.
 - c. *Planning commission hearing and recommendations:* The planning commission shall consider the ~~oil and gas permit~~Permit application at a public hearing following proper public notice. The role of the planning commission is to formulate a recommendation for the town council.
 - i. *Recommend approval of ~~permit~~Permit application:* If the ~~proposed oil and gas~~ operation satisfies all the oil and gas operation standards, the planning commission may recommend that the ~~permit~~Permit application be approved.
 - ii. *Recommend denial or conditional approval of permit application:* If the ~~proposed oil and gas~~ operation fails to satisfy one or more oil and gas operation standards, the planning commission shall recommend that the ~~permit~~Permit application be denied; or the planning commission may recommend approval with conditions determined necessary for compliance with the oil and gas operation standards.
- 4. *Public hearing and decision by town council:*
 - a. *Public notice:*
 - i. *Published notice:* Not less than 15 calendar days prior to the date of the public hearing, the ~~director~~ES Director shall publish a notice of public hearing on the ~~permit~~Permit application. The notice shall be published once in a newspaper having general circulation in the area. The notice shall include the information in subsection 4.a.iv, below. The applicant shall be responsible for the cost of publication.
 - ii. *Written notice of town council's hearing to property owners and occupants:* Not less than 15 calendar days prior to the date of the public hearing, the ~~director~~ES Director shall mail written notice of the public hearing to the owners and occupants of property described in subsection 4.a.v., below. The applicant shall provide a stamped and addressed envelope for each party to be notified.
 - iii. *Posted notice:* Fifteen days prior to the public hearing, the applicant shall post a sign at the site of the ~~proposed oil and gas~~ operation giving notice to the general public of the town council hearing. The town will provide the signs for posting. The applicant is responsible for filling out the signs, posting the signs, checking on the signs to make sure they remain in place, and to remove the signs within two days after the final decision on the Permit application. For parcels of land exceeding ten acres in size, two signs shall be posted. Such

signs shall be posted on the subject property in a manner and at a location or locations reasonably calculated by the town to afford the best notice to the public. Prior to the hearing, the applicant shall submit to the ~~director~~[ES Director](#) a notarized affidavit on a form provided by the town, stating that the posting requirements for the hearing notice have been met.

- iv. *Notice of hearing:* The notice of public hearing shall include:
 - (A) Date, time, and place of the hearing;
 - (B) Description of the property involved in the application by street address or by legal description and nearest cross street;
 - (C) Description of the purpose of the hearing and that interested parties can come to the meeting and speak on the matter;
 - (D) Information on how to obtain additional information on the ~~proposed oil and gas~~ operation and to comment on the proposed operation; and
 - (E) Contact information for the operator, including phone number and office hours.
 - v. *Extent of notice:* The list of property owners to be notified shall include the following persons and shall be compiled by the applicant using the most current record of property owners on file with the county assessor.
 - (A) Owners of record and occupants of property within one mile of the site of the ~~proposed oil and gas~~ operation and any homeowners' associations representing owners in the area.
 - (B) The LGD of municipalities and counties within one mile of the site of the ~~proposed oil and gas~~ operation.
 - (C) The ~~ECMC Director of the Colorado Oil and Gas Conservation Commission.~~
 - (D) Additional persons or geographic areas that the ~~director~~[ES Director](#) may designate.
 - vi. *Validity of notice:* The applicant is responsible for the accuracy of the list of property owners and occupants to whom written notice is provided. If the applicant makes reasonable good faith efforts to accomplish the notice responsibilities identified above, then the failure of any property owner or occupant to receive notice shall not affect the validity of the decision.
- b. *Application review and staff report:*

- i. *ES Director review and staff report:* The ~~director~~ES Director, in consultation with ~~the LGD and other relevant~~ staff members and consultants, shall prepare a report taking into account the application, planning commission recommendation, review comments, issues raised by referral agencies and consultants, terms and conditions imposed by state agencies, probability of compliance with the oil and gas operation standards, and any other available information on the record.
 - ii. *Distribution of staff report:* ~~No less than seven calendar days prior to the date of the public hearing, the director~~The ES Director shall submit the staff report to the applicant and to the town council. A copy of the staff report shall also be available for public review prior to the hearing.
- c. *Permit decision by town council:* The town council shall approve, approve with conditions, or deny the ~~permit~~Permit application based on all the evidence on the record.
 - i. *Approval of ~~permit~~Permit application:* If the ~~proposed oil and gas~~ operation satisfies all the oil and gas operation standards, the town council may approve the ~~permit~~Permit.
 - ii. *Denial or conditional approval of permit application:* If the ~~proposed oil and gas~~ operation fails to satisfy one or more oil and gas operation standards, the town council shall deny the ~~permit~~Permit; or the town council may approve the ~~permit~~Permit with conditions determined to be necessary for compliance with the oil and gas operation standards.
- d. *Documentation of council members' decision:* The town council's decision shall be documented in writing and contain the following:
 - i. *Description of project:* Brief discussion of the ~~proposed oil and gas~~ operation;
 - ii. *Issues:* Description of issues raised by the planning commission, affected property owners, referral agencies, and consultants;
 - iii. *Conditions imposed by the state:* Description of terms, conditions, and requirements imposed on ~~proposed oil and gas the~~ operation by state agencies;
 - iv. *Impacts and mitigation:* Description of impacts of the ~~proposed oil and gas~~ operation, proposed mitigation, and whether each approval standard has been satisfied; and
 - v. *Conditions of approval:* Conditions of approval, if any, necessary to ensure compliance with approval standards.

- vi. *Basis for denial:* If the trustees determine that the ~~permit~~[Permit](#) application must be denied, a statement explaining the standards that the application failed to satisfy.

10-12-3 Activity notice for minor modification to an existing oil and gas operation.

A. *Activity notice required for minor modification:* An activity notice is required prior to making any minor modification to an existing oil and gas operation.

AB. *Activity notice materials:*

1. The name, address, and telephone number of the operator.
2. Narrative description of the existing operation and the proposed modification, and site plan with sufficient detail to show the extent of the modification proposed.

~~3. Name and address of:~~

~~a. Homeowner associations, neighborhood associations and school districts within one mile of the boundaries of the area of the operation.~~

~~b. Owners of record and occupants of property within one mile of the boundaries of the area of the operation.~~

~~e3.~~ The LGD of municipalities and counties within one mile of the boundaries of the area of the operation.

BC. *Activity notice review and decision by ~~LGDES~~ Director:* Within five working days after the activity notice is deemed complete by the ~~LGDES~~ Director, the ~~LGDES~~ Director shall determine whether the activity notice shows that the proposed activity can be conducted in accordance with the requirements of these regulations.

1. If the activity notice shows that the proposed modification of an existing oil and gas operation does not constitute a substantial modification as defined in section 10-12-1 H, the ~~LGDES~~ Director shall provide the operator with a written order approving or approving with conditions the minor modification. Conditions may be imposed as necessary to protect public health, safety, welfare, and the environment.
2. If the activity notice shows that the proposed modification of an existing oil and gas operation does not qualify as a minor modification, the ~~LGDES~~ Director shall prohibit the proposed modification and require the operator to submit ~~ana~~
~~n~~ application for a ~~permit~~[Permit](#) under these regulations.

CD. *Public notice:*

1. *Written notice:* Not less than 15 days ahead of the date the activity will begin, the operator shall deliver ~~the approved activity notice and order to the property owners and occupants, and other parties required in subsection C.2 below~~ all materials outlined in Section 10-12-3 A to the ES Director. As soon as it is feasible, but not less than 24 hours before the activity begins, the ES Director shall issue a written notification to persons registered with the ES Director.
2. ~~*Parties to receive notice:*~~ The list of parties to be notified shall include the following and shall be compiled by the operator using the most current records on file with the county assessor:
 - a. ~~Homeowners' associations, neighborhood associations, and school districts within one mile of the boundaries of the area of the operation or activity.~~
 - b. ~~Owners of record and occupants of property within one mile of the boundaries of the area of the operation or activity.~~
 - c. ~~The LGD of municipalities and counties within one mile of the boundaries of the area of the operation or activity.~~
 - d. ~~Additional persons or geographic areas that the LGD may designate.~~
32. *Validity of notice:* The operator is responsible for the accuracy of ~~the list of property owners and occupants and other parties to whom written notice is~~ all materials provided ~~to the ES Director.~~ If the ~~operator~~ ES Director makes reasonable, good faith efforts to accomplish the notice responsibilities identified above, then the failure of any property owner or occupant to receive notice shall not affect the validity of the public notice.

10-12-4 ~~Oil~~ Standards for new oil and gas operations ~~standards and~~ substantial modifications.

The following standards ~~are the minimum standards that will~~ apply to all ~~proposed review of a permit application for new~~ oil and gas operations, ~~and shall be and~~ substantive modifications. ~~The burden of proof is on the applicant to demonstrate that the oil and gas operation complies with these standards.~~ These standards are in addition to any state or federal standards that may apply. In the event of a conflict between these standards and another applicable standard, the more stringent standard shall apply.

- A. *Expertise and financial capability:* The applicant has the necessary expertise and financial capability to ~~complete and operate the proposed oil and gas~~ conduct the operation in compliance with the requirements and conditions of these regulations.
- B. *Property rights and easements:* The applicant will obtain all property rights and easements necessary for the oil and gas operation prior to site disturbance.

C. *Location standards:*

1. The [Operationoperation](#) is located within a zone district that allows heavy industrial uses.
2. The operation is located at the site from which the minerals can be accessed with the least adverse impact to public health, safety, welfare, and the environment in compliance with all applicable standards in this section 10-12-4.
3. Any type of well pad and above-ground production facility shall be located at least 2,000 feet from the boundary line of platted residential lots or parks, sports fields and playgrounds, or other outside activity areas and any occupied structure. Measurement shall be taken from the edge of the disturbed area to the boundary line. The town may decide that a different setback is more appropriate based on the *Alternative Site Analysis*.
4. The operation shall be at least 500 feet from any surface water body.
5. The operation shall be at least 500 feet from any domestic or commercial water wells or irrigation wells.
6. The operation is not located within a floodway district as defined in section 10-2-7 C.4 of the UDC.

D. *Minimal site disturbance:* The oil and gas operation shall be located and constructed in a manner that does not cause site disturbance unnecessary for the areal extent of the operation and that minimizes the amount of cut and fill:

1. Multi-well drill pads and consolidated facilities shall be used to minimize surface disturbance.
2. Pad dimensions shall be the minimum size necessary to accommodate operational needs while minimizing surface disturbance.
3. Structures and surface equipment shall be the minimum size necessary to satisfy present and future operational needs.
4. The operation shall be located in a manner to minimize impacts on surrounding uses, and achieve compatibility with the natural topography and existing vegetation.

[EE. *Cumulative impacts.* The oil and gas operation shall not have a significant cumulative adverse impact on town public health, safety, welfare, the environment, and wildlife, when considered collectively with other land uses and sources of emissions.](#)

[F. *Geologic and natural hazards:*](#)

- 1. The oil and gas operation shall not be subject to risk from natural or geologic hazards.

2. The oil and gas operation shall not initiate or intensify natural or geologic hazards.
3. For oil and gas operations located in an area where geologic and natural hazards occur, the oil and gas operation shall be conducted in compliance with the recommendations of the Colorado Geological Survey.

FG. *Air quality:* Oil and gas operations shall not significantly degrade air quality and shall prevent adverse impacts to public health, safety and welfare, and the environment. ~~Evidence of compliance with this standard includes the following measures:~~

1. *Minimization of emissions:* ~~To minimize emissions:~~
 - a. Use of closed loop, pitless drilling, completions, and production systems without permanent on-site storage tanks for containment and/or recycling of all drilling, completion, flowback, and produced fluids.
 - b. Use Tier 4 fracturing pumps and Liberty Quiet Fleet or comparable technology and Tier 4 diesel engines.
 - c. Utilize pipelines for all transportation of gas and fluids from production facilities whenever available.
 - i. Any pipeline infrastructure for fresh water shall be constructed and placed into service prior to spudding for delivery of all fresh water to be used during the drilling, completion, production, and operations phases.
 - ii. Any pipeline infrastructure for produced water, natural gas, crude oil, and condensate will be constructed and placed into service prior to the start of any fluid flow from any wellbore.
 - d. Demonstrate hydrocarbon destruction or control efficiency by using an enclosed combustion device that complies with a design destruction efficiency of 98 percent or better.
 - e. Reduce emissions of the natural gas byproduct associated with oil and gas well production. Emission reduction includes prohibiting uncontrolled venting in compliance with AQCC Regulation 7 Section XII.C.1.
 - f. Implement best management practices during liquids unloading (~~i.e., maintenance activities to remove liquids from existing wells that are inhibiting production~~), and well swabbing, including use of a combustion device capable of achieving at least 95 percent emissions reduction ~~when utilizing combustion and the installation of artificial lift or and unloading through the separator where feasible.~~
 - g. Implement "tankless" production techniques.

- h. Obtain electrification from the power grid or from renewable sources for all permanent equipment that can be electrified. All equipment that is not electrically operated shall use quiet design mufflers (also referred to as hospital grade or dual dissipative) or equivalent; or acoustically insulated housing or covers to enclose the motor or engine.
- i. Install, calibrate, operate, and maintain any flare, auto ignition system, recorder, vapor recovery device, or other equipment used to meet the hydrocarbon destruction or control efficiency requirement in accordance with the manufacturer's recommendations, instructions, and operating manuals.
- j. Use of telemetric control and monitoring systems, including surveillance monitors to detect when pilot lights on control devices are extinguished.
- k. Use of zero-emission gas processing dehydrators.
- l. Reduce or eliminate emissions from oil and gas maintenance activities such as pigging or blowdowns.
 - i. If any maintenance activity will involve the intentional venting of gas from a well tank, compressor, or flowline, beyond routine pipeline maintenance activity and pigging, the operator shall provide 48-hour advance written notice to the [LGDES Director](#) of such proposed venting. Such notice shall identify the duration and nature of the venting event, a description as to why venting is necessary, a description of what vapors will likely be vented, what steps will be taken to limit the duration of venting, and what steps the operator proposes to undertake to minimize similar events in the future.
 - ii. If emergency venting is required, or if accidental venting occurs, operator shall provide notice to [LGDES Director](#) of such event as soon as possible, but in no event longer than 24 hours from the time of the event, with the information listed above and with an explanation as to the cause and how the event will be avoided in the future.
- m. Participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at the well pad site.
- n. Centralize compression facilities within a well site.
- o. Vent exhaust from all stationary engines, motors, chillers, and other mechanized equipment up or in a direction away from the closest occupied structures to such equipment.

- p. Use of a pressure-suitable separator and/or vapor recovery unit (VRU) when appropriate.
- q. Construct flowline infrastructure prior to beginning production.
- r. Use of dry seals on centrifugal compressors.
- s. Route emissions from rod-packing and other components on reciprocating compressors to vapor collection systems.
- ~~t. Control hydrocarbon emissions of 98 percent or better for centrifugal compressors and reciprocating compressors.~~
- ~~u.t.~~ Use of emission reduction measures to respond to air quality action day advisories posted by the Colorado Department of Public Health and Environment for the Front Range Area. Emission reduction measures will be implemented to the maximum extent practicable for the duration of an air quality action day advisory and will include:
 - i. Minimize vehicle and engine idling;
 - ii. Reduce truck traffic and worker traffic;
 - iii. Delay vehicle refueling;
 - iv. Suspend or delay use of fossil fuel powered ancillary equipment; and
 - v. Postpone construction activities
 - vi. Within 30 days following the conclusion of each annual air quality action day season, operator shall submit a report to the [LGDES Director](#) that details which measures it implemented during any action day advisories.
- ~~v.u.~~ Establish shutdown protocols, approved by the town, with notification and inspection provisions to ensure safe ~~shut-down~~[shutdown](#) and timely notification to affected neighborhoods.
- ~~w.y.~~ Conduct ongoing maintenance checks of all equipment to minimize the potential for gaseous or liquid leaks.
- ~~x.w.~~ Minimize truck traffic to and from the site.
- ~~y.x.~~ Hydrocarbon control of 98 percent or better for crude oil, condensate, and produced water tanks with uncontrolled actual emissions of VOCs greater than two TPY VOCs.
- ~~z.y.~~ Consolidate product treatment and storage facilities within a well pad site.
- ~~a.a.z.~~ Use of EPA reduced emission completions for wells. Daily logs documenting reduced emission completions provided to the [LGDES Director](#) upon request.

~~bb~~aa. Use of no-bleed ~~continuous and intermittent~~ pneumatic devices.
This requirement can be met by replacing natural gas with electricity or instrument air, or routing the discharge emissions to a closed loop-system or process.

~~ee~~bb. Conduct root cause analysis for any grade 1 gas leaks.

~~dd~~cc. Use of automated tank gauging.

~~ee~~dd. For operators with existing oil and gas operations in the Town of Erie, demonstrate that the operation will not result in any increase of volatile organic compounds (VOCs) from operator's existing and planned operations in the town. Operator may include anticipated reductions from plugging and abandoning existing wells located in town when modeling total VOCs from existing and future operations and related activities.

~~ff~~ee. Comply with all OSHA work practice requirements with respect to benzene.

~~gg~~ff. Construct flowline infrastructure prior to beginning production.

~~hh~~gg. Use of other best management practices to control emissions as they become available.

2. ~~Flares~~Venting and ~~combustion devices~~: ~~Flaring shall be eliminated~~:

a. Venting and flaring are prohibited other than during emergencies, for safety reasons, or upset conditions. ~~if otherwise approved in writing by the ES Director.~~

i. Non-emergency venting or flaring, such as for safety reasons, must be approved in writing by the ES Director as soon as practicable or at least 2 hours prior.

ii. The operator shall report all flaring to the LGD and residents within 2,500 feet of the venting or flaring operation at the earliest possible time before emergency venting or flaring occurs. to the ES Director concurrently with reporting to the ECMC.

b. If flaring is required, all flares, thermal oxidizers, or combustion devices shall be designed and operated as follows:

ai. Flaring shall be done with a flare that has a manufacturer specification of 98 percent destruction removal efficiency or better.

bii. Flare and/or combustor shall be fired with natural gas.

~~ei~~iii. Flare and/or combustor shall be designed and operated in a manner that will ensure no visible emissions during normal operation.

~~ii~~iv. No visible emissions of smoke for any period or periods of duration greater than or equal to one minute in any 15-minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

~~vii. Visible emissions do not include radiant energy or water vapor.~~

d. Flare and/or combustor shall be operated with a flame present at all times when emissions may be vented to it.

~~vi~~j. All combustion devices shall be equipped with an operating auto-igniter.

~~f~~vii. If using a pilot flame ignition system, the presence of a pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame. A pilot flame shall be maintained at all times in the flare's pilot light burner. A telemetry system shall be in place to monitor pilot flame and shall activate a visible and audible alarm in the case that the pilot goes out.

~~g~~viii. If using an electric arc ignition system, the arcing of the electric arc ignition system shall pulse continually, and a device shall be installed and used to continuously monitor the electric arc ignition system.

~~h~~ix. Flare, auto ignition system, recorder, vapor recovery device, or other equipment used to meet the hydrocarbon destruction or control efficiency requirement shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

3. *Leak detection and repair (LDAR):*

a. Operations shall be conducted in conformance with the leak detection and repair plan.

b. If the town determines that the leak presents an immediate hazard to persons or property, the operator may not operate the affected component, equipment, or flowline segment until the operator has corrected the problem and the town agrees that the affected component, equipment, or flowline segment no longer poses a hazard to persons or property. In the event of leaks that the town believes

do not pose an immediate hazard to persons or property, if more than 48 hours repair time is needed after a leak is discovered, operator shall contact the [LGDES Director](#) and provide an explanation of why more time is required. Continuous monitoring to detect leaks or measure hydrocarbon emissions and monitor meteorological data shall be required. Any continuous monitoring system shall be able to alert the operator of increases in air contaminant concentrations. Operator shall provide detailed recordkeeping of the inspections for leaking components.

4. *Well completion:* For each well completion operation with hydraulic fracturing, the operator shall control emissions by the following procedures.
 - a. For the duration of flowback, route the recovered liquids into one or more storage vessels or re-inject the recovered liquids into the well or another well, and route the recovered gas into a gas flowline or collection system, re-inject the recovered gas into the well or another well, use the recovered gas as an onsite fuel source, or use the recovered gas for another useful purpose that a purchased fuel or raw material would serve, with no direct release to the atmosphere.
 - ~~b. If the operator demonstrates to the satisfaction of the town that the operator cannot comply with paragraph 4.a above, the operator must capture and direct flowback emissions to a completion combustion device equipped with a reliable continuous ignition source over the duration of flowback, except in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact waterways or nearby structures. Non-flammable gas may be vented temporarily until flammable gas is encountered where capture or combustion is not feasible.~~
5. *Compliance:*
 - a. Operator will submit annual reports to the [LGDES Director](#) certifying:
 - i. Compliance with these air quality requirements and documenting any periods of material non-compliance, including the date and duration of each such deviation, and a compliance plan and schedule to achieve compliance, and
 - ii. Equipment at the well sites continues to operate within its design parameters, and if not, what steps will be taken to modify the equipment to enable the equipment to operate within its design parameters.
 - b. The annual report shall contain a certification as to the truth, accuracy, and completeness of the reports, signed by a responsible

corporate official. The operator will also provide the [LGDES Director](#) with a copy of any self-reporting submissions that operator provides to the CDPHE due to any incidence of non-compliance with any CDPHE air quality rules or regulations.

GH. *Odor management:*

- 1. Operations shall be conducted in conformance with the odor management plan.
2. Use of D-822 is prohibited unless its use is required by [COGCC/ECMC](#). In comments on the Form 2A the [LGDES Director](#) shall request that the [COGCC/ECMC](#) only approve mud types that are water-~~base-based~~ and low-odor type fluids.
3. The operator shall notify the [LGDES Director](#) no later than 24 hours after receiving an odor complaint.
4. Operator shall conduct drive-by inspections through neighborhoods at various times to hear, smell, and see what is going on during each phase of operations.
5. No emission of odorous gases or other odorous matter shall be permitted in such quantities as to be readily detectable when diluted in the ratio of one volume of odorous air to four volumes of clean air.
6. Any process which may involve the creation or emission of any odors shall be provided with a secondary safeguard system so that control will be maintained if the primary safeguard system should fail.
7. Filtration systems or additives to minimize odors from drilling and fracturing fluids may be used, except that operators shall not mask odors by using masking fragrances.
8. Drill cuttings shall be covered to prevent odor while being transported by truck.

HI. *Dust suppression:* Operations shall be conducted in conformance with the dust suppression plan.

IJ. *Water quality:* The oil and gas operation shall not cause significant degradation of water quality of affected water bodies and water wells. The operator shall implement the required water quality monitoring and mitigation plan to achieve the standard.

1. *Determination of significant degradation of water quality:* Determination of whether the operation will cause significant degradation to water quality may include, but is not limited to, the following considerations:
 - a. Applicable narrative and numeric water quality standards.
 - b. Changes in point and nonpoint source pollution loads.

- c. Increase in erosion and sediment loads.
 - d. Changes in stream channel or shoreline stability.
 - e. Changes in stormwater runoff flows.
 - f. Changes in quality of ~~ground-water~~groundwater.
 - g. Certification. The operator shall submit annual reports to the [LGDES Director](#) certifying compliance with water quality standards, documenting any non-compliance, including its date and duration. A compliance plan is required for all instances of non-compliance.
2. *Water wells:* The oil and gas operation shall not cause water quality or water pressure of any public or private water wells to go below pre-project levels. The operator shall submit monthly reports to the [LGDES Director](#) certifying that the operation has not caused water quality or pressure of public and private wells to go below pre-project levels, or documenting non-compliance, including the date and duration. A compliance plan is required for all instances of non-compliance.
3. *Water source sampling and testing:* Using records of the Colorado Division of Water Resources, Operator shall identify and sample all documented water sources located within one-half mile of the projected track of the borehole of a proposed well and within one-half mile of the radius of the proposed well pad site. All sampling must be conducted by third-party consultant approved of by the town. The operator shall provide all water source test results to the [LGDES Director](#) and maintain records of such results. Requirements for sampling include:
- a. Collection of initial baseline samples and subsequent monitoring samples from all available water sources within one-half mile of the well pad site.
 - b. Initial collection and testing of baseline samples from available water sources shall occur within 12 months prior to the commencement of drilling a well, or within 12 months prior to the re-stimulation of an existing well for which no samples were collected and tested during the previous 12 months.
 - c. Collection and testing of post-stimulation samples from available water sources within the following time frames:
 - i. One sample within six months after completion;
 - ii. One sample between 12 and 18 months after completion; and
 - iii. One sample between 60 and 72 months after completion.
 - d. For multi-well pads, monthly collection and testing during active drilling and completion.

- e. Collection of samples from at least one up-gradient and two down-gradient water sources within a one-half mile radius of the well pad site. If no such water sources are available, operator shall collect samples from additional water sources within a radius of up to one mile from the well pad site until samples from a total of at least one up-gradient and two downgradient water sources are collected. Operator shall give priority to the selection of water sources closest to the well pad site.
- f. Operator may rely on existing groundwater sampling data collected from any water source within the radii described above, provided the data was collected within the 12 months preceding the commencement of drilling the well, the data includes measurement of all of the constituents measured in Table 1, and there has been no significant oil and gas activity within a one-mile radius in the time period between the original sampling and the commencement of drilling the well.
- g. Operator shall make reasonable efforts to obtain the consent of the owner of the water source. If the operator is unable to locate and obtain permission from the surface owner of the water source, the operator shall advise the [LGDES Director](#) that the applicant could not obtain access to the water source from the surface owner.
- h. Testing for the analytes listed in Table 1, and subsequent testing as necessary or appropriate.
- i. Use of standard industry procedures in collecting samples, consistent with the [COGCC/ECMC](#) model sampling and analysis plan.
- j. Reporting the location of the water source using a GPS with sub-meter resolution.
- k. Reporting damaged or unsanitary well conditions, adjacent potential pollution sources, odor, water color, sediment, bubbles, and effervescence discovered through field observations.
- l. Providing copies of all test results described above to the [LGDES Director](#), the [COGCC/ECMC](#), and the water source owners within three months after collecting the samples.
- m. Additional measures to be required if sampling shows water contamination, including:
 - i. If free gas or a dissolved methane concentration level greater than one milligram per liter (mg/l) is detected in a water source, determination of the gas type using gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen).

- ii. If the test results indicate thermogenic or a mixture of thermogenic and biogenic gas, an action plan to determine the source of the gas.
- iii. Immediate notification to the [LGDES Director](#), the [COGCC/ECMC](#), and the owner of the water source if the methane concentration increases by more than five mg/l between sampling periods, or increases to more than ten mg/l.
- iv. Immediate notification to the [LGDES Director](#), the [COGCC/ECMC](#), and the owner of the water source if BTEX and/or TPH are detected as a result of testing. Such detections may result in required subsequent sampling for additional analytes.
- v. Further water source sampling in response to complaints from water source owners.
- vi. Timely production and distribution of test results, well location, and analytical data in electronic deliverable format to the [LGDES Director](#), the [COGCC/ECMC](#), and the water source owners.
- n. All abandoned well assessments and water source testing shall be conducted by the operator or if requested by a surface owner, by a qualified independent professional consultant approved by the town at the operator's expense.

Table 1. Water Quality Analytes	
GENERAL WATER QUALITY	Alkalinity Conductivity & TDS Ph& TSS BOD & COD Specific Gravity pH Dissolved Organic Carbon (or Total Organic Carbon) Bacteria Hydrogen Sulphide Sulfide
MAJOR IONS	Bicarbonate Bromide Calcium Chloride Fluoride Magnesium Potassium Sodium

	Sulfate Nitrate + Nitrite as N (total)
METALS	Arsenic Barium Boron Chromium Copper Iron Lead Manganese Selenium Strontium
DISSOLVED GASES AND VOLATILE ORGANIC COMPOUNDS	Methane Ethane Propane BTEX as Benzene, Toluene, Ethylbenzene, Xylenes Naphthalene 1,2,4-TMB 1,3,5-TMB Total Petroleum Hydrocarbons (TPH)
OTHER	Water Level Stable isotopes of water (Oxygen, Hydrogen, Carbon) Phosphorus

[JK](#). *Groundwater baseline sampling and monitoring, greater Wattenberg area wells:* Operator shall provide the [LGDES Director](#) with copies of the results of tests performed by Operator on Greater Wattenberg Area wells within the town limits under [COGCC/ECMC](#) Rule 318A.f,

[KL](#). *Stormwater:*

- 1. Operation shall be conducted in conformance with the stormwater management plan.
2. ~~Best management practices (BMPs)~~[Stormwater infrastructure](#) shall be maintained in effective operating condition, and ~~any additional BMPs the operator shall implement Best Management Practices as~~ recommended by a stormwater inspector ~~must be implemented by the operator~~ as soon as possible.
3. Results of stormwater inspections required by CDPHE-WQCD shall be provided to the [LGDES Director](#).

4. Final stabilization measures must be implemented [in accordance with town standards and Specifications](#) as soon as construction activities cease.
5. Once the well pad or production facility has reached final stabilization as defined by CDPHE, the well pad or production facility must develop and implement a post-construction stormwater program as defined by [COGCC/ECMC](#) Rule 1002.f.

[LM](#). *Water supply:*

- 1. The water supply is the least detrimental to the environment among the available sources and adequate to meet the needs of the oil and gas operation.
2. The water supply is legally and physically available, dependable, and sustainable. Reuse and recycling will be implemented.
3. The operation shall not use water from the town's municipal water supply unless approved by the town council.
4. The operation shall be conducted in conformance with the water supply plan.

[MN](#). *Spill release response and reporting:* The operator shall demonstrate the ability to control and contain all spills and releases of exploration and production waste, including produced fluids, immediately upon discovery in conformance with the spill release response and reporting plan.

[11](#). [Operators shall conduct visual inspections for liquid leaks at least every 30 days.](#)

- [2](#). Spills and releases shall be contained, investigated, and cleaned up as soon as possible or immediately in emergency situations.

- [23](#). All employees performing spill clean-up shall be qualified in accordance with applicable state and federal requirements.

- [34](#). Copies of Form 19 Spill Release Report [and Form 27 Site Investigation and Remediation Workplan](#) (both initial and supplemental report) ~~and~~, Form 23 Loss of Well Control Report, [and all associated materials and analyses](#) shall be submitted to the [LGDES Director](#) at the same time they are submitted to the [COGCC/ECMC](#), including the topographic map showing location of the spill and any information relating to initial mitigation, site investigation, and remediation that accompany the report.

- [45](#). Spills and releases outside of containment which exceed one barrel of exploration and production waste or produced fluids shall be reported to the [LGDES Director](#) within 24 hours.

- [56](#). Spills and releases of any size which impact or threaten to impact any waters of the state, residences or occupied structures, livestock, or public

byways shall be verbally reported to the [LGDES Director](#) within 24 hours, with a follow-up written notice within 48 hours.

- [67.](#) Spills and releases of any size which impact or threaten to impact any water supply area shall be verbally reported to the Colorado Environmental Spill Reporting Hotline at 1-877-518-5608, and to the [LGDES Director](#) immediately after discovery.
- [78.](#) Spills and releases that impact or threaten to impact a water supply intake shall be reported immediately to the [LGDES Director](#), and to the owner of the intake if the town is not the owner of the intake.
- [89.](#) Spills, chemical spills, and releases shall be reported in compliance with applicable state and federal laws. Applicant will provide the [LGDES Director](#) with a copy of any self-reporting submissions that [the](#) applicant provides to any agency.
- [NQ.](#) *Use of steel-rim berms:* The oil and gas operation shall use steel rim berms or some other state-of-the-art technology that has the capacity to contain 150 percent of the largest storage tank.
- [OP.](#) *Vehicle and equipment fueling and maintenance:* Routine field maintenance of vehicles or mobile machinery shall not be performed within 500 feet of any water body. All fueling must occur over impervious material.
- [PQ.](#) *Fuel storage areas:* The oil and gas operation includes measures to contain fuel in fuel storage areas to prevent release to any water body. Inventory management or leak detection plans may be required.
- [QR.](#) *Wastewater and waste management:* Wastewater and waste shall be managed in a manner that does not cause pollution of water and soil. The operation shall be conducted in conformance with the wastewater and waste management plan.
- [RS.](#) *Use of underground wastewater injection wells prohibited:* Class II underground wastewater injection wells within the town limits are prohibited.
- [ST.](#) *Disposal of hydraulic fracturing fluid:* The operator shall demonstrate the ability to and shall dispose of all hydraulic fracturing fluids in accordance with the chemicals and hydraulic fracturing fluids disposal and reporting plan.
- [TU.](#) *Hazardous materials:*

 - 1. The oil and gas operation includes measures to contain all hazardous materials in storage areas to prevent release to any water body. Inventory management and leak detection systems are required.
 - 2. Full disclosure, consistent with [COGCC/ECMC](#) requirements, including material safety data sheets of all hazardous materials that will be transported on any public or private roadway within the town for the oil and gas operation, shall be provided to the [LGDES Director](#). This

information will be treated as confidential and will be shared with other emergency response personnel only on an as-needed basis.

3. The area 25 feet around anything flammable shall be kept free of dry grass or weeds, conform to ~~EOGEE~~CMC safety standards, and applicable fire code.

uv. *Chemical disclosure and storage:* Prior to bringing hydraulic fracturing chemicals onto the property, the operator shall make available to the town, in table format, the name, Chemical Abstracts Service (CAS) number, storage, containment, and disposal method for such chemicals to be used on the well site, which the town may make available to the public as public records. Fracturing chemicals shall be uploaded onto the FracFocus website within 60 days of the completion of fracturing operations. The operator shall not permanently store fracturing chemicals, flowback from hydraulic fracturing, or produced water in the town limits. Operator shall remove all hydraulic fracturing chemicals at a well site within 30 days following the ~~completing~~completion of hydraulic fracturing at that well site.

The following chemicals will not be added to the hydraulic fracturing fluids used at the well sites:

Ingredient Name	CAS#
Benzene	71-43-2
Lead	7439-92-1
Mercury	7439-97-6
Arsenic	740-38-2
Cadmium	7440-43-9
Chromium	7440-47-3
Ethyl benzene	100-41-4
Xylenes f-Xylenes	1330-20-7
1,3,5-trimethylbenzene	108-67-8
1,4-dioxane	123-91-1
1-butanol	71-36-3
2-butoxyethanol	111-76-2
N,N-dimethylfonnamide	68-12-2
2-ethylhexanol	104-76-7
2-mercaptoethanol	60-24-2
benzene, 1, 1'-oxybis-, tetrapropylene derivatives, sulfonated, sodium salts (BOTS)	119345-04-9
butyl glycidyl ether	8/6/2426
polysorbate 80	9005-65-6
quatemary ammonium compounds, dicoco alkylidimethyl, chlorides (QAC)	61789-77-3

bis hexamethylene triamine penta methylene phosphonic acid (BMPA)	35657-77-3
diethylenetriamine penta (methylene-phosphonic acid)(DMPA)	15827-60-8
FD&C blue no. 1	3844-45-9
Tetrakis(triethanolaminate) zirconium(IV) (TTZ)	101033-44-7

YW. *Risk analysis*: Operator shall submit a risk analysis and site-specific detailed quantitative and qualitative risk assessment and management plan for pipelines and oil and gas facilities. Plan must identify risks, include qualitative and quantitative risk assessment, list methods of risk avoidance and control that implement techniques to prevent accidents and losses, and reduce the impact or cost of an accident or loss after it occurs.

WX. *Review of operations*: Operator shall review its operations every five years and retrofit with new beneficial technology if feasible, in consultation with the [LGDES Director](#).

XY. *Emergency preparedness and response*: Oil and gas operations shall avoid risks of emergency situations such as explosions, fires, gas, oil, or water pipeline leaks, ruptures, hydrogen sulfide, or other toxic gas or fluid emissions, and hazardous material vehicle accidents or spills. Oil and gas operations shall ensure that, in the event of an emergency, adequate practices, procedures, and infrastructure are in place to protect public health and safety and repair damage caused by emergencies. The oil and gas operation shall be conducted in accordance with the emergency response plan.

YZ. *Noise*:

1. No well shall be drilled, re-drilled, or any equipment operated in such a manner so as to create any noise which causes exterior noise level that:
 - a. Exceeds the ambient noise level by more than five decibels during daytime hours and more than three decibels during nighttime hours;
 - b. Exceeds the ambient noise level by more than ten decibels over the daytime average ambient noise level during fracturing operations during daytime hours. No fracturing shall be allowed during nighttime hours except for flowback operations related to fracturing as provided in subsection 1.c. below unless a waiver is granted by the [LGDES Director](#).
 - c. Exceeds the ambient noise level by more than three decibels during flowback operations during nighttime hours;
 - d. Creates pure tones where one-third octave band sound-pressure level in the band with the tone exceeds the arithmetic average of the sound-pressure levels of two contiguous one-third octave bands by five dB for center frequencies of 500 Hertz and above, and by eight

dB for center frequencies between 160 and 400 Hertz, and by 15 dB for center frequencies less than or equal to 125 Hertz; or

- e. Creates low-frequency outdoor noise levels that exceed the following dB levels:

16 Hz octave band	65 dB
31.5 Hz octave band	65 dB
64 Hz octave band	65 dB

2. The point of compliance for noise shall be the property line of the protected use or no less than 25 feet from the exterior wall of any protected use structure closest to the working pad surface, whichever is closer.
3. The operator shall establish and report to the LGDES Director a continuous 72-hour pre-drilling ambient noise level prior to the issuance of a permit~~Permit~~. The 72-hour time span shall include at least one 24-hour reading during either a Saturday or Sunday. The operator shall use the prior established ambient noise level for the installation of any new noise generation equipment unless the operator can demonstrate that the increase in the ambient noise level is not associated with drilling and production activities located either on-site or off-site.
4. Adjustments to the noise standards as set forth above in subsection 1.a, 1.b, and 1.c. of this section may be permitted intermittently in accordance with the following:

Permitted Increase (dBA)	Duration of Increase (minutes)*
10	5
15	1
20	Less than 1
* Cumulative minutes during any one hour	

5. All workover operations shall be restricted to daytime hours.
6. Uploading of pipes and other tubular goods restricted to daytime hours of 8:00 a.m. — — 6:00 p.m.
7. The exterior noise level generated by the drilling, redrilling, or other operations of all wells located within 600 feet of a protected use shall be continuously monitored, to ensure compliance. The cost of such monitoring shall be borne by the operator. If a complaint is received by either the operator or the town, the operator shall, within 24 hours of notice of the complaint, continuously monitor for a 72-hour period the exterior noise level generated by the drilling, redrilling, or other operations

to ensure compliance. At the request of the town, the operator shall monitor the exterior noise level at the source of the complaint.

8. Acoustical blankets, sound walls, mufflers, or other alternative methods as approved by the town may be used to ensure compliance. All soundproofing shall comply with accepted industry standards and be subject to approval by the fire district.
9. The sound level meter used in conducting noise evaluations shall meet the American National Standard Institute's Standard for sound meters or an instrument and the associated recording and analyzing equipment, which will provide equivalent data.
10. The operator shall verify compliance with the requirements of this section 10-12-4 Y. and the noise mitigation and monitoring plan after the installation of the noise-generating equipment.
11. If the operator is in compliance with the approved noise mitigation and monitoring plan and a violation still occurs, the operator shall be notified of noncompliance and given 24 hours to correct the violation from an identified source before a notice of violation and enforcement measures under section 10-12-7 are triggered. Additional extensions of the 24-hour period may be granted in the event that the source of the violation cannot be identified after reasonable diligence by the operator.

ZAA. *Vibration:*

1. No vibration shall be transmitted ~~thru~~through the ground that is discernible without the aid of instruments measured at 500 feet from the abutting residential or commercial development.
2. No vibration shall exceed 0.002g peak at up to 50 cps frequency measured at 500 feet from the abutting residential or commercial development. Vibrations recurring at higher than 50 cps frequency or a periodic vibrator shall not induce accelerations exceeding 0.001g.
3. Single impulse period vibrations occurring at an average interval greater than five minutes shall not induce accelerations exceeding .01g.
4. Operator shall conduct continuous seismic monitoring during fracking operations.
 - a. Seismic events greater than 2.0 on Richter scale shall be reported to [LGDES Director](#) and to [COGCC/ECMC](#).
 - b. If a seismic event occurs, the town may stop operations immediately, and operator can only resume work once the town is satisfied with the actions taken to reduce the likelihood of further seismicity.
 - c. Operations shall be immediately suspended for any seismic event measuring 4.0 or above on the Richter scale. Operator may only

resume work once the town is satisfied with the actions taken to reduce the likelihood of further seismicity.

AABB. *Visual quality:* The oil and gas operation shall not cause significant degradation to the scenic attributes and character of the town.

1. Facilities shall be painted in a uniform, non-contrasting, non-reflective color, to blend with the surrounding landscape and with colors that match the land rather than the sky. The color should be slightly darker than the surrounding landscape.
2. The oil and gas operation shall be buffered from sensitive visual areas by providing landscaping along the perimeter of the site between the surface equipment and the sensitive visual area.
3. The oil and gas operation shall be constructed in a manner to minimize the removal of and damage to existing trees and vegetation. If the operation requires clearing trees or vegetation, the edges of the cleared vegetation should be feathered and thinned, and the vegetation should be mowed or brushhogged while leaving root structure intact, instead of scraping the surface.
4. The oil and gas operation shall be sited away from prominent natural features and visual, scenic, and environmental resources such as distinctive rock and landforms, rivers and streams, and distinctive vegetative patterns.
5. The oil and gas operation shall use low-profile tanks or less visually intrusive equipment.

BBCC. *General operations and maintenance requirements:*

1. The operator shall at all times keep the well sites, roads, rights-of-way, facility locations, and other oil and gas operation areas safe and in good order, free of noxious weeds, litter, and debris.
 - a. The operator shall be responsible for ongoing weed control at all locations disturbed by the operation and along access roads during construction and operation, until abandonment and final reclamation is completed.
 - b. The operator shall utilize vehicle tracking control practices to control potential sediment discharges from unpaved surfaces. Such practices may include road and pad design and maintenance to minimize rutting and tracking, controlling site access, street sweeping or scraping, tracking pads, and wash racks. Traction chains from heavy equipment shall be removed before entering a public roadway.
2. The operator shall dispose of all water, unused equipment, litter, sewage, waste, chemicals, and debris from the site at an approved disposal site.

- a. All equipment used for drilling, re-drilling, and maintenance shall be removed from the well pad site within 30 days after completion of the work, unless otherwise agreed to by the surface owner. Permanent storage of equipment on well pad sites shall not be allowed.
 - b. Materials and trash shall not be buried on-site.
 - c. Open burning of trash, debris, or flammable materials on-site is prohibited.
3. The operator shall promptly reclaim and reseed all disturbed sites in conformance with the reclamation plan.
 4. All mechanized equipment associated with the operation shall be anchored to minimize transmission of vibrations through the ground.
 5. Open-ended discharge valves on all storage tanks, pipelines, and other containers shall be secured where the operation site is unattended or is accessible to the general public. Open-ended discharge valves shall be placed within the interior of the tank secondary containment.
 6. Above-ground oil and gas well facilities shall be fenced with wrought iron fencing or Ameristar Impasse or Stronghold fencing or approved equivalent, as determined by the ~~director~~ES Director. The fencing color shall be bronze unless the ~~director~~ES Director approves black fencing. Black fencing will only be approved by the ~~director~~ES Director if fencing or site furnishings in the adjacent developments have approved black elements.
 7. The operator will install ~~down-cast~~downcast lighting or some other form of lighting that mitigates light pollution and spill-over onto adjacent properties; provided, however, that operator may still use lighting that is necessary for public and occupational safety. __
 - ~~8. The town shall have access to the well pads to conduct inspections. Town personnel will be equipped with all appropriate personal protection equipment (PPE) and will comply with the operator's customary safety rules and shall be accompanied by an operator's representative.~~
- ~~CCDD~~. *Grading, drainage, and erosion control:* The oil and gas operation shall be conducted in accordance with the grading, drainage, and erosion control plan.
- ~~DDDE~~. *Use of existing roads:* Unless traffic safety, visual or noise concerns, or other adverse surface impacts clearly dictate otherwise, existing roads on or near the site of the oil and gas operation shall be used in order to minimize land disturbance.
- ~~EEEE~~. *Transportation, roads, and access standards:*
1. *Compliance with town standards:* All public roads shall be constructed and maintained in compliance with town standards as necessary to

accommodate the traffic and equipment related to oil and gas operations and emergency vehicles.

2. *Access to public roads:*

- a. Access points to public roads shall be located, improved, and maintained to assure adequate capacity for efficient movement of existing and projected traffic volumes and to minimize traffic hazards.
- b. Access roads shall be improved a minimum distance of 200 feet on the access road from the point of connection to a public road. The access road shall be improved as a hard surface (concrete or asphalt) for the first 100 feet from the public road and then improved as a crushed surface (concrete or asphalt) for 100 feet past the hard surface in the appropriate depth to support the weight load requirements of the vehicles accessing the well and production facilities.
- c. If an access road intersects with a pedestrian trail or walk, the operator shall pave the access road as a hard surface (concrete or asphalt) a distance of 100 feet either side of the trail or walk and, if necessary, replace the trail or walk to address the weight load requirements of the vehicles accessing the well and production facilities.
- d. Temporary access roads associated with the oil and gas operation shall be reclaimed and revegetated to the original state within 60 days after discontinued use of the temporary access roads.

3. Implementation of traffic management plan

- a. The operator shall implement the approved traffic management plan.
- b. Use of public roads by Class 7 vehicles or above shall be prohibited during the hours of 7:00—9:00 a.m. and 3:00—6:00 p.m. during weekdays.
- c. Idling or parking on shoulders of roads shall be prohibited.

4. *Road repairs:*

- a. The operator shall arrange for a qualified outside consultant to perform a road impact study for all public roads that are used to access the oil and gas operation. The consultant shall conduct the first part of the study prior to operations and the second part of the study after the operator completes all drilling and hydraulic fracturing. The operator and the town shall use these studies to determine the extent of any damage accruing to the road during the study period. The operator shall either promptly pay the town to repair such damage or arrange for and pay the cost of such repairs itself, whichever the town prefers.

- b. The operator shall maintain financial assurance to secure its road repair obligations. The amount of such financial assurance shall equal the town's annual road maintenance budget as of the date of ~~permit~~Permit approval, multiplied by the percentage yielded by dividing the total number of town road miles as of the date of ~~permit~~Permit approval into the number of such road miles that the operator will use to access the oil and gas operation. The operator shall select the form of such financial assurance and shall maintain such assurance.
- c. If the projected use of public roads as a result of the oil and gas operation will result in a need for an increase in roadway maintenance, the operator shall enter into an agreement with the town whereby the operator provides for private maintenance or reimburses the town for such increased costs and/or provides a bond or other financial assurance in an amount acceptable to the town to cover the costs of mitigating impacts to public roads.

FFGG. *Flowlines and pipelines:* Operator shall comply with the requirements for flowlines set forth in ~~COGCC~~ECMC Rules 1101 through 1105, which address: registration, construction standards, design, installation, reclamation, inspection, maintenance, repair, operation, and integrity management of flowlines; pressure testing; leak protection, detection, and monitoring; and data sharing with local government.

- 1. Off-location flow lines and crude oil transfer lines shall be sited to avoid areas containing existing or proposed residential, commercial, and industrial buildings; places of public assembly; surface water bodies; and open space.
- 2. Without compromising pipeline integrity and safety, applicant shall share existing pipeline rights-of-way and consolidate new corridors for pipeline rights-of-way to minimize impact.
- 3. Operator shall comply with ~~permit~~Permit and easement processes for all crude oil transfer lines and off-location flowlines installed in town-owned property or rights-of-way.
- 4. Flowlines and crude oil transfer lines shall be located a minimum of 150 feet away from residential, commercial, and industrial buildings, as well as the high-water mark of any surface water body, unless technically infeasible, in which case pipelines must be constructed in the next most protective location. This distance shall be measured from the nearest edge of the pipeline/flowline. Setbacks from sensitive environmental features will be determined on a case-by-case basis in consideration of the size and type of pipeline proposed and features of the proposed site.

5. Operator shall conduct at least two forms of leak detection/integrity management inspections in order to identify flowline leaks or integrity issues.
6. Operator shall make available to the town's third-party inspector, upon request, all records required to be kept by [ECMC](#).
7. Buried pipelines shall have a minimum of four feet cover.
8. Operator shall notify the town 30 days prior to any flowline abandonment activities and must receive final approval from town prior to proceeding with any type of flowline abandonment, whether in place or removal.
9. Operator's emergency response plan must address pipeline spills and ruptures.
10. Operations shall be conducted in conformance with the flowline management plan.

[GGHH](#). *Floodplain, wetlands, and riparian areas:* The oil and gas operation shall not have a significant adverse effect on the floodplain and shall not significantly degrade wetlands and riparian areas. Oil and gas operations conducted within the floodplain overlay district shall comply with section 10-2-7 C. of the UDC.

[HHII](#). *Natural resource areas:* The oil and gas operation shall not cause significant degradation of natural landmarks, rare plant species, riparian corridors, or other sensitive areas.

[IJJJ](#). *Wildlife:* The oil and gas operation shall not cause significant degradation of wildlife or wildlife habitat.

[JJKK](#). *Historical and cultural resources:* The oil and gas operation shall not cause significant degradation to resources of historic, cultural, paleontological, or archeological importance.

[KKLL](#). *Public services and facilities:* The oil and gas operation shall not have a significant adverse effect on the capability of the town to provide municipal services or the capacity of the service delivery systems.

[LLMM](#). *Seismic testing:* Seismic testing within the municipal boundaries is prohibited unless approved by the town council following a public hearing. Approval of the proposed testing shall be based on the council's determination that the testing will be conducted in a manner that adequately protects public health, safety, welfare, and the environment. Prior to the public hearing, applicant shall submit its plan for seismic testing to the [LGDES Director](#).

[NN](#). *ECMC Compliance:* The oil and gas operation shall comply with all applicable [ECMC Rules](#).

[OO](#). *Reports and Plans:* The oil and gas operation will comply with all reports and plans required as application materials in [Section 10-12-2\(E\)](#).

10-12-5 Financial guarantee.

Prior to beginningconducting any worksurface disturbance in connection with the oil and gas operation, the operator will provide evidence of financial guarantee in a form acceptable to the town to ensure that the oil and gas operation will comply with these regulations and all conditions of approval imposed by the town council. The final amount of such financial guarantee shall be calculated by the ~~director~~ES Director following final approval of the ~~permit~~Permit application.

A. *Purpose of guarantee:* The purpose of the financial guarantee, ~~at a minimum,~~ is to ensure that the operator will:

1. Secure the wells, well sites, associated well site lands, and infrastructure; plug and abandon all wells ~~at the well site~~ in compliance with state law, and reclaim the well site in compliance with state law;
2. Perform all requirements of the ~~oil and gas permit for the well site~~Permit;
3. Guarantee that if ~~the director notifies the issuing institution that the an~~ operator ~~has failed to do any of the foregoing or the occurrence of any event providing for an authorized use as defined in this section, the issuing institution will pay the amount of the bond or letter of credit into a standby trust fund.~~

~~B. Substitute fails to meet Permit obligations, the guarantee. If the business license of the surety upon a security filed pursuant will be available to this section is suspended or revoked, within 60 days after receiving notice thereof the permittee shall substitute a good cover costs to complete such obligations and sufficient surety licensed to do business in Colorado. If the permittee fails to make substitution in accordance with this section, the council shall suspend the permit until proper substitution has been made protect public health, safety, welfare, and the environment.~~

~~CB.~~ *Amount of guarantee:*

1. In determining the amount of the financial guarantee, the ~~director~~ES Director shall consider:
 - a. The operator's estimated cost of performing all mitigation requirements and ~~permit~~Permit conditions in connection with the oil and gas operation.
 - b. Estimated additional cost to the town of bringing in personnel and equipment to accomplish any unperformed purpose of the financial guarantee.
 - ec. The operator's estimated cost of plugging and abandoning all wells and removing all flowlines and pipelines associated with the operation.

- d. The operator's estimated cost of plugging and abandoning all Inactive Wells and removing all flowlines and pipelines under control of the operator within the town limits, if such wells, flowlines, and pipelines do not already have existing financial assurances associated with their decommissioning, whether or not the wells, flowlines, and pipelines are associated with the permitted operation.
 - e. The amount of bonding provided to the ECMC.
 - f. The amount of the financial guarantee shall be adjusted annually on January 1 for inflation.¹
2. The ~~director~~ES Director may review the financial guarantee for adequacy at any time. If the ~~director~~ES Director determines that the financial guarantee is insufficient to perform the purpose of the guarantee, the ~~director~~ES Director shall provide the permittee with written notice to increase the financial guarantee.
- a. The permittee shall post the additional guarantee within 60 days from the date of the written notice. If the amount of increased financial guarantee has not been provided within 60 days from the date of the written notice, the ~~director~~ES Director may schedule a hearing before the town council for possible revocation of the ~~permit~~Permit pursuant to section 10-12-7 of these regulations.
 - b. If the permittee disagrees with the notice to increase the financial guarantee, the ~~director~~ES Director shall schedule a hearing on the matter by the town council.

DC. *Form of guarantee:*

- 1. The guarantee shall be in a form or combination of forms acceptable to the town.
- 2. The guarantee shall not be a substitute for any bonding required by the state regulatory agencies for plugging and abandoning wells. The operator shall comply with all state regulatory agencies' bonding requirements.
- 3. The operator shall notify the ~~director~~ES Director, within five business days, if operator:
 - a. Files for protection under the bankruptcy laws;
 - b. Makes an assignment for the benefit of creditors;
 - c. Appoints or suffers appointment of a receiver or trustee over its property;

¹ Inflation means the annual percentage change in United States Department of Labor, Bureau of Labor Statistics Consumer Price Index, all items, all urban consumers, or its successor index.

- d. Files a petition under any bankruptcy or insolvency act or has any such petition filed against it which is not discharged within 90 days of the ~~fining~~filing thereof.
4. Notifications pursuant to subparagraph C.3, above, shall not be a condition to the city's use of any financial guarantee.
- ED.** *Release of guarantee:* The financial guarantee shall be released within seven business days after receipt of written request for release of guarantee to the ~~director~~ES Director, based on one of the following conditions:
 1. The ~~permit~~Permit has been surrendered to the council before commencement of any physical activity on the site of the operation.
 2. The operation has been abandoned, and the site has been returned to its original condition or to a condition acceptable to the town.
 3. A phase or phases of the operation have been satisfactorily completed, allowing for partial release of the financial guarantee consistent with phasing and as determined appropriate by the town.
 4. The applicable guaranteed conditions have been satisfied.
- FE.** *Forfeiture of guarantee:*
 1. If the council determines that a financial guarantee should be forfeited because of any violation of the ~~permit~~Permit or these regulations, the council shall provide written notice to the surety and the operator that the financial guarantee will be forfeited unless the operator requests a hearing by the council within 30 days after operator's receipt of notice.
 2. If a request for hearing is not made by the operator the council shall order the financial guarantee forfeited.
 23. The council shall hold a hearing within 30 days after receipt of the operator's written request for hearing. At the hearing, the operator may present statements, documents, and other information for the council's consideration with respect to the alleged violation. At the conclusion of the hearing, the council shall either withdraw the notice of violation or order the financial guarantee forfeited.
 34. If the forfeiture results in inadequate revenue to cover the costs of accomplishing the purposes of the financial guarantee, the town attorney shall take such steps as deemed proper to recover such costs, where recovery is deemed possible, including costs and attorney fees.
- F.** *Substitute guarantee: If the surety or the surety holder suspends, cancels, or revokes an operator's guarantee filed pursuant to this section, the operator shall substitute a good and sufficient guarantee from a surety licensed to do business in Colorado within 28 days of receiving notice of suspension, cancellation, or revocation. The town attorney, in consultation with the ES*

Director, may extend the period for receiving the substitute guarantee if the operator submits a written request detailing the need for such extension. If the permittee fails to make substitution in accordance with this section, the council shall suspend the Permit until proper substitution has been made.

- G. *Liability for claim:* The town shall not be liable to the operator or any surety, grantor, or financial institution for consequential damages arising from the town's exercise of its rights under paragraph E, above, including, without limitation, a claim for impairment of bonding capacity.

10-12-6 ~~Existing oil and gas operations~~ Permit issuance, term, transfer.

~~All existing oil~~ A. *Permit Issuance:*

1. Any Permit shall be issued in writing and ~~gas operations~~ approved by resolution of the Town Council.
2. The Permittee shall comply with all terms and significant ~~expansion~~ conditions established in the Permit.
3. The Permit is valid only for the construction and operation of the oil and gas operation as described in the application, together with the conditions of approval imposed by the town council. Material changes in the construction or operation of the oil and gas operation from that described in the application shall be a violation of the permit unless the operator obtains approval of a major or minor permit modification of existing oil and gas operations as determined by the LGD shall be.
4. Permits issued pursuant to these regulations shall encompass the right of the operator, its agents, employees, subcontractors, independent contractors, or any other person to perform that work reasonably necessary to conduct the activities authorized by the Permit, subject to ~~the all other applicable town regulations and requirements. The operator is financially liable for the activities of all contractors, subcontractors, employees, and agents in carrying out the permitted activity. of UDC title 10, chapter 12, regulations for oil and gas operations.~~

~~A. *Registration of existing oil and gas operations:*~~ 5. A Permit under these regulations shall satisfy the requirement of section 34-60-106(1)(f)(I)(A) of the Colorado Oil and Gas Conservation Act, as may be amended.

B. *Term:* A Permit shall lapse three years from the date of its approval if the ECMC has not issued final approvals to drill for the oil and gas operation covered by the Permit.

C. *Transfer of permits:* A Permit may be transferred only with the written consent of the town council. The town council must ensure, in approving any transfer, that:

1. The proposed transferee can and will comply with all the requirements, terms, and conditions contained in the Permit and these regulations;
2. Such requirements, terms, and conditions remain sufficient to protect the health, welfare, and safety of the public; and
3. An adequate guarantee of financial security can be made.

10-12-7 Well and pipeline abandonment and decommissioning.

All oil and gas operations, including those existing at the effective date of these regulations, shall comply with following.

A. Wells.

1. Within 6 months of any well located within the town becoming an Inactive Well, the operator shall plug the well and decommission associated flowlines unless another timeline is approved by the ECMC and agreed to by the ES Director in writing.
2. Unless the surface owner otherwise makes a written request to the ES Director, the operator must leave onsite a permanent physical marker of the well location.

B. Pipelines and flowlines. Once permanently removed from service, all flowlines or fresh, produced, or associated wastewater pipelines shall be removed unless abandoning them in place is authorized in writing by the ES Director.

C. ES Director approval.

1. An operator may not commence activities to plug, abandon, or otherwise decommission an oil and gas well, flowline, or associated fresh, produced, or wastewater pipeline until the ES Director has reviewed and provided written approval for such activity.
2. The operator shall submit a request to the ES Director for approval to plug, abandon, or otherwise decommission an oil and gas well, flowline, or associated fresh, produced, or wastewater pipeline. The request shall include, at a minimum, the surveyed coordinates of the decommissioned well or facility, planned or proposed access route(s), planned duration of activities, planned hours of operation, and a list of equipment to be utilized at the site.
3. As part of the approval, the ES Director may impose conditions to minimize impacts of surface activities related to plugging and abandonment, including, without limitation, timing limitations and reclamation and revegetation requirements.

D. Notice to ES Director, property owners, and residents.

1. The operator shall submit any ECMC reports or notices, including the Notice of Intent to Abandon, to the ES Director concurrently with its submittal to ECMC.
2. At least seven (7) days prior to commencement of decommissioning or plugging operations, the operator shall send notice to the ES Director and to all property owners and current residents within one-half (1/2) mile of the oil and gas facility, well, or site being decommissioned or plugged and abandoned.
3. Within 30 days after plugging and abandonment, the operator shall provide the ES Director with the surveyed coordinates of the decommissioned, plugged, or abandoned well, photographs of the welded cap on the well with API number, and the onsite permanent physical marker of the well location.

10-12-8 Operator Registration

All oil and gas operations, including wells that are out-of-productionshut-in and wells that are temporarily abandoned or abandoned, must be registered with the town within 30 days. The registration must be renewed annually together with the annual registration fee.

- A. Operators that have not already registered their operations with the town as of the effective date of these regulations. Any modification or expansion of an existing operation shall require an oil and gas permit pursuant to 10-12-2, et seq shall register in accordance with the following within 90 days of the effective date of these regulations.
1. ~~Submit~~B. Operators seeking a Permit or activity notice pursuant to these regulations must submit registration materials. Operator at least 14 days prior to the pre-application conference in Section 10-12-2(B).
- C. Operators shall submit the maintain active registration until the town has approved final reclamation, plugging and abandonment, or decommissioning.
- D. Registration materials described in subsection A.2, below,; For the initial registration, operators shall submit the following registration materials and all applicable fees to the LGDES Director.
 2. ~~Registration materials:~~ The following materials are required for registration of oil and gas operations:
 - a1. Completed oil and gas operation registration form.
 - b2. Initial registration fee in the amount established by resolution of Town Council.
 3. Map of all production facilities with equipment clearly marked.
 4. Copy of maps and flowline records submitted to ~~ECGCE~~ECMC.

- e5. Copy of the emergency response plan.
- d6. Copy of current [spill prevention, control, and countermeasure \(SPCC\)](#) plan.
- ~~e7. Emissions record from previous calendar year.~~
 - ~~f. Copy of most recent operator's monthly report of operations submitted to COGCC.~~
- g. For shut-in wells:
 - ia. A map at a scale designated by the town showing the location, including GPS location, of each shut-in well and denoting the age; size, and the maximum pressure at which it is operated; and its depth from the surface.
 - ib. Copy of the most recent mechanical integrity test report submitted to [COGCC/ECMC](#) for each shut-in well.
- h8. For ~~abandoned and~~ temporarily abandoned wells:
 - ia. A map at a scale designated by the town showing the location, including GPS location, of ~~abandoned and~~ temporarily abandoned wells.
 - ib. Copy of the most recent mechanical integrity test report submitted to [COGCC/ECMC](#) for each temporarily abandoned well.
 - ~~9iii. Copy of Form 6 Notice of Intent to Abandon submitted to COGCC.~~
 - ~~iv. Quarterly inspections of temporarily abandoned and shut-in wells for surface impacts.~~
 - i. A copy of the gas capture plan approved by [COGCC/ECMC](#).

~~B. Decommissioned and abandoned oil and gas well assessment~~E. Renewal materials: For the annual renewal, operators shall submit the following materials and all applicable fees to the ES Director.

1. Annual registration fee in the amount established by resolution of Town Council.
2. Emissions record from previous calendar year.
3. Copy of most recent operator's monthly report of operations as submitted to ECMC.
4. Copy of the most recent mechanical integrity test report, as submitted to ECMC, for each shut-in or temporarily abandoned well.
5. Any registration materials that have been changed or updated.

10-12-9 Operator inspection and monitoring.

All oil and gas operations, including those existing at the effective date of these regulations, shall comply with following.

A. Bradenhead monitoring, testing, reporting. Operators shall conduct Bradenhead monitoring, testing, and report in compliance with ECMC Rule 419. Valves used for annular pressure monitoring shall remain exposed to allow for visual inspection. The operator shall take Bradenhead pressure readings on a monthly basis, or a different frequency if required by the ECMC, and report those readings to the ES Director with the same frequency as reporting to the ECMC. Such readings shall include the date, time, and pressure of each reading, and the type of fluid reported.

~~prior to and following fracturing.~~ B. Monitoring nearby plugged, decommissioned, abandoned wells. Prior to any hydraulic fracturing, and at specified periods following hydraulic fracturing, ~~operator shall conduct assessment and monitoring of operators must monitor and assess any~~ oil and gas wells that are plugged ~~and, abandoned, or otherwise decommissioned or removed from use or dry and removed from use (abandoned wells)~~ within one-quarter mile of the projected track of the borehole of a proposed well.

1. Operator shall obtain permission from each surface owner who has an abandoned well on the surface owner's property to access the property in order to test the abandoned well. If a surface owner has not provided permission to access after 30 days from receiving notice, the applicant shall not be required to test the abandoned well.

~~1. Assessment~~ 2. The assessment shall include:

- a. ~~Based upon examination of COGCC and other publicly available records, identification~~ Identification of all abandoned wells located within one-quarter mile of the projected track of the borehole of a proposed well. ~~based upon examination of ECMC and other publicly available records.~~
- b. Risk assessment of leaking gas or water to the ground surface or into subsurface water resources, taking into account plugging and cementing procedures described in any recompletion or plugged and abandoned report filed with the ~~COGCC~~ ECMC.
- c. ~~Soil.~~ Initial and monthly soil gas surveys from various depths and at various distances, depending on results of risk assessment, of the abandoned well prior to hydraulic fracturing.
- d. Soil gas surveys from various depths and at various distances, depending on results of risk assessment, of the abandoned well within one year and then every three years after production has commenced.

23. Operator shall notify the [LGDES Director](#) and [COGCC/ECMC](#) of the results of the assessment ~~of the plugging and cementing procedures.~~
3. Results of the soil gas survey shall be provided to the [LGDES Director](#) and the [COGCC/ECMC](#) within three weeks of conducting the survey or advising the [LGDES Director](#) that access to the abandoned wells could not be obtained from the surface owner.
4. If contamination is detected during any soils testing, ~~no further~~ operations ~~may continue~~ shall cease until the cause of the contamination is detected and resolved, and the town has given its approval for additional operations to continue.
5. ~~Operator shall conduct Bradenhead monitoring. Operator shall equip the bradenhead access to the annulus between the production and surface casing, as well as any intermediate casing, with a fitting to allow safe and convenient determinations of pressure and fluid flow. Valves used for annular pressure monitoring shall remain exposed and not buried to allow for visual inspection. The operator shall take bradenhead pressure readings on a monthly basis and report those readings to the LGD. Such readings shall include the date, time, and pressure of each reading, and the type of fluid reported.~~

10-12-~~7~~ **Permit transfer and inspection.**

~~A. **Transfer of permits:** A permit may be transferred only with the prior consent of the Town Council. In approving any transfer, the Town Council must ensure that the proposed transferee can and will comply with all the 10 Operational requirements, terms, and conditions contained in the permit and these regulations; that such requirements, terms, and conditions remain sufficient to protect the health, welfare, and safety of the public; and that an adequate guarantee of financial security can be made for all oil and gas operations.~~

All oil and gas operations, including those existing at the effective date of these regulations, shall comply with following requirements.

A. Air quality requirements:

1. Minimization of emissions:

- a. Utilize pipelines for all transportation of gas and fluids from production facilities whenever available.
- b. Implement best management practices during liquids unloading and well swabbing, such as the use of a combustion device capable of achieving at least 95 percent emissions reduction and unloading through a separator.

- c. Use emission reduction measures to respond to air quality action day advisories posted by the Colorado Department of Public Health and Environment for the Front Range Area, including:
 - i. Minimize vehicle and engine idling;
 - ii. Reduce truck traffic and worker traffic;
 - iii. Delay vehicle refueling;
 - iv. Suspend or delay use of fossil fuel powered ancillary equipment; and
 - v. Postpone construction activities.
- d. Within 30 days following the conclusion of each annual air quality action day season, operator shall submit a report to the ES Director that detail which measures it implemented during any action day advisories.

2. Venting and Flaring:

- a. Venting and flaring are prohibited other than during emergencies, for safety reasons, or if otherwise approved in writing by the ES Director.
 - i. Non-emergency venting or flaring, such as for safety reasons, must be approved in writing by the ES Director as soon as practicable or at least 2 hours prior.
 - ii. The operator shall report all emergency venting or flaring to the ES Director concurrently with reporting to the ECMC.
- b. To the extent practicable, if flaring is required, all flares, thermal oxidizers, or combustion devices shall be designed and operated as follows:
 - i. Flaring shall be done with a flare that has a manufacturer specification of 98 percent destruction removal efficiency or better.
 - ii. Flare and/or combustor shall be fired with natural gas.
 - iii. Flare and/or combustor shall be designed and operated in a manner that will ensure no visible emissions during normal operation.
 - iv. No visible emissions of smoke for any period or periods of duration greater than or equal to one minute in any 15-minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

- iv. Flare and/or combustor shall be operated with a flame present at all times when emissions may be vented to it.
- v. All combustion devices shall be equipped with an operating auto-igniter.
- vi. If using a pilot flame ignition system, the presence of a pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame. A pilot flame shall be maintained at all times in the flare's pilot light burner. A telemetry system shall be in place to monitor pilot flame and shall activate a visible and audible alarm in the case that the pilot goes out.
- vii. If using an electric arc ignition system, the arcing of the electric arc ignition system shall pulse continually and a device shall be installed and used to continuously monitor the electric arc ignition system.
- viii. Flare, auto ignition system, recorder, vapor recovery device, or other equipment used to meet the hydrocarbon destruction or control efficiency requirement shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

3. Leak detection and repair (LDAR):

- a. Operators shall conduct a leak detection and repair program that requires at least quarterly inspections, or as otherwise required in a Town Permit or agreed to by the ES Director, and uses modern leak detection technologies for all equipment in operation.
- b. If the town determines that the leak presents an immediate hazard to persons or property, the operator may not operate the affected component, equipment, or flowline segment until the operator has corrected the problem and the town agrees that the affected component, equipment, or flowline segment no longer poses a hazard to persons or property. In the event of leaks that the town believes do not pose an immediate hazard to persons or property, if more than 48 hours repair time is needed after a leak is discovered, operator shall contact the ES Director and provide an explanation of why more time is required. Continuous monitoring to detect leaks or measure hydrocarbon emissions and monitor meteorological data shall be required. Any continuous monitoring system shall be able to alert the operator of increases in air contaminant concentrations. Operator shall provide detailed recordkeeping of the inspections for leaking components.

B. General operations and maintenance requirements:

1. The operator shall, at all times keep the well sites, roads, rights-of-way, facility locations, and other oil and gas operation areas safe and in good order, free of noxious weeds, litter, and debris.
 - a. The operator shall be responsible for ongoing weed control at all locations disturbed by the operation and along access roads during construction and operation, until abandonment and final reclamation is completed.
 - b. The operator shall utilize vehicle tracking control practices to control potential sediment discharges from unpaved surfaces. Such practices may include road and pad design and maintenance to minimize rutting and tracking, controlling site access, street sweeping or scraping, tracking pads, and wash racks. Traction chains from heavy equipment shall be removed before entering a public roadway.
2. The operator shall dispose of all water, unused equipment, litter, sewage, waste, chemicals, and debris from the site at an approved disposal site.
3. All equipment used for maintenance shall be removed from the well pad site within 30 days after completion of the work, unless otherwise agreed to by the surface owner. Permanent storage of equipment on well pad sites shall not be allowed.
4. Materials and trash shall not be buried on-site.
5. Open burning of trash, debris, or flammable materials on-site is prohibited.

C. Odor management:

1. The operator shall notify the ES Director no later than 24 hours after receiving an odor complaint.
2. Operator shall conduct drive-by inspections through neighborhoods at various times to hear, smell, and see what is going on during each phase of operations.
3. No emission of odorous gases or other odorous matter shall be permitted in such quantities as to be readily detectable when diluted in the ratio of one volume of odorous air to four volumes of clean air.
4. Filtration systems or additives to minimize odors from drilling and fracturing fluids may be used, except that operators shall not mask odors by using masking fragrances.

D. Water quality: The oil and gas operation shall not cause significant degradation of water quality of affected water bodies and water wells.

E. Stormwater:

1. Operators shall consult with the ES Director for any operations with expected surface disturbance outside of the existing production facility to determine whether a stormwater permit may be required.
2. Stormwater infrastructure shall be maintained in effective operating condition, and the operator shall implement Best Management Practices as recommended by a stormwater inspector as soon as possible.
3. Results of stormwater inspections required by CDPHE-WQCD shall be made available to the ES Director upon request.

F. *Spill release response and reporting:* The operator shall demonstrate the ability to control and contain all spills and releases of exploration and production waste, including produced fluids, immediately upon discovery in conformance with the spill release response and reporting plan.

1. Operators shall conduct visual inspections for liquid leaks at least every 30 days.
2. Spills and releases shall be contained, investigated, and cleaned up as soon as possible or immediately in emergency situations.
3. All employees performing spill clean-up shall be qualified in accordance with applicable state and federal requirements.
4. Copies of Form 19 Spill Release Report and Form 27 Site Investigation and Remediation Workplan (both initial and supplemental report), Form 23 Loss of Well Control Report, and all associated materials and analyses shall be submitted to the ES Director at the same time they are submitted to the ECMC, including the topographic map showing location of the spill and any information relating to initial mitigation, site investigation, and remediation that accompany the report.
5. Spills and releases outside of containment which exceed one barrel of exploration and production waste or produced fluids shall be reported to the ES Director within 24 hours.
6. Spills and releases of any size which impact or threaten to impact any waters of the state, residences or occupied structures, livestock, or public byways shall be verbally reported to the ES Director within 24 hours, with a follow-up written notice within 48 hours.
7. Spills and releases of any size which impact or threaten to impact any water supply area shall be verbally reported to the Colorado Environmental Spill Reporting Hotline at 1-877-518-5608, and to the ES Director immediately after discovery.
8. Spills and releases that impact or threaten to impact a water supply intake shall be reported immediately to the ES Director, and to the owner of the intake if the town is not the owner of the intake.

9. Spills, chemical spills, and releases shall be reported in compliance with applicable state and federal laws. Operator will provide the ES Director with a copy of any self-reporting submissions that the applicant provides to any agency.
10. The town may undertake prevention, control, countermeasures, containment, and clean-up measures if the operator fails to comply with its obligations under 10-12-6.D.7 and the operator will pay all costs incurred by the town for any such measures.

G. Hazardous materials:

1. The oil and gas operation shall undertake measures to contain all hazardous materials in storage areas to prevent release to any water body. Inventory management and leak detection systems are required.
2. Full disclosure, consistent with ECMC requirements, including material safety data sheets of all hazardous materials that will be transported on any public or private roadway within the town for the oil and gas operation, shall be provided to the ES Director. This information will be treated as confidential and will be shared with other emergency response personnel only on an as-needed basis.
3. The area 25 feet around anything flammable shall be kept free of dry grass or weeds, and all areas shall conform to ECMC safety standards and applicable fire code(s).

H. Noise:

1. Unless an operator demonstrates that it is impossible to modify existing equipment to satisfy the following requirements, no equipment shall be operated in such a manner so as to create any noise which causes exterior noise level that:
 - a. Exceeds the ambient noise level by more than five decibels during daytime hours and more than three decibels during nighttime hours;
 - b. Creates pure tones where one-third octave band sound-pressure level in the band with the tone exceeds the arithmetic average of the sound-pressure levels of two contiguous one-third octave bands by five dB for center frequencies of 500 Hertz and above, and by eight dB for center frequencies between 160 and 400 Hertz, and by 15 dB for center frequencies less than or equal to 125 Hertz; or
 - c. Creates low-frequency outdoor noise levels that exceed the following dB levels:

<u>16 Hz octave band</u>	<u>65 dB</u>
<u>31.5 Hz octave band</u>	<u>65 dB</u>
<u>64 Hz octave band</u>	<u>65 dB</u>

- d. Adjustments to the noise standards as set forth above in subsection 1.a, 1.b, and 1.c. of this section may be permitted intermittently in accordance with the following:

<u>Permitted Increase (dBA)</u>	<u>Duration of Increase (minutes)*</u>
<u>10</u>	<u>5</u>
<u>15</u>	<u>1</u>
<u>20</u>	<u>Less than 1</u>
<u>* Cumulative minutes during any one hour</u>	

2. The point of compliance for noise shall be the property line of the protected use or no less than 25 feet from the exterior wall of any protected use structure closest to the working pad surface, whichever is closer.
3. All workover operations shall be restricted to daytime hours.
4. Uploading of pipes and other tubular goods restricted to daytime hours of 8:00 a.m.—6:00 p.m.
5. Acoustical blankets, sound walls, mufflers or other alternative methods as approved by the town may be used to ensure compliance. All soundproofing shall comply with accepted industry standards and be subject to approval by the fire district.
6. The sound level meter used in conducting noise evaluations shall meet the American National Standard Institute's standard for sound meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

I. Vibration:

1. No vibration shall be transmitted through the ground that is discernible without the aid of instruments measured at 500 feet from the abutting residential or commercial development.
2. No vibration shall exceed 0.002g peak at up to 50 cps frequency measured at 500 feet from the abutting residential or commercial development. Vibrations recurring at higher than 50 cps frequency or a periodic vibrator shall not induce accelerations exceeding 0.001g.
3. Single impulse period vibrations occurring at an average interval greater than five minutes shall not induce accelerations exceeding .01g.

- J. Visual quality: When facilities are painted, the paint shall be a uniform, non-contrasting, non-reflective color, to blend with the surrounding landscape and with colors that match the land rather than the sky. The color should be slightly darker than the surrounding landscape.

- K. Floodplain, wetlands, and riparian areas: The oil and gas operation shall not have a significant adverse effect on the floodplain and shall not significantly degrade wetlands and riparian areas. Oil and gas operations conducted within the floodplain overlay district shall comply with section 10-2-7 C. of the UDC.
- L. Natural resource areas: The oil and gas operation shall not cause significant degradation of natural landmarks, rare plant species, riparian corridors, or other sensitive areas.
- M. Wildlife: The oil and gas operation shall not cause significant degradation of wildlife or wildlife habitat.
- N. Historical and cultural resources: The oil and gas operation shall not cause significant degradation to resources of historic, cultural, paleontological, or archeological importance.
- O. Public services and facilities: The oil and gas operation shall not have a significant adverse effect on the capability of the town to provide municipal services or the capacity of the service delivery systems.
- P. Enforcement. Violations of this section are subject to the enforcement mechanisms in Section 10-12-11.

10-12-11 Enforcement, penalties, and inspections.

A. Unlawful to violate these regulations: Any operator or person who violates these Regulations is subject to criminal or civil liability and penalties as set forth in the UDC and municipal code. Each day during which such violation continues shall be deemed a separate offense.

B. Inspection and notifications to local government designee ("LGD"):

1. Inspection:

a. The Town may enter and inspect any property associated with an oil and gas operation that is subject to these regulations at reasonable hours for the purpose of determining whether the development is in violation of these compliance with applicable laws and regulations.- The Town will attempt to provide reasonable notice of inspections, but reserves the right to conduct unannounced inspections.

b. Upon request, the operator shall make available to the Town all records for the operation required to be maintained by the following town or by state or federal agencies: ~~the Colorado Department of Public Health and Environment (CDPHE), including permits, Air Pollutant Emission Notices (APENs), and other documents; the Colorado Energy and Carbon Management Commission (ECMC); the Colorado Public Utilities Commission (PUC); the Occupational Safety and Health Administration (OSHA); and the Pipeline and Hazardous Materials Safety Administration (PHMSA).~~

2. *Notification to LGDES Director:* In addition to any notice required by state law, operators shall provide ~~notice of~~ the following notices to the Town's LGDES Director:

- a. Ten (10) days prior to removal of any tank or other equipment;
- b. ~~Thirty (30) days prior to activities associated with plugging and abandonment of any well;~~
- c. ~~Thirty (30) days following plugging and abandonment of a well, accompanied by a photograph of welded cap on well with API number of well, plaque, and GPS coordinates of the well;~~
- d. ~~Thirty (30)~~ Ten (10) days prior to planned maintenance activities and workover activities; and
- e. ~~Thirty (30)~~ Five (5) days following maintenance activities taken in response to emergencies.