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<tr>
<td>6/24/2020</td>
<td>Brendan Schultz</td>
<td><a href="mailto:breschultz@gmail.com">breschultz@gmail.com</a></td>
<td>No oil and gas drilling. Focus on the important things like abolishing the police department full of murderers and drunks first. Thanks Brendan Schultz 15350 e arizona ave</td>
<td>The City of Aurora has authority to regulate oil and gas development and operations. It does not have authority to halt the development of valid mineral interests.</td>
</tr>
<tr>
<td>7/10/2020</td>
<td>Nate Rice</td>
<td><a href="mailto:nathaniel.a.l.rice@gmail.com">nathaniel.a.l.rice@gmail.com</a></td>
<td>Greetings, 1. Continuing to drill oil and gas is like not paying your own taxes, you only hurt yourself in the end. 2. Polis' push towards renewable energy and RE infrastructure is more important and profitable. 3. Allowing more community solar systems or building those with corporate partners is a better option. 4. As a former Sunrun, Denver HQ2, employee, and Tesla employee, oil and gas just seems like a losing battle because as of today Tesla's stock is higher than ExxonMobile. 5. Wind (various scales), Solar (various styles), Geo thermal, hydro (sm scale), micro reactors (thorium or down cycle), CNG (waste leeching), and other more sustainable development of energy. Heck do them all!</td>
<td>The City is welcoming of all alternative energy solutions. The City itself does not drill for oil and gas. We regulate those who exercise their legal mineral rights.</td>
</tr>
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</table>
### Comment

**Date:** 7/14/2020

**Commenter Name (if given):** Kenneth Westervelt

**Commenter email:** kenneth.westervelt@gmail.com

**ZIP code:** 80010

As an 811 utility locator, I'm seeing activity in Adams/Arapahoe largely centered around decommissioning old&dry well systems. I am not aware of any fossil fuel reserves we're sitting on that may require new wells. I couldn't find any public information on the state website to support that idea. The idea that regulation may be needed for new wells puzzles me.

I would not be surprised, however, to see O&G companies need to replace old gathering lines. Much like how Aurora neighborhoods are seeing their electric grid replaced, old pipes will show their age and may need replacement before refineries reach their end-of-life. I have been a part of work on replacing old electric lines. That work is necessary. I fully expect O&G replacements to be necessary as well. Whatever you may think about the morality of fossil fuel extraction, until there is no use for refineries around DIA we will either choose to spend labor on replacing or repairing existing pipeline. For the safety of our labor force and the surrounding countryside, I'd much rather have them replace than repair.

I have no opinion on new wells. Ban them, "drill baby drill", doesn't make much difference to me. I strongly support working with pipeline owners to update or replace existing infrastructure as needed. So long as that happens, I'll be okay with the new order of things.

Sincerely, Ken Westervelt

---

**City Response:**

There are 60 actively producing wells within the City limits of Aurora, all east of E-470. Additional wells are in various stages of the permitting process. Regulations related to pipelines over which Aurora has authority are included in the Oil & Gas Manual in Sections 31-38.
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<tr>
<td>7/16/2020</td>
<td>Kathryn Schlatter</td>
<td><a href="mailto:kwschlatter@gmail.com">kwschlatter@gmail.com</a></td>
<td>Dear Aurora City Council Members and Mayor, While you draft the BMP for the City of Aurora please carefully consider the property rights of mineral owners within the City. The State of Colorado has some of the toughest regulations in the Country and over the past few years the City of Aurora and Oil and Gas Companies have worked together diligently on implementing operating agreements that have added additional safety measures for oil and gas operations within the City. Please consider how the city can implement best management practices while not forgetting to also protect the property rights that mineral owners in the City of Aurora have to access their property. Thank you for your continued service to community, businesses and property owners within the City of Aurora. Best Regards, Kathryn Schlatter</td>
<td>The City understands the property rights of mineral owners. Properly balancing the rights of property owners with protection of the public and the environment is one of the key responsibilities of our regulations.</td>
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<tr>
<td>7/17/2020</td>
<td>Rich Coolidge</td>
<td><a href="mailto:Rich.Coolidge@coga.org">Rich.Coolidge@coga.org</a></td>
<td>Do you have a video recording from last night’s virtual town hall that you can send? Thanks.</td>
<td>The July 16 Virtual Town Hall is viewable at <a href="https://youtu.be/p8HlsW3GZxg">https://youtu.be/p8HlsW3GZxg</a></td>
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<tr>
<td>7/27/2020</td>
<td>Sean Hacket</td>
<td><a href="mailto:sean.hackett@state.co.us">sean.hackett@state.co.us</a></td>
<td>CDPHE appreciates the opportunity to review Aurora's draft regulations. Although Aurora's draft regulations are stronger in some areas (e.g. use of electric equipment and line power), they are not inconsistent with CDPHE's regulations and it looks like they build in the appropriate language to account for potential changes/updates CDPHE may eventually take. 4.02 Surface Water Protection- Consider a requirement that if a local public water system has completed a source water protection plan for their community or water supply, the permittee is obligated to discuss potential impacts to the water provider and implement appropriate BMPs (above and beyond those explicitly required in the regulations) to reduce potential contamination agreed upon between the operator and water provider. 5.01.2.05 - How does Aurora define venting? (COGCC's draft 900 series rules define venting as &quot;intentionally allowing natural gas to escape into the atmosphere.&quot;) 5.01.3- Air Monitoring and Leak Detection for Facilities Without Permanent Tanks- Why does the continuous monitoring requirement only apply to facilities without permanent tanks? What is the reasoning behind requiring monitoring for a period of 5 days of monitoring? What is the reasoning behind requiring monitoring at least 30 days in advance of any construction activities? The draft regulations use the term &quot;hydrocarbons&quot; in 5.01.3.01 and &quot;total hydrocarbons&quot; in 5.01.3.02. Are these terms intended to mean the same thing?</td>
<td>4.02 - Noted. 5.01.2.05 - We agree with that definition. If it is unintentional, then either it is a leak, which is covered in other provisions, or it is an emergency. 5.01.3 - Good catch. 5.01.3.02 should be promoted to a different section without regard to tank usage. 5 days of monitoring - The &quot;5 days&quot; only relates to baseline monitoring prior to construction. We have requested it 30 days in advance of construction because it is very important that the sampling is done and submitted to the City, else we have no way to go back and obtain a baseline. &quot;hydrocarbons&quot; in 5.01.3.01 and &quot;total hydrocarbons&quot; in 5.01.3.02. - Yes. I will modify the language.</td>
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<tr>
<td>7/28/2020</td>
<td>ARB Midstream/DJ South Infield Gathering</td>
<td><a href="mailto:Amanda.Martin@ARBMidstream.com">Amanda.Martin@ARBMidstream.com</a></td>
<td>Thank you for taking the time last week to discuss some of the items of concern in the City of Aurora’s proposed Oil &amp; Gas Manual as it pertains to midstream projects within the City. It is our goal to work with City staff to develop workable common sense guidelines that will facilitate the safe and successful development of necessary infrastructure within the City. We appreciate your willingness to understand our concerns and address potential conflicts that may arise from the new Manual guidelines. Attached, please find a summary of items as identified by ARB Midstream/DJ South Infield Gathering for City review and consideration prior to issuance of the Manual. Please note that this list is comprised of some items discussed during our group call last week and others that were not discussed due to time constraints. Should you have any questions about my notes as written or if you’d like to discuss anything in particular, please feel free to reach out anytime. Again, thank you for the opportunity to discuss these items in detail. We appreciate the City's consideration.</td>
<td>NOTE: Comments from this party were lengthy and the City is preparing a response to be posted with this spreadsheet in the near future.</td>
</tr>
<tr>
<td>7/30/2020</td>
<td>Tracy Colling</td>
<td><a href="mailto:Tracy_Colling@oxy.com">Tracy_Colling@oxy.com</a></td>
<td>We are collecting information for local government throughout Colorado to identify what each local jurisdiction has as a setback requirement from existing plugged and abandoned wells (P&amp;A). I don’t find it in your code can you please direct me to the correct section or if you don’t have a setback please advise? Thank you, Tracy Colling</td>
<td>The City is developing reverse setback requirements. Most likely those will not be in the OGM since they would not apply to oil and gas Operators.</td>
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<td>7/31/2020</td>
<td>Lisa Tran</td>
<td><a href="mailto:lisa_tran186@hotmail.com">lisa_tran186@hotmail.com</a></td>
<td>Good Morning, I do not want any type of drilling to happen, but I know as a city you will not care as long as the funds are there. We know fracking will impact the quality of water, and cause water to catch on fire. Will residents be able to get their waters tested and clean for free?</td>
<td>Colorado and local jurisdictions such as Aurora do not have authority to halt the development of valid mineral interests. Aurora works in conjunction with COGCC to regulate the industry for the purpose of protecting public health, safety, welfare, and the environment. The Oil &amp; Gas Division is unable to provide water testing for residents. If you have a concern about your water quality, please contact your water provider. If you have your own water well and have concerns about your water quality, you may have an independent test performed.</td>
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8/11/2020 | William E. Windler | williamwindler@y7mail.com | The proposed oil and gas regulations are a premier example of bureaucratic over-reach. They are overly detailed and dictatorial and will result in stifling industry creativity and competitiveness. The proposed rules go well beyond practical and do not provide a balance between private property rights and the public good.

The proposed rules assume that the city knows the industry better than the industry knows itself. If implemented as written there will be many unintended consequences including loss of jobs and tax revenue. The city is already basically bankrupt because of COVID and other financial decisions. Adding another large bureaucratic process to an already financially strapped city makes no sense.

The amount of time it will take for a company to comply with the voluminous amount of regulations and timelines associated therewith is off the charts, even for a subdivision of government. These types of regulations are designed to kill and bankrupt businesses that provide jobs and tax revenues for thousand of citizens.

I quote below from an article entitled PRIVATE PROPERTY AND THE PUBLIC GOOD written by Jon Stone, Denver University. “The eighteenth-century English legal commentator William Blackstone famously declared private property to be a “sacred and inviolable” right – a precondition for personal security, individual liberty, and societal flourishing. For their part, America’s constitutional Founders viewed private property to be so fundamental that they enacted the Takings Clause of the Fifth Amendment (as well as comparable provisions in state-level constitutions) to prevent unlawful incursions by government on the rights of property owners.”

He further states “Despite the long-standing importance of private property rights in Anglo-American law, considerable encroachments on such rights have occurred in recent decades as governmental bodies have increasingly sought to deploy…. their power to take property from private individuals for a variety of so-called “public” uses.”

These proposed regulations will do exactly that. As written, these regulations are so onerous that mineral owners in the city of Aurora will be deprived of their constitutional rights to peacefully enjoy their constitutionally protected property rights. [CONTINUED]
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<td>8/11/2020</td>
<td>William E. Windler</td>
<td><a href="mailto:williamwindler@y7mail.com">williamwindler@y7mail.com</a></td>
<td>These rights are equal to other constitutional rights such as Free Speech as recently proclaimed by the United States Supreme Court. These violations can now be litigated in the federal court system bypassing local and state jurisdictions. In my particular case, my family has owned land and mineral rights in the area since almost statehood. And now for a city to attempt to put in place rules and regulations that will potentially rob us of opportunities to develop our 710 mineral acres is nothing short of theft. As Mr. Stone’s article published March 10, 2020 clearly articulates, “There has been a battle over the past 50 years between two powerful forces: One is private property owners and the other is the police power threatening these owners,” says Jan Laitos, the John A. Carver, Jr. Chair at the University of Denver’s Sturm College of Law. “The Colorado Oil and Gas Commission already has in place regulations that cover the most important elements of oil and gas exploration. There is no need for the overly burdensome proposed regulations unless the ultimate goal is to actually destroy the oil and gas industry now that the United States is finally self sufficient in energy development. Would the city prefer to export all the jobs that will be lost back to the Middle East and Russia? The possible economic losses would represent current, tangible, and ascertainable losses that are neither speculative or remote if these rules are approved as written. Finally, and most significant, these rules if approved will substantially diminish the value of the mineral acreage held by many mineral owners in the City of Aurora and potentially deprive the owners of their right to an efficient exploitation of it minerals. Both circumstances would be inconsistent with the mandate of the Colorado oil and gas conservation statutes. I assume the city is willing to compensate the mineral owners and oil and gas companies for their losses because, if adopted, these rules would constitute a takings of private property. Numerous oil and gas companies have already worked tirelessly over the past several years with the city, landowners, mineral owners and other neighbors to gain consensus and develop cutting edge, environmentally sound, technologically advanced and quiet operations. I am not aware of any malpractice on the part of any oil and gas operator in the City of Aurora. So why is there a need for more bureaucracy? In many people’s opinion there isn’t. This appears to be a partisan political agenda.</td>
<td>The City of Aurora understands the rights of mineral owners. In the United States and in Colorado, mineral rights are property rights. We appreciate your comments regarding the burden placed on Operators by regulations. The Oil &amp; Gas Division seeks to find the balance between protection of public and the environment, and allowing Operators to access their legal mineral interest. More than 95% of the regulations found in the Draft Oil &amp; Gas Manual are not new, rather they were taken from the Operator Agreements negotiated between Operators and City Council last year. The City is currently working with five (5) Operators (both upstream and midstream) whose regulations are substantially the same as those found within the Draft Oil &amp; Gas Manual.</td>
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William E. Windler, Mineral Owner, First Creek LTD/Windler Homestead |
8/19/2020 Patty Dunn patdunn4@comcast.net I recently learned while watching an Aurora City Council meeting, that marijuana facilities must assure the City that they have $400,000 available. My question: How much money does oil and gas need to show Council they have available? Is this question asked of the applicant before their applications are approved?
I am very concerned about the financial viability of oil and gas companies, especially in light of Extraction Oil and Gas going bankrupt. Thank you for your time.

We do not ask that question of oil and gas applicants currently. We require evidence of various insurance policies for protection to the City. COGCC requires bonding of Operators at the State level. COGCC has authority and responsibility for P&A of wellbores.

8/21/2020 MATTHEW RODGERS matthew.rodgers.7@us.army.mil Hello, please see comments below from Buckley AFB on your Draft Oil & Gas Manual currently posted for review and commenting by the public...

City Comments are included in the attached document.
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<tr>
<td>8/22/2020</td>
<td>Sandra Toland</td>
<td><a href="mailto:sjtoland@ecentral.com">sjtoland@ecentral.com</a></td>
<td>In 2019 Aurora government approved an operator agreement with Extraction Oil and Gas, even though many Aurora residents warned the city council, during public testimony, that Extraction was in financial straits. Extraction’s stocks had been plummeting for some time and they had $1.7 billion in long-term debt. In June 2020, Extraction filed for Chapter 11 bankruptcy protection. The passage of SB-181 now allows the COGCC to get financial assurances, from companies applying for drilling permits, to prove they are able to fulfill their obligations to monitor, maintain, and eventually close, plug and reclaim their wells. I think it would have saved the city a lot of time and money if it had first looked into the financial solvency of Extraction before going to the trouble of negotiating an Operator Agreement with them. Aurora has rules for applying to open a marijuana dispensary, requiring the party applying for the license to have at least $400,000 in liquid assets. Shouldn’t Aurora have rules requiring a high level of financial liquidity for oil and gas companies applying for drilling permits? The oil and gas industry continues to be plagued by financial solvency issues: it has never made a sustainable profit from horizontal fracking of shale formations. The fracking boom has been paid for by massive borrowing and investors. The cumulative debts of 446 oil and gas companies filing for bankruptcy from 2015 to 2020 is $262 billion. These bankruptcies are sure to continue with the pandemic causing reductions in gasoline use, a glut of oil reserves, and low oil prices. Aurora needs financial assurance rules, in its oil and gas manual, to protect itself from financially shaky operators, who will not be able to meet the obligations of protecting public health and safety, and the environment.</td>
<td>The City is reviewing appropriate options for financial assurance from Operators. The City currently requires certain bonds to be posted via the Road Maintenance Agreement and Stormwater plan, as well as robust insurance requirements.</td>
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<td>8/22/2020</td>
<td>Christopher J. McGowne</td>
<td><a href="mailto:McGowneC@api.org">McGowneC@api.org</a></td>
<td>Lengthy comments included in attached document.</td>
<td>City Comments are included in the attached document.</td>
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<td>8/22/2020</td>
<td>Christopher J. McGowne (API)</td>
<td><a href="mailto:McGowneC@api.org">McGowneC@api.org</a></td>
<td>Lengthy comments included in attached document.</td>
<td>City Comments are included in the attached document.</td>
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<td>8/23/2020</td>
<td>Bonnie Rader (Lowry Landfill Superfund Site Citizens Advisory Group)</td>
<td><a href="mailto:berr@pcisys.net">berr@pcisys.net</a></td>
<td>(Comments submitted were stated duplicates from the following numbered items of the submission by What the Frack?! Arapahoe. #10, #21, #24, #25, #32) A PDF of the comments are attached below.</td>
<td>City Comments will be covered under the submission by What the Frack?! Arapahoe</td>
</tr>
<tr>
<td>8/23/2020</td>
<td>PATTY DUNN</td>
<td><a href="mailto:patdunn4@comcast.net">patdunn4@comcast.net</a></td>
<td>How many oil and gas wells are operational in Aurora? How often are they inspected? How many outstanding applications are there in Aurora for oil and gas wells, and where are they located. Thank you for your response to my inquiry.</td>
<td>The City currently has 76 wells drilled. Most are producing, but some are either shut-in or waiting on completion. There are an additional 99 wells which have been submitted and/or are approved. We are scheduling quarterly routine inspections plus additional inspections if needed to review public complaints.</td>
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<td>8/23/2020</td>
<td>G. Thomas Kraus</td>
<td><a href="mailto:tomem3@gmail.com">tomem3@gmail.com</a></td>
<td>I wish to support the comments given by Sonia-Skakich Scrima of &quot;What the Frack&quot;. Her comments are insightful and well documented. Please give them close consideration. They were submitted on 08/23/2020. Aurora Resident</td>
<td>Thank you for your comments. Comments from What the Frack?! Arapahoe have been received and reviewed separately.</td>
</tr>
<tr>
<td>8/23/2020</td>
<td>Ryan Seastrom (COGA)</td>
<td><a href="mailto:Ryan.Seastrom@coga.org">Ryan.Seastrom@coga.org</a></td>
<td>Lengthy comments included in attached document.</td>
<td>City Comments are included in the attached document.</td>
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| 8/23/2020    | Lawrence Scrima           | lscrima@gmail.com | To whom it may concern,  
As a board certified Sleep Specialist, I am naturally concerned with promoting health and an environment that supports health and good sleep.  
I endorse the Comments and Requested Revisions to the proposed Aurora oil and gas ordinances provided by What the Frack?! Arapahoe. Please give their suggested revisions your most serious consideration as they appear to be critical to the health of Aurora residents.  
Lawrence Scrima, PhD, D,ABSM, FAASM  
Principal, Sleep Expert Consultants, LLC  
Aurora Colorado | Thank you for your comments. Comments from What the Frack?! Arapahoe have been received and reviewed separately. |
| 8/23/2020    | Randee Webb               | rwebb153@hotmail.com | Lengthy comments included in attached document. | City Comments are included in the attached document. |
| 8/23/2020    | Randee Webb               | rwebb153@hotmail.com | As a voting resident in Ward IV (4), I wish to add --for the record-- my support of comments submitted by the local volunteer group, circa 2011, What the Frack?! Arapahoe.  
The group has been educating Coloradans (via movies, guest expert speakers, personal testimony before committees of the Colorado Assembly and the Aurora City Council, etc.) about the impacts of oil and gas development.  
Many Aurorans, like myself, have been looking forward to seeing what 2020 holds insofar as protections mandated by our government. Please support the comments submitted by Sonia Skakich-Scrima as founder of and on behalf of What the Frack?! Arapahoe.  
Sincerely, | Thank you for your comments. Comments from What the Frack?! Arapahoe have been received and reviewed separately. |
Public Comments Submitted to oil&gas@auroragov.org about the Draft Oil & Gas Manual through August 23, 2020

**NOTE:** Comments which were too lengthy to include in the spreadsheet are attached after the spreadsheet; some with City response.

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| 8/23/2020    | Arnie Schultz             | seamus12@comcast.net | Dear Mr. Moore,  
I have read and support all of the changes that What the Frack?! Arapahoe is proposing to be more protective of public health, safety, welfare, and the environment. The comparisons they have made to Aurora vs. other jurisdictions shows the need for Aurora to tighten its regulation of the oil and gas industry as it revises the Aurora Oil and Gas Manual. The revisions are supported by the intent of Colorado state law (SB181).  
Sincerely yours,  
Arnie Schultz, Ph.D.  
1137 S. Oakland St.  
Aurora, CO 80012-4259 | Thank you for your comments. Comments from What the Frack?! Arapahoe have been received and reviewed separately. |
| 8/23/2020    | EDITH HENKE               | phed@comcast.net | Lengthy comments included in attached document. | City Comments are included in the attached document. |
| 8/23/2020    | Sonia-Skakich Scrima (What the Frack? Arapahoe) | joejederman@msn.com | Lengthy comments included in attached document. | City Comments are included in the attached document. |
| 8/23/2020    | Kyle Larson               | kyle@myroofingexpert.com | Lengthy comments included in attached document. | City Comments are included in the attached document. |
| 8/23/2020    | Diane Kocis (Arapahoe County) | DKocis@arapahoegov.com | Lengthy comments included in attached document. | City Comments are included in the attached document. |
| 8/23/2020    | Paula Smolen              | pmsmolen@yahoo.com | Lengthy comments included in attached document. | City Comments are included in the attached document. |
| 8/23/2020    | Sonia-Skakich Scrima      | joejederman@msn.com | Lengthy comments included in attached document. | City Comments are included in the attached document. |
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<tr>
<td>8/24/2020</td>
<td>Jon Barber</td>
<td><a href="mailto:jonbarber1955@gmail.com">jonbarber1955@gmail.com</a></td>
<td>I am good with the comments taken from Sonia's dissertation on the risk assessment regarding the LLSF with O&amp;G exploration, drilling and fracking. Thank you Sonia.</td>
<td>Noted.</td>
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NOTE: Comments unrelated to oil and gas have been forwarded to the appropriate department.
The following document contains public comments regarding the Draft Oil & Gas Manual which were too lengthy to include in the weekly spreadsheet. Black and blue font is original, from the commenter. Red font is an initial response from the City of Aurora.

Comments submitted by: Amanda Martin Amanda.Martin@ARBMidstream.com
Subject: ARB Midstream/DJ South Infield Gathering - proposed Oil & Gas manual review & comments

City of Aurora – Oil & Gas Manual - Additional items for review/consideration ARB Midstream LLC

General Comment

− Terminology in midstream section needs to be consistent with midstream applications, not E&P

Noted. Some Midstream sections were copied from the E&P section and the wording did not get changed. Thanks for your diligence in review.

32.01.02 – Future Increase in Oil & Gas Midstream Location Size

− Operator should have ability to add equipment without having to submit an entirely new permit
− Potentially change to only “major modifications” and define “major”

This is a fair point. Our intent was to indicate the need for additional approval if, as you said, major changes are made. We will change the word “Facilities” to “CGF, Gathering Lines, or Associated Facilities.” to indicate the type of changes we envision needing to be approved. We will also add an option for updating of the permit.

32.02.2.01 – Neighborhood Meeting

− “Oil and Gas Location” is inappropriate term

Noted. Should be “CGF, Gathering Lines or Associated Facilities.” Also, this sub-section is mis-numbered. Should be 32.02.7.01 and will be corrected.

32.02.14 – Administrative Approval of OGMP

− Company should be notified of a call-up and have opportunity to discuss project
− Ambiguity of approval
− What would a call-up from City Council entail? Could they overturn an administrative approval?

The applicant is always included in any Council call-up meeting and will be allowed to present whatever information they wish to support their application. Council has the authority to overturn an administrative approval. Ideally, they would provide direction to the applicant and staff as to how the application can be modified to receive their support.

32.02.18 – Time Limits

− Clarify the process to request an extension

Yes. The applicant can request an extension, but would need to provide evidence of why the project was delayed and a future timeline. Note that if BMPs have changed during the three years the permit was active, the new BMPs will be applied to any extension.

32.03.2.09 – Letter of Introduction for Plans for Gathering Line Submittal Materials

− Is a description of hazards necessary/normal?
− Seems vague

Yes. The applicant should have sufficient experience in operating the facilities applied for, and be able to describe what hazards exist.
32.03.3.16 – Site Plan for the CGF and Associated Facilities/PHA-HAZOP
  – For what types of facilities?
  
  For all facilities.

32.03.3.30 – Fee Payment
  – What are the fees?
  
  Application fees are currently established by the Planning Department and are based on the time required to review an application.

33.02.4 – Emergencies
  – Massive expense for operators
  – How will amount of water be determined?
  
  We will discuss this with our Fire Department staff. There may need to be an adjustment if this language came from the Wells section.

33.03.01 – PHA-HAZOP
  – Replace “incorporated” with “considered”
  
  Will discuss with Fire Department.

33.11 Insurance
  – Add option to self-insure (similar to language in License Agreement)
  
  We will discuss this with our Risk Manager.

34.01.1 – Water Source
  – Clarify water sourcing requirements for midstream. Is it mandated by the City like that of E&P use?
  
  I believe it is mandated. I will confirm with Aurora Water.

34.04 – Water During Drilling Phase
  – This provision should be removed for midstream operations
  
  That makes sense, since Midstream operators are not drilling. I will confirm with Aurora Water.

35.01.2.07 – Minimization of Emissions
  – “Reduction of emissions from oil and gas well maintenance activities.” Should be removed in midstream section
  
  Agreed.

35.04 – Electric Equipment
  – In conflict with 35.01.2.02 stating that “Natural gas engines and turbines will be operated and maintained...” This implies that use of temporary generators is permitted
  
  Temporary generators are allowed. 35.04 is focused on permanent equipment.

  – If allowed, include language to allow for use of temporary generators during construction AND/OR until/if power company is causing delay in bringing power to site, or due to other situations outside the Operator’s control.
  
  Operator may request such as a variance.

37.01.1 Notice of Application
  – Notification of landowners within 1 mile of entire gathering system is unnecessary. Propose to revise this to within 1 mile of surface equipment (appurtenance sites).
The section states one mile from “CGF and Associated Facilities.” The notification distance from gathering lines is 350’. The OGM will be updated to include that language.

37.01.2 – Resident Notification of Neighborhood Drilling
- “Approximate date to begin drilling” should be removed
Language will be updated to reflect construction not drilling.

37.05 – Previously Installed Facilities
- Retroactive application of code is problematic, unreasonable, and unnecessary.
Other industries apply this same approach. This requirement pertains to operations on a point-forward basis. For example, if a BMP regarding installation of a gathering line changes, but the gathering line has already been installed, then the line is in compliance since that phase is already completed.

37.06 – Construction Work Hours
- Limited work hours could increase time for construction of facilities and disturbance to any nearby residents
Understood. Nearby residents may be disturbed by construction activities of any industry. Limiting working hours is a trade off between constant 24-hour construction which would be shorter in duration, and daytime-only construction which would be longer.

- What is the process for requesting an exception to work hours at the time of construction (not known at the time of OGMP process) if/when emergency/extenuating circumstances arise? (ex: completing bore operations or tie-ins to avoid leaving open trenches/bell holes, etc.)
The Operator may request a variance at any time. Certain variances (certain activities, or certain locations of work) would be known at time of application. If an emergency arises, the Operator would be expected to notify the City as soon as possible, and continue working to mitigate the emergency situation per the Emergency Response Plan.

38.05 Pipeline Location Requirements
- 38.05.1 – Is this requirement specific to City utilities only or all 3rd party crossings?
I will address this question with Public Works.

• Standard industry practice and existing regulations require 2’ minimum vertical separation. 10’, or even 5’ with an exception, is unnecessary and excessive.

• 10’ required separation could present safety and maintenance problems depending on final depth
I will address this question with Public Works.

- 38.05.3 – Clarify the “10 feet edge to edge” spacing language – does this mean 10’ spacing from the pipe itself or the easement? • 30’ required spacing is excessive and results in a “taking” from private landowners when easements are required to be acquired so far into their usable lands. Creates potential for litigation against the City.
I will address this question with Public Works and City Attorneys.

- 38.05.10 – 30’ required spacing is excessive and creates a “taking” from private landowners when easements are required to be acquired so far into their usable lands – potential for litigation.
I will address this question with Public Works and City Attorneys.
− 38.05.11 – Maximum pipeline corridor width of 75’ will limit ability to accommodate spacing requirements also required by the Manual
   This is a good point. I will address this question with Public Works.

− 38.05.12 – include language to remove this obligation if structures are built or flood boundaries are revised after the pipeline is installed.
   If the pipeline is built first, then it would be the responsibility of the developer of the other surface features to consider any reverse set-back requirements.

− 38.05.13 – Clarify that bore requirement is only specific to floodWAYS, not all “creeks, ditches, and other conveyances” due to vagueness of these terms. • 20’ required depth is excessive and not consistent with other area municipalities (i.e.: Arapahoe County 6’ DOC required in floodplains, and no requirement to bore); propose to revise to 15’ DOC
   I will discuss with Aurora Water and update as appropriate.

38.06 Testing and Maintenance
− Ensure that language allows/requires pigging of lines “as applicable” – some gathering lines are non-piggable due to size
   I will add a clarification.

− Propose to modify frequency to 2 times per year (not quarterly) or “as deemed necessary by operator”
   I will check with COGCC to inquire about their frequency requirements.

90.01.3 – Notification for Inspections
− Please define “reasonable notice”
  Reasonable notice means reasonable. In the case of routine inspections, it might be several days or more. If there is an emergency or urgent citizen complaint, it might be “today” or within hours.
Hello, please see comments below from Buckley AFB on your Draft Oil & Gas Manual currently posted for review and commenting by the public. Please feel free to reach out to me directly to discuss any of our comments further and we thank the City of Aurora for the opportunity to comment on this document.

1) General Note - Please be advised that we have become aware that the CO Oil & Gas Conservation Commission (COGCC) does not show any of our restoration sites via their GIS data other than Site 3 & 11 (A landfill and chlorinated solvents plumes respectively); while we are working with the COGCC to get our data updated into their GIS system and the chance of any drilling operations adversely affecting these sites is likely very low, I wanted to ensure that the City of Aurora was aware as there is pending horizontal drilling that is to occur very close, at least horizontally, to at least one of our restoration sites (Site 10). I request that the City of Aurora coordinates with Scott Wilson, whom is the Buckley AFB Restoration Program Manager (Scott.Wilson.7@us.af.mil, 720-847-7159), before the pending wells just east of our boundary are approved by the City of Aurora for drilling.

Thank you. We will coordinate with Mr. Wilson. The proposed horizontal wells shown on the COGCC map are not directly under the BAFB. Additionally, those wells have never been submitted to the City for review. If they are submitted in the future, we will certainly look closely at the specific locations and coordinate with you.

2) Table of Contents - Sections 4, 5 & 6 and 34, 35 & 36 seem to be duplicative, respectively, and would merge if possible.

Sections 1-7 are for Wells. Section 31-38 are for midstream operations.

3) Section 2.02.8 - I’m seeking clarification on whether notification is to be given to only property owners within 1 mile of the O&G drilling location boundary from the point of surface drilling or 1 mile from the extent of horizontal drilling; if the former, then it is requested that all owners within 1 mile from the extent of horizontal drilling be notified to ensure a good faith effort in notifying the surrounding community of both surface and sub-surface disruption.

Current regulations require notification from the surface location. The City does not have authority to regulate subsurface wells. We recommend you submit this comment to the COGCC.

4) Section 4.01.2 - It is recommended that the City of Aurora be specific as to what the “applicable laws, rules, and regulations concerning the source(s) of water used in the Drilling Phase, Completion Phase, and Production Phase” are as liability to the city can be increased when using such all-inclusive language rather than decreased.

I will ask for clarifying language from Aurora Water.

5) Section 4.02.2.02 - Cite specific regulations related to the recycling of flowback and produced water.

COGCC 907.a.1 and 907.d.1
6) Section 4.02.2.05 – Would recommend at least placing a note that all wastewater generated from drilling activity where the City of Aurora has an interest shall be disposed of in accordance with applicable laws, rules, and regulations even if it can’t be disposed of within city limits and, again, citing specific wastewater regulations such as MWRD Rules & Regulations is advisable.

Noted.

7) Section 4.02.4.01 – Will there be any setback restrictions related to private infrastructure such as drinking wells?

There is no such setback currently. Private drinking wells typically are associated with a residence which does have setback requirements.

8) Section 4.03.01 – Recommend extending this requirement to preclude any drilling activity, where the City of Aurora has an interest, from degrading surface/ground waters or wetlands within or outside of city limits.

Your recommendation is already included. We do not have authority to regulate areas outside the City limits.

9) Section 6.08 – Change Division of Wildlife to Colorado Parks & Wildlife

Noted.

10) Section 7.01.3 – In first paragraph, specify either calendar or business days.

Noted.

11) Section 7.01.3 – In second paragraph, request that the CoA is explicit that no work can occur by operator at the proposed location until all comments have been responded to that require a response.

Operator must respond to all comments prior to receiving a permit.

12) Section 33.02.3 – Request that Buckley AFB Fire Department be added as a consulting party along with Sable Altura Fire Rescue and Bennett Fire.

Noted. Thank you for this comment, as I wasn’t aware that the BAFB Fire Department was able to assist with non-BAFB emergency events.

13) Section 36.08 – Change Division of Wildlife to Colorado Parks & Wildlife

Noted.

V/R,
MATTHEW C. RODGERS, GS-13, DAF
Chief - Environmental Element
460 CES/CEIE
660 South Aspen Street, Mail Stop 86
Bldg. 1005, Room 178
Buckley AFB, CO 80011-9564
DSN: 847-7245; COMM: 720-847-7245
Email: matthew.rodgers.7@us.af.mil
Dear Mr. Moore

The American Petroleum Institute Colorado (API) appreciates the opportunity to review and comment on the City of Aurora's proposed draft Oil & Gas Manual. API Colorado is a division of the American Petroleum Institute, which represents all facets of the oil and natural gas industry. Our more than 600 members produce, process, and distribute most of the nation’s energy. In our first 100 years, API has developed more than 700 standards to enhance operational and environmental safety, efficiency and sustainability. API Colorado is committed to ensuring a strong, viable industry capable of meeting the energy needs of the state in a safe and environmentally responsible manner.

API and its member companies have always enjoyed a very positive, collaborative, and engaging relationship with communities across the front range. In Colorado alone, API members have continuously come to the table in local jurisdictions to find collaborative solutions to complex issues. This is also true in Aurora, where our operators have worked diligently with the Aurora Oil and Gas Division to address community issues. However, we have some concerns regarding your proposed draft Oil & Gas Manual.

As such, we have highlighted our more pressing issues in this comment letter. You will also find a redline of the E&P Sections attached with this letter, which contains a more comprehensive list of our suggestions and edits.

A. General Comments

We would like to make some initial observations. First, we understand the City's reasoning behind proposing an Oil & Gas Manual, as opposed to codification of its development code. With that in mind, we would like to suggest that the manual incorporate the procedure by which future amendments to the manual will be proposed and adopted. Regulatory certainty is an important part of our industry’s operating decisions. With respect to future manual changes, Section 1.03 only states only that future revisions "may be adopted as often as needed by the City Manager of their designee". Certainly, we understand the City will likely conduct a formal process for future changes. However, we believe it is always prudent to specify what procedures will govern the amendment process, when drafting formal guidance.

The Oil & Gas Manual (OGM) will be referenced in updated City code. The OGM will be legally enforceable as are other technical manuals for other departments. The procedure for updating the OGM will be found in the new ordinance which will be reviewed and approved by City Council. The ordinance is the most appropriate place for the update process. Proposed updates will first be sent to the Aurora Oil & Gas Advisory Committee for review and then to City Attorneys. Afterwards, the updates will be officially promulgated administratively, and notice sent to City Council. Council may call up any administrative decision within the City.

In addition, we believe the manual should make clear that Title 24, Article 68 of the Colorado Revised Statutes regarding Vested Rights applies to each permit application. As noted above, one of the key pillars of all business development is regulatory certainty. Making clear that any permit application will
be governed by the standards under which it was submitted serves to provide operators with the assurances necessary that the City will not change the rules, and the City will not be required to judge each permit application by ever evolving regulatory standards.

I will ask our City Attorneys to review the referenced Article for applicability. Currently, Operators may request vesting, and if so, it is included in the Oil and Gas Location permit approval.

Finally, there are portions of the code that we believe constitute downhole or subsurface regulation. Section 1.02.1 of the manual notes that the manual is derived from recent state legislative changes to the Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101 et seq. It is important to be aware that the act requires any local government regulations to be "necessary" in addition to "reasonable". Further, the text of the act, as well as the legislative history, is clear that local governments may regulate surface impacts associated with oil and natural gas development. This authority does not extend to either downhole or subsurface activity.

You are correct that Aurora does not have authority over downhole activities. We removed some provisions found in the Operator Agreements regarding downhole work. I will review your detailed redline to see if there are additional items that need to be removed.

B. Flowline Regulations

The proposed manual seeks to regulate several aspects of underground oil and gas activity. One of those areas is flowlines. For example, Section 2.04.3.03, Section 6.01, and Section 4.07 each propose to regulate some aspect of flowline implementation or management. We would want to suggest to the City that flowlines are subsurface equipment related to the production of oil and gas. They are used to transport hydrocarbons from the development site to another location. Thus, we would suggest that the City defer regulation of flowlines and gathering lines to their respective state and federal governing bodies.

Thank you for your comment. The City has compelling reasonable concerns about flowlines which leads to the current proposed regulations. Flowlines connect to a well or other equipment within the boundaries of the Oil and Gas Location and thus clearly affect land use within the Oil and Gas Location and surrounding area. I will address this question with City Attorneys as well.

C. Insurance Requirements

The City has indicated it would like to propose certain financial assurance requirements for wells drilled within its jurisdiction. While API does not oppose certain financial assurance requirements, we would request some clarification as to how the City determined what limits would be proposed. While some of those may be appropriate, we would simply seek clarification as to what factors were considered when determining the proposed amounts.

Insurance limits were proposed with input from the City Risk Manager.

In addition, we would suggest that the City consider the already existing COGCC bonding and reclamation procedures for oil and gas wells. We understand the City has a concern about the possibility of future wells being abandoned. We would like to assure the City that the responsibility for reclamation of abandoned wells lies with the state, specifically the COGCC.

You are correct that COGCC requires bonding for P&A and the City does not desire to have authority or responsibility for downhole reclamation at this time. Insurance is different than bonding. Our insurance
requirements are unrelated to reclamation or abandonment, but protect the City from financial liability in case of incidents or unforeseen events.

D. Section 4.02.4.03

The City's proposed manual proposes a one-mile setback from reservoirs. API is very concerned about the arbitrary nature of such a proposed distance. We would respectfully ask the City to provide some justification for this distance. We would hope the City would base its proposal on hard facts, which all show a one-mile setback is neither necessary nor reasonable. We see no data or science that supports benefits to air quality, water quality, noise, or any other aspect of oil and gas development. Operators are always certainly happy to discuss what steps needed to ensure adequate public protection of health safety and welfare. However, a one-mile setback simply does not accomplish that goal.

This section was initiated by Aurora Water. By definition, a reservoir is lower topographically than the immediate surrounding area. Surface flood events could carry spills or waste into the reservoir. I will review this section with Aurora Water again to determine if a lesser distance would still be protective. Also, an Operator may request a variance which would be decided on a case-by-case basis.

E. Section 4.05.2

Section 4.05.2 of the oil and gas manual makes clear that any oil and gas permit requires the use of pipelines. However, there is no expedited review or certainty afforded to applicants. In other words, the code requires the use of pipelines, while still requiring an entirely new and separate permit application with no guarantee of success. In sum, this code requires essentially a dual set of permits for a single oil and gas well site, with no guarantee of approval.

We strongly suggest you incorporate a process for either dual permit application and approval or allow operators who have complied with one section of the code to be deemed approved for the second required permit.

The City is moving to a preference for using pipelines for transportation of all fluids. However, I see a clear issue here with how we have suggested the implementation. I agree that there is a conflict here, and I will discuss with Staff how to resolve. A dual permit was not the intent, so especially for Operators who are installing their own Gathering Lines (downstream of the flowlines which connect to the wellhead) there will need to be more clear explanation.

F. Section 5.01.3.02 - Continuous Air Monitoring

This section states that operators shall be required to conduct continuous air monitoring. This provision assumes that technology related to continuous emissions monitoring is feasible for various pollutants, proven for several different applications, and commercially available. API does not believe that the technology has advanced to this level.

The City has a contract with a third-party consulting company, RTI International, specifically for air quality matters. I will follow up with them to discuss your concerns.

Further, the manual requires mandatory participation in what are voluntary programs, requires the implementation of technology that may either be unnecessary or impracticable, outlines subjective standards that may be amended at any time, and requires other standards that in sum, will prove to be extremely difficult for operators to comply with. We would suggest one avenue would be for the city to contact the APCD to discuss your proposal. We would also note that APCD will be considering rules for
emissions monitoring of its rulemaking docket in 2020 and 2021, which should be helpful to local
governments and the public in understanding the potential for application of this technology.

We monitor—and often participate—in rulemaking at State agencies. We will make future updates to
the OGM as needed to appropriately capture changes at the State level. CDPHE has provided comments
on our OGM.

G. Retroactive Application

Section 7.05 requires that any operator who purchases any previously drilled wells must bring those
wells into compliance with the most current version of the manual. We believe this provision to be
problematic.

Retrospective legislation is constitutionally prohibited. Colo. Const. Art. II, § 11 (prohibiting the General
Assembly from passing retrospective legislation) (emphasis added); People v. D.K.B., 843 P.2d 1326,
1332 (Colo.1993). A statute is retrospective if it “takes away or impairs vested rights acquired under
existing laws, or creates a new obligation, imposes a new duty, or attaches a new disability, in respect to
transactions or considerations already past.” In re Estate of DeWitt, 54 P.3d at 854 (quoting Denver S.
Park & Pac. Ry. Co. v. Woodward, 4 Colo. 162, 167 (1878)). This proscription is intended to prevent the
unfairness that would otherwise result from changing the consequences of an act after that act has

This is the situation under this proposed language. The well, leased mineral rights, and the associated
permit are all vested personal property rights. Requiring a new purchaser to conform to a new set of
standards would certainly impact the primary owner’s right to sell or transfer those assets. We
encourage the City to remove this requirement.

This is an interesting legal point and I will defer to City Attorneys for review.

Again, we thank you for the opportunity to share some of our most pressing concerns with the draft Oil
& Gas Manual. As always, we would welcome the opportunity to discuss these issues with the City
Managers and staff in greater detail.

If you have any questions, please do not hesitate to contact me at (720) 878-7688, or
mcgownec@api.org.

Sincerely,

Chris McGowne

Associate Director

Colorado Petroleum Council
Dear Mr. Moore

The American Petroleum Institute Colorado (API) appreciates the opportunity to review and comment on the City of Aurora's proposed midstream permit regulations. API Colorado is a division of the American Petroleum Institute, which represents all facets of the natural gas and oil industry. Our more than 600 members produce, process, and distribute most of the nation’s energy. In our first 100 years, API has developed more than 700 standards to enhance operational and environmental safety, efficiency, and sustainability. API Colorado is committed to ensuring a strong, viable industry capable of meeting the energy needs of the state in a safe and environmentally responsible manner.

API and its member companies have always enjoyed a very positive, collaborative, and engaging relationship with communities across the front range. In Colorado alone, API members have continuously come to the table in local jurisdictions to find collaborative solutions to complex issues. This is also true in Aurora, where our operators have worked diligently to address both the city and constituent concerns. However, we have some concerns regarding this proposal.

As such, we have highlighted our more pressing Issues in this comment letter. We have also attached a redline, with a comprehensive list of our suggestions and edits.

A. Midstream Permit Application General Comment

We acknowledge and appreciate the desire of the City to protect the health and welfare of its citizens. We further appreciate that the proposed midstream code seeks to regulate some impacts outside the direct development of wells. However, we do believe it is important to highlight several issues.

First, this midstream permit applies to "CGF, Gathering Lines, and Associated Facilities within the City of Aurora." See Section 32.01.1 Permitting of Oil & Gas Midstream Locations and Associated Facilities. These are each different and complex aspects of oil and gas development. Each has different development standards, processes, design features, and purposes. However, the manual does not make any meaningful distinction. Rather, these regulations are significantly based on the development standards related to oil and gas exploration and development, and slightly modified is some areas.

In the petroleum industry, CGF, Gathering Lines, and Associated Facilities are all generally classified as parts of the Midstream sector. Certainly, they are different in many regards. In Aurora, Gathering Lines are the primary element from this group that we permit. They are grouped together not because each of the elements are the same, but because they are part of the same sector (transportation and treating of oil and gas).

We would also like to reiterate that the City of Aurora is limited to regulating only the surface impacts of oil and gas development. However, there are portions of the proposal that we believe constitute subsurface regulation. Section 32.02.1 of the manual notes that the City's authority is derived from recent state legislative changes to the Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101 et seq. The act requires any local government regulations to be "necessary" in addition to "reasonable". In addition, the text and legislative history of SB19-181 makes clear that the authority...
granted to local governments is limited to surface regulations. Our comments are intended to convey that we do believe some areas where the City has proposed to impose certain requirements that constitute an exercise of authority not granted to local governments.

We make a distinction between “downhole” regulation, meaning the activities and equipment related to the drilling, completion, and production of oil and gas wells, versus other features, such as pipelines, which may be located “below the ground surface.” Certainly the City has authority over water pipelines which are below the surface, and various other types of utility lines, etc.

We agree that we do not have authority over “downhole” operations; these are solely the responsibility of COGCC. We disagree about our authority in the subsurface. We believe we have clear authority to regulate land use as it pertains to subsurface pipelines etc., except in the case where the federal government has authority.

In addition, we believe the manual should make clear that Title 24, Article 68 of the Colorado Revised Statutes regarding Vested Rights applies to each permit application.

As noted above, one of the key pillars of all business development is regulatory certainty. Making clear that any permit application will be governed by the standards under which it was submitted serves to provide operators with the assurances necessary that the City will not change the rules, and the City will not be required to judge each permit application by ever evolving regulatory standards.

Operators may request vesting as part of their application. I will discuss Title 24, Article 68 with City Attorneys to see if additional language should be added.

B. Pipeline Requirements

Section 4.05.1 of the proposed manual states "Pipelines servicing a particular Oil and Gas Location must be constructed before the Production Phase commences at such Oil and Gas Location." Thus, under the proposed manual before a well can ever produce in paying quantities, both permits must be secured and pipelines must be in place. This raises several issues such as an instance where there is no viable location under the proposed regulations. This is just one of several circumstances where such a provision could be highly problematic.

The City is moving to a preference for using pipelines for transportation of all fluids. The Operator may submit a variance request to propose using tanks temporarily until pipelines can be constructed.

Second, we would request clarification regarding the duplication of permitting. For example, based on the timeframe requirements, would an operator be able to concurrently notice midstream and E&P facility permits?

An Operator may submit as many permit applications as they like at any time. The City will work with the Operator to determine which applications are highest priority if the volume of permits exceeds the City’s staffing capacity.

Would two notices be required or could they be combined? Would duplicative assessments, plans, etc. be required? We would request the City insert a provision that allows for the concurrent approval of midstream and development permits.
No provision is needed here as each type of permit may be submitted and reviewed concurrently. I’m not sure how to respond to your question about “duplicative assessments, plans, etc.” A site plan for an Oil and Gas Location looks very different from a site plan for a Gathering Line. They are not duplicates.

Additionally, we would seek clarification on the midstream permit and it’s application. Will a single permit cover all listed applications, or will separate permitting be required for each CGF, pipeline, and associated facility.

A single permit is sufficient for an inter-connected gathering system and any features connected to it.

Finally, while there is an administrative aspect to permit approval, which we appreciate, there is the possibility of a city council call up and a denial. In other words, the City Council still has the ability to delay or otherwise put in limbo any midstream permit, even if a well location has been approved. This creates a great deal of uncertainty with respect to oil and gas development. Thus we have proposed a limiting period to allow for a measure of certainty.

Yes, City Council may call up any administrative decision. I recognize your concern with timing, and will review your comments in the redline file.

C. Private Contracts

In several places the midstream permit regulations seek to govern several aspects of private contract. We have noted those areas in the attached redline. While we understand the City seeks to implement regulations that offer protections for its residents, we do not believe the City can, or should, insert itself into private negotiations between consenting parties for development on private land. We are certainly not arguing that contracts are not subject to regulation. Rather, we are concerned that the regulations as written could invalidate certain private contracts as illegal, will restrict the use of private land by landowners, and may altogether prohibit development in certain instances.

I will review your comments in the redline file.

D. Retroactive Application

Section 37.05 requires that "When an Operator purchases or acquires an interest in an Oil & Gas Midstream location or facility, the Operator must review the BMPs in effect in this Oil & Gas Manual at the time of purchase" and submit to the City certification they can comply with the standards or submit a plan to bring any facility into compliance with the manual requirements at the time of purchase. In other words, the manual seeks to retroactively impose development standards on facilities that were constructed under a different set of regulations.

Retrospective legislation is constitutionally prohibited. Colo. Const. Art. II, § 11 (prohibiting the General Assembly from passing retrospective legislation) (emphasis added); People v. D.K.B., 843 P.2d 1326, 1332 (Colo.1993). A statute is retrospective if it “takes away or impairs vested rights acquired under existing laws, or creates a new obligation, imposes a new duty, or attaches a new disability, in respect to transactions or considerations already past.” In re Estate of DeWitt, 54 P.3d at 854 (quoting Denver S. Park & Pac. Ry. Co. v. Woodward, 4 Colo. 162, 167 (1878)). This proscription is intended to prevent the unfairness that would otherwise result from changing the consequences of an act after that act has occurred. Van Sickle v. Boyes, 797 P.2d 1267, 1271 (Colo.1990).

This is the situation under this proposed language. The well, leased mineral rights, and the associated permit are all vested personal property rights. Requiring a new purchaser to conform to a new set of
standards would certainly impact the primary owner’s right to sell or transfer those assets. We encourage the City to remove this requirement.

I will ask City Attorneys to review these legal arguments.

E. Pipeline Disclosure

The proposed code makes clear that the location of pipelines will be fully disclosed to the City and will be available in some fashion to the public at large. This is very problematic. While we are fully supportive of transparency and always seek to be good neighbors, full disclosure of pipeline routes poses a significant safety risk. There are numerous documented instances of activists trespassing or committing acts of vandalism to pipelines and associated equipment. We would strongly suggest the City include privacy protections in the proposed code to ensure that the City is able to monitor locations while at the same time ensuring all pipeline development is protected.

We share your concern. There are privacy provisions in other sections of the Aurora Municipal Code which would apply here. Other jurisdictions, such as COGCC, require pipeline data, but do limit the scale at which the data is available to the public.

F. Federal Regulation

As it relates to liquid (crude) gathering lines, we would suggest the City of Aurora is preempted by federal law with regards to implementing any provisions related to pipeline safety. By definition, any gathering lines (and facilities) within the city limits would not be rural (see definition of “rural” in 49 CFR 195.2), and therefore would be fully subject to Part 195. Currently, neither the State of Colorado nor the City of Aurora have a 49 CFR § 60105 certification for intrastate liquids. Therefore, Section 33.00 Safety and Security and 34.06 Berms for Fluid Containment would seem to be preempted by federal regulation.

We also believe the same would be true for any gas gathering lines that are not in Class 1 areas. Aurora is a densely populated suburb of Denver, and we don’t believe there are extensive Class 1 areas. The Colorado Public Utilities Commission has a PHMSA certification for gas pipelines. However, as codified in federal law (49 USC § 60105(a)) and reaffirmed in case law (see Olympic Pipe Line v. City of Seattle / Williams Pipe Line Co v. City of Mounds View), the certification is limited to the specific agency making it. Therefore, the CPUC’s intrastate certification to implement a pipeline safety program does not extend to the City of Aurora.

Thank you for these references. I will have City Attorneys review. We are clear that there are definitely certain pipelines and certain elements of transportation over which we do not have authority. If that is the case, we would remove those regulations from the OGM.

Again, we thank you for the opportunity to share some of our most pressing concerns with the draft Oil & Gas Manual. As always, we would welcome the opportunity to discuss these issues with the City Managers and staff in greater detail.

If you have any questions, please do not hesitate to contact me at (720) 878-7688, or mcgownec@api.org.

Sincerely,
Chris McGowne
Associate Director
Colorado Petroleum Council
ATTN:

Jeffrey Moore, Manager – Oil & Gas Division

RE: Colorado Oil & Gas Association – Comment to Aurora Draft Oil & Gas Manual

Dear Mr. Moore:

The Colorado Oil & Gas Association (“COGA”) appreciates the opportunity to provide comment on Aurora’s draft Oil & Gas Manual. It is clear the city has spent a significant amount of time creating this manual, and we are appreciative of the stakeholder process provided. Below are several concerns that COGA and our members currently have with the draft manual and attached you will find our redline of the proposed code. Please note that the concerns listed below are not presented in any particular order of importance, nor represent the entirety of COGA’s concerns. We appreciate the city’s attention to the below and attached.

Operator Agreement Based Code

It is COGA’s understanding that many of the provisions in the draft code are taken from previously negotiated operator agreements. While operator agreements are useful tools for local governments to negotiate future, site-specific development, operator agreements are just that, site-specific. Standardizing these requirements creates a one-size-fits-all approach that does not make sense for all oil and gas development, which can vary greatly from location to location. COGA submits that the additional requirements included from the negotiated operator agreements could unintentionally price out and prohibit future development in Aurora. COGA recommends that those specific provisions be struck to allow for greater flexibility.

We agree that oil and gas development varies from location to location. When the Operator Agreements were negotiated by City Council, they contained a significant amount of total regulations which City staff and City Council believed were most appropriate for Aurora. As such, we believe those regulations, which do form the base of the OGM, are appropriate across the vast majority of Aurora. Operators may submit a variance request for particular BMPs if they feel the variance will still protect public health and the environment.

Duplication & Frequency of Testing and Reporting

Various provisions in Aurora’s draft code require testing and reporting standards that are above and beyond what is currently required by state and federal regulations. The data collected is also already publicly available and reflects the results of the testing that is done on an annual, semi-annual, or more frequent basis. As currently drafted, the testing and reporting requirements would increase the financial burden on operators and significantly increase the administrative burden on both the operator and the city. Is there a specific worry that Aurora has that has led to the increased testing and reporting standards? COGA suggests that Aurora rely on data already reported to the various state and federal agencies and seek that information from the respective agencies once available.
We will review the reporting frequencies and specifically how our proposal matched with other jurisdictions.

**Future Increase in Oil and Gas Location Size**

Normal operations on an oil and gas location or at a midstream facility/location may necessitate the addition or removal of certain equipment from time to time for maintenance or operational purposes. As currently drafted in the manual, an operator would have to submit a new OGP or OGMP application to do so. This requirement could essentially halt operations at an existing location or facility and potentially create a safety hazard.

We appreciate the city's openness to carving out flexibility for such activities, and as requested, please see below for a list of activities that industry would classify as routine maintenance or minor improvements. This list should not be considered exhaustive, and COGA recommends that the city build in language to sections 2.01.2 and 32.01.2, giving an operator the ability to conduct such activities without seeking a new permit.

Facilities:

Removing and replacing equipment with similar equipment
- Replace a dehy contactor vessel with a similar new vessel on same foundation
- Swap engine out on a compressor package with similar HP engine
- Swap motor out on a compressor package with similar HP motor
- Change out or replace small motors in the facility with similar motors
- Replace compressor package with in-kind package
- Replace process skid packages with in-kind package
- Replacing or adding small items like pumps / strainers / meters that do not require engineered foundations

Piping modifications
- Re-route / modify station piping (below or above ground) without changes to equipment
- Replace or add valves in the piping system
- Replace or add relief valves in the piping system

Pipelines:
- Modify launcher/receiver piping (drains or vents)
- Reconfigure valve sets
- Revise bollards due to safety reasons

The City would consider the list above to be primarily normal maintenance items that do not rise to the level of “adding an Oil and Gas facility.” However, we can add language to help clarify.

**Retroactive Application of Code to Existing Facilities**
Upon acquiring or purchasing an interest in an Oil & Gas Midstream location or facility or an Oil & Gas Location, both sections 7.05 and 37.05 require an operator to bring the locations or facilities into compliance with the current code. This is problematic for several reasons. First, as drafted, the manual can be revised as often as needed. The ever-increasing list of regulations and BMPs could make it impossible for the purchasing party to bring an older site up to current code. This would also affect the resale value of such assets as the purchaser may have to spend an unreasonable amount of money to bring an asset into current compliance. It would be especially problematic if an operator found themselves facing a financial setback and needed to sell their assets to another company to avoid orphaning their locations. Related to midstream operations, this provision could require an operator to dig up previously laid pipelines and relocate them, causing increased surface disturbance and the potential need to obtain an entirely new permit. COGA suggests that the language in the code be changed to not retroactively apply to existing locations and facilities that were granted under a previous code.

Our intent would be that wells and locations stay current on a point-forward basis. For example, if a well has already be drilled, new BMPs related to drilling would not apply since the drilling phase is complete.

**Administrative Changes to Manual**

COGA strongly suggests the removal of provision 1.03, which allows the City Manager or designee to make and adopt changes to the Oil & Gas Manual. While the legality of this provision is questionable, the administrative adoption of changes removes any ability for a stakeholder process and public input. In an extremely technical industry with rapid technological advances, it would benefit Aurora to seek out relevant information and input before changes are made. The “behind closed doors” approach to future revisions does not inspire confidence, and COGA again asks that this provision be struck or amended to provide appropriate due process.

An ordinance is being prepared for City Council to review which will make the Oil & Gas Manual official code. Council may delegate authority to anyone they like. The ordinance will also define the requirements of the update process. The OGM will first go to the Oil & Gas Advisory Committee for review. Public may attend that meeting. Then the OGM will be sent to City Attorneys for final review. Once complete, the rules will be promulgated administratively. Council may call up any administrative decision. Although it will not be code, I intend to provide a summary of changes, allow with the recommendation from the Oil & Gas Advisory Committee to City Council in a Study Session.

**Timelines for Permitting**

COGA also suggests that the city add timelines for the various stages of the permitting process (first review, second review, etc.) and also help to provide direction on how the OGP and OGMP process interplays with the other departments in the city (e.g. which steps can occur concurrently or not). Defined timeframes help provide certainty to an operator that their project will move through the permitting process in a timely manner and help prevent potential abuse from those who may wish to intentionally delay the project.

The City endeavors to move through all development applications in a timely manner. At the pre-application meeting, the Office of Development Assistance (ODA) will provide an expected timeline to the Operator, and they can informally discuss typical timeframes at any time.

**Summary**
The oil and gas industry understands Aurora’s desire to update their regulations, and COGA believes that code can be implemented that meets the city’s goals and allows for the safe and reasonable extraction of minerals and operation of facilities.

If there is any further information that COGA and its members can provide to help facilitate this process, please do not hesitate to contact us and we would be happy to assist. COGA and our members are grateful for the opportunity to provide comment.

Sincerely,

Ryan Seastrom, Regulatory Affairs Manager

Colorado Oil & Gas Association
Comments submitted by: Randee Webb rwebb153@hotmail.com  
Subject: Setbacks

Per a friend, in the Thursday, Aug 20, 2020, Ward II online meeting, Aurora's Oil & Gas Division Manager, Jeffery Moore, said that Aurora's draft Oil & Gas Manual (OGM) setbacks for parks and open space has been revised from its 350 feet due to public input, but he did not say what the revision was. I'd like to know what distance and other details are currently in the draft OGM.

The proposed setback is 350 feet. Previously, there was no required setback.

I attended online Thursday, Aug 20, 2020, the Ward IV meeting, and Jeffery Moore advised that the OGM does not refer to any other type of setback and that Aurora would be following the COGCC minimum statewide regulations. In general, those setbacks are 500 ft. from residences and 1,000 ft. from schools and hospitals. Jeffrey Moore also said that Aurora is and will be following COGCC meetings and changes in regulations, and that the COGCC will be addressing setbacks soon.

We believe there will be upcoming discussion related to setbacks during COGCC rulemaking which we are monitoring.

Jeffrey Moore mentioned that Aurora could certainly make changes and update the OGM in the future. However, the current COGCC setbacks are not based on health science or safety and are not at all protective Coloradans. So, I feel very strongly that Aurora should have additional setbacks besides parks and open space. It is of utmost importance to use facts and minimal health science for a basis.

From my research, the most often used safety setback by emergency responders is a 2,500 ft radius from fires, explosions, and major leaks. When it comes to health, many hundreds (perhaps thousands) of studies shown in the Compendium and studies done right here in Colorado indicate that from the well pad border to even a distance as far away as 2,640 ft there are significant negative health impacts.

If our local Aurora government does truly intend to protect Aurorans' safety and health, which is the most important reason to have a government and which is required by current Colorado law Senate Bill 19-181 (181), then setbacks from all occupied buildings (residences, businesses, schools and daycares, hospitals, etc.) should be AT LEAST 2,640 ft and should be a beginning marker in Aurora's OGM.

Thank you for your comments. We note your concerns and will discuss as a staff.

Sincerely,

Mrs. Randee Webb
Hi Jeffery,

I do endorse fully What the Frack?! Arapahoe's "Comments and Requests for Revision of Draft Proposal for Aurora Oil and Gas Manual".

Most importantly I do so because I am part of the population that will be heavily impacted on a grand scale due to the city of Aurora's plans to approve the permits for over 400 oil and gas wells in north Aurora located in Ward II. That number does not include the permits that the state (not sure the number) and Arapahoe County (151) have received. These wells will be located near our homes. Presently there are over 25 wells near our homes in production.

The City currently has 76 wells drilled. Most are producing, but some are either shut-in or waiting on completion. There are an additional 99 wells which have been submitted and/or are approved. I am unclear on your reference to "400 wells". There are 142 wells which were drilled historically and are now plugged and abandoned. There are 82 “abandoned locations” which means the Operator applied for the well but never drilled the well or disturbed the surface.

Under Section 10...see below. It is paramount that this language in italics be implemented for those of us who live in North Aurora in order to protect our health and safety. A hospital is proposed to be built on the corner of Gun Club Road and I-70 Frontage Road. This location is about 2 miles west of the Jamasco 8 pad well. Even though production at Jamasco has been put on hold for the time being, this will be a concern in the future and should be considered in the decision making.

The comments below are extracted from the comments by What the Frack?! Arapahoe. City responses will be included there.

"10. Application Submission Process : 2.02.3Submission of OIL & GAS LOCATIONApplication(Phase 1); 2.02.4Pre-AcceptanceCompletenessReview; 2.02.5Acceptance of OGP Application

At some point in this process, additional requirements need to be imposed in order to support public health and safety, such as environmental impact assessment and geologic and other special hazards review (e.g. special hazards in Aurora such as the the Lowry Landfill Superfund Site and its toxic leachate plume of 1,4 Dioxane AND its suspected geologic ground fault under the plume, the DADS landfill site, the Former Lowry Bombing Range lands, and known Dept of Defence toxic storage and spillage sites).

Broomfield County wisely requires the Operator to pay for the city to have an environmental assessment completed by an independent expert of the county's choosing, and required the Operator, Extraction, to pay for that and for a Risk Assessment (due to the proximity of some proposed wells to residential areas). Additionally, Broomfield has a public health epidemiologist consulting with the oil and gas department, in order to address complaints related to public health.

Aurora should do all of the above to demonstrate responsible due diligence to uphold public health and safety, as well as adding a health impact assessment to the independent environmental assessment.
The health impact assessment would estimate the increased health risks for Aurorans living/working within a mile of each well, such as increased risks for respiratory disease, sinus, allergy, skin, gastrointestinal and neurologic problems, cancer, birth defects, and reproductive failure, all of which are scientifically documented risks of proximity to O&G development. It would provide separate risk probabilities for children, pregnant women and their fetuses, the elderly, and the health impaired."

Thank you,

Edith Henke
My name is Kyle Larson,

In 2011 I purchased a house in the Eagle Valley subdivision of Frederick CO. My wife Tearsa and I moved in August of that year. We came to understand that there were plans to expand the Oil & Gas operations that were located within a few hundred feet of our house directly across the street in an open space area.

In the summer of 2013 Sundance Energy began the work. At the time I was in Omaha NE for work. My wife Tearsa and my youngest Daughter Michaela were subject to the noise and obnoxious fumes that were present during the operation. My wife Tearsa sent several emails to officials at the State complaining about the noise, dust, and fumes she was experiencing. Near the end of August my oldest daughter, Amber, her Husband Juan, and our 1 year old granddaughter Gabriella all moved in with us. During this time I kept reassuring Tearsa that although all this disturbance was a royal pain, it would soon be over and that as far as I could tell there was no documented evidence suggesting that fracking operations were dangerous to the people who lived in close proximity to the wells. Furthermore I truly believed that if the Oil & Gas industry, as well as our elected and appointed officials, had any doubt as to the safety of what was occurring they would quite frankly not allow it.

Fast forward to August of 2014 my daughter Amber begin to experience extreme fatigue that none of us could explain. After a short period of time without any improvement my wife Tearsa contacted doctors at University hospital to try and discover what was happening. At Amber’s first apt. the Doctor’s discovered her platelets were very low and suggested she come for testing every couple days until she could see a hematologist. After approx. One week she was able to see the hematologist and the hematologist ordered a bone marrow biopsy. This was the first time we heard the word Leukemia. The bone marrow biopsy was on a Monday and by Tuesday afternoon it was confirmed that my healthy 29 year old, wife to my son in law, mother to our two year old granddaughter, sibling to 2 sisters and one brother, daughter, had contracted Leukemia. The doctors told her to go home and report to the hospital the next day so they could get her started on chemotherapy to hopefully save her life.

During this ordeal Amber’s doctors have made it clear that there are Known carcinogenic’s, present from fracking operations, that could cause Leukemia. In fact as Amber has no other factors that might be the cause, Ambers doctors would not allow her to go back to our home. We struggled with what to do and ended up deciding that under no circumstance could we expose Amber or anyone else in our family to the risk that quite possibly was associated with our home. Nor could we morally sell or rent our home with the knowledge that living there might very well be the cause of Amber’s illness, and any new residents would then be exposed to this same risk. We proceeded to move to an available rental house in Centennial.

My family has, and is struggling with many issues that no family should ever have to ponder. Our strong desire is to see the City of Aurora consider the fact that as far as we can tell no one knows for certain what, if any, detrimental heath issues the residents of Colorado, and particularly the residents that live in close proximity to fracking, and oil & gas operations are being exposed too. It seems that the highest priority should be put on truly finding out if these operations are, in fact, killing the residents of Colorado. Until we all know for sure one way or the other the answer to that question, all other considerations are, in my humble opinion, truly unimportant.
Mr. Larson, thank you for sharing your very personal story of your experiences near oil and gas operations in Frederick, Colorado. We wish your family all the best for a speedy recovery. We take resident health very seriously and our responsibility to our public seriously as well. No City has authority to halt development of valid mineral interests. We endeavor as a City to provide protective boundaries for our Operators to follow, and then provide routine inspection and enforcement if needed.

As you have indicated you live in Centennial, we recommend reaching out to the City of Centennial. No oil or gas wells have ever been drilled within the Centennial city limits, but your concerns should be noted if they consider future regulations.

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Kyle & Tearsa Larson

720 309-7191
Comments submitted by: Diane Kocis DKocis@arapahoegov.com
Subject: Comments from Arapahoe County

1.01: Why isn’t CDPHE mentioned at the bottom of the 4th paragraph? It probably should be. I will review.

1.02: Why did you choose not to note SB181? SB181 is a Senate Bill. We have referenced the specific locations of the CRS where changes were made based on SB 19-181.

Definition of Berm: In 4.06 it also refers to the steel secondary containment around storage tanks. But in other jurisdictions is also refers to a large earthen landscaping tool that hides facilities. You may want to expand the definition because I know my managers get confused when I use the term.

Good feedback. I will provide more clarification.

Other definitions: There is no definition of “blowout” or “wetland”.

I will add those.

2.03.5 Re Alternative Location Analyses. Will you refer to COGCC rule 304? We have removed most specific references to COGCC rule numbers until rulemaking is complete this fall, so as to avoid confusion if numbers change.

2.04.16 Is there a few schedule for O&G permit review, other required permits (including a Transportation Impact Fee)? Our current application fees are $1500 for Planning and $2000 for Engineering, plus the Tri-County Health Dept fee of $360. Just an FYI. We would really like to see your TIF schedule so I’ll get back to you on that.

Permit fees have been handled by Planning Department and Office of Development Assistance and are not part of the OGM.

3.00 I didn’t see anything about a lock box accessible by emergency responders. Will your emergency responders have codes or keys to get into the facilities?

That is a good question. I am reviewing our current facility plans and will make sure emergency responders always have access.

4.03.3 Will your operators be prohibited from using the EWS #7 injection facility that we’ve been reviewing for over 2 years? It’s in SWSE Sec 5 5S 64W? It may be approved by us (USR + 1041) and CDPHE (the Certificate of Designation Portion) by the end of the year; however our Land Development Code doesn’t allow 24/7 operation of injection facilities so the applicant will have to apply for a code change as well.

City Attorneys are reviewing the legality of our proposed prohibition on using Class II UIC wells within four miles of the City Limits. I don’t believe we have authority to prohibit activities outside the City Limits.

4.04.1 Regarding reuse of fluids. Conoco always said they couldn’t reuse the fluids due to high TDS encountered during completion. It will be interesting to see what Crestone does.
Noted.

5.05 I’m surprised that, unlike other Front Range jurisdictions, there is no mention of use of electric drilling equipment where the equipment and electric power are available.

City Attorneys have advised the such regulation of drilling equipment is covered by federal regulation and we are not able to supersede those regulations.

Here are my co-workers comments:

Overall, I thought that it was a good document for O&G wells and midstream permits. Most of my comments are relatively minor. Also some comments are the same for O&G wells and midstream permits.

1. Section 1.02 Authority: I would suggest that you also reference SB-181 as giving the City of Aurora authority from the State to regulate oil and gas. Citing both Local Government Land Use Control Enabling Act of 1974 and SB-181 laws gives the City of Aurora more authority to regulate O&G.

SB181 is a Senate Bill. We have referenced the specific locations of the CRS where changes were made based on SB 19-181.

2. Section 1.05.1 Minimum Requirements: I like this feature.

Thank you.

3. Section 1.06.1 Abbreviations: I would add explanations the following abbreviations: PHA-HAZOP, WIMP, and CGI.

Noted for PHA-HAZOP and WIMP. CGI does not appear in the draft.

4. Section 2.02.12 Public Hearing: How does the public hearing relate to the Administrative Approval of OGP (Section 2.02.21). If you have an administrative approval, why do you need a public hearing. Need to clarify and explain how the public hearing and administrative approval work either together or separately

The public hearing is a requirement expected from COGCC, so that they will consider a local jurisdiction's approval as valid.

5. Section 2.03.2 Site Plan: May want to add wetlands to submittal requirements for the site plan. This requirement could also be added to Section 2.04.3.

I will discuss with staff.

6. Section 3.13 Insurance: These are very comprehensive insurance requirements which is to be commended.

Thank you.

7. Section 4.02.4 Setbacks: These are very useful setbacks.

Thank you.

8. Section 6.06 Tree Mitigation: Good to have tree mitigation.

Noted.
9. Section 6.09 Building Electric: Why is the work "Electric" in the title of this section? No mention of electric in the body of this section. Suggest removing "Electric" and only have "Building in the title.

   Good point. I believe the Operator Agreement from which this was taken, had addition language, but after discussion with staff, we modified it for the OGM. I will review.

10. Section 8.00 - 30.00 Reserved and Section 39.00-89.00: Why are so many numbers reserved? What do you plan to add in the future. I could understand a few numbers, but 22.00 and 50.00 seem excessive.

   In the future, we may have opportunity to add regulation of other types of energy extraction and generation.

11. Section 2.02.21 and Section 32.02.14 Administrative Approvals: Is there any provision for an applicant to appeal Administrative Approvals for OGP or OGMP?

   Yes. Applicants may appeal to City Management or City Council.

   Sherman
To: OilandGas@Aurora.gov

NOTE: The sections which are quoted from the comments submitted by What the Frack?! Arapahoe, have been responded to in their submittal. Additional comments here from Paula Smolen will receive responses.

Thank you for the opportunity to voice our concerns.

You are welcome. We appreciate all members of the public who choose to provide their opinions to the Oil and Gas Division.

I am a Board member and included as signatory on an email document sent to you from Lowry Landfill Superfund site CAG from Bonnie Rader and Tom Krause. I would like to also send my personal comments.

I will quote from Sonia Skakich-Scrima’s document sent to you as founder of What the Frack?! Arapahoe entitled Comments are Requests for Revision and Draft Proposal for Aurora Oil and Gas Manual to support my concerns. (My words are in red [NOTE: Comments from Paula Smolen have been changed to blue instead of red since red font is being used for responses from the City].)

My greatest concerns are twofold- 1) **human health and safety** 2) **the environment**.

Quoting Bonnie Rader’s email dated 9-22 to Mr. Moore “Any drilling or fracking activities conducted near this (LLSF) Site could have devastating impacts because two (2) major aquifers are directly under the pits- (referring to the pits containing 138 million gallons of chemical waste) the Dawson Aquifer and the Denver Aquifer. These aquifers have already been tainted by the chemicals, however, if the site waste pits are breached and the 138 million gallons of waste are released, the water from Pueblo to Fort Collins will be rendered unusable.”

1) The scope of the regulation manual is “minimum acceptable criteria for permitting, designing, and constructing all locations and facilities related to oil and gas development within the City of Aurora”, but lacks a **Purpose or Objective**. Some other Co local governments cite their objective as their intent to protect public health, safety, and welfare, including protection of the environment and wildlife resources, and to regulate oil and gas development to protect those values (per SB181). **Aurora leadership should insist on this critically important objective for Aurora's O&G ordinances, to assure this primary intent to all Aurorans, and to ensure that it is boldly so stated in this section,( expanded to be Scope and Objective).**

**Original sponsors of SB181 wrote in a letter to Commissioners:**

- “(SB181 terms ) must be viewed as a sea change rather than merely a course correction. Some places are just too dangerous and/or too impactful to conduct an oil and gas operation given the current extraction processes. **Permit approval should not be a question of whether the operator checks all of the boxes in its permit application ...**"
13) **Aurora should require** that O&G developers **recycle** the precious water that they have used down well for additional O&G well applications, since that water is rendered so toxic (with deep earth minerals and gases and added chemicals) that it cannot be used for other purposes and must be removed from the hydrologic cycle by being forever sequestered in a Class II deep injection well; that water is for all intents and purposes “destroyed”.

Section 21, portions of section 24, and section 32 of the above document (re: What the Frack?! Arapahoe) are included in the email from LLSF CAG board so I will not site again here but emphasize they support my concerns.

24) Given all the many factors that can impact health research, it is therefore extremely significant that over 80% of such studies find serious long term health impacts for people residing near frac sites, with risks increasing directly with proximity to well sites. Severe health impacts have been noted for persons residing 500 feet, 2,500 feet and even 1 to 5 miles from fracking sites or O&G facilities, including high risk pregnancies, birth defects, cancer (especially childhood cancer), respiratory problems, neurological damage, gastrointestinal and skin problems, etc., some of which resolve if the person moves away, some of which result in lifelong health conditions.

24 B) **Setbacks from special case/hazardous sites:** Aurora has numerous special case hazardous sites, such as the the Lowry Landfill Superfund Site, the DADs landfill site, Aurora's Landfill, the Former Lowry Bombing Range lands, and additional known Dept. of Defence toxic storage and spillage sites (such as Buckley Garrison, former Lowry Air Base, etc).

These sites store or have stored hazardous chemicals, whose secure containment is a priority for immediate and long term human safety. Some of these sites have been found to have leachate plumes in waterways that pass through or near the sites (e.g., Lowry Landfill Superfund Site has a plume of 1-4 dioxane). Additionally, there is a suspected ground fault under the Lowry Landfill Plume.

At these sites, distributed across Aurora, induced seismicity could lead to serious threats to public health and environmental harms: increased migration of toxic chemicals, increased intersection of toxic chemicals with natural gas pockets, catastrophic release of toxic chemicals into our major aquifers, increased activity of suspected ground fault under Lowry Landfill Superfund site 1-4 Dioxane leachate plume, etc. This is why Class II deep injection wells, which have a strong documented history of resulting in earthquakes even miles from the injection well should not be allowed in Aurora.

*It is incumbent upon Aurora's Oil and Gas Division to obtain expert consulting on induced seismicity from fracking from a geologist and/or hydrogeologist familiar with the geology of our area (and CDPHE’s white paper on the suspected ground fault under the Lowry Landfill Superfund Site leachate plume), to study the specifics of each of these hazardous sites and to determine an evidence-based rule on the minimum setback distance of fracking operations (both well bore and radial arms) from such hazardous sites, in order to protect public health, safety, and welfare and the environment. As fracking sites multiply around the Lowry Landfill Superfund site, this is an URGENT goal that needs to be fulfilled within the next few months!*

30) **In order to support city due diligence in risk management for operations with which carry high consequence risk, modify Risk Management requirements** the above to require that the Operator pay for an independent expert consultant firm selected by the city to perform a risk management assessment and plan, especially knowing in advance the threats that already exist with regard to the
LLSF site and the potential flood of COC’s if a fracture should occur. The County of Broomfield had this requirement fulfilled by Extraction O&G as part of its permitting process.

We will review Broomfield’s agreement and discuss this as a staff.

Commentary on Revision of Draft Proposal for Aurora Oil and Gas Manual written by Skakich-Scriva must be seriously considered in order to improve the conditions under which Oil and Gas has operated in the past. Holding the Operators responsible through fines and threats of closure would allow the city of Aurora to exercise appropriate force over that which is permitted within the city. We cannot allow the Oil and Gas industry to set the parameters, the city must do that so as to give greater assurance to its residents that the city is fulfilling its mandate to protect them.

We agree. This is exactly why we are updating our regulations via the Oil & Gas Manual.

Please pay particular attention to section 33 in Sonia’s comments document regarding regulations and consequences. Any city can lay out a plan, but that city must enforce the conditions for safe implementation of any plan. Unless the city puts “teeth” into its regulations, they are merely suggestions.

Inspection and enforcement are key provisions in our regulations. In some cases, the regulations regarding enforcement are appropriately found in other sections of the Aurora Municipal Code—not the Oil & Gas Manual—because they apply equally to all Aurora businesses.

Residents of the City of Aurora should expect no less protection than what is in place for other nearby cities regulating Oil and Gas permits.

We seek to implement regulations that are most appropriate for our citizens and our environment. We have reviewed, considered, and added some regulations from other nearby local jurisdictions, however, I would caution against the assumption that our regulations are not protective simply because they do not match another jurisdictions.

There is no greater concern for city administrators than the health and safety of all their residents and because you are “in charge” of how this plays out, that priority should drive all the regulations. Years from now when oil and gas are “former” sources of energy in our communities, we should not be living with the health concerns and genetic changes caused by the toxins in the air and water that are a result of this industry.

We take our authority and responsibility provided by State rules seriously and appreciate your concerns related to oil and gas development both now and in the future.

34) Since O&G development contributes a disproportionate amount of greenhouse gases (GHG) that escalate climate instability, its role in contributing to the above mentioned elevated risks must be included in any O&G environmental and health and risk assessments, as well as consideration of fines and penalties. Our city leadership and representatives should become very familiar with all of that information, since it will be incumbent upon them to usher in a responsible, urgent transition to sustainable, clean energy, transportation, land development/conservation and other measures that can have a role in reducing climate instability contributions from Aurora.

Thank you again for the opportunity to comment. It is my sincere hope you will heed the suggestions set forth by Sonia and the LLSF site CAG. There is much at stake. The Superfund site is not resolved and
the chemicals are migrating. The consequences of disturbing this area would be devastating to hundreds of people in Aurora.

We consider all comments submitted by the public.

Paula Smolen
Aurora resident
Comments and Requests for Revision of Draft Proposal for Aurora Oil and Gas Manual

Per the transformative CO state law (SB181), the primary objective of state oil and gas (O&G) interest is: "It is declared to be in the public interest and the commission is directed to: (I) regulate development and production of the natural resources of oil and gas in the state of Colorado in a manner that protects public health, safety, and welfare, including protection of the environment and wildlife resources (34-60-102. Legislative declaration. (1) (a)).

Hopefully, this is also the intent of our city leaders, in promulgating new oil and gas ordinances, namely, to ensure protection of these most valuable of resources: public health, safety, and welfare and protection of the environment.

Yes, these are the City’s goals as well. We also recognize that there is a balance to our work. SB181 does not give us the authority to ban development of mineral interests, but rather to regulate it in a way that is protective of people and the environment. In the past, some Colorado jurisdictions have attempted to ban oil and gas development which led to costly lawsuits in which the Operators prevailed. We believe it is not in the best interest of Aurora taxpayers to craft regulations which would be so prohibitive as to lead to legal action by Operators in which we cannot clearly prevail.

Given that SB181 (Section 17) amends preemption law by specifying that both state agencies and local governments have authority to regulate oil and gas operations and establishes that local government requirements may be more protective or stricter than state requirements, we are recommending that the proposed draft proposal be revised in numerous areas, in order to better protect public health, safety, public welfare, and the environment, especially through more evidence-based requirements. Specific recommendations are bolded and in italics.

1) Scope (1.01):

The scope is stated as: "minimum acceptable criteria for permitting, designing, and constructing all locations and facilities related to oil and gas development within the City of Aurora", but lacks a Purpose or Objective. Some other Co local governments cite their objective as their intent to protect public health, safety, and welfare, including protection of the environment and wildlife resources, and to regulate oil and gas development to protect those values (per SB181). Aurora leadership should insist on this critically important objective for Aurora’s O&G ordinances, to assure this primary intent to all Aurorans, and to ensure that it is boldly so stated in this section,( expanded to be Scope and Objective).

This is great perspective, and I will add language to the Scope in 1.01 indicating our alignment with the clear language of SB181.
2) **Authority (1.02)** Cites "The Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101", curiously ignoring the recent transformative authority of SB19-181 Protect Public Welfare Oil And Gas Operations, as it amended the Colorado Revised Statutes in 2019, regarding Mineral Resources,Title 34, Article 60, Oil and Gas Conservation ( CO Oil and Gas Conservation Act CRS 34-60). This omission needs to be corrected, not just regarding failure to reference more recent authorizing law, but since SB181 significantly expanded CO local government authority to promulgate ordinances re O&G:

There is no omission here. “The Local Government Land Use Control Enabling Act of 1974” is the name of the Act, not the most recent date of update. In a regulatory manual such as the Oil & Gas Manual (OGM), it is more appropriate—and a stronger legal background—to cite from the Colorado Revised Statutes, rather than a Senate Bill. Senate Bill 19-181 provided instruction to update the Colorado Revised Statutes, which occurred in 2019.

(“Current law specifies that local governments have so-called "House Bill 1041“ powers, which are a type of land use authority over oil and gas mineral extraction areas, only if the Colorado oil and gas conservation commission (commission) has identified a specific area for designation. Sections 1 and 2 of the act repeal that limitation; Section 17 amends preemption law by specifying that both state agencies and local governments have authority to regulate oil and gas operations and establishes that local government requirements may be more protective or stricter than state requirements. https://leg.colorado.gov/bills/sb19-181 "). This expansion of local authority to promulgate ordinances more protective of public health, safety, welfare, and environment needs to be be abundantly clear to city leaders and to Aurora residents as new ordinances are being proposed, so that the goal of being protective of those values is used as the measure of appropriateness of each of the proposals' terms.

The original sponsors of SB181 have become so concerned over the general lack of understanding over this and related important issues in the law, that they wrote a letter of concern to the COGCC commissioners on Aug 14, 2020. The relevant points of which we should all be aware:

- "Under the new rules, we believe the overriding question should first be whether the proposed oil and gas operation can occur while ensuring the protection of public health and safety, and if so, what are the best ways to avoid or minimize the adverse impacts that accompany oil and gas operations."
- "(SB181 terms ) must be viewed as a sea change rather than merely a course correction. Some places are just too dangerous and/or too impactful to conduct an oil and gas operation given the current extraction processes. Permit approval should not be a question of whether the operator checks all of the boxes in its permit application …"
- "SB 181 is decidedly not about achieving stakeholder harmony at the expense of public health and safety."
- "Any setback distance involves an exercise in line-drawing, but we note most of the available studies, investigative reports, and anecdotal evidence from residents close to oil and gas operations confirms the current 500-foot minimum is not nearly enough to protect health and safety as envisioned by SB 181… Public health and safety is the paramount concern under SB 181, even if that means some minerals are inaccessible until extraction technology improves."
- “The residents of those industry-friendly jurisdictions still deserve baseline health and safety protections, however. In other words, COGCC regulations should provide a “basement” and SB 181 does not allow industry-friendly local governments to “dig a new basement.” ….Industry parties have argued the legislative intent of SB 181 was to allow local governments to site oil and gas operations closer to buildings than state regulations would authorize. That assertion is false. We believe the language of SB
181 is clear and accurately reflects our intent, which was to designate local governments and the COGCC as co-equal authorities in permitting oil and gas operations. Operators must obtain permits from both local and state entities (assuming the local government regulates oil and gas), and the local permit does not supersede the state permit process. We believe the residents of Weld and Garfield Counties should have the baseline health and safety protections promulgated by the COGCC. We also believe other counties like Adams, Boulder, and Broomfield have the authority to put in more protective regulations than the COGCC if they choose.

While the Manual does indirectly reference SB181’s statutory authority by referencing CRS 34-60-131 and mentions that "local governments may adopt regulations that are more protective or stricter than state requirements" in section 31 of the manual (i.e on page 85), the reference and its relevance should be made clear in the introduction to Manual, in Section 1, for the reasons outlined above. Similarly, Section 31’s reference to the Colorado Air Pollution Prevention and Control Act ("APPCA"), C.R.S. § 25-7-108 and the fact that local governments may enact local air pollution resolutions or ordinances that include more stringent emission control regulations than state requirements should also be included in section 1.

We agree. These same references are included in Section 1.02.1 as well on page 1-3.

3) 1.03 Revisions: Revisions to this Oil & Gas Manual may be adopted as often as needed by the City Manager or their designee. For government accountability and transparency, any substantive revisions should occur through a public process, unless in case of emergency temporary variance/revision, which should then be followed by a public process revision.

Proposed changes to the OGM will first be reviewed by the Aurora Oil & Gas Advisory Committee (O&GAC). This group of citizens, industry representatives, and mineral or surface owners provides information and perspective to the Aurora City Council. Meetings of the O&GAC are open to the public. Additionally, proposed changes to the OGM will be presented at a Study Session of City Council. The actual changes may be called up by City Council.

4) 1.05.2 Existing Permits This Oil & Gas Manual shall not abrogate or annul any permit issued before its effective date, any construction plans approved before their effective date, or any site plans that have been recommended for approval by the City’s Planning and Zoning Commission before the effective date of these standards. (add: however, any expansion or proposed alteration of permitted activities shall be subject to the current City ordinances).

I will ask City Attorneys to review this language for possible inclusion.

5) 1.06 Definitions:

EVENT shall mean a significant occurrence or happening. As applicable to pipeline safety, an event could be an accident, abnormal condition, incident, equipment failure, human failure, or release. To accord with COGCC terminology, should be listed as EVENT / INCIDENT, and concrete examples should be given: add "such as fires, explosions, spills, blowback, unexpected release of gases/venting".

Noted.
INJECTION WELL shall mean any hole drilled into the earth into which fluids are injected for purposes of secondary recovery, storage, or disposal pursuant to authorizations granted by the COGCC. **Add a part b of definition for Class II injection wells, to distinguish it from production wellbore well.**

Noted.

**Consider also including in the definitions: geologic hazard, CAS Registration number, VOCs, in order to inform public understanding of these important terms.**

Noted.

6) **1.07 Previous Agreements:** Any previous Operator Agreement or other agreement, duly signed by the City Manager of the City of Aurora, or approved by the City Council, shall remain in full effect until the term of such agreement has expired, or until all Wells drilled during the term of such agreement are permanently plugged, abandoned, and removed from the Oil and Gas Location in accordance with the rules and regulations of the COGCC and reclamation has been completed pursuant to COGCC requirements, or unless otherwise terminated by law.

In order to assure that a new Operator purchasing an existent contract will be capable of performing all contract terms and abiding by all Aurora ordinances, to assure that the BMPs Aurora requires are sufficiently protective based on objective evidence, etc., **add:** Any new permit applications/expansions of activities not specifically included in the agreement shall fall under current Aurora O&G ordinance terms. Any terms of the agreement or city ordinance that have since been objectively determined (through on site empirical evidence or peer reviewed science) to cause significant risk of serious harm to human health or safety shall be modified to uphold public health and safety. Any transfer of ownership of the previous agreement will be subject to review to update requirements that uphold public health and safety and also to review of the safety performance record and financial solvency of the entity that seeks to acquire the contract. Note that Broomfield and Boulder both require all permit applicants to pass review of both performance records and financial solvency and that SB181 specifically allows solvency consideration.

This is an excellent suggestion and I will ask City Attorneys to review the language.

7) **1.08 Best Management Practices:** The Operator must comply with the BMPs set forth in this Oil & Gas Manual at all times.

Performance records of Operators in Colorado indicate that, in the absence of significant fines and penalties, more violations occur more often, and with some operators, repeatedly. **Add:** subject to fines and penalties for violations, commensurate with harm or potential harm to public health, safety or welfare or the environment and to resident quality of life and property.

This is covered in part in Section 91.01, but I think it would be good to add your suggested language.

8) **2.02 Pre-Application Meeting 2.02.1.03:** A map and detailed description of the Oil and Gas Location must accompany the request for a Pre-Application Meeting.

The CP Operator Agreement provided poorly drawn sketches with no clear identifying routes or scales, making it difficult to envision site locations and didn't even provide a total of the number of new wells proposed. Public documents must be clear in all their terms. **Add:** including aerial photo map of the site and its surround, with streets or rural routes clearly identified and a scale provided, and each proposed well site clearly identified, along with a list of the proposed sites and the total number of wells and anticipated number and length of radial arms of each.
The purpose of the Pre-Application Meeting is for City Staff to understand the big picture of the Operators planned permit submittal. The items you have mentioned are included in Section 2.03. The Operator Agreement with ConocoPhilips did include the number of wells on each Well Site in Exhibit B. The maps in the Operator Agreement could have been more detailed, however, detailed maps are always required as part of actual application.

9) 2.02.2 Pre-Submittal Meeting _At the Pre-Submittal Meeting, the Operator shall demonstrate, prior to entering the formal OGP application process, its ability to comply with all BMPs. Add the following requirements, as have Broomfield and Boulder Counties (in various portions of their guiding documents or proposed ordinances): Operator shall demonstrate ability to fully comply with the required terms by providing a performance record of their oil and gas activities, including all cited violations and complaints, demonstrating good performance, and by providing certified information attesting to their financial solvency (this latter information to remain confidential if desired). This is important due diligence on the part of the city, in order to avoid future situations like that encountered with Extraction, which had a developing record of incidents/poor performance and of pending financial insolvency (only partially obscured by delay and fraudulent manipulation of their latest quarterly report).

I will confirm with City Attorneys if we can add some or all of this language.

10. Application Submission Process: 2.02.3 Submission of OIL & GAS LOCATION Application (Phase 1); 2.02.4 Pre-Acceptance Completeness Review; 2.02.5 Acceptance of OGP Application

At some point in this process, additional requirements need to be imposed in order to support public health and safety, such as environmental impact assessment and geologic and other special hazards review (e.g. special hazards in Aurora such as the the Lowry Landfill Superfund Site and its toxic leachate plume of 1,4 Dioxane AND its suspected geologic ground fault under the plume, the DADs landfill site, the Former Lowry Bombing Range lands, and known Dept of Defence toxic storage and spillage sites).

In general, we believe the types of information submitted by the Operator during the permitting process provides clear evidence of impact on the environment which City staff evaluates. Some of these sites listed above are outside the City limits of Aurora, and we have no authority in such sites. We are supporting rulemaking at COGCC which gives proximate local governments (Arapahoe County in the above case) greater input into the permitting process.

Broomfield County wisely requires the Operator to pay for the city to have an environmental assessment completed by an independent expert of the county’s choosing, and required the Operator, Extraction, to pay for that and for a Risk Assessment (due to the proximity of some proposed wells to residential areas). Broomfield is somewhat unique in that residential areas are essentially a donut around a core of oil and gas development. We do not have that situation in Aurora.

Additionally, Broomfield has a public health epidemiologist consulting with the oil and gas department, in order to address complaints related to public health.

Aurora should do all of the above to demonstrate responsible due diligence to uphold public health and safety, as well as adding a health impact assessment to the independent environmental assessment. The health impact assessment would estimate the increased health risks for Aurorans.
living/working within a mile of each well, such as increased risks for respiratory disease, sinus, allergy, skin, gastrointestinal and neurologic problems, cancer, birth defects, and reproductive failure, all of which are scientifically documented risks of proximity to O&G development. It would provide separate risk probabilities for children, pregnant women and their fetuses, the elderly, and the health impaired.

It is critical for Aurorans and their elected leaders and representatives to have an evidence-based idea of the risks of each project to human health, the possible sacrifice of human health that each project is proposing.

A health impact assessment is an interesting concept and something we might consider for the future. Currently, I feel it would be almost impossible to calculate an estimate of the “increased health risks” of a given location due to inconsistency among studies. Further, it might also be impossible for the City to evaluate such assessment provided by an Operator for accuracy.

11. 2.02-2.02.12 Public Input:
2.02.8 Neighborhood Meeting and 7.01.3 Neighborhood Meeting
2.02.9 Phase 1 - Second Review In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review, including Operator Responses to Neighborhood Meeting Comments;
2.02.12 Public Hearing

Aurora resident experiences with Neighborhood Meetings have been less than productive: questions not answered at the meeting, promised to be answered in writing but never answered, questions and requests submitted in writing and many not answered. Neighborhood meetings should be attended by a city representative who transcribes questions posed onto a master list that Operator must address in written response.

I have attended all Neighborhood Meetings since beginning employment with the City in March 2020, and I plan to attend each one in the future. Questions were not transcribed due to the format of the meeting, however I connected with multiple attendees to ask if their questions were being answered to their satisfaction.

Other CO local governments, such as Broomfield, publicly post all resident questions, concerns, and requests regarding proposed new O&G developments in application on their oil and gas page, along with any responses provided by the Operator and/or by the County, in order to make the process transparent and accountable, and to allow Planning and elected officials to become aware of specific concerns and special considerations in the area that they might not have been aware of (https://www.broomfieldvoice.com/oilandgasregulations). Aurora should do the same.

We do. All development applications within the City can be accessed at aurora4biz.org/. The City is working on an update to its websites. In the future Oil & Gas applications will be linked on the Oil & Gas web page. All files related to the permit application can be accessed at this website. As part of the permit process, Operators are required to respond in writing to public comments received by the City. These comments and responses are found within the Operators response documents on the above website.
Public hearing comments should also be posted on the city web page, since not all are given in the public hearing portion of the Council meeting, some are submitted in writing. Lengthy comments should be accessible through a link.

See above comments.

12) **2.03 Required Application Contents - 2.03.2 Site Plan** which depicts the following ...

In order for the Planning Dept, Oil and Gas Designee, elected officials, and Aurora residents to begin to assess the anticipated impact of the plan on public health, safety, and welfare, we all need some objective information. Initial indicators with objective information and best estimate calculations are important and readily available by requiring that the permitting process required documents include independent baseline air sampling results at the site (in order to assess the existing hazardous air pollutant levels in the area) and by requiring the Operator to submit their APEN application to the city (which they have to prepare anyway for submission to the CO Air Quality Control Commission), which estimates their anticipated yearly emissions of hazardous pollutants (broken down by class and individual chemicals). With that information at the outset of the permitting process, all of us will have a ball park idea of the impact of their additional hazardous emissions on the site and its surrounding neighborhoods, including an idea of the cumulative or aggregate (total) hazardous emissions that the community is likely to be exposed to if those O&G operations are approved (baseline air quality + added air quality hazards of the project). (Note that cumulative impact assessment is specifically encouraged in SB181, since it is vital to health impact assessment. It is also furthered by necessary continual monitoring of project sites and regional areas during operations, so that ACTUAL hazardous emissions exposure, from all sources and from the project source can be objectively measured, to assess health impacts over time.) Additionally, the city can request, as has Broomfield, that the CO Dept of Health (CDPHE) provide mobile CAMEL air monitoring at the proposed site, for independent verification of existing baseline values.

This is excellent information. Cumulative impacts are a topic that we are already discussing for inclusion in a future update of the OGM. Baseline air monitoring is required in Section 5.01.3.01.

13. **2.03.6 Water Supply Plan** (and section 4.0 Protection of Water): In recognition of the severity of drought conditions and scientific predictions of their greatly increasing severity in Colorado (and the myriad negative impacts of that on our economy, tourism, farmers' crops and food prices, resident water costs, forest fires, etc.) and the fact that water (essential to all life) is becoming more and more of a scarce resource:

Aurora should require that O&G developers recycle the precious water that they have used down well for additional O&G well applications, since that water is rendered so toxic (with deep earth minerals and gases and added chemicals) that it cannot be used for other purposes and must be removed from the hydrologic cycle by being forever sequestered in a Class II deep injection well; that water is for all intents and purposes "destroyed".

Additionally, project application should include Operator estimation of the total gallons of water that will be used during each phase of the project. If project is approved, actual water usage should be reported quarterly, for public and city government awareness. Consider requiring that any use of non-recycled water (actual usage reported quarterly and made public) more than say 10% above estimated usage should be considered a violation, with penalty.

A Water Supply Plan and Water Delivery Agreement are required as part of the permit process. Aurora Water has recently championed changes to CDPHE Regulation 84 which allow reclaimed water to be used for oil and gas purposes.
On July 30, 2020, the Local Government Coalition (LGC), of which Aurora is a member, submitted a Prehearing Letter to the Colorado Air Quality Control Commission regarding Regulation 7 rulemaking (re new requirements to address pre-production emissions, underground injection well emissions, and air quality monitoring at oil and gas well sites during pre-production and production).

In it, the extensive air quality monitoring measures that have been put in place by Broomfield County, Lafayette, and Boulder are described, with Broomfield's touted as a model worth emulating, including the important reasons why, which are well worth noting:

"The City and County of Broomfield's Oil and Gas Division administers an air quality monitoring program, the objectives of which include monitoring community impact from changes to oil and gas operations in the area, identifying emissions sources, and comparing data to standardized health guidelines. Monitoring under this program has taken place during pre-production and early production activities. The monitoring solution has been carefully designed to include multiple technologies that complement each other to provide excellent spatial coverage, excellent time coverage, useful and high-quality data, and enable accurate modeling. The program is primarily intended to improve best management practices at the oil and gas facilities based upon air data for various operations and to inform policy. This multi-faceted approach to air quality monitoring has been refined in 2020 to include 15 planned monitoring stations around oil and gas activity and throughout the Broomfield community, as well as stationary gas chromatography ("GC") monitoring at two locations. All the equipment, including the sensors, can be moved as oil and gas development moves to different locations. This monitoring has been done through each stage of operations, including baseline, drilling, hydraulic fracturing, flowback and production.

The monitoring data from this program is displayed in real time on the Ajax and Boulder AIR websites, linked from Broomfield's website. A map of the air quality sensors is also available (to the public) through Broomfield's website. This detailed and thorough program at the local level is an example of the type of monitoring program that can be developed under the proposed Regulation 7 requirements. Local government involvement in the development of individual air monitoring plans is critical in order to obtain the level of detail necessary to establish an effective and informative program."

Creating public access to continuous objective measurement of specific hazardous chemicals/gases emitted (i.e., speciated, not merely "capable of detecting total hydrocarbons") related to oil and gas development is a critical goal stated in SB181. It is critical because it informs everyone of the evidence-based objective impact of oil and gas on air quality and public health and safety, it detects unanticipated releases that can be corrected then in real time and/or provide notice to evacuate to the community, it identifies individual gases being released which can more readily assist correction and mitigation efforts, and the pattern of releases can objectively inform revisions to ordinances and needed new BMPs.

Broomfield's air quality monitoring and analysis is provided by an independent company, by CSU, and assisted with CDPHE mobile lab data, as well as county health epidemiology and toxicology review and has cost the county over a million per year for the past two years. **Aurora must provide the same caliber of evidence-based due diligence for air monitoring and evidence-based policy review as Broomfield, with a data system that is continuously accessible to the public and elected officials alike. But it should require that the Operator whose industrial activities emit the excess hazardous**
emissions pay a substantial portion of the cost of this expensive system required for public health due diligence, an expense that would not otherwise be required.

These suggestions are noted, and will be discussed by staff for future consideration in the OGM. The Broomfield data system could be difficult to implement in Aurora. Again, Broomfield’s wells are significantly concentrated compared to Aurora’s. Implementing a $1 million per year system without assurance that excess emissions will be captured, would leave the City to bear the cost of such system. Significant study would be necessary prior to recommendation to City Council.

15.) 2.04.5 Emergency Action Plan (EAP) / Emergency Response Plan (ERP) (if applicable). An emergency Action and Response Plan is ALWAYS applicable and should be a master plan that is substantially the same for all Operators, defined by Aurora ordinances in this document.

The EAP and ERP are two different documents with different purposes. An Emergency Action Plan (EAP) is a written procedure detailing the appropriate response to various types of emergencies and is always required. In the OGM we are using the ERP to detail field-wide emergency plans when an Operator has more than one Oil and Gas Location, thus it is not always applicable.

It should be publicly posted on the city O&G webpage, as other CO local governments do. It is. Currently on the website listed above aurora4biz.org/ In the future, these will be linked from the Oil & gas page.

and it should be sent in written form to all residents and businesses within 1 mile of oil and gas operations, in order to inform them of what they can expect and will be required to do in the event of an incident such as fire, explosion, spill, or dangerous levels of toxic emissions, and can thus know what to look out for and report immediately, and can be prepared and knowledgeable of evacuation routes, etc., just as they are informed by the local gas company of hazards to look out for, what to do in case of emergency, etc.

This is a good idea, and I don’t believe we do this currently. I will discuss with staff if the Operator would do this, or if the City would craft a general document on oil and gas emergencies to send out.

Read this article to understand the daunting logistics of oil and gas fires and attempts to control them: https://www.hcn.org/issues/50.18/energy-industry-how-site-workers-and-firefighters-responding-to-a-2017-natural-gas-explosion-in-windsor-colorado-narrowly-avoided-disaster

Also pertaining to 3.02 Emergency Action Plan (EAP): 3.03

Aurora’s requirements for emergency planning in the current Operator Agreements are much less protective than the Broomfield Extraction Operator Agreement they were supposedly modeled after, removing numerous terms regarding notification, active participation of local fire departments, etc; Broomfield’s emergency plan from their Extraction Agreement should be revisited. Due to the extreme level of risk to human health of O&G workers and the public posed by O&G incidents (as well as risk to environment, businesses, property), the plan should be reviewed and written by an independent expert in oil and gas fires and explosions and spills, creating a standardized diligent plan that is required for ALL operators, not proposed by Operators.
This is a good suggestion that we will review as a staff.

*Local fire departments should be involved in first response training exercises, in order to be prepared and should be immediately notified of any incident (not "if requested by them to do so").*

Agreed. The requirement here is for the Operator to work with the emergency services providers if requested to do so. We will be adding other emergency services from other jurisdictions to this section. We don’t have authority over other jurisdictions, so we have to make it a request. Notification would certainly be immediate.

*A list of chemicals used on site (CAS registry info) and elements /chemicals /gases emitted should be provided in advance (not "upon request") to local hospitals and emergency response teams, so that they can advance review the medical risks and create protocols for the appropriate treatment of typical health impacts in the event of such incident, to be appropriately prepared.*

Agreed. This is already required under the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986.

*The city should ascertain that an adequate supply of fire fighting foam for O&G fires is on stock by the operator, specifically, foam that does not contain the additionally hazardous "forever chemicals" PFAAs, PFOAs, that are so harmful to health and the environment. The Operator must demonstrate that they can provide needed expertise and resources to control the incident, without having to wait for 12 or 24 hrs for assistance from another state (usually Texas).*

Agreed. This is already required under 33.02.2.10.

*Community Alarms: Based on the extraordinary toxicity of hydrogen sulfide, the fact that high amounts have been detected at some well sites in Colorado, the fact that oil and gas workers have a sensor alarm that warns them if it is being released (so that they can flee and avoid fatality), and that when released via explosion it disperses in a 1 to 2 mile plume, the operator should monitor the site for hydrogen sulfide emissions (transmitting recorded values in real time to a central manned site) and install an alarm to sound for the community (and notify county officials) if safe levels are exceeded. Benzene is another exceedingly toxic chemical that is routinely emitted at well sites. A benzene alarm for levels that pose a risk to health would also be prudent.*

Hydrogen sulfide is found in only certain formations and under certain biological conditions. We don’t believe H₂S alarms are necessary at this time.

*3.02.2.03 A detailed plan for responding to emergencies, that may include any or all of the following: explosions, fires, gas, oil, or water pipeline leaks or ruptures. *Should include also:* spills, accidents, unexpected release of hazardous gases or chemicals, unanticipated pressure events.*

I will add this language.

*3.02.2.09 Operator shall reimburse the appropriate emergency agencies for their reasonable expenses directly resulting from the Operator’s operations. *Operator should reimburse emergency agencies for their incident related expenses, as submitted, not be reimbursed for what the Operator considers to be their "reasonable expenses".*
“Reasonable” is at the discretion of the emergency agency, not the Operator. I can add language to clarify.

16. **2.05 Variance Requests:** Define “minor”. Minor variances should never include any measures that negatively impact health or human safety; Variances should not be granted unless they improve protection of public health, safety, and welfare and/or environment, as indirectly but appropriately noted in 2.05.3.07.

Agreed. Variances cannot negatively impact health or human safety. A type of minor variance could be a request to have one less tree planted around the location. Per the operator agreements minor variances are so small that they do not affect the operations plan.

17. **2.05.2.04 Conditions of Approval:** In approving a variance, the Oil & Gas Division may attach any conditions necessary to ensure the variance authorized shall not constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity in which the subject property is located and will protect public health, safety, welfare, the environment. **Consider instead:** shall not constitute a grant of special privilege inconsistent with limitations on other commercial entities in Aurora.

I think that is good language and I will double check with City Attorneys.

18. **3.04 PHA-Hazard and Operability** A third party PHA-HAZOP certified facilitator shall coordinate a Hazard and Operability Study with the cooperation of the Operator. **Add: the cost of which will be paid by the Operator,** since it is the Operator’s activities that necessitate this diligent oversight work.

The City has no role in the Hazard and Operability Study, so yes the Operator must bear the cost.

19. **3.08 Chemical Disclosure and Storage** All hydraulic fracturing chemicals must be disclosed to Aurora Fire Rescue as part of the Emergency Response Plan pursuant to the process set forth below before bringing such chemicals onto an Oil and Gas Location. **Add/edit:** All hydraulic fracturing chemicals must be disclosed and additionally identified by their CAS numbers to Aurora Fire & Rescue, TriCounty Health, local hospitals and first responder emergency services, as part of the Emergency Response Plan pursuant to the process set forth below before bringing such chemicals onto an Oil and Gas Location.

This may be an acceptable condition. I need to check on the legality of what and to whom we can require the Operator to report.

The Operator shall make available to the City, in a table format, the name, Chemical Abstracts Service (CAS) number, and storage, containment, and disposal methods for such chemicals to be used on the Oil and Gas Location, which the City may make available to the public as public records. **Change “may” to “shall”, so the public and its city representatives can all be aware of the chemicals used.**

I believe there are existing laws at the State level about reporting of fracturing chemicals. I will discuss with City Attorneys to understand what we are allowed to report.

20. **3.08.3 Chemicals Not Permitted for Use**  

**In order to avoid additional public/environmental exposure to “endocrine disrupting chemicals”, which dysfunctionally alter human metabolism and hormonal function, and some of which degrade/ substantively alter human DNA (which can create permanent transgenerational DNA alterations), this**
class of chemicals (often used as solvents in oil and gas processes and frequently found by researchers in nearby surface water) shall be added to the chemicals not permitted for use. See https://endocrinedisruption.org/

Thank you for the reference. I will discuss this list with Aurora Water. I would note that there are several naturally occurring minerals on this list such as limestone and quartz, so I would need to do more research to understand the nature of the risk Before placing it in the Oil & Gas Manual.

21. 4.02.2.02 Flowback and produced water shall be transported by pipeline once constructed and available. If a pipeline is unavailable, flowback and produced water must be stored in tanks and transported by tanker trucks. All flowback and produced water must be disposed of at a licensed disposal site or recycled for use on-site.

Due to numerous incidents of explosions of trucks carrying gas and chemical laden produced/wastewater from sites (i.e, road accident, driver smoking, etc), such trucks will be clearly identified on all sides as carrying flammable, potentially explosive materials, such that all drivers can read the signs and such that truck drivers will be aware of the hazardous load they are carrying (many truck drivers report that they were not advised of the potential explosiveness of their cargo).

I believe this would fall under federal regulation under the Department of Transportation. I will discuss with our outside counsel.

Aurora should specify that it will not allow any class II disposal wells for produced wastewater within Aurora, due to risk of induced seismicity (noted in regions across the country and the world at 10 miles and beyond) and the number of hazardous sites in Aurora where risk of induced seismicity could lead to serious environmental harms (such as, increased migration of toxic chemicals, increased intersection of toxic chemicals with natural gas pockets, increased activity of suspected ground fault under Lowry Landfill Superfund site 1-4 Dioxane leachate plume, etc.).

This is discussed in 4.03.3.

22. 4.02.4 Setbacks and 6.14 Park and Open Space Area Setback

The Oil and Gas Location shall be sited a minimum of three hundred fifty (350) feet away from existing and proposed parks and open space areas. This distance shall be measured from the perimeter of the Oil and Gas Location.

A 350 foot setback from existing and proposed parks and open space areas constitutes reckless endangerment of the public and must be increased to a minimum of 2000 feet, for the following reasons:

B. Public health and safety: Physical Threats: Oil and gas well sites are subject to rare but high consequence failure events, such as explosions, fires, blowback (loss of control that can lead to explosive ejection of oil and gas, cement, toxic wastewater fluids, equipment, and often followed by explosion, fire, and/or tremors that can impact up to 900 feet away). Associated fires, burning at temperatures exceeding 3500 F, are known to cause blister burns within 22 seconds at a distance of 350 feet. Explosions have been known to have a radius (and cause craters) of 750 feet. Extremely toxic hydrogen sulfide gas, if released via explosion, is known to carry in
plumes 1-2 miles away. Colorado well site/ facility explosions have been documented to throw projectile objects and petroleum product over 2000 feet.

That is the physics of the heavy industrial activity of fracking shale for oil and gas and those outcomes are well documented and irrefutable. Therefore, the proposed 350 feet poses a grave risk to human safety and life at 350 feet, in the event of any such incident. Per a comprehensive scientific overview of such physical safety issues pertaining to oil and gas operation setbacks and such failure events, the minimum recommended distance from human habitation or human activity is 1000 feet, in order to avoid human fatality and injury in the blast and burn zones and 2000 feet to avoid human exposure to projectile zones and exposure to highly toxic fumes (Haley, M., McCawley, M., Epstein, A.C., Arrington, B., and Bjerke, E.F., Adequacy of Current State Setbacks for Directional High-Volume Hydraulic Fracturing in the Marcellus, Barnett, and Niobrara Shale Plays, Environ Health Perspect. 2016 Sep;124(9):1323-33). Also note that most O&G fireline perimeter and evacuation zones (i.e. safety zones) begin at a half mile or mile from the incident.

b) Public health and safety: Increased exposure to toxic emissions: Throughout the lifespan of oil and gas operations with the now standard high volume horizontal hydraulic fracturing of shale (“fracking”), and in the normal course of such operations, highly toxic gases are emitted into the air (including VOCs that increase cancer risk, VOCs and NO2, which produce respiratory- impairing ozone, and occasionally, deadly hydrogen sulfide), toxic petroleum product is burned off under various circumstances that distribute particulate matter and toxic chemicals that cause asthma and other respiratory disorders, and incidents of excess release of toxic VOC chemicals are common. All of those toxic emissions pose threat to human health, especially respiratory, cardiovascular, and neurologic threat, increasing both immediate and chronic health risks, some debilitating, some ultimately fatal, depending on degree, duration of exposure, size of individual, etc. Meta analyses of peer reviewed scientific studies of health impacts from O&G operations indicate that more than 80% of such studies show that living within less than 2 miles of active well sites substantially increases risks of all of those health threats, as well as risk of cancer, gastrointestinal problems, reproductive problems, birth defects, low birth weight, etc.

In public open spaces and parks people engage in physical activity- running, walking, playing, riding bicycles, etc, all of which cause people to breathe more deeply, meaning they will take more toxic materials further into their lungs. As for children, who are usually the largest number of park and open space users, due to their small size and their increased rate of respiration, their intake of toxic chemicals causes more harm, proportionately, than for an adult. Besides children, other especially vulnerable groups are those who are already health impaired, those with asthma or other respiratory problems (e.g. COPD), pregnant women, infants, the elderly, and has recently been demonstrated, those with COVID 19.

Exposing the public and its vulnerable members to toxic emissions within 350 ft while they are recreating, engaging in physical activity (with the reasonable expectation that such activity is good for their health!) is therefore reckless endangerment and must be increased to a 2000 foot setback. For all the same reasons given above, playgrounds and athletic fields must be included in the same category as parks and open space

Currently, there is no required setback in COGCC or City regulations for these features. This is a new category of setback for the City. We note your concerns, and will discuss as a staff how to address. In general, I believe playgrounds are included in “parks and open space” and athletic fields are included with schools which have greater setbacks, but that will be a discussion with staff as well.
23)  6.14   Park and Open Space Area Setback: For Flowlines that pass within three hundred fifty (350) feet of a park or open space area, a mitigation plan which identifies measures to be taken to mitigate impacts to parks and open space areas shall be submitted to the City and

4.07 Flowlines:

*Consider adding a section on gathering lines...* Note that La Plata County, Colorado set precedent for exercising siting authority for gathering lines at well sites on county land in its oil and gas regulations, Sec 90-133 (b) (5). Indeed, gathering lines (the pipeline from the wellsite that takes product to a flow or transmission line) are neither under federal nor under formerly state preempted oversight, and local governments can therefore exercise their land use authority regarding setbacks by exercising it over gathering line siting. As La Plata’s regulations regarding gathering line setbacks has received no pushback from the state or from industry, it is important to include this avenue for asserting various setbacks. The residents of Aurora assume that the city is taking all available measures to protect health and safety.

Gathering line siting setbacks are conventionally based on the specifics of the wellpads, namely, applying the accepted industry/regulatory scientific equations to estimate anticipated explosion and burn radii for minimum setbacks, by entering the values for the following and calculating the resulting distances: 1. Pipeline diameter and wall thickness, 2. Depth of cover, 3. Typical operating pressure and maximum allowable operating pressure, 4. Material transported and typical daily flow rate. Two key industry and regulatory scientific reports address the information needed and equations to apply: 1) GRI-00/0189: “A MODEL FOR SIZING HIGH CONSEQUENCE AREAS ASSOCIATED WITH NATURAL GAS” Scientific report of the Gas Research Institute, [http://pstrust.org/docs/C-FerCircle.pdf](http://pstrust.org/docs/C-FerCircle.pdf); includes formulaic basis and planning regarding “worst credible case” “failure event” scenario, in the eventuality of pipeline failure, to mitigate harm and protect public safety. When there is a ‘failure event’ (read explosion) in a natural gas pipeline, the impact zone will have two ‘radii of influence’: the ‘boom’/explosion radius and the ‘burn’ radius. Equations are provided to determine anticipated radius of influence, based on pipe size, volume of product and pressure and 2) “Partnering to Further Enhance Pipeline Safety in Communities Through Risk-Informed Land Use Planning “, Final Report of Recommended Practices of the Pipelines and Informed Planning Alliance (PIPA), November 2010, [http://pstrust.org/docs/PIPA-Report-Final-20101117.pdf](http://pstrust.org/docs/PIPA-Report-Final-20101117.pdf)

The risk of incident with a buried Gathering Lines is extremely low when compared with an Oil and Gas Location. We do not believe additional setbacks from Gathering Lines is warranted, however, I will review the indicated references.

24 ) 4.02 Setbacks:

A. Setbacks from places of residence and business: Cities have zoning requirements for common sense reasons, i.e. to keep heavy industry out of residential areas, in order for residential areas to have the right to quiet enjoyment of their homes, be free of industrial heavy truck traffic, tremors, noise, lights, high consequence industrial accidents, and toxic emissions. Unfortunately, in Colorado and across the nation, the oil and gas industry has been given a unique exemption to this common sense requirement. The negative impacts of this zoning exemption not only disrupt the quiet enjoyment of property, decrease property values, and put residents at risk of high consequence industrial accidents, they also disrupt the primary health needs of sleep and the ability to breathe clean air.
Sources of toxic air pollution from oil and gas sites are wells, pumps, generators, compressors, pneumatic devices, storage and separator tanks, surface impoundments, solid and liquid waste handling and from venting and flaring of gases, which emit hazardous air pollutants (HAPs). Sixty one hazardous air pollutants are emitted from most well site operations, 26 of which are classified as (systemic) endocrine disruptors. Some of the most common are benzene, toluene, ethylbenzene and xylenes (BTEX), formaldehyde, n-hexane, styrene, and 1,3butadiene and polycyclic aromatic hydrocarbons (PAHs), which are undeniably toxic to human health. Benzene, for example, poses an increased risk to health at a dilution of 0.1mg/m³ (estimated at ½ mile / 2,640ft).

While the health impacts of being in an explosion or explosive crater zone, explosive projectile zone, or explosive fire zone are abundantly clear, the health consequences of longterm exposures to toxic emissions are not as easily grasped nor as easily studied. While people all over the country who live near frack sites complain of similar symptoms (nosebleeds, dizziness, headaches, rash, nausea, cough, gastrointestinal problems) and note that most of these symptoms go away when they leave the area for an extended period of time, health studies attempting to quantify the long term impacts vary in their results. Health impact research outcomes re O&G toxic emissions vary based on numerous factors: the Operator’s choice of chemicals used, the phase of drilling or production, choice of BMPs used or lack thereof, predominant wind direction, amount of time spent outdoors, whether methane leaks into the home, the health and age of residents, etc.

Given all the many factors that can impact health research, it is therefore extremely significant that over 80% of such studies find serious long term health impacts for people residing near frack sites, with risks increasing directly with proximity to well sites. Severe health impacts have been noted for persons residing 500 feet, 2,500 feet and even 1 to 5 miles from fracking sites or O&G facilities, including high risk pregnancies, birth defects, cancer (especially childhood cancer), respiratory problems, neurological damage, gastrointestinal and skin problems, etc., some of which resolve if the person moves away, some of which result in lifelong health conditions.

A May 2019 scientific overview of setback considerations related to O&G and public health was presented to Congress by Dr. Shonkoff, who noted that one of the most robust studies to date is McKenzie et al.‘s 2018 study using in-situ air pollution monitoring to estimate exposure and calculate risk across an array of distances in Colorado. Within ~500ft of active oil and gas development, the cancer risk estimate was 8.3cases per 10,000 individuals, exceeding the USEPA upper threshold for acceptable risk(1casein10,000) by 830%. Her 2017 study investigating the potential association between residential proximity to and density of oil and gas development in rural Colorado and risk of hematologic (blood)cancers found that individuals ages 5-24 with acute lymphocytic leukemia(ALL) cancer were over four times as likely to live in the highest well proximity. Her 2012 study estimated increased cancer risk at one half mile, based on emissions collected. Numerous other studies support that data and attribute the higher cancer risk to exposure to benzene and other petroleum hydrocarbons in ambient air as well as elevated benzene concentrations detected in ground water at oil and gas development sites.

In 2015, an independent, state-sponsored report by the California Council on Science and Technology reviewed the scientific literature and recommended a host of public health protections, including a 2,500-foot setback. In a 2019 report sponsored by the City of Los Angeles, scientists and public health experts from Physicians, Scientists, and Engineers for Healthy Energy recommended the city consider a setback of between 500 feet and one mile (5,290 feet).

Given these current health study findings, an evidenced-based setback for well sites and other O&G facilities from human habitation and businesses that prevent harm to human health should be at least a mile or more away. “A 2,500 foot setback recommendation is on the lower end of the range of distances where research has determined harmful health and quality of life impacts of toxic emissions and exposures.” A setback of 2500 feet would diminish health risks considerably, although still pose elevated health risks.

A distance of 2500 feet from homes and businesses, schools, hospitals, and other residential facilities, where people spend the majority of their time every day is therefore an appropriate evidence-based setback. Setbacks from any and all structures occupied by day and/or night (homes, schools, businesses, hospitals, etc.), should be set back 2500 feet minimum from the outermost property line, for the evidence-based reasons stated above, regarding high consequence risk to life and health of incidents such as fires, explosions, blowback (at 2000 feet) and the constant exposure to toxic emissions that pose high risk of serious harm to long term health. No Aurora resident or worker should be expected to sacrifice their health for O&G development.

Staff will review this recommendation.

B) Setbacks from special case/hazardous sites: Aurora has numerous special case hazardous sites, such as the the Lowry Landfill Superfund Site, the DADs landfill site, Aurora’s Landfill, the Former Lowry Bombing Range lands, and additional known Dept. of Defence toxic storage and spillage sites (such as Buckley Garrison, former Lowry Air Base, etc).

Some of these sites are outside the City limits of Aurora. Others, such as the former Lowry Air Base are more than ten miles away from existing wells.

These sites store or have stored hazardous chemicals, whose secure containment is a priority for immediate and long term human safety. Some of these sites have been found to have leachate plumes in waterways that pass through or near the sites (e.g., Lowry Landfill Superfund Site has a plume of 1-4 dioxane). Additionally, there is a suspected ground fault under the Lowry Landfill Plume.

At these sites, distributed across Aurora, induced seismicity could lead to serious threats to public health and environmental harms: increased migration of toxic chemicals, increased intersection of toxic chemicals with natural gas pockets, catastrophic release of toxic chemicals into our major aquifers, increased activity of suspected ground fault under Lowry Landfill Superfund site 1-4 Dioxane leachate plume, etc. This is why Class II deep injection wells, which have a strong documented history of resulting in earthquakes even miles from the injection well should not be allowed in Aurora.

Class II wells are not allowed in Aurora. I believe that is part of Aurora Water regulations. In the OGM, Section 4.03.3 discusses Class II wells.

However, fracking operations have also been known to cause earthquakes, although much more rarely. Per the US Geologic Survey: “Fracking intentionally causes small earthquakes (magnitudes smaller than 1) to enhance permeability, but it has also been linked to larger earthquakes. The largest earthquake known to be induced by hydraulic fracturing in the United States was a M4 earthquake in Texas.” More than 600 small earthquakes (between magnitude 2.0 and 3.8) were identified as caused by fracking in
Ohio, Pennsylvania, West Virginia, Oklahoma and Texas (Brudzinski, Miami University in Ohio, 2019). Per Brudzinski, the factors that increase likelihood of fracking caused earthquakes:

It isn’t just the deeper the well, the more likely it is to be closer to basement rock and mature faults that are likely to slip, he said, although that might still play a role in these earthquakes. Instead, overpressuring appears to have a stronger correlation with fracking-induced seismicity.

Overpressuring occurs when there is high fluid pressure within rocks buried deep in a basin by many overlying rock layers.

https://www.usgs.gov/faqs/does-production-oil-and-gas-shales-cause-earthquakes-if-so-how-are-earthquakes-related-these?qt-news_science_products=0#qt-news_science_products seismic activity

https://www.sciencedaily.com/releases/2019/04/190426110601.htm

It is incumbent upon Aurora’s Oil and Gas Division to obtain expert consulting on induced seismicity from fracking from a geologist and/or hydrogeologist familiar with the geology of our area (and CDPHE’s white paper on the suspected ground fault under the Lowry Landfill Superfund Site leachate plume), to study the specifics of each of these hazardous sites and to determine an evidence-based rule on the minimum setback distance of fracking operations (both well bore and radial arms) from such hazardous sites, in order to protect public health, safety, and welfare and the environment. As fracking sites multiply around the Lowry Landfill Superfund site, this is an URGENT goal that needs to be fulfilled within the next few months!

Local jurisdictions such as Aurora have no authority over downhole operations. We recommend you send these comments to COGCC. The productive layers under Aurora are normally pressured (not overpressured) which reduces the risk.

24 addendum) 4.03 Setbacks, A.

NAMELY: Dr. Shonkoff’s 2019 report to the City of Los Angeles was a comprehensive overview of research to date of health impacts to persons residing in the vicinity of oil and gas development, including an overview of setbacks from various states. He concluded that “a setback greater than 500 feet and up to 5,290 feet should be considered” (larger setback distance for dwellings where children are to be found, including hospitals, schools), but additionally noted in the report that a 1,500 ft setback does not take into account “risks posed by fires, explosions and other emergencies”, that most studies of health impacts at 2,500 feet also find significant health impacts, and that density of oil and gas wells and facilities is a key variable in health outcomes.

Per Dr. Shonkoff’s comprehensive review and nuanced recommendations to Los Angeles: “The determination of how far is far enough is complex, especially given that much of the literature to date has also identified the density of oil and gas development to be a key factor associated with health risks…. agencies with jurisdiction may consider limiting the density of wells and other oil and gas development infrastructure to oil and gas producing areas.”

Density of oil and gas development would fall under the concept of cumulative impacts analysis. COGCC is undergoing proposal of new rules concerning this topic. Aurora may need to address this topic more fully in the future depending on the outcome of COGCC rulemaking.

There is a dense corridor of oil and gas operations developing in SE Aurora, especially within several miles of 2 very large emitters of hazardous air pollutants (HAP), two large natural gas processing plants, right next to one another (at Powhatton Rd, just north of I70, and I70 is of course also a source of HAP). The Wattenberg Gas Plant emits an estimated 16 tons of Hazardous Air Pollutants per year; Blue
Spruce Energy Center emits an estimated 74.06 tons. Additionally, 2 miles to the east is the Watkins Compressor Station, which emits 56 tons of HAP per year.

Less than .5 miles south of the 2 natural gas processing plants is a trailer park community called Foxridge Farms, with 481 families; about 1 mile or so to the south are the neighborhoods of Adonea, Traditions, and KB Sky Ranch, as well as Vista Peak Exploratory and Vista Peak Preparatory schools, with numerous oil and gas wells to the north, south, and in between. The range of aggregate HAP that these communities, and especially children, are being continually exposed is very concerning.

The city should urgently arrange for a data contract with CDPHE air emissions specialists for air sampling for those communities and schools and an independent company, under the direction of the Colorado School for Public Health at Anschutz, for continuous air monitoring of air quality, over all seasons (to account for variable emission spikes, temperature, windborne emissions from outside Aurora, etc), to measure aggregate Hazardous Air Pollutant (HAP) emissions that people are being exposed to, with a breakdown of chemicals of particular health concern (e.g. benzene, formaldehyde, ozone ranges, etc).

Seeking consultation with one of the world’s foremost researchers of health impacts of oil and gas related to distance from and density of wells, Dr. Lisa M. McKenzie, U. of Colorado, Denver-Anschutz, Colorado School of Public would be most appropriate for such a project and to provide planning insight for permitting, as to the total oil and gas density in a given area that should be avoided in order to prevent the most serious lifelong diseases for residents, particularly the most vulnerable: children, pregnant women, the elderly and the health impaired. Additional such aggregate HAP monitoring needs to take place in other areas of dense oil and gas development, but this area appears to have the most total exposure to HAPs, given the numerous gas plants, the interstate, and oil wells.

Your suggestions have been noted. We require air monitoring by Operators as part of the permitting process. We have contracted with experts at RTI International to assist us with issues related to air quality and will seek their input. Density of wells in Aurora is currently significantly less than some other areas of the State, but as it increases in the future, cumulative impacts become more important to consider.

25) 4.03 Groundwater Protection 4.03.1 Water Quality Monitoring Plan and 4.03.2.11:

B. In 2011 The U.S. Environmental Protection Agency found chemical compounds specific to fracking in a pair of environmental monitoring wells drilled deep into an aquifer in Pavillion, Wyoming, an area where residents have suspected that hydraulic fracturing caused their water to turn black and smell like gasoline and led to loss of sense of smell and nerve pain.


In 2016 the EPA concluded that fracking has not had systemic, widespread effects on drinking water. But... the agency’s own panel of independent scientific advisors has disputed that conclusion.

As one of the foremost engineering experts on fracking, A.R. Ingraffea, has noted, fracking annuli (cement and or casing barriers) are subject to structural integrity failure, with such failures increasing over time:

Cement barriers may fail at any time over the life of a well for a number of reasons, including hydrostatic imbalances caused by inappropriate cement density, inadequately cleaned bore holes, premature gelation of the cement, excessive fluid loss in the cement, high permeability in the cement slurry, cement shrinkage, radial cracking due to pressure fluctuations in the casings, poor interfacial bonding, and normal deterioration with age (12). Casing may fail due to failed casing joints, casing collapse, and corrosion (13). Loss of zonal isolation creates pressure differentials between the formations intersected by the wellbore and the open barrier(s). The pressure gradient thus created allows for the flow of gases or other formation fluids between geological zones (i.e., interzonal migration) and possibly to the surface (14⇓–16), where it might manifest as sustained casing pressure (SCP) or sustained casing vent flow.

As noted in a comprehensive overview of casing failures, including ones in Colorado: “Well integrity in shale gas wells is a risk that needs active management throughout the well life cycle for the safe, efficient and environmentally sustainable operation of wells.”

In order to assure the integrity of our aquifers, in addition to inspections and deep monitoring wells for testing aquifer water, please consider requiring an alarm system that would be triggered by the presence of a signature frack fluid chemical in the aquifer monitoring wells, so that the unlikely but high consequence event of aquifer contamination can be promptly noted and, hopefully, resolved.

I am not aware of technology that can continuously sample and analyze water samples for constituents downhole and thus provide an alarm. We require routine sampling of monitoring wells and reporting to the City. Ground water flow is extremely slow. A real-time sampling alarm would not be necessary.

B. In order to avoid additional public/environmental exposure to “endocrine disrupting chemicals”, which alter human metabolism and hormonal function, causing serious disease and dysfunction, and some of which degrade/ substantively alter human DNA (which can create permanent transgenerational DNA alterations), such chemicals (often used as solvents in oil and gas processes and frequently found by researchers in nearby surface water) should be added to the chemicals tested for in baseline measurements and during operations and not permitted for use in any phase of operations. See https://endocrinedisruption.org/ for an introduction to scientific study of endocrine disrupter impacts on human health.

This was already addressed under 19) above.

26). 5.01.6 ComplianceReports: The Operator must submit quarterly reports to the City 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) that the equipment at the Oil and Gas Location 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. The quarterly report must contain a certification as to the truth, accuracy, and completeness of the reports, signed by a Responsible Official, as defined by the CDPHE. The Operator will also provide the City 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 at the Oil and Gas Location.

We require people to report violations of laws and ordinances and for the police to monitor for violations of laws precisely because violators don't normally self report. But Aurora's O&G ordinances are based on that premise of self report, on a quarterly basis, with no real enforcement provisions, or fines or penalties that might dissuade Operators from committing violations or failing to report them?! O&G is not an industry that has a good track record of conforming to state laws or regulations, the number of serious violations and cover ups of serious violations each year is high in Colorado and before SB 181, COGCC permitted violators to plea down their violations, get their fines /penalties waived or replaced with some public service or reduced considerably. That is why SB 181 included local government authority to issue fines and penalties.

It is therefore incumbent upon Aurora to responsibly assert the following requirements, in order to protect public health, safety, and welfare and the environment and Aurora taxpayer dollars, just as other CO local governments have:

A. Violations or other incidents of non compliance must be reported to the city within 24 hours of discovery or face significant penalties for delayed report, commensurate with damage and potential damage to health, environment, safety, or property and length of report delay. Aurora residents or businesses whose health or property has been damaged will be fairly compensated for damages by the Operator, with compensation becoming a matter of public record (i.e., without resorting to private /gagged settlement).

B. Compliance with all requirements will be overseen by the Oil and Gas Designee and his/her appointed inspectors and independent expert consultant reviews (paid for by the Operator as necessitated by circumstances) and also based on objective emissions records/evidence of spills or other incidents/resident complaints, etc.

C. Negligent or calculated non compliance, serial non compliance, and /or non compliance with serious potential impact on public health, safety or welfare or to environment or property may also be grounds for termination of Operator rights to operate per the permit issued by the City of Aurora, but may also result in the loss of right to operate in the city in the future.

D. Mitigation plans to avoid future occurrence of similar incidents of non compliance as proposed by the Operator will be subject to review, amendment and final decision by the city's O&G Designee and Director of O&G Division and affirmatory vote of City Council.

The City requires reporting by the Operators, but follows up on that reporting with inspections. These will become even more robust with time as we acquire additional equipment for our own sampling/monitoring methods. We enforce all regulations within the City and legally require compliance with our Best Management Practices and regulations. Penalties will be assessed for non-compliance. Requiring compensation to individuals for damage to health could open the City to legal action by Operators. I will discuss this with City Attorneys.

27) 6.04.5Road Repairs  Road repairs will be addressed as set forth in the Road Maintenance Agreement.
Add: which will become part of the public record submitted for review at public hearing and which will require the Operator to pay all road repair costs estimated to be due to Operator traffic load.

Operators are required to pay damages as part of the Road Maintenance Agreement. Those rules will not be duplicated in the OGM.

28) 7.03 Incidents/Spills  7.03.1Events or Incidents: Any COGCC or OSHA reportable injuries, accidents, or natural events shall be reported to the City within twenty-four (24) hours.
Per a published scientific study 2017 by Dr. Adgate and his colleagues at the CO School for Public Health regarding incident reporting in Colorado, the threshold for incident reporting required by COGCC is much higher than in other states (i.e., substantially higher thresholds for volumes of spills reported, higher thresholds for seriousness of accidents, fires reported, etc.) and therefore results in a Colorado safety performance profile for our state’s oil and gas operations that greatly underestimates actual incident frequency and severity. [https://www.sciencedirect.com/science/article/abs/pii/S2214629617301081](https://www.sciencedirect.com/science/article/abs/pii/S2214629617301081)

*In the interest of accountable and transparent government, determined to uphold and promote protection of public health, safety and welfare and the environment, as well as the safety of O&G workers (who have the highest rates of occupational accidents and injuries of all workers), it should be required that Operators must report ALL incidents and accidents to the city, within 24 hours, with complete information as to relevant circumstances and means of avoiding such issues in the future, with penalties and fines applying for report delay, commensurate with incident potential harm to public and worker health, safety, welfare and harm to environment, quality of life and property, and related to duration of the incident and length of time past discovery that the report was submitted, and with city rights to amend the Operator mitigation proposal and attach it to the Operator permit.*

Broomfield has terms aligning with most of those requirements.

We believe OSHA and COGCC rules properly include the types of incidents that should be reported. While the oil and gas industry certainly has risks, it is not in the top ten most dangerous industries. Here is one article for reference: [https://www.cnbc.com/2019/12/27/the-10-most-dangerous-jobs-in-america-according-to-bls-data.html](https://www.cnbc.com/2019/12/27/the-10-most-dangerous-jobs-in-america-according-to-bls-data.html)

29) **SECTION 32.00 OIL & GAS MIDSTREAM PERMIT (OGMP) APPLICATION PROCESS**

*The concerns and suggestions regarding the topics reviewed above apply to this section’s content that includes the same topics. The above comments regarding gathering lines as an additional avenue to establishing various setback requirements apply in this section as well.*

30) **33.12 Risk Management:** As part of Operator’s application to the City, Operator shall provide a risk management plan, which will include the identification of potential risks, methods of risk avoidance, and controls that implement techniques to prevent accidents and losses and reduce the impact or cost after the occurrence of identified potential events.

According to the oil and gas industry, their operations are "clean and safe" and pose no significant risks, despite all evidence to the contrary. Therefore, it would be irresponsible to allow the Operator to perform the risk analysis.

*In order to support city due diligence in risk management for operations with which carry high consequence risk, modify the above to require that the Operator pay for an independent expert consultant firm selected by the city to perform a risk management assessment and plan.* The County of Broomfield had this requirement fulfilled by Extraction O&G as part of its permitting process.

City staff and Risk Manager will review this concept.

31) **34.03 Groundwater Protection**

*Operator shall avoid causing degradation to surface or ground waters within the City and to wetlands within the City. If Operator is responsible for degradation to water, it will pay its proportionate share to restore water quality as close to baseline as possible. In the interest of clarity and responsible assignment of costs, the language should be changed to assert that the Operator is responsible for all costs associated with its degradation of water, for its restoration to baseline as close as possible and for damages costs pertaining to remaining damages.*

We require this is Section 4.03.2.11.8. I will copy that language to section 34.03 for Midstream Operators.
32) **Class II Underground Injection Control Wells:** For operations associated with the CGF, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure.

_Aurora should not allow any Class II disposal wells for produced wastewater within city limits, due to risk of induced seismicity (noted in regions across the country and the world at 10 miles and beyond and the study of which is in its infancy, with poor predictive performance of range and severity of induced seismicity). Aurora has numerous special case hazardous sites, such as the the Lowry Landfill Superfund Site and its toxic leachate plume of 1-4 Dioxane AND its suspected geologic ground fault under the plume, the DADs landfill site, Aurora’s Landfill, the Former Lowry Bombing Range lands, and known Dept of Defence toxic storage and spillage sites. At these sites, distributed across Aurora, induced seismicity could lead to serious environmental harms (such as, increased migration of toxic chemicals, increased intersection of toxic chemicals with natural gas pockets, increased activity of suspected ground fault under Lowry Landfill Superfund site 1-4 Dioxane leachate plume, etc.)._

Class II injection wells, such as those used for sequestering toxic fracking wastewater, have long been documented to produce earthquakes and other significant seismic activity (induced seismicity), with a significant earthquake caused in Denver in 1961 by an injection well for disposal of toxic fluids from Rocky Mt Arsenal, and subsequent earthquakes in the Trinidad area due to O&G injection wells over the past decade (1,800 earthquakes up to magnitude 4.3, between 2008-2010 alone in Colorado's Raton Basin) [https://www.colorado.edu/today/2017/10/24/raton-basin-earthquakes-linked-oil-and-gas-fluid-injections](https://www.colorado.edu/today/2017/10/24/raton-basin-earthquakes-linked-oil-and-gas-fluid-injections).

Research on Induced (human caused) Seismicity from injection wells show that pressure increases in distance/range from the well and over time, with some areas of the country experiencing impacts up to 50 miles from injection wells. _Due to the nascent stage of the science of induced seismicity, and its current inability to predict which areas or circumstances lead to Class II wells inducing significant seismic events at a range of 10 or more miles from the well, it would be ill advised for Aurora to allow such permitting._ Note that Arapahoe County has not been permitting Class II injection wells due to similar induced seismicity concerns.

This was addressed in number 24) above. Rules on injection wells are most properly included in Aurora Water regulations.

33) **SECTION 91.00 ENFORCEMENT; 91.01 General:** The City may impose penalties for the violations of these BMPs or specifications under [Placeholder for new code: Aurora Municipal Code 135-103]

As noted in point 26) re Section, 5.01.6 Compliance Reports, we as a society require people to report violations of laws and ordinances and for the police to monitor for violations of laws precisely because the violators don’t normally self report. But Aurora’s O&G ordinances are based on precisely that premise of self report, on a quarterly basis, with no real enforcement provisions, or fines or penalties that might dissuade Operators from committing violations or failing to report them?! O&G is not an industry that has a good track record of conforming to state laws or regulations, the number of serious violations and cover ups of serious violations each year is high in Colorado and before SB 181, COGCC permitted violators to plea down their violations, get their fines/penalties waived or replaced with some public service or reduced considerably. That is why SB 181 included local government authority to issue fines and penalties.
This section is critically important to flesh out, per the specific authority granted under SB 181, in order to assert responsible governance that does not show favoritism to the O&G industry over other industries, and that enforces requirements that protect public health, safety, welfare and the environment, as well as private property and quality of life for Aurora residents, and that ensures that harms to the city or its residents have clear and significant consequences, the cost of which will be borne by the perpetrator.

Clearly the current wording stating that the city "may" levy fines or penalties must be changed to "will" if enforcement is to have any teeth. The suggested wording regarding Compliance in 26)section 5.01.6 should be considered as a start (see below), adding in a section on Specific Harms as a direct or indirect result of O&G operations, and naming minimum and maximum penalties for each violation/incident/harm. Additionally note that Broomfield and Boulder have begun this process in their draft regulations that can be reviewed.

It is therefore incumbent upon Aurora to responsibly assert the following requirements, in order to protect public health, safety, and welfare and the environment and Aurora taxpayer dollars, just as other CO local governments have:

A. Violations or other incidents of non compliance must be reported to the city within 24 hours of discovery or face significant penalties for delayed report, commensurate with damage and potential damage to health, environment, safety, or property and length of report delay. Aurora residents or businesses whose health or property has been damaged will be fairly compensated for damages by the Operator, with compensation becoming a matter of public record (i.e., without resorting to private /gagged settlement).

B. Compliance with all requirements will be overseen by the Oil and Gas Designee and his/her appointed inspectors and independent expert consultant reviews (paid for by the Operator as necessitated by circumstances) and also based on objective emissions records/evidence of spills or other incidents/resident complaints, etc.

C. Negligent or calculated non compliance, serial non compliance, and/or non compliance with serious potential impact on public health, safety or welfare or to environment or property may also be grounds for termination of Operator rights to operate the project permit issued by the City of Aurora, and for loss of right to operate in the city in the future.

D. Mitigation plans to avoid future occurrence of similar incidents of non compliance as proposed by the Operator will be subject to review, amendment and final decision by the city's O&G Designee and Director of O&G Division and affirmatory vote of City Council.

I agree there is room for additional information in the enforcement section. The use of the term “may” provides opportunity for reasonable discussion with the Operator. Just like a police officer has discretion in giving a warning or a ticket for a traffic violation. For example, if an Operator allows mud to be tracked onto a roadway once, the first best solution to resolve a nuisance issue is for them to pay to remove it, and receive a warning that it is a violation. If it continues, then clearly fines would be imposed and enforced. If there is a violation involving public health, then fines would always be imposed.

34. Additional concerns/ suggestions:

- Relevant to health and environmental impacts, risk assessment: Climate Change

There is scientific consensus that the climate crisis is escalating, tipping points to irreversible climate collapse are looming (non linear abrupt shift anticipated, with cataclysmic consequences for agriculture, infrastructure, water, food, health, environment, and "continuity of civilization"). The Joint Chiefs of Staff has called global warming "the greatest challenge humanity has ever faced".

As noted in the July 30, 2020 letter from Coalition of Local Governments (of which Aurora is a member) to CO Air Quality Control Commission:
"Most of the emissions causing climate change also are associated with local and regional pollution, making it doubly critical to reduce emissions from these sources. While all Coloradans are at risk, some populations are disproportionately vulnerable to air pollution and climate disruption, including those with low income, some communities of color, immigrant groups (including those with limited English proficiency), indigenous peoples, children and pregnant women, older adults, vulnerable occupational groups, persons with disabilities, and persons with pre-existing or chronic medical conditions.11See LGC PHS EX-001, “Impact of Climate Change on Ecology, Public Health, and Local Governments in Colorado” for more background....

Local Governments Bear Many of the Costs of Climate Change

Higher temperatures, more intense storms, and increased intensity of wildfires will dramatically increase local governments’ long-term infrastructure and operational costs. Stronger storms bringing greater rainfall can overload urban drainage systems and cause local flooding, higher temperatures will cause asphalt on roads to degrade more quickly, requiring more frequent maintenance and repairs, and bridges may suffer damage that requires adaptation and repair.21Local governments also bear the burden of the increase in fire frequency and intensity. While the federal government and other organizations may shoulder a large portion of short-term expenses, such as fire suppression and immediate economic relief, local and state governments, individuals, and taxpayers foot the bill for long-term expenses, which are generally greater than short-term expenses and can go on for years.22 Private insurance increasingly does not cover these damages, and recent disasters have shown that federal aid is also not adequate to cover the costs.23 The strain of disaster response and recovery is expected to increase in a context of state budget shortfalls and climate-influenced economic uncertainty.

A warming climate will dramatically change the hydrologic cycle in Colorado. Increased temperatures have already decreased snowpack, led to earlier runoff, and increased the proportion of rain to snow.24 Overall, we can expect to see substantial flow declines in key waterways.25 Colorado’s 2019-2020 water year demonstrates the increased volatility in our hydrologic cycle. As recently as April 20, federal data showed snowpack statewide measuring 104 percent of the norm. But due to abnormal dryness since then, as of July 21 nearly the entire state, 95 percent, is in some level of drought and forty of Colorado’s sixty-four counties are in severe to extreme drought.26

Climate change will also increase air pollution, with severe consequences for human health. Higher temperatures lead to increased production of ozone, a respiratory irritant that is especially dangerous for sensitive populations including children, older adults, and those suffering from asthma.27 Climate-driven increases in ozone will cause premature deaths, hospital visits, lost school days, and acute respiratory symptoms.28 The current COVID-19 crisis tightens our focus on the critical importance of air quality to respiratory health. The CDC has cited asthma as a risk factor for poor COVID-19 outcomes.29 While the literature is still developing regarding COVID-19 morbidity and mortality to air pollution, air pollution is closely linked to negative outcomes from similar respiratory diseases.30 Local governments and health agencies are on the front lines of the COVID-19 crisis, which is revealing the fragility of our economy and infrastructure to seismic disruptions of the type to be expected more frequently under climate change."

The above noted additional costs to local governments and our state and all its residents, as well as increased infrastructure risks from Super Storm events, decreased crop production from drought, health risks from fire particulates and increased heat, rising food costs, etc., are significant threats to our economic and general well being and a viable future for next generations. Since O&G development contributes a disproportionate amount of greenhouse gases (GHG) that escalate climate
instability, its role in contributing to the above mentioned elevated risks must be included in any O&G environmental and health and risk assessments, as well as consideration of fines and penalties. Our city leadership and representatives should become very familiar with all of that information, since it will be incumbent upon them to usher in a responsible, urgent transition to sustainable, clean energy, transportation, land development/conservation and other measures that can have a role in reducing climate instability contributions from Aurora.

Your concerns are noted. Climate change, and specifically how local governments can do their part to prevent negative impacts will be part of ongoing study by the Oil & Gas Division.

- **Update the City O&G web pages, to better inform the public and its elected representatives, to include** (as do other CO local governments): Invite Aurora residents to submit their emails for an O&G updates notice, links to letters sent by Aurora to state entities regarding the city position on O&G issues, rulemaking, etc., notice of new applications and direct links to them for public review and comment, public posting of such comments and public hearing comments, as well as public posting of O&G neighborhood meeting questions/concerns and Operator and city responses, resident complaints re operations and the city's response, summaries of new relevant state regs or laws, status of relevant legal proceedings. See for example Broomfield’s Q&A forthrightly describing Extraction’s bankruptcy and legal cases against it and city responses to Extraction in stark contrast to my many attempts to get an answer to whether the city would consider nullifying the Operator Agreement or taking legal action against Extraction for fraudulent representation of its financial solvency during Operator Agreement negotiations, which yielded no response or being told that that matter could not be discussed with the public and that the city could not "provide legal counsel" on that matter. [https://docs.google.com/document/d/12_U-DPkwpx7KwzWL-70n-hlgmUk8byNihkhjQgO5fqE/edit](https://docs.google.com/document/d/12_U-DPkwpx7KwzWL-70n-hlgmUk8byNihkhjQgO5fqE/edit)  
The public deserves transparency and the right to participate more actively in O&G matters.

I am in full agreement that the Oil & Gas webpage deserves significant remodeling, and that is underway. The Oil & Gas Division began operations only in March 2020, and the first order of business was to update regulations. Once that is complete, many other initiatives are planned. The entire City website is undergoing an update, and then the Oil & Gas page will be updated in the future.

Nullifying an Operator Agreement is exactly the wrong approach if a company were to be found in violation, as it is the Agreement itself which provides accountability and enforcement. If the City were to nullify an a legal agreement, then the Operator would likely claim they no longer have any responsibility for the operations which were occurring under the agreement.

- **Consider raising bond requirements in order to ensure that the cost of plugging completed wells is covered**. The state currently pays for plugging in the event of Operator bankruptcy and estimates the cost as varying between $85,000 to $250,00 per well, in taxpayer dollars. Since the state budget is stretched beyond capacity as is taxpayer ability to pay additional taxes, and since the bankruptcy rate of Operators is escalating rapidly (due to oil price drop, demand drop, decreased number of investors, etc), it would be wise to consider collecting that fee up front for each well and hold it in escrow until well completion, then return it to the Operator when it is time to plug the well.

The City has no authority over downhole operations or plugging. This is entirely the authority of the COGCC. Requiring bonding for downhole plugging could allow the COGCC to claim that the City was entirely responsible for the plugging costs if there was a future issue with the Operator. We recommend you submit your comments on this topic to the COGCC.
All above comments and suggested revisions are made on behalf of the local grassroots advocacy group, What the Frack?! Arapahoe, formed in 2011 in order to promote awareness of health, environmental, and quality of life impacts of fracking for oil and gas, and to urge local and state representatives to stand for the fundamental rights of residents to clean air and water and to full quiet enjoyment of their property and their community. Thank you for your thoughtful consideration of these requests.

Thank you for your thorough review of the Oil & Gas Manual and many specific comments. Your perspectives are valuable and provide the City with the opportunity to better understand issues from the perspective of our residents and public.

Thank you for your thoughtful consideration of these comments and requests and for providing public comment opportunity and public posting of comments on the oil and gas page link.

Sincerely,

Sonia Skakich-Scrima, M.A.
Founder,
What the Frack?! Arapahoe
Comments captured from Town Hall meetings which have not already been covered in written comments above.

From July 16, 2020:
Section 7.01.2 Create a template for notification requirements.
Excellent idea

Section 90.01.3 Thank you for shortening the notification period for City inspections
Thank you.

From July 28, 2020:
No comments

From August 20, 2020 (Ward II Town Hall):
You should post the final OGM to the City website for public viewing.
Yes, it will be posted when complete.

Request comments from the Lowry Superfund site Citizens Advisory Group
Done.

Consider regulation for marking of Gathering Lines.
That is a good idea. Will be discussed with staff and legal.

From August 20, 2020 (Ward IV Town Hall):
Can the City ban hydraulic fracturing?
No.

Residential setback should be half-mile.
We will discuss changes to setbacks as a staff.
LOWRY LANDFILL SUPERFUND SITE CITIZENS ADVISORY GROUP
(LLSF Site CAG)
(303) 912-2905 *** berr@pcisys.net *** 71 Algonquian St., Aurora, CO 80018

August 23, 2020

TO: Oil&Gas@auroragov.org

RE: Lowry Landfill Superfund Site Citizens Advisory Group Comments and Requests for Revision of Draft Proposal for Aurora Oil and Gas Manual

The 503 acre Lowry Landfill Superfund Site (LLSF), owned by the City of Denver and Operated by Waste Management, is located at the intersection of Quincy and Gun Club Road, within the City of Aurora. Between the mid 1960s and early 1980s, the site received and co-disposed of domestic trash and chemical wastes produced by Front Range Industry. The EPA Remedial Investigation revealed that there were a minimum of 73 open, unlined pits within the 503 acres. Because the pits were open at the time, the chemicals traveled in the air and into area homes. In the early 1980s, EPA ordered the pits covered - without removing the liquids first. As a result, there remains buried at the LLSF Site, at least 138 million gallons of liquid chemical wastes.

The Record of Decision (ROD) for the LLSF Site requires “containment of the chemicals on-site, at the Point of Compliance.” The major concern of the residents who live near the LLSF site is: **The chemicals have not been successfully contained within the 503 acre SF Site. An off-site plume of 1,4-dioxane has been identified having traveled more than 4 miles north of the LLSF Site, traveling through and into area neighborhoods.**

December, 2018, the LLSF Site CAG was approved and funded by EPA Region 8. The purpose of the CAG is to provide a public forum for community members to present and discuss their needs and concerns related to the Superfund decision-making process at LLSF Site. The CAG Citizen Board consists of 8 residents who live near and are impacted by activities at the LLSF Site. Also attending the monthly CAG Meetings are: EPA, Colorado Department of Health, Arapahoe County, City of Aurora, City of Denver, Waste Management, Tri-County Health.

**Added CAG concerns are:**
1. The 73 buried chemical pits do not have protective liners or containment features,
2. Numerous Sand Lenses surround the pits,
3. There is a Growth Fault in the center of the SF Site,
4. The vibrations through the ground caused by Denver Arapahoe Disposal Site (DADs) excavation, heavy equipment and truck traffic may be causing the chemicals to move,
5. The new construction at the corner of Quincy and Gun Club Road may be causing more vibrations, not only from heavy automobile traffic, but also from the heavy equipment and truck traffic working on the construction.
6. The off-site chemical plume has not yet been clearly defined, the CAG Board is concerned that any new movement of liquid materials from the pits (drilling, fracking, injection) might cause the chemicals to follow new pathways (sand lenses, fractures, growth faults) to move in new or increased directions.
7. LLSF is designed to contain over 100 contaminants within barrier walls laterally and a basement barrier of lignite. Those barriers are specially vulnerable to a breccia caused by seismic activity.

Attached to this comment from the LLSF Site CAG, you will find a list of LLSF Site CAG Board Members. Among the names, you will find the name of Sonia Skakich Scrims. Sonia has been a Citizen CAG Board Member since the inception of the LLSF CAG Board. The Citizen CAG Board Members have benefitted greatly from Sonia’s research and commenting skills. Therefore, the LLSF Site Citizen CAG Group Board has come to consensus that, after a review of the document titled:
Comments and Requests for Revision of Draft Proposal for Aurora Oil and Gas Manual"  (Sonia Skakich-Scrina, on Behalf of What the Frack?! Arapahoe, grassroots group),
the LLSF Site Citizen CAG Board agrees to endorse the sections that pertain specifically to Lowry Landfill Superfund Site and are found in the document at: #10, #21, #24 B, and #32.

The following comments are endorsed by the LLSF Site Citizen CAG Board

10. Application Submission Process: 2.02.3 Submission of OIL & GAS LOCATION Application (Phase 1); 2.02.4 Pre-Acceptance Completeness Review; 2.02.5 Acceptance of OGP Application

At some point in this process, additional requirements need to be imposed in order to support public health and safety, such as environmental impact assessment and geologic and other special hazards review (e.g. special hazards in Aurora such as the the Lowry Landfill Superfund Site and its toxic leachate plume of 1-4 Dioxane AND its suspected geologic ground fault under the plume, the DADs landfill site, the Former Lowry Bombing Range lands, and known Dept of Defence toxic storage and spillage sites).

Broomfield County wisely requires the Operator to pay for the city to have an environmental assessment completed by an independent expert of the county's choosing, and required the Operator, Extraction, to pay for that and for a Risk Assessment (due to the proximity of some proposed wells to residential areas).

Additionally, Broomfield has a public health epidemiologist consulting with the oil and gas department, in order to address complaints related to public health.

Aurora should do all of the above to demonstrate responsible due diligence to uphold public health and safety, as well as adding a health impact assessment to the independent environmental assessment. The health impact assessment would estimate the increased health risks for Aurorans living/working within a mile of each well, such as increased risks for respiratory disease, sinus, allergy, skin, gastrointestinal and neurologic problems, cancer, birth defects, and reproductive failure, all of which are scientifically documented risks of proximity to O&G development. It would provide separate risk probabilities for children, pregnant women and their fetuses, the elderly, and the health impaired.

It is critical for Aurorans and their elected leaders and representatives to have an evidence-based idea of the risks of each project to human health, the possible sacrifice of human health that each project is proposing.

21. 4.02.2.02 Flowback and produced water shall be transported by pipeline once constructed and available. If a pipeline is unavailable, flowback and produced water must be stored in tanks and transported by tanker trucks. All flowback and produced water must be disposed of at a licensed disposal site or recycled for use on-site.

Due to numerous incidents of explosions of trucks carrying gas and chemical laden produced/wastewater from sites (i.e. road accident, driver smoking, etc), such trucks will be clearly identified on all sides as carrying flammable, potentially explosive materials, such that all drivers can read the signs and such that truck drivers will be aware of the hazardous load they are carrying (many truck drivers report that they were not advised of the potential explosiveness of their cargo).

Aurora should specify that it will not allow any class II disposal wells for produced wastewater within Aurora, due to risk of induced seismicity (noted in regions across the country and the world at 10 miles and beyond) and the number of hazardous sites in Aurora where risk of induced seismicity could lead to serious environmental harms (such as, increased migration of toxic chemicals, increased intersection of toxic chemicals with natural gas pockets, increased activity of suspected ground fault under Lowry Landfill Superfund site 1-4 Dioxane leachate plume, etc.).

24. B) Setbacks from special case/hazardous sites: Aurora has numerous special case hazardous sites, such as the the Lowry Landfill Superfund Site, the DADs landfill site, Aurora's Landfill, the Former Lowry Bombing Range lands, and additional known Dept. of Defence toxic storage and spillage sites (such as Buckley Garrison, former Lowry Air Base, etc).
These sites store or have stored hazardous chemicals, whose secure containment is a priority for immediate and long term human safety. Some of these sites have been found to have leachate plumes in waterways that pass through or near the sites (e.g., Lowry Landfill Superfund Site has a plume of 1-4 dioxane). Additionally, there is a suspected ground fault under the Lowry Landfill Plume.

At these sites, distributed across Aurora, induced seismicity could lead to serious threats to public health and environmental harms: increased migration of toxic chemicals, increased intersection of toxic chemicals with natural gas pockets, catastrophic release of toxic chemicals into our major aquifers, increased activity of suspected ground fault under Lowry Landfill Superfund site 1-4 Dioxane leachate plume, etc. This is why Class II deep injection wells, which have a strong documented history of resulting in earthquakes even miles from the injection well, should not be allowed in Aurora.

However, fracking operations have also been known to cause earthquakes, although much more rarely. Per the US Geologic Survey: "Fracking intentionally causes small earthquakes (magnitudes smaller than 1) to enhance permeability, but it has also been linked to larger earthquakes. The largest earthquake known to be induced by hydraulic fracturing in the United States was a M4 earthquake in Texas." More than 600 small earthquakes (between magnitude 2.0 and 3.8) were identified as caused by fracking in Ohio, Pennsylvania, West Virginia, Oklahoma and Texas (Brudzinski, Miami University in Ohio, 2019). Per Brudzinski, the factors that increase likelihood of fracking caused earthquakes:

- It isn't just the deeper the well, the more likely it is to be closer to basement rock and mature faults that are likely to slip, he said, although that might still play a role in these earthquakes. Instead, overpressuring appears to have a stronger correlation with fracking-induced seismicity. Overpressuring occurs when there is high fluid pressure within rocks buried deep in a basin by many overlying rock layers.

https://www.usgs.gov/faqs/does-production-oil-and-gas-shales-cause-earthquakes-if-so-how-are-earthquakes-related-these?qt-news_science_products=0#qt-news_science_products seismic activity
https://www.sciencedaily.com/releases/2019/04/190426110601.htm

**It is incumbent upon Aurora's Oil and Gas Division to obtain expert consulting on induced seismicity from fracking from a geologist and/or hydrogeologist familiar with the geology of our area (and CDPHE's white paper on the suspected ground fault under the Lowry Landfill Superfund Site leachate plume), to study the specifics of each of these hazardous sites and to determine an evidence-based rule on the minimum setback distance of fracking operations (both well bore and radial arms) from such hazardous sites, in order to protect public health, safety, and welfare and the environment. As fracking sites multiply around the Lowry Landfill Superfund site, this is an URGENT goal that needs to be fulfilled within the next few months!**

25) 4.03 Groundwater Protection 4.03.1 Water Quality Monitoring Plan and 4.03.2.11:

A. In 2011 The U.S. Environmental Protection Agency found chemical compounds specific to fracking in a pair of environmental monitoring wells drilled deep into an aquifer in Pavillion, Wyoming, an area where residents have suspected that hydraulic fracturing caused their water to turn black and smell like gasoline and led to loss of sense of smell and nerve pain. https://www.scientificamerican.com/article/epa-finds-fracking-compound-wyoming-aquifer/

In 2016 the EPA concluded that fracking has not had systemic, widespread effects on drinking water. But... the agency's own panel of independent scientific advisors has disputed that conclusion. https://insideclimatetinews.org/news/29032016/fracking-study-pavillion-wyoming-drinking-water-contamination-epa

As one of the foremost engineering experts on fracking, A.R. Ingraffea, has noted, fracking annuli (cement and or casing barriers) are subject to structural integrity failure, with such failures increasing over time:
Cement barriers may fail at any time over the life of a well for a number of reasons, including hydrostatic imbalances caused by inappropriate cement density, inadequately cleaned bore holes, premature gelation of the cement, excessive fluid loss in the cement, high permeability in the cement slurry, cement shrinkage, radial cracking due to pressure fluctuations in the casings, poor interfacial bonding, and normal deterioration with age (12). Casing may fail due to failed casing joints, casing collapse, and corrosion (13). Loss of zonal isolation creates pressure differentials between the formations intersected by the wellbore and the open barrier(s). The pressure gradient thus created allows for the flow of gases or other formation fluids between geological zones (i.e., interzonal migration) and possibly to the surface (14–16), where it might manifest as sustained casing pressure (SCP) or sustained casing vent flow. 

https://www.pnas.org/content/111/30/10955

As noted in a comprehensive overview of casing failures, including ones in Colorado: "Well integrity in shale gas wells is a risk that needs active management throughout the well life cycle for the safe, efficient and environmentally sustainable operation of wells." https://publications.csiro.au/rpr/download?pid=csiro:EP179028&dsid=DS2

In order to assure the integrity of our aquifers, in addition to inspections and deep monitoring wells for testing aquifer water, please consider requiring an alarm system that would be triggered by the presence of a signature frac fluid chemical in the aquifer monitoring wells, so that the unlikely but high consequence event of aquifer contamination can be promptly noted and, hopefully, resolved.

32) **34.03.2 Class II Underground Injection Control Wells:** For operations associated with the CGF, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure

*Aurora should not allow any class II disposal wells for produced wastewater within city limits, due to risk of induced seismicity (noted in regions across the country and the world at 10 miles and beyond and the study of which is in its infancy, with poor predictive performance of range and severity of induced seismicity). Aurora has numerous special case hazardous sites, such as the the Lowry Landfill Superfund Site and its toxic leachate plume of 1,4 Dioxane AND its suspected geologic ground fault under the plume, the DADs landfill site, Aurora’s Landfill, the Former Lowry Bombing Range lands, and known Dept of Defence toxic storage and spillage sites. At these sites, distributed across Aurora, induced seismicity could lead to serious environmental harms (such as, increased migration of toxic chemicals, increased intersection of toxic chemicals with natural gas pockets, increased activity of suspected ground fault under Lowry Landfill Superfund site 1,4 Dioxane leachate plume, etc.).

Class II injection wells, such as those used for sequestering toxic fracking wastewater, have long been documented to produce earthquakes and other significant seismic activity (induced seismicity), with a significant earthquake caused in Denver in 1961 by an injection well for disposal of toxic fluids from Rocky Mt Arsenal, and subsequent earthquakes in the Trinidad area due to O&G injection wells over the past decade (1,800 earthquakes up to magnitude 4.3, between 2008-2010 alone in Colorado's Raton Basin)


Research on Induced (human caused) Seismicity from injection wells show that pressure increases in distance/range from the well and over time, with some areas of the country experiencing impacts up to 50 miles from injection wells. *Due to the nascent stage of the science of induced seismicity, and its current inability to predict which areas or circumstances lead to Class II wells inducing significant seismic events at a range of 10 or more miles from the well, it would be ill advised for Aurora to allow such permitting.* Note that Arapahoe County has not been permitting Class II injection wells due to similar induced seismicity concerns.

The LLSF Site C Group Board appreciates the opportunity to provide this comment. LLSF Site CAG Board Members are:
Bonnie Rader, Chair
Thomas Kraus, MD, Co-Chair
Margie Sobey, Board Member
Maggie Rash, Board Member
Molly Smolen, Board Member
Jon Barber, Board Member
Richard Rader, Board Member
Sonia Skakich Scrima, Board Member

If there are questions or issues surrounding the above comment, the LLSF Site CAG invites you to attend a CAG Meeting to participate in a discussion with the Group. The CAG is always open to learning new information and sharing our information with other groups to the benefit of all.

Bonnie Rader, Chair, LLSF Site CAG
08/23/2020

Thomas Kraus, MD, Co-Chair LLSF Site CAG
08/23/2020
Oil & Gas Manual

These are the combined comments from members of the Aurora Oil & Gas Advisory Committee

We steward access to the natural resources under our authority with integrity and respect for our citizens, businesses, and the environment.

City of Aurora

Oil & Gas Division

Jeffrey S. Moore, P.G., Manager
Oil & Gas Manual

We welcome public comments on this Draft Oil & Gas Manual. To access the Draft Oil & Gas Manual, go to AuroraGov.org/Oil&Gas.

Comments may be emailed to Oil&Gas@AuroraGov.org

Two virtual Town Hall meetings will be held on June 30 and July 16. Visit AuroraGov.org/Oil&Gas for details.
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SECTION 1.00 INTRODUCTION

1.01 Scope

This Oil & Gas Manual (OGM) sets forth the minimum acceptable criteria for permitting, designing, and constructing all locations and facilities related to oil and gas development within the City of Aurora.

Sections 1.00-7.00 set forth the criteria for Oil and Gas Locations, Oil and Gas Facilities, and Flowlines, including well pads, wells, and related infrastructure.

Sections 31.00-38.00 of this Oil & Gas Manual (OGM) set forth the minimum acceptable criteria for permitting, designing, and constructing pipelines and pipeline facilities, including Central Gathering Facilities (CGF), Gathering Lines, and Associated Facilities within the City of Aurora.

Regulations and Best Management Practices (BMPs) related to oil and gas development not specifically addressed in this document shall follow the provisions of the latest Rules and Regulations of the Colorado Oil & Gas Conservation Commission (COGCC) and the Air Quality Control Commission (AQCC).

1.02 Authority

1.02.1 State Authority

The Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101 et seq. authorizes local governments to regulate the surface impacts of oil and gas operations in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare and the environment within its jurisdiction. It also authorizes local governments to adopt reasonable regulations for surface impacts of oil and gas operations that address:

1.02.1.01 Land use

1.02.1.02 The location and siting of oil and gas facilities and oil and gas locations.

1.02.1.03 Impacts to public facilities and services.

1.02.1.04 Water quality and source, noise, vibration, odor, light, dust, air emissions, and air quality, land disturbance, reclamation procedures, cultural resources, emergency preparedness, and coordination with first responders, security, and traffic and transportation impacts.
1.02.05 Financial securities and insurance as appropriate to ensure compliance with the regulations of the local government.

1.02.06 All other nuisance-type effects of oil and gas development.

1.02.07 Otherwise planning for and regulating the use of land to provide planned and orderly use of land and protection of the environment in a manner consistent with constitutional rights.

1.02.08 Inspect all facilities subject to local government regulation.

1.02.09 Impose fines for leaks, spills, and emissions.

1.02.10 Impose fees on Operators or owners to cover the reasonably foreseeable direct and indirect costs of permitting and regulation and the costs of any monitoring and inspection program necessary to address the impacts of development and to enforce local governmental requirements.

Pursuant to the Colorado Oil and Gas Conservation Act, C.R.S. § 34-60-131 local governments may adopt regulations that are more protective or stricter than state requirements.

Pursuant to the Colorado Air Pollution Prevention and Control Act (APPCA), C.R.S. § 25-7-108 local governments may enact local air pollution resolutions or ordinances that include more stringent emission control regulations than state requirements.

1.02.2 Aurora Municipal Code

[Placeholder for final code sections A.M.C. 135-101, 135-102, 135-103, 135-104] give authority to the Oil & Gas Manual to regulate Oil and Gas Locations, Oil and Gas Facilities, pipelines, and all other oil and gas related operations.

1.03 Revisions

Revisions to this Oil & Gas Manual may be adopted as often as needed by the City Manager or their designee. It is the responsibility of the Operator to obtain the latest revisions from the City.

1.04 Review and Approval

City staff will review all submittals for general compliance with this Oil & Gas Manual. However, approval by the City does not relieve the Operator from the responsibility of ensuring their
calculations, plans, specifications, construction, and as-built drawings are correct and in compliance with this Oil & Gas Manual.

1.05 Interpretation

In the interpretation and application of the provisions of this Oil & Gas Manual, the following shall govern:

1.05.1 Minimum Requirements

This Oil & Gas Manual shall be regarded as the minimum requirements needed for the protection of public health, safety, welfare, and the environment.

1.05.2 Existing Permits

This Oil & Gas Manual shall not abrogate or annul any permit issued before its effective date, any construction plans approved before their effective date, or any site plans that have been recommended for approval by the City’s Planning and Zoning Commission before the effective date of these standards.

1.05.3 Headings

The descriptive headings of the sections of this Oil & Gas Manual are inserted for convenience only and shall not control or affect the meaning or construction of any regulations herein.

1.06 Terms and Definitions

Wherever in this Oil & Gas Manual the following terms, acronyms, or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

1.06.1 Abbreviations

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<th>Abbreviation</th>
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<td>A.M.C.</td>
<td>Aurora Municipal Code</td>
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<tr>
<td>AMSE</td>
<td>Association of Mechanical and Structural Engineers</td>
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<tr>
<td>AQCC</td>
<td>Air Quality Control Commission of Colorado</td>
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<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
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<tr>
<td>BMP</td>
<td>Best Management Practice</td>
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<tr>
<td>BTEX</td>
<td>Benzene, Toluene, Ethylbenzene and Xylene</td>
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<td>CDOT</td>
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1.06.2 Definitions

ABUTTING shall mean two or more properties or zone lots sharing a common border or separated only by a public or private right-of-way or by public open space or body of water not more than 1,000 feet in width.

ABUTTING PROPERTY OR ZONE LOT shall mean property that shares at least part of a boundary line, not just a corner point, with the subject property or zone lot.

ACCESSORY EQUIPMENT shall mean any equipment that is integral to the production and operation of an oil or gas well, including but not limited to tanks, treaters, separators, and production pits.

ASSOCIATED FACILITIES shall mean a Compressor Station, Launcher and Receiver sites, Valve Stations, Electrical Substation, and related equipment.
BERM shall mean an earthen barrier of compacted soils preventing the passage of liquid materials or providing screening from adjacent uses as may be specified in an applicable development standard.

BURIED DEPTH shall mean the depth of cover to the top of the largest pipe, typically a minimum of forty-eight (48) inches.

CENTRAL GATHERING FACILITY (CGF) shall mean a facility or location which receives crude oil, liquid hydrocarbons, associated field gas, and produced water from production wells and central distribution points via a Gathering Lines to treat and stabilize the liquid hydrocarbon into a saleable product.

CITY shall mean the City of Aurora, Colorado, a home rule municipal corporation of the Counties of Adams, Arapahoe, and Douglas.

CITY CODE shall mean the duly adopted Aurora Municipal Code of the City of Aurora, Colorado, as amended.

COMMERCIAL EXEMPT WELL Defined by the state of Colorado Department of Natural Resources Division of Water Resources for uses of water for drinking and sanitation facilities inside a business.

COMPRESSOR STATION shall mean a facility that collects natural gas from exploration and production facilities via Gathering Lines and transports natural gas into third party systems for further processing.

CONSTRUCTION shall mean any site preparation, assembly, erection, substantial repair, alteration, or similar action.

CORROSION shall mean the deterioration of a material, usually a metal, which results from a reaction with its environment.

CRITICAL INFRASTRUCTURE shall mean all existing or planned source water pipelines, potable waterlines of sixteen-inch (16”) diameter and greater, sanitary sewer pipelines of twenty-four-inch (24”) diameter and greater, storm sewer pipelines (or box culverts) of thirty-six-inch (36”) diameter or greater or City pump stations, lift stations, and bridges.

CRUDE OIL see OIL.
CUSTODY TRANSFER shall mean the transaction involving the transportation and measurement of a raw petroleum product from one Operator to another.

DISTANCE FROM AN OIL AND GAS LOCATION TO A PLATTED RESIDENTIAL SUBDIVISION, PLATTED LOT LINE CONTAINING RESIDENTIAL BUILDING UNIT shall mean the distance from the edge of the Oil and Gas Location (not including access road) to the nearest platted residential lot line or a platted lot line that contains a Residential Building Unit.

ENGINEER shall mean a Licensed Professional Engineer (PE) in the State of Colorado.

EVENT shall mean a significant occurrence or happening. As applicable to pipeline safety, an event could be an accident, abnormal condition, incident, equipment failure, human failure, or release.

EXPRESSIONS Wherever the words “as required,” or words of like meaning are used, it shall be understood that the direction, requirements, or permission of the City’s Oil & Gas Division Manager is intended. Similarly, the words “approved,” “acceptable,” will refer to approval by the City’s Oil & Gas Division Manager.

FLOWLINE shall mean 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. The different types of flowlines are:

Wellhead Line shall mean a flowline that transfers well production fluids from an oil or gas well to process equipment (e.g., separator, production separator, tank, heater treater), not including pre-conditioning equipment such as sand traps and line heaters, which do not materially reduce line pressure.

Production Piping shall mean a segment of pipe that transfers well production fluids from a wellhead line or production equipment to a Gathering Line or storage vessel and includes the following:
Production Line shall mean a flowline connecting a separator to a meter, LACT, or Gathering Line;

Dump Line shall mean a flowline that transfers produced water, crude oil, or condensate to a storage tank, pit, or process vessel and operates at or near atmospheric pressure at the flowline’s outlet;

Manifold Piping shall mean a flowline that transfers fluids into a piece of production facility equipment from lines that have been joined together to comingle fluids; and

Process Piping shall mean all other piping that is integral to oil and gas exploration and production related to an individual piece or a set of production facility equipment pieces.

Off-Location Flowline shall mean a flowline transferring produced fluids (crude oil, natural gas, condensate, or produced water) from an oil and gas location to a production facility, injection facility, pit, or discharge point that is not on the same oil and gas location. This definition also includes flowlines connecting to gas compressors or gas plants.

Peripheral Piping shall mean a flowline that transfers fluids such as fuel gas, lift gas, instrument gas, or power fluids between oil and gas facilities for lease use.

Produced Water Flowline shall mean a flowline on the oil and gas location used to transfer produced water for treatment, storage, discharge, injection, or reuse for oil and gas operations. A segment of pipe transferring only freshwater is not a flowline.

GAS shall mean all natural gases and all hydrocarbons not defined as oil. Examples are: natural gas, flammable gas, manufactured gas, petroleum, or other hydrocarbon gases including propane; or any mixture of gas produced, transmitted, distributed, or furnished by a utility.

GATHERING LINE shall mean a gathering pipeline or system as defined by the Colorado Public Utilities Commission, Regulation No. 4, 4 C.C.R. 723-4901, Part 4, (4 C.C.R. 723-4901) or a pipeline regulated by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration pursuant to 49 C.F.R. §§
HAZARD AND OPERABILITY ANALYSIS (HAZOP) shall mean a systematic method for evaluating hazards. It often involves the review of detailed system drawings, specifications, and operating procedures. Process hazards and potential operating problems are identified through a qualitative investigation of deviations from normal process conditions.

HORIZONTAL DIRECTIONAL BORING OR DRILLING (HDD) shall mean a method of installing underground pipelines, cables, and service conduit through trenchless methods. It involves the use of a directional drilling machine, and associated attachments, to accurately drill along the chosen bore path and back ream the required pipe.

HYDROCARBON shall mean an organic compound of hydrogen and carbon, such as any of those which are the chief components of petroleum and natural gas.

INJECTION WELL shall mean any hole drilled into the earth into which fluids are injected for purposes of secondary recovery, storage, or disposal pursuant to authorizations granted by the COGCC.

INTERNAL FLOATING ROOF TANKS shall mean a tank that has both a fixed roof and an internal floating roof. The fixed roof is usually a cone roof. The internal floating roof can be constructed of steel, aluminum, plastic, or other material. These tanks hold stabilized liquid hydrocarbon.

LEASE AUTOMATIC CUSTODY TRANSFER (LACT) shall mean a unit that measures the net volume and quality of liquid hydrocarbons. This system provides for the automatic measurement, sampling, and transfer of oil from one Operator to another.

OBSERVER shall mean the authorized representative of the Oil & Gas Division Manager assigned to observe the work.

OIL shall mean crude petroleum oil and any other hydrocarbons, regardless of gravities, that are produced at the well in liquid form by ordinary production methods, and that is not the result of condensation of gas before or after it leaves the reservoir. Oil that is extracted from the ground before it is refined into usable products, such as gasoline.
**OIL AND GAS** shall mean oil or gas or both oil and gas.

**OIL & GAS DIVISION** shall mean the Oil and Gas Division of the City of Aurora.

**OIL & GAS DIVISION MANAGER** shall mean the authorized representative of the City who provides overall technical coordination and monitoring of work.

**OIL & GAS FACILITY** shall mean equipment or improvements used or installed at an Oil and Gas Location for the exploration, production, withdrawal, gathering, treatment, or processing of crude oil, condensate, E&P waste, or gas. Any well, wellhead, flowlines, tanks, surface equipment, or associated infrastructure used in the development, production, storage, or marketing of oil, natural gas, natural gas liquids, or other hydrocarbon resources.

**OIL & GAS LOCATION** shall mean a definable area where an operator has disturbed or intends to disturb the land surface in order to locate an Oil and Gas Facility. An Oil and Gas Location might contain a single well, multiple wells, and/or associated infrastructure. An Oil and Gas Location is the primary component that is permitted through the Oil & Gas Permit application process.

**OIL & GAS MIDSTREAM PERMIT (OGMP)** shall mean a duly approved permit to construct a CGF, Gathering Line, or Associated Facilities within the City of Aurora.

**OIL & GAS PERMIT (OGP)** shall mean a properly approved permit to begin construction on an Oil & Gas Location within the City of Aurora.

**OIL AND GAS WELL** see **WELL**

**OPERATIONAL PHASES** shall mean those phases within the life cycle of an Oil & Gas Location or Oil and Gas Facility, which best describe the type of activities happening at the Oil & Gas Location or Oil and Gas Facility during the phase. It is possible for multiple phases of operation to be occurring at the same time with respect to a single Oil & Gas Location. Chronologically, those phases are:

**PERMITTING PHASE** shall mean the period of time in which the project proposed by the Operator is being evaluated by the City. The Permitting Phase ends with a decision by the City and when all additional required federal, state, and local permits or approvals have been obtained.
CONSTRUCTION PHASE shall mean the conducting of civil and earth work in connection with the construction and installation of drilling pads, visual mitigation measures, access routes, pipelines, and launcher/receiver locations. The Construction Phase ends when the Oil & Gas Location or Oil and Gas Facility is fully prepared for its intended purpose.

DRILLING PHASE shall mean the period in which a drilling or spudder rig is utilized to penetrate the surface of the earth with a drill bit and the installation of well casing and cement at one or more wells. The Drilling Phase ends when the Completion Phase begins.

COMPLETION PHASE shall mean the period of hydraulic fracturing, coiling, workover, installation of tubing, and flowback of one or more wells at the Oil & Gas Location. The Completion Phase ends when the Production Phase begins.

PRODUCTION PHASE shall mean the period in which one or more wells are capable of producing hydrocarbons that flow through permanent separator facilities and into tanks or, if applicable, into a Gathering Line.

RECLAMATION PHASE shall mean the period of returning or restoring the surface of disturbed land as nearly as practicable to its condition prior to the commencement of oil and gas operations.

OPERATING PLAN shall mean a general description of an oil or gas well facility identifying purpose, use, typical staffing pattern, seasonal or periodic considerations, routine hours of operation, source of services and infrastructure, and any other information related to the regular functioning of that facility.

OPERATOR shall mean the permitted entity authorized to construct or operate an Oil & Gas Location, a Well, or an Oil & Gas Facility in the City of Aurora.

PIG shall mean a generic term signifying any independent, self-contained device, tool, or vehicle that is inserted into and moves through the interior of a pipeline for inspecting, dimensioning, or cleaning.

PIG LAUNCHER AND RECEIVER SITES shall mean a location including equipment associated with the operation and maintenance of the pipelines associated with the cleaning and inspection of the pipelines, also known as pigging.
PIPELINE & HAZARDOUS MATERIALS SAFETY ADMINISTRATION

PHMSA monitors compliance through field inspections of facilities and construction projects; programmatic inspections of Operator management systems, procedures, and processes; incident investigations; and through direct dialogue with Operator management.

(Pipeline) Maintenance shall mean the process of maintaining property or equipment, including pipelines, to preserve it and prevent it from failure and ensure that it will continue to perform its intended function.

Planning Department shall mean, unless the context clearly indicates otherwise, the Aurora Planning and Development Services Department.

Platted Residential Subdivision shall mean a subdivision that has been approved and recorded and is located in a zone that allows residential uses.

Process Safety Management (PSM) shall mean an analytical tool focused on preventing releases of any substance defined as highly hazardous by the EPA or OSHA. A “process” is defined by OSHA in the PSM standard as “any activity involving a flammable substance including any use, storage, manufacturing, handling, or the on-site movement of such chemicals, or combination of these activities.”

Produced Water Transfer System Defined by COGCC, to mean a system of off-location flowlines that transports produced water generated at more than one Oil & Gas Location or production facility.

Production Pits shall mean those pits used for initial settling, temporary storage, or disposal of produced water by permeation or evaporation after drilling and initial completion of the well.

Production Site shall mean that surface area immediately surrounding proposed or existing production pits, or other accessory equipment necessary for oil and gas production activities, exclusive of transmission and Gathering Lines.

Public Project shall mean (1) a public work or improvement within the City that is wholly owned by the City; or (2) a public work or improvement within the City where 50% or more the funding is provided by any combination of the City, the Federal Government, the State of Colorado, any regional transportation District, the Urban Drainage and Flood Control District, any regional transportation authority, any
Colorado county, or any type of governmental entity, or any type of quasi-governmental entity; or (3) any public work or improvement funded and constructed within the City for the benefit of the City.

**RESIDENTIAL BUILDING UNIT** shall mean a 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.

**RIGHT-OF-WAY** shall mean an area of land dedicated to the public in fee simple title conveyed to the City for drainage, pedestrian, utility, street lighting, landscaping, roadway, or other purposes.

**STATE** shall mean the State of Colorado.

**TANK** shall mean any container used in conjunction with the production or storage of petroleum and hydrocarbon substances stored at or near atmospheric pressure.

**TESTING AGENCY** shall mean any individual or other person or entity which is qualified and licensed to perform the required sampling, analysis, testing, and professional recommendation service.

**TREATMENT FACILITIES** shall mean any plant, equipment, or other works used to treat, separate, or stabilize any substance produced from a well.

**TWINNING** shall mean the drilling of a well adjacent to or near an existing wellbore when the existing well cannot be drilled to the objective depth or produced due to an engineering problem such as collapsed casing or formation damage.

**VALVE STATIONS** shall mean a location associated with the a Gathering Line where Safety Shutdown Valves, Automated Safety Devices, and pressure monitoring devices are strategically located to isolate segments of the Gathering Line.

**WATER FLOWLINE** shall mean a pipe composed of a rigid material such as steel, PVC or HDPE or lay-flat pipe with the general characteristics of fire hose, which is used to transport or convey water for application to use.

**WATER SOURCES** shall mean all floodways, as defined by FEMA, and permanent City underground water storage facilities.
WELL shall mean a hole drilled into the earth for the purpose of exploring for or extracting oil, gas, or other hydrocarbon substances.

WILDLIFE HABITAT shall mean a specific geographic area that provides the physical and biological features needed for life and successful reproduction of plant or animal species.

1.07 Previous Agreements

Any previous Operator Agreement or other agreement, duly signed by the City Manager of the City of Aurora, or approved by the City Council, shall remain in full effect until the term of such agreement has expired, or until all Wells drilled during the term of such agreement are permanently plugged, abandoned, and removed from the Oil and Gas Location in accordance with the rules and regulations of the COGCC and reclamation has been completed pursuant to COGCC requirements, or unless otherwise terminated by law.

1.08 Best Management Practices

1.08.1 General

This Oil & Gas Manual represents Best Management Practices (BMPs), which protect and minimize adverse impacts to public health, safety, welfare, and the environment. The Operator must comply with the BMPs set forth in this Oil & Gas Manual at all times.

1.09 Compliance with Other Authorities

The BMPs identified in this Oil & Gas Manual are intended to supplement and are in addition to state rules and regulations. However, Operator shall comply with applicable federal and state rules, regulations, and standards pertaining to public health, safety, welfare, and the environment. Operator shall comply with the more protective of the BMPs contained in this Oil & Gas Manual or applicable federal or state rule or regulation and/or standards.
SECTION 2.00 OIL & GAS PERMIT (OGP) APPLICATION PROCESS

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SECTION 2.00 OIL & GAS PERMIT APPLICATION PROCESS

2.01 General/Applicability

2.01.1 Permitting of an Oil and Gas Location

The Oil & Gas Permit (OGP) application process shall apply to any Oil and Gas Location within the City of Aurora. Each Oil and Gas Location requires a separate OGP application.

2.01.2 Future Increase in Oil and Gas Location Size

An Oil and Gas Location is fixed in size and geographical extent at the time the OGP is approved. If an Operator desires to increase the size of an Oil and Gas Location or add an additional Oil and Gas Facility to the Oil and Gas Location, then the Operator must submit a new OGP application.

2.01.3 Overview of Application Process

The OGP process is divided into two Phases. In Phase 1, the Operator submits required items to support its application for its Oil & Gas Location. The Oil & Gas Location must be reviewed by the City and approved by the Planning and Zoning Commission before the Operator can submit the remainder of its items for the OGP. This process aligns with the requirements of the COGCC.

After approval of the Oil & Gas Location by the Planning and Zoning Commission, the Operator moves to Phase 2. In Phase 2, the Operator submits the remainder of its items for the OGP. In some cases, documents and agreements (such as the Water Delivery Agreement, Road Maintenance Agreement, and License Agreements) are begun in Phase 1 and completed in Phase 2.

2.02 Application Process

The purpose of the pre-application process is for the Operator to provide a high-level overview of the proposed OGP application to the City. City staff will provide feedback to the Operator on any BMPs or issues of concern.

2.02.1 Pre-Application Meeting

2.02.1.01 Operator shall request a Pre-Application Meeting with the Office of Development Assistance prior to submitting an application for an Oil and Gas Location. Appropriate City staff (as determined in the sole
discretion of the Oil & Gas Manager) may attend. The City may waive the Pre-Application Meeting or Pre-Submittal requirement for any Oil and Gas Location.

2.02.1.02 At the Pre-Application Meeting, Operator shall present the proposed project to the City to determine the appropriate materials needed for the application.

2.02.1.03 A map and detailed description of the Oil and Gas Location must accompany the request for a Pre-Application Meeting.

2.02.2 Pre-Submittal Meeting

At the Pre-Submittal Meeting, the Operator shall demonstrate, prior to entering the formal OGP application process, its ability to comply with all BMPs.

2.02.2.01 Following receipt of City comments from the Pre-Application Meeting, the Operator shall request a Pre-Submittal Meeting with the City Staff to demonstrate the Operator’s ability to comply with BMPs.

2.02.2.02 At the Pre-Submittal Meeting, Operator shall request that a portal be opened to allow the application to be submitted digitally.

2.02.3 Submission of OIL & GAS LOCATION Application (Phase 1)

In Phase 1 of the OGP application process, the Operator shall apply for approval of its Oil & Gas Location. Submittal requirements are listed in Section 2.03 of this OGM.

OGP applications will be processed in the order received. Operator shall not submit more than two OGP applications per three weeks. If Operator has more than one OGP application that has been deemed by the City to be complete, it may provide a priority list for review of complete OGP applications. Such a request may increase the approval time needed for Operator’s other applications.

2.02.4 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGP application, the City will initiate a Pre-Acceptance Review to determine whether the OGP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify any deficiencies in the OGP application and will notify the Operator of its decision
in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.

2.02.5 Acceptance of OGP Application

If no deficiencies are identified, an invoice of the OGP application fee for Phase 1 listed in the City Code will be sent to the Operator. The OGP application fee must be paid prior to the City and outside agencies beginning review of the OGP application.

If deficiencies in the OGP application are identified, the Operator shall address the deficiencies and resubmit the OGP application. The City will review the resubmitted application and notify the Operator in writing of its completeness determination.

2.02.6 Schedule Pre-Submittal Meetings for Phase 2

Once the City begins review of the Oil & Gas Location application, the Operator shall schedule Phase 2 Pre-Submittal Meetings with City Departments as necessary to initiate discussions of submittal requirements for Phase 2.

2.02.7 Phase 1-First Review

In the First Review, the City will review the completed OGP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

2.02.8 Neighborhood Meeting

Operator shall host a Neighborhood Meeting to inform the public of their application.

2.02.8.01 Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location, of the time and location of the Neighborhood Meeting. Surface owners shall be notified a minimum of ten (10) days in advance.

2.02.8.02 Operator shall respond to all comments received at the Neighborhood Meeting in writing.

2.02.9 Phase 1-Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review, including Operator Responses to Neighborhood Meeting Comments. The City will provide any further questions and comments to
the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

2.02.10 Phase 1-Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

2.02.11 Operator Response Timing

Any time the City provides written comments to an Operator submittal, the Operator shall reply in a timely manner. If comments are not received from the Operator within ninety (90) days of the City’s response, the Operator’s application will be deemed abandoned.

2.02.12 Public Hearing

Once the City is satisfied with Operator responses to its review, a Public Hearing will be scheduled at a meeting of the City of Aurora Planning and Zoning Commission. Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location of the time and location of the Public Hearing. The Planning and Zoning Commission will make a formal decision on the Oil & Gas Location. All Planning and Zoning Commission decisions are subject to call-up by City Council.

2.02.13 Approval of Oil & Gas Location

When the Planning and Zoning Commission decision and any City Council call-up is complete, Operator will be notified in writing of the decision on its Oil & Gas Location application.

2.02.14 Submission of Oil & Gas Permit (OGP) Application (Phase 2)

In Phase 2 of the OGP application process, the Operator shall submit the remainder of submittal requirements in support of its OGP application. Submittal requirements are listed in Section 2.04 of this OGM.

2.02.15 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGP Phase 2 application, the City will initiate a Pre-Acceptance Review to determine whether the OGP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify
any deficiencies in the OGP application and will notify the Operator of its decision in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.

2.02.16 Phase 2-First Review

In the First Review, the City will review the completed OGP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

2.02.17 Phase 2-Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review. The City will provide any further questions and comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

2.02.18 Phase 1-Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

2.02.19 Compatibility with Approved Master Plans

The location and operations of the Oil and Gas Location shall be compatible with the approved Master Plan for the subject property.

2.02.20 Limit on Commencement of Construction

The Operator shall not move any heavy equipment or begin construction at the Oil and Gas Location based on COGCC approval until the Operator has received final approval of the OGP from the City pursuant to this Oil & Gas Manual and all applicable City permits.

2.02.21 Administrative Approval of OGP

OGP applications are approved by the Oil & Gas Division on an administrative basis. Once all questions have been answered by the Operator to the satisfaction of the City (at the sole discretion of the Oil & Gas Manager), a Letter of Administrative Decision is provided to the Aurora City Council. The City Council may elect to call-up the approved OGP for further discussion.
2.02.22 Issuance of OGP

Once any City Council call-up requirements are complete, the Oil & Gas Permit (OGP) will be issued to the Operator by the Oil & Gas Division with or without conditions. No drilling of wells or installation of any Oil and Gas Facility may begin until Operator receives the NTP.

2.02.23 Fulfillment of OGP Conditions

The Operator shall satisfy any conditions required by the OGP.

2.02.24 Notice to Proceed (NTP)

Upon satisfaction of all conditions required by the OGP, the City and Operator may execute a Water Delivery Agreement, Road Maintenance Agreement, and other agreements as necessary. Upon approval and execution of all required agreements, the City may issue a Notice to Proceed (NTP) with or without conditions. After issuance of the NTP, Operator may begin drilling activities at the Oil and Gas Location if all additional approvals from COGCC have been received.

2.02.24 Time Limits

An administratively approved OGP shall be valid for a period of three (3) years from the date of approval. If the construction of the Oil and Gas Location has not begun within that period, a new OGP application must be submitted by the Operator.

2.02.25 Denial

If it is established by competent evidence that a proposed Oil and Gas Location fails to meet any of the specifications in this Oil & Gas Manual, the permit for such Oil and Gas Location may be denied.

2.03 Required Application Contents-Phase 1

An OGP application to the City shall contain the following (together, the Submittal Requirements whose components are further described in this Oil & Gas Manual):

2.03.1 Combined Letter of Introduction and Project Summary

Operator shall include:

2.03.1.01 Response to Pre-Application City comments
2.03.1.02 A narrative list of how applicable BMPs (related to location) will be addressed.

2.03.1.03 Any requests for variance from the regulations within this OGM.

2.03.2 Site Plan which depicts the following:

A full Site Plan is not required for Phase 1, however, there must be one or more 24" x 36" sheets that detail the following:

2.03.2.01 Oil and Gas Location Layout (Drilling and Production site layout sheets; Existing Conditions sheet)

2.03.2.02 New Oil or Gas Wells

2.03.2.03 Proposed Location of Facilities

2.03.2.04 Road Access

2.03.2.05 Existing easements and rights-of-way

2.03.2.06 Mile High Flood District Streams (with names)

2.03.2.07 FEMA Flood Hazard Zones

2.03.2.08 Visible improvements within five hundred (500) feet of the Oil and Gas Location

2.03.2.09 Photometric Plan with Fixture Specifications

2.03.3 Visual Mitigation Plan

2.03.4 Vicinity/Context Map

2.03.4.01 Map must be topographic

2.03.4.02 Map must show Water Sources identified by the City

2.03.4.03 Map must indicate distances to the nearest occupied structure, municipal boundary, and subdivision boundary

2.03.4.04 Neighborhood outlines and approved Master Plans
2.03.5 Alternative Location Analysis

2.03.6 Water Supply Plan

2.03.7 Water Delivery Method (signed agreement required in Phase 2)

2.03.8 Preliminary Drainage Report (PDR)

A Preliminary Drainage Report is required for Oil and Gas Locations. A Preliminary Drainage Letter shall not be submitted in place of a Report.

2.03.9 Groundwater Quality Monitoring Plan

2.03.10 Air Quality Plan

2.03.11 Noise Management Plan

2.03.12 Property Owner Authorizations

2.03.13 Recorded Surface Use Agreement, (if applicable)

2.03.14 Determination of License Agreements needed

2.03.15 One-mile Radius Abutters Map and List

2.03.16 Traffic Letter or other analysis requested in the Pre-Application Notes & Traffic Management Plan

2.03.17 Haul Route

2.03.18 Road Maintenance-Evidence of Initial discussion with Public Works

 Including impacts to City-owned improvements as the result of Operator construction or infrastructure relocation and including any entailed construction of drainage improvements such as culverts.

2.03.19 Wildlife Impact Mitigation Plan (if applicable)

2.03.20 COGCC Forms

 Submit to the City a copy of the drilling and spacing order, which confirms the Operator’s right to develop the mineral estate and confirms the ownership of the surface information.

2.03.21 Proof of Insurance
2.03.22 Neighborhood Meeting Schedule and Results / Response to Public Comments

2.03.23 Fee Payment-Phase 1

2.04 Required Application Contents-Phase 2

2.04.1 Letter of Introduction (full)

Operator shall include:

2.04.1.01 Response to any conditions on the Oil & Gas Location approval

2.04.1.02 A narrative list of how remaining applicable BMPs will be addressed

2.04.1.03 Any requests for variance from the regulations within this OGM with justification.

2.04.2 Project Summary (full)

2.04.3 Site Plan which depicts the following:

2.04.3.01 Site Plan should reflect all submittal sheets and revisions from Phase 1

2.04.3.02 Oil and Gas Location Layout

2.04.3.03 Location of Flowlines, reasons for selection, and procedures to be employed in mitigating any adverse impacts of the proposed routes

2.04.3.04 New Oil or Gas Wells

2.04.3.05 Proposed Location of Facilities

2.04.3.06 Road Access

2.04.3.07 Existing and ultimate easements and rights-of-way

2.04.3.08 Mile High Flood District Streams (with names)

2.04.3.09 FEMA Flood Hazard Zones

2.04.3.10 Visible improvements within five hundred (500) feet of the Oil and Gas Location
2.04.3.11 Landscape Plan: Must include fencing and other criteria listed in the BMPs.

2.04.3.12 Interim Reclamation Plan

2.04.3.13 Building and Structure Elevations, including Placarding note as applicable

2.04.4 Operations Plan

2.04.4.01 Project Development Schedule

2.04.4.02 Security Plan

2.04.4.03 Decommissioning / Final Reclamation Plan. The Decommissioning Plan shall address how the Flowline will be properly removed from the ground.

2.04.5 Emergency Action Plan (EAP) / Emergency Response Plan (ERP) (if applicable)

2.04.6 PHA-HAZOP Letter

The Operator will provide a letter that the PHA-HAZOP has been completed, and the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.

2.04.7 Water Delivery Agreement

2.04.8 Water Use Plan consistent with CDPHE Regulation 84

2.04.9 Fluid Disposal Plan

2.04.10 Road Maintenance Agreement and DOT Registration (if applicable)

2.04.11 Fugitive Dust Suppression Plan

2.04.12 License Agreements as applicable

2.04.13 Weed Control Plan

2.04.14 Storm Water Management Plan, Civil Plans, Final Drainage Report (Grading, Drainage and Erosion Plan)

Operator should contact Public Works separately for a Pre-Submittal Meeting.
2.04.15 Approved COGCC Form 2A

2.04.16 Fee Payment-Phase 2

2.05 Variance Requests

Operator may seek a minor exception to the strict application of the BMPs by making a written Variance Request to the Oil & Gas Division. The Variance Request must include the justifiable rationale supporting the request. As part of a granted variance request, the Oil & Gas Division may require alternative mitigation measures to ensure compliance with the goals of the applicable BMPs.

2.05.1 Variance Request Process

Any request for a variance shall be processed through the Oil & Gas Division. The Oil & Gas Division shall approve, approve with conditions, or deny the variance based on consideration of the staff report, the evidence from the neighborhood meeting, and the variance’s compliance with the criteria for approval.

2.05.2 Variance Request Steps

2.05.2.01 Submission of a request by Operator

2.05.2.02 Neighborhood Meeting: Optional, unless the Oil & Gas Manager determines the variance request could have significant neighborhood impacts.

2.05.2.03 Staff Report

2.05.2.04 Conditions of Approval: In approving a variance, the Oil & Gas Division may attach any conditions necessary to ensure the variance authorized shall not constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity in which the subject property is located and will protect public health, safety, welfare, the environment.

2.05.3 Variance Request Approval Criteria

The Oil & Gas Division in approving a variance shall find:

2.05.3.01 Special physical requirements or circumstances exist which are peculiar to the land, the lot or some aspect inherent in the land causes the hardship and are not applicable to other lands in the same district.
2.05.3.02 The literal interpretation of the provisions of these standards and regulations would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of these standards and regulations.

2.05.3.03 Granting of the variance requested will not confer on the applicant any special privilege denied by these standards and regulations for other land in the same zone district.

2.05.3.04 Because of physical circumstances or conditions, the property cannot reasonably be developed in conformity with the provisions of the physical requirements of these standards and regulations.

2.05.3.05 The special circumstances applicable to the property have not been created by voluntary action or negligence by any person presently having an interest in the property.

2.05.3.06 The granting of the variance will be in harmony with the general purpose and intent of the Oil & Gas Manual.

2.05.3.07 The granting of a variance from the strict application of these standards and regulations will not cause substantial detriment to the public good or impair the intent of these standards and regulations.
SECTION 3.00 SAFETY AND SECURITY

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3.02 Emergency Action Plan (EAP) ....................................................................................... 3-2
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SECTION 3.00 SAFETY AND SECURITY

3.01 Security Plan

A Security Plan must be included with the OGP application to indicate how the Oil and Gas Location and associated Oil and Gas Facilities will be operated and maintained free from purposeful and inadvertent interference from anyone except the Operator. The Security Plan may contain a description of fencing, cattle guards, a remote security system, warning and identification signs, and gating.

3.02 Emergency Action Plan (EAP)

3.02.1 Detailed Emergency Action Plan

The Operator is required to complete a detailed Emergency Action Plan for all operations in the City of Aurora, and a site-specific plan for each Oil and Gas Location including all Flowlines and associated Oil and Gas Facilities in accordance with the provisions of this BMP.

3.02.2 Required Elements of the Emergency Action Plan

The Emergency Action Plan shall consist of at least the following information:

3.02.2.01 Name, address, and phone number, including twenty-four (24) hour emergency numbers for at least two (2) persons responsible for emergency field operations as well as the contact information for any subcontractor of Operator engaged for well-control or Flowline emergencies.

3.02.2.02 An as-built facilities map to be provided after the facilities are placed in service, in a format suitable for input into a GIS system depicting the location of above-ground facilities, Flowlines, and associated equipment for emergency response and management purposes.

3.02.2.03 A detailed plan for responding to emergencies that may include any or all of the following: explosions, fires, gas, oil, or water pipeline leaks or ruptures. A provision that any spill outside of the containment area that has the potential to leave the Oil and Gas Location or to threaten water, or as required by the City-approved Emergency Action Plan, shall be reported to the City’s LGD.
3.02.2.04 Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.

3.02.2.05 Operator shall provide the City with its emergency shutdown protocols and promptly notify the City of any emergency shutdowns related to onsite upset conditions that would have an impact to any area beyond the confines of the Oil and Gas Location.

3.02.2.06 A statement and detailed information indicating that the Operator has adequate personnel, supplies, and training to implement the Emergency Action Plan immediately at all times.

3.02.2.07 The Operator shall have current Safety Data Sheets (SDS) for all chemicals available upon request. The SDS shall be provided immediately upon request to City officials, a public safety officer, or a health professional as required by COGCC regulations. Operator’s contractors are responsible for the management of their own SDS and are to be made available upon request.

3.02.2.08 All “walkthroughs” or trainings associated with the Emergency Action Plan shall be coordinated with the City or Aurora Fire Rescue, upon their request.

3.02.2.09 Operator shall reimburse the appropriate emergency agencies for their reasonable expenses directly resulting from the Operator’s operations.

3.02.3 Notification to Aurora Fire Rescue and Aurora Public Safety

Operator shall notify and work with Aurora Fire Rescue and Aurora Public Safety to prepare for an emergency if requested by them to do so. In case of an emergency, the Operator will have appropriate response foam, and the capacity to apply such, available to respond to emergencies related to the Oil and Gas Location and Flowline.

3.02.4 Approval of Emergency Action Plan

The City and Aurora Fire Rescue must approve the Emergency Action Plan before the Drilling Phase commences. As long as all requirements of this BMP are met, the City and Aurora Fire Rescue shall not unreasonably withhold approval and shall approve the Emergency Action Plan within thirty (30) days of submittal.
3.02.5 Annual Update of Emergency Action Plan

The Emergency Action Plan shall be filed with the City and Aurora Fire Rescue and updated on an annual basis or as conditions change (responsible field personnel changes, ownership changes, etc.).

3.03 Emergency Response Plan (ERP)

3.03.1 Fieldwide Emergency Response Plan

When an Operator applies for a second or subsequent Oil and Gas Location permit application, they shall submit an in-depth field-wide ERP that encompasses every element required by the ERP, and a summarized site-specific ERP to cover each individual site.

3.04 PHA-Hazard and Operability Study

3.04.1 PHA-HAZOP

A third party PHA-HAZOP certified facilitator shall coordinate a Hazard and Operability Study with the cooperation of the Operator. If any of the findings by the PHA-HAZOP certified facilitator are applicable, this information will be added to the Emergency Action Plan and Aurora Fire Rescue training. The Operator will provide a letter that the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design of the applicable Oil and Gas Location.

3.04.1.01 The Engineer of record letter shall include the credentials of pertinent individuals that are responsible for any studies, design, and operational implementation, such as the “certified facilitator, Engineer of record, data analyst, design team, etc.”

3.05 Anchoring

Well equipment and all existing equipment at the Oil and Gas Location shall be anchored to the extent necessary to resist flotation, collapse, lateral movement, or subsidence in compliance with applicable Federal Emergency Management Agency (FEMA) (as administered by this City) and COGCC rules and regulations. All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.
3.06 Photometric Plan with Fixture Specifications

3.06.1 A Photometric Plan with Fixture Specifications must be included with the OGP application.

3.06.2 Lighting shall be downcast and shall not shine beyond the boundaries of the Oil and Gas Location.

3.07 Discharge Valves

Open-ended discharge valves on all storage tanks, pipelines, and other containers within the Oil and Gas Location or Flowline shall be secured, capped, or blind-flanged and shall not be accessible to the general public. Open-ended discharge valves within the Oil and Gas Location or Flowline shall be placed within the interior of the secondary containment area.

3.08 Chemical Disclosure and Storage

3.08.1 Chemical Disclosure

All hydraulic fracturing chemicals must be disclosed to Aurora Fire Rescue as part of the Emergency Response Plan pursuant to the process set forth below before bringing such chemicals onto an Oil and Gas Location. The Operator shall make available to the City, in a table format, the name, Chemical Abstracts Service (CAS) number, and storage, containment, and disposal methods for such chemicals to be used on the Oil and Gas Location, which the City may make available to the public as public records.

3.08.2 Chemical Storage

The Operator shall not permanently store fracturing chemicals or flowback from hydraulic fracturing on an Oil and Gas Location. Operator shall remove all unused hydraulic fracturing chemicals at an Oil and Gas Location within thirty (30) days following the end of the Completion Phase at that Well.

3.08.3 Chemicals Not Permitted for Use

In addition to any substances that are not permitted to be used in accordance with state or federal rules or regulations in place from time to time, the following chemicals on Table 3-1 shall not be utilized in the hydraulic fracturing fluid at the Oil and Gas Location:
### Table 3-1 Chemicals Not to be Used in Hydraulic Fracturing

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
</tr>
<tr>
<td>Lead</td>
<td>7439-92-1</td>
</tr>
<tr>
<td>Mercury</td>
<td>7439-97-6</td>
</tr>
<tr>
<td>Arsenic</td>
<td>740-38-2</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
</tr>
<tr>
<td>Xylene-f</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>1,3,5-trimethylbenzene</td>
<td>108-67-8</td>
</tr>
<tr>
<td>1,4-dioxane</td>
<td>123-91-1</td>
</tr>
<tr>
<td>1-butanol</td>
<td>71-36-3</td>
</tr>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
</tr>
<tr>
<td>N,N-dimethylformamide</td>
<td>68-12-2</td>
</tr>
<tr>
<td>2-ethylhexanol</td>
<td>104-76-7</td>
</tr>
<tr>
<td>2-mercaptoethanol</td>
<td>60-24-2</td>
</tr>
<tr>
<td>benzene, 1, 1'-oxybis-, tetrapropylene derivatives, sulfonated, sodium salts (BOTS)</td>
<td>119345-04-9</td>
</tr>
<tr>
<td>Butyl glycidyl ether</td>
<td>2426-8-6</td>
</tr>
<tr>
<td>Polysorbate 80</td>
<td>9005-65-6</td>
</tr>
<tr>
<td>quaternary ammonium compounds, dicoco alkyldimethyl, chlorides (QAC)</td>
<td>61789-77-3</td>
</tr>
<tr>
<td>bis hexamethylene triamine penta methylene phosphonic acid (BMPA)</td>
<td>35657-77-3</td>
</tr>
<tr>
<td>FD&amp;C blue no. 1</td>
<td>3844-45-9</td>
</tr>
<tr>
<td>Tetrakis(triethanolaminato) zirconium (IV)(TTZ)</td>
<td>101033-44-7</td>
</tr>
</tbody>
</table>
3.09 Automatic Safety Protective Systems and Surface Safety Valve

3.09.1 General

An automated safety system, governed by safety devices and a programmable logic computer, will be installed at the Oil and Gas Location. The automated safety system shall include the installation, monitoring, and remote control of a Surface Safety Valve (SSV), among many other engineered measures and devices that are implemented to greatly reduce or eliminate the potential for a Well event. All Wells will have an SSV installed prior to the commencement of the Production Phase connected to the production tubing at the surface. The SSV will be equipped to operate remotely via the automated safety protective system, which monitors multiple flowing pressures and rates which have predetermined maximum and/or minimum threshold values programmed and will remotely shut wells in should certain upset conditions be detected. Additionally, the automated safety system provides the ability to remotely shut-in wells on demand through Operator remote intervention. The SSV will have documented quarterly testing to ensure functionality.

3.10 Flammable Material

All ground within twenty-five (25) feet of any tank, or other structure containing flammable or combustible materials, shall be kept free of dry weeds, grass, rubbish or landscaping.

3.11 General Maintenance

Operator shall operate and maintain all equipment pursuant to manufacturer specifications consistent with technological limitations and reasonable and customary maintenance practices.

3.12 Miscellaneous

3.12.1 General

Operator shall not conduct the Drilling Phase and Completion Phase operations simultaneously at a single Oil and Gas Location.

3.12.2 Signs

Each Oil and Gas Location shall post a legible sign in a conspicuous place, which is three (3) to six (6) square feet in area. The sign shall bear the current name of the Operator, a current telephone number including area code, where the Operator may be reached at all times, name or number of the lease, and the number of the well printed thereon. The sign shall warn of safety hazards to the public and shall be
maintained on the premises from the time materials are delivered for drilling purposes until the Oil and Gas Location is abandoned.

3.13 Insurance

3.13.1 General

The Operator shall provide liability and insurance under the conditions and in the amounts set forth below.

3.13.2 Operator shall maintain or cause to be maintained, with insurers authorized by the state of Colorado and carrying a financial strength rating from A.M. Best of no less than A-VII (or a similar rating from an equivalent recognized rating agency), at a minimum, the following types of insurance with limits no less than the amounts indicated:

3.13.2.01 Commercial General Liability insurance on an occurrence-based form including coverage for bodily injury or property damage for operations and products and completed operations with limits of not less than $1,000,000 each and every occurrence.

3.13.2.02 Automobile Liability insurance with limits of not less than $1,000,000 each and every occurrence.

3.13.2.03 Workers’ Compensation insurance—Statutory Workers’ Compensation Coverage for the employee’s normal State of employment/hire. Including Employer’s Liability insurance—with limits of not less than $1,000,000 Each Accident, Disease—Each Employee, Disease—Policy Limit.

3.13.2.04 Control of Well/Operators Extra Expense insurance—with limits of not less than $10,000,000 covering the cost of controlling a well that is out of control or experiences a blowout, re-drilling, or restoration expenses, seepage and pollution damage resulting from an out of control well or blowout as first party recovery for the Operator and related expenses, including, but not limited to, loss of equipment and evacuation of residents.

3.13.2.05 Umbrella/Excess Liability—in excess of General Liability, Employer’s Liability, and Automobile Liability with limits no less than $25,000,000
per occurrence; provided, however, that for so long as the Construction Phase, Drilling Phase, or Completion Phase is ongoing at the Oil and Gas Location or Flowline, Operator will maintain such insurance with limits no less than $100,000,000 per occurrence.

3.13.2.06 Environmental Liability/Pollution Legal Liability insurance—with limits of not less than $5,000,000 per pollution incident, with coverage being required beginning with the date that is eight (8) years from the date of first production from the Oil and Gas Location (the “Required Date.”) Coverage must include gradual pollution events. This insurance may be on a claims-made basis; however, the retroactive date must precede the Required Date in order to cover all Wells.

3.13.3 Operator shall waive and cause its insurers under the above policies to waive for the benefit of the City any right of recovery or subrogation which the insurer may have or acquire against the City or any of its affiliates, or its or their employees, officers or directors for payments made or to be made under such policies.

3.13.4 As it pertains to the risks and liabilities assumed by Operator, Operator shall add the City and its elected and appointed officials and employees as Additional Insureds under general liability (including operations and completed operations), auto liability, and umbrella liability.

3.13.5 Operator shall ensure that each of the policies is endorsed to provide that they are primary without right of contribution from the City or any insurance or self-insurance otherwise maintained by the City, and not in excess of any insurance issued to the City.

3.13.6 Operator shall ensure that each of the policies above (excluding workers’ compensation and OCC/COW) are endorsed to state that the inclusion of more than one insured under such insurance policy shall not operate to impair the rights of one insured against another insured and that the coverage afforded by each insurance policy shall apply as though a separate policy had been issued to each insured.

3.13.7 All policies shall be endorsed such that they cannot be canceled or non-renewed without at least thirty (30) days’ advanced written notice to the Operator and the City, evidenced by return receipt via United States mail, except when such policy is being canceled for nonpayment of premium, in which case ten (10) days advance written
notice is required. Language relating to cancellation requirements stating that the insurer’s notice obligation is limited to “endeavor to” is not acceptable.

3.13.8 Operator shall, prior to permit issuance, deliver Certificates of Insurance reasonably acceptable to the City confirming all required minimum insurance is in full force and effect.

3.13.9 Deductibles or retentions shall be the responsibility of Operator. Deductibles or retentions must be listed on the Certificate of Insurance required herein and are subject to the reasonable approval of the City.

3.13.10 Operator shall require any of its subcontractors to carry the types of coverage and in the minimum amounts in accordance with the requirements set out in Sections 3.13.2.01, 3.13.2.02, and 3.13.2.03. Operator shall be responsible for any damage or loss suffered by the City as a result of non-compliance by Operator or any subcontractor with this section.

3.13.11 In the event that Operator’s coverage lapses, is canceled, or otherwise not in force, the City reserves the right to obtain the insurance required herein and charge all costs and associated expenses to Operator, which shall become due and payable immediately.
SECTION 4.00 PROTECTION OF WATER QUALITY

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SECTION 4.00 PROTECTION OF WATER QUALITY

4.01 General

4.01.1 Water Sources

The City, through Aurora Water, will identify Water Sources and water infrastructure to be depicted by Operator on its Site Plan for an Oil and Gas Location to be submitted with the OGP application.

4.01.2 Water Supply

The Operator shall comply with applicable laws, rules, and regulations concerning the source(s) of water used in the Drilling Phase, Completion Phase, and Production Phase.

4.02 Surface Water Protection

4.02.1 Maintenance

Routine field maintenance of vehicles or mobile machinery shall not be performed within five hundred (500) feet of any navigable waters of the United States. All fueling must occur over impervious material.

4.02.2 Wastewater and Waste Management

Operator must submit a waste management plan to the City that complies with the following:

4.02.2.01 All fluids shall be contained, and there shall be no discharge of fluids with the exception of unimpacted stormwater per federal Spill Prevention, Control, and Countermeasure Plan (SPCC) regulations.

4.02.2.02 Flowback and produced water shall be transported by pipeline once constructed and available. If a pipeline is unavailable, flowback and produced water must be stored in tanks and transported by tanker trucks. All flowback and produced water must be disposed of at a licensed disposal site or recycled for use on-site.

4.02.2.03 No land treatment of oil-impacted or contaminated drill cuttings is permitted. Disposal of oil-impacted or contaminated drill cuttings shall be disposed of at licensed disposal or recycling sites.
4.02.04 A copy of the Operator’s Spill Prevention, Control, and Countermeasure Plan (SPCC) will be submitted to the City as part of the wastewater and waste management plan.

4.02.05 The Operator shall not dispose of any wastewater within the City.

4.02.3 Stormwater Management

Operator must apply for and receive a City stormwater quality discharge permit for each Oil and Gas Location in accordance with the City of Aurora’s Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities. Erosion and sedimentation control are required for each Oil and Gas Location. Operator must inspect and maintain stormwater facilities and control devices to ensure compliance with BMPs annually as well as after storm events.

4.02.4 Setbacks

4.02.4.01 Setbacks from buried infrastructure. Operator shall locate the Oil and Gas Location a minimum of three hundred fifty (350) feet from City buried infrastructure (Critical Infrastructure).

4.02.4.02 Setbacks from floodways. Operator shall locate the Oil and Gas Location a minimum of five hundred (500) feet from floodways (as defined by FEMA).

4.02.4.03 Setbacks from reservoirs. Operator shall locate the Oil and Gas Location a minimum of one (1) mile from all existing or planned reservoir sites.

4.03 Groundwater Protection

4.03.1 Water Quality Monitoring Plan.

The Operator shall implement a water quality and well testing plan. Operator will submit water quality monitoring reports to the City. Operator shall avoid causing degradation to surface or ground waters within the City and to wetlands within the City.
4.03.2 Baseline Sampling

Using records of the Colorado Division of Water Resources, Operator must implement a water quality monitoring and well testing plan that includes the following:

4.03.2.01 Operator must obtain initial baseline samples from all available domestic water sources within a one-half (1/2) mile distance from the edge of the Oil and Gas Location. Operator shall also drill (1) down-gradient monitoring well (Operator Drilled Monitoring Well) on that Oil and Gas Location to sufficiently test the domestic water supply for the City groundwater source in each aquifer (Alluvial, Dawson, Denver, Laramie-Fox, and Arapahoe).

4.03.2.02 Operator must collect initial testing of baseline samples from available water sources, including on-site Operator Drilled Monitoring Well prior to the commencement of the Drilling Phase at an Oil and Gas Location, or prior to the re-stimulation of an existing Well for which no samples were collected and tested during the previous twelve (12) months.

4.03.2.03 Post-Completion Phase samples of available domestic water sources shall be collected to test the domestic water supply for the City groundwater source in each aquifer (Alluvial, Dawson, Denver, Laramie-Fox, and Arapahoe). The Operator Drilled Monitoring Well at the Oil and Gas Location will be tested annually for the Denver Basin Aquifers and quarterly for the alluvial aquifer, for the duration of the Oil and Gas Location. The representative water source locations will be mutually agreed upon by the City and the Operator.

4.03.2.04 Operator may rely on existing groundwater sampling data from any water source within the radii described above that was collected in accordance with accepted City standards, provided the data was collected within the twelve (12) months preceding the commencement of Drilling Phase for such Oil and Gas Location, the data includes measurement of all of the constituents measured in Tables 4-1 through 4-6 below, 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 the Drilling Phase for such Oil and Gas Location.
4.03.2.05 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 of the water source, the Operator must advise the City that Operator could not obtain access to the water source from the surface owner. Operator shall drill one (1) Operator Drilled Monitoring Well regardless of the existence of water sources available within a one-half (1/2) mile distance from the edge of the Oil and Gas Location.

4.03.2.06 Baseline water quality testing will be conducted for the analytes listed in Tables 4-1 through 4-6 below. Subsequent water quality testing will be conducted for the analytes in Table 4-7, annually for the Denver Basin Aquifers and quarterly for the alluvial aquifer.

4.03.2.07 Operator must follow standard industry procedures in collecting samples, consistent with the current version of the COGCC Model Sampling and Analysis Plan.

4.03.2.08 Operator must report the location of the water source using a GPS with sub-meter resolution.

4.03.2.09 Operator must report results of field observations, including reporting on damaged or unsanitary well conditions, adjacent potential pollution sources, odor, water color, sediment, bubbles, and effervescence.

4.03.2.10 Operator must provide copies of all test results described above to the City, the COGCC, and the water source owners within thirty (30) days after receiving the lab analytical.

4.03.2.11 If sampling shows the degradation of water quality, additional measures may be required, including:

4.03.2.11.1 If free gas or a dissolved methane concentration level higher than one (1) 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).

4.03.2.11.2 If the test results indicate thermogenic or a mixture of thermogenic and biogenic gas, an action plan to determine the source of the gas.
4.03.2.11.3 Immediate notification to the City, the COGCC, and the owner of the water source if the methane concentration increases by more than five (5) mg/l between sampling periods, or increases to more than ten (10) mg/l.

4.03.2.11.4 Immediate notification to the City, the COGCC, 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.

4.03.2.11.5 Further water well sampling in response to complaints from water source owners.

4.03.2.11.6 Timely production and distribution of test results in electronic deliverable format to the City, the COGCC, and the water source owners.

4.03.2.11.7 All water source testing must be conducted by the Operator or, if requested by a surface owner, by a qualified independent professional consultant.

4.03.2.11.8 If Operator identifies degradation to water quality from the baseline testing as a result of its oil and gas development, Operator will be responsible to mitigate the degradation of water quality to the baseline levels.

4.03.2.11.9 Operator will submit a CDPHE Regulation 84 water use plan as described in section 84.11 sections B, D, and F.

**Table 4-1 Inorganic Chemicals**

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
</tr>
<tr>
<td>Arsenic</td>
</tr>
<tr>
<td>Asbestos</td>
</tr>
<tr>
<td>Barium</td>
</tr>
<tr>
<td>Beryllium</td>
</tr>
<tr>
<td>Cadmium</td>
</tr>
<tr>
<td>Chromium</td>
</tr>
<tr>
<td>Cyanide (as free Cyanide)</td>
</tr>
<tr>
<td>Fluoride</td>
</tr>
</tbody>
</table>
Table 4-2 Volatile Organic Compounds (VOCs)

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury</td>
</tr>
<tr>
<td>Nitrate</td>
</tr>
<tr>
<td>Nitrite</td>
</tr>
<tr>
<td>Total Nitrate and Nitrite</td>
</tr>
<tr>
<td>Selenium</td>
</tr>
<tr>
<td>Thallium</td>
</tr>
<tr>
<td>Propane</td>
</tr>
<tr>
<td>BTEX as Benzene, Toluene, Ethylbenzene and Xylenes</td>
</tr>
<tr>
<td>Total Petroleum Hydrocarbons (TPH)</td>
</tr>
<tr>
<td>Vinyl chloride</td>
</tr>
<tr>
<td>Benzene</td>
</tr>
<tr>
<td>Carbon tetrachloride</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
</tr>
<tr>
<td>Trichloroethylene</td>
</tr>
<tr>
<td>Para-Dichlorobenzene</td>
</tr>
<tr>
<td>1,1-Dichloroethylene</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane</td>
</tr>
<tr>
<td>cis-1,2 Dichloroethylene</td>
</tr>
<tr>
<td>1,2-Dichloropropane</td>
</tr>
<tr>
<td>Ethylbenzene</td>
</tr>
<tr>
<td>Monochlorobenzene</td>
</tr>
<tr>
<td>o-Dichlorobenzene</td>
</tr>
<tr>
<td>Styrene</td>
</tr>
<tr>
<td>Tetrachloroethylene</td>
</tr>
<tr>
<td>Toluene</td>
</tr>
<tr>
<td>Trans-1,2 Dichloroethylene</td>
</tr>
<tr>
<td>Xylenes (total)</td>
</tr>
<tr>
<td>Dichloromethane(methylene chloride)</td>
</tr>
<tr>
<td>1,2,4-Trichlorobenzene</td>
</tr>
<tr>
<td>1,1,2-Trichloroethane</td>
</tr>
</tbody>
</table>

Table 4-3 Synthetic Organic Compounds (SOCs)

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alachlor</td>
</tr>
<tr>
<td>Aldicarb I</td>
</tr>
<tr>
<td>Aldicarb sulfoxide</td>
</tr>
<tr>
<td>Aldicarb sulfone</td>
</tr>
<tr>
<td>Atrazine</td>
</tr>
<tr>
<td>Carbofuran</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Chlordane</td>
</tr>
<tr>
<td>Dibromochloropropene</td>
</tr>
<tr>
<td>2,4-D</td>
</tr>
<tr>
<td>Ethylene dibromide</td>
</tr>
<tr>
<td>Heptachlor</td>
</tr>
<tr>
<td>Heptachlor epoxide</td>
</tr>
<tr>
<td>Lindane</td>
</tr>
<tr>
<td>Methoxychlor</td>
</tr>
<tr>
<td>Polychlorinated biphenyls</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
</tr>
<tr>
<td>Toxaphene</td>
</tr>
<tr>
<td>2,4,5-TP (Silvex)</td>
</tr>
<tr>
<td>Benzopyrene</td>
</tr>
<tr>
<td>Dalapon</td>
</tr>
<tr>
<td>Di(2-ethylhexyl) adipate</td>
</tr>
<tr>
<td>Di(2-ethylhexyl) phthalate</td>
</tr>
<tr>
<td>Dinoseb</td>
</tr>
<tr>
<td>Diquat</td>
</tr>
<tr>
<td>Endothall</td>
</tr>
<tr>
<td>Endrin</td>
</tr>
<tr>
<td>Glyphosate</td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
</tr>
<tr>
<td>Hexachlorocyclopentadiene</td>
</tr>
<tr>
<td>Oxamyl (Vydate)</td>
</tr>
<tr>
<td>Picloram</td>
</tr>
<tr>
<td>Simazine</td>
</tr>
<tr>
<td>2,3,7,8-TCDD (Dioxin)</td>
</tr>
<tr>
<td>Perfluorooctanoic Acid (PFOA)</td>
</tr>
<tr>
<td>Perfluorooctane Sulfonate (PFOS)</td>
</tr>
</tbody>
</table>

Table 4-4 Radionuclides

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined radium-226 and radium-228</td>
</tr>
<tr>
<td>Gross alpha particle activity (including radium-226 but excluding radon and uranium)</td>
</tr>
<tr>
<td>Beta particle and photon radioactivity</td>
</tr>
<tr>
<td>Uranium</td>
</tr>
<tr>
<td>Contaminant</td>
</tr>
<tr>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Aluminum</td>
</tr>
<tr>
<td>Chloride</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Copper</td>
</tr>
<tr>
<td>Corrosivity</td>
</tr>
<tr>
<td>Fluoride</td>
</tr>
<tr>
<td>Foaming agents (surfactants)</td>
</tr>
<tr>
<td>Iron</td>
</tr>
<tr>
<td>Manganese</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Silver</td>
</tr>
<tr>
<td>Sulfate</td>
</tr>
<tr>
<td>Total dissolved solids (TDS)</td>
</tr>
<tr>
<td>Zinc</td>
</tr>
</tbody>
</table>

**Table 4-6 Other Parameters**

**GENERAL WATER QUALITY**

Alkalinity, Conductivity & TDS, pH, Dissolved Organic Carbon (or Total Organic Carbon), Bacteria, and Hydrogen Sulfide

**MAJOR IONS**

Bromide, Magnesium, Potassium, Sodium, and Nitrate + Nitrite as N

**METALS**

Boron, Lead, Selenium, Strontium,

**DISSOLVED GASES**

Methane, Ethane,

**OTHER**

Water Level, Stable isotopes of water (Oxygen, Hydrogen, Carbon), Phosphorus
Table 4-7 General Sampling Parameters

<table>
<thead>
<tr>
<th>GENERAL WATER QUALITY</th>
<th>MAJOR IONS</th>
<th>METALS</th>
<th>DISSOLVED GASES and VOLATILE ORGANIC COMPOUNDS</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity, Conductivity &amp; Total Dissolved Solids (TDS), pH, Dissolved Organic Carbon (or Total Organic Carbon), Bacteria, and Hydrogen Sulfide</td>
<td>Bromide, Chloride, Fluoride, Magnesium, Potassium, Sodium, Sulfate, and Nitrate + Nitrite as N</td>
<td>Arsenic, Barium, Boron, Chromium, Copper, Iron, Lead, Manganese, Selenium, Strontium, Mercury, Uranium, and Radium</td>
<td>Methane, Ethane, Propane, BTEX as Benzene, Toluene, Ethylbenzene and Xylenes, Total Petroleum Hydrocarbons (TPH)</td>
<td>Water Level, Stable isotopes of water (Oxygen, Hydrogen, Carbon), Phosphorus</td>
</tr>
</tbody>
</table>

4.03.3 **Class II Underground Injection Control Wells**

For operations associated with any Oil and Gas Location, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure.

4.03.4 **Wellbore Integrity and Aquifer Protection**

Operator shall follow all COGCC regulations regarding wellbore integrity and aquifer protection.

4.04 **Water During Drilling Phase**

4.04.1 **Closed-Loop Pitless Systems for the Containment and/or Recycling of Drilling Fluids**

Wells shall be drilled, completed, and operated using closed-loop pitless systems for containment and/or reuse of all drilling, completion, flowback, and produced fluids. Operator shall reuse fluids unless technically infeasible. All aboveground storage,
including temporary tanks and separators, for use during drilling, completion, flowback, and other produced fluids shall have secondary containment.

4.05 Use and Transportation of Water and Hydrocarbons During Completion and Production Phases

4.05.1 Pipeline Construction Timeframe

Pipelines servicing a particular Oil and Gas Location must be constructed before the Production Phase commences at such Oil and Gas Location.

4.05.2 Separate Use of Pipelines

Operator shall use separate pipelines for the transportation of raw water to and from the Oil and Gas Location, and the transportation of hydrocarbons and produced water from the Oil and Gas Location.

During the Completion Phase, the Operator will use flowlines and pipelines for flowback unless technically infeasible. All raw water related completion activities shall be transported to the Oil and Gas Location by pipeline.

4.05.3 Temporary Use of Tanks

Operator shall be permitted to utilize temporary tanks during the Drilling and Completion Phases, and during maintenance operations of the Oil and Gas Location or Flowline, provided Operator has provided proper notice regarding location, and required screening for temporary tanks if the maintenance or temporary tanks are present longer than a week.

For maintenance operations that are expected to extend greater than seven days, Operator shall give the City’s Oil and Gas Manager or designee prior notice of maintenance activities within three days of commencing the maintenance operations and the planned number of temporary tanks.

Operator may use temporary tanks for up to one month for an Oil and Gas Location during any single maintenance operation without the need for adding appropriate temporary visual screening (e.g., hay bales).

4.05.6 Water for Landscape Irrigation

All water use at the Oil and Gas Location shall be pursuant to A.M.C. 138 et seq.
4.06 Berms for Fluid Containment

4.06.1 Berm Design

The Operator shall utilize steel-rim berms at the Oil and Gas Location with sufficient capacity to contain one and one-half (1.5) times the maximum volume of the largest tank on the location that such Oil and Gas Location will contain at any given time plus sufficient freeboard to prevent overflow around all permanent facility equipment. All berms and containment devices shall be inspected quarterly by the Operator and maintained in good condition. No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel, or such sources are rated in accordance with industry codes and standards. Secondary containment such as duck ponds or lined earthen berms for temporary tanks may also be used.

4.06.2 Permanent Berms

Permanent containment berms shall be constructed of steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.

4.06.3 Secondary Containment

Secondary containment for tanks shall be constructed with a synthetic or engineered liner that contains all primary containment vessels and is mechanically connected to the steel ring to prevent leakage.

4.06.4 Locations Near Surface Water

For locations within five hundred (500) feet and up-gradient of a surface water body or flood plain, tertiary containment, such as an earthen berm, is required around production facilities.

4.07 Flowlines

4.07.1 General

The Operator shall construct a Flowline in accordance with specifications set forth in Section 38 of this Oil & Gas Manual for the transportation of hydrocarbons and produced water. Operator shall comply with the requirements for Flowlines set forth in COGCC regulations. All new Flowlines shall have the legal description of the location recorded with the Clerk and Recorder of the applicable county within thirty days.
(30) days of completion of their construction. Operator shall provide as-built GIS locations and maps of all Off-Location flowlines.

4.07.2 Flowline Construction

4.07.2.01 The pipeline buried depth should be a minimum of forty-eight (48) inches for all pipes outside of the City ROW. All pipes within the arterial City ROWs shall be a minimum of twenty (20) feet depth. All pipes within all other City ROWs shall be a minimum of fifteen (15) feet depth. All pipelines installed beneath public ROW shall be bored unless otherwise approved by the City Engineer.

4.07.2.02 Operator will conduct an x-ray or other non-destructive examination on all welds and conduct surveys and logging for every girth weld in place.

4.07.2.03 Operator will utilize jeeping (holiday detector) as well as visual inspection of the coating. Once a jeep (damage) is detected, pipe coating shall be repaired and re-jeeped until the damage is repaired and does not cause a jeep or detection.

4.07.3 Flowline Safety

4.07.3.01 On all Flowlines regulated by the COGCC leak protection and detection shall be provided through differential metering to meet zero tolerance levels for migration of product from the pipe envelope. Operator to conduct additional leak detection through aerial surveys at least two (2) times per year.

4.07.3.02 On all Flowlines regulated by the COGCC Operator shall hydrostatic test to 1.25 times the Maximum Operating Pressure for four (4) hours for exposed pipe and eight (8) hours for buried pipe.

4.07.3.03 On all Flowlines regulated by the COGCC Operator shall utilize automated systems for overpressure protection & low pressure detection that shut-in the pipe in order for Operator to investigate.

4.07.4 Flowline Maintenance

4.07.3.03 Operator shall conduct quarterly pigging on the pipelines.
4.08 Floodways

Additional BMPs related to water preservation or protection may be imposed by the City staff during the OGP application process in order to mitigate risks of potential contamination to a floodway.

4.09 Drainage

4.09.1 Planning Process & Preliminary Drainage Reports The OGP process requires the submittal of a Preliminary Drainage Report for the Oil and Gas Location and Pumping Stations. Preliminary Drainage Letters in place of Report will not be permitted.

4.09.2 Civil Plans—Process Public Works Engineering will require a civil plan Pre-Submittal Meeting to be held. To set up a meeting, please contact Chris Eravelly at 303-739-7457.

4.09.3 Civil Plans—Content and Naming Convention Operator Agreements and associated applications and checklists for Oil and Gas Locations have been developed using the term “Storm Water Management Plans (SWMPs)” in reference to the Civil Plans for these sites. The Civil Plans for Oil and Gas Locations include features that go beyond typical SWMPs. Drainage Reports (both Preliminary and Final) and Civil Plan submittals will be reviewed using City standards.

4.09.4 Civil Plans—Submittal Package Civil Plan submittals for an Oil and Gas Location shall include the Final Drainage Report, Storm Water Management Report, and an Inspection and Maintenance Plan as outlined at the civil pre-submittal meeting. Any grading within an existing utility easement may require structural loading evaluation as determined at the civil plan pre-submittal meeting. The structural loading evaluation shall be submitted with the first submittal of civil plans.

4.09.5 Hydrologic Analyses for Drainage Reports The City’s Storm Drainage Design and Technical Criteria Manual along with Mile High Flood District Urban Storm Drainage Criteria Manual shall be used to develop the hydrology for Oil and Gas Locations. For Oil and Gas Locations, 100-year precipitation depths shall be used for major storm event analyses. The entire tributary area, including the Oil and Gas Location, draining to Water Quality/Full Spectrum (EURV)/Detention BMPs shall be used to size those BMPs. Gravel surfaced pads shall use imperviousness (40%) and runoff coefficients consistent with the City’s SDDTC Table 1.
4.09.6 **Hydraulic Analyses—Conveyances/Detention/WQ** For Oil and Gas Locations, WQ/EURV/Detention BMPs will be sized and designed in accordance with the standard requirements of the City SDDTC (e.g., Extended Detention Basins). Storm Water Detention and Infiltration (SDI) Data Sheets shall be uploaded to the State website prior to civil plan approval. Culverts, Open Channels, and Grass Lined Swales shall satisfy the standard requirements of the City SDDTC.

4.09.7 **Subsurface Utility Investigation/Loading Information** For Oil and Gas Location Civil Plans, the City of Aurora Roadway Specifications SUE note 22 (which refers to SB 18-167 and will be updated to refer to CRS 9-1.5) is a required note to be placed on the plans. In addition, Aurora Water requires any crossing of existing utilities or tie-ins to provide pre-design potholing.

4.09.8 **Drainage Easements/License Agreements** For all Oil and Gas Locations, the need for Easements and License Agreements shall be evaluated on a case-by-case basis. For Oil and Gas Locations where the lease agreement with the property owner includes provisions for removing WQ/Detention BMPs, the I&M Plan for such BMP will negate the need for a Drainage Easement or License Agreement for that BMP. If there is a need for a drainage or license agreement, these documents must be executed prior to civil plan approval.
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5.02 Odor........................................................................................................ 5-7
5.03 Fugitive Dust Suppression ................................................................. 5-7
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SECTION 5.00 PROTECTION OF AIR QUALITY

5.01 Air Quality Monitoring Plan

5.01.1 General

In order to minimize degradation to air quality, Operator shall avoid or minimize and mitigate all potentially harmful emissions and odors, and avoid, minimize or mitigate dust associated with onsite activities and traffic on access roads.

5.01.2 Minimization of Emissions

To protect air quality, the following will be required:

5.01.2.01 The use of electric equipment and electric line power to operate permanent production equipment.

5.01.2.02 The use of no-bleed continuous and intermittent pneumatic devices that do not bleed natural gas to the atmosphere. 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.

5.01.2.03 Any combustion device, auto ignition system, recorder, vapor recovery device or other equipment used to meet the hydrocarbon destruction or control efficiency used to meet the relevant BMP shall be installed, calibrated, operated, and maintained in accordance with the manufacturer’s recommendations, instructions, and operating manuals.

5.01.2.04 Year-round compliance with the odor standards pursuant to COGCC and CDPHE regulations.

5.01.2.05 Venting is prohibited unless necessary for safety. If emergency venting is required, or if accidental venting occurs, the Operator shall provide notice to the City of such event as soon as, but in no event later than twenty-four (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.

5.01.2.06 Reduction of emissions from oil and gas well maintenance activities.

For planned maintenance activities involving the intentional flaring of gas, the Operator shall provide forty-eight (48) hour advance written
notice to the City of such proposed flaring. Such notice shall identify the duration and nature of the flaring event, a description as to why flaring is necessary, what steps will be taken to limit the duration of flaring, and what steps the Operator proposes to undertake to minimize similar events in the future.

5.01.2.07 Telemetric control and monitoring systems to detect when pilot lights on control devices are extinguished.

5.01.2.08 Exhaust from all engines, motors, coolers, and all other equipment must be vented up and away from the nearest residences.

5.01.2.09 Operator shall participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at the Oil and Gas Location.

5.01.3 Air Monitoring and Leak Detection for Facilities Without Permanent Tanks

5.01.3.01 Pre-Construction or Pre-Drilling Baseline Air Quality Testing. Operator shall conduct air sampling for a period of five (5) days prior to any construction activities for any new Oil and Gas Location or prior to drilling additional wells on any Oil and Gas Location already constructed. Operator shall conduct baseline sampling using a continuous monitoring system that detects hydrocarbons. Operator shall conduct baseline sampling at least thirty (30) days in advance of any construction activities at the Oil and Gas Location. Results of the baseline air sampling must be received prior to the issuance of the final OGP.

5.01.3.02 Continuous Air Monitoring. During Drilling and Completion Phases, the Operator shall conduct continuous air monitoring capable of detecting total hydrocarbons.

5.01.3.02 Periodic Air Sampling. During all Operational Phases, the Operator shall have the ability to deploy and collect air samples for speciated hydrocarbon analysis when monitoring indicates elevated levels of hydrocarbons, or at the request of the City.
5.01.3.03 Data related to air monitoring or sampling during any phase shall be made available to the City upon request.

5.01.3.04 **Leak Detection and Repair.** During the Production Phase, the Operator shall develop and maintain a Leak Detection And Repair (LDAR) program as required by CDPHE using modern leak detection technologies such as infra-red (IR) cameras for equipment used on the Oil and Gas Location.

5.01.3.05 For the first five (5) years of the Production Phase at an Oil and Gas Location, the Operator shall conduct at least semi-annual inspections of all equipment at the Oil and Gas Location; more frequent inspections may be required based on the nature and location of the facility and as required by state rules. At least once per year, the Operator shall notify the City five (5) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

5.01.3.07 **Records** The Operator will maintain records of all leaks found, the date the leaks were repaired, and the date the location is re-screened to verify that the leak has been repaired. Such records must be maintained for five (5) years and must be made available to the City upon request.

5.01.3.08 **Repairs** Except when an emergency circumstance would necessitate an immediate repair, Operator must repair leaks as quickly as practicable. If more than five (5) days repair time is needed after a leak is discovered, an explanation of why more time is required must be submitted to the City.

5.01.4 **Air Quality Requirements For Facilities With Permanent Tanks**

For facilities that use permanent storage tanks and do not transport all hydrocarbons and produced water via pipelines, the following Air Quality provisions will apply until the pipeline infrastructure is available:

5.01.4.01 **Operator shall comply with the provision in 5.01.3.01**

5.01.4.02 **Leak Detection and Repair.**

Unless more frequent inspections are required by the AQCC, for the five (5) year period beginning with the start of the Production Phase at an
Oil and Gas Location, Operator shall conduct IR camera monitoring of all equipment at the respective Oil and Gas Location based on the following minimum frequency:

**Year 1 – monthly**  
**Year 2 – quarterly**  
**Year 3-5 – semi-annually**

The first inspection will occur within thirty (30) days of the facility commencing production.

**5.01.4.03 Additional Monitoring** After the initial five (5) year period, Operator will conduct semi-annual IR camera monitoring until all Wells at the Oil and Gas Location are either connected to a Gathering Line and Associated Infrastructure or are plugged and abandoned.

**5.01.4.04** The City may require the Operator to use a third party to conduct additional air monitoring and analysis as needed in response to emergency events such as spills, process upsets, or accidental releases. Operator may evaluate other technologies throughout the life of the wells and may use other technologies if they are as effective in detecting target compounds.

**5.01.5 Ozone Air Quality Action Days**

The Operator shall respond to Ozone Air Quality Action Day advisories posted by the CDPHE for the Front Range Area by implementing their suggested air emission reduction measures as feasible. Emission reduction measures shall be implemented for the duration of an Ozone Air Quality Action Day advisory and may include measures such as:

**5.01.5.01** Minimization of vehicle and engine idling.

**5.01.5.02** Reducing truck traffic and worker traffic.

**5.01.5.03** Delaying vehicle refueling.

**5.01.5.04** Postponement of construction and maintenance activities if feasible.

**5.01.5.05** Within thirty (30) days following the conclusion of each annual Ozone Air Quality Action Day season, Operator must submit a report to the
City that details which measures it implemented during any Ozone Air Quality Action Day advisories.

5.01.6 Compliance Reports

The Operator must submit quarterly reports to the City 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) that the equipment at the Oil and Gas Location 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. The quarterly report must contain a certification as to the truth, accuracy, and completeness of the reports, signed by a Responsible Official, as defined by the CDPHE. The Operator will also provide the City 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 at the Oil and Gas Location.

5.01.7 Combustion Devices

To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:

5.01.7.01 The combustion device must be fired with natural gas and designed to operate with a ninety-eight (98) percent or higher hydrocarbon destruction efficiency.

5.01.7.02 The combustion device must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions mean observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

5.01.7.03 The combustion device must be operated with a flame present at all times when emissions may be vented to it, or another mechanism that does not allow uncontrolled emissions.
5.01.7.04 The combustion device will have no visible flame, with the exception of the pilot light, from the Oil and Gas Location boundary. The combustion device shall completely conceal the flame.

5.01.7.05 All combustion devices must be equipped with an auto-igniter unless manned while in use.

5.01.8 Burning

No open burning shall occur on any Oil and Gas Location.

5.01.9 Air Modeling Study

If the City determines that an Air Modeling Study is necessary to create a dispersion model, Operator will be invoiced its proportionate share in an amount not to exceed $5000 per Oil & Gas Location.

5.02 Odor

5.02.1 Odor Prevention

Operator will prevent odors by routing to closed-loop systems unless technically infeasible. Odors emitting from Oil and Gas Location must be controlled immediately. Operator must minimize odors by proactively addressing and resolving citizen concerns within twenty-four (24) hours. Operator must use a filtration system or additives to drilling fluids to prevent or minimize odors but cannot mask odors. In order to meet the provisions of this section, Operator implements the following measures:

5.02.1.01 Wiping down the drill pipe each time that the drilling operation “trips” out of the hole.

5.02.1.02 Increasing additive concentrations during peak hours.

5.03 Fugitive Dust Suppression

5.03.1 Minimize Dust

In addition to complying with COGCC rules, dust associated with activities on the Oil and Gas Location, and traffic on access roads shall be minimized throughout construction, drilling and operational activities such that there are no visible dust
emissions from access roads or the Oil and Gas Location to the maximum extent practicable given wind conditions.

5.03.2 Water Use

No untreated produced water or other process fluids shall be used for dust suppression.

5.03.3 Covering of Material

At the Oil and Gas Location, sand, silica, or similar material must be stored in covered containers.

5.03.4 Safety Data Sheets (SDS)

Safety Data Sheets (SDS) for any chemical-based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use.

5.04 Noise

5.04.1 Noise Management Plan

For any Oil and Gas Location that is on property located in zoning districts that allow for residential development or if a Residential Building Unit is located within 1,320 feet of an Oil and Gas Location located in a zoning district that does not allow for residential development unless the Operator obtains waivers from all property owners within that distance the following provisions shall apply:

5.04.1.01 A Baseline Noise Mitigation Study will be conducted to ascertain baseline noise levels at the Oil and Gas Location to demonstrate that noise is expected to be mitigated to the extent practicable and a copy will be provided to the City.

5.04.1.02 The Operator shall comply with all provisions of COGCC regulations on Noise Abatement with respect to the Oil and Gas Location; provided, however, that the maximum permissible noise levels to be applied under COGCC regulations for the length of time indicated in COGCC regulations shall be, other than during the Construction Phase, the greater of (i) the levels set forth for the land use type of “Residential/Agricultural/Rural” under COGCC regulations if measurements are taken at 1,000 feet from the sound walls at the Oil
and Gas Location and (ii) 4 dB(A) higher than baseline ambient sound measured at 1,000 feet from the sound walls at the Oil and Gas Location. During the Construction Phase, noise levels shall not exceed those produced by the construction of a typical commercial development. All measurements considered for compliance with this section shall be taken by a third-party contractor using industry-standard equipment and practices. The Operator shall address C scale noise/vibration through berming, capable sound walls, and other associated BMPs. During the Drilling and Completion Phases, the Operator shall construct a sound wall and/or comparable measures to mitigate noise.

5.04.1.03 All noise mitigation measures shall be paid for by the Operator.

5.04.1.04 Unloading pipe. The Operator shall not unload pipe from delivery trucks between 8:00 p.m. and 7:00 a.m.

5.04.2 Mitigation of Dust, Noise, and Visual Disturbance

For mitigation of dust, noise, and visual disturbance during the Drilling and Completion Phases, the Operator shall use a combination of berms, bales, and sound walls at the perimeter of any Oil and Gas Location that:

5.04.2.01 Is located in a zoning district that allows for residential development or

5.04.2.02 Is located within 1,320 feet of a Residential Building Unit (as measured from the edge of an Oil and Gas Location) in a zoning district not zoned for residential development unless the Operator obtains a variance in advance.

5.04.3 Quiet Completion Technology

Operator shall use quiet completion technology on any Oil and Gas Location that:

5.04.3.01 Is located in a zoning district that allows for residential development or

5.04.3.02 Is located within 1,320 feet of a Residential Building Unit (as measured from the edge of an Oil and Gas Location) in a zoning district not zoned for residential development unless the Operator obtains a variance in advance.
5.05 Electric Equipment
Operator shall use electric line power to power permanent production equipment, such as compressors, motors, and pump jacks, in order to mitigate noise and to reduce emissions.

5.06 Reduced Emission Completion
Operator shall comply with EPA Reduced Emission Completion rules for oil and gas wells.
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SECTION 6.00 PROTECTION OF SURFACE QUALITY

6.01 License Agreements

Operator shall use Flowlines to be built in accordance with specifications set forth in Section 38 of this Oil & Gas Manual. Operator will utilize Flowlines once operations commence. The Operator’s obligation to build and utilize such Flowlines is subject to the Operator obtaining all necessary rights-of-way, crossings, licenses and easements, and the City issuing Operator the necessary Public Improvement Permits.

6.02 Visual Mitigation

6.02.1 Low Profile Equipment

Operator will use low profile equipment, such as low profile tanks, associated production equipment, and combustion devices. No tanks shall exceed twenty (20) feet in height.

6.02.2 Fencing

Permanent opaque fencing shall be installed around production equipment and shall be secured. Operator will not use chain link fencing.

6.02.3 Color

All permanent aboveground production equipment, structures, and stationary equipment on each Oil and Gas Location shall be painted in a tan or brown matte finish unless a different color is necessary for safety or per regulations.

6.02.4 Location Siting

6.02.4.01 An Oil and Gas Location shall be located away from prominent natural features such as distinctive rock and landforms, vegetative patterns, river crossings, land in the POS zone district, and other designated landmarks.

6.02.4.02 An Oil and Gas Location shall be located to avoid hilltops and ridges to prevent the appearance of pump jack and accessory equipment profiles on the horizon.

6.02.4.03 The Operator shall locate facilities at the base of slopes to provide a background of topography and natural cover.
6.02.4.04 The Operator shall align access roads to follow existing grades and minimize cuts and fills.

6.03 Traffic

6.03.1 Transportation and Circulation

The Operator will submit a traffic management plan for the City to review during the Oil and Gas Location OGP application review process that includes detailed descriptions of all proposed haul routes for equipment, water, sand, waste fluids, waste solids, mixed waste, and all other material to be hauled on the public and private streets and roads during phased well development and operations. The traffic management plan shall include the following:

6.03.1.01 Estimated weights of vehicles when loaded, a description of the vehicles, including the number of wheels and axles of such vehicles and estimated trips per day.

6.03.1.02 Detail of access locations for the Oil and Gas Location, including sight distance, turning radius of vehicles, and a template indicating this is feasible, sight distance, turning volumes in and out of the Oil and Gas Location for an average day, and what to expect during peak hours.

6.03.1.03 Estimated truck traffic volumes converted to equivalent single axle loads and compared to existing volumes.

6.03.1.04 Truck routing map and truck turning radius templates with a listing of required improvements that are necessary at intersections along the route.

6.03.1.05 Complete traffic letter, determining operational changes and geometric modifications necessary as a result of Operator’s activities.

6.03.1.06 Identification of the need for any additional traffic lanes, which would be subject to the final approval of the City’s engineer.

6.03.1.07 Restriction of non-essential traffic to and from the Oil and Gas Location to periods outside of peak a.m. and p.m. traffic periods and during school hours of schools along the designated traffic routes (generally 7:00-9:00 a.m. and 3:00-6:00 p.m.).
**6.03.1.08**  City may request consolidated haul routes and roadway improvements or upgrades based on contents of the traffic management plan to be covered in a Road Maintenance Agreement during the OGP review process.

**6.04 Road Maintenance**

**6.04.1 Access Roads**

Access points to public roads shall be located, improved, and maintained to ensure adequate capacity for efficient movement of existing and projected traffic volumes, and to minimize traffic hazards.

**6.04.1.01**  Permanent access roads shall be improved a minimum distance of two-hundred (200) feet onto the access road from the point of connection to a public road. All access roads shall be in conformance with the City’s current Roadway Specification Manual. The access road shall be improved as a hard surface (concrete or asphalt) for the first one-hundred (100) feet from the public road and then improved as a crushed surface (concrete or asphalt) for one-hundred (100) feet past the hard surface in the appropriate depth to support the weight load requirements of the vehicles accessing the Oil and Gas Location. A geotechnical report and pavement design will be submitted to the City for approval. 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 one-hundred (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 Oil and Gas Location.

**6.04.1.02**  Temporary access roads associated with the operation shall be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

**6.04.2 Mud Tracking**

In accordance with the Stormwater Management Plan (SWMP), the Operator shall take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets, in excess of *de minimus* levels, the streets shall be cleaned immediately by the Operator. If, for some
reason, this cannot be done or needs to be postponed, the Operator shall notify the City of its plan for mud removal.

6.04.3 Chains

Traction Chains from heavy equipment shall be removed from all Operator vehicles before entering a City street.

6.04.4 Culverts

Operator shall construct all necessary culverts for road construction per any available City or County, as applicable, Drainage Plan. In the event no information is available, the Operator shall complete any necessary studies or analysis to determine the appropriate culvert size.

6.04.5 Road Repairs

Road repairs will be addressed as set forth in the Road Maintenance Agreement.

6.05 Landscaping

Operator shall submit a landscape plan for City approval during the Oil and Gas Location OGP application review process. Operator shall implement the landscape plan when new development is constructed within 1,500 feet of an Oil and Gas Location once access to City main water source is available.

6.06 Tree Mitigation

The Oil and Gas Location and Flowline should be constructed in a manner that minimizes the removal of and damage to existing trees in accordance with the City’s tree mitigation ordinance.

6.07 Cultural and Historical Resource Protection

6.07.1 General

The Operator shall comply with the City of Aurora Municipal Code, as amended, by not causing to be carried out any construction, alteration, removal, or demolition of a building or feature or make any changes that would impair the historical association of the landmark building, landmark site, or historic district, pursuant to those qualities depicted in the Code, without first obtaining approval. Operator will submit the permit application and await the planning department’s approval following referral.
to the historic preservation commission, if applicable. If there is a discovery of historical artifacts, Operator will notify the City.

6.07.2 Protection of Natural, Historical, and Archaeological Resources

The nature and location of an Oil and Gas Location shall not unreasonably interfere with or affect any unique natural resource, historical site or landmark, or known archaeological site.

6.08 Wildlife\WIMP

This BMP is only applicable in the event that an Oil and Gas Location is located in a significant wildlife habitat or high priority habitat, as defined by the State Division of Wildlife, and/or in a natural area or open space. In such a case, the Operator shall consult with the State Division of Wildlife or the City Parks, Recreation, and Open Space Department to obtain recommendations for appropriate site-specific and cumulative impact mitigation procedures. If not applicable, Operator shall provide the City with a statement that it has investigated whether the Oil and Gas Location is located near a significant wildlife habitat and that this BMP is not applicable.

6.09 Building Electric

6.09.1 Any buildings or structures must meet the design standards contained in the Aurora Municipal Code. All site features shall be integrated into the building or site design.

6.09.2 Operator shall place a note on site plan elevation sheets, stating: “Operator certifies that all structures are in compliance with 8 Colorado Code Regulations § 1302-14 regarding placarding and certification of non-residential modular or factory-built structures.”

6.10 Removal of Debris

6.10.1 General

All construction-related debris shall be removed from the Oil and Gas Location for proper disposal in a timely manner. The Oil and Gas Location shall be maintained free of debris and excess materials at all times during operation. Operator shall also not stockpile debris at the Oil and Gas Location.
6.11 Removal of Equipment

All equipment used for drilling, re-completion, and maintenance of the facility shall be removed from the Oil and Gas Location within thirty (30) days of completion of the work, weather conditions permitting, unless otherwise agreed to by the applicable surface owner. Permanent storage of removable equipment on the Oil and Gas Location shall not be allowed.

6.12 Trailers

A construction trailer(s) is permitted as an accessory use during active drilling and well completion or workover operations only. No permanent residential trailers shall be permitted at the Oil and Gas Location; provided, however, that until six (6) months following the end of the Completion Phase on an Oil and Gas Location, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator’s personnel and the personnel of its subcontractors on a temporary basis.

6.13 Noxious Weed Control

The Operator shall be responsible for ongoing noxious weed control as defined under the Colorado Noxious Weed Act (C.R.S. § 35-5.5-101 et seq.) at the Oil and Gas Location, along access roads, and in disturbed areas under restoration as a result of related construction activities or operations per City or other applicable agency regulations.

6.14 Park and Open Space Area Setback

The Oil and Gas Location shall be sited a minimum of three hundred fifty (350) feet away from existing and proposed parks and open space areas. This distance shall be measured from the perimeter of the Oil and Gas Location. For Flowlines that pass within three hundred fifty (350) feet of a park or open space area, a mitigation plan which identifies measures to be taken to mitigate impacts to parks and open space areas shall be submitted to the City.

6.15 Reclamation

6.15.1 Interim Reclamation.

Operator must submit an Oil and Gas Location Interim Reclamation Plan to the City with each OGP.

6.15.2 Final Reclamation Plan.

Operator must submit a Final Oil and Gas Location Reclamation Plan to the City concurrently with the submission of the COGCC application to plug and abandon the last Well at the Oil and Gas Location.
6.15.3 Decommissioning of Flowlines

Operator shall properly drain and decommission in accordance with City and COGCC regulations all Flowlines associated with any Plugged and Abandoned Well and shall remove from service all Flowlines by either abandoning in place and filling with flow fill or removing the pipe subject to approval by the City.
SECTION 7.00 GENERAL OIL & GAS PERMIT REQUIREMENTS

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SECTION 7.00 GENERAL OIL & GAS PERMIT REQUIREMENTS

7.01 Surface Stakeholder Notification

7.01.1 Notice of Application

When Operator submits an OGP application to the City, the Operator shall include a list of all property owners (names, property addresses and mailing addresses) within one mile from the edge of an Oil and Gas Location and all registered neighborhood organizations within one mile of the Oil and Gas Location, and the surface owners of the property upon which the Oil and Gas Location is located (“Notified Residents”). The City shall send out notices of the OGP application to Notified Residents when the review process commences for the purpose of receiving public comment.

7.01.2 Resident Notification of Neighborhood Meeting

When the City begins the OGP review process, the Operator shall send notification of a Neighborhood Meeting to all Notified Residents. The notice must include:

• Operator’s contact information
• Approximate date to begin drilling
• Information on the Neighborhood Meeting

Operator shall send proof of mailed notices to the City by affidavit or certificate of mailing.

7.01.3 Neighborhood Meeting

Upon the City’s completeness determination of the OGP application, the Operator shall hold a Neighborhood Meeting to facilitate engagement between the Operator and nearby Notified Residents of the applicable Oil and Gas Location. Operator shall notify all Notified Residents of the Neighborhood Meeting. Operator shall provide notice a minimum of ten (10) days in advance of the Neighborhood Meeting.

Notified Residents may submit written comments to the City about the OGP application, including the BMPs. The City shall transmit those comments which require an Operator response to the Operator. Operator shall respond to those comments within thirty (30) days in writing to the City. A Neighborhood Meeting may not be required if there are no residents within one (1) mile of the Oil and Gas Location, no comments are received from the initial notice of filing of OGP application and the City agrees.
7.01.4 Notice of Administrative Decision

The City shall provide Operator with a form letter for Notice of Administrative Decision for a pending OGP application. At least ten (10) calendar days prior to the scheduled decision on an OGP application, the Operator shall send out the Notice of Administrative Decision to the Notified Residents. The Operator shall provide proof to the City of mailed notices by affidavit or certificate of mailing.

7.01.5 Pre-Drilling Notice

Operator will comply with the mailing requirements of the Move-In, Rig-Up Notice required by the COGCC rules.

7.02 Other Notifications

7.02.1 General

All notices and other correspondence sent to the City shall be in writing and shall be delivered by: (A) certified mail with return receipt, or (B) hand delivery with signature or delivery receipt provided by a third-party courier service (such as FedEx, UPS, etc.) to the designated representative of the City as indicated below, or (C) email to the designated representative of the City as indicated below.

City of Aurora
Oil & Gas Division
15151 E. Alameda Parkway, #5900
Aurora, CO 80012

Attn: Oil & Gas Manager
Telephone: 303-739-7676
Email: jsmoore@auroragov.org

7.02.2 Notification of Submittal of COGCC Permits, Orders, and Approvals

At the time the Operator files any COGCC Form 2 or Form 2A for a Well or Oil and Gas Location within the City, the Operator will provide the City a copy of such filings and shall provide the City with notification of any decision with respect to any COGCC Form 2 or Form 2A for a Well or an Oil and Gas Location and Operator’s best estimate as to when the Construction Phase for such Well or Oil and Gas Location will begin.
7.02.3 Notification of New Operational Phase

Operator shall provide written notice to the City no less than thirty (30) days prior to the commencement of any of the following: Construction Phase (unless the Construction Phase commences within forty-five (45) days of the approval of the applicable Form 2 or Form 2A), Drilling Phase, Completion Phase, or any recompletion, re-drilling, or plugging and abandonment of a Well. Until the commencement of the Production Phase at the Oil and Gas Location, Operator shall notify the Oil & Gas Division Manager as to the status of development at each active Well monthly. Any notification provided by Operator to City may be used by the City for public notification.

7.02.4 Routine Maintenance

Operator may perform all surface and downhole well maintenance and operations on its Oil and Gas Location, Oil and Gas Facility, or Flowline that the Operator deems prudent and necessary. Operator may perform routine maintenance of Oil and Gas Facilities without prior notification to the City, including surface and downhole well maintenance.

7.02.4.01 If Operator intends to perform maintenance that may be excessively loud or performed with vehicles larger than a standard work vehicle, the City shall receive advance notification in order to best answer questions from citizens.

7.03 Incidents/Spills

7.03.1 Events or Incidents. Any COGCC or OSHA reportable injuries, accidents, or natural events shall be reported to the City within twenty-four (24) hours. Once the applicable forms are submitted to the agency, a copy of that form will also be provided to the City. In the event of a fire that is not controllable by Operator personnel, explosion, or need for emergency services response, 911 shall be called.

7.03.2 Spills. Operator must notify the City of any spill of any material on permeable ground on the Oil and Gas Location that has a reportable spill quantity under any law. The Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the Oil and Gas Location.
7.04 Annual Development Schedule

The Operator shall provide a summary of planned operations and an operational timeline (Development Schedule) to the City by January 31 of each year. The Operator may revise the summary and timeline from time to time provided that the Operator will keep the City informed of any revision to the Development Schedule. The Development Schedule should include a brief summary of major planned operations at all of Operator’s Oil and Gas Locations within the City for the coming year, including a proposed timeline of operations, and any new permitting activities. This report is informal in nature and may be changed by the Operator at any time. The report provides guidance to the City staff for planning workflows.

7.05 Previously Drilled Wells

When an Operator purchases or acquires an interest in an Oil and Gas Location, previously drilled Well, or other Oil and Gas Facility, which was not subject to an Operator Agreement, the Operator must review the BMPs in effect in this Oil & Gas Manual at the time of purchase. Within ninety (90) days before the purchase date, the Operator must submit a written report demonstrating compliance with all BMPs or a plan to bring the Oil and Gas Location and all Oil and Gas Facilities into compliance by the purchase date.

SECTION 8.00-30.00 RESERVED
SECTION 31.00 INTRODUCTION TO OIL & GAS MIDSTREAM PERMITTING

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31.02 Authority............................................................................................................... 31-2
SECTION 31.00 INTRODUCTION TO OIL & GAS MIDSTREAM PERMITTING

31.01 Scope
Sections 31.00-38.00 of this Oil & Gas Manual (OGM), set forth the minimum acceptable criteria for permitting, designing, and constructing pipelines and pipeline facilities, including Central Gathering Facilities (CGF), Gathering Lines, and Associated Facilities within the City of Aurora. A successful permit application process results in the approval of an Oil & Gas Midstream Permit (OGMP).

31.02 Authority

31.02.1 Local Authority
The Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101 et seq. authorizes local governments to regulate the surface impacts of oil and gas operations in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare and the environment within its jurisdiction. It also authorizes local governments to adopt reasonable regulations for surface impacts of oil and gas operations that address plan for and regulate the use of land by regulating the surface impacts of oil and gas operations in a reasonable manner to address:

Pursuant to the Colorado Oil and Gas Conservation Act, C.R.S. § 34-60-131 local governments may adopt regulations that are more protective or stricter than state requirements.

Pursuant to the Colorado Air Pollution Prevention and Control Act (“APPCA”), C.R.S. § 25-7-108 local governments may enact local air pollution resolutions or ordinances that include more stringent emission control regulations than state requirements.

31.02.2 City Code of Aurora
[Placeholder for final code sections A.M.C. 135-101, 135-102, 135-103, 135-104] give authority to the Oil & Gas Manual to regulate Oil and Gas Locations, Oil and Gas Facilities, pipelines, and all other oil and gas related operations.
SECTION 32.00 OIL & GAS MIDSTREAM PERMIT (OGMP) APPLICATION PROCESS

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SECTION 32.00 OIL & GAS MIDSTREAM PERMIT (OGMP) APPLICATION PROCESS

32.01 General/Applicability

32.01.1 Permitting of Oil & Gas Midstream Locations and Associated Facilities

The Oil & Gas Midstream Permit (OGMP) application process shall apply to the CGF, Gathering Lines, and Associated Facilities within the City of Aurora.

32.01.2 Future Increase in Oil & Gas Midstream Location Size

Oil & Gas Midstream locations should be constructed only to the extent approved and are fixed in size and geographical extent at the time the OGMP is approved. In the future, if an Operator desires to increase the size of an Oil & Gas Midstream location, or add additional Facilities, then the Operator shall submit a new permit application.

32.02 OGMP Application Process

The purpose of the pre-application process is for the Operator to provide a high-level overview of the proposed OGMP application to the City. City staff will provide feedback to the Operator on any BMPs or issues of concern.

Operator shall first obtain any necessary permits and agreements pursuant to these regulations prior to construction. The Operator shall submit all required City permits and applications such as but not limited to building permit, Stormwater and Erosion Control Permit, license agreements, rights-of-way permit, and OGMP application for the CGF, Associated Facilities, and Gathering Lines. The review by the City of these permits is to ensure the proposed Gathering Lines, Associated Facilities, and CGF comply with this Oil & Gas Manual and all applicable City of Aurora Municipal Code requirements.

32.02.1 Pre-Application Meeting

32.02.1.01 Operator shall request a Pre-Application Meeting with the Office of Development Assistance prior to submitting an application for an Oil & Gas Midstream Permit (OGMP). Appropriate City staff (as determined in the sole discretion of the Oil & Gas Manager) may attend. The City may waive the Pre-Application Meeting or Pre-Submittal requirement for any Oil & Gas Midstream application.
At the Pre-Application Meeting, Operator shall present the proposed project to the City to determine appropriate materials needed for the application, and any special conditions for the CGF, Gathering Lines, and Associated Facilities.

A map and detailed description of the CGF, Gathering Lines, and Associated Facilities, as applicable, must accompany the request for a Pre-Application Meeting.

The City shall provide Operator with comments from the Pre-Application Meeting in writing.

32.02.2 Pre-Submittal Meeting

At the Pre-Submittal Meeting, the Operator shall demonstrate, prior to entering the formal OGMP application process, its ability to comply with all BMPs.

Following receipt of City comments from the Pre-Application Meeting, the Operator shall request a Pre-Submittal Meeting with the City Staff to demonstrate the Operator’s ability to comply with BMPs.

At the Pre-Submittal Meeting, Operator shall request that a portal be opened to allow the application to be submitted digitally.

32.02.3 Submission of OGMP Application

Operator may then submit the OGMP application.

32.02.4 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGMP application, the City will initiate a Pre-Acceptance Review to determine whether the OGMP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify any deficiencies in the OGMP application and will notify the Operator of its decision in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.
32.02.5 Acceptance of OGMP Application

If no deficiencies are identified, an invoice of the OGMP application fee listed in the City Code will be sent to the Operator. The OGMP application fee must be paid prior to the City and outside agencies beginning review of the OGMP application.

If deficiencies in the OGMP application are identified, the Operator shall address the deficiencies and resubmit the OGMP application. The City will review the resubmitted application and notify the Operator in writing of its completeness determination.

32.02.6 First Review

In the First Review, the City will review the completed OGMP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

32.02.7 Neighborhood Meeting

Operator shall host a Neighborhood Meeting to inform the public of their application.

32.02.2.01 Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location, of the time and location of the Neighborhood Meeting. Surface owners shall be notified a minimum of ten (10) days in advance.

32.02.2.02 Operator shall respond to all comments received at the Neighborhood Meeting in writing.

32.02.8 Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review, including Operator Responses to Neighborhood Meeting comments. The City will provide any further questions and comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

32.02.9 Civil Construction Plans

Operator can submit its Civil Construction Plans concurrently with the second City review of the CGFP.
32.02.10 Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

32.02.11 Operator Response Timing

Any time the City provides written comments to an Operator submittal, the Operator shall reply in a timely manner. If comments are not received from the Operator within ninety (90) days of the City’s response, the Operator’s application will be deemed abandoned.

32.02.12 Compatibility with Approved Master Plans

The location and operations of the Oil and Gas Location shall be compatible with the approved Master Plan for the subject property.

32.02.13 Limit on Commencement of Construction

No construction activities shall begin until a valid Oil & Gas Midstream Permit (OGMP) has been received by the Operator. The Operator shall not move any heavy equipment or begin construction at the CGF, Gathering Lines, or Associated Facilities based on COGCC approval until the Operator has received administrative approval after the OGMP application review process by the City pursuant to this Oil & Gas Manual and all applicable City, State, and Federal permits.

32.02.14 Administrative Approval of OGMP

OGMP applications are approved by the Oil & Gas Division on an administrative basis. Once all questions have been answered by the Operator to satisfaction of the City (at the sole discretion of the Oil & Gas Manager), a Letter of Administrative Decision is provided to the Aurora City Council. The City Council may elect to call-up the approved OGMP for further discussion.

32.02.15 Issuance of OGMP

Once any City Council call-up requirements are complete, the Oil & Gas Midstream Permit (OGMP) will be issued to the Operator by the Oil & Gas Division with or without conditions. No installation of pipelines or Associated Facilities may begin until Operator receives the NTP.
32.02.16 Fulfillment of OGP Conditions

The Operator shall satisfy any conditions required by the OGMP.

32.02.17 Notice to Proceed (NTP)

Upon satisfaction of all conditions required by the OGMP, the City and Operator may execute a Water Delivery Agreement, Road Maintenance Agreement, and other agreements as necessary. Upon approval and execution of all required agreements, the City may issue a Notice to Proceed (NTP) with or without conditions. After issuance of the NTP, Operator may begin drilling activities at the Oil and Gas Midstream location, if all additional approvals from COGCC have been received.

32.02.18 Time Limits

An administratively approved signed OGMP shall be valid for a period of three (3) years from the date of approval. If construction of the pipeline or Associated Facilities has not begun within that period, a new application must be submitted by the Operator.

32.02.19 Denial

If it is established by competent evidence that a proposed Oil & Gas Midstream application fails to meet any of the specifications in this Oil & Gas Manual, the permit for such Oil & Gas Midstream location may be denied.

32.03 Required Application Contents

An Oil & Gas Midstream Permit (OGMP) application to the City contains the following (together, the Submittal Requirements) as described in the current City Code and Criteria. Application requirements will be at the discretion of the City based on the type of submittal.:

32.03.1 Master Plan

To include the following:

32.03.1.01 All the planned components and land uses for the site

32.03.1.02 Public improvement plan

32.03.1.03 Context Map
32.03.2 Letter of Introduction for Plans for Gathering Line Submittal Materials including items below:

32.03.2.01 The name, address, email, and telephone number of the Operator.

32.03.2.02 A summary statement of the project

32.03.2.03 A description of the Gathering Line, including the product(s) or substance(s) being transported and its/their source, size, terminus or end of route, and type of Facility, including any support structures involved.

32.03.2.04 All public utility crossings labeling the diameter and type of utility crossing to include bridges, culverts, water, wastewater, and stormwater infrastructure. Also, identify all public utilities within a one hundred fifty (150) foot buffer from the Gathering Line.

32.03.2.05 A description of the route or location of the Gathering Line and reasons for its selection.

32.03.2.06 Procedures to be employed in mitigating any adverse impacts of the proposed routes or sites of the Gathering Lines.

32.03.2.07 An outline of the planned construction, including startup and commissioning schedule, and include timing of each. The City acknowledges that this outline is subject to change, due to factors including, but not limited to, contractor availability, weather, ability to close ROW tracts, and the timing of third-party facility completion.

32.03.2.08 Information from Neighborhood Meeting conducted to include the location, date, time, attendance, and method of advertising.

32.03.2.09 A description of the hazards, if any, of fire, explosion, and other dangers to the health, safety, and welfare of the Operator’s employees and the public.

32.03.2.10 A Decommissioning Plan, which shall address how the Gathering Line will be properly cleaned, capped, and maintained if the Gathering Line will be Properly Abandoned in Place or whether the Gathering Line will be removed from the ground.
32.03.2.11 A description of any haul routes during construction, identifying the roads and bridges involved, and the weight of the loads.

32.03.2.12 Existing land use within or adjacent to the Gathering Line within 1,800 feet.

32.03.2.13 Soils reports required for Gathering Line crossings or any Gathering Line encroaching in a public right-of-way, if required by the Department of Public Works.

32.03.2.14 Present zone and overlay zoning districts, which include floodplains and floodways, if appropriate.

32.03.2.15 Operator shall provide either authorization letters or agreements from all impacted property owners to verify application can be accepted.

32.03.2.16 Signature of the applicant.

32.03.2.17 Easements or rights-of-way for the Gathering Line from other landowners or a statement that the Operator is currently in good faith negotiations with the owners of surface properties, irrigation ditch companies and/or affected irrigation ditch easement owners of record at the point crossed by the Gathering Line.

32.03.2.18 A statement which provides evidence of compliance with the following standards:

32.03.2.18.1 The Gathering Line will not have an undue adverse effect on existing and future development of the surrounding area as set forth in applicable City Master Plans.

32.03.2.18.2 The design of the proposed Gathering Line mitigates negative impacts on the surrounding area to the greatest extent feasible.

32.03.2.18.3 The disturbed area shall be maintained during construction by the Operator or property owner in
such a manner to control soil erosion, dust, and the growth of noxious weeds.

32.03.3 Site Plan for the CGF and Associated Facilities to include the following:

32.03.3.01 Proposed location of CGF and Associated Facilities on CGF property

32.03.3.02 Road access

32.03.3.03 Haul routes

32.03.3.04 Existing easements and rights-of-way

32.03.3.05 Visible improvements within 500 feet

32.03.3.06 Distances to the nearest occupied structure

32.03.3.07 Gathering Line Routes

32.03.3.08 Interim Reclamation Plan

32.03.3.09 Landscape Plan (including fencing and other criteria listed in the BMPs)

32.03.3.10 Photometric Plan

32.03.3.11 Visual Mitigation Plan

32.03.3.12 Air Quality Plan

32.03.3.13 Fugitive Dust Suppression Plan

32.03.3.14 Emergency Response Plan

32.03.3.15 Fluid Disposal Plan

32.03.3.16 PHA-HAZOP Letter- The Operator will provide a letter that the PHA-HAZOP has been completed, and the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.

32.03.3.17 Noise Management Plan
32.03.3.18 Operations Plan

32.03.3.19 Project Development Schedule

32.03.3.20 Security Plan

32.03.3.21 Traffic Letter or other analysis requested in the Pre-Application Notes & Traffic Management Plan

32.03.3.22 Wildlife Impact Mitigation Plan (if applicable)

32.03.3.23 Road Maintenance Agreement

32.03.3.24 Recorded Surface Use Agreement, if applicable

32.03.3.25 Stormwater and Erosion Control Plan (Grading, Drainage and Erosion Plan)

32.03.3.26 License Agreements, if applicable

32.03.3.27 A certified list of the names, addresses, and the corresponding Parcel Identification Numbers assigned by the County Assessor of owners of surface properties located within one hundred fifty (150) feet of the CGF and Associated Facilities. The source of such list shall be the records of the County Assessor, or an ownership update from a title, abstract company, or attorney derived from such records, or from the records of the County Clerk and Recorder. If the list was assembled from the records of the County Assessor, the Operator shall certify that such a list was assembled within thirty (30) days of the application submission date.

32.03.3.28 Evidence of Insurance

32.03.3.29 Such additional information as may be reasonably required by the City.

32.03.3.30 Fee Payment

The Operator shall be subject to an administrative fee associated with plan review and report analysis.
32.03.4 Narrative list of applicable BMPs addressed

The Operator shall include those BMPs which (A) the COGCC has the ability to respond to and resolve potential complaints regarding the BMP and (B) the COGCC has enforcement ability to which it can exercise through inspection to ensure compliance with the BMPs.
SECTION 33.00 SAFETY AND SECURITY

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SECTION 33.00 SAFETY AND SECURITY

33.01 Security Plan

33.01.1 General

A Security Plan must be included with the OGMP application to indicate how the Oil and Gas Facility will be operated and maintained free from purposeful and inadvertent interference from anyone except the Operator. The Security Plan may contain a description of fencing, cattle guards, a remote security system, warning and identification signs, and gating.

33.01.2 Security Fencing

Permanent security fencing shall be installed around the CGF and Associated Facilities and shall be secured. An internal security fence may include chain-link fence with security wire immediately surrounding the CGF and Compressor Station, with visual mitigation of the chain-link fence addressed by BMPs used in the visual mitigation plan. Gating systems shall meet City’s Roadway Specification Manual applicable at the time of the OGMP application.

33.02 Emergency Response Plan (ERP)

33.02.1 Detailed Emergency Response Plan

The Operator is required to complete a detailed Emergency Response Plan for all operations in the City of Aurora, and CGF, Gathering Lines, and Associated Facilities in accordance with the provisions of this Section, and Operator shall notify and work with Aurora Fire Rescue, Aurora Public Safety and Bennett Fire to prepare for an emergency if requested by them to do so.

33.02.2 Required Elements of the Emergency Response Plan

The Emergency Action Plan shall consist of at least the following information:

33.02.2.01 Name, address, and phone number, including twenty-four (24) hour emergency numbers for at least two (2) persons responsible for emergency field operations as well as the contact information for any subcontractor of Operator engaged for CGF, Gathering Line, and Associated Facilities emergencies.
33.02.02 An as-built CGF, Gathering Line, and Associated Facilities map, to be provided after the CGF, Gathering Line, and Associated Facilities are placed in service, in a format suitable for input into a GIS system depicting the locations and type of above-ground facilities and associated equipment for emergency response and management purposes.

33.02.03 A detailed plan for responding to emergencies that may include any or all of the following: explosions, fires, gas, oil, or water pipeline leaks or ruptures. A provision that any spill outside of the containment area that has the potential to leave the facility or to threaten waters of the state, or as required by the City-approved Emergency Response Plan, shall be reported to the City’s LGD.

33.02.04 Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.

33.02.05 A statement and detailed information indicating that the Operator has adequate personnel, supplies, and training to implement the Emergency Response Plan immediately at all times during construction and operations.

33.02.06 The Operator shall have current Safety Data Sheets (SDS) for all chemicals available upon request. The SDS shall be provided immediately upon request to City officials, a public safety officer, or a health professional as required by COGCC. The contractors of the Operator are responsible for the management of their own SDS and are to be made available upon request.

33.02.07 All “walkthroughs” or trainings associated with the Emergency Response Plan shall be coordinated with the City or Aurora Fire Rescue, upon their request.

33.02.08 Operator shall reimburse the appropriate emergency agencies for their expenses resulting from the Operator’s operations, to the extent required by Colorado Revised Statutes.

33.02.09 Operator shall provide the City with its emergency shutdown protocols and promptly notify the City of any emergency shutdowns
related to onsite upset conditions that would have an impact to any area beyond the confines of the CGF, Gathering Line, and Associated Facilities.

33.02.2.10 Operator shall use non-PFAS foam such as Novacool or equivalent if foam is necessary to respond to an accident

33.02.3 Approval of Emergency Action Plan

The City and Aurora Fire Rescue must approve the Emergency Plan before operations commence. Operator shall consult with Sable Altura Fire Rescue and/or Bennett Fire, if applicable.

33.02.4 Emergencies

In case of an emergency, the Operator will have appropriate response foam on hand, and the capacity to apply such, to respond to emergencies at the CGF, Gathering Line, and Associated Facilities. The Operator will have a tank large enough to hold the water needed for putting out a fire of the largest building at the CGF.

33.02.5 Annual Update of Emergency Action Plan

The Emergency Plan shall be filed with the City, Bennett Fire, if applicable, and Aurora Fire Rescue and updated on an annual basis or as conditions change (responsible field personnel change, ownership changes, etc.). As part of the evacuation plan, Emergency Responders will notify surrounding residents.

33.03 PHA-Hazard and Operability Study

33.03.1 PHA-HAZOP

A third party PHA-HAZOP certified facilitator shall coordinate the Hazard and Operability Study with the Operator after the permitting phase. If any of the findings by the PHA-HAZOP certified facilitator is applicable, this information will be added to the Emergency Response Plan and the Aurora Fire Rescue training. The Operator will provide a letter that the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.

33.03.1.01 The Engineer or record letter shall include the credentials of pertinent individuals that are responsible for any studies, design, and
33.04 Photometric Plan

33.04.1 A Photometric Plan must be included with the OGMP application.

33.04.2 Lighting shall be downcast and shall not shine beyond the boundaries of the CGF and Associated Facilities.

33.05 Discharge Valves

33.05.1 General

Open-ended discharge valves on all storage tanks, pipelines, and other containers within the CGF, Gathering Line, and Associated Facilities shall be secured and shall not be accessible to the general public. Open-ended discharge valves within the CGF, Gathering Line, and Associated Facilities shall be blinded and locked and where feasible placed within the interior of the secondary containment area.

33.06 Chemical Disclosure and Storage

33.06.1 General

Operator shall disclose the referenced chemicals to the Aurora Fire Rescue and Bennett Fire as part of the Emergency Response Plan pursuant to the process set forth in the ERP. Chemicals that will be disclosed include methanol, triethylene glycol, corrosion inhibitor, and other operational required chemicals used for the safe operation of CGF and Associated Facilities.

33.07 Automatic Safety Protective Systems and Surface Safety Valve

33.07.1 General

An automated safety system, governed by safety devices and a programmable logic computer, will be installed at the CGF, Gathering Line, and Associated Facilities. The automated safety system shall include the installation, monitoring, and remote control of Safety shutdown valves (SDVs), among many other engineered measures and devices that are implemented to greatly reduce or eliminate the potential for an upset condition.

33.07.1.01 The SDV will be equipped to operate remotely via the automated safety protective system, which monitors multiple flowing pressures
and rates which have predetermined maximum and/or minimum threshold values programmed and will remotely shut in the CGF, Gathering Line, and Associated Facilities should certain upset conditions be detected. Additionally, the automated safety system provides the ability to remotely shut-in the CGF, Gathering Line, and Associated Facilities on demand through Operator remote intervention. The Automatic Safety Protective System will have documented quarterly testing to ensure functionality.

33.07.1.02 Automated Safety Systems shall be maintained per OSHA PSM guidance and annually documented compliance.

33.07.1.03 Automated Process and Safety Systems shall be maintained per OSHA PSM guidance, and a Computerized Maintenance Management System implemented for compliance and auditable periodic testing.

33.08 Flammable Material
All ground within twenty-five (25) feet of any tank, or other structure containing flammable or combustible materials, shall be kept free of dry weeds, grass, rubbish or landscaping.

33.09 General Maintenance
Operator shall operate and maintain all equipment pursuant to manufacturer specifications consistent with technological limitations and reasonable and customary maintenance practices.

33.10 Miscellaneous
  33.10.1 Lightning Protection

Lightning protection mitigation measures will be considered by the Operator during the CGF and Associated Facilities design and installed per industry best practice to mitigate lightning strike events and/or consequences.

33.11 Insurance
  33.11.1 General

The Operator shall provide liability and insurance under the conditions, and in the amounts, set forth below.
33.1.2 Operator shall maintain or cause to be maintained, with insurers authorized by the state of Colorado and carrying a financial strength rating from AM. Best of no less than A- VII (or a similar rating from an equivalent recognized rating agency), at a minimum, the following types of insurance with limits no less than the amounts indicated:

33.1.2.01 Commercial General Liability insurance on an occurrence-based form including coverage for bodily injury or property damage for operations and products and completed operations with limits of not less than $1,000,000 each and every occurrence.

33.1.2.02 Automobile Liability insurance with limits of not less than $1,000,000 each and every occurrence.

33.1.2.03 Workers’ Compensation insurance- Statutory Workers’ Compensation Coverage for the employee’s normal State of employment/hire. Including Employer’s Liability insurance with limits of not less than $1,000,000 Each Accident, Disease- Each Employee, Disease - Policy Limit.

33.1.2.04 Umbrella/Excess Liability - in excess of General Liability, Employer’s Liability, and Automobile Liability with limits no less than $25,000,000 per occurrence; provided, however, that for so long as the Construction Phase is ongoing at the CGF, Gathering Line, and Associated Facilities, Operator will maintain such insurance with limits no less than $100,000,000 per occurrence.

33.1.2.05 Environmental Liability/Pollution Legal Liability insurance- with limits of not less than $5,000,000 per pollution incident, with coverage being required beginning with the date that is eight (8) years from the date of CGF, Gathering Line, and Associated Facilities construction. (the “Required Date”). Coverage must include gradual pollution events. This insurance may be on a claims-made basis; however, the retroactive date must precede the Required Date.

33.1.3 Operator shall waive and cause its insurers under the above policies to waive for the benefit of the City any right of recovery or subrogation which the insurer may
have or acquire against the City or any of its affiliates, or its or their employees, officers or directors for payments made or to be made under such policies.

33.11.4 As it pertains to the risks and liabilities assumed by Operator, Operator shall add the City and its elected and appointed officials and employees as Additional Insureds under general liability (including operations and completed operations), auto liability, and umbrella liability.

33.11.5 Operator shall ensure that each of the policies is endorsed to provide that they are primary without right of contribution from the City or any insurance or self-insurance otherwise maintained by the City, and not in excess of any insurance issued to the City.

33.11.6 Operator shall ensure that each of the policies above (excluding workers’ compensation and OCC/COW) are endorsed to state that the inclusion of more than one insured under such insurance policy shall not operate to impair the rights of one insured against another insured and that the coverage afforded by each insurance policy shall apply as though a separate policy had been issued to each insured.

33.11.7 All policies shall be endorsed such that they cannot be canceled or non-renewed without at least thirty (30) days’ advanced written notice to the Operator and the City, evidenced by return receipt via United States mail, except when such policy is being canceled for nonpayment of premium, in which case ten (10) days advance written notice is required. Language relating to cancellation requirements stating that the insurer’s notice obligation is limited to “endeavor to” is not acceptable.

33.11.8 Operator shall, prior to permit issuance, deliver Certificates of Insurance reasonably acceptable to the City confirming all required minimum insurance is in full force and effect.

33.11.9 Deductibles or retentions shall be the responsibility of Operator. Deductibles or retentions must be listed on the Certificate of Insurance required herein and are subject to the reasonable approval of the City.

33.11.10 Operator shall require any of its subcontractors to carry the types of coverage and in the minimum amounts in accordance with the requirements set out in Section 1.A, 1.B., and 1.C. Operator shall be responsible for any damage or loss suffered
by the City as a result of non-compliance by Operator or any subcontractor with this Section.

**33.11.11** In the event that Operator’s coverage lapses, is canceled, or otherwise not in force, the City reserves the right to obtain the insurance required herein and charge all costs and associated expenses to Operator, which shall become due and payable immediately.

**33.12 Risk Management**

As part of Operator’s application to the City, Operator shall provide a risk management plan, which will include the identification of potential risks, methods of risk avoidance, and controls that implement techniques to prevent accidents and losses and reduce the impact or cost after the occurrence of identified potential events.
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SECTION 34.00 PROTECTION OF WATER QUALITY

34.01 General

34.01.1 Water Sources

The City, through Aurora Water, will identify Water Sources and Critical Infrastructure located near Operator’s infrastructure, and the Water Sources and Critical Infrastructure will be noted on Operator’s Site Plans that will be provided during the review process. The Operator will then note the distance of the Water Sources and Critical Infrastructure from the edge of the CGF and Associated Facilities.

34.01.2 Water Supply

The Operator shall comply with applicable laws, rules, and regulations concerning the source(s) of water used in the construction and operations phase.

34.02 Surface Water Protection

34.02.1 Maintenance

Routine field maintenance of vehicles or mobile machinery shall not be performed within five hundred (500) feet of any Waters of the United States, as defined by the EPA. All fueling must occur over impervious material, and spills must be cleaned up and properly disposed of.

34.02.2 Wastewater and Waste Management

Operator must submit a waste management plan to the City that complies with the following:

34.02.2.01 All fluids shall be contained, and there shall be no discharge of fluids with the exception of unimpacted stormwater per federal Spill Prevention, Control, and Countermeasure Plan (SPCC) regulations.

34.02.2.02 Waste shall be stored in tanks, transported by tanker trucks and/or pipelines, and disposed of at licensed disposal or recycling sites.

34.02.2.03 A copy of the Operator’s Spill Prevention, Control, and Countermeasure Plan (SPCC) will be submitted to the City as part of the wastewater and waste management plan. The SPCC shall
meet all federal requirements associated with spill prevention and mitigation practices.

34.02.3 Stormwater Management

Operator must apply for and obtain a City stormwater and erosion control permit. Erosion and sedimentation control are required.

34.03 Groundwater Protection

34.03.1 Groundwater Pollution Mitigation.

Operator shall avoid causing degradation to surface or ground waters within the City and to wetlands within the City. If Operator is responsible for degradation to water, it will pay its proportionate share to restore water quality as close to baseline as possible.

34.03.2 Class II Underground Injection Control Wells

For operations associated with the CGF, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure.

34.04 Water During Drilling Phase

34.04.1 Water Supply

Operator will enter into a separate agreement with the City for the delivery of groundwater through a commercially exempt well in accordance with the Colorado Division of Water Resources if City water infrastructure is unavailable.

34.05 Construction of Gathering Line

34.05.1 General

The Operator shall construct a Gathering Line for the transportation of hydrocarbons and produced water to the CGF.

34.05.2 Temporary Use of Tanks
Operator shall be permitted to utilize temporary tanks during Gathering Line maintenance operations, provided Operator has obtained City approval regarding the location and required screening for temporary tanks if the maintenance or temporary tanks are present longer than a week. For maintenance operations that extend greater than seven (7) days, Operator shall give City prior notice of maintenance activities within three (3) days and planned number of temporary tanks.

34.06 Berms for Fluid Containment

34.06.1 General

The Operator shall utilize steel-rim berms around all permanent facility tankage at the CGF and Compressor Station with sufficient capacity to contain the maximum volume of the largest tank on location, plus a twenty-five (25)-year twenty-four (24)-hour rain event, plus sufficient freeboard to prevent overflow.

34.06.1.01 All berms and containment devices shall be inspected quarterly by the Operator and maintained in good condition.

34.06.1.02 No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel, or such sources are rated in accordance with industry codes and standards.

34.06.2 Permanent Berms

Permanent containment berms shall be constructed of earthen berms or steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.

34.06.3 Secondary Containment

Secondary containment shall be constructed with a synthetic or engineered liner that is mechanically connected to the steel ring to prevent leakage.

34.07 Floodways

Additional BMPs related to water preservation or protection shall be imposed by the City staff during the OGMP application process in order to mitigate risks of potential contamination to a floodway.
34.08 Drainage

34.08.1 Planning Process & Preliminary Drainage Reports The OGMP process may require the submittal of a Preliminary Drainage Report for Oil & Gas Facilities and Pumping Stations.

34.08.2 Civil Plans—Process Public Works Engineering will require a civil plan Pre-Submittal Meeting to be held. To set up a meeting, please contact the Aurora Public Works Department.

34.08.3 Civil Plans—Content and Naming Convention Operator Agreements and associated applications and checklists for Oil & Gas Facilities have been developed using the term “Storm Water Management Plans (SWMPs)” in reference to the Civil Plans for these sites. The Civil Plans for Oil & Gas Facilities include features that go beyond typical SWMPs. Drainage Reports (both Preliminary and Final) and Civil Plan submittals will be reviewed using City standards.

34.08.4 Civil Plans—Submittal Package Civil Plan submittals for Oil & Gas Facilities will be determined on a case by case basis at civil plan pre-submittal meeting and may include: Final Drainage Report, Storm Water Management Report, and an Inspection and Maintenance Plan. Any grading within an existing utility easement may require structural loading evaluation as determined at the civil plan pre-submittal meeting. The structural loading evaluation shall be submitted with the first submittal of civil plans.

34.08.5 Subsurface Utility Investigation/Loading Information For Oil & Gas Facility Civil Plans, the City of Aurora Roadway Specifications SUE note 22 (which refers to SB 18-167 and will be updated to refer to CRS 9-1.5) is a required note to be placed on the plans. In addition, Aurora Water requires any crossing of existing utilities or tie-ins to provide pre-design potholing.

34.08.6 Oil and Gas Pipeline Civil Plans—Content Civil Plans for Oil and Gas Pipelines shall include Plan & Profile sheets (P&Ps) where such pipelines cross City ROW, utility easements, floodplains, or other critical areas as determined on a case-by-case basis. The Subsurface Utility Investigations described above shall be used to provide depictions of existing utilities on those profiles. The P&Ps shall be included with the SWMP submittal

34.08.7 Drainage Easements/License Agreements For all Oil & Gas Facilities, the need for Easements and License Agreements shall be evaluated on a case-by-case
basis. If there is a need for a drainage or license agreement these documents must be executed prior to civil plan approval

34.08.8 **Oil and Gas Pipeline CAD Files and As-Builts** 3-D CAD files that include the entire pipeline shall be submitted to the City with the Signature Set of Civil Plans. In addition, the City requires as-builts for entire pipeline alignments upon construction completion, for pipelines external to pad sites. This shall be noted on the Site Plans, Civil Plans, and in Storm Water Permits.

34.08.9 **CAD Submittal Standards.** The City has developed CAD Data Submittal Standards to streamline the process of importing AutoCAD information into the city’s Enterprise GIS. A digital submission meeting the CAD Data Submittal Standards is required before the final Site Plan mylars can be routed for signatures or recorded. Please review the CAD Data Submittal Standards, including templates and required layer file labeling, at [http://tinyurl.com/AuroraCAD](http://tinyurl.com/AuroraCAD). Email your Case Manager the appropriate Site Plan and Pipeline Easement files before submitting your final Site Plan mylars. Once received, the City’s AutoCAD Operator will run an audit report and your Case Manager will let you know whether the file meets or does not meet the City’s CAD Data Submittal Standards. Please email CADGIS@auroragov.org for questions or more detailed instructions.
SECTION 35.00 PROTECTION OF AIR QUALITY

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SECTION 35.00 PROTECTION OF AIR QUALITY

The BMPs in this Section relate to the CGF and Associated Facilities only.

35.01 Air Quality Monitoring Plan

35.01.1 General

In order to minimize degradation to air quality, Operator shall eliminate, capture, or minimize all potentially harmful emissions and minimize dust associated with onsite activities and traffic on access roads. Operator shall comply with all applicable state and federal regulations, including regulations promulgated by CDPHE, COGCC, and US EPA.

35.01.2 Minimization of Emissions

To protect air quality, the following will be required:

35.01.2.01 The use of electric equipment and electric line power to operate all permanent production equipment.

35.01.2.02 Natural gas engines and turbines will be operated and maintained in accordance with the CDPHE and the US EPA regulations and emissions standards.

35.01.2.03 The use of no-bleed continuous and intermittent pneumatic devices that do not bleed natural gas to the atmosphere. 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.

35.01.2.04 Any combustion device, 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.

35.01.2.05 Year-round compliance with the odor standards pursuant to COGCC and CDPHE regulations.
35.01.2.06 Venting is prohibited unless necessary for safety. If emergency venting is required, or if accidental venting occurs, the Operator shall provide notice to the City of such event as soon as, but in no event later than twenty-four (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.

35.01.2.07 Reduction of emissions from oil and gas well maintenance activities. For planned maintenance activities involving the intentional flaring of gas, the Operator shall provide forty-eight (48) hour advance written notice to the City of such proposed flaring. Such notice shall identify the duration and nature of the flaring event, a description as to why flaring is necessary, what steps will be taken to limit the duration of flaring, and what steps the Operator proposes to undertake to minimize similar events in the future.

35.01.2.08 Telemetric control and monitoring systems to detect when pilot lights on control devices are extinguished.

35.01.2.09 Exhaust from all engines, motors, coolers, and all other equipment must be vented up and away from the nearest residences.

35.01.2.10 Operator shall participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at sites.

35.01.3 Air Monitoring and Leak Detection

35.01.3.01 Leak Detection and Repair The Operator shall develop and maintain a Leak Detection And Repair (LDAR) program as required by CDPHE using modern leak detection technologies such as infrared cameras. The Operator shall conduct quarterly IR camera monitoring or alternative instrument monitoring method of all permanent production equipment.

35.01.3.02 Except when an emergency circumstance would necessitate an immediate repair, Operator must repair leaks as quickly as practicable. If more than five (5) days repair time is needed after a leak is discovered, an explanation of why more time is required must
be submitted to the City. At least once per year, the Operator shall notify the City five (5) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

35.01.3.03 Data related to LDAR during any phase shall be made available to the City upon request.

35.01.4 Ozone Air Quality Action Days

The Operator shall respond to Ozone Air Quality Action Day advisories posted by the CDPHE for the Front Range Area by implementing their suggested air emission reduction measures as feasible. Emission reduction measures shall be implemented for the duration of an Ozone Air Quality Action Day advisory and may include measures such as:

35.01.4.01 Minimization of vehicle and engine idling.
35.01.4.02 Reducing truck traffic and worker traffic.
35.01.4.03 Delaying vehicle refueling.
35.01.4.04 Postponement of construction and maintenance activities to the maximum extent practicable.
35.01.4.05 Within thirty (30) days following the conclusion of each annual Ozone Air Quality Action Day season, Operator must submit a report to the City that details which measures it implemented during any Ozone Air Quality Action Day advisories.

35.01.5 Compliance Reports

The Operator must submit bi-annual reports to the City 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, (ii) that the equipment at the CGF and Associated Facilities 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. The bi-annual report must contain a certification as to the truth, accuracy, and completeness of the reports, signed by a
Responsible Official. The Operator will also provide the City 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 at the CGF and Associated Facilities.

35.01.6 Combustion Devices

To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:

35.01.6.01 A combustion device shall be available at the CGF and Compressor Station during operations for maintenance or emergencies only.

35.01.6.02 The combustion device must be fired with natural gas and designed to operate with a ninety-eight (98) percent or higher hydrocarbon destruction efficiency.

35.01.6.03 The combustion device must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions mean observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

35.01.6.04 The combustion device must be operated with a flame present at all times when emissions may be vented to it, or another mechanism that does not allow uncontrolled emissions.

35.01.6.05 All combustion devices must be equipped with an auto-igniter unless manned while in use.

35.01.7 Burning

No open burning except for the use of combusters or flares shall occur on the site of any oil and gas operation, as per City Code.
35.02 Odor

35.02.1 Odor Prevention

Operator will prevent odors by routing to closed-loop systems. Odor emitting from the CGF and Associated Facilities must be controlled immediately. Operator must minimize odors by proactively addressing and resolving citizen concerns within twenty-four (24) hours.

35.03 Noise Mitigation

For the CGF and compressor station, the following noise mitigation apply:

35.03.1 Operator shall comply with noise requirements set forth in the City’s zoning code for all construction activities.

35.03.2 Operator shall adhere to the City’s noise ordinance:

35.03.3 Operator may be required to provide for additional noise mitigation based on the following site-specific characteristics considering the distance from the nearest residential structure:

- 35.03.3.01 Nature and proximity of adjacent development (design, location, use)
- 35.03.3.02 Prevailing weather patterns, including wind directions
- 35.03.3.03 Type and intensity of the noise emitted
- 35.03.3.04 Vegetative cover on or adjacent to the site or topography

35.03.4 Based on the foregoing, if there is a Residential Building Unit within one thousand three hundred twenty (1,320) feet of the CGF or compressor station location, the City may require one or more of the following additional noise abatement measures or BMPs depending on the site including:

- 35.03.4.01 A Noise Management Plan specifying the hours of maximum noise and the type, frequency, and level of noise emitted, and the mitigation methods to be employed to control both A and C scale noise.
35.03.4.02 A Baseline Noise Mitigation Study shall be conducted to ascertain baseline noise levels at the CGF to demonstrate that noise is expected to be mitigated to the maximum extent practicable, and a copy will be provided to the City.

35.03.5 All noise mitigation measures shall be paid for by the Operator.

35.03.6 **Noise Mitigation Barriers** The Operator shall use a combination of berms, bales, and other measures during the construction of the CGF and Associated Facilities. During the operations of the CGF and Associated Facilities, the Operator shall use a combination of equipment enclosures, structures, or pre-engineered buildings, berms, landscaping, and other visual mitigation measures to ensure compliance with the City’s noise ordinance.

35.04 **Electric Equipment**
Operator shall use electric line power, to power permanent production equipment, such as compressors and motors, in order to mitigate noise and to reduce emissions.
## SECTION 36.00 PROTECTION OF SURFACE QUALITY

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SECTION 36.00 PROTECTION OF SURFACE QUALITY

36.01 License Agreements
Operator shall use Gathering Lines to be built in accordance with specifications set forth in Section 38 of this Oil & Gas Manual. Operator will utilize Gathering Lines once operations commence. The Operator’s obligation to build and utilize such Gathering Lines is subject to the Operator obtaining all necessary rights-of-way, crossings, licenses and easements, and the City issuing Operator the necessary Public Improvement Permits.

36.02 Fugitive Dust Suppression

36.02.1 Minimize Dust
Dust associated with on-site activities and traffic along pipeline ROW shall be minimized throughout construction and operational activities such that there are no visible dust emissions from access roads or the CGF, Gathering Line, and Associated Facilities unless infeasible given wind conditions. If dust is not suppressed, the City may require the surface to be improved to a dust-free surface.

36.02.2 Water Use
No untreated produced water or other process fluids shall be used for dust suppression.

36.02.3 Safety Data Sheets (SDS)
Safety Data Sheets (SDS) for any chemical-based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use.

36.03 Visual Mitigation

36.03.1 General
Operator shall submit a landscape and screening plan to mitigate visual impacts from the CGF and Associated Facilities for City approval during the OGMP review process.

Visual impacts from the CGF and Associated Facilities, including security fencing, shall be mitigated through a combination of equipment enclosures, structures or pre-engineered buildings, landscaping, opaque fencing, or other similar measures from the public right-of-way and critical public views. Critical public views are
defined as views from existing adjacent surface property owners as of the date of the OGMP application. Visual mitigation may be reduced or waived if written approval is provided by the adjacent surface property owners, and the City determines that the reduction or waiver is not visible from the public right-of-way or impairs critical public views.

36.03.2 Color

All permanent above-ground associated production equipment, structures, and stationary equipment on each CGF, Gathering Line, Associated Facilities shall be painted in a tan or brown matte finish unless a different color is necessary for safety per regulations.

36.04 Traffic

36.04.1 Transportation and Circulation

The Operator will submit a traffic management plan for the City to review and, if acceptable, approve that includes detailed descriptions of all proposed haul routes for equipment, pipe, and all other material to be hauled on the public and private streets and roads during pipeline and facility construction. The traffic management plan shall include the following:

36.04.1.01 Estimated weights of vehicles when loaded, a description of the vehicles, including the number of wheels and axles of such vehicles and estimated trips per day.

36.04.1.02 Detail of access locations for each CGF, Gathering Lines, and Associated Facilities, including sight distance, turning radius of vehicles, and a template indicating this is feasible.

36.04.1.03 Truck traffic volumes converted to equivalent single axle loads and compared with existing volumes. Trucks anticipated on roadways that are being accessed to equivalent single axle loads using existing volumes and proposed with extraction activities.

36.04.1.04 Truck routing map and truck turning radius templates with a listing of required improvements that are necessary at intersections along the route.
36.04.1.05 Complete traffic letter, determining operational changes and geometric modifications necessary as a result of Operator’s activities.

36.04.1.06 Identification of the need for any additional traffic lanes, which would be subject to the final approval of the City’s engineer.

36.04.1.07 Restriction of non-essential traffic to and from CGF, Gathering Lines, and Associated Facilities to periods outside of peak a.m. and p.m. traffic periods and during school hours of schools along the designated traffic routes (generally 7-9 a.m. and 3-6 p.m.).

36.04.1.08 City may request consolidated haul routes and roadway improvements, or upgrades based on the contents of the traffic management plan.

36.04.1.09 Road Repairs will be addressed as set forth in the Road Maintenance Agreement. A separate Road Maintenance Agreement shall be required for Operator.

36.05 Road Maintenance

36.05.1 Access Roads

Access points to public roads shall be located, improved, and maintained to ensure adequate capacity for efficient movement of existing and projected traffic volumes and to minimize traffic hazards.

36.05.1.01 Permanent access roads must be improved a minimum distance of two hundred (200) feet on the access road from the point of connection to a public road. All access roads shall be in conformance with the City’s Roadway Specification Manual applicable at the time of OGMP application for CGF, Gathering Lines, and Associated Facilities. The access road must be improved as a hard surface (concrete or asphalt) for the first one hundred (100) feet from the public road, unless the public road is not already a hard surface, in which case, Operator shall meet the current standards of the public road and the access road must be improved as a crushed surface (concrete or asphalt) for one hundred (100) feet past the hard surface in the appropriate depth to support the weight load.
requirements of the vehicles accessing the CGF, Gathering Line, and Associated Facilities.

36.05.1.02 A geotechnical report and pavement design will be submitted to the City for approval. If an access road intersects with a pedestrian trail or walk, the Operator must pave the access road as a hard surface (concrete or asphalt) a distance of one hundred (100) feet on 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 unless the trail or walk is not already a hard surface, in which case, Operator shall meet the current standards of the trail or walk. Temporary access roads associated with the operation must be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

36.05.1.03 For the CGF, all required roadways for the project shall be evaluated and included in a Public Improvement Plan.

36.05.1.04 Temporary access roads associated with the operation shall be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

36.05.2 Mud Tracking

In accordance with the Storm Water Management Plan, the Operator shall take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets, in excess of de minimus levels, the streets shall be cleaned within twenty-four (24) hours by the Operator. If, for some reason, this cannot be done or needs to be postponed, the City shall be notified of the Operator’s plan for mud removal.

36.05.3 Culverts

Operator shall construct all necessary culverts for road construction per any available City or County, as applicable, Drainage Plan. In the event no information is available, the Operator shall complete any necessary studies or analysis to determine the appropriate culvert size.
36.05.4  Road Repairs

Road repairs will be addressed as set forth in the Road Maintenance Agreement.

36.06  Tree Mitigation

CGF, Gathering Line, and Associated Facilities shall be constructed in a manner to minimize the removal of and damage to and replacement of existing trees in accordance with the City’s tree mitigation policy.

36.07  Cultural and Historical Resource Protection

36.07.1  General

The Operator shall comply with the City of Aurora Municipal Code, as amended, by not causing any construction, alteration, removal, or demolition of a building or feature or make any changes that would impair the historical association of the landmark building, landmark site, or historic district, pursuant to those qualities depicted in the Code, without first obtaining approval. Operator will submit the permit application and await the planning department’s approval following referral to the historic preservation commission, if applicable. If there is a discovery of historical artifacts, Operator will notify the City.

36.07.2  Protection of Natural, Historical, and Archaeological Resources

The nature and location of an Oil and Gas Midstream location or facility shall not interfere with or affect any unique natural resource, historical site or landmark, or known archaeological site.

36.08  Wildlife\WIMP

This BMP is only applicable in the event that a Facility is located in a significant wildlife habitat or high priority habitat, as defined by the State Division of Wildlife, and/or in a natural area or open space. In such a case, the Operator shall consult with the State Division of Wildlife or the City Parks, Recreation and Open Space Department to obtain recommendations for appropriate site-specific and cumulative impact mitigation procedures. If not applicable, Operator shall provide the City with a statement that it has investigated whether the Facility is located near a significant wildlife habitat and that this BMP is not applicable.
36.09 Buildings, Structures, and Associated Appurtenances
Any buildings or structures must meet the design standards contained in the Aurora Municipal Code. All site features shall be integrated into the building or site design.

36.10 Removal of Debris
All construction-related debris shall be removed from the CGF, Gathering Line, and Associated Facilities for proper disposal in a timely manner. The CGF, Gathering System, Flowlines, and Associated Facilities shall be maintained free of debris and excess materials at all times during operation. Operator shall also not stockpile debris at the CGF, Gathering Line, and Associated Facilities.

36.11 Trailers
A construction trailer(s) is permitted as an accessory use during construction only. No permanent residential trailers shall be permitted at the CGF, Gathering Line, and Associated Facilities; provided, however, that until six (6) months following the end of the construction phase on the CGF, Gathering Line, and Associated Facilities, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator’s personnel and the personnel of its subcontractors on a temporary basis.

36.12 Noxious Weed Control
The Operator shall be responsible for ongoing noxious weed control as defined under the Colorado Noxious Weed Act (C.R.S. § 35-5.5-101 et seq.) at the CGF, Associated Facilities, along access roads, and in disturbed areas under restoration as a result of related construction activities or operations per City or other applicable agency regulations.

36.13 Park and Open Space Area Setback
The CGF, Gathering Line, and Associated Facilities, shall be sited a minimum of three hundred fifty (350) feet away from existing and proposed parks and open space areas. This distance shall be measured from the perimeter of the CGF, Gathering Line, or Associated Facility. For Gathering Lines that pass within three hundred fifty (350) feet of a park or open space area, a mitigation plan which identifies measures to be taken to mitigate impacts to parks and open space areas shall be submitted to the City.
36.14 Reclamation

36.14.1 Interim Reclamation.

Operator must submit an Oil & Gas Facility Interim Reclamation Plan to the City with each OGMP.


Operator must submit a Final Oil & Gas Facility Reclamation Plan to the City concurrently with the submission of the COGCC permit to decommission any CGF, Gathering Line, or Associated Facility.

36.14.3 Decommissioning of Gathering Lines

Operator shall properly drain and decommission in accordance with City, COGCC, DOT and PHMSA rules and regulations all Gathering Lines associated with any Plugged and Abandoned Well or Wells which are plugged, abandoned, and decommissioned by oil and gas upstream affiliate Operator(s), and shall remove from service all Gathering Lines related to the plugged wells by either abandoning in place and filling with flow fill or removing the pipe subject to approval by the City.

36.15 Damages

The initial cost of installing the Gathering Line and of maintaining such easements shall be borne by the Operator. In the event that Operator relocates an access road or Gathering Line causing damage to improvements owned by the City, the Operator shall repair the damage pursuant to the appropriate permit. If Operator fails to make the necessary repairs, Operator shall promptly reimburse the City for such damage upon receipt of a reasonable itemized statement that documents the cost to repair the damage; provided that, such reimbursement shall be received by the City no later than forty-five (45) calendar days from the date of the itemized statement. Notwithstanding the foregoing, nothing in this paragraph prevents an independent developer from seeking an agreement with Operator to relocate Gathering Lines. In the event that a relocation of the Gathering Line is needed, the City and the Operator will work cooperatively to identify an alternative route and Operator shall be permitted to maintain use of the existing Gathering Line until six (6) months after City’s approval of any necessary permits for such alternative routes.
SECTION 37.00 GENERAL OIL & GAS MIDSTREAM PERMIT REQUIREMENTS

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SECTION 37.00 GENERAL OIL & GAS MIDSTREAM PERMIT REQUIREMENTS

37.01 Surface Stakeholder Notification

37.01.1 Notice of Application

When Operator submits an OGMP application to the City, the Operator shall provide a list of all property owners (names, property addresses and mailing addresses) and all registered neighborhood organizations within one mile of the CGF and Associated Facilities and the surface owners of the property upon which the CGF or Associated Facilities is located (Notified Residents). The City shall send out notices of the OGMP application to notified residents when the review process commences for the purpose of receiving public comment.

37.01.2 Resident Notification of Neighborhood Meeting

When the City begins the OGMP review process, the Operator shall send notification of a Neighborhood Meeting to all Notified Residents. The notice must include:

- Operator’s contact information
- Approximate date to begin drilling
- Information on the Neighborhood Meeting

Operator shall send proof of mailed notices to the City by affidavit or certificate of mailing.

37.01.3 Neighborhood Meeting

Upon City acceptance of the OGMP application, the Operator shall hold a meeting to facilitate engagement between the Operator and nearby residents (Neighborhood Meeting). Operator shall notify all Notified Residents of the Neighborhood Meeting. Operator shall provide notice a minimum of ten (10) days in advance of the Neighborhood Meeting.

Notified Residents may submit written comments to the City on the OGMP application, including the BMPs. The City shall transmit those comments which require an Operator response to the Operator. Operator shall respond to those comments within thirty (30) days in writing to the City. A neighborhood meeting may not be required if there are no residents within one (1) mile of the CGF or...
Associated Facilities location, no comments are received from the initial notice of the filing of OGMP Application, and the City agrees.

37.01.4 Notice of Administrative Decision

The City shall provide Operator with a form letter for Notice of Administrative Decision for a pending OGMP application. At least ten (10) calendar days prior to the scheduled decision on an OGMP application, the Operator shall send out a Notice of Administrative Decision to the Notified Residents. The Operator shall provide proof to the city of mailed notices by affidavit or certificate of mailing.

37.02 Other Notifications

37.02.1 General

All notices and other correspondence sent to the City shall be in writing and shall be delivered by: (A) certified mail with return receipt, or (B) hand delivery with signature or delivery receipt provided by a third-party courier service (such as FedEx, UPS, etc.) to the designated representative of the City as indicated below, or (C) email to the designated representative of the City as indicated below.

City of Aurora
Oil & Gas Division
15151 E. Alameda Parkway, #5900
Aurora, CO 80012

Attn: Oil & Gas Manager
Telephone: 303-739-7676
Email: jsmoore@auroragov.org

37.02.2 Notifications to the City Regarding Commencement of Construction at CGF and Pipeline Operations

Written notice to the City no less than thirty (30) days prior to the commencement of any of the following: Construction, planned maintenance, and abandonment. Operator must obtain all necessary permits prior to construction. Any notification provided by Operator to City may be used by the City for public notification. All Notifications shall be submitted to the Planning Local Government Designee
(LGD) with copies to the Public Works City Engineer and the Water Department Environmental Services Manager.

37.02.3 Routine Maintenance

Operator may perform all maintenance and operations on the CGF, Gathering Lines that the Operator deems prudent and necessary as long as in accordance with requirements set forth by easement language and state and federal requirements. Operator may perform routine maintenance of CGF, Gathering Line, and Associated Facilities without prior notification to the City.

37.02.3.01 If Operator intends to perform maintenance that may be excessively loud or performed with vehicles larger than a standard work vehicle, the City appreciates advance notification in order to best answer questions from citizens.

37.03 Incidents/Spills

37.03.1 Events or Incidents. Any COGCC reportable safety event or OSHA reportable injuries shall be reported to the City within twenty-four (24) hours. Once the applicable forms are submitted to the agency, a copy of that form will be provided to the City. In the event of a fire, explosion, or need for emergency services response, 911 shall be called.

37.03.2 Spills. Operator must notify the City of any spill of any material on permeable ground on the CGF, Gathering Line, and Associated Facilities that have a reportable spill quantity under any law. Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the CGF, Gathering Line, and Associated Facilities.

37.04 Annual Development Schedule

The Operator shall provide a summary of planned operations and an operational timeline (Development Schedule) to the City by January 31 of each year. The Operator may revise the summary and timeline from time to time provided that the Operator will keep the City informed of any revision to the Development Schedule. The Development Schedule should include a brief summary of major planned operations at all of Operator’s Oil & Gas Midstream locations and Associated Facilities within the City for the coming year, including a proposed timeline of operations, and any new permitting activities. This report is informal in nature and may be changed by the Operator at any time. The report provides guidance to the City staff for planning workflows.
37.05 Previously Installed Facilities
When an Operator purchases or acquires an interest in an Oil & Gas Midstream location or facility, the Operator must review the BMPs in effect in this Oil & Gas Manual at the time of purchase. Within ninety (90) days of purchase, the Operator must submit a written report demonstrating compliance with all BMPs or a plan to bring the Oil & Gas Midstream location or facility and all Associated Facilities into compliance.

37.06 Construction Work Hours
Operator shall only construct CGF, Gathering Line, and Associated Facilities, during hours as specified in Aurora Zoning Code unless exceptions requested by the City and approved by the City during the OGMP process.

37.07 CGF and Associated Facilities Documentation
CGF and Associated Facilities documentation will be held in accordance with OSHA Process Safety Information and continuous review per OSHA requirement.

37.08 Mechanical Integrity Program
Mechanical Integrity Program shall be developed and implemented per industry best practices.

37.09 Operations and Maintenance of the CGF Work Hours
All facilities on the CGF property shall be staffed with the appropriate number of operators to ensure the safe, and reliable operation of the CGF, Gathering Line, and Associated Facilities.

37.10 Platting Requirements
The site configuration of the parcel must comply with subdivision standards and should not limit access for adjacent unplatted properties. Cross access agreements may be necessary to ensure that other properties are not negatively impacted.
SECTION 38.00 PIPELINE CONSTRUCTION REQUIREMENTS

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SECTION 38.00 PIPELINE CONSTRUCTION REQUIREMENTS

38.01 Easements
All pipeline rights-of-way (ROW) or easements shall be located outside existing and future road ROWs based on the latest available roadway information.

38.02 License Agreements
License Agreements are required for all crossing of City ROW and City easements.

38.03 Stormwater Management
Operator must apply for and obtain a City stormwater and erosion control permit. Erosion and sedimentation control is required.

38.04 General Requirements
38.04.1 Following construction, the site shall be left in as good a condition as prior to construction, and Operator shall work with the applicable surface owner on restoration. Operator shall restore the site to a substantially similar condition as it existed prior to construction unless otherwise agreed by the City in writing.

38.04.2 All new pipelines shall have the legal description of the location recorded with the Clerk and Recorder of the City within thirty (30) days of completion of construction and provide the City GIS feature classes in the projection identified by the City.

38.04.3 Operator will submit to City all records required to be submitted to PHMSA or the PUC, including those related to inspections, pressure testing, pipeline accidents, and other safety incidents.

38.04.4 Once the non-water pipelines are no longer in use, they shall be properly abandoned in place using flow fill or similar or removed. At this time, the easement shall be released to the property owner or to the City. All pipelines, installed greater than fifty (50) years ago, shall be properly abandoned or re-certified by a third party, and the certification shall be provided to the City.

38.05 Pipeline Location Requirements
38.05.1 Operator is responsible for locating all existing and proposed utility crossings and ensure a minimum vertical separation of ten (10) feet below said crossing. If, during the crossing design, a reduced vertical separation is requested due to site-specific factors, the City Engineer can approve a crossing with as little separation as five
(5) feet. Some crossing locations may be subject to additional requirements, including enhanced stabilization.

38.05.2 All pipeline utility crossings shall be perpendicular or a minimum crossing angle sixty (60) degrees.

38.05.3 Horizontal offsets to all existing and proposed City utilities shall be a minimum of ten (10) feet edge to edge with the exception of critical infrastructure or planned critical infrastructure, then the horizontal offset shall be a minimum of thirty (30) feet. Construction equipment is not allowed on top of critical infrastructure unless additional protection, as approved by the City, is applied.

38.05.4 The pipeline shall not have an undue adverse effect on existing and future development on the surrounding area as set forth in applicable City Master Plans and mitigates negative impacts on the surrounding area to the greatest extent feasible.

38.05.5 The nature and location or expansion of the pipeline will not unreasonably interfere with any significant wildlife habitat and will not unreasonably affect any endangered wildlife species, unique natural resource, known historical landmark, or archaeological site within the affected area.

38.05.6 No adverse impact, from stormwater runoff, to the public ROWs, of water supply and/or surrounding properties will result because of the pipeline.

38.05.7 Operator shall mitigate any conflicts with any mutual irrigation ditch and/or structures used to transport water within the easement or ROW of the pipeline.

38.05.8 No pipeline shall be constructed in any zoning district until approved by the City.

38.05.9 Pipeline route shall follow quarter-sections, or existing ROW and may not traverse properties diagonally unless the diagonal distance is less than two hundred fifty (250) feet unless specified by landowner or developer, with coordination of the City. For all routes on a non-platted parcel of land that do not meet the criteria in this paragraph, the Operator shall consult the City as to an acceptable pipeline route.

38.05.10 No pipelines shall be allowed in City ROW, with the exception of ROW crossings, and the edge of the closest pipeline to ROW must be a minimum distance of thirty (30) feet. Any pipeline which is located within an easement obtained on or after the Effective Date, and within an existing and/or future ROW, shall be moved at the
expense of the Operator and/or permitted upon receipt of notice by City of its intent to improve or construct a roadway within the ROW.

38.05.11 Maximum pipeline corridor width shall be seventy-five (75) feet. Temporary construction easements are not included in maximum width.

38.05.12 Unless infeasible, all pipelines shall be sited a minimum of one hundred fifty (150) feet away from general residential, commercial, and industrial buildings, as well as the high-water mark or floodplain of any water of the United States as defined by the EPA. This distance shall be measured from the nearest edge of the pipelines. Gathering Lines that pass within one hundred fifty (150) feet of general residential, commercial, and industrial buildings or the high-water mark or floodplain of any water of the United States as defined by the EPA shall incorporate leak detection, secondary containment, or other mitigation, as appropriate. The mitigation plan for such pipelines shall be submitted to the City.

38.05.13 Floodways, creeks, ditches, and other conveyances shall be bored underneath at a depth no less than twenty (20) feet as determined by a Professional Engineer stamped geotechnical report and horizontal directional drill design.

38.06 Testing and Maintenance

38.06.1 All steps and or phases of construction shall be inspected by Operator’s third-party inspectors or the City.

38.06.2 If applicable, DOT Operational Control Center (OCC) will be used to monitor and control the DOT-regulated pipelines. Safety and pipeline systems actively monitor for rupture, leak, and flow anomalies.

SECTION 39.00-89.00 RESERVED
SECTION 90.00 INSPECTIONS

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SECTION 90.00 INSPECTIONS

90.01 General

90.01.1 Operator Monitoring

The Operator will conduct its air, groundwater, and plugged and decommissioned well monitoring programs as required by the Oil and Gas Manual.

90.01.2 Access for Inspections

Operator shall allow the City access to the Oil and Gas Location, Oil and Gas Facility, Flowlines, CGF, Gathering Lines, and Associated Facilities easements for the purpose of undertaking compliance inspections, provided the City personnel are equipped with all appropriate personal protection equipment (PPE), that such personnel comply with the Operator’s customary safety rules and are accompanied by an Operator’s representative, with the exception of Stormwater and Erosion Control Permit inspections for Facilities.

90.01.3 Notification for Inspections

Operator shall allow the City access to the Oil and Gas Location, Oil and Gas Facility, Flowlines, CGF, Gathering Lines, and Associated Facilities easements upon reasonable notice to the Operator. Reasonable notice may include notification by City staff at the Oil and Gas Location or Oil and Gas Facility.

90.02 Cost of Inspections

90.02.1 General

The Operator shall reimburse the City for inspection costs reasonably incurred to inspect the Operator’s facilities to determine compliance. The City may impose an
inspection fee on Operator. The fee will cover the City’s reasonable cost of the compliance inspection. Operator shall pay the invoiced amount within thirty (30) business days.
SECTION 91.00 ENFORCEMENT

91.01 General .............................................................................................................................................. 91-2
SECTION 91.00 ENFORCEMENT

91.01 General

The City may impose penalties for the violations of these BMPs or specifications under [Placeholder for new code: Aurora Municipal Code 135-103].

Any Operator or their employees, agents, or assigns violating any provision of this Oil & Gas Manual shall be subject to the penalties of A.M.C. Section 1-13. Each day of such unlawful operation shall constitute a separate violation.

SECTION 92.00-99.00 RESERVED
Oil & Gas Manual

We steward access to the natural resources under our authority with integrity and respect for our citizens, businesses, and the environment.

City of Aurora
Oil & Gas Division
Jeffrey S. Moore, P.G., Manager
We welcome public comments on this Draft Oil & Gas Manual. To access the Draft Oil & Gas Manual, go to AuroraGov.org/Oil&Gas.

Comments may be emailed to Oil&Gas@AuroraGov.org

Two virtual Town Hall meetings will be held on June 30 and July 16. Visit AuroraGov.org/Oil&Gas for details.
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SECTION 1.00 INTRODUCTION

1.01 Scope

This Oil & Gas Manual (OGM) sets forth the minimum acceptable criteria for permitting, designing, and constructing all locations and facilities related to oil and gas development within the City of Aurora.

Sections 1.00-7.00 set forth the criteria for Oil and Gas Locations, Oil and Gas Facilities, and Flowlines, including well pads, wells, and related infrastructure.

Sections 31.00-38.00 of this Oil & Gas Manual (OGM), set forth the minimum acceptable criteria for permitting, designing, and constructing pipelines and pipeline facilities, including Central Gathering Facilities (CGF), Gathering Lines, and Associated Facilities within the City of Aurora.

Regulations and Best Management Practices (BMPs) related to oil and gas development not specifically addressed in this document shall follow the provisions of the latest Rules and Regulations of the Colorado Oil & Gas Conservation Commission (COGCC) and the Air Quality Control Commission (AQCC).

1.02 Authority

1.02.1 State Authority

The Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101 et seq. authorizes local governments to regulate the surface impacts of oil and gas operations in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare and the environment within its jurisdiction. It also authorizes local governments to adopt reasonable regulations for surface impacts of oil and gas operations that address:

1.02.1.01 Land use

1.02.1.02 The location and siting of oil and gas facilities and oil and gas locations.

1.02.1.03 Impacts to public facilities and services.

1.02.1.04 Water quality and source, noise, vibration, odor, light, dust, air emissions, and air quality, land disturbance, reclamation procedures, cultural resources, emergency preparedness, and coordination with first responders, security, and traffic and transportation impacts.

Commented [BHFS1]: To fully capture statute, COGA recommends adding “necessary.” See § 29-20-104(h) authorizing local governments to regulate surface impacts of oil and gas development “to the extent necessary and reasonable.”
1.02.1.05 Financial securities and insurance as appropriate to ensure compliance with the regulations of the local government.

1.02.1.06 All other nuisance-type effects of oil and gas development.

1.02.1.07 Otherwise planning for and regulating the use of land to provide planned and orderly use of land and protection of the environment in a manner consistent with constitutional rights.

1.02.1.08 Inspect all facilities subject to local government regulation.

1.02.1.09 Impose fines for leaks, spills, and emissions.

1.02.1.10 Impose fees on Operators or owners to cover the reasonably foreseeable direct and indirect costs of permitting and regulation and the costs of any monitoring and inspection program necessary to address the impacts of development and to enforce local governmental requirements.

Pursuant to the Colorado Oil and Gas Conservation Act, C.R.S. § 34-60-131 local governments may adopt regulations that are more protective or stricter than state requirements.

Pursuant to the Colorado Air Pollution Prevention and Control Act (APPCA), C.R.S. § 25-7-108 local governments may enact local air pollution resolutions or ordinances that include more stringent emission control regulations than state requirements.

1.02.2 Aurora Municipal Code

[A.M.C. 135-101, 135-102, 135-103, 135-104] give authority to the Oil & Gas Manual to regulate Oil and Gas Locations, Oil and Gas Facilities, pipelines, and all other oil and gas related operations.

1.03 Revisions

Revisions to this Oil & Gas Manual may be adopted as often as needed by the City Manager or their designee. It is the responsibility of the Operator to obtain the latest revisions from the City.

1.04.03 Review and Approval

City staff will review all submittals for general compliance with this Oil & Gas Manual. However, approval by the City does not relieve the Operator from the responsibility of ensuring their

Commented [BHFS2]: See comment below. COGA does not believe it is appropriate for the City to allow for administrative legislation. Even if the City had the authority to do what it is proposing, COGA submits it would be imprudent to allow the City Manager or their designee to revise the manual without any process because process allows stakeholders to bring their views to the table and process creates better outcomes. Particularly in an area as technical and as rapidly evolving as oil and gas development should the City seek out relevant information before changing compliance requirements.

Commented [BHFS3]: COGA has serious due process concerns about the City purporting to allow for the administrative revision of manual provisions carrying the force of law. The City Manager has no authority to legislate but this provision would give the City Manager that ultra vires power. This also is contrary to Aurora’s municipal code. Article III, section 3.9 (emphasis added) of Aurora’s Code invests the council with “all legislative powers of the city.” Article VII, section 7.4 lists the City Manager’s powers but notably absent is the City Manager’s ability to legislate. Nowhere in Aurora’s Code does it allow the City Manager to legislate but that is exactly what this provision proposes. It is also contrary to statute. See § 31-16-106, C.R.S. (“No ordinance shall be adopted by any city council of any city unless the same has been previously introduced and read at a preceding regular or special meeting of such city council and published in full in the manner provided in section 31-16-105 at least ten days before its adoption.”). There is no meaningful distinction between an ordinance changing code and a revision to a manual required by code, as the latter has the practical effect of the former. Despite the recitals in 1.02, the City has not identified a source of law that allows the City Manager or their designee to revise the manual, compliance with which is required by Code.
calculations, plans, specifications, construction, and as-built drawings are correct and in compliance with this Oil & Gas Manual.

**1.051.04 Interpretation**

In the interpretation and application of the provisions of this Oil & Gas Manual, the following shall govern:

**1.05.1.04.1 Minimum Requirements**

This Oil & Gas Manual shall be regarded as the minimum requirements needed for the protection of public health, safety, welfare, and the environment.

**1.05.2.04.2 Existing Permits**

This Oil & Gas Manual shall not abrogate or annul any permit issued before its effective date, any construction plans approved before their effective date, or any site plans that have been recommended for approval by the City’s Planning and Zoning Commission before the effective date of these standards.

**1.05.3.04.3 Headings**

The descriptive headings of the sections of this Oil & Gas Manual are inserted for convenience only and shall not control or affect the meaning or construction of any regulations herein.

**1.061.05 Terms and Definitions**

Wherever in this Oil & Gas Manual the following terms, acronyms, or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

**1.06.1.05.1 Abbreviations**

- A.M.C. Aurora Municipal Code
- AMSE Association of Mechanical and Structural Engineers
- AQCC Air Quality Control Commission of Colorado
- ASTM American Society for Testing and Materials
- BMP Best Management Practice
- BTEX Benzene, Toluene, Ethylbenzene and Xylene
- CDOT Colorado Department of Transportation
- CDPHE Colorado Department of Public Health and Environment

Commented [BHFS4]: COGA recommends adding a provision to acknowledge that if an Operator Agreement or other contract differently defines a term, the definition in the contract controls.
ABUTTING shall mean two or more properties or zone lots sharing a common border or separated only by a public or private right-of-way or by public open space or body of water not more than 1,000 feet in width.

ABUTTING PROPERTY OR ZONE LOT shall mean property that shares at least part of a boundary line, not just a corner point, with the subject property or zone lot.

ACCESSORY EQUIPMENT shall mean any equipment that is integral to the production and operation of an oil or gas well, including but not limited to tanks, treaters, separators, and production pits.

ASSOCIATED FACILITIES shall mean a Compressor Station, Launcher and Receiver sites, Valve Stations, Electrical Substation, and related equipment.
BERM shall mean an earthen barrier of compacted soils preventing the passage of liquid materials or providing screening from adjacent uses as may be specified in an applicable development standard.

BURIED DEPTH shall mean the depth of cover to the top of the largest pipe, typically a minimum of forty-eight (48) inches.

CENTRAL GATHERING FACILITY (CGF) shall mean a facility or location which receives crude oil, liquid hydrocarbons, associated field gas, and produced water from production wells and central distribution points via a Gathering Lines to treat and stabilize the liquid hydrocarbon into a saleable product.

CITY shall mean the City of Aurora, Colorado, a home rule municipal corporation of the Counties of Adams, Arapahoe, and Douglas.

CITY CODE shall mean the duly adopted Aurora Municipal Code of the City of Aurora, Colorado, as amended.

COMMERCIAL EXEMPT WELL Defined by the state of Colorado Department of Natural Resources Division of Water Resources for uses of water for drinking and sanitation facilities inside a business.

COMPRESSOR STATION shall mean a facility that collects natural gas from exploration and production facilities via Gathering Lines and transports natural gas into third party systems for further processing.

CONSTRUCTION shall mean any site preparation, assembly, erection, substantial repair, alteration, or similar action.

CORROSION shall mean the deterioration of a material, usually a metal, which results from a reaction with its environment.

CRITICAL INFRASTRUCTURE shall mean all existing or planned source water pipelines, potable waterlines of sixteen-inch (16") diameter and greater, sanitary sewer pipelines of twenty-four-inch (24") diameter and greater, storm sewer pipelines (or box culverts) of thirty-six-inch (36") diameter or greater or City pump stations, lift stations, and bridges.

CRUDE OIL, see OIL.
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CUSTODY TRANSFER shall mean the transaction involving the transportation and measurement of a raw petroleum product from one Operator to another.

DISTANCE FROM AN OIL AND GAS LOCATION TO A PLATTED RESIDENTIAL SUBDIVISION, PLATTED LOT LINE CONTAINING A RESIDENTIAL BUILDING UNIT shall mean the distance from the edge of the Oil and Gas Location (not including access road) to the nearest platted residential lot line or a platted lot line that contains a Residential Building Unit.

ENGINEER shall mean a Licensed Professional Engineer (PE) in the State of Colorado.

EVENT shall mean a significant occurrence or happening. As applicable to pipeline safety, an event could be an accident, abnormal condition, incident, equipment failure, human failure, or release.

EXPRESSIONS Wherever the words “as required,” or words of like meaning are used, it shall be understood that the direction, requirements, or permission of the City’s Oil & Gas Division Manager is intended. Similarly, the words “approved,” “acceptable,” shall refer to approval by the City’s Oil & Gas Division Manager.

FLOWLINE shall mean 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. The different types of flowlines are:

Wellhead Line shall mean a flowline that transfers well production fluids from an oil or gas well to process equipment (e.g., separator, production separator, tank, heater treater), not including pre-conditioning equipment such as sand traps and line heaters, which do not materially reduce line pressure.

Production Piping shall mean a segment of pipe that transfers well production fluids from a wellhead line or production equipment to a Gathering Line or storage vessel and includes the following:
Production Line shall mean a flowline connecting a separator to a meter, LACT, or Gathering Line;

Dump Line shall mean a flowline that transfers produced water, crude oil, or condensate to a storage tank, pit, or process vessel and operates at or near atmospheric pressure at the flowline’s outlet;

Manifold Piping shall mean a flowline that transfers fluids into a piece of production facility equipment from lines that have been joined together to comingle fluids; and

Process Piping shall mean all other piping that is integral to oil and gas exploration and production related to an individual piece or a set of production facility equipment pieces.

Off-Location Flowline shall mean a flowline transferring produced fluids (crude oil, natural gas, condensate, or produced water) from an oil and gas location to a production facility, injection facility, pit, or discharge point that is not on the same oil and gas location. This definition also includes flowlines connecting to gas compressors or gas plants.

Peripheral Piping shall mean a flowline that transfers fluids such as fuel gas, lift gas, instrument gas, or power fluids between oil and gas facilities for lease use.

Produced Water Flowline shall mean a flowline on the oil and gas location used to transfer produced water for treatment, storage, discharge, injection, or reuse for oil and gas operations. A segment of pipe transferring only freshwater is not a flowline.

GAS shall mean all natural gases and all hydrocarbons not defined as oil. Examples are: natural gas, flammable gas, manufactured gas, petroleum, or other hydrocarbon gases including propane; or any mixture of gas produced, transmitted, distributed, or furnished by a utility.

GATHERING LINE shall mean a gathering pipeline or system as defined by the Colorado Public Utilities Commission, Regulation No. 4, 4 C.C.R. 723-4901, Part 4, (4 C.C.R. 723-4901) or a pipeline regulated by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration pursuant to 49 C.F.R. §§
HAZARD AND OPERABILITY ANALYSIS (HAZOP) shall mean a systematic method for evaluating hazards. It often involves the review of detailed system drawings, specifications, and operating procedures. Process hazards and potential operating problems are identified through a qualitative investigation of deviations from normal process conditions.

HORIZONTAL DIRECTIONAL BORING OR DRILLING (HDD) shall mean a method of installing underground pipelines, cables, and service conduit through trenchless methods. It involves the use of a directional drilling machine, and associated attachments, to accurately drill along the chosen bore path and back ream the required pipe.

HYDROCARBON shall mean an organic compound of hydrogen and carbon, such as any of those which are the chief components of petroleum and natural gas.

INJECTION WELL shall mean any hole drilled into the earth into which fluids are injected for purposes of secondary recovery, storage, or disposal pursuant to authorizations granted by the COGCC.

INTERNAL FLOATING ROOF TANKS shall mean a tank that has both a fixed roof and an internal floating roof. The fixed roof is usually a cone roof. The internal floating roof can be constructed of steel, aluminum, plastic, or other material. These tanks hold stabilized liquid hydrocarbon.

LEASE AUTOMATIC CUSTODY TRANSFER (LACT) shall mean a unit that measures the net volume and quality of liquid hydrocarbons. This system provides for the automatic measurement, sampling, and transfer of oil from one Operator to another.

OBSERVER shall mean the authorized representative of the Oil & Gas Division Manager assigned to observe the work.

OIL shall mean crude petroleum oil and any other hydrocarbons, regardless of gravities, that are produced at the well in liquid form by ordinary production methods, and that is not the result of condensation of gas before or after it leaves the reservoir. Oil that is extracted from the ground before it is refined into usable products, such as gasoline.
OIL AND GAS shall mean oil or gas or both oil and gas.

OIL & GAS DIVISION shall mean the Oil and Gas Division of the City of Aurora.

OIL & GAS DIVISION MANAGER shall mean the authorized representative of the City who provides overall technical coordination and monitoring of work.

OIL & GAS FACILITY shall mean equipment or improvements used or installed at an Oil and Gas Location for the exploration, production, withdrawal, gathering, treatment, or processing of crude oil, condensate, E&P waste, or gas. Any well, wellhead, flowlines, tanks, surface equipment, or associated infrastructure used in the development, production, storage, or marketing of oil, natural gas, natural gas liquids, or other hydrocarbon resources.

OIL & GAS LOCATION shall mean a definable area where an operator has disturbed or intends to disturb the land surface in order to locate an Oil and Gas Facility. An Oil and Gas Location might contain a single well, multiple wells, and/or associated infrastructure. An Oil and Gas Location is the primary component that is permitted through the Oil & Gas Permit application process.

OIL & GAS MIDSTREAM PERMIT (OGMP) shall mean a duly approved permit to construct a CGF, Gathering Line, or Associated Facilities within the City of Aurora.

OIL & GAS PERMIT (OGP) shall mean a properly approved permit to begin construction on an Oil & Gas Location within the City of Aurora.

OIL AND GAS WELL see WELL.

OPERATIONAL PHASES shall mean those phases within the life cycle of an Oil & Gas Location or Oil and Gas Facility, which best describe the type of activities happening at the Oil & Gas Location or Oil and Gas Facility during the phase. It is possible for multiple phases of operation to be occurring at the same time with respect to a single Oil & Gas Location. Chronologically, those phases are:

PERMITTING PHASE shall mean the period of time in which the project proposed by the Operator is being evaluated by the City. The Permitting Phase ends with a decision by the City and when all additional required federal, state, and local permits or approvals have been obtained.
CONSTRUCTION PHASE shall mean the conducting of civil and earth work in connection with the construction and installation of drilling pads, visual mitigation measures, access routes, pipelines, and launcher/receiver locations. The Construction Phase ends when the Oil & Gas Location or Oil and Gas Facility is fully prepared for its intended purpose.

DRILLING PHASE shall mean the period in which a drilling or spudder rig is utilized to penetrate the surface of the earth with a drill bit and the installation of well casing and cement at one or more wells. The Drilling Phase ends when the Completion Phase begins.

COMPLETION PHASE shall mean the period of hydraulic fracturing, coiling, workover, installation of tubing, and flowback of one or more wells at the Oil & Gas Location. The Completion Phase ends when the Production Phase begins.

PRODUCTION PHASE shall mean the period in which one or more wells are capable of producing hydrocarbons that flow through permanent separator facilities and into tanks or, if applicable, into a Gathering Line.

RECLAMATION PHASE shall mean the period of returning or restoring the surface of disturbed land as nearly as practicable to its condition prior to the commencement of oil and gas operations.

OPERATING PLAN shall mean a general description of an oil or gas well facility identifying purpose, use, typical staffing pattern, seasonal or periodic considerations, routine hours of operation, source of services and infrastructure, and any other information related to the regular functioning of that facility.

OPERATOR shall mean the permitted entity authorized to construct or operate an Oil & Gas Location, a Well, or an Oil & Gas Facility in the City of Aurora.

PIG shall mean a generic term signifying any independent, self-contained device, tool, or vehicle that is inserted into and moves through the interior of a pipeline for inspecting, dimensioning, or cleaning.

PIG LAUNCHER AND RECEIVER SITES shall mean a location including equipment associated with the operation and maintenance of the pipelines associated with the cleaning and inspection of the pipelines, also known as pigging.
PIPELINE & HAZARDOUS MATERIALS SAFETY ADMINISTRATION
PHMSA monitors compliance through field inspections of facilities and construction projects; programmatic inspections of Operator management systems, procedures, and processes; incident investigations; and through direct dialogue with Operator management.

(Pipeline) Maintenance shall mean the process of maintaining property or equipment, including pipelines, to preserve it and prevent it from failure and ensure that it will continue to perform its intended function.

Planning Department shall mean, unless the context clearly indicates otherwise, the Aurora Planning and Development Services Department.

Platted Residential Subdivision shall mean a subdivision that has been approved and recorded and is located in a zone that allows residential uses.

Process Safety Management (PSM) shall mean an analytical tool focused on preventing releases of any substance defined as highly hazardous by the EPA or OSHA. A “process” is defined by OSHA in the PSM standard as “any activity involving a flammable substance including any use, storage, manufacturing, handling, or the on-site movement of such chemicals, or combination of these activities.”

Produced Water Transfer System Defined by COGCC, to mean a system of off-location flowlines that transports produced water generated at more than one Oil & Gas Location or production facility.

Production Pits shall mean those pits used for initial settling, temporary storage, or disposal of produced water by permeation or evaporation after drilling and initial completion of the well.

Production Site shall mean that surface area immediately surrounding proposed or existing production pits, or other accessory equipment necessary for oil and gas production activities, exclusive of transmission and Gathering Lines.

Public Project shall mean (1) a public work or improvement within the City that is wholly owned by the City; or (2) a public work or improvement within the City where 50% or more the funding is provided by any combination of the City, the Federal Government, the State of Colorado, any regional transportation District, the Urban Drainage and Flood Control District, any regional transportation authority, any
COGA Redline

Colorado county, or any type of governmental entity, or any type of quasi-governmental entity; or (3) any public work or improvement funded and constructed within the City for the benefit of the City.

RESIDENTIAL BUILDING UNIT shall mean a 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.

RIGHT-OF-WAY shall mean an area of land dedicated to the public in fee simple title conveyed to the City for drainage, pedestrian, utility, street lighting, landscaping, roadway, or other purposes.

STATE shall mean the State of Colorado.

TANK shall mean any container used in conjunction with the production or storage of petroleum and hydrocarbon substances stored at or near atmospheric pressure.

TESTING AGENCY shall mean any individual or other person or entity which is qualified and licensed to perform the required sampling, analysis, testing, and professional recommendation service.

TREATMENT FACILITIES shall mean any plant, equipment, or other works used to treat, separate, or stabilize any substance produced from a well.

TWINNING shall mean the drilling of a well adjacent to or near an existing wellbore when the existing well cannot be drilled to the objective depth or produced due to an engineering problem such as collapsed casing or formation damage.

VALVE STATIONS shall mean a location associated with the a Gathering Line where Safety Shutdown Valves, Automated Safety Devices, and pressure monitoring devices are strategically located to isolate segments of the Gathering Line.

WATER FLOWLINE shall mean a pipe composed of a rigid material such as steel, PVC or HDPE or lay-flat pipe with the general characteristics of fire hose, which is used to transport or convey water for application to use.

WATER SOURCES shall mean all floodways, as defined by FEMA, and permanent City underground water storage facilities.
**WELL** shall mean a hole drilled into the earth for the purpose of exploring for or extracting oil, gas, or other hydrocarbon substances.

**WILDLIFE HABITAT** shall mean a specific geographic area that provides the physical and biological features needed for life and successful reproduction of plant or animal species.

### 1.07.06 Previous Agreements

Any previous Operator Agreement or other agreement, duly signed by the City Manager of the City of Aurora, or approved by the City Council, shall remain in full effect until the term of such agreement has expired, or until all Wells drilled during the term of such agreement are permanently plugged, abandoned, and removed from the Oil and Gas Location in accordance with the rules and regulations of the COGCC and reclamation has been completed pursuant to COGCC requirements, or unless otherwise terminated by law.

### 1.08.07 Best Management Practices

#### 1.08.11.07.1 General

This Oil & Gas Manual represents Best Management Practices (BMPs), which protect and minimize adverse impacts to public health, safety, welfare, and the environment. The Operator must comply with the BMPs set forth in this Oil & Gas Manual at all times.

### 1.09.08 Compliance with Other Authorities

The BMPs identified in this Oil & Gas Manual are intended to supplement and are in addition to state rules and regulations. However, Operator shall comply with applicable federal and state rules, regulations, and standards pertaining to public health, safety, welfare, and the environment. Operator shall comply with the more protective of the BMPs contained in this Oil & Gas Manual or applicable federal or state rule or regulation and/or standards.
SECTION 2.00 OIL & GAS PERMIT APPLICATION PROCESS

2.01 General/Applicability

2.01.1 Permitting of an Oil and Gas Location

The Oil & Gas Permit (OGP) application process shall apply to any Oil and Gas Location within the City of Aurora. Each Oil and Gas Location requires a separate OGP application.

2.01.2 Future Increase in Oil and Gas Location Size

An Oil and Gas Location is fixed in size and geographical extent at the time the OGP is approved. If an Operator desires to increase the size of an Oil and Gas Location or add an additional Oil and Gas Facility to the Oil and Gas Location, then the Operator must submit a new OGP application may apply for a variance. Notwithstanding the foregoing, proposed additional Oil and Gas Facilities that further minimize or mitigate adverse impacts shall be approved administratively and proposed increases in the size of an Oil and Gas Location that would increase the size by less than 15% may also be approved administratively.

2.01.3 Overview of Application Process

The OGP process is divided into two Phases. In Phase 1, the Operator submits required items to support its application for its Oil & Gas Location. The Oil & Gas Location must be reviewed by the City and approved by the Planning and Zoning Commission before the Operator can submit the remainder of its items for the OGP. This process aligns with the requirements of the COGCC.

After approval of the Oil & Gas Location by the Planning and Zoning Commission, the Operator moves to Phase 2. In Phase 2, the Operator submits the remainder of its items for the OGP. In some cases, documents and agreements (such as the Water Delivery Agreement, Road Maintenance Agreement, and License Agreements) are begun in Phase 1 and completed in Phase 2.

2.02 Application Process

The purpose of the pre-application process is for the Operator to provide a high-level overview of the proposed OGP application to the City. City staff will provide feedback to the Operator on any BMPs or issues of concern.

2.02.1 Pre-Application Meeting

2.02.1.01 Operator shall request a Pre-Application Meeting with the Office of
COGA Redline

Development Assistance prior to submitting an application for an Oil and Gas Location. Appropriate City staff (as determined in the sole
discretion of the Oil & Gas Manager) may attend. The City may waive the Pre-Application Meeting or Pre-Submittal requirement for any Oil and Gas Location.

2.02.1.02 At the Pre-Application Meeting, Operator shall present the proposed project to the City to determine the appropriate materials needed for the application.

2.02.1.03 A map and detailed description of the Oil and Gas Location must accompany the request for a Pre-Application Meeting.

2.02.1.03.02.1.04 The Manual as it exists at the time the Pre-application Meeting is requested will govern the remainder of the OGP applicant’s application.

2.02.2 Pre-Submittal Meeting
At the Pre-Submittal Meeting, the Operator shall demonstrate, prior to entering the formal OGP application process, its ability to comply with all BMPs.

2.02.2.01 Following receipt of City comments from the Pre-Application Meeting, the Operator shall request a Pre-Submittal Meeting with the City Staff to demonstrate the Operator’s ability to comply with BMPs.

2.02.2.02 At the Pre-Submittal Meeting, Operator shall request that a portal be opened to allow the application to be submitted digitally.

2.02.3 Submission of OIL & GAS LOCATION Application (Phase 1)
In Phase 1 of the OGP application process, the Operator shall apply for approval of its Oil & Gas Location. Submittal requirements are listed in Section 2.03 of this OGM.

OGP applications will be processed in the order received. Operator shall not submit more than two OGP applications per in a three week periods. If Operator has more than one OGP application that has been deemed by the City to be complete, it may provide a priority list for review of complete OGP applications. Such a request may increase the approval time needed for Operator’s other applications.

2.02.4 Pre-Acceptance Completeness Review
Upon receipt of the Operator’s OGP application, the City will initiate a Pre-Acceptance Review to determine whether the OGP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify
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any deficiencies in the OGP application *within two weeks* and will notify the Operator of its decision
in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.

2.02.5 **Acceptance of OGP Application**

If no deficiencies are identified, an invoice of the OGP application fee for Phase 1 listed in the City Code will be sent to the Operator. The OGP application fee must be paid prior to the City and outside agencies beginning review of the OGP application.

If deficiencies in the OGP application are identified, the Operator shall address the deficiencies and resubmit the OGP application. The City will review the resubmitted application and notify the Operator in writing of its completeness determination.

2.02.6 **Schedule Pre-Submittal Meetings for Phase 2**

Once the City begins review of the Oil & Gas Location application, the Operator shall schedule Phase 2 Pre-Submittal Meetings with City Departments as necessary to initiate discussions of submittal requirements for Phase 2.

2.02.7 **Phase 1-First Review**

In the First Review, the City will review the completed OGP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

2.02.8 **Neighborhood Meeting**

Operator shall host a Neighborhood Meeting to inform the public of their application.

2.02.8.01 Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location, of the time and location of the Neighborhood Meeting. Surface owners shall be notified a minimum of ten (10) days in advance.

2.02.8.02 Operator shall respond to all substantive comments related to the proposed Oil & Gas Location received at the Neighborhood Meeting in writing.

2.02.9 **Phase 1-Second Review**

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review, including Operator Responses to Neighborhood Meeting Comments. The City will provide any further questions and comments to

Commented [BHFS10]: Needs a process for Operator to question fees. The fees must be reasonable and a third-party contractor cannot be allowed to take advantage of the OGM process.

Commented [BHFS11]: Needs timeframes.

Commented [BHFS12]: Respond to the commenters or the City? Respond how? Also this needs some side boards as the Operator should not be required to respond to general comments about oil and gas development that do not related to the proposed Oil & Gas Location.

Commented [BHFS13]: Needs time frames.
the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

2.02.10 Phase 1-Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

2.02.11 Operator Response Timing

Any time the City provides written comments to an Operator submittal, the Operator shall reply in a timely manner. If comments are not received from the Operator within ninety (90) days of the City’s response, the Operator’s application will be deemed abandoned.

2.02.12 Public Hearing

Once the City is satisfied with Operator responses to its review, a Public Hearing will be scheduled at a meeting of the City of Aurora Planning and Zoning Commission. Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location of the time and location of the Public Hearing. The Planning and Zoning Commission will make a formal decision on the Oil & Gas Location. All Planning and Zoning Commission decisions are subject to call-up by City Council.

2.02.13 Approval of Oil & Gas Location

When the Planning and Zoning Commission decision and any City Council call-up is complete, Operator will be notified in writing of the decision on its Oil & Gas Location application.

2.02.14 Submission of Oil & Gas Permit (OGP) Application (Phase 2)

In Phase 2 of the OGP application process, the Operator shall submit the remainder of submittal requirements in support of its OGP application. Submittal requirements are listed in Section 2.04 of this OGM.

2.02.15 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGP Phase 2 application, the City will initiate a Pre-Acceptance Review to determine whether the OGP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify

Commented [BHFS14]: This can’t be an infinite loop. Appeal process?

Commented [Author15]: If project is called up by City Council, operator/company should be notified by the City and presented with an opportunity to discuss their project.

Commented [BHFS16]: Need timeframes.

Commented [BHFS17]: Needs time frames.
any deficiencies in the OGP application and will notify the Operator of its decision in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.

2.02.16 Phase 2-First Review

In the First Review, the City will review the completed OGP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

2.02.17 Phase 2-Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review. The City will provide any further questions and comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

2.02.18 Phase 1-Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

2.02.19 Compatibility with Approved Master Plans

The location and operations of the Oil and Gas Location shall be compatible with the approved Master Plan for the subject property.

2.02.20 Limit on Commencement of Construction

The Operator shall not move any heavy equipment or begin construction at the Oil and Gas Location based on COGCC approval until the Operator has received final approval of the OGP from the City pursuant to this Oil & Gas Manual and all applicable City permits.

2.02.21 Administrative Approval of OGP

OGP applications are approved by the Oil & Gas Division on an administrative basis. Once all questions have been answered by the Operator to the satisfaction of the City (at the sole discretion of the Oil & Gas Manager), a Letter of Administrative Decision is provided to the Aurora City Council. The City Council may elect to call-up the approved OGP for further discussion.
2.02.22 Issuance of OGP

Once any City Council call-up requirements are complete, the Oil & Gas Permit (OGP) will be issued to the Operator by the Oil & Gas Division with or without conditions. No drilling of wells or installation of any Oil and Gas Facility may begin until Operator receives the NTP.

2.02.23 Fulfillment of OGP Conditions

The Operator shall satisfy any conditions required by the OGP.

2.02.24 Notice to Proceed (NTP)

Upon satisfaction of all conditions required by the OGP, the City and Operator may execute a Water Delivery Agreement, Road Maintenance Agreement, and other agreements as necessary. Upon approval and execution of all required agreements, the City may issue a Notice to Proceed (NTP) with or without conditions. After issuance of the NTP, Operator may begin drilling activities at the Oil and Gas Location if all additional approvals from COGCC have been received. The City will promptly execute the agreements necessary for the Operator with an approved OGP to receive an NTP.

2.02.24 Time Limits

An administratively approved OGP shall be valid for a period of three (3) years from the date of approval. If the construction of the Oil and Gas Location has not begun within that period, a new OGP application must be submitted by the Operator.

2.02.25 Denial

If it is established by competent evidence that a proposed Oil and Gas Location fails to meet any of the specifications in this Oil & Gas Manual, the permit for such Oil and Gas Location may be denied.

2.03 Required Application Contents-Phase 1

An OGP application to the City shall contain the following (together, the Submittal Requirements whose components are further described in this Oil & Gas Manual):

2.03.1 Combined Letter of Introduction and Project Summary

Operator shall include:

2.03.1.01 Response to Pre-Application City comments
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2.03.1.02 A narrative list of how applicable BMPs (related to location) will be addressed.

2.03.1.03 Any requests for variance from the regulations within this OGM.

2.03.2 Site Plan which depicts the following:

A full Site Plan is not required for Phase 1, however, there must be one or more 24” x 36” sheets that detail the following:

2.03.2.01 Oil and Gas Location Layout (Drilling and Production site layout sheets; Existing Conditions sheet)

2.03.2.02 New Oil or Gas Wells

2.03.2.03 Proposed Location of Facilities

2.03.2.04 Road Access

2.03.2.05 Existing easements and rights-of-way

2.03.2.06 Mile High Flood District Streams (with names)

2.03.2.07 FEMA Flood Hazard Zones

2.03.2.08 Visible improvements within five hundred (500) feet of the Oil and Gas Location

2.03.2.09 Photometric Plan with Fixture Specifications

2.03.3 Visual Mitigation Plan

2.03.4 Vicinity/Context Map

2.03.4.01 Map must be topographic

2.03.4.02 Map must show Water Sources identified by the City

2.03.4.03 Map must indicate distances to the nearest occupied structure, municipal boundary, and subdivision boundary from wellheads and production facilities.

2.03.4.04 Neighborhood outlines and approved Master Plans

Commented [Author25]: This does not specify from where the distances are measured.
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2.03.5 Alternative Location Analysis
2.03.6 Water Supply Plan
2.03.7 Water Delivery Method (signed agreement required in Phase 2)
2.03.8 Preliminary Drainage Report (PDR)
   A Preliminary Drainage Report is required for Oil and Gas Locations. A Preliminary Drainage Letter shall not be submitted in place of a Report.
2.03.9 Groundwater Quality Monitoring Plan
2.03.10 Air Quality Plan
2.03.11 Noise Management Plan
2.03.12 Property Owner Authorizations
2.03.13 Recorded Surface Use Agreement, (if applicable)
2.03.14 Determination of License Agreements needed
2.03.15 One-mile Radius Abutters Map and List
2.03.16 Traffic Letter or other analysis requested in the Pre-Application Notes & Traffic Management Plan
2.03.17 Haul Route
2.03.18 Road Maintenance-Evidence of Initial discussion with Public Works
   Including impacts to City-owned improvements as the result of Operator construction or infrastructure relocation and including any entailed construction of drainage improvements such as culverts.
2.03.19 Wildlife Impact Mitigation Plan (if applicable)
2.03.20 COGCC Forms (if applicable)
   Submit to the City a copy of the drilling and spacing order, which confirms the Operator’s right to develop the mineral estate and confirms the ownership of the surface information. If a COGCC drilling and spacing order covers the Oil and Gas Location a copy of such order.
2.03.21 Proof of Insurance

Commented [BHFS26]: “Abutters Map?” COGA is unclear what this terminology means.

Commented [BHFS27]: New state law requires local government disposition before applying for a drilling and spacing unit. An Operator may not have this in hand. Further, drilling and spacing orders do not convey any development rights and they do not confirm ownership of surface information. Drilling and spacing orders allocate density of wells in a given amount of acreage and do not designate operatorship or provide state level authorization for drilling.

Commented [BHFS28]: This needs some flexibility. An Operator may not insure until it has the property right (the approved permit) to insure. Insurance instead can be a condition of approval.
2.03.22 Neighborhood Meeting Schedule and Results / Response to Public Comments

2.03.23 Fee Payment - Phase 1

2.04 Required Application Contents - Phase 2

2.04.1 Letter of Introduction (full)

Operator shall include:

- **2.04.1.01** Response to any conditions on the Oil & Gas Location approval

- **2.04.1.02** A narrative list of how remaining applicable BMPs will be addressed

- **2.04.1.03** Any requests for variance from the regulations within this OGM with justification.

2.04.2 Project Summary (full)

2.04.3 Site Plan which depicts the following:

- **2.04.3.01** Site Plan should reflect all submittal sheets and revisions from Phase 1

- **2.04.3.02** Oil and Gas Location Layout

- **2.04.3.03** Location of Flowlines, reasons for selection, and procedures to be employed in mitigating any adverse impacts of the proposed routes

- **2.04.3.04** New Oil or Gas Wells

- **2.04.3.05** Proposed Location of Facilities

- **2.04.3.06** Road Access

- **2.04.3.07** Existing and ultimate easements and rights-of-way

- **2.04.3.08** Mile High Flood District Streams (with names)

- **2.04.3.09** FEMA Flood Hazard Zones

- **2.04.3.10** Visible improvements within five hundred (500) feet of the Oil and Gas Location
2.04.3.11 Landscape Plan: Must include fencing and other criteria listed in the BMPs.

2.04.3.12 Interim Reclamation Plan

2.04.3.13 Building and Structure Elevations, including Placarding note as applicable

2.04.4 Operations Plan

2.04.4.01 Project Development Schedule

2.04.4.02 Security Plan

2.04.4.03 Decommissioning / Final Reclamation Plan. The Decommissioning Plan shall address how the Flowline will be properly removed from the ground.

2.04.5 Emergency Action Plan (EAP) / Emergency Response Plan (ERP) (if applicable)

2.04.6 PHA-HAZOP Letter

The Operator will provide a letter that the PHA-HAZOP has been completed, if required by OSHA, and the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.

2.04.7 Water Delivery Agreement

2.04.8 Water Use Plan consistent with CDPHE Regulation 84 (if applicable)

2.04.9 Fluid Disposal Plan

2.04.10 Road Maintenance Agreement and DOT Registration (if applicable)

2.04.11 Fugitive Dust Suppression Plan

2.04.12 License Agreements as applicable

2.04.13 Weed Control Plan

2.04.14 Storm Water Management Plan, Civil Plans, Final Drainage Report (Grading, Drainage and Erosion Plan)

Operator should contact Public Works separately for a Pre-Submittal Meeting.

Commented [BHFS29]: At the time of decommissioning, it may be unwise to remove the flowline. The flowline might be under a sensitive area for wildlife or plants, including wetlands, waters of the state or ephemeral streams, or the removal may impact the integrity of an overlying structure. Under these circumstances, the flowline can and should be abandoned safely in place. Additionally, COGA supports a catch-all provision allowing the City Manager the discretion to allow a line to remain in place when he or she deems, based on site-specific conditions, that abandoning a flowline in place will better protect human health, safety, welfare, the environment and wildlife. The OGM itself recognizes abandonment in place may be proper in section 6.15.3 below.

Commented [BHFS30]: Not all OSHA PSM requirements are applicable to exploration and production facilities.

Commented [Author31]: Should only be required if operator is using reclaimed water subject to Reg. 84
2.04.15 **Approved COGCC Form 2A** (if applicable)

2.04.16 Fee Payment - Phase 2

2.05 Variance Requests

Operator may seek a minor exception to the strict application of the BMPs by making a written Variance Request to the Oil & Gas Division. The Variance Request must include the justifiable rationale supporting the request. As part of a granted variance request, the Oil & Gas Division may require alternative mitigation measures to ensure compliance with the goals of the applicable BMPs.

2.05.1 Variance Request Process

Any request for a variance shall be processed through the Oil & Gas Division. The Oil & Gas Division shall approve, approve with conditions, or deny the variance based on consideration of the staff report, the evidence from the neighborhood meeting, and the variance’s compliance with the criteria for approval.

2.05.2 Variance Request Steps

2.05.2.01 Submission of a request by Operator

2.05.2.02 Neighborhood Meeting: Optional, unless the Oil & Gas Manager determines the variance request could have significant neighborhood impacts.

2.05.2.03 Staff Report

2.05.2.04 Conditions of Approval: In approving a variance, the Oil & Gas Division may attach any conditions necessary to ensure the variance authorized shall not constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity in which the subject property is located and will protect public health, safety, welfare, the environment.

2.05.3 Variance Request Approval Criteria

The Oil & Gas Division in approving a variance shall find:

2.05.3.01 Special physical requirements or circumstances exist which are peculiar to the land, the lot or some aspect inherent in the land, including its geology, causes the hardship and are not applicable to other lands in the same district.


**COGA Redline**

2.05.3.02 The literal interpretation of the provisions of these standards and regulations would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of these standards and regulations.

2.05.3.03 Granting of the variance requested will not confer on the applicant any special privilege denied by these standards and regulations for other land in the same zone district.

2.05.3.04 Because of physical circumstances or conditions, the property cannot reasonably be developed in conformity with the provisions of the physical requirements of these standards and regulations.

2.05.3.05 The special circumstances applicable to the property have not been created by voluntary action or negligence by any person presently having an interest in the property.

2.05.3.06 The granting of the variance will be in harmony with the general purpose and intent of the Oil & Gas Manual.

2.05.3.07 The granting of a variance from the strict application of these standards and regulations will not cause substantial detriment to the public good or impair the intent of these standards and regulations.
### SECTION 3.00 SAFETY AND SECURITY

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<td>3.13</td>
<td>Insurance</td>
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</table>
SECTION 3.00 SAFETY AND SECURITY

3.01 Security Plan

A Security Plan must be included with the OGP application to indicate how the Oil and Gas Location and associated Oil and Gas Facilities will be operated and maintained free from purposeful and inadvertent interference from anyone except the Operator. The Security Plan may contain a description of fencing, cattle guards, a remote security system, warning and identification signs, and gating.

3.02 Emergency Action Plan (EAP)

3.02.1 Detailed Emergency Action Plan

The Operator is required to complete a detailed Emergency Action Plan for all operations in the City of Aurora, and a site-specific plan for each Oil and Gas Location including all Flowlines and associated Oil and Gas Facilities in accordance with the provisions of this BMP.

3.02.2 Required Elements of the Emergency Action Plan

The Emergency Action Plan shall consist of at least the following information:

3.02.2.01 Name, address, and phone number, including twenty-four (24) hour emergency numbers for at least two (2) persons responsible for emergency field operations as well as the contact information for any subcontractor of Operator engaged for well-control or Flowline emergencies.

3.02.2.02 An as-built facilities map to be provided after the facilities are placed in service, in a format suitable for input into a GIS system depicting the location of above-ground facilities, Flowlines, and associated equipment for emergency response and management purposes.

3.02.2.03 A detailed plan for responding to emergencies that may include any or all of the following: explosions, fires, gas, oil, or water pipeline leaks or ruptures. A provision that any spill outside of the containment area that has the potential to leave the Oil and Gas Location or to threaten water, or as required by the City-approved Emergency Action Plan, shall be reported to the City’s LGD.

Commented [BHFS35]: COGA has safety concerns about submitting precise locations of flowlines unless there is assurance the City will treat this information confidentially. Disclosing very specific and detailed information regarding flowline locations could embolden individuals, developers and local governments to undertake excavation activity without consulting the 811 One-Call System. Additionally, the federal government does not disclose specific pipeline location data, recognizing that, "new threats to the nation's pipeline systems have evolved to include sabotage by environmental activists and cyber-attack or intrusion by nations." U.S. GAO Report to Congressional Requesters, GAO 19-48 (Dec. 18, 2018)).

COGA suggests the City follow COGCC Rule 1101.e.(2), which provides in relevant part that "A local government may share more specific data in person than that which the Commission makes publicly available (a 1:6,000 scale), but the information must be treated as confidential and may not be reproduced or published."
3.02.2.04 Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.

3.02.2.05 Operator shall provide the City with its emergency shutdown protocols and promptly notify the City of any emergency shutdowns related to onsite upset conditions that would have an impact to any area beyond the confines of the Oil and Gas Location.

3.02.2.06 A statement and detailed information indicating that the Operator has adequate personnel, supplies, and training to implement the Emergency Action Plan immediately at all times.

3.02.2.07 The Operator shall have current Safety Data Sheets (SDS) for all chemicals available upon request. The SDS shall be provided immediately upon request to City officials, a public safety officer, or a health professional as required by COGCC regulations. Operator’s contractors are responsible for the management of their own SDS and are to be made available upon request.

3.02.2.08 All “walkthroughs” or trainings associated with the Emergency Action Plan shall be coordinated with the City or Aurora Fire Rescue, upon their request.

3.02.2.09 Operator shall reimburse the appropriate emergency agencies for their reasonable expenses directly resulting from the Operator’s operations.

3.02.3 Notification to Aurora Fire Rescue and Aurora Public Safety

Operator shall notify and work with Aurora Fire Rescue and Aurora Public Safety to prepare for an emergency if requested by them to do so. In case of an emergency, the Operator will have appropriate response foam, and the capacity to apply such, available to respond to emergencies related to the Oil and Gas Location and Flowline.

3.02.4 Approval of Emergency Action Plan

The City and Aurora Fire Rescue must approve the Emergency Action Plan before the Drilling Phase commences. As long as all requirements of this BMP are met, the City and Aurora Fire Rescue shall not unreasonably withhold approval and shall approve the Emergency Action Plan within thirty (30) days of submittal.

Commented [Author36]: Guidance needs to be developed to account for multiple Operators within the jurisdiction with response foam resources, any company mutual aid agreements, or any existing foam inventory maintained by the Fire Department to respond to railroad, pipeline, fuel tanker, and or chemical emergencies within the City of Aurora.

It may not be necessary for every operator to have response foam or to continuously supply these resources to a Fire Department. Also, other HAZMAT industries are excluded from this requirement, which pose a greater risk to the population in the City of Aurora.

The HAZOP study of the Draft Oil and Gas Manual may be used to identify the necessary response resources, and if the study identifies the Fire Department has “appropriate” foam resources, this can be used to meet this requirement.
COGA Redline

3.02.5 Annual Update of Emergency Action Plan

The Emergency Action Plan shall be filed with the City and Aurora Fire Rescue and updated on an annual basis or as conditions change (responsible field personnel changes, ownership changes, etc.).

3.03 Emergency Response Plan (ERP)

3.03.1 Fieldwide Emergency Response Plan

When an Operator applies for a second or subsequent Oil and Gas Location permit application, they shall submit an in-depth field-wide ERP that encompasses every element required by the ERP, and a summarized site-specific ERP to cover each individual site.

3.04 PHA-Hazard and Operability Study

3.04.1 PHA-HAZOP

A third party PHA-HAZOP certified facilitator shall coordinate a Hazard and Operability Study with the cooperation of the Operator. If any of the findings by the PHA-HAZOP certified facilitator are applicable, this information will be added to the Emergency Action Plan and Aurora Fire Rescue training. The Operator will provide a letter that the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design of the applicable Oil and Gas Location.

3.04.1.01 The Engineer or record letter shall include the credentials of pertinent individuals that are responsible for any studies, design, and operational implementation, such as the “certified facilitator, Engineer of record, data analyst, design team, etc.”

3.05 Anchoring

Well equipment and all existing equipment at the Oil and Gas Location shall be anchored to the extent necessary to resist flotation, collapse, lateral movement, or subsidence in compliance with applicable Federal Emergency Management Agency (FEMA) (as administered by this City) and COGCC rules and regulations. All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.

Commented [Author37]: COGA suggests that the HAZOP and other planning documents be separate from the ERP and standalone.

COGA, after consultation with EHSR professionals, suggests that the ERP focus on response, rather than risk analysis, HAZOP, and other safety and planning documents that add unnecessary bulk to the plan.

These documents/processes are important, but we suggest they be kept more to the facility planning section of the code or elsewhere in the OGP.

Commented [Author38]: See above comment.
3.06 Photometric Plan with Fixture Specifications

3.06.1 A Photometric Plan with Fixture Specifications must be included with the OGP application.

3.06.2 Lighting shall be downcast and shall not shine beyond the boundaries of the Oil and Gas Location.

3.06.3 Nothing in this Section prevents an Operator from using ad hoc temporary portable lighting when necessary for safety reasons.

3.07 Discharge Valves

Open-ended discharge valves on all storage tanks, pipelines, and other containers within the Oil and Gas Location or Flowline shall be secured, capped, or blind-flanged and shall not be accessible to the general public. Open-ended discharge valves within the Oil and Gas Location or Flowline shall be placed within the interior of the secondary containment area.

3.08 Chemical Disclosure and Storage

3.08.1 Chemical Disclosure

All hydraulic fracturing chemicals must be disclosed to Aurora Fire Rescue as part of the Emergency Response Plan pursuant to the process set forth below before bringing such chemicals onto an Oil and Gas Location. The Operator shall make available to the City, in a table format, the name, Chemical Abstracts Service (CAS) number, and storage, containment, and disposal methods for such chemicals to be used on the Oil and Gas Location, which the City may make available to the public as public records.

3.08.2 Chemical Storage

The Operator shall not permanently store fracturing chemicals or flowback from hydraulic fracturing on an Oil and Gas Location. Operator shall remove all unused hydraulic fracturing chemicals at an Oil and Gas Location within thirty (30) days following the end of the Completion Phase at that Well.

3.08.3 Chemicals Not Permitted for Use

In addition to any substances that are not permitted to be used in accordance with state or federal rules or regulations in place from time to time, the following chemicals on Table 3-1 shall not be utilized in the hydraulic fracturing fluid at the Oil and Gas Location:
Table 3-1 Chemicals Not to be Used in Hydraulic Fracturing

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
</tr>
<tr>
<td>Lead</td>
<td>7439-92-1</td>
</tr>
<tr>
<td>Mercury</td>
<td>7439-97-6</td>
</tr>
<tr>
<td>Arsenic</td>
<td>740-38-2</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
</tr>
<tr>
<td>Xylene-f</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>1,3,5-trimethylbenzene</td>
<td>108-67-8</td>
</tr>
<tr>
<td>1,4-dioxane</td>
<td>123-91-1</td>
</tr>
<tr>
<td>1-butanol</td>
<td>71-36-3</td>
</tr>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
</tr>
<tr>
<td>N,N-dimethylformamide</td>
<td>68-12-2</td>
</tr>
<tr>
<td>2-ethylhexanol</td>
<td>104-76-7</td>
</tr>
<tr>
<td>2-mercaptoethanol</td>
<td>60-24-2</td>
</tr>
<tr>
<td>benzene, 1, 1'-oxybis-, tetrapropylene derivatives, sulfonated, sodium salts (BOTS)</td>
<td>119345-04-9</td>
</tr>
<tr>
<td>Butyl glycidyl ether</td>
<td>2426-8-6</td>
</tr>
<tr>
<td>Polysorbate 80</td>
<td>9005-65-6</td>
</tr>
<tr>
<td>quaternary ammonium compounds, dicoco alkyldimethyl, chlorides (QAC)</td>
<td>61789-77-3</td>
</tr>
<tr>
<td>bis hexamethylene triamine penta methylene phosphonic acid (BMPA)</td>
<td>35657-77-3</td>
</tr>
<tr>
<td>FD&amp;C blue no. 1</td>
<td>3844-45-9</td>
</tr>
<tr>
<td>Tetrakis(triethanolaminato) zirconium (IV)(TTZ)</td>
<td>101033-44-7</td>
</tr>
</tbody>
</table>
3.09 Automatic Safety Protective Systems and Surface Safety Valve

3.09.1 General

An automated safety system, governed by safety devices and a programmable logic computer, will be installed at the Oil and Gas Location. The automated safety system shall include the installation, monitoring, and remote control of a Surface Safety Valve (SSV), among many other engineered measures and devices that are implemented to greatly reduce or eliminate the potential for a Well event. All Wells will have an SSV installed prior to the commencement of the Production Phase connected to the production tubing at the surface. The SSV will be equipped to operate remotely via the automated safety protective system, which monitors multiple flowing pressures and rates which have predetermined maximum and/or minimum threshold values programmed and will remotely shut wells in should certain upset conditions be detected. Additionally, the automated safety system provides the ability to remotely shut-in wells on demand through Operator remote intervention. The SSV will have documented quarterly testing to ensure functionality.

3.10 Flammable Material

All ground within twenty-five (25) feet of any tank, or other structure containing flammable or combustible materials, shall be kept free of dry weeds, grass, rubbish or landscaping.

3.11 General Maintenance

Operator shall operate and maintain all equipment pursuant to manufacturer specifications consistent with technological limitations and reasonable and customary maintenance practices.

3.12 Miscellaneous

3.12.1 General

Operator shall not conduct the Drilling Phase and Completion Phase operations simultaneously at a single Oil and Gas Location.

3.12.2 Signs

Each Oil and Gas Location shall post a legible sign in a conspicuous place, which is three (3) to six (6) square feet in area. The sign shall bear the current name of the Operator, a current telephone number including area code, where the Operator may be reached at all times, name or number of the lease, and the number of the well printed thereon. The sign shall warn of safety hazards to the public and shall be

Commented [Author39]: What is the basis for requiring quarterly testing?
3.13 Insurance

3.13.1 General

The Operator shall provide liability and insurance under the conditions and in the amounts set forth below.

3.13.2 Operator shall maintain or cause to be maintained, with insurers authorized by the state of Colorado and carrying a financial strength rating from A.M. Best of no less than A- VII (or a similar rating from an equivalent recognized rating agency), at a minimum, the following types of insurance with limits no less than the amounts indicated:

3.13.2.01 Commercial General Liability insurance on an occurrence-based form including coverage for bodily injury or property damage for operations and products and completed operations, with limits of not less than $1,000,000 each and every occurrence.

3.13.2.02 Automobile Liability insurance with limits of not less than $1,000,000 each and every occurrence.

3.13.2.03 Workers’ Compensation insurance—Statutory Workers’ Compensation Coverage for the employee’s normal State of employment/hire. Including Employer’s Liability insurance—with limits of not less than $1,000,000 Each Accident, Disease—Each Employee, Disease—Policy Limit.

3.13.2.04 Control of Well/Operators Extra Expense insurance—with limits of not less than $10,000,000 covering the cost of controlling a well that is out of control or experiences a blowout, re-drilling, or restoration expenses, seepage and pollution damage resulting from an out of control well or blowout as first party recovery for the Operator and related expenses, including, but not limited to, loss of equipment and evacuation of residents.

3.13.2.05 Umbrella/Excess Liability—in excess of General Liability, Employer’s Liability, and Automobile Liability with limits no less than $25,000,000.
per occurrence; provided, however, that for so long as the Construction Phase, Drilling Phase, or Completion Phase is ongoing at the Oil and Gas Location or Flowline, Operator will maintain such insurance with limits no less than $100,000,000 per occurrence.

3.13.2.06 Environmental Liability/Pollution Legal Liability insurance—with limits of not less than $5,000,000 per pollution incident, with coverage being required beginning with the date that is eight (8) years from the date of first production from the Oil and Gas Location (the “Required Date.”) Coverage must include gradual pollution events. This insurance may be on a claims-made basis; however, the retroactive date must precede the Required Date in order to cover all Wells.

3.13.3 Operator shall waive and cause its insurers under the above policies to waive for the benefit of the City any right of recovery or subrogation which the insurer may have or acquire against the City or any of its affiliates, or its or their employees, officers or directors for payments made or to be made under such policies.

3.13.4 As it pertains to the risks and liabilities assumed by Operator, Operator shall add the City and its elected and appointed officials and employees as Additional Insureds under general liability (including operations and completed operations), auto liability, and umbrella liability.

3.13.5 Operator shall ensure that each of the policies is endorsed to provide that they are primary without right of contribution from the City or any insurance or self-insurance otherwise maintained by the City, and not in excess of any insurance issued to the City.

3.13.6 Operator shall ensure that each of the policies above (excluding workers’ compensation and OCC/COW) are endorsed to state that the inclusion of more than one insured under such insurance policy shall not operate to impair the rights of one insured against another insured and that the coverage afforded by each insurance policy shall apply as though a separate policy had been issued to each insured.

3.13.7 All policies shall be endorsed such that they cannot be canceled or non-renewed without at least thirty (30) days’ advanced written notice to the Operator and the City, evidenced by return receipt via United States mail, except when such policy is being canceled for nonpayment of premium, in which case ten (10) days advance written
notice is required. Language relating to cancellation requirements stating that the insurer’s notice obligation is limited to “endeavor to” is not acceptable.

3.13.8 Operator shall, prior to permit issuance after permit approval but before construction, deliver Certificates of Insurance reasonably acceptable to the City confirming all required minimum insurance is in full force and effect.

3.13.9 Deductibles or retentions shall be the responsibility of Operator. Deductibles or retentions must be listed on the Certificate of Insurance required herein and are subject to the reasonable approval of the City.

3.13.10 Operator shall require any of its subcontractors to carry the types of coverage and in the minimum amounts in accordance with the requirements set out in Sections 3.13.2.01, 3.13.2.02, and 3.13.2.03. Operator shall be responsible for any damage or loss suffered by the City as a result of non-compliance by Operator or any subcontractor with this section.

3.13.11 In the event that Operator’s coverage lapses, is canceled, or otherwise not in force, the City reserves the right to obtain the insurance required herein and charge all costs and associated expenses to Operator, which shall become due and payable immediately.

Commented [BHFS43]: The policies contemplated by this draft OGM are expensive and difficult if not at time imposable to obtain. The City should not require the operator to have insurance until the Operator is certain it will have the property right (the approved permit) to insure.

Commented [BHFS44]: Grace period is needed.

The city of Aurora should not purchase insurance on behalf of operators. Further, if operator’s previous insurance is renewed, and less than the insurance that Aurora purchased, is the City able/willing to reimburse the operator for the undue expense?
SECTION 4.00 PROTECTION OF WATER QUALITY

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SECTION 4.00 PROTECTION OF WATER QUALITY

4.01 General

4.01.1 Water Sources

The City, through Aurora Water, will identify Water Sources and water infrastructure to be depicted by Operator on its Site Plan for an Oil and Gas Location to be submitted with the OGP application.

4.01.2 Water Supply

The Operator shall comply with applicable laws, rules, and regulations concerning the source(s) of water used in the Drilling Phase, Completion Phase, and Production Phase.

4.02 Surface Water Protection

4.02.1 Maintenance

Routine field maintenance of vehicles or mobile machinery shall not be performed within five hundred (500) feet of any navigable waters of the United States. All fueling must occur over impervious material.

4.02.2 Wastewater and Waste Management

Operator must submit a waste management plan to the City that complies with the following:

4.02.2.01 All fluids shall be contained, and there shall be no discharge of fluids with the exception of unimpacted stormwater per federal Spill Prevention, Control, and Countermeasure Plan (SPCC) regulations.

4.02.2.02 Flowback and produced water shall be transported by pipeline once constructed and available. If a pipeline is unavailable, flowback and produced water must be stored in tanks and transported by tanker trucks. All flowback and produced water must be disposed of at a licensed disposal site or recycled for use on-site.

4.02.2.03 No land treatment of oil-impacted or contaminated drill cuttings is permitted. Disposal of oil-impacted or contaminated drill cuttings shall be disposed of at licensed disposal or recycling sites.
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4.02.2.04 A copy of the Operator’s Spill Prevention, Control, and Countermeasure Plan (SPCC) will be submitted to the City as part of the wastewater and waste management plan.

4.02.2.05 The Operator shall not dispose of any wastewater within the City.

4.02.3 **Stormwater Management**

Operator must apply for and receive a City stormwater quality discharge permit for each Oil and Gas Location in accordance with the City of Aurora’s Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities. Erosion and sedimentation control are required for each Oil and Gas Location. Operator must inspect and maintain stormwater facilities and control devices to ensure compliance with BMPs annually as well as after storm events.

4.02.4 **Setbacks**

4.02.4.01 **Setbacks from buried infrastructure.** Operator shall locate the Oil and Gas Location a minimum of three hundred fifty (350) feet from City buried infrastructure (Critical Infrastructure).

4.02.4.02 **Setbacks from floodways.** Operator shall locate the Oil and Gas Location a minimum of five hundred (500) feet from floodways (as defined by FEMA).

4.02.4.03 **Setbacks from reservoirs.** Operator shall locate the Oil and Gas Location a minimum of one (1) mile from all existing or planned reservoir sites.

4.03 **Groundwater Protection**

4.03.1 **Water Quality Monitoring Plan.**

The Operator shall implement a water quality and well testing plan. Operator will submit water quality monitoring reports to the City. Operator shall avoid causing degradation to surface or ground waters within the City and to wetlands within the City.
4.03.2 Baseline Sampling

Using records of the Colorado Division of Water Resources, Operator must implement a water quality monitoring and well testing plan that includes the following:

4.03.2.01 Operator must obtain initial baseline samples from all available domestic water sources within a one-half (1/2) mile distance from the edge of the Oil and Gas Location. Operator shall also drill one (1) down-gradient monitoring well (Operator Drilled Monitoring Well) on that Oil and Gas Location to sufficiently test the domestic water supply for the City groundwater source in each aquifer (Alluvial, Dawson, Denver, Laramie-Fox, and Arapahoe).

4.03.2.02 Operator must collect initial testing of baseline samples from available water sources, including on-site Operator Drilled Monitoring Well prior to the commencement of the Drilling Phase at an Oil and Gas Location, or prior to the re-stimulation of an existing Well for which no samples were collected and tested during the previous twelve (12) months.

4.03.2.03 Post-Completion Phase samples of available domestic water sources shall be collected to test the domestic water supply for the City groundwater source in each aquifer (Alluvial, Dawson, Denver, Laramie-Fox, and Arapahoe). The Operator Drilled Monitoring Well at the Oil and Gas Location will be tested annually for the Denver Basin Aquifers and quarterly for the alluvial aquifer for the duration of the Oil and Gas Location. The representative water source locations will be mutually agreed upon by the City and the Operator.

4.03.2.04 Operator may rely on existing groundwater sampling data from any water source within the radii described above that was collected in accordance with accepted City standards, provided the data was collected within the twelve (12) months preceding the commencement of Drilling Phase for such Oil and Gas Location, the data includes measurement of all of the constituents measured in Tables 4-1 through 4-6 below, 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 the Drilling Phase for such Oil and Gas Location.
4.03.2.05  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 of the water source, the Operator must advise the City that Operator could not obtain access to the water source from the surface owner. Operator shall drill one (1) Operator Drilled Monitoring Well regardless of the existence of water sources available within a one-half (1/2) mile distance from the edge of the Oil and Gas Location.

4.03.2.06  Baseline water quality testing will be conducted for the analytes listed in Tables 4-1 through 4-6 below. Subsequent water quality testing will be conducted for the analytes in Table 4-7, annually for the Denver Basin Aquifers and quarterly for the alluvial aquifer.

4.03.2.07  Operator must follow standard industry procedures in collecting samples, consistent with the current version of the COGCC Model Sampling and Analysis Plan.

4.03.2.08  Operator must report the location of the water source using a GPS with sub-meter resolution.

4.03.2.09  Operator must report results of field observations, including reporting on damaged or unsanitary well conditions, adjacent potential pollution sources, odor, water color, sediment, bubbles, and effervescence.

4.03.2.10  Operator must provide copies of all test results described above to the City, the COGCC, and the water source owners within thirty (30) days after receiving the lab analytical.

4.03.2.11  If sampling shows the degradation of water quality, additional measures may be required, including:

   4.03.2.11.1  If free gas or a dissolved methane concentration level higher than one (1) 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).

   4.03.2.11.2  If the test results indicate thermogenic or a mixture of thermogenic and biogenic gas, an action plan to determine the source of the gas.
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4.03.2.11.3 Immediate notification to the City, the COGCC, and the owner of the water source if the methane concentration increases by more than five (5) mg/l between sampling periods, or increases to more than ten (10) mg/l.

4.03.2.11.4 Immediate notification to the City, the COGCC, 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.

4.03.2.11.5 Further water well sampling in response to credible complaints from water source owners.

4.03.2.11.6 Timely production and distribution of test results in electronic deliverable format to the City, the COGCC, and the water source owners.

4.03.2.11.7 All water source testing must be conducted by the Operator or, if requested by a surface owner, by a qualified independent professional consultant.

4.03.2.11.8 If Operator identifies degradation to water quality from the baseline testing as a result of its oil and gas development, Operator will be responsible to mitigate the degradation of water quality to the baseline levels.

4.03.2.11.9 If applicable, Operator will submit a CDPHE Regulation 84 water use plan as described in section 84.11 sections B, D, and F.

Table 4-1 Inorganic Chemicals

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
</tr>
<tr>
<td>Arsenic</td>
</tr>
<tr>
<td>Asbestos</td>
</tr>
<tr>
<td>Barium</td>
</tr>
<tr>
<td>Beryllium</td>
</tr>
<tr>
<td>Cadmium</td>
</tr>
<tr>
<td>Chromium</td>
</tr>
<tr>
<td>Cyanide (as free Cyanide)</td>
</tr>
<tr>
<td>Fluoride</td>
</tr>
</tbody>
</table>
**Table 4-2 Volatile Organic Compounds (VOCs)**

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane</td>
</tr>
<tr>
<td>BTEX as Benzene, Toluene, Ethylbenzene and Xylenes</td>
</tr>
<tr>
<td>Total Petroleum Hydrocarbons (TPH)</td>
</tr>
<tr>
<td>Vinyl chloride</td>
</tr>
<tr>
<td>Benzene</td>
</tr>
<tr>
<td>Carbon tetrachloride</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
</tr>
<tr>
<td>Trichloroethylene</td>
</tr>
<tr>
<td>Para-Dichlorobenzene</td>
</tr>
<tr>
<td>1,1-Dichloroethylene</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane</td>
</tr>
<tr>
<td>cis-1,2 Dichloroethylene</td>
</tr>
<tr>
<td>1,2-Dichloropropane</td>
</tr>
<tr>
<td>Ethylbenzene</td>
</tr>
<tr>
<td>Monochlorobenzene</td>
</tr>
<tr>
<td>α-Dichlorobenzene</td>
</tr>
<tr>
<td>Styrene</td>
</tr>
<tr>
<td>Tetrachloroethylene</td>
</tr>
<tr>
<td>Toluene</td>
</tr>
<tr>
<td>Trans-1,2 Dichloroethylene</td>
</tr>
<tr>
<td>Xylenes (total)</td>
</tr>
<tr>
<td>Dichloromethane(methylene chloride)</td>
</tr>
<tr>
<td>1,2,4-Trichlorobenzene</td>
</tr>
<tr>
<td>1,1,2-Trichloroethane</td>
</tr>
</tbody>
</table>

**Table 4-3 Synthetic Organic Compounds (SOCs)**

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alachlor</td>
</tr>
<tr>
<td>Aldicarb1</td>
</tr>
<tr>
<td>Aldicarb sulfoxide</td>
</tr>
<tr>
<td>Aldicarb sulfone</td>
</tr>
<tr>
<td>Atrazine</td>
</tr>
<tr>
<td>Contaminant:</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Combined radium-226 and radium-228</td>
</tr>
<tr>
<td>Gross alpha particle activity (including radium-226 but, excluding radon and uranium)</td>
</tr>
<tr>
<td>Beta particle and photon radioactivity</td>
</tr>
<tr>
<td>Uranium</td>
</tr>
</tbody>
</table>
Table 4-5 Secondary Maximum Contaminant Levels

<table>
<thead>
<tr>
<th>Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
</tr>
<tr>
<td>Chloride</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Copper</td>
</tr>
<tr>
<td>Corrosivity</td>
</tr>
<tr>
<td>Fluoride</td>
</tr>
<tr>
<td>Foaming agents (surfactants)</td>
</tr>
<tr>
<td>Iron</td>
</tr>
<tr>
<td>Manganese</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Silver</td>
</tr>
<tr>
<td>Sulfate</td>
</tr>
<tr>
<td>Total dissolved solids (TDS)</td>
</tr>
<tr>
<td>Zinc</td>
</tr>
</tbody>
</table>

Table 4-6 Other Parameters

<table>
<thead>
<tr>
<th>GENERAL WATER QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity, Conductivity &amp; TDS, pH, Dissolved Organic Carbon (or Total Organic Carbon), Bacteria, and Hydrogen Sulfide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAJOR IONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromide, Magnesium, Potassium, Sodium, and Nitrate + Nitrite as N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>METALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron, Lead, Selenium, Strontium,</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISSOLVED GASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane, Ethane,</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Level, Stable isotopes of water (Oxygen, Hydrogen, Carbon), Phosphorus</td>
</tr>
</tbody>
</table>
COGA Redline

Table 4-7 General Sampling Parameters

<table>
<thead>
<tr>
<th>GENERAL WATER QUALITY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity, Conductivity &amp; Total Dissolved Solids (TDS),</td>
<td>pH, Dissolved Organic Carbon (or Total Organic Carbon), Bacteria,</td>
</tr>
<tr>
<td></td>
<td>and Hydrogen Sulfide</td>
</tr>
<tr>
<td>MAJOR IONS</td>
<td>Bromide, Chloride, Fluoride, Magnesium, Potassium, Sodium, Sulfate,</td>
</tr>
<tr>
<td></td>
<td>and Nitrate + Nitrite as N</td>
</tr>
<tr>
<td>METALS</td>
<td>Arsenic, Barium, Boron, Chromium, Copper, Iron, Lead, Manganese,</td>
</tr>
<tr>
<td></td>
<td>Selenium, Strontium, Mercury, Uranium, and Radium</td>
</tr>
<tr>
<td>DISSOLVED GASES and VOLATILE ORGANIC COMPOUNDS</td>
<td>Methane, Ethane, Propane, BTEX as Benzene, Toluene, Ethylbenzene</td>
</tr>
<tr>
<td></td>
<td>and Xylenes, Total Petroleum Hydrocarbons (TPH)</td>
</tr>
<tr>
<td>OTHER</td>
<td>Water Level, Stable isotopes of water (Oxygen, Hydrogen, Carbon),</td>
</tr>
<tr>
<td></td>
<td>Phosphorus</td>
</tr>
</tbody>
</table>

4.03.3 Class II Underground Injection Control Wells

For operations associated with any Oil and Gas Location, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure.

4.03.4 Wellbore Integrity and Aquifer Protection

Operator shall follow all COGCC regulations regarding wellbore integrity and aquifer protection.

4.04 Water During Drilling Phase

4.04.1 Closed-Loop Pitless Systems for the Containment and/or Recycling of Drilling Fluids

Wells shall be drilled, completed, and operated using closed-loop pitless systems for containment and/or reuse of all drilling, completion, flowback, and produced fluids. Operator shall reuse fluids unless technically infeasible or economically practicable. All aboveground storage,
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including temporary tanks and separators, for use during drilling, completion, flowback, and other produced fluids shall have secondary containment.

4.05 Use and Transportation of Water and Hydrocarbons During Completion and Production Phases

4.05.1 Pipeline Construction Timeframe

Pipelines servicing a particular Oil and Gas Location must be constructed before the Production Phase commences at such Oil and Gas Location.

4.05.2 Separate Use of Pipelines

Operator shall use separate pipelines for the transportation of raw water to and from the Oil and Gas Location, and the transportation of hydrocarbons and produced water from the Oil and Gas Location.

During the Completion Phase, the Operator will use flowlines and pipelines for flowback unless technically infeasible. All raw water related to completion activities shall be transported to the Oil and Gas Location by pipeline.

4.05.3 Temporary Use of Tanks

Operator shall be permitted to utilize temporary tanks during the Drilling and Completion Phases, and during maintenance operations of the Oil and Gas Location or Flowline, provided Operator has provided proper notice regarding location, and required screening for temporary tanks if the maintenance or temporary tanks are present longer than a week.

For maintenance operations that are expected to extend greater than seven days, Operator shall give the City’s Oil and Gas Manager or designee prior notice of maintenance activities within three days of commencing the maintenance operations and the planned number of temporary tanks.

Operator may use temporary tanks for up to one month for an Oil and Gas Location during any single maintenance operation without the need for adding appropriate temporary visual screening (e.g., hay bales).

4.05.6 Water for Landscape Irrigation

All water use at the Oil and Gas Location shall be pursuant to A.M.C. 138 et seq.
4.06 Berms for Fluid Containment

4.06.1 Berm Design

The Operator shall utilize steel-rim berms at the Oil and Gas Location with sufficient capacity to contain one and one-half (1.5) times the maximum volume of the largest tank on the location that such Oil and Gas Location will contain at any given time plus sufficient freeboard to prevent overflow around all permanent facility equipment. All berms and containment devices shall be inspected quarterly by the Operator and maintained in good condition. No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel, or such sources are rated in accordance with industry codes and standards. Secondary containment such as duck ponds or lined earthen berms for temporary tanks may also be used.

4.06.2 Permanent Berms

Permanent containment berms shall be constructed of steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.

4.06.3 Secondary Containment

Secondary containment for tanks shall be constructed with a synthetic or engineered liner that contains all primary containment vessels and is mechanically connected to the steel ring to prevent leakage.

4.06.4 Locations Near Surface Water

For locations within five hundred (500) feet and up-gradient of a surface water body or flood plain, tertiary containment, such as an earthen berm, is required around production facilities.

4.07 Flowlines

4.07.1 General

The Operator shall construct a Flowline in accordance with specifications set forth in Section 38 of this Oil & Gas Manual for the transportation of hydrocarbons and produced water. Operator shall comply with the requirements for Flowlines set forth in COGCC regulations. All new Flowlines shall have the legal description of the location recorded with the Clerk and Recorder of the applicable county within thirty
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(30) days of completion of their construction. **Operator shall provide as-built GIS locations and maps of all Off-Location flowlines.**

4.07.2 Flowline Construction

4.07.2.01 The pipeline buried depth should be a minimum of forty eight (48) inches for all pipes outside of the City ROW. All pipes within the arterial City ROWs shall be a minimum of twenty (20) feet depth. All pipes within all other City ROWs shall be a minimum of fifteen (15) feet depth. All pipelines installed beneath public ROW shall be bored unless otherwise approved by the City Engineer.

4.07.2.02 Operator will conduct an x-ray or other non-destructive examination on all welds and conduct surveys and logging for every girth weld in place.

4.07.2.03 Operator will utilize jeeping (holiday detector) as well as visual inspection of the coating. Once a jeep (damage) is detected, pipe coating shall be repaired and re-jeeped until the damage is repaired and does not cause a jeep or detection.

4.07.3 Flowline Safety

4.07.3.01 On all Flowlines regulated by the COGCC leak protection and detection shall be provided through differential metering to meet zero tolerance levels for migration of product from the pipe envelope. Operator to conduct additional leak detection through aerial surveys at least two (2) times per year.

4.07.3.02 On all Flowlines regulated by the COGCC Operator shall hydrostatic test to 1.25 times the Maximum Operating Pressure for four (4) hours for exposed pipe and eight (8) hours for buried pipe.

4.07.3.03 On all Flowlines regulated by the COGCC Operator shall utilize automated systems for overpressure protection & low pressure detection that shut-in the pipe in order for Operator to investigate.

4.07.4 Flowline Maintenance

4.07.3.03 Operator shall conduct quarterly pigging on the pipelines.

Commented [Author47]: Operators already have to register off-locations flowlines with the COGCC via Form 44. If City still requires as-builts, data must be kept confidential and not able to be shared to with the general public. See comments above.

Commented [Author48]: Depth requirement is excessive and unnecessary. Such depths also pose safety and maintenance issues. What is the City’s justification for such a depth? Does this apply to on and off-locations flowlines? Further, are utilities held to the same standard?

Commented [Author49]: What is the concern that Aurora has to require quarterly pigging? Does this require all types of pipelines to be pigged? This is unnecessary and unreasonable, particularly given the other flowline integrity rules required by the City and state.
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4.08 Floodways
Additional BMPs related to water preservation or protection may be imposed by the City staff during the OGP application process in order to mitigate risks of potential contamination to a floodway.

4.09 Drainage

4.09.1 Planning Process & Preliminary Drainage Reports The OGP process requires the submittal of a Preliminary Drainage Report for the Oil and Gas Location and Pumping Stations. Preliminary Drainage Letters in place of Report will not be permitted.

4.09.2 Civil Plans—Process Public Works Engineering will require a civil plan Pre-Submittal Meeting to be held. To set up a meeting, please contact Chris Eravelly at 303-739-7457.

4.09.3 Civil Plans—Content and Naming Convention Operator Agreements and associated applications and checklists for Oil and Gas Locations have been developed using the term “Storm Water Management Plans (SWMPs)” in reference to the Civil Plans for these sites. The Civil Plans for Oil and Gas Locations include features that go beyond typical SWMPs. Drainage Reports (both Preliminary and Final) and Civil Plan submittals will be reviewed using City standards.

4.09.4 Civil Plans—Submittal Package Civil Plan submittals for an Oil and Gas Location shall include the Final Drainage Report, Storm Water Management Report, and an Inspection and Maintenance Plan as outlined at the civil pre-submittal meeting. Any grading within an existing utility easement may require structural loading evaluation as determined at the civil plan pre-submittal meeting. The structural loading evaluation shall be submitted with the first submittal of civil plans.

4.09.5 Hydrologic Analyses for Drainage Reports The City’s Storm Drainage Design and Technical Criteria Manual along with Mile High Flood District Urban Storm Drainage Criteria Manual shall be used to develop the hydrology for Oil and Gas Locations. For Oil and Gas Locations, 100-year precipitation depths shall be used for major storm event analyses. The entire tributary area, including the Oil and Gas Location, draining to Water Quality/Full Spectrum (EURV)/Detention BMPs shall be used to size those BMPs. Gravel surfaced pads shall use imperviousness (40%) and runoff coefficients consistent with the City’s SDDTC Table 1.
4.09.6 **Hydraulic Analyses—Conveyances/Detention/WQ** For Oil and Gas Locations, WQ/EURV/Detention BMPs will be sized and designed in accordance with the standard requirements of the City SDDTC (e.g., Extended Detention Basins). Storm Water Detention and Infiltration (SDI) Data Sheets shall be uploaded to the State website prior to civil plan approval. Culverts, Open Channels, and Grass-Lined Swales shall satisfy the standard requirements of the City SDDTC.

4.09.7 **Subsurface Utility Investigation/Loading Information** For Oil and Gas Location Civil Plans, the City of Aurora Roadway Specifications SUE note 22 (which refers to SB 18-167 and will be updated to refer to CRS 9-1.5) is a required note to be placed on the plans. In addition, Aurora Water requires any crossing of existing utilities or tie-ins to provide pre-design potholing.

4.09.8 **Drainage Easements/License Agreements** For all Oil and Gas Locations, the need for Easements and License Agreements shall be evaluated on a case-by-case basis. For Oil and Gas Locations where the lease agreement with the property owner includes provisions for removing WQ/Detention BMPs, the I&M Plan for such BMP will negate the need for a Drainage Easement or License Agreement for that BMP. If there is a need for a drainage or license agreement, these documents must be executed prior to civil plan approval.
SECTION 5.00 PROTECTION OF AIR QUALITY

5.01 Air Quality Monitoring Plan.................................................................5-2
5.02 Odor.....................................................................................................5-7
5.03 Fugitive Dust Suppression ....................................................................5-7
5.04 Noise....................................................................................................5-8
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5.06 Reduced Emission Completions ............................................................5-10
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SECTION 5.00 PROTECTION OF AIR QUALITY

5.01 Air Quality Monitoring Plan

5.01.1 General

In order to minimize degradation to air quality, Operator shall avoid or minimize and mitigate all potentially harmful emissions and odors, and avoid, minimize or mitigate dust associated with onsite activities and traffic on access roads.

5.01.2 Minimization of Emissions

To protect air quality, the following will be required:

5.01.2.01 The use of electric equipment and electric line power to operate all permanent production equipment.

5.01.2.02 The use of no-bleed continuous and intermittent pneumatic devices that do not bleed natural gas to the atmosphere. 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.

5.01.2.03 Any combustion device, auto ignition system, recorder, vapor recovery device or other equipment used to meet the hydrocarbon destruction or control efficiency used to meet the relevant BMP shall be installed, calibrated, operated, and maintained in accordance with the manufacturer’s recommendations, instructions, and operating manuals.

5.01.2.04 Year-round compliance with the odor standards pursuant to COGCC and CDPHE regulations.

5.01.2.05 Venting is prohibited unless necessary for safety. If emergency venting is required, or if accidental venting occurs, the Operator shall provide notice to the City of such event as soon as, but in no event later than twenty-four (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.

5.01.2.06 Reduction of emissions from oil and gas well maintenance activities. For planned maintenance activities involving the intentional flaring of gas, the Operator shall provide forty-eight (48) hour advance written
notice to the City of such proposed flaring. Such notice shall identify
the duration and nature of the flaring event, a description as to why
flaring is necessary, what steps will be taken to limit the duration of
flaring, and what steps the Operator proposes to undertake to minimize
similar events in the future.

5.01.2.07 Telemetric control and monitoring systems to detect when pilot lights
on control devices are extinguished.

5.01.2.08 Exhaust from all engines, motors, coolers, and all other equipment must
be vented up and away from the nearest residences.

5.01.2.09 Operator shall participate in Natural Gas STAR program or other
voluntary programs to encourage innovation in pollution control at the
Oil and Gas Location.

5.01.3 Air Monitoring and Leak Detection for Facilities Without Permanent
Tanks

5.01.3.01 Pre-Construction or Pre-Drilling Baseline Air Quality
Testing. Operator shall conduct air sampling for a period of five (5)
days prior to any construction activities for any new Oil and Gas
Location or prior to drilling additional wells on any Oil and Gas
Location already constructed. Operator shall conduct baseline sampling
using a continuous monitoring system that detects hydrocarbons.
Operator shall conduct baseline sampling at least thirty (30) days in
advance of any construction activities at the Oil and Gas Location.
Results of the baseline air sampling must be received prior to the
issuance of the final OGP.

5.01.3.02 Continuous Air Monitoring. During Drilling and Completion
Phases, the Operator shall conduct continuous air monitoring capable of
detecting total hydrocarbons.

5.01.3.02 Periodic Air Sampling. During all Operational Phases, the Operator
shall have the ability to deploy and collect air samples for speciated
hydrocarbon analysis when monitoring indicates elevated levels of
hydrocarbons, or at the request of the City.
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5.01.3.03 Data related to air monitoring or sampling during any phase shall be made available to the City upon request.

5.01.3.04 **Leak Detection and Repair.** During the Production Phase, the Operator shall develop and maintain a Leak Detection And Repair (LDAR) program as required by CDPHE using modern leak detection technologies such as infra-red (IR) cameras for equipment used on the Oil and Gas Location.

5.01.3.05 For the first five (5) years of the Production Phase at an Oil and Gas Location, the Operator shall conduct at least semi-annual inspections of all equipment at the Oil and Gas Location; more frequent inspections may be required based on the nature and location of the facility and as required by state rules. At least once per year, the Operator shall notify the City five (5) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

5.01.3.07 **Records** The Operator will maintain records of all leaks found, the date the leaks were repaired, and the date the location is re-screened to verify that the leak has been repaired. Such records must be maintained for five (5) years and must be made available to the City upon request.

5.01.3.08 **Repairs** Except when an emergency circumstance would necessitate an immediate repair, Operator must repair Grade 1 gas leaks as quickly as practicable. If more than five (5) days repair time is needed after a leak is discovered, an explanation of why more time is required must be submitted to the City.

5.01.4 **Air Quality Requirements For Facilities With Permanent Tanks**

For facilities that use permanent storage tanks and do not transport all hydrocarbons and produced water via pipelines, the following Air Quality provisions will apply until the pipeline infrastructure is available:

5.01.4.01 Operator shall comply with the provision in 5.01.3.01

5.01.4.02 **Leak Detection and Repair.**

Unless more frequent inspections are required by the AQCC, for the five (5) year period beginning with the start of the Production Phase at an
Oil and Gas Location, Operator shall conduct IR camera monitoring of all equipment at the respective Oil and Gas Location based on the following minimum frequency:

**Year 1** – monthly  
**Year 2** – quarterly  
**Year 3-5** – semi-annually  

The first inspection will occur within thirty (30) days of the facility commencing production.

**5.01.4.03 Additional Monitoring** After the initial five (5) year period, Operator will conduct semi-annual IR camera monitoring until all Wells at the Oil and Gas Location are either connected to a Gathering Line and Associated Infrastructure or are plugged and abandoned.

**5.01.4.04** The City may require the Operator to use a third party to conduct additional air monitoring and analysis as needed in response to emergency events such as spills, process upsets, or accidental releases. Operator may evaluate other technologies throughout the life of the wells and may use other technologies if they are as effective in detecting target compounds.

**5.01.5 Ozone Air Quality Action Days**

The Operator shall respond to Ozone Air Quality Action Day advisories posted by the CDPHE for the Front Range Area by implementing their suggested air emission reduction measures as feasible. Emission reduction measures shall be implemented for the duration of an Ozone Air Quality Action Day advisory and may include measures such as:

**5.01.5.01** Minimization of vehicle and engine idling.

**5.01.5.02** Reducing truck traffic and worker traffic.

**5.01.5.03** Delaying vehicle refueling.

**5.01.5.04** Postponement of construction and maintenance activities if feasible.

**5.01.5.05** Within thirty (30) days following the conclusion of each annual Ozone Air Quality Action Day season, Operator must submit a report to the
5.01.6 Compliance Reports

The Operator must submit quarterly reports to the City 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) that the equipment at the Oil and Gas Location 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. The quarterly report must contain a certification as to the truth, accuracy, and completeness of the reports, signed by a Responsible Official, as defined by the CDPHE. The Operator will also provide the City 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 at the Oil and Gas Location.

5.01.7 Combustion Devices

To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:

5.01.7.01 The combustion device must be fired with natural gas and designed to operate with a ninety-eight (98) percent or higher hydrocarbon destruction efficiency.

5.01.7.02 The combustion device must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions mean observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

5.01.7.03 The combustion device must be operated with a flame present at all times when emissions may be vented to it, or another mechanism that does not allow uncontrolled emissions.
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5.01.7.04 The combustion device will have no visible flame, with the exception of the pilot light, from the Oil and Gas Location boundary. The combustion device shall completely conceal the flame.

5.01.7.05 All combustion devices must be equipped with an auto-igniter unless manned while in use.

5.01.8 Burning

No open burning shall occur on any Oil and Gas Location.

5.01.9 Air Modeling Study

If the City determines that an Air Modeling Study is necessary to create a dispersion model, Operator will be invoiced its proportionate share in an amount not to exceed $5000 per Oil & Gas Location.

5.02 Odor

5.02.1 Odor Prevention

Operator will prevent odors by routing to closed-loop systems unless technically infeasible. Odors emitting from Oil and Gas Location must be controlled immediately. Operator must minimize odors by proactively addressing and resolving citizen concerns within twenty-four (24) hours. Operator must use a filtration system or additives to drilling fluids to prevent or minimize odors but cannot mask odors. In order to meet the provisions of this section, Operator implements the following measures:

5.02.1.01 Wiping down the drill pipe each time that the drilling operation “trips” out of the hole.

5.02.1.02 Increasing additive concentrations during peak hours.

5.03 Fugitive Dust Suppression

5.03.1 Minimize Dust

In addition to complying with COGCC rules, dust associated with activities on the Oil and Gas Location, and traffic on access roads shall be minimized throughout construction, drilling and operational activities such that there are no visible dust
emissions from access roads or the Oil and Gas Location to the maximum extent practicable given wind conditions.

5.03.2 Water Use

No untreated produced water or other process fluids shall be used for dust suppression.

5.03.3 Covering of Material

At the Oil and Gas Location, sand, silica, or similar material must be stored in covered containers.

5.03.4 Safety Data Sheets (SDS)

Safety Data Sheets (SDS) for any chemical-based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use.

5.04 Noise

5.04.1 Noise Management Plan

For any Oil and Gas Location that is on property located in zoning districts that allow for residential development or if a Residential Building Unit is located within 1,320 feet of an Oil and Gas Location located in a zoning district that does not allow for residential development unless Operator obtains waivers from all property owners within that distance the following provisions shall apply:

5.04.1.01 A Baseline Noise Mitigation Study will be conducted to ascertain baseline noise levels at the Oil and Gas Location to demonstrate that noise is expected to be mitigated to the extent practicable and a copy will be provided to the City.

5.04.1.02 The Operator shall comply with all provisions of COGCC regulations on Noise Abatement with respect to the Oil and Gas Location; provided, however, that the maximum permissible noise levels to be applied under COGCC regulations for the length of time indicated in COGCC regulations shall be, other than during the Construction Phase, the greater of (i) the levels set forth for the land use type of “Residential/Agricultural/Rural” under COGCC regulations if measurements are taken at 1,000 feet from the sound walls at the Oil

Commented [BHFS50]: Why not industrial if industrial is in industrial zone?
5.04.1.03 All noise mitigation measures shall be paid for by the Operator.

5.04.1.04 Unloading pipe. The Operator shall not unload pipe from delivery trucks between 8:00 p.m. and 7:00 a.m.

5.04.2 Mitigation of Dust, Noise, and Visual Disturbance

For mitigation of dust, noise, and visual disturbance during the Drilling and Completion Phases, the Operator shall use a combination of berms, bales, and sound walls at the perimeter of any Oil and Gas Location that:

5.04.2.01 Is located in a zoning district that allows for residential development or

5.04.2.02 Is located within 1,320 feet of a Residential Building Unit (as measured from the edge of an Oil and Gas Location, excluding access roads and berms) in a zoning district not zoned for residential development unless the Operator obtains a variance in advance.

5.04.3 Quiet Completion Technology

Operator shall use quiet completion technology on any Oil and Gas Location that:

5.04.3.01 Is located in a zoning district that allows for residential development or

5.04.3.02 Is located within 1,320 feet of a Residential Building Unit (as measured from the edge of an Oil and Gas Location) in a zoning district not zoned for residential development unless the Operator obtains a variance in advance.
5.05 Electric Equipment
Operator shall use electric line power to power permanent production equipment, such as compressors, motors, and pump jacks, in order to mitigate noise and to reduce emissions.

5.06 Reduced Emission Completion
Operator shall comply with EPA Reduced Emission Completion rules for oil and gas wells.
SECTION 6.00 PROTECTION OF SURFACE QUALITY

6.01 License Agreements ................................................................. 6-2
6.02 Visual Mitigation ........................................................................ 6-2
6.03 Traffic ......................................................................................... 6-3
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6.12 Trailers .............................................................................. 6-7
6.13 Noxious Weed Control ........................................................... 6-7
6.14 Park and Open Space Area Setback ........................................ 6-7
6.15 Reclamation ........................................................................... 6-7
SECTION 6.00 PROTECTION OF SURFACE QUALITY

6.01 License Agreements
Operator shall use Flowlines to be built in accordance with specifications set forth in Section 38 of this Oil & Gas Manual. Operator will utilize Flowlines once operations commence. The Operator’s obligation to build and utilize such Flowlines is subject to the Operator obtaining all necessary rights-of-way, crossings, licenses and easements, and the City issuing Operator the necessary Public Improvement Permits.

6.02 Visual Mitigation

6.02.1 Low Profile Equipment
Operator will use low profile equipment, such as low profile tanks, associated production equipment, and combustion devices. No tanks shall exceed twenty (20) feet in height.

6.02.2 Fencing
Permanent opaque fencing shall be installed around production equipment and shall be secured. Operator will not use chain link fencing.

6.02.3 Color
All permanent aboveground production equipment, structures, and stationary equipment on each Oil and Gas Location shall be painted in a tan or brown matte finish unless a different color is necessary for safety or per regulations.

6.02.4 Location Siting

6.02.4.01 An Oil and Gas Location shall be located away from prominent natural features such as distinctive rock and landforms, vegetative patterns, river crossings, land in the POS zone district, and other designated landmarks.

6.02.4.02 An Oil and Gas Location shall be located to avoid hilltops and ridges to prevent the appearance of pump jack and accessory equipment profiles on the horizon.

6.02.4.03 The Operator shall locate facilities at the base of slopes to provide a background of topography and natural cover.
6.02.4.04 The Operator shall align access roads to follow existing grades and minimize cuts and fills.

6.03 Traffic

6.03.1 Transportation and Circulation

The Operator will submit a traffic management plan for the City to review during the Oil and Gas Location OGP application review process that includes detailed descriptions of all proposed haul routes for equipment, water, sand, waste fluids, waste solids, mixed waste, and all other material to be hauled on the public and private streets and roads during phased well development and operations. The traffic management plan shall include the following:

6.03.1.01 Estimated weights of vehicles when loaded, a description of the vehicles, including the number of wheels and axles of such vehicles and estimated trips per day.

6.03.1.02 Detail of access locations for the Oil and Gas Location, including sight distance, turning radius of vehicles, and a template indicating this is feasible, sight distance, turning volumes in and out of the Oil and Gas Location for an average day, and what to expect during peak hours.

6.03.1.03 Estimated truck traffic volumes converted to equivalent single axle loads and compared to existing volumes.

6.03.1.04 Truck routing map and truck turning radius templates with a listing of required improvements that are necessary at intersections along the route.

6.03.1.05 Complete traffic letter, determining operational changes and geometric modifications necessary as a result of Operator’s activities.

6.03.1.06 Identification of the need for any additional traffic lanes, which would be subject to the final approval of the City’s engineer.

6.03.1.07 Restriction of non-essential traffic to and from the Oil and Gas Location to periods outside of peak a.m. and p.m. traffic periods and during school hours of schools along the designated traffic routes (generally 7:00-9:00 a.m. and 3:00-6:00 p.m.).
6.03.1.08 City may request consolidated haul routes and roadway improvements or upgrades based on contents of the traffic management plan to be covered in a Road Maintenance Agreement during the OGP review process.

6.04 Road Maintenance

6.04.1 Access Roads

Access points to public roads shall be located, improved, and maintained to ensure adequate capacity for efficient movement of existing and projected traffic volumes, and to minimize traffic hazards.

6.04.1.01 Permanent access roads shall be improved a minimum distance of two-hundred (200) feet onto the access road from the point of connection to a public road. All access roads shall be in conformance with the City’s current Roadway Specification Manual. The access road shall be improved as a hard surface (concrete or asphalt) for the first one-hundred (100) feet from the public road and then improved as a crushed surface (concrete or asphalt) for one-hundred (100) feet past the hard surface in the appropriate depth to support the weight load requirements of the vehicles accessing the Oil and Gas Location. A geotechnical report and pavement design will be submitted to the City for approval. 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 one-hundred (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 Oil and Gas Location.

6.04.1.02 Temporary access roads associated with the operation shall be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

6.04.2 Mud Tracking

In accordance with the Stormwater Management Plan (SWMP), the Operator shall take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets, in excess of *de minimus* levels, the streets shall be cleaned immediately by the Operator. If, for some
reason, this cannot be done or needs to be postponed, the Operator shall notify the City of its plan for mud removal.

6.04.3 Chains

Traction Chains from heavy equipment shall be removed from all Operator vehicles before entering a City street.

6.04.4 Culverts

Operator shall construct all necessary culverts for road construction per any available City or County, as applicable, Drainage Plan. In the event no information is available, the Operator shall complete any necessary studies or analysis to determine the appropriate culvert size.

6.04.5 Road Repairs

Road repairs will be addressed as set forth in the Road Maintenance Agreement.

6.05 Landscaping

Operator shall submit a landscape plan for City approval during the Oil and Gas Location OGP application review process. Operator shall implement the landscape plan when new development is constructed within 1,500 feet of an Oil and Gas Location once access to City main water source is available.

6.06 Tree Mitigation

The Oil and Gas Location and Flowline should be constructed in a manner that minimizes the removal of and damage to existing trees in accordance with the City’s tree mitigation ordinance.

6.07 Cultural and Historical Resource Protection

6.07.1 General

The Operator shall comply with the City of Aurora Municipal Code, as amended, by not causing to be carried out any construction, alteration, removal, or demolition of a building or feature or make any changes that would impair the historical association of the landmark building, landmark site, or historic district, pursuant to those qualities depicted in the Code, without first obtaining approval. Operator will submit the permit application and await the planning department’s approval following referral.

COGA Redline
COGA Redline

to the historic preservation commission, if applicable. If there is a discovery of historical artifacts, Operator will notify the City.

6.07.2 Protection of Natural, Historical, and Archaeological Resources

The nature and location of an Oil and Gas Location shall not unreasonably interfere with or affect any unique natural resource, historical site or landmark, or known archaeological site.

6.08 Wildlife/WIMP

This BMP is only applicable in the event that an Oil and Gas Location is located in a significant wildlife habitat or high priority habitat, as defined by the State Division of Wildlife, and/or in a natural area or open space. In such a case, the Operator shall consult with the State Division of Wildlife or the City Parks, Recreation, and Open Space Department to obtain recommendations for appropriate site-specific and cumulative impact mitigation procedures. If not applicable, Operator shall provide the City with a statement that it has investigated whether the Oil and Gas Location is located near a significant wildlife habitat and that this BMP is not applicable.

6.09 Building Electric

6.09.1 Any buildings or structures must meet the design standards contained in the Aurora Municipal Code. All site features shall be integrated into the building or site design.

6.09.2 Operator shall place a note on site plan elevation sheets, stating: “Operator certifies that all structures are in compliance with 8 Colorado Code Regulations § 1302-14 regarding placarding and certification of non-residential modular or factory-built structures.”

6.10 Removal of Debris

6.10.1 General

All construction-related debris shall be removed from the Oil and Gas Location for proper disposal in a timely manner. The Oil and Gas Location shall be maintained free of debris and excess materials at all times during operation. Operator shall also not stockpile debris at the Oil and Gas Location.
6.11 Removal of Equipment
All equipment used for drilling, re-completion, and maintenance of the facility shall be removed from the Oil and Gas Location within thirty (30) days of completion of the work, weather conditions permitting, unless otherwise agreed to by the applicable surface owner. Permanent storage of removable equipment on the Oil and Gas Location shall not be allowed.

6.12 Trailers
A construction trailer(s) is permitted as an accessory use during active drilling and well completion or workover operations only. No permanent residential trailers shall be permitted at the Oil and Gas Location; provided, however, that until six (6) months following the end of the Completion Phase on an Oil and Gas Location, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator’s personnel and the personnel of its subcontractors on a temporary basis.

6.13 Noxious Weed Control
The Operator shall be responsible for ongoing noxious weed control as defined under the Colorado Noxious Weed Act (C.R.S. § 35-5.5-101 et seq.) at the Oil and Gas Location, along access roads, and in disturbed areas under restoration as a result of related construction activities or operations per City or other applicable agency regulations.

6.14 Park and Open Space Area Setback
The Oil and Gas Location shall be sited a minimum of three hundred fifty (350) feet away from existing and proposed parks and open space areas. This distance shall be measured from the perimeter of the Oil and Gas Location. For Flowlines that pass within three hundred fifty (350) feet of a park or open space area, a mitigation plan which identifies measures to be taken to mitigate impacts to parks and open space areas shall be submitted to the City.

6.15 Reclamation
   6.15.1 Interim Reclamation.  
   Operator must submit an Oil and Gas Location Interim Reclamation Plan to the City with each OGP.

   6.15.2 Final Reclamation Plan.  
   Operator must submit a Final Oil and Gas Location Reclamation Plan to the City concurrently with the submission of the COGCC application to plug and abandon the last Well at the Oil and Gas Location.
6.15.3  Decommissioning of Flowlines

Operator shall properly drain and decommission in accordance with City and COGCC regulations all Flowlines associated with any Plugged and Abandoned Well and shall remove from service all Flowlines by either abandoning in place and filling with flow fill or removing the pipe subject to approval by the City.
SECTION 7.00 GENERAL OIL & GAS PERMIT REQUIREMENTS

7.01 Surface Stakeholder Notification ................................................................. 7-2
7.02 Other Notifications ...................................................................................... 7-3
7.03 Incidents/Spills ............................................................................................. 7-4
7.04 Annual Development Schedule .................................................................. 7-5
7.05 Previously Drilled Wells .............................................................................. 7-5
SECTION 7.00 GENERAL OIL & GAS PERMIT REQUIREMENTS

7.01 Surface Stakeholder Notification

7.01.1 Notice of Application

When Operator submits an OGP application to the City, the Operator shall include a list of all property owners of record (names, property addresses and mailing addresses) within one mile from the edge of an Oil and Gas Location and all registered neighborhood organizations within one mile of the Oil and Gas Location, and the surface owners of the property upon which the Oil and Gas Location is located (“Notified Residents”). The City shall send out notices of the OGP application to Notified Residents when the review process commences for the purpose of receiving public comment.

7.01.2 Resident Notification of Neighborhood Meeting

When the City begins the OGP review process, the Operator shall send notification of a Neighborhood Meeting to all Notified Residents. The notice must include:

• Operator’s contact information
• Approximate date to begin drilling
• Information on the Neighborhood Meeting

Operator shall send proof of mailed notices to the City by affidavit or certificate of mailing.

7.01.3 Neighborhood Meeting

Upon the City’s completeness determination of the OGP application, the Operator shall hold a Neighborhood Meeting to facilitate engagement between the Operator and nearby Notified Residents of the applicable Oil and Gas Location. Operator shall notify all Notified Residents of the Neighborhood Meeting. Operator shall provide notice a minimum of ten (10) days in advance of the Neighborhood Meeting.

Notified Residents may submit written comments to the City about the OGP application, including the BMPs. The City shall transmit those comments which require an Operator response to the Operator. Operator shall respond to those comments within thirty (30) days in writing to the City. A Neighborhood Meeting may not be required if there are no residents within one (1) mile of the Oil and Gas Location, no comments are received from the initial notice of filing of OGP application and the City agrees.
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7.01.4 Notice of Administrative Decision

The City shall provide Operator with a form letter for Notice of Administrative Decision for a pending OGP application. At least ten (10) calendar days prior to the scheduled decision on an OGP application, theOperator shall send out the Notice of Administrative Decision to the Notified Residents. The Operator shall provide proof to the City of mailed notices by affidavit or certificate of mailing.

7.01.5 Pre-Drilling Notice

Operator will comply with the mailing requirements of the Move-In, Rig-Up Notice required by the COGCC rules

7.02 Other Notifications

7.02.1 General

All notices and other correspondence sent to the City shall be in writing and shall be delivered by: (A) certified mail with return receipt, or (B) hand delivery with signature or delivery receipt provided by a third-party courier service (such as FedEx, UPS, etc.) to the designated representative of the City as indicated below, or (C) email to the designated representative of the City as indicated below.

City of Aurora
Oil & Gas Division
15151 E. Alameda Parkway, #5900
Aurora, CO 80012

Attn: Oil & Gas Manager
Telephone: 303-739-7676
Email: jsmoore@auroragov.org

7.02.2 Notification of Submittal of COGCC Permits, Orders, and Approvals

At the time the Operator files any COGCC Form 2 or Form 2A for a Well or Oil and Gas Location within the City, the Operator will provide the City a copy of such filings and shall provide the City with notification of any decision with respect to any COGCC Form 2 or Form 2A for a Well or an Oil and Gas Location and Operator’s best estimate as to when the Construction Phase for such Well or Oil and Gas Location will begin.
7.02.3 Notification of New Operational Phase

Operator shall provide written notice to the City no less than thirty (30) days prior to the commencement of any of the following: Construction Phase (unless the Construction Phase commences within forty-five (45) days of the approval of the applicable Form 2 or Form 2A), Drilling Phase, Completion Phase, or any recompletion, re-drilling, or plugging and abandonment of a Well. Until the commencement of the Production Phase at the Oil and Gas Location, Operator shall notify the Oil & Gas Division Manager as to the status of development at each active Well monthly. Any notification provided by Operator to City may be used by the City for public notification.

7.02.4 Routine Maintenance

Operator may perform all surface and downhole well maintenance and operations on its Oil and Gas Location, Oil and Gas Facility, or Flowline that the Operator deems prudent and necessary. Operator may perform routine maintenance of Oil and Gas Facilities without prior notification to the City, including surface and downhole well maintenance.

7.02.4.01 If Operator intends to perform maintenance that may be excessively loud or performed with vehicles larger than a standard work vehicle, the City shall receive advance notification in order to best answer questions from citizens.

7.03 Incidents/Spills

7.03.1 Events or Incidents. Any COGCC or OSHA reportable injuries, accidents, or natural events shall be reported to the City within twenty-four (24) hours. Once the applicable forms are submitted to the agency, a copy of that form will also be provided to the City. In the event of a fire that is not controllable by Operator personnel, explosion, or need for emergency services response, 911 shall be called.

7.03.2 Spills. Operator must notify the City of any spill of any material on permeable ground on the Oil and Gas Location that has a reportable spill quantity under any law. The Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the Oil and Gas Location.
7.04 Annual Development Schedule

The Operator shall provide a summary of planned operations and an operational timeline (Development Schedule) to the City by January 31 of each year. The Operator may revise the summary and timeline from time to time provided that the Operator will keep the City informed of any revision to the Development Schedule. The Development Schedule should include a brief summary of major planned operations at all of Operator’s Oil and Gas Locations within the City for the coming year, including a proposed timeline of operations, and any new permitting activities. This report is informal in nature and may be changed by the Operator at any time. The report provides guidance to the City staff for planning workflows.

7.05 Previously Drilled Wells

When an Operator purchases or acquires an interest in an Oil and Gas Location, previously drilled Well, or other Oil and Gas Facility, which was not subject to an Operator Agreement, the Operator must review the BMPs in effect in this Oil & Gas Manual at the time of purchase of the Oil and Gas Location, Well, or other Oil and Gas Facility was approved. Within ninety (90) days before the purchase date, the Operator must submit a written report demonstrating compliance with all BMPs or a plan to bring the Oil and Gas Location and all Oil and Gas Facilities into compliance as soon as practicable by after the purchase date.

SECTION 8.00-30.00 RESERVED
SECTION 31.00 INTRODUCTION TO OIL & GAS MIDSTREAM PERMITTING

31.01 Scope......................................................................................................................31-2
31.02 Authority..................................................................................................................31-2
SECTION 31.00 INTRODUCTION TO OIL & GAS MIDSTREAM
PERMITTING

31.01 Scope
Sections 31.00-38.00 of this Oil & Gas Manual (OGM), set forth the minimum acceptable criteria for permitting, designing, and constructing pipelines and pipeline facilities, including Central Gathering Facilities (CGF), Gathering Lines, and Associated Facilities within the City of Aurora. A successful permit application process results in the approval of an Oil & Gas Midstream Permit (OGMP).

31.02 Authority
31.02.1 Local Authority
The Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101 et seq. authorizes local governments to regulate the surface impacts of oil and gas operations in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare and the environment within its jurisdiction. It also authorizes local governments to adopt reasonable regulations for surface impacts of oil and gas operations that address plan for and regulate the use of land by regulating the surface impacts of oil and gas operations in a reasonable manner to address:

Pursuant to the Colorado Oil and Gas Conservation Act, C.R.S. § 34-60-131 local governments may adopt regulations that are more protective or stricter than state requirements.

Pursuant to the Colorado Air Pollution Prevention and Control Act (“APPCA”), C.R.S. § 25-7-108 local governments may enact local air pollution resolutions or ordinances that include more stringent emission control regulations than state requirements.

31.02.2 City Code of Aurora
[Placeholder for final code sections A.M.C. 135-101, 135-102, 135-103, 135-104] give authority to the Oil & Gas Manual to regulate Oil and Gas Locations, Oil and Gas Facilities, pipelines, and all other oil and gas related operations.

Commented [Author53]: Terminology throughout this portion of the manual needs to be consistent with midstream facilities and applications. There are several instances throughout this section that reference terms used for upstream operations.

Commented [BHFS54]: This isn’t relevant because the COGCC has no jurisdiction over midstream operations.
COGA Redline

SECTION 32.00 OIL & GAS MIDSTREAM PERMIT (OGMP)
APPLICATION PROCESS

32.01 General/Applicability ................................................................. 32-2
32.02 OGMP Application Process ........................................................ 32-2
32.03 Required Application Contents................................................. 32-6
SECTION 32.00 OIL & GAS MIDSTREAM PERMIT (OGMP) APPLICATION PROCESS

32.01 General/Applicability

32.01.1 Permitting of Oil & Gas Midstream Locations and Associated Facilities

The Oil & Gas Midstream Permit (OGMP) application process shall apply to the CGF, Gathering Lines, and Associated Facilities within the City of Aurora.

32.01.2 Future Increase in Oil & Gas Midstream Location Size

Oil & Gas Midstream locations should be constructed only to the extent approved and are fixed in size and geographical extent at the time the OGMP is approved. In the future, if an Operator desires to increase the size of an Oil & Gas Midstream location, or add additional Facilities, then the Operator shall submit a new permit application.

32.02 OGMP Application Process

The purpose of the pre-application process is for the Operator to provide a high-level overview of the proposed OGMP application to the City. City staff will provide feedback to the Operator on any BMPs or issues of concern.

Operator shall first obtain any necessary permits and agreements pursuant to these regulations prior to construction. The Operator shall submit all required City permits and applications such as but not limited to building permit, Stormwater and Erosion Control Permit, license agreements, rights-of-way permit, and OGMP application for the CGF, Associated Facilities, and Gathering Lines. The review by the City of these permits is to ensure the proposed Gathering Lines, Associated Facilities, and CGF comply with this Oil & Gas Manual and all applicable City of Aurora Municipal Code requirements.

32.02.1 Pre-Application Meeting

32.02.1.01 Operator shall request a Pre-Application Meeting with the Office of Development Assistance prior to submitting an application for an Oil & Gas Midstream Permit (OGMP). Appropriate City staff (as determined in the sole discretion of the Oil & Gas Manager) may attend. The City may waive the Pre-Application Meeting or Pre-Submittal requirement for any Oil & Gas Midstream application.
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32.02.1.02 At the Pre-Application Meeting, Operator shall present the proposed project to the City to determine appropriate materials needed for the application, and any special conditions for the CGF, Gathering Lines, and Associated Facilities.

32.02.1.03 A map and detailed description of the CGF, Gathering Lines, and Associated Facilities, as applicable, must accompany the request for a Pre-Application Meeting.

32.02.1.04 The City shall provide Operator with comments from the Pre-Application Meeting in writing.

32.02.2 Pre-Submittal Meeting

At the Pre-Submittal Meeting, the Operator shall demonstrate, prior to entering the formal OGMP application process, its ability to comply with all BMPs.

32.02.2.01 Following receipt of City comments from the Pre-Application Meeting, the Operator shall request a Pre-Submittal Meeting with the City Staff to demonstrate the Operator’s ability to comply with BMPs.

32.02.2.02 At the Pre-Submittal Meeting, Operator shall request that a portal be opened to allow the application to be submitted digitally.

32.02.3 Submission of OGMP Application

Operator may then submit the OGMP application.

32.02.4 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGMP application, the City will initiate a Pre-Acceptance Review to determine whether the OGMP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify any deficiencies in the OGMP application and will notify the Operator of its decision in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.
32.02.5 Acceptance of OGMP Application

If no deficiencies are identified, an invoice of the OGMP application fee listed in the City Code will be sent to the Operator. The OGMP application fee must be paid prior to the City and outside agencies beginning review of the OGMP application.

If deficiencies in the OGMP application are identified, the Operator shall address the deficiencies and resubmit the OGMP application. The City will review the resubmitted application and notify the Operator in writing of its completeness determination.

32.02.6 First Review

In the First Review, the City will review the completed OGMP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

32.02.7 Neighborhood Meeting

Operator shall host a Neighborhood Meeting to inform the public of their application.

32.02.2.01 Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location, 500' of the midstream facility of the time and location of the Neighborhood Meeting. Surface owners shall be notified a minimum of ten (10) days in advance.

32.02.2.02 Operator shall respond to all comments received at the Neighborhood Meeting in writing.

32.02.8 Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review, including Operator Responses to Neighborhood Meeting comments. The City will provide any further questions and comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

32.02.9 Civil Construction Plans

Operator can submit its Civil Construction Plans concurrently with the second City review of the CGFP.
32.02.10 Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

Commented [Author60]: Is there opportunity for mediation/resolution if the two sides can’t agree?
Also, the term “sufficiently” is subjective, and could cause unnecessary delays in the permit process.
See comment above. This can’t be an endless lop and there should be an appeal process.

Commented [Author61]: What if there are variance requests to be processed and delays on the City’s end in responding to requests?

Commented [BHFS62]: Please provide guidance as to what “compatible with” means. This is vague and subjective.

Commented [Author63]: If City Council calls up a permit, the operator should have the opportunity to present/defend their project to Council.
Further, if a permit is called-up we request that the city notify the respective company/operator.

32.02.11 Operator Response Timing

Any time the City provides written comments to an Operator submittal, the Operator shall reply in a timely manner. If comments are not received from the Operator within ninety (90) days of the City’s response, the Operator’s application will be deemed abandoned.

32.02.12 Compatibility with Approved Master Plans

The location and operations of the Oil and Gas Location shall be compatible with the approved Master Plan for the subject property.

32.02.13 Limit on Commencement of Construction

No construction activities shall begin until a valid Oil & Gas Midstream Permit (OGMP) has been received by the Operator. The Operator shall not move any heavy equipment or begin construction at the CGF, Gathering Lines, or Associated Facilities based on COGCC approval until the Operator has received administrative approval after the OGMP application review process by the City pursuant to this Oil & Gas Manual and all applicable City, State, and Federal permits.

32.02.14 Administrative Approval of OGMP

OGMP applications are approved by the Oil & Gas Division on an administrative basis. Once all questions have been answered by the Operator to the satisfaction of the City (at the sole discretion of the Oil & Gas Manager), a Letter of Administrative Decision is provided to the Aurora City Council. The City Council may elect to call-up the approved OGMP for further discussion.

32.02.15 Issuance of OGMP

Once any City Council call-up requirements are complete, the Oil & Gas Midstream Permit (OGMP) will be issued to the Operator by the Oil & Gas Division with or without conditions. No installation of pipelines or Associated Facilities may begin until Operator receives the NTP.
32.02.16 Fulfillment of OGP Conditions

The Operator shall satisfy any conditions required by the OGMP.

32.02.17 Notice to Proceed (NTP)

Upon satisfaction of all conditions required by the OGMP, the City and Operator may execute a Water Delivery Agreement, Road Maintenance Agreement, and other agreements as necessary. Upon approval and execution of all required agreements, the City may issue a Notice to Proceed (NTP) with or without conditions. After issuance of the NTP, Operator may begin drilling activities at the Oil and Gas Midstream location, if all additional approvals from COGCC have been received.

32.02.18 Time Limits

An administratively approved signed OGMP shall be valid for a period of three (3) years from the date of approval. If construction of the pipeline or Associated Facilities has not begun within that period, a new application must be submitted by the Operator.

32.02.19 Denial

If it is established by competent evidence that a proposed Oil & Gas Midstream application fails to meet any of the specifications in this Oil & Gas Manual, the permit for such Oil & Gas Midstream location may be denied.

32.03 Required Application Contents

An Oil & Gas Midstream Permit (OGMP) application to the City contains the following (together, the Submittal Requirements) as described in the current City Code and Criteria. Application requirements will be at the discretion of the City based on the type of submittal.:

32.03.1 Master Plan To include the following:

32.03.1.01 All the planned components and land uses for the site

32.03.1.02 Public improvement plan

32.03.1.03 Context Map
COGA Redline

32.03.2 Letter of Introduction for Plans for Gathering Line Submittal Materials including items below:

32.03.2.01 The name, address, email, and telephone number of the Operator.

32.03.2.02 A summary statement of the project

32.03.2.03 A description of the Gathering Line, including the product(s) or substance(s) being transported and its/their source, size, terminus or end of route, and type of Facility, including any support structures involved.

32.03.2.04 All public utility crossings labeling the diameter and type of utility crossing to include bridges, culverts, water, wastewater, and stormwater infrastructure. Also, identify all public utilities within a one hundred fifty (150) foot buffer from the Gathering Line.

32.03.2.05 A description of the route or location of the Gathering Line and reasons for its selection.

32.03.2.06 Procedures to be employed in mitigating any adverse impacts of the proposed routes or sites of the Gathering Lines.

32.03.2.07 An outline of the planned construction, including startup and commissioning schedule, and include timing of each. The City acknowledges that this outline is subject to change, due to factors including, but not limited to, contractor availability, weather, ability to close ROW tracts, and the timing of third-party facility completion.

32.03.2.08 Information from Neighborhood Meeting conducted to include the location, date, time, attendance, and method of advertising.

32.03.2.09 A description of the hazards, if any, of fire, explosion, and other dangers to the health, safety, and welfare of the Operator’s employees and the public.

32.03.2.10 A Decommissioning Plan, which shall address how the Gathering Line will be properly cleaned, capped, and maintained if the Gathering Line will be Properly Abandoned in Place or whether the Gathering Line will be removed from the ground.
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32.03.2.11 A description of any haul routes during construction, identifying the roads and bridges involved, and the weight of the loads.

32.03.2.12 Existing land use within or adjacent to the Gathering Line within 1,800 feet.

32.03.2.13 Soils reports required for Gathering Line crossings or any Gathering Line encroaching in a public right-of-way, if required by the Department of Public Works.

32.03.2.14 Present zone and overlay zoning districts, which include floodplains and floodways, if appropriate.

32.03.2.15 Operator shall provide either authorization letters or agreements from all impacted property owners to verify application can be accepted.

32.03.2.16 Signature of the applicant.

32.03.2.17 Easements or rights-of-way for the Gathering Line from other landowners or a statement that the Operator is currently in good faith negotiations with the owners of surface properties, irrigation ditch companies and/or affected irrigation ditch easement owners of record at the point crossed by the Gathering Line.

32.03.2.18 A statement which provides evidence of compliance with the following standards:

<table>
<thead>
<tr>
<th>32.03.2.18.1</th>
<th>The Gathering Line will not have an undue adverse effect on existing and future development of the surrounding area as set forth in applicable City Master Plans.</th>
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<tr>
<td>32.03.2.18.2</td>
<td>The design of the proposed Gathering Line mitigates negative impacts on the surrounding area to the greatest extent feasible.</td>
</tr>
<tr>
<td>32.03.2.18.3</td>
<td>The disturbed area shall be maintained during construction by the Operator or property owner in</td>
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such a manner to control soil erosion, dust, and the growth of noxious weeds.

32.03.3 Site Plan for the CGF and Associated Facilities to include the following:

32.03.3.01 Proposed location of CGF and Associated Facilities on CGF property
32.03.3.02 Road access
32.03.3.03 Haul routes
32.03.3.04 Existing easements and rights-of-way
32.03.3.05 Visible improvements within 500 feet
32.03.3.06 Distances to the nearest occupied structure
32.03.3.07 Gathering Line Routes
32.03.3.08 Interim Reclamation Plan
32.03.3.09 Landscape Plan (including fencing and other criteria listed in the BMPs)
32.03.3.10 Photometric Plan
32.03.3.11 Visual Mitigation Plan
32.03.3.12 Air Quality Plan
32.03.3.13 Fugitive Dust Suppression Plan
32.03.3.14 Emergency Response Plan
32.03.3.15 Fluid Disposal Plan
32.03.3.16 PHA-HAZOP Letter. The Operator will provide a letter that the PHA-HAZOP has been completed, and the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.
32.03.3.17 Noise Management Plan

Commented [Author66]: The Pre-Startup Safety Review (PSSR) is an OSHA PSM guideline and we ensure that all PHA or HAZOP comments are completed prior to startup – not before the permitting process can begin. 33.03.1 mentions that the PHA-HAZOP would happen after the permitting phase, which is more typical.
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32.03.3.18 Operations Plan
32.03.3.19 Project Development Schedule
32.03.3.20 Security Plan
32.03.3.21 Traffic Letter or other analysis requested in the Pre-Application Notes & Traffic Management Plan
32.03.3.22 Wildlife Impact Mitigation Plan (if applicable)
32.03.3.23 Road Maintenance Agreement
32.03.3.24 Recorded Surface Use Agreement, if applicable
32.03.3.25 Stormwater and Erosion Control Plan (Grading, Drainage and Erosion Plan)
32.03.3.26 License Agreements, if applicable
32.03.3.27 A certified list of the names, addresses, and the corresponding Parcel Identification Numbers assigned by the County Assessor of owners of surface properties located within one hundred fifty (150) feet of the CGF and Associated Facilities. The source of such list shall be the records of the County Assessor, or an ownership update from a title, abstract company, or attorney derived from such records, or from the records of the County Clerk and Recorder. If the list was assembled from the records of the County Assessor, the Operator shall certify that such a list was assembled within thirty (30) days of the application submission date.
32.03.3.28 Evidence of Insurance
32.03.3.29 Such additional information as may be reasonably required by the City.

32.03.3.30 **Fee Payment**

The Operator shall be subject to an administrative fee associated with plan review and report analysis.

Commented [Author67]: Please include code reference to applicable fee(s)
32.03.4 Narrative list of applicable BMPs addressed

The Operator shall include those BMPs which (A) the COGCC has the ability to respond to and resolve potential complaints regarding the BMP and (B) the COGCC has enforcement ability to which it can exercise through inspection to ensure compliance with the BMPs.
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SECTION 33.00 SAFETY AND SECURITY

33.01 Security Plan........................................................................................................33-2
33.02 Emergency Response Plan (ERP)........................................................................33-2
33.03 PHA-Hazard and Operability Study......................................................................33-4
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33.05 Discharge Valves..................................................................................................33-5
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33.09 General Maintenance...........................................................................................33-6
33.10 Miscellaneous.......................................................................................................33-6
33.11 Insurance..............................................................................................................33-6
33.12 Risk Management................................................................................................33-9
SECTION 33.00 SAFETY AND SECURITY

33.01 Security Plan

33.01.1 General

A Security Plan must be included with the OGMP application to indicate how the Oil and Gas Facility will be operated and maintained free from purposeful and inadvertent interference from anyone except the Operator. The Security Plan may contain a description of fencing, cattle guards, a remote security system, warning and identification signs, and gating.

33.01.2 Security Fencing

Permanent security fencing shall be required to be installed around the CGF and Associated Facilities and, if so, shall be secured. An internal security fence may include chain-link fence with security wire immediately surrounding the CGF and Compressor Station, with visual mitigation of the chain-link fence addressed by BMPs used in the visual mitigation plan. Gating systems shall meet City’s Roadway Specification Manual applicable at the time of the OGMP application.

33.02 Emergency Response Plan (ERP)

33.02.1 Detailed Emergency Response Plan

The Operator is required to complete a detailed Emergency Response Plan for all operations in the City of Aurora, and CGF, Gathering Lines, and Associated Facilities in accordance with the provisions of this Section, and Operator shall notify and work with Aurora Fire Rescue, Aurora Public Safety and Bennett Fire to prepare for an emergency if requested by them to do so.

33.02.2 Required Elements of the Emergency Response Plan

The Emergency Action Plan shall consist of at least the following information:

33.02.2.01 Name, address, and phone number, including twenty-four (24) hour emergency numbers for at least two (2) persons responsible for emergency field operations as well as the contact information for any subcontractor of Operator engaged for CGF, Gathering Line, and Associated Facilities emergencies.
33.02.2.02 An as-built CGF, Gathering Line, and Associated Facilities map, to be provided after the CGF, Gathering Line, and Associated Facilities are placed in service, in a format suitable for input into a GIS system depicting the locations and type of above-ground facilities and associated equipment for emergency response and management purposes.

Commented [Author72]: As-buils should not be made publicly available for safety reasons.

33.02.2.03 A detailed plan for responding to emergencies that may include any or all of the following: explosions, fires, gas, oil, or water pipeline leaks or ruptures. A provision that any spill outside of the containment area that has the potential to leave the facility or to threaten waters of the state, or as required by the City-approved Emergency Response Plan, shall be reported to the City’s LGD.

Commented [Author73]: Please define “adequate.” Note that operators are the subject matter experts in determining the safety plan that would be appropriate for operations.

33.02.2.04 Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.

Commented [Author74]: Please define “walkthrough.” Are these intended for emergency response purposes? If they are intended for frequent department trainings, this requirement could easily become burdensome, interfere with operations, and impose substantial costs.

33.02.2.05 A statement and detailed information indicating that the Operator has adequate personnel, supplies, and training to implement the Emergency Response Plan immediately at all times during construction and operations.

33.02.2.06 The Operator shall have current Safety Data Sheets (SDS) for all chemicals available upon request. The SDS shall be provided immediately upon request to City officials, a public safety officer, or a health professional as required by COGCC. The contractors of the Operator are responsible for the management of their own SDS and are to be made available upon request.

33.02.2.07 All “walkthroughs” or trainings associated with the Emergency Response Plan shall be coordinated with the City or Aurora Fire Rescue, upon their request.

33.02.2.08 Operator shall reimburse the appropriate emergency agencies for their expenses resulting from the Operator’s operations, to the extent required by Colorado Revised Statutes.

Commented [Author73]: Will operators be financially responsible for the “walkthroughs” or trainings?

33.02.2.09 Operator shall provide the City with its emergency shutdown protocols and promptly notify the City of any emergency shutdowns.
related to onsite upset conditions that would have an impact to any area beyond the confines of the CGF, Gathering Line, and Associated Facilities.

33.02.10 Operator shall use non-PFAS foam such as Novacool or equivalent if foam is necessary to respond to an accident.

33.02.3 Approval of Emergency Action Plan

The City and Aurora Fire Rescue must approve the Emergency Plan before operations commence. Operator shall consult with Sable Altura Fire Rescue and/or Bennett Fire, if applicable.

33.02.4 Emergencies

In case of an emergency, the Operator will have appropriate response foam on hand, and the capacity to apply such, to respond to emergencies at the CGF, Gathering Line, and Associated Facilities. The Operator will have a tank large enough to hold the water needed for putting out a fire of the largest building at the CGF.

33.02.5 Annual Update of Emergency Action Plan

The Emergency Plan shall be filed with the City, Bennett Fire, if applicable, and Aurora Fire Rescue and updated on an annual basis if or as conditions change (responsible field personnel change, ownership changes, etc.). As part of the evacuation plan, Emergency Responders will notify surrounding residents.

33.03 PHA-Hazard and Operability Study

33.03.1 PHA-HAZOP

A third party PHA-HAZOP certified facilitator shall coordinate the Hazard and Operability Study with the Operator after the permitting phase. If any of the findings by the PHA-HAZOP certified facilitator is applicable, this information will be added to the Emergency Response Plan and the Aurora Fire Rescue training. The Operator will provide a letter that the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.

33.03.01 The Engineer or record letter shall include the credentials of pertinent individuals that are responsible for any studies, design, and
operational implementation, such as the “certified facilitator, Engineer of record, data analyst, design team, etc.”

33.04 Photometric Plan

33.04.1 A Photometric Plan must be included with the OGMP application.

33.04.2 Lighting shall be downcast and shall not shine beyond the boundaries of the CGF and Associated Facilities.

33.05 Discharge Valves

33.05.1 General

Open-ended discharge valves on all storage tanks, pipelines, and other containers within the CGF, Gathering Line, and Associated Facilities shall be secured and shall not be accessible to the general public. Open-ended discharge valves within the CGF, Gathering Line, and Associated Facilities shall be blinded and locked and where feasible placed within the interior of the secondary containment area.

33.06 Chemical Disclosure and Storage

33.06.1 General

Operator shall disclose the referenced chemicals to the Aurora Fire Rescue and Bennett Fire as part of the Emergency Response Plan pursuant to the process set forth in the ERP. Chemicals that will be disclosed include methanol, tri-ethylene glycol, corrosion inhibitor, and other operational required chemicals used for the safe operation of CGF and Associated Facilities.

33.07 Automatic Safety Protective Systems and Surface Safety Valve

33.07.1 General

An automated safety system, governed by safety devices and a programmable logic computer, will be installed at the CGF, Gathering Line, and Associated Facilities. The automated safety system shall include the installation, monitoring, and remote control of Safety shutdown valves (SDVs), among many other engineered measures and devices that are implemented to greatly reduce or eliminate the potential for an upset condition.

33.07.1.01 The SDV will be equipped to operate remotely via the automated safety protective system, which monitors multiple flowing pressures...
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and rates which have predetermined maximum and/or minimum threshold values programmed and will remotely shut in the CGF, Gathering Line, and Associated Facilities should certain upset conditions be detected. Additionally, the automated safety system provides the ability to remotely shut-in the CGF, Gathering Line, and Associated Facilities on demand through Operator remote intervention. The Automatic Safety Protective System will have documented quarterly-annual testing to ensure functionality.

33.07.1.02 Automated Safety Systems shall be maintained per OSHA PSM guidance and annually documented compliance.

33.07.1.03 Automated Process and Safety Systems PSM facilities shall be maintained per OSHA PSM guidance, and a Computerized Maintenance Management System implemented for compliance and auditable periodic testing.

33.08 Flammable Material
All ground within twenty-five (25) feet of any tank, or other structure containing flammable or combustible materials, shall be kept free of dry weeds, grass, rubbish or landscaping.

33.09 General Maintenance
Operator shall operate and maintain all equipment pursuant to manufacturer specifications consistent with technological limitations and reasonable and customary maintenance practices.

33.10 Miscellaneous
33.10.1 Lightning Protection

Lightning protection mitigation measures will be considered by the Operator during the CGF and Associated Facilities design and installed per industry best practice to mitigate lightning strike events and/or consequences.

33.11 Insurance
33.11.1 General

The Operator shall provide liability and insurance under the conditions, and in the amounts, set forth below.
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33.11.2 Operator shall maintain or cause to be maintained, with insurers authorized by the state of Colorado and carrying a financial strength rating from AM. Best of no less than A- VII (or a similar rating from an equivalent recognized rating agency), at a minimum, the following types of insurance with limits no less than the amounts indicated:

33.11.2.01 Commercial General Liability insurance on an occurrence-based form including coverage for bodily injury or property damage for operations and products and completed operations with limits of not less than $1,000,000 each and every occurrence.

33.11.2.02 Automobile Liability insurance with limits of not less than $1,000,000 each and every occurrence.

33.11.2.03 Workers’ Compensation insurance- Statutory Workers’ Compensation Coverage for the employee’s normal State of employment/hire. Including Employer’s Liability insurance with limits of not less than $1,000,000 Each Accident, Disease- Each Employee, Disease - Policy Limit.

33.11.2.04 Umbrella/Excess Liability - in excess of General Liability, Employer’s Liability, and Automobile Liability with limits no less than $25,000,000 per occurrence; provided, however, that for so long as the Construction Phase is ongoing at the CGF, Gathering Line, and Associated Facilities, Operator will maintain such insurance with limits no less than $100,000,000 per occurrence.

33.11.2.05 Environmental Liability/Pollution Legal Liability insurance- with limits of not less than $5,000,000 per pollution incident, with coverage being required beginning with the date that is eight (8) years from the date of CGF, Gathering Line, and Associated Facilities construction. (the “Required Date”). Coverage must include gradual pollution events. This insurance may be on a claims-made basis; however, the retroactive date must precede the Required Date.

33.11.3 Operator shall waive and cause its insurers under the above policies to waive for the benefit of the City any right of recovery or subrogation which the insurer may
have or acquire against the City or any of its affiliates, or its or their employees, officers or directors for payments made or to be made under such policies.

33.11.4 As it pertains to the risks and liabilities assumed by Operator, Operator shall add the City and its elected and appointed officials and employees as Additional Insureds under general liability (including operations and completed operations), auto liability, and umbrella liability.

33.11.5 Operator shall ensure that each of the policies is endorsed to provide that they are primary without right of contribution from the City or any insurance or self-insurance otherwise maintained by the City, and not in excess of any insurance issued to the City.

33.11.6 Operator shall ensure that each of the policies above (excluding workers’ compensation and OCC/COW) are endorsed to state that the inclusion of more than one insured under such insurance policy shall not operate to impair the rights of one insured against another insured and that the coverage afforded by each insurance policy shall apply as though a separate policy had been issued to each insured.

33.11.7 All policies shall be endorsed such that they cannot be canceled or non-renewed without at least thirty (30) days’ advanced written notice to the Operator and the City, evidenced by return receipt via United States mail, except when such policy is being canceled for nonpayment of premium, in which case ten (10) days advance written notice is required. Language relating to cancellation requirements stating that the insurer’s notice obligation is limited to “endeavor to” is not acceptable.

33.11.8 Operator shall, prior to permit issuance, deliver Certificates of Insurance reasonably acceptable to the City confirming all required minimum insurance is in full force and effect.

33.11.9 Deductibles or retentions shall be the responsibility of Operator. Deductibles or retentions must be listed on the Certificate of Insurance required herein and are subject to the reasonable approval of the City.

33.11.10 Operator shall require any of its subcontractors to carry the types of coverage and in the minimum amounts in accordance with the requirements set out in Section 1.A, 1.B., and 1.C. Operator shall be responsible for any damage or loss suffered.

Commented [Author92]: COGA suggests limiting all three requirements to the extent that the operator has an obligation in the requirements.

Commented [Author93]: Not applicable to midstream operations. COGA suggests striking this provision.

Commented [Author94]: Return receipt requirement is unnecessary.

Commented [Author95]: Operators choose deductibles that are reasonable for their specific company and operation. Deductibles should not be subject to the “reasonable approval” of Aurora. What is the purpose of this requirement?
by the City as a result of non-compliance by Operator or any subcontractor with this Section.

33.11.10 In the event that Operator’s coverage lapses, is canceled, or otherwise not in force, the City reserves the right to obtain the insurance required herein and charge all costs and associated expenses to Operator, which shall become due and payable immediately.

33.12 Risk Management
As part of Operator’s application to the City, Operator shall provide a risk management plan, which will include the identification of potential risks, methods of risk avoidance, and controls that implement techniques to prevent accidents and losses and reduce the impact or cost after the occurrence of identified potential events.

Commented [Author96]: If referring to 33.11.2.01, 33.11.2.02, and 33.11.2.03, COGA suggests modifying language to state, “Operator shall require any of its subcontractors to carry insurance sufficient to cover such subcontractor’s obligations.” The operator is responsible regardless.

Commented [Author97]: Grace period is needed.

The city of Aurora should not purchase insurance on behalf of operators. Further, if operator’s previous insurance is renewed, and less than the insurance that Aurora purchased, is the City able/willing to reimburse the operator for the undue expense?
## SECTION 34.00 PROTECTION OF WATER QUALITY

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SECTION 34.00 PROTECTION OF WATER QUALITY

34.01 General

34.01.1 Water Sources

The City, through Aurora Water, will identify Water Sources and Critical Infrastructure located near Operator's infrastructure, and the Water Sources and Critical Infrastructure will be noted on Operator’s Site Plans that will be provided during the review process. The Operator will then note the distance of the Water Sources and Critical Infrastructure from the edge of the CGF and Associated Facilities.

34.01.2 Water Supply

The Operator shall comply with applicable laws, rules, and regulations concerning the source(s) of water used in the construction and operations phase.

34.02 Surface Water Protection

34.02.1 Maintenance

Routine field maintenance of vehicles or mobile machinery shall not be performed within five hundred (500) feet of any Waters of the United States, as defined by the EPA. All fueling must occur over impervious material, and spills must be cleaned up and properly disposed of.

34.02.2 Wastewater and Waste Management

Operator must submit a waste management plan to the City that complies with the following:

34.02.2.01 All fluids shall be contained, and there shall be no discharge of fluids with the exception of unimpacted stormwater per federal Spill Prevention, Control, and Countermeasure Plan (SPCC) regulations.

34.02.2.02 Waste shall be stored in tanks, transported by tanker trucks and/or pipelines, and disposed of at licensed disposal or recycling sites.

34.02.2.03 A copy of the Operator’s Spill Prevention, Control, and Countermeasure Plan (SPCC) will be submitted to the City as part of the wastewater and waste management plan. The SPCC shall

Commented [Author98]: Would an operator’s Spill Prevention, Control, and Countermeasure Plan (SPCC) suffice as a waste management plan? This plan explains how the operator handles its waste (e.g. all waste generated at certain facilities undergoes a waste determination and is handled in accordance with regulations promulgated by the US EPA, CDPHE, and COGCC.)

Further, this requirement is already covered under federal regulations.
meet all federal requirements associated with spill prevention and mitigation practices.

34.02.3 Stormwater Management

When seeking to permit new midstream facilities, Operator must apply for and obtain a City stormwater and erosion control permit. Erosion and sedimentation control are required.

34.03 Groundwater Protection

34.03.1 Groundwater Pollution Mitigation.

Operator shall avoid causing degradation to surface or ground waters within the City and to wetlands within the City. If Operator is responsible for degradation to water, it will pay its proportionate share to restore water quality as close to baseline as possible.

34.03.2 Class II Underground Injection Control Wells

For operations associated with the CGF, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure.

34.04 Water During Drilling Phase

34.04.1 Water Supply

Operator will enter into a separate agreement with the City for the delivery of groundwater through a commercially exempt well in accordance with the Colorado Division of Water Resources if City water infrastructure is unavailable.

34.05.04 Construction of Gathering Line

34.05.04.1 General

The Operator shall construct a Gathering Line for the transportation of hydrocarbons and produced water to the CGF.

34.05.04.2 Temporary Use of Tanks

Commented [Author99]: Please clarify that this applies to new facilities moving forward only.

Commented [Author100]: This requirement is not applicable to midstream operations and should be removed.
Operator shall be permitted to utilize temporary tanks during Gathering Line maintenance operations, provided Operator has obtained City approval regarding the location and required screening for temporary tanks if the maintenance or temporary tanks are present longer than a week. For maintenance operations that extend greater than seven (7) days, Operator shall give City prior notice of maintenance activities within three (3) days and planned number of temporary tanks.

### 34.06 Berms for Fluid Containment

#### 34.06.1 General

The Operator shall utilize steel-rim berms around all permanent facility tankage at the CGF and Compressor Station with sufficient capacity to contain the maximum volume of the largest tank on location, plus a twenty-five (25)-year twenty-four (24)-hour rain event, plus sufficient freeboard to prevent overflow.

- **34.06.1.01** All berms and containment devices shall be inspected quarterly by the Operator and maintained in good condition.

- **34.06.1.02** No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel, or such sources are rated in accordance with industry codes and standards.

#### 34.06.2 Permanent Berms

Permanent containment berms shall be constructed of earthen berms or steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.

#### 34.06.3 Secondary Containment

Secondary containment shall be constructed with a synthetic or engineered liner that is mechanically connected to the steel ring to prevent leakage.

### 34.07 Floodways

Additional BMPs related to water preservation or protection shall be imposed by the City staff during the OGMP application process in order to mitigate risks of potential contamination to a floodway.
34.08.07 Drainage

34.08.134.07.1 Planning Process & Preliminary Drainage Reports The OGMP process may require the submittal of a Preliminary Drainage Report for Oil & Gas Facilities and Pumping Stations.

34.08.234.07.2 Civil Plans—Process Public Works Engineering will require a civil plan Pre-Submittal Meeting to be held. To set up a meeting, please contact the Aurora Public Works Department.

34.08.334.07.3 Civil Plans—Content and Naming Convention Operator Agreements and associated applications and checklists for Oil & Gas Facilities have been developed using the term “Storm Water Management Plans (SWMPs)” in reference to the Civil Plans for these sites. The Civil Plans for Oil & Gas Facilities include features that go beyond typical SWMPs. Drainage Reports (both Preliminary and Final) and Civil Plan submittals will be reviewed using City standards.

34.08.434.07.4 Civil Plans—Submittal Package Civil Plan submittals for Oil & Gas Facilities will be determined on a case by case basis at civil plan pre-submittal meeting and may include: Final Drainage Report, Storm Water Management Report, and an Inspection and Maintenance Plan. Any grading within an existing utility easement may require structural loading evaluation as determined at the civil plan pre-submittal meeting. The structural loading evaluation shall be submitted with the first submittal of civil plans.

34.08.534.07.5 Subsurface Utility Investigation/Loading Information For Oil & Gas Facility Civil Plans, the City of Aurora Roadway Specifications SUE note 22 (which refers to SB 18-167 and will be updated to refer to CRS 9-1.5) is a required note to be placed on the plans. In addition, Aurora Water requires any crossing of existing utilities or tie-ins to provide pre-design potholing.

34.08.634.07.6 Oil and Gas Pipeline Civil Plans—Content Civil Plans for Oil and Gas Pipelines shall include Plan & Profile sheets (P&Ps) where such pipelines cross City ROW, utility easements, floodplains, or other critical areas as determined on a case-by-case basis. The Subsurface Utility Investigations described above shall be used to provide depictions of existing utilities on those profiles. The P&Ps shall be included with the SWMP submittal.

34.08.734.07.7 Drainage Easements-License Agreements For all Oil & Gas Facilities, the need for Easements and License Agreements shall be evaluated on a
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case-by-case
basis. If there is a need for a drainage or license agreement these documents must be executed prior to civil plan approval.

34.07.8 **Oil and Gas Pipeline CAD Files and As-Built**

2-D CAD files that include the entire pipeline shall be submitted to the City with the Signature Set of Civil Plans. In addition, the City requires as-buils for entire pipeline alignments upon construction completion, for pipelines external to pad sites. This shall be noted on the Site Plans, Civil Plans, and in Storm Water Permits. The City shall hold these plans confidentially and exempt them from disclosure under the Colorado Open Records Act exemptions.

34.07.9 **CAD Submittal Standards.** The City has developed CAD Data Submittal Standards to streamline the process of importing AutoCAD information into the city’s Enterprise GIS. A digital submission meeting the CAD Data Submittal Standards is required before the final Site Plan mylars can be routed for signatures or recorded. Please review the CAD Data Submittal Standards, including templates and required layer file labeling, at http://tinyurl.com/AuroraCAD. Email your Case Manager the appropriate Site Plan and Pipeline Easement files before submitting your final Site Plan mylars. Once received, the City’s AutoCAD Operator will run an audit report and your Case Manager will let you know whether the file meets or does not meet the City’s CAD Data Submittal Standards. Please email CADGIS@auroragov.org for questions or more detailed instructions.
**SECTION 35.00 PROTECTION OF AIR QUALITY**

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SECTION 35.00 PROTECTION OF AIR QUALITY

The BMPs in this Section relate to the CGF and Associated Facilities only.

35.01 Air Quality Monitoring Plan

35.01.1 General

In order to minimize degradation to air quality, Operator shall eliminate, capture, or minimize all potentially harmful emissions and minimize dust associated with onsite activities and traffic on access roads. Operator shall comply with all applicable state and federal regulations, including regulations promulgated by CDPHE, COGCC, and US EPA.

35.01.2 Minimization of Emissions

To protect air quality, the following will be required:

35.01.2.01 The use of electric equipment and electric line power to operate all permanent production equipment.

35.01.2.02 Natural gas engines and turbines will be operated and maintained in accordance with the CDPHE and the US EPA regulations and emissions standards.

35.01.2.03 The use of no-bleed continuous and or-intermittent pneumatic devices that do not bleed natural gas to the atmosphere. 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.

35.01.2.04 Any combustion device, 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.

35.01.2.05 Year-round compliance with the odor standards pursuant to COGCC and CDPHE regulations.
35.01.2.06 Venting is prohibited unless necessary for safety. If emergency venting is required, or if accidental venting occurs, the Operator shall provide notice to the City of such event as soon as, but in no event later than twenty-four (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.

35.01.2.07 Reduction of emissions from oil and gas well maintenance activities. For planned maintenance activities involving the intentional flaring of gas, the Operator shall provide forty-eight (48) hour advance written notice to the City of such proposed flaring. Such notice shall identify the duration and nature of the flaring event, a description as to why flaring is necessary, what steps will be taken to limit the duration of flaring, and what steps the Operator proposes to undertake to minimize similar events in the future.

35.01.2.08 Telemetric control and monitoring systems to detect when pilot lights on control devices are extinguished.

35.01.2.09 Exhaust from all engines, motors, coolers, and all other equipment must be vented up and away from the nearest residences.

35.01.2.10 Operator shall participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at sites.

35.01.3 Air Monitoring and Leak Detection

35.01.3.01 Leak Detection and Repair The Operator shall develop and maintain a Leak Detection And Repair (LDAR) program as required by CDPHE using modern leak detection technologies such as infrared cameras. The Operator shall conduct quarterly IR camera monitoring or alternative instrument monitoring method of all permanent production equipment.

35.01.3.02 Except when an emergency circumstance would necessitate an immediate repair, Operator must repair leaks as defined by applicable and federal rules as quickly as practicable. If more than five (5) days repair time is needed after a leak is discovered, an explanation of why more time is required must
be submitted to the City. At least once per year, the Operator shall notify the City five (5) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

35.01.3.03 Data related to LDAR during any phase shall be made available to the City upon request.

35.01.4 Ozone Air Quality Action Days

The Operator shall respond to Ozone Air Quality Action Day advisories posted by the CDPHE for the Front Range Area by implementing their suggested air emission reduction measures as feasible. Emission reduction measures shall be implemented for the duration of an Ozone Air Quality Action Day advisory and may include measures such as:

35.01.4.01 Minimization of vehicle and engine idling.
35.01.4.02 Reducing truck traffic and worker traffic.
35.01.4.03 Delaying vehicle refueling.
35.01.4.04 Postponement of construction and maintenance activities to the maximum extent practicable.

35.01.4.05 Within thirty (30) days following the conclusion of each annual Ozone Air Quality Action Day season, Operator must submit a report to the City that details which measures it implemented during any Ozone Air Quality Action Day advisories.

35.01.5 Compliance Reports

The Operator must submit bi-annual reports to the City 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, (ii) that the equipment at the CGF and Associated Facilities 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. The bi-annual report must contain a certification as to the truth, accuracy, and completeness of the reports, signed by a
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Responsible Official. The Operator will also provide the City 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 at the CGF and Associated Facilities.

35.01.6 Combustion Devices

To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:

35.01.6.01 A combustion device shall be available at the CGF and Compressor Station during operations for maintenance or emergencies only.

35.01.6.02 The combustion device must be fired with natural gas and designed to operate with a ninety-eight (98) percent or higher hydrocarbon destruction efficiency.

35.01.6.03 The combustion device must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions mean observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

35.01.6.04 The combustion device must be operated with a flame present at all times when emissions may be vented to it, or another mechanism that does not allow uncontrolled emissions.

35.01.6.05 All combustion devices must be equipped with an auto-igniter unless manned while in use.

35.01.7 Burning

No open burning except for the use of combusters or flares shall occur on the site of any oil and gas operation, as per City Code.
35.02 Odor

35.02.1 Odor Prevention

Operator will prevent odors by routing to closed-loop systems. Odor emitting from the CGF and Associated Facilities must be controlled immediately. Operator must minimize odors by proactively addressing and resolving citizen concerns within twenty-four (24) hours.

35.03 Noise Mitigation

For the CGF and compressor station, the following noise mitigation apply:

35.03.1 Operator shall comply with noise requirements set forth in the City’s zoning code for all construction activities.

35.03.2 Operator shall adhere to the City’s noise ordinance:

35.03.3 Operator may be required to provide for additional noise mitigation based on the following site-specific characteristics considering the distance from the nearest residential structure:

- **35.03.3.01** Nature and proximity of adjacent development (design, location, use)
- **35.03.3.02** Prevailing weather patterns, including wind directions
- **35.03.3.03** Type and intensity of the noise emitted
- **35.03.3.04** Vegetative cover on or adjacent to the site or topography

35.03.4 Based on the foregoing, if there is a Residential Building Unit within one thousand three hundred twenty (1,320) feet of the CGF or compressor station location, the City may require one or more of the following additional noise abatement measures or BMPs depending on the site including:

- **35.03.4.01** A Noise Management Plan specifying the hours of maximum noise and the type, frequency, and level of noise emitted, and the mitigation methods to be employed to control both A and C scale noise.
35.03.4.02 A Baseline Noise Mitigation Study shall be conducted to ascertain baseline noise levels at the CGF to demonstrate that noise is expected to be mitigated to the maximum extent practicable, and a copy will be provided to the City.

35.03.5 All noise mitigation measures shall be paid for by the Operator.

35.03.6 **Noise Mitigation Barriers** The Operator shall use a combination of berms, bales, and other measures during the construction of the CGF and Associated Facilities. During the operations of the CGF and Associated Facilities, the Operator shall use a combination of equipment enclosures, structures, or pre-engineered buildings, berms, landscaping, and other visual mitigation measures to ensure compliance with the City’s noise ordinance.

35.04 **Electric Equipment**

Operator shall use electric line power, to power permanent production equipment, such as compressors and motors, in order to mitigate noise and to reduce emissions.

**Commented [Author115]:** Bales are a fire hazard. Same comment above in the exploration and production context, too, but COGA realizes that sometimes they may be appropriate. The idea is that bales should not be mandatory.

**Commented [Author116]:** Electric compressors could face reliability issues if there are power outages.

**Commented [Author117]:** Because Section 35.02.2.02 also allows for the use of natural gas engines and turbines, these regulations are confusing. Please clarify.
SECTION 36.00 PROTECTION OF SURFACE QUALITY

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SECTION 36.00 PROTECTION OF SURFACE QUALITY

36.01 License Agreements
Operator shall use Gathering Lines to be built in accordance with specifications set forth in Section 38 of this Oil & Gas Manual. Operator will utilize Gathering Lines once gathering operations commence. The Operator’s obligation to build and utilize such Gathering Lines is subject to the Operator obtaining all necessary rights-of-way, crossings, licenses and easements, and the City issuing Operator the necessary Public Improvement Permits.

36.02 Fugitive Dust Suppression

36.02.1 Minimize Dust
Dust associated with on-site activities and traffic along pipeline ROW shall be minimized throughout construction and operational activities such that there are no visible dust emissions from access roads or the CGF, Gathering Line, and Associated Facilities unless infeasible given wind conditions. If dust is not suppressed, the City may require the surface to be improved to a dust-free surface.

36.02.2 Water Use
No untreated produced water or other process fluids shall be used for dust suppression.

36.02.3 Safety Data Sheets (SDS)
Safety Data Sheets (SDS) for any chemical-based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use.

36.03 Visual Mitigation

36.03.1 General
Operator shall submit a landscape and screening plan to mitigate visual impacts from the CGF and Associated Facilities for City approval during the OGMP review process.

Visual impacts from the CGF and Associated Facilities, including security fencing, shall be mitigated through a combination of equipment enclosures, structures or pre-engineered buildings, landscaping, opaque fencing, or other similar measures from the public right-of-way and critical public views. Critical public views are
defined as views from existing adjacent surface property owners as of the date of the OGMP application. Visual mitigation may be reduced or waived if written approval is provided by the adjacent surface property owners, and the City determines that the reduction or waiver is not visible from the public right-of-way or impairs critical public views.

36.03.2 Color

All permanent above-ground associated production equipment, structures, and stationary equipment on each CGF, Gathering Line, Associated Facilities shall be painted in a tan or brown matte finish unless a different color is necessary for safety per regulations.

36.04 Traffic

36.04.1 Transportation and Circulation

The Operator will may be required to submit a traffic management plan for the City to review and, if acceptable, approve that includes detailed descriptions of all proposed haul routes for equipment, pipe, and all other material to be hauled on the public and private streets and roads during pipeline and facility construction. The traffic management plan shall include the following:

36.04.1.01 Estimated weights of vehicles when loaded, a description of the vehicles, including the number of wheels and axles of such vehicles and estimated trips per day.

36.04.1.02 Detail of access locations for each CGF, Gathering Lines, and Associated Facilities, including sight distance, turning radius of vehicles, and a template indicating this is feasible.

36.04.1.03 Truck traffic volumes converted to equivalent single axle loads and compared with existing volumes. Trucks anticipated on roadways that are being accessed to equivalent single axle loads using existing volumes and proposed with extraction activities.

36.04.1.04 Truck routing map and truck turning radius templates with a listing of required improvements that are necessary at intersections along the route. Such map would be required and reviewed as needed, on a case-by-case basis.

Commented [Author118]: COGA suggests there be a threshold for projects that would require a plan. These plans make sense for large projects, but not for smaller projects such as pipelines.
Complete traffic letter, determining operational changes and geometric modifications necessary as a result of Operator’s activities.

Identification of the need for any additional traffic lanes, which would be subject to the final approval of the City’s engineer.

Restriction of non-essential traffic to and from CGF, Gathering Lines, and Associated Facilities to periods outside of peak a.m. and p.m. traffic periods and during school hours of schools along the designated traffic routes (generally 7-9 a.m. and 3-6 p.m.).

City may request consolidated haul routes and roadway improvements, or upgrades based on the contents of the traffic management plan.

Road Repairs will be addressed as set forth in the Road Maintenance Agreement. A separate Road Maintenance Agreement shall be required for Operator.

Access points to public roads shall be located, improved, and maintained to ensure adequate capacity for efficient movement of existing and projected traffic volumes and to minimize traffic hazards.

Permanent access roads must be improved a minimum distance of two hundred (200) feet on the access road from the point of connection to a public road. All access roads shall be in conformance with the City’s Roadway Specification Manual applicable at the time of OGMP application for CGF, Gathering Lines, and Associated Facilities. The access road must be improved as a hard surface (concrete or asphalt) for the first one hundred (100) feet from the public road, unless the public road is not already a hard surface, in which case, Operator shall meet the current standards of the public road and the access road must be improved as a crushed surface (concrete or asphalt) for one hundred (100) feet past the hard surface in the appropriate depth to support the weight load.
requirements of the vehicles accessing the CGF, Gathering Line, and Associated Facilities.

36.05.1.02 A geotechnical report and pavement design will be submitted to the City for approval. If an access road intersects with a pedestrian trail or walk, the Operator must pave the access road as a hard surface (concrete or asphalt) a distance of one hundred (100) feet on 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 unless the trail or walk is not already a hard surface, in which case, Operator shall meet the current standards of the trail or walk. Temporary access roads associated with the operation must be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

36.05.1.03 For the CGF, all required roadways for the project shall be evaluated and included in a Public Improvement Plan.

36.05.1.04 Temporary access roads associated with the operation shall be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

36.05.2 Mud Tracking

In accordance with the Storm Water Management Plan, the Operator shall take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets, in excess of de minimus levels, the streets shall be cleaned within twenty-four (24) hours by the Operator. If, for some reason, this cannot be done or needs to be postponed, the City shall be notified of the Operator’s plan for mud removal.

36.05.3 Culverts

Operator shall construct all necessary culverts for road construction per any available City or County, as applicable, Drainage Plan. In the event no information is available, the Operator shall complete any necessary studies or analysis to determine the appropriate culvert size.
36.05.4 Road Repairs

Road repairs will be addressed as set forth in the Road Maintenance Agreement.

36.06 Tree Mitigation

CGF, Gathering Line, and Associated Facilities shall be constructed in a manner to minimize the removal of and damage to and replacement of existing trees in accordance with the City’s tree mitigation policy.

36.07 Cultural and Historical Resource Protection

36.07.1 General

The Operator shall comply with the City of Aurora Municipal Code, as amended, by not causing any construction, alteration, removal, or demolition of a building or feature or make any changes that would impair the historical association of the landmark building, landmark site, or historic district, pursuant to those qualities depicted in the Code, without first obtaining approval. Operator will submit the permit application and await the planning department’s approval following referral to the historic preservation commission, if applicable. If there is a discovery of historical artifacts, Operator will notify the City.

36.07.2 Protection of Natural, Historical, and Archaeological Resources

The nature and location of an Oil and Gas Midstream location or facility shall not interfere with or affect any unique natural resource, historical site or landmark, or known archaeological site.

36.08 Wildlife WIMP

This BMP is only applicable in the event that a Facility is located in a significant wildlife habitat or high priority habitat, as defined by the State Division of Wildlife, and/or in a natural area or open space. In such a case, the Operator shall consult with the State Division of Wildlife or the City Parks, Recreation and Open Space Department to obtain recommendations for appropriate site-specific and cumulative impact mitigation procedures. If not applicable, Operator shall provide the City with a statement that it has investigated whether the Facility is located near a significant wildlife habitat and that this BMP is not applicable.
36.09 Buildings, Structures, and Associated Appurtenances
Any buildings or structures must meet the design standards contained in the Aurora Municipal Code. All site features shall be integrated into the building or site design.

36.10 Removal of Debris
All construction-related debris shall be removed from the CGF, Gathering Line, and Associated Facilities for proper disposal in a timely manner. The CGF, Gathering System, Flowlines, and Associated Facilities shall be maintained free of debris and excess materials at all times during operation. Operator shall also not stockpile debris at the CGF, Gathering Line, and Associated Facilities.

36.11 Trailers
A construction trailer(s) is permitted as an accessory use during construction only. No permanent residential trailers shall be permitted at the CGF, Gathering Line, and Associated Facilities; provided, however, that until six (6) months following the end of the construction phase on the CGF, Gathering Line, and Associated Facilities, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator’s personnel and the personnel of its subcontractors on a temporary basis.

36.12 Noxious Weed Control
The Operator shall be responsible for ongoing noxious weed control as defined under the Colorado Noxious Weed Act (C.R.S. § 35-5.5-101 et seq.) at the CGF, Associated Facilities, along access roads, and in disturbed areas under restoration as a result of related construction activities or operations per City or other applicable agency regulations.

36.13 Park and Open Space Area Setback
The CGF, Gathering Line, and Associated Facilities, shall be sited a minimum of three hundred fifty (350) feet away from existing and proposed parks and open space areas. This distance shall be measured from the perimeter of the CGF, Gathering Line, or Associated Facility. For Gathering Lines that pass within three hundred fifty (350) feet of a park or open space area, a mitigation plan which identifies measures to be taken to mitigate impacts to parks and open space areas shall be submitted to the City.

Commented [Author120]: Is this a similar requirement placed upon utility providers? COGA also suggests reviewing the applicable PHMSA/DOT regulations related to gathering line regulation.
36.14 Reclamation

36.14.1 Interim Reclamation.

Operator must submit an Oil & Gas Facility Interim Reclamation Plan to the City with each OGMP.


Operator must submit a Final Oil & Gas Facility Reclamation Plan to the City concurrently with the submission of the COGCC permit to decommission any CGF, Gathering Line, or Associated Facility.

36.14.3 Decommissioning of Gathering Lines

Operator shall properly drain and decommission in accordance with City, COGCC, DOT and PHMSA rules and regulations all Gathering Lines associated with any Plugged and Abandoned Well or Wells which are plugged, abandoned, and decommissioned by oil and gas upstream affiliate Operator(s), and shall remove from service all Gathering Lines related to the plugged wells by either abandoning in place and filling with flow fill or removing the pipe subject to approval by the City.

36.15 Damages

The initial cost of installing the Gathering Line and of maintaining such easements shall be borne by the Operator. In the event that Operator relocates an access road or Gathering Line causing damage to improvements owned by the City, the Operator shall repair the damage pursuant to the appropriate permit. If Operator fails to make the necessary repairs, Operator shall promptly reimburse the City for such damage upon receipt of a reasonable itemized statement that documents the cost to repair the damage; provided that, such reimbursement shall be received by the City no later than forty-five (45) calendar days from the date of the itemized statement. Notwithstanding the foregoing, nothing in this paragraph prevents an independent developer from seeking an agreement with Operator to relocate Gathering Lines. In the event that a relocation of the Gathering Line is needed, the City and the Operator will work cooperatively to identify an alternative route and Operator shall be permitted to maintain use of the existing Gathering Line until six (6) months after City’s approval of any necessary permits for such alternative routes.
# SECTION 37.00 GENERAL OIL & GAS MIDSTREAM PERMIT REQUIREMENTS

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SECTION 37.00 GENERAL OIL & GAS MIDSTREAM PERMIT REQUIREMENTS

37.01 Surface Stakeholder Notification

37.01.1 Notice of Application

When Operator submits an OGMP application to the City, the Operator shall provide a list of all property owners of record (names, property addresses and mailing addresses) and all registered neighborhood organizations within one mile of the CGF and Associated Facilities and the surface owners of the property upon which the CGF or Associated Facilities is located (Notified Residents). The City shall send out notices of the OGMP application to notified residents when the review process commences for the purpose of receiving public comment.

37.01.2 Resident Notification of Neighborhood Meeting

When the City begins the OGMP review process, the Operator shall send notification of a Neighborhood Meeting to all Notified Residents. The notice must include:

- Operator’s contact information
- Approximate date to begin drilling
- Information on the Neighborhood Meeting

Operator shall send proof of mailed notices to the City by affidavit or certificate of mailing.

37.01.3 Neighborhood Meeting

Upon City acceptance of the OGMP application, the Operator shall hold a meeting to facilitate engagement between the Operator and nearby residents (Neighborhood Meeting). Operator shall notify all Notified Residents of the Neighborhood Meeting. Operator shall provide notice a minimum of ten (10) days in advance of the Neighborhood Meeting.

Notified Residents may submit written comments to the City on the OGMP application, including the BMPs. The City shall transmit those comments which require an Operator response to the Operator. Operator shall respond to those comments within thirty (30) days in writing to the City. A neighborhood meeting may not be required if there are no residents within one (1) mile of the CGF or
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Associated Facilities location, no comments are received from the initial notice of the filing of OGMP Application, and the City agrees.

37.01.4 Notice of Administrative Decision

The City shall provide Operator with a form letter for Notice of Administrative Decision for a pending OGMP application. At least ten (10) calendar days prior to the scheduled decision on an OGMP application, the Operator shall send out a Notice of Administrative Decision to the Notified Residents. The Operator shall provide proof to the city of mailed notices by affidavit or certificate of mailing.

37.02 Other Notifications

37.02.1 General

All notices and other correspondence sent to the City shall be in writing and shall be delivered by: (A) certified mail with return receipt, or (B) hand delivery with signature or delivery receipt provided by a third-party courier service (such as FedEx, UPS, etc.) to the designated representative of the City as indicated below, or (C) email to the designated representative of the City as indicated below.

City of Aurora
Oil & Gas Division
15151 E. Alameda Parkway, #5900
Aurora, CO 80012

Attn: Oil & Gas Manager
Telephone: 303-739-7676
Email: jsmoore@auroragov.org

37.02.2 Notifications to the City Regarding Commencement of Construction at CGF and Pipeline Operations

Written notice to the City no less than thirty (30) days prior to the commencement of any of the following: Construction, planned maintenance, and abandonment. Operator must obtain all necessary permits prior to construction. Any notification provided by Operator to City may be used by the City for public notification. All Notifications shall be submitted to the Planning Local Government Designee
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(LGD) with copies to the Public Works City Engineer and the Water Department Environmental Services Manager.

37.02.3 Routine Maintenance

Operator may perform all maintenance and operations on the CGF, Gathering Lines that the Operator deems prudent and necessary as long as in accordance with requirements set forth by easement language and state and federal requirements. Operator may perform routine maintenance of CGF, Gathering Line, and Associated Facilities without prior notification to the City.

37.02.3.01 If Operator intends to perform maintenance that may be excessively loud or performed with vehicles larger than a standard work vehicle, the City appreciates advance notification in order to best answer questions from citizens.

37.03 Incidents/Spills

37.03.1 Events or Incidents. Any COGCC reportable safety event or OSHA reportable injuries shall be reported to the City within twenty-four (24) hours. Once the applicable forms are submitted to the agency, a copy of that form will be provided to the City. In the event of a fire, explosion, or need for emergency services response, 911 shall be called.

37.03.2 Spills. Operator must notify the City of any spill of any material on permeable ground on the CGF, Gathering Line, and Associated Facilities that have a reportable spill quantity under any law. Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the CGF, Gathering Line, and Associated Facilities.

37.04 Annual Development Schedule

The Operator shall provide a summary of planned operations and an operational timeline (Development Schedule) to the City by January 31 of each year. The Operator may revise the summary and timeline from time to time provided that the Operator will keep the City informed of any revision to the Development Schedule. The Development Schedule should include a brief summary of major planned operations at all of Operator’s Oil & Gas Midstream locations and Associated Facilities within the City for the coming year, including a proposed timeline of operations, and any new permitting activities. This report is informal in nature and may be changed by the Operator at any time. The report provides guidance to the City staff for planning workflows.

Commented [Author122]: COGA suggests removing this requirement. These reports are publicly available and Aurora can request such reports from the respective agencies.

Commented [Author123]: Planning and construction schedules can change daily. COGA suggests revising this section to add more flexibility for such changes and to reduce the number of notifications potentially sent.

COGA recommends modifying this language such that the City of Aurora may request a summary of planned operations at any time but the obligation on the part of the operator to provide an updated schedule on a frequent basis is removed.
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37.05 Previously Installed Facilities
When an Operator purchases or acquires an interest in an Oil & Gas Midstream location or facility, the Operator must review the BMPs in effect in this Oil & Gas Manual at the time of purchase the Oil & Gas Midstream location or facility was approved. Within ninety-one-hundred twenty (230) days of purchase, the Operator must submit a written report demonstrating compliance with all BMPs or a plan to bring the Oil & Gas Midstream location or facility and all Associated Facilities into compliance.

37.06 Construction Work Hours
Operator shall only construct CGF, Gathering Line, and Associated Facilities, during hours as specified in Aurora Zoning Code unless exceptions are requested by the City Operator and approved by the City during the OGMP process.

37.07 CGF and Associated Facilities Documentation
CGF and Associated Facilities documentation will be held in accordance with OSHA Process Safety Information and continuous review per OSHA requirement.

37.08 37.07 Mechanical Integrity Program
Mechanical Integrity Program shall be developed and implemented per industry best practices.

37.09 37.08 Operations and Maintenance of the CGF Work Hours
All facilities on the CGF property shall be staffed with the appropriate number of operators, as determined by the operator, to ensure the safe, and reliable operation of the CGF, Gathering Line, and Associated Facilities.

37.10 Plating Requirements
The site configuration of the parcel must comply with subdivision standards and should not limit access for adjacent unplatted properties. Cross access agreements may be necessary to ensure that other properties are not negatively impacted.
SECTION 38.00 PIPELINE CONSTRUCTION REQUIREMENTS

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SECTION 38.00 PIPELINE CONSTRUCTION REQUIREMENTS

38.01 Easements
All pipeline rights-of-way (ROW) or easements shall be located outside existing and future road ROWs based on the latest available roadway information.

38.02 License Agreements
License Agreements are required for all crossing of City ROW and City easements.

38.03 Stormwater Management
Operator must apply for and obtain a City stormwater and erosion control permit. Erosion and sedimentation control is required.

38.04 General Requirements
38.04.1 Following construction, the site shall be left in as good a condition as prior to construction, and Operator shall work with the applicable surface owner on restoration. Operator shall restore the site to a substantially similar condition as it existed prior to construction unless otherwise agreed by the City in writing.

38.04.2 All new pipelines shall have the legal description of the location recorded with the Clerk and Recorder of the City within thirty (30) days of completion of construction and provide the City GIS feature classes in the projection identified by the City.

38.04.3 Operator will submit to City all records required to be submitted to PHMSA or the PUC, including those related to inspections, pressure testing, pipeline accidents, and other safety incidents.

38.04.4 Once the non-water pipelines are no longer in use, they shall be properly abandoned in place using flow fill or similar or removed. At this time, the easement shall be released to the property owner or to the City. All pipelines, installed greater than fifty (50) years ago, shall be properly abandoned or re-certified by a third party, and the certification shall be provided to the City.

38.05 Pipeline Location Requirements
38.05.1 Operator is responsible for locating all existing and proposed utility crossings and ensure a minimum vertical separation of ten (10) feet, appropriate site specific amount below said crossing. If, during the crossing design, a reduced vertical separation is requested due to site-specific factors, the City Engineer can approve a crossing with as little separation as five.

Commented [BHFS131]: Please clarify that crossing roads may be acceptable.

Commented [Author132]: Please clarify the process of obtaining this permit for pipelines. It does not appear to be part of Section 32 or Section 34.

Commented [Author133]: Would the ROW grant/easement be sufficient?

Commented [Author134]: COGA suggests the City request these documents from PHMSA or PUC instead of requiring the operator to do so.

Commented [Author135]: Unclear how the mechanism of abandonment is determined. Does the landowner have a say in the matter?

Commented [Author136]: What is the mechanism for informing the operator of a proposed utility crossing? This would affect negotiations with landowners regarding securing easements.

Commented [Author137]: 10’ separation could present safety and maintenance problems depending on final depth. Further, depth requirements between midstream and upstream are considerably different. Why?
COGA Redline

(5) feet. Some crossing locations may be subject to additional requirements, including enhanced stabilization.

38.05.2 All pipeline utility crossings shall be perpendicular or a minimum crossing angle sixty (60) degrees.

38.05.3 Horizontal offsets to all existing and proposed City utilities shall be a minimum of ten (10) feet edge to edge with the exception of critical infrastructure or planned critical infrastructure, then the horizontal offset shall be a minimum of thirty (30) feet. Construction equipment is not allowed on top of critical infrastructure unless additional protection, as approved by the City, is applied.

38.05.4 The pipeline shall not have an undue adverse effect on existing and future development on the surrounding area as set forth in applicable City Master Plans and mitigates negative impacts on the surrounding area to the greatest extent feasible.

38.05.5 The nature and location or expansion of the pipeline will not unreasonably interfere with any significant wildlife habitat and will not unreasonably affect any endangered wildlife species, unique natural resource, known historical landmark, or archaeological site within the affected area.

38.05.6 No adverse impact, from stormwater runoff, to the public ROWs, of water supply and/or surrounding properties will result because of the pipeline.

38.05.7 Operator shall mitigate any conflicts with any mutual irrigation ditch and/or structures used to transport water within the easement or ROW of the pipeline.

38.05.8 No pipeline shall be constructed in any zoning district until approved by the City.

38.05.9 Pipeline route shall follow quarter-sections, or existing ROW and may not traverse properties diagonally unless the diagonal distance is less than two hundred fifty (250) feet unless specified by landowner or developer, with coordination of the City. For all routes on a non-platted parcel of land that do not meet the criteria in this paragraph, the Operator shall consult the City as to an acceptable pipeline route.

38.05.10 No pipelines shall be allowed in City ROW, with the exception of ROW crossings, and the edge of the closest pipeline to ROW must be a minimum distance of thirty (30) feet. Any pipeline which is located within an easement obtained on or after the Effective Date, and within an existing and/or future ROW, shall be moved at the

Commented [Author138]: What is the mechanism for informing the operator of planned infrastructure? This would affect negotiations with landowners regarding securing easements.

Commented [Author139]: Requirement would make it more difficult to meet other pipeline construction requirements.
expense of the Operator and/or permitted upon receipt of notice by City of its intent to improve or construct a roadway within the ROW.

38.05.11 Maximum pipeline corridor width shall be seventy-five (75) feet. Temporary construction easements are not included in maximum width.

38.05.12 Unless infeasible, all pipelines shall be sited a minimum of one hundred fifty (150) feet away from general residential, commercial, and industrial buildings, as well as the high-water mark or floodplain of any water of the United States as defined by the EPA. This distance shall be measured from the nearest edge of the pipelines. Gathering Lines that pass within one hundred fifty (150) feet of general residential, commercial, and industrial buildings or the high-water mark or floodplain of any water of the United States as defined by the EPA shall incorporate leak detection, secondary containment, or other mitigation, as appropriate. The mitigation plan for such pipelines shall be submitted to the City.

38.05.13 Floodways, creeks, ditches, and other conveyances shall be bored underneath at a depth no less than twenty (20) feet as determined by a Professional Engineer stamped geotechnical report and horizontal directional drill design.

38.06 Testing and Maintenance

38.06.1 All steps and or phases of construction shall be inspected by Operator’s third-party inspectors or the City.

38.06.2 If applicable, DOT Operational Control Center (OCC) will be used to monitor and control the DOT-regulated pipelines. Safety and pipeline systems actively monitor for rupture, leak, and flow anomalies.

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SECTION 90.00 INSPECTIONS

90.01 General

90.01.1 Operator Monitoring

The Operator will conduct its air, groundwater, and plugged and decommissioned well monitoring programs as required by the Oil and Gas Manual.

90.01.2 Access for Inspections

Operator shall allow the City access to the Oil and Gas Location, Oil and Gas Facility, Flowlines, CGF, Gathering Lines, and Associated Facilities easements for the purpose of undertaking compliance inspections, provided the City personnel are equipped with all appropriate personal protection equipment (PPE), that such personnel comply with the Operator’s customary safety rules and are accompanied by an Operator’s representative, with the exception of Stormwater and Erosion Control Permit inspections for Facilities.

90.01.3 Notification for Inspections

Operator shall allow the City access to the Oil and Gas Location, Oil and Gas Facility, Flowlines, CGF, Gathering Lines, and Associated Facilities easements upon reasonable notice to the Operator. Reasonable notice may include notification by City staff at the Oil and Gas Location or Oil and Gas Facility.

90.01.3.01 Inspection Results

The City shall provide the Operator with the results of any inspection within three (3) business days of the inspection. Additionally, the City reserves the right to contact the appropriate COGCC, CDPHE, PUC, or PHMSA area inspector if non-compliance issues related to state laws, rules, or regulations are identified as a result of field inspections or if non-compliance issues are not resolved expediently. Operator shall promptly address any compliance issues noted by the City staff.

90.02 Cost of Inspections

90.02.1 General

The Operator shall reimburse the City for inspection costs reasonably incurred to inspect the Operator’s facilities to determine compliance. The City may impose an
inspection fee on Operator. The fee will cover the City’s reasonable cost of the compliance inspection. Operator shall pay the invoiced amount within thirty (30) business days.
COGA Redline

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SECTION 91.00 ENFORCEMENT

91.01 General

The City may impose penalties for the violations of these BMPs or specifications under [Placeholder for new code: Aurora Municipal Code 135-103].

Any Operator or their employees, agents, or assigns violating any provision of this Oil & Gas Manual shall be subject to the penalties of A.M.C. Section 1-13. Each day of such unlawful operation shall constitute a separate violation.

SECTION 92.00-99.00 RESERVED
We steward access to the natural resources under our authority with integrity and respect for our citizens, businesses, and the environment.

City of Aurora
Oil & Gas Division
Jeffrey S. Moore, P.G., Manager
We welcome public comments on this Draft Oil & Gas Manual. To access the Draft Oil & Gas Manual, go to AuroraGov.org/Oil&Gas.

Comments may be emailed to Oil&Gas@AuroraGov.org

Two virtual Town Hall meetings will be held on June 30 and July 16. Visit AuroraGov.org/Oil&Gas for details.
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SECTION 1.00 INTRODUCTION

1.01 Scope

This Oil & Gas Manual (OGM) sets forth the minimum acceptable criteria for permitting, designing, and constructing all locations and facilities related to oil and gas development within the City of Aurora.

Sections 1.00-7.00 set forth the criteria for Oil and Gas Locations, Oil and Gas Facilities, and Flowlines, including well pads, wells, and related infrastructure.
Sections 31.00-38.00 of this Oil & Gas Manual (OGM), set forth the minimum acceptable criteria for permitting, designing, and constructing pipelines and pipeline facilities, including Central Gathering Facilities (CGF), Gathering Lines, and Associated Facilities within the City of Aurora.

Regulations and Best Management Practices (BMPs) related to oil and gas development not specifically addressed in this document shall follow the provisions of the latest Rules and Regulations of the Colorado Oil & Gas Conservation Commission (COGCC) and the Air Quality Control Commission (AQCC).

1.02 Authority

1.02.1 State Authority

The Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20-101 et seq. authorizes local governments to regulate the surface impacts of oil and gas operations in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare and the environment within its jurisdiction. It also authorizes local governments to adopt reasonable regulations for surface impacts of oil and gas operations that address:

1.02.1.01 Land use

1.02.1.02 The location and siting of oil and gas facilities and oil and gas locations.

1.02.1.03 Impacts to public facilities and services.

1.02.1.04 Water quality and source, noise, vibration, odor, light, dust, air emissions, and air quality, land disturbance, reclamation procedures, cultural resources, emergency preparedness, and coordination with first responders, security, and traffic and transportation impacts.

1.02.1.05 Financial securities and insurance as appropriate to ensure compliance with the regulations of the local government.

1.02.1.06 All other nuisance-type effects of oil and gas development.

1.02.1.07 Otherwise planning for and regulating the use of land to provide planned and orderly use of land and protection of the environment in a manner consistent with constitutional rights.

1.02.1.08 Inspect all facilities subject to local government regulation.
1.02.1.09 Impose fines for leaks, spills, and emissions.

1.02.1.10 Impose fees on Operators or owners to cover the reasonably foreseeable direct and indirect costs of permitting and regulation and the costs of any monitoring and inspection program necessary to address the impacts of development and to enforce local governmental requirements.

Pursuant to the Colorado Oil and Gas Conservation Act, C.R.S. § 34-60-131 local governments may adopt regulations that are more protective or stricter than state requirements.

Pursuant to the Colorado Air Pollution Prevention and Control Act (APPCA), C.R.S. § 25-7-108 local governments may enact local air pollution resolutions or ordinances that include more stringent emission control regulations than state requirements.

1.02.2 Aurora Municipal Code

[Placeholder for final code sections A.M.C. 135-101, 135-102, 135-103, 135-104] give authority to the Oil & Gas Manual to regulate Oil and Gas Locations, Oil and Gas Facilities, pipelines, and all other oil and gas related operations.

1.03 Revisions

Revisions to this Oil & Gas Manual may be adopted as often as needed by the City Manager or their designee. It is the responsibility of the Operator to obtain the latest revisions from the City.

1.04 Review and Approval

City staff will review all submittals for general compliance with this Oil & Gas Manual. However, approval by the City does not relieve the Operator from the responsibility of ensuring their calculations, plans, specifications, construction, and as-built drawings are correct and in compliance with this Oil & Gas Manual.

1.05 Interpretation

In the interpretation and application of the provisions of this Oil & Gas Manual, the following shall govern:
API Redline

1.05.1 Minimum Requirements

This Oil & Gas Manual shall be regarded as the minimum requirements needed for the protection of public health, safety, welfare, and the environment.

1.05.2 Existing Permits

This Oil & Gas Manual shall not abrogate or annul any permit issued before its effective date, any construction plans approved before their effective date, or any site plans that have been recommended for approval by the City’s Planning and Zoning Commission before the effective date of these standards.

1.05.3 Headings

The descriptive headings of the sections of this Oil & Gas Manual are inserted for convenience only and shall not control or affect the meaning or construction of any regulations herein.

1.06 Terms and Definitions

Wherever in this Oil & Gas Manual the following terms, acronyms, or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

1.06.1 Abbreviations

A.M.C. Aurora Municipal Code
AMSE Association of Mechanical and Structural Engineers
AQCC Air Quality Control Commission of Colorado
ASTM American Society for Testing and Materials
BMP Best Management Practice
BTEX Benzene, Toluene, Ethylbenzene and Xylene
CDOT Colorado Department of Transportation
CDPHE Colorado Department of Public Health and Environment
CERCLA Comprehensive Environmental Response, Compensation and Liability Act
CGF Central Gathering Facility
COA City of Aurora
COGCC Colorado Oil & Gas Conservation Commission

Commented [CJM3]: We agree with this provision. A good add, but we would suggest adding in a notation to C.R.S. Title 24 Article 68.
1.06.2 Definitions

ABUTTING shall mean two or more properties or zone lots sharing a common border or separated only by a public or private right-of-way or by public open space or body of water not more than 1,000 feet in width.

ABUTTING PROPERTY OR ZONE LOT shall mean property that shares at least part of a boundary line, not just a corner point, with the subject property or zone lot.

ACCESSORY EQUIPMENT shall mean any equipment that is integral to the production and operation of an oil or gas well, including but not limited to tanks, treaters, separators, and production pits.

ASSOCIATED FACILITIES shall mean a Compressor Station, Launcher and Receiver sites, Valve Stations, Electrical Substation, and related equipment.

BERM shall mean an earthen barrier of compacted soils preventing the passage of liquid materials or providing screening from adjacent uses as may be specified in an applicable development standard.

BURIED DEPTH shall mean the depth of cover to the top of the largest pipe, typically a minimum of forty-eight (48) inches.
CENTRAL GATHERING FACILITY (CGF) shall mean a facility or location which receives crude oil, liquid hydrocarbons, associated field gas, and produced water from production wells and central distribution points via a Gathering Lines to treat and stabilize the liquid hydrocarbon into a saleable product.

CITY shall mean the City of Aurora, Colorado, a home rule municipal corporation of the Counties of Adams, Arapahoe, and Douglas.

CITY CODE shall mean the duly adopted Aurora Municipal Code of the City of Aurora, Colorado, as amended.

COMMERCIAL EXEMPT WELL Defined by the state of Colorado Department of Natural Resources Division of Water Resources for uses of water for drinking and sanitation facilities inside a business.

COMPRESSOR STATION shall mean a facility that collects natural gas from exploration and production facilities via Gathering Lines and transports natural gas into third party systems for further processing.

CONSTRUCTION shall mean any site preparation, assembly, erection, substantial repair, alteration, or similar action.

CORROSION shall mean the deterioration of a material, usually a metal, which results from a reaction with its environment.

CRITICAL INFRASTRUCTURE shall mean all existing or planned source water pipelines, potable waterlines of sixteen-inch (16”) diameter and greater, sanitary sewer pipelines of twenty-four-inch (24”) diameter and greater, storm sewer pipelines (or box culverts) of thirty-six-inch (36”) diameter or greater or City pump stations, lift stations, and bridges.

CRUDE OIL see OIL.

CUSTODY TRANSFER shall mean the transaction involving the transportation and measurement of a raw petroleum product from one Operator to another.

DISTANCE FROM AN OIL AND GAS LOCATION TO A PLATTED RESIDENTIAL SUBDIVISION, PLATTED LOT LINE CONTAINING A
RESIDENTIAL BUILDING UNIT shall mean the distance from the edge of the Oil and Gas Location (not including access road) to the nearest platted residential lot line or a platted lot line that contains a Residential Building Unit.

ENGINEER shall mean a Licensed Professional Engineer (PE) in the State of Colorado.

EVENT shall mean a significant occurrence or happening. As applicable to pipeline safety, an event could be an accident, abnormal condition, incident, equipment failure, human failure, or release.

EXPRESSIONS Wherever the words “as required,” or words of like meaning are used, it shall be understood that the direction, requirements, or permission of the City’s Oil & Gas Division Manager is intended. Similarly, the words “approved,” “acceptable,” shall refer to approval by the City’s Oil & Gas Division Manager.

FLOWLINE shall mean 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. The different types of flowlines are:

Wellhead Line shall mean a flowline that transfers well production fluids from an oil or gas well to process equipment (e.g., separator, production separator, tank, heater treater), not including pre-conditioning equipment such as sand traps and line heaters, which do not materially reduce line pressure.

Production Piping shall mean a segment of pipe that transfers well production fluids from a wellhead line or production equipment to a Gathering Line or storage vessel and includes the following:

Production Line shall mean a flowline connecting a separator to a meter, LACT, or Gathering Line;
Dump Line shall mean a flowline that transfers produced water, crude oil, or condensate to a storage tank, pit, or process vessel and operates at or near atmospheric pressure at the flowline’s outlet;

Manifold Piping shall mean a flowline that transfers fluids into a piece of production facility equipment from lines that have been joined together to comingle fluids; and

Process Piping shall mean all other piping that is integral to oil and gas exploration and production related to an individual piece or a set of production facility equipment pieces.

Off-Location Flowline shall mean a flowline transferring produced fluids (crude oil, natural gas, condensate, or produced water) from an oil and gas location to a production facility, injection facility, pit, or discharge point that is not on the same oil and gas location. This definition also includes flowlines connecting to gas compressors or gas plants.

Peripheral Piping shall mean a flowline that transfers fluids such as fuel gas, lift gas, instrument gas, or power fluids between oil and gas facilities for lease use.

Produced Water Flowline shall mean a flowline on the oil and gas location used to transfer produced water for treatment, storage, discharge, injection, or reuse for oil and gas operations. A segment of pipe transferring only freshwater is not a flowline.

GAS shall mean all natural gases and all hydrocarbons not defined as oil. Examples are: natural gas, flammable gas, manufactured gas, petroleum, or other hydrocarbon gases including propane; or any mixture of gas produced, transmitted, distributed, or furnished by a utility.

GATHERING LINE shall mean a gathering pipeline or system as defined by the Colorado Public Utilities Commission, Regulation No. 4, 4 C.C.R. 723-4901, Part 4, (4 C.C.R. 723-4901) or a pipeline regulated by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration pursuant to 49 C.F.R. §§ 195.2 or 192.8. (49 C.F.R. §§ 195.2 or 192.8 and 4 C.C.R. 723-4901 in existence as of [date of adoption of this OGM] and does not include later amendments.)
HAZARD AND OPERABILITY ANALYSIS (HAZOP) shall mean a systematic method for evaluating hazards. It often involves the review of detailed system drawings, specifications, and operating procedures. Process hazards and potential operating problems are identified through a qualitative investigation of deviations from normal process conditions.

HORIZONTAL DIRECTIONAL BORING OR DRILLING (HDD) shall mean a method of installing underground pipelines, cables, and service conduit through trenchless methods. It involves the use of a directional drilling machine, and associated attachments, to accurately drill along the chosen bore path and backream the required pipe.

HYDROCARBON shall mean an organic compound of hydrogen and carbon, such as any of those which are the chief components of petroleum and natural gas.

INJECTION WELL shall mean any hole drilled into the earth into which fluids are injected for purposes of secondary recovery, storage, or disposal pursuant to authorizations granted by the COGCC.

INTERNAL FLOATING ROOF TANKS shall mean a tank that has both a fixed roof and an internal floating roof. The fixed roof is usually a cone roof. The internal floating roof can be constructed of steel, aluminum, plastic, or other material. These tanks hold stabilized liquid hydrocarbon.

LEASE AUTOMATIC CUSTODY TRANSFER (LACT) shall mean a unit that measures the net volume and quality of liquid hydrocarbons. This system provides for the automatic measurement, sampling, and transfer of oil from one Operator to another.

OBSERVER shall mean the authorized representative of the Oil & Gas Division Manager assigned to observe the work.

OIL shall mean crude petroleum oil and any other hydrocarbons, regardless of gravities, that are produced at the well in liquid form by ordinary production methods, and that is not the result of condensation of gas before or after it leaves the reservoir. Oil that is extracted from the ground before it is refined into usable products, such as gasoline.

OIL AND GAS shall mean oil or gas or both oil and gas.
OIL & GAS DIVISION shall mean the Oil and Gas Division of the City of Aurora.

OIL & GAS DIVISION MANAGER shall mean the authorized representative of the City who provides overall technical coordination and monitoring of work.

OIL & GAS FACILITY shall mean equipment or improvements used or installed at an Oil and Gas Location for the exploration, production, withdrawal, gathering, treatment, or processing of crude oil, condensate, E&P waste, or gas. Any well, wellhead, flowlines, tanks, surface equipment, or associated infrastructure used in the development, production, storage, or marketing of oil, natural gas, natural gas liquids, or other hydrocarbon resources.

OIL & GAS LOCATION shall mean a definable area where an operator has disturbed or intends to disturb the land surface in order to locate an Oil and Gas Facility. An Oil and Gas Location might contain a single well, multiple wells, and/or associated infrastructure. An Oil and Gas Location is the primary component that is permitted through the Oil & Gas Permit application process.

OIL & GAS MIDSTREAM PERMIT (OGMP) shall mean a duly approved permit to construct a CGF, Gathering Line, or Associated Facilities within the City of Aurora.

OIL & GAS PERMIT (OGP) shall mean a properly approved permit to begin construction on an Oil & Gas Location within the City of Aurora.

OIL AND GAS WELL see WELL.

OPERATIONAL PHASES shall mean those phases within the life cycle of an Oil & Gas Location or Oil and Gas Facility, which best describe the type of activities happening at the Oil & Gas Location or Oil and Gas Facility during the phase. It is possible for multiple phases of operation to be occurring at the same time with respect to a single Oil & Gas Location. Chronologically, those phases are:

   PERMITTING PHASE shall mean the period of time in which the project proposed by the Operator is being evaluated by the City. The Permitting Phase ends with a decision by the City and when all additional required federal, state, and local permits or approvals have been obtained.

   CONSTRUCTION PHASE shall mean the conducting of civil and earth work in connection with the construction and installation of drilling pads,
visual mitigation measures, access routes, pipelines, and launcher/receiver locations. The Construction Phase ends when the Oil & Gas Location or Oil and Gas Facility is fully prepared for its intended purpose.

**DRILLING PHASE** shall mean the period in which a drilling or spudder rig is utilized to penetrate the surface of the earth with a drill bit and the installation of well casing and cement at one or more wells. The Drilling Phase ends when the Completion Phase begins.

**COMPLETION PHASE** shall mean the period of hydraulic fracturing, coiling, workover, installation of tubing, and flowback of one or more wells at the Oil & Gas Location. The Completion Phase ends when the Production Phase begins.

**PRODUCTION PHASE** shall mean the period in which one or more wells are capable of producing hydrocarbons that flow through permanent separator facilities and into tanks or, if applicable, into a Gathering Line.

**RECLAMATION PHASE** shall mean the period of returning or restoring the surface of disturbed land as nearly as practicable to its condition prior to the commencement of oil and gas operations.

**OPERATING PLAN** shall mean a general description of an oil or gas well facility identifying purpose, use, typical staffing pattern, seasonal or periodic considerations, routine hours of operation, source of services and infrastructure, and any other information related to the regular functioning of that facility.

**OPERATOR** shall mean the permitted entity authorized to construct or operate an Oil & Gas Location, a Well, or an Oil & Gas Facility in the City of Aurora.

**PIG** shall mean a generic term signifying any independent, self-contained device, tool, or vehicle that is inserted into and moves through the interior of a pipeline for inspecting, dimensioning, or cleaning.

**PIG LAUNCHER AND RECEIVER SITES** shall mean a location including equipment associated with the operation and maintenance of the pipelines associated with the cleaning and inspection of the pipelines, also known as pigging.

**PIPELINE & HAZARDOUS MATERIALS SAFETY ADMINISTRATION**
PHMSA monitors compliance through field inspections of facilities and construction projects; programmatic inspections of Operator management systems, procedures, and processes; incident investigations; and through direct dialogue with Operator management.

 PIPELINE MAINTENANCE shall mean the process of maintaining property or equipment, including pipelines, to preserve it and prevent it from failure and ensure that it will continue to perform its intended function.

 PLANNING DEPARTMENT shall mean, unless the context clearly indicates otherwise, the Aurora Planning and Development Services Department.

 PLATTED RESIDENTIAL SUBDIVISION shall mean a subdivision that has been approved and recorded and is located in a zone that allows residential uses.

 PROCESS SAFETY MANAGEMENT (PSM) shall mean an analytical tool focused on preventing releases of any substance defined as highly hazardous by the EPA or OSHA. A “process” is defined by OSHA in the PSM standard as “any activity involving a flammable substance including any use, storage, manufacturing, handling, or the on-site movement of such chemicals, or combination of these activities.”

 PRODUCED WATER TRANSFER SYSTEM Defined by COGCC, to mean a system of off-location flowlines that transports produced water generated at more than one Oil & Gas Location or production facility.

 PRODUCTION PITS shall mean those pits used for initial settling, temporary storage, or disposal of produced water by permeation or evaporation after drilling and initial completion of the well.

 PRODUCTION SITE shall mean that surface area immediately surrounding proposed or existing production pits, or other accessory equipment necessary for oil and gas production activities, exclusive of transmission and Gathering Lines.

 PUBLIC PROJECT shall mean (1) a public work or improvement within the City that is wholly owned by the City; or (2) a public work or improvement within the City where 50% or more the funding is provided by any combination of the City, the Federal Government, the State of Colorado, any regional transportation District, the Urban Drainage and Flood Control District, any regional transportation authority, any
Colorado county, or any type of governmental entity, or any type of quasigovernmental entity; or (3) any public work or improvement funded and constructed within the City for the benefit of the City.

RESIDENTIAL BUILDING UNIT shall mean a 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.

RIGHT-OF-WAY shall mean an area of land dedicated to the public in fee simple title conveyed to the City for drainage, pedestrian, utility, street lighting, landscaping, roadway, or other purposes.

STATE shall mean the State of Colorado.

TANK shall mean any container used in conjunction with the production or storage of petroleum and hydrocarbon substances stored at or near atmospheric pressure.

TESTING AGENCY shall mean any individual or other person or entity which is qualified and licensed to perform the required sampling, analysis, testing, and professional recommendation service.

TREATMENT FACILITIES shall mean any plant, equipment, or other works used to treat, separate, or stabilize any substance produced from a well.

TWINNING shall mean the drilling of a well adjacent to or near an existing wellbore when the existing well cannot be drilled to the objective depth or produced due to an engineering problem such as collapsed casing or formation damage.

VALVE STATIONS shall mean a location associated with the a Gathering Line where Safety Shutdown Valves, Automated Safety Devices, and pressure monitoring devices are strategically located to isolate segments of the Gathering Line.

WATER FLOWLINE shall mean a pipe composed of a rigid material such as steel, PVC or HDPE or lay-flat pipe with the general characteristics of fire hose, which is used to transport or convey water for application to use.

WATER SOURCES shall mean all floodways, as defined by FEMA, and permanent City underground water storage facilities.
API Redline

**WELL** shall mean a hole drilled into the earth for the purpose of exploring for or extracting oil, gas, or other hydrocarbon substances.

**WILDLIFE HABITAT** shall mean a specific geographic area that provides the physical and biological features needed for life and successful reproduction of plant or animal species.

### 1.07 Previous Agreements

Any previous Operator Agreement or other agreement, duly signed by the City Manager of the City of Aurora, or approved by the City Council, shall remain in full effect until the term of such agreement has expired, or until all Wells drilled during the term of such agreement are permanently plugged, abandoned, and removed from the Oil and Gas Location in accordance with the rules and regulations of the COGCC and reclamation has been completed pursuant to COGCC requirements, or unless otherwise terminated by law.

### 1.08 Best Management Practices

#### 1.08.1 General

This Oil & Gas Manual represents Best Management Practices (BMPs), which protect and minimize adverse impacts to public health, safety, welfare, and the environment. The Operator must comply with the BMPs set forth in this Oil & Gas Manual at all times.

### 1.09 Compliance with Other Authorities

The BMPs identified in this Oil & Gas Manual are intended to supplement and are in addition to state rules and regulations. However, Operator shall comply with applicable federal and state rules, regulations, and standards pertaining to public health, safety, welfare, and the environment. Operator shall comply with the more protective of the BMPs contained in this Oil & Gas Manual or applicable federal or state rule or regulation and/or standards.
SECTION 2.00 OIL & GAS PERMIT (OGP) APPLICATION PROCESS

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SECTION 2.00 OIL & GAS PERMIT APPLICATION PROCESS

2.01 General/Applicability

2.01.1 Permitting of an Oil and Gas Location

The Oil & Gas Permit (OGP) application process shall apply to any Oil and Gas Location within the City of Aurora. Each Oil and Gas Location requires a separate OGP application.
2.01.2 Future Increase in Oil and Gas Location Size

An Oil and Gas Location is fixed in size and geographical extent at the time the OGP is approved. If an Operator desires to increase the size of an Oil and Gas Location or add an additional Oil and Gas Facility to the Oil and Gas Location, then the Operator must submit a new OGP application.

2.01.3 Overview of Application Process

The OGP process is divided into two Phases. In Phase 1, the Operator submits required items to support its application for its Oil & Gas Location. The Oil & Gas Location must be reviewed by the City and approved by the Planning and Zoning Commission before the Operator can submit the remainder of its items for the OGP. This process aligns with the requirements of the COGCC.

After approval of the Oil & Gas Location by the Planning and Zoning Commission, the Operator moves to Phase 2. In Phase 2, the Operator submits the remainder of its items for the OGP. In some cases, documents and agreements (such as the Water Delivery Agreement, Road Maintenance Agreement, and License Agreements) are begun in Phase 1 and completed in Phase 2.

2.02 Application Process

The purpose of the pre-application process is for the Operator to provide a high-level overview of the proposed OGP application to the City. City staff will provide feedback to the Operator on any BMPs or issues of concern.

2.02.1 Pre-Application Meeting

2.02.1.01 Operator shall request a Pre-Application Meeting with the Office of Development Assistance prior to submitting an application for an Oil and Gas Location. Appropriate City staff (as determined in the sole discretion of the Oil & Gas Manager) may attend. The City may waive the Pre-Application Meeting or Pre-Submittal requirement for any Oil and Gas Location.

2.02.1.02 At the Pre-Application Meeting, Operator shall present the proposed project to the City to determine the appropriate materials needed for the application.
2.02.1.03 A map and detailed description of the Oil and Gas Location must accompany the request for a Pre-Application Meeting.

2.02.2 Pre-Submittal Meeting

At the Pre-Submittal Meeting, the Operator shall demonstrate, prior to entering the formal OGP application process, its ability to comply with all BMPs.

2.02.2.01 Following receipt of City comments from the Pre-Application Meeting, the Operator shall request a Pre-Submittal Meeting with the City Staff to demonstrate the Operator’s ability to comply with BMPs.

2.02.2.02 At the Pre-Submittal Meeting, Operator shall request that a portal be opened to allow the application to be submitted digitally.

2.02.3 Submission of OIL & GAS LOCATION Application (Phase 1)

In Phase 1 of the OGP application process, the Operator shall apply for approval of its Oil & Gas Location. Submittal requirements are listed in Section 2.03 of this OGM.

OGP applications will be processed in the order received. Operator shall not submit more than two OGP applications per three weeks. If Operator has more than one OGP application that has been deemed by the City to be complete, it may provide a priority list for review of complete OGP applications. Such a request may increase the approval time needed for Operator’s other applications.

2.02.4 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGP application, the City will initiate a Pre-Acceptance Review to determine whether the OGP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify any deficiencies in the OGP application and will notify the Operator of its decision in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.

2.02.5 Acceptance of OGP Application

If no deficiencies are identified, an invoice of the OGP application fee for Phase 1 listed in the City Code will be sent to the Operator. The OGP application fee must be paid prior to the City and outside agencies beginning review of the OGP application.
API Redline

If deficiencies in the OGP application are identified, the Operator shall address the deficiencies and resubmit the OGP application. The City will review the resubmitted application and notify the Operator in writing of its completeness determination.

2.02.6 Schedule Pre-Submittal Meetings for Phase 2

Once the City begins review of the Oil & Gas Location application, the Operator shall schedule Phase 2 Pre-Submittal Meetings with City Departments as necessary to initiate discussions of submittal requirements for Phase 2.

2.02.7 Phase 1-First Review

In the First Review, the City will review the completed OGP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

2.02.8 Neighborhood Meeting

Operator shall host a Neighborhood Meeting to inform the public of their application.

2.02.8.01 Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location, of the time and location of the Neighborhood Meeting.
Surface owners shall be notified a minimum of ten (10) days in advance.

2.02.8.02 Operator shall respond to all comments received at the Neighborhood Meeting in writing.

2.02.9 Phase 1-Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review, including Operator Responses to Neighborhood Meeting Comments. The City will provide any further questions and comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

2.02.10 Phase 1-Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.
2.02.11 Operator Response Timing

Any time the City provides written comments to an Operator submittal, the Operator shall reply in a timely manner. If comments are not received from the Operator within ninety (90) days of the City’s response, the Operator’s application will be deemed abandoned.

2.02.12 Public Hearing

Once the City is satisfied with Operator responses to its review, a Public Hearing will be scheduled at a meeting of the City of Aurora Planning and Zoning Commission. Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location of the time and location of the Public Hearing. The Planning and Zoning Commission will make a formal decision on the Oil & Gas Location. All Planning and Zoning Commission decisions are subject to call-up by City Council.

2.02.13 Approval of Oil & Gas Location

When the Planning and Zoning Commission decision and any City Council call-up is complete, Operator will be notified in writing of the decision on its Oil & Gas Location application.

2.02.14 Submission of Oil & Gas Permit (OGP) Application (Phase 2)

In Phase 2 of the OGP application process, the Operator shall submit the remainder of submittal requirements in support of its OGP application. Submittal requirements are listed in Section 2.04 of this OGM.

2.02.15 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGP Phase 2 application, the City will initiate a Pre-Acceptance Review to determine whether the OGP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify any deficiencies in the OGP application and will notify the Operator of its decision in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.
2.02.16 Phase 2-First Review

In the First Review, the City will review the completed OGP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

2.02.17 Phase 2-Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review. The City will provide any further questions and comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

2.02.18 Phase 1-Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

2.02.19 Compatibility with Approved Master Plans

The location and operations of the Oil and Gas Location shall be compatible with the approved Master Plan for the subject property.

2.02.20 Limit on Commencement of Construction

The Operator shall not move any heavy equipment or begin construction at the Oil and Gas Location based on COGCC approval until the Operator has received final approval of the OGP from the City pursuant to this Oil & Gas Manual and all applicable City permits.

2.02.21 Administrative Approval of OGP

OGP applications are approved by the Oil & Gas Division on an administrative basis. Once all questions have been answered by the Operator to the satisfaction of the City (at the sole discretion of the Oil & Gas Manager), a Letter of Administrative Decision is provided to the Aurora City Council. The City Council may elect to call-up the approved OGP for further discussion.

Commented [CJM6]: We agree with this provision
2.02.22 Issuance of OGP

Once any City Council call-up requirements are complete, the Oil & Gas Permit (OGP) will be issued to the Operator by the Oil & Gas Division with or without conditions. No drilling of wells or installation of any Oil and Gas Facility may begin until Operator receives the NTP.

2.02.23 Fulfillment of OGP Conditions

The Operator shall satisfy any conditions required by the OGP.

2.02.24 Notice to Proceed (NTP)

Upon satisfaction of all conditions required by the OGP, the City and Operator may execute a Water Delivery Agreement, Road Maintenance Agreement, and other agreements as necessary. Upon approval and execution of all required agreements, the City may issue a Notice to Proceed (NTP) with or without conditions. After issuance of the NTP, Operator may begin drilling activities at the Oil and Gas Location if all additional approvals from COGCC have been received.

2.02.24 Time Limits

An administratively approved OGP shall be valid for a period of three (3) years from the date of approval. If the construction of the Oil and Gas Location has not begun within that period, a new OGP application must be submitted by the Operator.

2.02.25 Denial

If it is established by competent evidence that a proposed Oil and Gas Location fails to meet any of the specifications in this Oil & Gas Manual, the permit for such Oil and Gas Location may be denied.

2.03 Required Application Contents-Phase 1

An OGP application to the City shall contain the following (together, the Submittal Requirements whose components are further described in this Oil & Gas Manual):

2.03.1 Combined Letter of Introduction and Project Summary

Operator shall include:

2.03.1.01 Response to Pre-Application City comments
API Redline

2.03.1.02 A narrative list of how applicable BMPs (related to location) will be addressed.

2.03.1.03 Any requests for variance from the regulations within this OGM.

2.03.2 Site Plan which depicts the following:

A full Site Plan is not required for Phase 1, however, there must be one or more 24" x 36" sheets that detail the following:

2.03.2.01 Oil and Gas Location Layout (Drilling and Production site layout sheets; Existing Conditions sheet)

2.03.2.02 New Oil or Gas Wells

2.03.2.03 Proposed Location of Facilities

2.03.2.04 Road Access

2.03.2.05 Existing easements and rights-of-way

2.03.2.06 Mile High Flood District Streams (with names)

2.03.2.07 FEMA Flood Hazard Zones

2.03.2.08 Visible improvements within five hundred (500) feet of the Oil and Gas Location

2.03.2.09 Photometric Plan with Fixture Specifications

2.03.3 Visual Mitigation Plan

2.03.4 Vicinity/Context Map

2.03.4.01 Map must be topographic

2.03.4.02 Map must show Water Sources identified by the City

2.03.4.03 Map must indicate distances to the nearest occupied structure, municipal boundary, and subdivision boundary

2.03.4.04 Neighborhood outlines and approved Master Plans
2.03.5 Alternative Location Analysis

2.03.6 Water Supply Plan

2.03.7 Water Delivery Method (signed agreement required in Phase 2)

2.03.8 Preliminary Drainage Report (PDR)

A Preliminary Drainage Report is required for Oil and Gas Locations. A Preliminary Drainage Letter shall not be submitted in place of a Report.

2.03.9 Groundwater Quality Monitoring Plan

2.03.10 Air Quality Plan

2.03.11 Noise Management Plan

2.03.12 Property Owner Authorizations

2.03.13 Recorded Surface Use Agreement, (if applicable)

2.03.14 Determination of License Agreements needed

2.03.15 One-mile Radius Abutters Map and List

2.03.16 Traffic Letter or other analysis requested in the Pre-Application Notes & Traffic Management Plan

2.03.17 Haul Route

2.03.18 Road Maintenance-Evidence of Initial discussion with Public Works

Including impacts to City-owned improvements as the result of Operator construction or infrastructure relocation and including any entailed construction of drainage improvements such as culverts.

2.03.19 Wildlife Impact Mitigation Plan (if applicable) 2.03.20 COGCC Forms

Submit to the City a copy of the drilling and spacing order, which confirms the Operator’s right to develop the mineral estate and confirms the ownership of the surface information.

2.03.21 Proof of Insurance
2.04 **Required Application Contents-Phase 2**

2.04.1 **Letter of Introduction (full)**

Operator shall include:

- **2.04.1.01** Response to any conditions on the Oil & Gas Location approval
- **2.04.1.02** A narrative list of how remaining applicable BMPs will be addressed
- **2.04.1.03** Any requests for variance from the regulations within this OGM with justification.

2.04.2 **Project Summary (full)**

2.04.3 **Site Plan which depicts the following:**

- **2.04.3.01** Site Plan should reflect all submittal sheets and revisions from Phase 1
- **2.04.3.02** Oil and Gas Location Layout
- **2.04.3.03** Location of Flowlines, reasons for selection, and procedures to be employed in mitigating any adverse impacts of the proposed routes
- **2.04.3.04** New Oil or Gas Wells
- **2.04.3.05** Proposed Location of Facilities
- **2.04.3.06** Road Access
- **2.04.3.07** Existing and ultimate easements and rights-of-way
- **2.04.3.08** Mile High Flood District Streams (with names)
- **2.04.3.09** FEMA Flood Hazard Zones
- **2.04.3.10** Visible improvements within five hundred (500) feet of the Oil and Gas Location

### Commented [CJM9]
Section 2.04.3.03 – This should simply require conformance with COGCC standards. Flowlines are typically underground equipment.
2.04.3.11 Landscape Plan: Must include fencing and other criteria listed in the BMPs.

2.04.3.12 Interim Reclamation Plan

2.04.3.13 Building and Structure Elevations, including Placarding note as applicable

2.04.4 Operations Plan

2.04.4.01 Project Development Schedule

2.04.4.02 Security Plan

2.04.4.03 Decommissioning / Final Reclamation Plan. The Decommissioning Plan shall address how the Flowline will be properly removed from the ground.

2.04.5 Emergency Action Plan (EAP) / Emergency Response Plan (ERP) (if applicable) 2.04.6 PHA-HAZOP Letter

The Operator will provide a letter that the PHA-HAZOP has been completed, and the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.

2.04.7 Water Delivery Agreement

2.04.8 Water Use Plan consistent with CDPHE Regulation 84

2.04.9 Fluid Disposal Plan

2.04.10 Road Maintenance Agreement and DOT Registration (if applicable)

2.04.11 Fugitive Dust Suppression Plan

2.04.12 License Agreements as applicable

2.04.13 Weed Control Plan

2.04.14 Storm Water Management Plan, Civil Plans, Final Drainage Report (Grading, Drainage and Erosion Plan)

Operator should contact Public Works separately for a Pre-Submittal Meeting.

2.04.15 Approved COGCC Form 2A 2.04.16 Fee Payment-Phase 2

Commented [CJM10]: Does this City plan to require this even in the instance a private source of water is used? Will the City mandate all operators use Reclaimed Water for wells within the City?
2.05 Variance Requests

Operator may seek a minor exception to the strict application of the BMPs by making a written Variance Request to the Oil & Gas Division. The Variance Request must include the justifiable rationale supporting the request. As part of a granted variance request, the Oil & Gas Division may require alternative mitigation measures to ensure compliance with the goals of the applicable BMPs.

2.05.1 Variance Request Process

Any request for a variance shall be processed through the Oil & Gas Division. The Oil & Gas Division shall approve, approve with conditions, or deny the variance based on consideration of the staff report, the evidence from the neighborhood meeting, and the variance’s compliance with the criteria for approval.

2.05.2 Variance Request Steps

2.05.2.01 Submission of a request by Operator

2.05.2.02 Neighborhood Meeting: Optional, unless the Oil & Gas Manager determines the variance request could have significant neighborhood impacts.

2.05.2.03 Staff Report

2.05.2.04 Conditions of Approval: In approving a variance, the Oil & Gas Division may attach any conditions necessary to ensure the variance authorized shall not constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity in which the subject property is located and will protect public health, safety, welfare, the environment.

2.05.3 Variance Request Approval Criteria

The Oil & Gas Division in approving a variance shall find:

2.05.3.01 Special physical requirements or circumstances exist which are peculiar to the land, the lot or some aspect inherent in the land causes the hardship and are not applicable to other lands in the same district.
2.05.3.02 The literal interpretation of the provisions of these standards and regulations would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of these standards and regulations.

2.05.3.03 Granting of the variance requested will not confer on the applicant any special privilege denied by these standards and regulations for other land in the same zone district.

2.05.3.04 Because of physical circumstances or conditions, the property cannot reasonably be developed in conformity with the provisions of the physical requirements of these standards and regulations.

2.05.3.05 The special circumstances applicable to the property have not been created by voluntary action or negligence by any person presently having an interest in the property.

2.05.3.06 The granting of the variance will be in harmony with the general purpose and intent of the Oil & Gas Manual.

2.05.3.07 The granting of a variance from the strict application of these standards and regulations will not cause substantial detriment to the public good or impair the intent of these standards and regulations.
SECTION 3.00 SAFETY AND SECURITY

3.01 Security Plan
A Security Plan must be included with the OGP application to indicate how the Oil and Gas Location and associated Oil and Gas Facilities will be operated and maintained free from purposeful and inadvertent interference from anyone except the Operator. The Security Plan may... 

Commented [CJM12]: To the best of an operator’s ability. There are some incidents that simply cannot be avoided regardless of security measures.
3.02 Emergency Action Plan (EAP)

3.02.1 Detailed Emergency Action Plan

The Operator is required to complete a detailed Emergency Action Plan for all operations in the City of Aurora, and a site-specific plan for each Oil and Gas Location including all Flowlines and associated Oil and Gas Facilities in accordance with the provisions of this BMP.

3.02.2 Required Elements of the Emergency Action Plan

The Emergency Action Plan shall consist of at least the following information:

3.02.2.01 Name, address, and phone number, including twenty-four (24) hour emergency numbers for at least two (2) persons responsible for emergency field operations as well as the contact information for any subcontractor of Operator engaged for well-control or Flowline emergencies.

3.02.2.02 An as-built facilities map to be provided after the facilities are placed in service, in a format suitable for input into a GIS system depicting the location of above-ground facilities, Flowlines, and associated equipment for emergency response and management purposes.

3.02.2.03 A detailed plan for responding to emergencies that may include any or all of the following: explosions, fires, gas, oil, or water pipeline leaks or ruptures. A provision that any spill outside of the containment area that has the potential to leave the Oil and Gas Location or to threaten water, or as required by the City-approved Emergency Action Plan, shall be reported to the City’s LGD.

3.02.2.04 Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.

3.02.2.05 Operator shall provide the City with its emergency shutdown protocols and promptly notify the City of any emergency shutdowns related to
onsite upset conditions that would have an impact to any area beyond the confines of the Oil and Gas Location.

3.02.2.06 A statement and detailed information indicating that the Operator has adequate personnel, supplies, and training to implement the Emergency Action Plan immediately at all times.

3.02.2.07 The Operator shall have current Safety Data Sheets (SDS) for all chemicals available upon request. The SDS shall be provided immediately upon request to City officials, a public safety officer, or a health professional as required by COGCC regulations. Operator’s contractors are responsible for the management of their own SDS and are to be made available upon request.

3.02.2.08 All “walkthroughs” or trainings associated with the Emergency Action Plan shall be coordinated with the City or Aurora Fire Rescue, upon their request.

3.02.2.09 Operator shall reimburse the appropriate emergency agencies for their reasonable expenses directly resulting from the Operator’s operations.

3.02.3 Notification to Aurora Fire Rescue and Aurora Public Safety

Operator shall notify and work with Aurora Fire Rescue and Aurora Public Safety to prepare for an emergency if requested by them to do so. In case of an emergency, the Operator will have appropriate response foam, and the capacity to apply such, available to respond to emergencies related to the Oil and Gas Location and Flowline.

3.02.4 Approval of Emergency Action Plan

The City and Aurora Fire Rescue must approve the Emergency Action Plan before the Drilling Phase commences. As long as all requirements of this BMP are met, the City and Aurora Fire Rescue shall not unreasonably withhold approval and shall approve the Emergency Action Plan within thirty (30) days of submittal.
3.02.5 Annual Update of Emergency Action Plan

The Emergency Action Plan shall be filed with the City and Aurora Fire Rescue and updated on an annual basis or as conditions change (responsible field personnel changes, ownership changes, etc.).

3.03 Emergency Response Plan (ERP)
3.03.1 Fieldwide Emergency Response Plan

When an Operator applies for a second or subsequent Oil and Gas Location permit application, they shall submit an in-depth field-wide ERP that encompasses every element required by the ERP, and a summarized site-specific ERP to cover each individual site.

3.04 PHA-Hazard and Operability Study
3.04.1 PHA-HAZOP

A third party PHA-HAZOP certified facilitator shall coordinate a Hazard and Operability Study with the cooperation of the Operator. If any of the findings by the PHA-HAZOP certified facilitator are applicable, this information will be added to the Emergency Action Plan and Aurora Fire Rescue training. The Operator will provide a letter that the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design of the applicable Oil and Gas Location.

3.04.1.01 The Engineer or record letter shall include the credentials of pertinent individuals that are responsible for any studies, design, and operational implementation, such as the “certified facilitator, Engineer of record, data analyst, design team, etc.”

3.05 Anchoring

Well equipment and all existing equipment at the Oil and Gas Location shall be anchored to the extent necessary to resist flotation, collapse, lateral movement, or subsidence in compliance with applicable Federal Emergency Management Agency (FEMA) (as administered by this City) and COGCC rules and regulations. All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.
3.06 Photometric Plan with Fixture Specifications

3.06.1 A Photometric Plan with Fixture Specifications must be included with the OGP application.

3.06.2 Lighting shall be downcast and shall not shine beyond the boundaries of the Oil and Gas Location.

3.07 Discharge Valves

Open-ended discharge valves on all storage tanks, pipelines, and other containers within the Oil and Gas Location or Flowline shall be secured, capped, or blind-flanged and shall not be accessible to the general public. Open-ended discharge valves within the Oil and Gas Location or Flowline shall be placed within the interior of the secondary containment area.

3.08 Chemical Disclosure and Storage

3.08.1 Chemical Disclosure

All hydraulic fracturing chemicals must be disclosed to Aurora Fire Rescue as part of the Emergency Response Plan pursuant to the process set forth below before bringing such chemicals onto an Oil and Gas Location. The Operator shall make available to the City, in a table format, the name, Chemical Abstracts Service (CAS) number, and storage, containment, and disposal methods for such chemicals to be used on the Oil and Gas Location, which the City may make available to the public as public records.

3.08.2 Chemical Storage

The Operator shall not permanently store fracturing chemicals or flowback from hydraulic fracturing on an Oil and Gas Location. Operator shall remove all unused hydraulic fracturing chemicals at an Oil and Gas Location within thirty (30) days following the end of the Completion Phase at that Well.

3.08.3 Chemicals Not Permitted for Use

In addition to any substances that are not permitted to be used in accordance with state or federal rules or regulations in place from time to time, the following chemicals on Table 3-1 shall not be utilized in the hydraulic fracturing fluid at the Oil and Gas Location:
### Table 3-1 Chemicals Not to be Used in Hydraulic Fracturing

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
</tr>
<tr>
<td>Lead</td>
<td>7439-92-1</td>
</tr>
<tr>
<td>Mercury</td>
<td>7439-97-6</td>
</tr>
<tr>
<td>Arsenic</td>
<td>740-38-2</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
</tr>
<tr>
<td>Xylene-f</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>1,3,5-trimethylbenzene</td>
<td>108-67-8</td>
</tr>
<tr>
<td>1,4-dioxane</td>
<td>123-91-1</td>
</tr>
<tr>
<td>1-butanol</td>
<td>71-36-3</td>
</tr>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
</tr>
<tr>
<td>N,N-dimethylformamide</td>
<td>68-12-2</td>
</tr>
<tr>
<td>2-ethylhexanol</td>
<td>104-76-7</td>
</tr>
<tr>
<td>2-mercaptethanol</td>
<td>60-24-2</td>
</tr>
<tr>
<td>benzene, 1, l’-oxybis-, tetrapropylene derivatives, sulfonated, sodium salts (BOTS)</td>
<td>119345-04-9</td>
</tr>
<tr>
<td>Butyl glycidyl ether</td>
<td>2426-8-6</td>
</tr>
<tr>
<td>Polysorbate 80</td>
<td>9005-65-6</td>
</tr>
<tr>
<td>quaternary ammonium compounds, diecocy alkylidimethyl, chlorides (QAC)</td>
<td>61789-77-3</td>
</tr>
<tr>
<td>bis hexamethylene triamine penta methylene phosphonic acid (BMPA)</td>
<td>35657-77-3</td>
</tr>
<tr>
<td>FD&amp;C blue no. 1</td>
<td>3844-45-9</td>
</tr>
<tr>
<td>Tetrakis(triethanolaminato) zirconium (IV)(TTZ)</td>
<td>101033-44-7</td>
</tr>
</tbody>
</table>
3.09 Automatic Safety Protective Systems and Surface Safety Valve

3.09.1 General
An automated safety system, governed by safety devices and a programmable logic computer, will be installed at the Oil and Gas Location. The automated safety system shall include the installation, monitoring, and remote control of a Surface Safety Valve (SSV), among many other engineered measures and devices that are implemented to greatly reduce or eliminate the potential for a Well event. All Wells will have an SSV installed prior to the commencement of the Production Phase connected to the production tubing at the surface. The SSV will be equipped to operate remotely via the automated safety protective system, which monitors multiple flowing pressures and rates which have predetermined maximum and/or minimum threshold values programmed and will remotely shut wells in should certain upset conditions be detected. Additionally, the automated safety system provides the ability to remotely shut-in wells on demand through Operator remote intervention. The SSV will have documented quarterly testing to ensure functionality.

3.10 Flammable Material
All ground within twenty-five (25) feet of any tank, or other structure containing flammable or combustible materials, shall be kept free of dry weeds, grass, rubbish or landscaping.

3.11 General Maintenance
Operator shall operate and maintain all equipment pursuant to manufacturer specifications consistent with technological limitations and reasonable and customary maintenance practices.

3.12 Miscellaneous

3.12.1 General
Operator shall not conduct the Drilling Phase and Completion Phase operations simultaneously at a single Oil and Gas Location.

3.12.2 Signs
Each Oil and Gas Location shall post a legible sign in a conspicuous place, which is three (3) to six (6) square feet in area. The sign shall bear the current name of the Operator, a current telephone number including area code, where the Operator may be reached at all times, name or number of the lease, and the number of the well.
The sign shall warn of safety hazards to the public and shall be maintained on the premises from the time materials are delivered for drilling purposes until the Oil and Gas Location is abandoned.

### 3.13 Insurance

#### 3.13.1 General

The Operator shall provide liability and insurance under the conditions and in the amounts set forth below.

#### 3.13.2 Operator shall maintain or cause to be maintained, with insurers authorized by the state of Colorado and carrying a financial strength rating from A.M. Best of no less than A-VII (or a similar rating from an equivalent recognized rating agency), at a minimum, the following types of insurance with limits no less than the amounts indicated:

1. **3.13.2.01** Commercial General Liability insurance on an occurrence-based form including coverage for bodily injury or property damage for operations and products and completed operations with limits of not less than $1,000,000 each and every occurrence.

2. **3.13.2.02** Automobile Liability insurance with limits of not less than $1,000,000 each and every occurrence.

3. **3.13.2.03** Workers’ Compensation insurance—Statutory Workers’ Compensation Coverage for the employee’s normal State of employment/hire. Including Employer’s Liability insurance—with limits of not less than $1,000,000 Each Accident, Disease—Each Employee, Disease—Policy Limit.

4. **3.13.2.04** Control of Well/Operators Extra Expense insurance—with limits of not less than $10,000,000 covering the cost of controlling a well that is out of control or experiences a blowout, re-drilling, or restoration expenses, seepage and pollution damage resulting from an out of control well or blowout as first party recovery for the Operator and related expenses, including, but not limited to, loss of equipment and evacuation of residents.
3.13.2.05 Umbrella/Excess Liability—in excess of General Liability, Employer’s Liability, and Automobile Liability with limits no less than $25,000,000 per occurrence; provided, however, that for so long as the Construction Phase, Drilling Phase, or Completion Phase is ongoing at the Oil and Gas Location or Flowline, Operator will maintain such insurance with limits no less than $100,000,000 per occurrence.

3.13.2.06 Environmental Liability/Pollution Legal Liability insurance—with limits of not less than $5,000,000 per pollution incident, with coverage being required beginning with the date that is eight (8) years from the date of first production from the Oil and Gas Location (the “Required Date.”) Coverage must include gradual pollution events. This insurance may be on a claims-made basis; however, the retroactive date must precede the Required Date in order to cover all Wells.

3.13.3 Operator shall waive and cause its insurers under the above policies to waive for the benefit of the City any right of recovery or subrogation which the insurer may have or acquire against the City or any of its affiliates, or its or their employees, officers or directors for payments made or to be made under such policies.

3.13.4 As it pertains to the risks and liabilities assumed by Operator, Operator shall add the City and its elected and appointed officials and employees as Additional Insureds under general liability (including operations and completed operations), auto liability, and umbrella liability.

3.13.5 Operator shall ensure that each of the policies is endorsed to provide that they are primary without right of contribution from the City or any insurance or self-insurance otherwise maintained by the City, and not in excess of any insurance issued to the City.

3.13.6 Operator shall ensure that each of the policies above (excluding workers’ compensation and OCC/COW) are endorsed to state that the inclusion of more than one insured under such insurance policy shall not operate to impair the rights of one insured against another insured and that the coverage afforded by each insurance policy shall apply as though a separate policy had been issued to each insured.

3.13.7 All policies shall be endorsed such that they cannot be canceled or non-renewed.
without at least thirty (30) days’ advanced written notice to the Operator and the City, evidenced by return receipt via United States mail, except when such policy is being canceled for nonpayment of premium, in which case ten (10) days advance written notice is required. Language relating to cancellation requirements stating that the insurer’s notice obligation is limited to “endeavor to” is not acceptable.

3.13.8 Operator shall, prior to permit issuance, deliver Certificates of Insurance reasonably acceptable to the City confirming all required minimum insurance is in full force and effect.

3.13.9 Deductibles or retentions shall be the responsibility of Operator. Deductibles or retentions must be listed on the Certificate of Insurance required herein and are subject to the reasonable approval of the City.

3.13.10 Operator shall require any of its subcontractors to carry the types of coverage and in the minimum amounts in accordance with the requirements set out in Sections 3.13.2.01, 3.13.2.02, and 3.13.2.03. Operator shall be responsible for any damage or loss suffered by the City as a result of non-compliance by Operator or any

3.13.11 In the event that Operator’s coverage lapses, is canceled, or otherwise not in force, the City reserves the right to obtain the insurance required herein and charge all costs and associated expenses to Operator, which shall become due and payable immediately.
SECTION 4.00 PROTECTION OF WATER QUALITY

General ........................................................................................................ 4-2
Surface Water Protection ........................................................................... 4-2
Groundwater Protection ............................................................................ 4-3
Water During Drilling Phase .................................................................... 4-10
Use and Transportation of Water and Hydrocarbons During Completion and
Production Phases ...................................................................................... 4-11

4.06 Berms for Fluid Containment ............................................................ 4-12
4.07 Flowlines ............................................................................................. 4-12
4.08 Floodways ........................................................................................... 4-14
4.09 Drainage ............................................................................................... 4-14

4.01 4.02 4.03 4.04 4.05
SECTION 4.00 PROTECTION OF WATER QUALITY

4.01 General

4.01.1 Water Sources

The City, through Aurora Water, will identify Water Sources and water infrastructure to be depicted by Operator on its Site Plan for an Oil and Gas Location to be submitted with the OGP application.

4.01.2 Water Supply

The Operator shall comply with applicable laws, rules, and regulations concerning the source(s) of water used in the Drilling Phase, Completion Phase, and Production Phase.

4.02 Surface Water Protection

4.02.1 Maintenance

Routine field maintenance of vehicles or mobile machinery shall not be performed within five hundred (500) feet of any navigable waters of the United States. All fueling must occur over impervious material.

4.02.2 Wastewater and Waste Management

Operator must submit a waste management plan to the City that complies with the following:

4.02.2.01 All fluids shall be contained, and there shall be no discharge of fluids with the exception of unimpacted stormwater per federal Spill Prevention, Control, and Countermeasure Plan (SPCC) regulations.

4.02.2.02 Flowback and produced water shall be transported by pipeline once constructed and available. If a pipeline is unavailable, flowback and produced water must be stored in tanks and transported by tanker trucks. All flowback and produced water must be disposed of at a licensed disposal site or recycled for use on-site.
4.02.2.03 No land treatment of oil-impacted or contaminated drill cuttings is permitted. Disposal of oil-impacted or contaminated drill cuttings shall be disposed of at licensed disposal or recycling sites.

4.02.2.04 A copy of the Operator’s Spill Prevention, Control, and Countermeasure Plan (SPCC) will be submitted to the City as part of the wastewater and waste management plan.

4.02.2.05 The Operator shall not dispose of any wastewater within the City.

4.02.3 Stormwater Management

Operator must apply for and receive a City stormwater quality discharge permit for each Oil and Gas Location in accordance with the City of Aurora’s Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities. Erosion and sedimentation control are required for each Oil and Gas Location. Operator must inspect and maintain stormwater facilities and control devices to ensure compliance with BMPs annually as well as after storm events.

4.02.4 Setbacks

4.02.4.01 Setbacks from buried infrastructure. Operator shall locate the Oil and Gas Location a minimum of three hundred fifty (350) feet from City buried infrastructure (Critical Infrastructure).

4.02.4.02 Setbacks from floodways. Operator shall locate the Oil and Gas Location a minimum of five hundred (500) feet from floodways (as defined by FEMA).

4.02.4.03 Setbacks from reservoirs. Operator shall locate the Oil and Gas Location a minimum of one (1) mile from all existing or planned reservoir sites.

4.03 Groundwater Protection

4.03.1 Water Quality Monitoring Plan.

The Operator shall implement a water quality and well testing plan. Operator will submit water quality monitoring reports to the City. Operator shall avoid causing degradation to surface or ground waters within the City and to wetlands within the City.
4.03.2 Baseline Sampling

Using records of the Colorado Division of Water Resources, Operator must implement a water quality monitoring and well testing plan that includes the following:

4.03.2.01 Operator must obtain initial baseline samples from all available domestic water sources within a one-half (1/2) mile distance from the edge of the Oil and Gas Location. Operator shall also drill one (1) downgradient monitoring well (Operator Drilled Monitoring Well) on that Oil and Gas Location to sufficiently test the domestic water supply for the City groundwater source in each aquifer (Alluvial, Dawson, Denver, Laramie-Fox, and Arapahoe).

4.03.2.02 Operator must collect initial testing of baseline samples from available water sources, including on-site Operator Drilled Monitoring Well prior to the commencement of the Drilling Phase at an Oil and Gas Location, or prior to the re-stimulation of an existing Well for which no samples were collected and tested during the previous twelve (12) months.

4.03.2.03 Post-Completion Phase samples of available domestic water sources shall be collected to test the domestic water supply for the City groundwater source in each aquifer (Alluvial, Dawson, Denver, Laramie-Fox, and Arapahoe). The Operator Drilled Monitoring Well at the Oil and Gas Location will be tested annually for the Denver Basin Aquifers and quarterly for the alluvial aquifer, for the duration of the Oil and Gas Location. The representative water source locations will be mutually agreed upon by the City and the Operator.

4.03.2.04 Operator may rely on existing groundwater sampling data from any water source within the radii described above that was collected in accordance with accepted City standards, provided the data was collected within the twelve (12) months preceding the commencement of Drilling Phase for such Oil and Gas Location, the data includes measurement of all of the constituents measured in Tables 4-1 through 4-6 below, and there has

Commented [CJM17]: Available sources – the City should provide operators the list as some owners may not available.
been no significant oil and gas activity within a one-mile radius in the time period between the original sampling and the commencement of the Drilling Phase for such Oil and Gas Location.

4.03.2.05 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 of the water source, the Operator must advise the City that Operator could not obtain access to the water source from the surface owner. Operator shall drill one (1) Operator Drilled Monitoring Well regardless of the existence of water sources available within a one-half (1/2) mile distance from the edge of the Oil and Gas Location.

4.03.2.06 Baseline water quality testing will be conducted for the analytes listed in Tables 4-1 through 4-6 below. Subsequent water quality testing will be conducted for the analytes in Table 4-7, annually for the Denver Basin Aquifers and quarterly for the alluvial aquifer.

4.03.2.07 Operator must follow standard industry procedures in collecting samples, consistent with the current version of the COGCC Model Sampling and Analysis Plan.

4.03.2.08 Operator must report the location of the water source using a GPS with sub-meter resolution.

4.03.2.09 Operator must report results of field observations, including reporting on damaged or unsanitary well conditions, adjacent potential pollution sources, odor, water color, sediment, bubbles, and effervescence.

4.03.2.10 Operator must provide copies of all test results described above to the City, the COGCC, and the water source owners within thirty (30) days after receiving the lab analytical.

4.03.2.11 If sampling shows the degradation of water quality, additional measures may be required, including:

4.03.2.11.1 If free gas or a dissolved methane concentration level higher than one (1) 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).

4.03.2.11.2 If the test results indicate thermogenic or a mixture of thermogenic and biogenic gas, an action plan to determine the source of the gas.

4.03.2.11.3 Immediate notification to the City, the COGCC, and the owner of the water source if the methane concentration increases by more than five (5) mg/l between sampling periods, or increases to more than ten (10) mg/l.

4.03.2.11.4 Immediate notification to the City, the COGCC, and the owner of the water source if BTEX and/or TPH are detected as a result of testing. Such detections may result
Further water well sampling in response to complaints from water source owners.

Timely production and distribution of test results in electronic deliverable format to the City, the COGCC, and the water source owners.

All water source testing must be conducted by the Operator or, if requested by a surface owner, by a qualified independent professional consultant.

If Operator identifies degradation to water quality from the baseline testing as a result of its oil and gas development, Operator will be responsible to mitigate the degradation of water quality to the baseline levels.

Operator will submit a CDPHE Regulation 84 water use plan as described in section 84.11 sections B, D, and F.

<table>
<thead>
<tr>
<th>Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
</tr>
<tr>
<td>Arsenic</td>
</tr>
<tr>
<td>Asbestos</td>
</tr>
<tr>
<td>Barium</td>
</tr>
<tr>
<td>Beryllium</td>
</tr>
<tr>
<td>Cadmium</td>
</tr>
<tr>
<td>Chromium</td>
</tr>
<tr>
<td>Cyanide (as free Cyanide)</td>
</tr>
<tr>
<td>Fluoride</td>
</tr>
</tbody>
</table>

in required subsequent sampling for additional analytes.

Commented [CJM19]: Section 4.03.2.11.5 should contain the words “verified” complaints. This could lead to an unending string of testing with no constraints.

Also, is it the intend of the City to require the use of reclaimed water at each facility?
<table>
<thead>
<tr>
<th>Table 4-2 Volatile Organic Compounds (VOCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contaminant:</strong></td>
</tr>
<tr>
<td>Propane</td>
</tr>
<tr>
<td>BTEX as Benzene, Toluene, Ethylbenzene and Xylenes</td>
</tr>
<tr>
<td>Total Petroleum Hydrocarbons (TPH)</td>
</tr>
<tr>
<td>Vinyl chloride</td>
</tr>
<tr>
<td>Benzene</td>
</tr>
<tr>
<td>Carbon tetrachloride</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
</tr>
<tr>
<td>Trichloroethylene</td>
</tr>
<tr>
<td>Para-Dichlorobenzene</td>
</tr>
<tr>
<td>1,1-Dichloroethylene</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane</td>
</tr>
<tr>
<td>cis-1,2 Dichloroethylene</td>
</tr>
<tr>
<td>1,2-Dichloroethylene</td>
</tr>
<tr>
<td>Ethylbenzene</td>
</tr>
<tr>
<td>Monochlorobenzene</td>
</tr>
<tr>
<td>o-Dichlorobenzene</td>
</tr>
<tr>
<td>Styrene</td>
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<tr>
<td>Toluene</td>
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<tr>
<td>Trans-1,2 Dichloroethylene</td>
</tr>
<tr>
<td>Xylenes (total)</td>
</tr>
<tr>
<td>Dichloromethane(methylene chloride)</td>
</tr>
<tr>
<td>1,2,4-Trichlorobenzene</td>
</tr>
<tr>
<td>1,1,2-Trichloroethane</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4-3 Synthetic Organic Compounds (SOCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contaminant:</strong></td>
</tr>
<tr>
<td>Alachlor</td>
</tr>
<tr>
<td>Aldicarb1</td>
</tr>
<tr>
<td>Aldicarb sulfoxide</td>
</tr>
<tr>
<td>Aldicarb sulfone</td>
</tr>
</tbody>
</table>
### Table 4-4 Radionuclides

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined radium-226 and radium-228</td>
</tr>
<tr>
<td>Gross alpha particle activity (including radium-226 but excluding radon and uranium)</td>
</tr>
<tr>
<td>Beta particle and photon radioactivity</td>
</tr>
<tr>
<td>Uranium</td>
</tr>
</tbody>
</table>

### Table 4-5 Secondary Maximum Contaminant Levels

<table>
<thead>
<tr>
<th>Atrazine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbofuran</td>
</tr>
<tr>
<td>Chlor dane</td>
</tr>
<tr>
<td>Dibromochloropropane</td>
</tr>
<tr>
<td>2,4-D</td>
</tr>
<tr>
<td>Ethylene dibromide</td>
</tr>
<tr>
<td>Heptachlor</td>
</tr>
<tr>
<td>Heptachlor epoxide</td>
</tr>
<tr>
<td>Lindane</td>
</tr>
<tr>
<td>Methoxychlor</td>
</tr>
<tr>
<td>Polychlorinated biphenyls</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
</tr>
<tr>
<td>Toxaphene</td>
</tr>
<tr>
<td>2,4,5-TP (Silvex)</td>
</tr>
<tr>
<td>Benzopyrene</td>
</tr>
<tr>
<td>Daphon</td>
</tr>
<tr>
<td>Di(2-ethylhexyl)adipate</td>
</tr>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
</tr>
<tr>
<td>Dinosorb</td>
</tr>
<tr>
<td>Diquat</td>
</tr>
<tr>
<td>Endothall</td>
</tr>
<tr>
<td>Endrin</td>
</tr>
<tr>
<td>Glyphosate</td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
</tr>
<tr>
<td>Hexachlorocyclopentadiene</td>
</tr>
<tr>
<td>Oxamyl (Vydate)</td>
</tr>
<tr>
<td>Pictoran</td>
</tr>
<tr>
<td>Simazine</td>
</tr>
<tr>
<td>2,3,7,8-TCDD (Dioxin)</td>
</tr>
<tr>
<td>Perfluorooctanoic Acid (PFOA)</td>
</tr>
<tr>
<td>Perfluorooctane Sulfonate (PFOS)</td>
</tr>
</tbody>
</table>
### Table 4-7 General Sampling Parameters

#### GENERAL WATER QUALITY

<table>
<thead>
<tr>
<th>Contaminant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
</tr>
<tr>
<td>Chloride</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Copper</td>
</tr>
<tr>
<td>Corrosivity</td>
</tr>
<tr>
<td>Fluoride</td>
</tr>
<tr>
<td>Foaming agents (surfactants)</td>
</tr>
<tr>
<td>Iron</td>
</tr>
<tr>
<td>Manganese</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Silver</td>
</tr>
<tr>
<td>Sulfate</td>
</tr>
<tr>
<td>Total dissolved solids (TDS)</td>
</tr>
<tr>
<td>Zinc</td>
</tr>
</tbody>
</table>

### Table 4-6 Other Parameters

#### GENERAL WATER QUALITY

- Alkalinity, Conductivity & TDS, pH, Dissolved Organic Carbon (or Total Organic Carbon), Bacteria, and Hydrogen Sulfide

#### MAJOR IONS

- Bromide, Magnesium, Potassium, Sodium, and Nitrate + Nitrite as N

#### METALS

- Boron, Lead, Selenium, Strontium

#### DISSOLVED GASES

- Methane, Ethane

#### OTHER

- Water Level, Stable isotopes of water (Oxygen, Hydrogen, Carbon), Phosphorus

---

**Note:** API Redline
### 4.03.3 Class II Underground Injection Control Wells

For operations associated with any Oil and Gas Location, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure.

### 4.03.4 Wellbore Integrity and Aquifer Protection

Operator shall follow all COGCC regulations regarding wellbore integrity and aquifer protection.

### 4.04 Water During Drilling Phase

#### 4.04.1 Closed-Loop Pitless Systems for the Containment and/or Recycling of Drilling Fluids

Wells shall be drilled, completed, and operated using closed-loop pitless systems for containment and/or reuse of all drilling, completion, flowback, and produced fluids. Operator shall reuse fluids unless technically infeasible. All aboveground storage, including temporary tanks and separators, for use during drilling, completion, flowback, and other produced fluids shall have secondary containment.
4.05 Use and Transportation of Water and Hydrocarbons During Completion and Production Phases

4.05.1 Pipeline Construction Timeframe

Pipelines servicing a particular Oil and Gas Location must be constructed before the Production Phase commences at such Oil and Gas Location.

4.05.2 Separate Use of Pipelines

Operator shall use separate pipelines for the transportation of raw water to and from the Oil and Gas Location, and the transportation of hydrocarbons and produced water from the Oil and Gas Location. During the Completion Phase, the Operator will use flowlines and pipelines for flowback unless technically infeasible. All raw water related to completion activities shall be transported to the Oil and Gas Location by pipeline.

4.05.3 Temporary Use of Tanks

Operator shall be permitted to utilize temporary tanks during the Drilling and Completion Phases, and during maintenance operations of the Oil and Gas Location or Flowline, provided Operator has provided proper notice regarding location, and required screening for temporary tanks if the maintenance or temporary tanks are present longer than a week.

For maintenance operations that are expected to extend greater than seven days, Operator shall give the City’s Oil and Gas Manager or designee prior notice of maintenance activities within three days of commencing the maintenance operations and the planned number of temporary tanks.

Operator may use temporary tanks for up to one month for an Oil and Gas Location during any single maintenance operation without the need for adding appropriate temporary visual screening (e.g., hay bales).

4.05.6 Water for Landscape Irrigation

All water use at the Oil and Gas Location shall be pursuant to A.M.C. 138 et seq.
4.06 Berms for Fluid Containment

4.06.1 Berm Design

The Operator shall utilize steel-rim berms at the Oil and Gas Location with sufficient capacity to contain one and one-half (1.5) times the maximum volume of the largest tank on the location that such Oil and Gas Location will contain at any given time plus sufficient freeboard to prevent overflow around all permanent facility equipment. All berms and containment devices shall be inspected quarterly by the Operator and maintained in good condition. No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel, or such sources are rated in accordance with industry codes and standards. Secondary containment such as duck ponds or lined earthen berms for temporary tanks may also be used.

4.06.2 Permanent Berms

Permanent containment berms shall be constructed of steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.

4.06.3 Secondary Containment

Secondary containment for tanks shall be constructed with a synthetic or engineered liner that contains all primary containment vessels and is mechanically connected to the steel ring to prevent leakage.

4.06.4 Locations Near Surface Water

For locations within five hundred (500) feet and up-gradient of a surface water body or flood plain, tertiary containment, such as an earthen berm, is required around production facilities.

4.07 Flowlines

4.07.1 General

The Operator shall construct a Flowline in accordance with specifications set forth in Section 38 of this Oil & Gas Manual for the transportation of hydrocarbons and produced water. Operator shall comply with the requirements for Flowlines set forth in COGCC regulations. All new Flowlines shall have the legal description of the location recorded with the Clerk and Recorder of the applicable county within thirty days.
API Redline

(30) days of completion of their construction. Operator shall provide as-built GIS locations and maps of all Off-Location flowlines.

4.07.2 Flowline Construction

4.07.2.01 The pipeline buried depth should be a minimum of forty-eight (48) inches for all pipes outside of the City ROW. All pipes within the arterial City ROWs shall be a minimum of twenty (20) feet depth. All pipes within all other City ROWs shall be a minimum of fifteen (15) feet depth. All pipelines installed beneath public ROW shall be bored unless otherwise approved by the City Engineer.

4.07.2.02 Operator will conduct an x-ray or other non-destructive examination on all welds and conduct surveys and logging for every girth weld in place.

4.07.2.03 Operator will utilize jeeping (holiday detector) as well as visual inspection of the coating. Once a jeep (damage) is detected, pipe coating shall be repaired and re-jeeped until the damage is repaired and does not cause a jeep or detection.

4.07.3 Flowline Safety

4.07.3.01 On all Flowlines regulated by the COGCC leak protection and detection shall be provided through differential metering to meet zero tolerance levels for migration of product from the pipe envelope. Operator to conduct additional leak detection through aerial surveys at least two (2) times per year.

4.07.3.02 On all Flowlines regulated by the COGCC Operator shall hydrostatic test to 1.25 times the Maximum Operating Pressure for four (4) hours for exposed pipe and eight (8) hours for buried pipe.

4.07.3.03 On all Flowlines regulated by the COGCC Operator shall utilize automated systems for overpressure protection & low pressure detection that shut-in the pipe in order for Operator to investigate.

4.07.4 Flowline Maintenance

4.07.3.03 Operator shall conduct quarterly pigging on the pipelines.
4.08 Floodways
Additional BMPs related to water preservation or protection may be imposed by the City staff during the OGP application process in order to mitigate risks of potential contamination to a floodway.

4.09 Drainage

4.09.1 Planning Process & Preliminary Drainage Reports The OGP process requires the submittal of a Preliminary Drainage Report for the Oil and Gas Location and Pumping Stations. Preliminary Drainage Letters in place of Report will not be permitted.

4.09.2 Civil Plans—Process Public Works Engineering will require a civil plan PreSubmittal Meeting to be held. To set up a meeting, please contact Chris Eravelly at 303-739-7457.

4.09.3 Civil Plans—Content and Naming Convention Operator Agreements and associated applications and checklists for Oil and Gas Locations have been developed using the term “Storm Water Management Plans (SWMPs)” in reference to the Civil Plans for these sites. The Civil Plans for Oil and Gas Locations include features that go beyond typical SWMPs. Drainage Reports (both Preliminary and Final) and Civil Plan submittals will be reviewed using City standards.

4.09.4 Civil Plans—Submittal Package Civil Plan submittals for an Oil and Gas Location shall include the Final Drainage Report, Storm Water Management Report, and an Inspection and Maintenance Plan as outlined at the civil pre-submittal meeting. Any grading within an existing utility easement may require structural loading evaluation as determined at the civil plan pre-submittal meeting. The structural loading evaluation shall be submitted with the first submittal of civil plans.

4.09.5 Hydrologic Analyses for Drainage Reports The City’s Storm Drainage Design and Technical Criteria Manual along with Mile High Flood District Urban Storm Drainage Criteria Manual shall be used to develop the hydrology for Oil and Gas Locations. For Oil and Gas Locations, 100-year precipitation depths shall be used for major storm event analyses. The entire tributary area, including the Oil and Gas Location, draining to Water Quality/Full Spectrum (EURV)/Detention BMPs shall be used to size those BMPs. Gravel surfaced pads shall use imperviousness (40%) and runoff coefficients consistent with the City’s SDDTC Table 1.
4.09.6 Hydraulic Analyses—Conveyances/Detention/WQ For Oil and Gas Locations, WQ/EURV/Detention BMPs will be sized and designed in accordance with the standard requirements of the City SDDTC (e.g., Extended Detention Basins). Storm Water Detention and Infiltration (SDI) Data Sheets shall be uploaded to the State website prior to civil plan approval. Culverts, Open Channels, and Grass Lined Swales shall satisfy the standard requirements of the City SDDTC.

4.09.7 Subsurface Utility Investigation/Loading Information For Oil and Gas Locations, the City of Aurora Roadway Specifications SUE note 22 (which refers to SB 18-167 and will be updated to refer to CRS 9-1.5) is a required note to be placed on the plans. In addition, Aurora Water requires any crossing of existing utilities or tie-ins to provide pre-design potholing.

4.09.8 Drainage Easements/License Agreements For all Oil and Gas Locations, the need for Easements and License Agreements shall be evaluated on a case-by-case basis. For Oil and Gas Locations where the lease agreement with the property owner includes provisions for removing WQ/Detention BMPs, the I&M Plan for such BMP will negate the need for a Drainage Easement or License Agreement for that BMP. If there is a need for a drainage or license agreement, these documents must be executed prior to civil plan approval.
SECTION 5.00 PROTECTION OF AIR QUALITY

5.01 Air Quality Monitoring Plan ................................................................. 5-2
5.02 Odor ...................................................................................................... 5-7
5.03 Fugitive Dust Suppression ................................................................. 5-7
5.04 Noise .................................................................................................. 5-8
5.05 Electric Equipment ............................................................................. 5-10
5.06 Reduced Emission Completions ....................................................... 5-10
5.01 Air Quality Monitoring Plan

5.01.1 General

In order to minimize degradation to air quality, Operator shall avoid or minimize and mitigate all potentially harmful emissions and odors, and avoid, minimize or mitigate dust associated with onsite activities and traffic on access roads.

5.01.2 Minimization of Emissions

To protect air quality, the following will be required:

- **5.01.2.01** The use of electric equipment and electric line power to operate all permanent production equipment.

- **5.01.2.02** The use of no-bleed continuous and intermittent pneumatic devices that do not bleed natural gas to the atmosphere. 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.

- **5.01.2.03** Any combustion device, auto ignition system, recorder, vapor recovery device or other equipment used to meet the hydrocarbon destruction or control efficiency used to meet the relevant BMP shall be installed, calibrated, operated, and maintained in accordance with the manufacturer’s recommendations, instructions, and operating manuals.

- **5.01.2.04** Year-round compliance with the odor standards pursuant to COGCC and CDPHE regulations.

- **5.01.2.05** Venting is prohibited unless necessary for safety. If emergency venting is required, or if accidental venting occurs, the Operator shall provide notice to the City of such event as soon as, but in no event later than twenty-four (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.

- **5.01.2.06** Reduction of emissions from oil and gas well maintenance activities. For planned maintenance activities involving the intentional flaring of gas, the Operator shall provide forty-eight (48) hour advance written notice.
notice to the City of such proposed flaring. Such notice shall identify the duration and nature of the flaring event, a description as to why flaring is necessary, what steps will be taken to limit the duration of flaring, and what steps the Operator proposes to undertake to minimize similar events in the future.

5.01.2.07 Telemetric control and monitoring systems to detect when pilot lights on control devices are extinguished.

5.01.2.08 Exhaust from all engines, motors, coolers, and all other equipment must be vented up and away from the nearest residences.

5.01.2.09 Operator shall participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at the Oil and Gas Location.

5.01.3 Air Monitoring and Leak Detection for Facilities Without Permanent Tanks

5.01.3.01 Pre-Construction or Pre-Drilling Baseline Air Quality Testing. Operator shall conduct air sampling for a period of five (5) days prior to any construction activities for any new Oil and Gas Location or prior to drilling additional wells on any Oil and Gas Location already constructed. Operator shall conduct baseline sampling using a continuous monitoring system that detects hydrocarbons. Operator shall conduct baseline sampling at least thirty (30) days in advance of any construction activities at the Oil and Gas Location. Results of the baseline air sampling must be received prior to the issuance of the final OGP.

5.01.3.02 Continuous Air Monitoring. During Drilling and Completion Phases, the Operator shall conduct continuous air monitoring capable of detecting total hydrocarbons.

5.01.3.02 Periodic Air Sampling. During all Operational Phases, the Operator shall have the ability to deploy and collect air samples for speciated hydrocarbon analysis when monitoring indicates elevated levels of hydrocarbons, or at the request of the City.
5.01.3.03 Data related to air monitoring or sampling during any phase shall be made available to the City upon request.

5.01.3.04 **Leak Detection and Repair.** During the Production Phase, the Operator shall develop and maintain a Leak Detection And Repair (LDAR) program as required by CDPHE using modern leak detection technologies such as infra-red (IR) cameras for equipment used on the Oil and Gas Location.

5.01.3.05 For the first five (5) years of the Production Phase at an Oil and Gas Location, the Operator shall conduct at least semi-annual inspections of all equipment at the Oil and Gas Location; more frequent inspections may be required based on the nature and location of the facility and as required by state rules. At least once per year, the Operator shall notify the City five (5) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

5.01.3.07 **Records** The Operator will maintain records of all leaks found, the date the leaks were repaired, and the date the location is re-screened to verify that the leak has been repaired. Such records must be maintained for five (5) years and must be made available to the City upon request.

5.01.3.08 **Repairs** Except when an emergency circumstance would necessitate an immediate repair, Operator must repair leaks as quickly as practicable. If more than five (5) days repair time is needed after a leak is discovered, an explanation of why more time is required must be submitted to the City.

5.01.4 **Air Quality Requirements For Facilities With Permanent Tanks**

For facilities that use permanent storage tanks and do not transport all hydrocarbons and produced water via pipelines, the following Air Quality provisions will apply until the pipeline infrastructure is available:

5.01.4.01 Operator shall comply with the provision in 5.01.3.01

5.01.4.02 **Leak Detection and Repair.**

Unless more frequent inspections are required by the AQCC, for the five
(5) year period beginning with the start of the Production Phase at an Oil and Gas Location, Operator shall conduct IR camera monitoring of all equipment at the respective Oil and Gas Location based on the following minimum frequency:

Year 1 – monthly  
Year 2 – quarterly  
Year 3-5 – semi-annually  

The first inspection will occur within thirty (30) days of the facility commencing production.

5.01.4.03 Additional Monitoring  
After the initial five (5) year period, Operator will conduct semi-annual IR camera monitoring until all Wells at the Oil and Gas Location are either connected to a Gathering Line and Associated Infrastructure or are plugged and abandoned.

5.01.4.04  
The City may require the Operator to use a third party to conduct additional air monitoring and analysis as needed in response to emergency events such as spills, process upsets, or accidental releases. Operator may evaluate other technologies throughout the life of the wells and may use other technologies if they are as effective in detecting target compounds.

5.01.5 Ozone Air Quality Action Days  
The Operator shall respond to Ozone Air Quality Action Day advisories posted by the CDPHE for the Front Range Area by implementing their suggested air emission reduction measures as feasible. Emission reduction measures shall be implemented for the duration of an Ozone Air Quality Action Day advisory and may include measures such as:

5.01.5.01 Minimization of vehicle and engine idling.  
5.01.5.02 Reducing truck traffic and worker traffic.  
5.01.5.03 Delaying vehicle refueling.  
5.01.5.04 Postponement of construction and maintenance activities if feasible.
5.01.5.05 Within thirty (30) days following the conclusion of each annual Ozone Air Quality Action Day season, Operator must submit a report to the City that details which measures it implemented during any Ozone Air Quality Action Day advisories.

5.01.6 Compliance Reports

The Operator must submit quarterly reports to the City certifying: (i) compliance with these air quality requirements and documenting any periods of material noncompliance, including the date and duration of each such deviation and a compliance plan and schedule to achieve compliance; and (ii) that the equipment at the Oil and Gas Location 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. The quarterly report must contain a certification as to the truth, accuracy, and completeness of the reports, signed by a Responsible Official, as defined by the CDPHE. The Operator will also provide the City 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 at the Oil and Gas Location.

5.01.7 Combustion Devices

To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:

5.01.7.01 The combustion device must be fired with natural gas and designed to operate with a ninety-eight (98) percent or higher hydrocarbon destruction efficiency.

5.01.7.02 The combustion device must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions mean observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.
API Redline

5.01.7.03 The combustion device must be operated with a flame present at all times when emissions may be vented to it, or another mechanism that does not allow uncontrolled emissions.

5.01.7.04 The combustion device will have no visible flame, with the exception of the pilot light, from the Oil and Gas Location boundary. The combustion device shall completely conceal the flame.

5.01.7.05 All combustion devices must be equipped with an auto-igniter unless manned while in use.

5.01.8 Burning

No open burning shall occur on any Oil and Gas Location.

5.01.9 Air Modeling Study

If the City determines that an Air Modeling Study is necessary to create a dispersion model, Operator will be invoiced its proportionate share in an amount not to exceed $5000 per Oil & Gas Location.

5.02 Odor

5.02.1 Odor Prevention

Operator will prevent odors by routing to closed-loop systems unless technically infeasible. Odors emitting from Oil and Gas Location must be controlled immediately. Operator must minimize odors by proactively addressing and resolving citizen concerns within twenty-four (24) hours. Operator must use a filtration system or additives to drilling fluids to prevent or minimize odors but cannot mask odors. In order to meet the provisions of this section, Operator implements the following measures:

5.02.1.01 Wiping down the drill pipe each time that the drilling operation “trips” out of the hole.

5.02.1.02 Increasing additive concentrations during peak hours.
5.03  Fugitive Dust Suppression

5.03.1 Minimize Dust

In addition to complying with COGCC rules, dust associated with activities on the Oil and Gas Location, and traffic on access roads shall be minimized throughout construction, drilling and operational activities such that there are no visible dust emissions from access roads or the Oil and Gas Location to the maximum extent practicable given wind conditions.

5.03.2 Water Use

No untreated produced water or other process fluids shall be used for dust suppression.

5.03.3 Covering of Material

At the Oil and Gas Location, sand, silica, or similar material must be stored in covered containers.

5.03.4 Safety Data Sheets (SDS)

Safety Data Sheets (SDS) for any chemical-based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use.

5.04  Noise

5.04.1 Noise Management Plan

For any Oil and Gas Location that is on property located in zoning districts that allow for residential development or if a Residential Building Unit is located within 1,320 feet of an Oil and Gas Location located in a zoning district that does not allow for residential development unless Operator obtains waivers from all property owners within that distance the following provisions shall apply:

5.04.1.01 A Baseline Noise Mitigation Study will be conducted to ascertain baseline noise levels at the Oil and Gas Location to demonstrate that noise is expected to be mitigated to the extent practicable and a copy will be provided to the City.

5.04.1.02 The Operator shall comply with all provisions of COGCC regulations on Noise Abatement with respect to the Oil and Gas Location; provided,
however, that the maximum permissible noise levels to be applied under COGCC regulations for the length of time indicated in COGCC regulations shall be, other than during the Construction Phase, the greater of (i) the levels set forth for the land use type of “Residential/Agricultural/Rural” under COGCC regulations if measurements are taken at 1,000 feet from the sound walls at the Oil and Gas Location and (ii) 4 dB(A) higher than baseline ambient sound measured at 1,000 feet from the sound walls at the Oil and Gas Location. During the Construction Phase, noise levels shall not exceed those produced by the construction of a typical commercial development. All measurements considered for compliance with this section shall be taken by a third-party contractor using industry-standard equipment and practices. The Operator shall address C scale noise/vibration through berming, capable sound walls, and other associated BMPs. During the Drilling and Completion Phases, the Operator shall construct a sound wall and/or comparable measures to mitigate noise.

5.04.1.03 All noise mitigation measures shall be paid for by the Operator.

5.04.1.04 Unloading pipe. The Operator shall not unload pipe from delivery trucks between 8:00 p.m. and 7:00 a.m.

5.04.2 Mitigation of Dust, Noise, and Visual Disturbance

For mitigation of dust, noise, and visual disturbance during the Drilling and Completion Phases, the Operator shall use a combination of berms, bales, and sound walls at the perimeter of any Oil and Gas Location that:

5.04.2.01 Is located in a zoning district that allows for residential development or

5.04.2.02 Is located within 1,320 feet of a Residential Building Unit (as measured from the edge of an Oil and Gas Location) in a zoning district not zoned for residential development unless the Operator obtains a variance in advance.

5.04.3 Quiet Completion Technology

Operator shall use quiet completion technology on any Oil and Gas Location that:

5.04.3.01 Is located in a zoning district that allows for residential development or
5.04.3.02 Is located within 1,320 feet of a Residential Building Unit (as measured from the edge of an Oil and Gas Location) in a zoning district not zoned for residential development unless the Operator obtains a variance in advance.

5.05 Electric Equipment
Operator shall use electric line power to power permanent production equipment, such as compressors, motors, and pump jacks, in order to mitigate noise and to reduce emissions.

5.06 Reduced Emission Completion
Operator shall comply with EPA Reduced Emission Completion rules for oil and gas wells.
SECTION 6.00 PROTECTION OF SURFACE QUALITY

6.01 License Agreements
Operator shall use Flowlines to be built in accordance with specifications set forth in Section 38 of this Oil & Gas Manual. Operator will utilize Flowlines once operations commence. The Operator’s obligation to build and utilize such Flowlines is subject to the Operator obtaining all necessary rights-of-way, crossings, licenses and easements, and the City issuing Operator the necessary Public Improvement Permits.

6.02 Visual Mitigation
   6.02.1 Low Profile Equipment
       Operator will use low profile equipment, such as low profile tanks, associated production equipment, and combustion devices. No tanks shall exceed twenty (20) feet in height.

   6.02.2 Fencing
       Permanent opaque fencing shall be installed around production equipment and shall be secured. Operator will not use chain link fencing.

Commented [CJM28]: We would again reiterate our concern about these regulations
6.02.3 Color

All permanent aboveground production equipment, structures, and stationary equipment on each Oil and Gas Location shall be painted in a tan or brown matte finish unless a different color is necessary for safety or per regulations.

6.02.4 Location Siting

6.02.4.01 An Oil and Gas Location shall be located away from prominent natural features such as distinctive rock and landforms, vegetative patterns, river crossings, land in the POS zone district, and other designated landmarks.

6.02.4.02 An Oil and Gas Location shall be located to avoid hilltops and ridges to prevent the appearance of pump jack and accessory equipment profiles on the horizon.

6.02.4.03 The Operator shall locate facilities at the base of slopes to provide a background of topography and natural cover.

6.02.4.04 The Operator shall align access roads to follow existing grades and minimize cuts and fills.

6.03 Traffic

6.03.1 Transportation and Circulation

The Operator will submit a traffic management plan for the City to review during the Oil and Gas Location OGP application review process that includes detailed descriptions of all proposed haul routes for equipment, water, sand, waste fluids, waste solids, mixed waste, and all other material to be hauled on the public and private streets and roads during phased well development and operations. The traffic management plan shall include the following:

6.03.1.01 Estimated weights of vehicles when loaded, a description of the vehicles, including the number of wheels and axles of such vehicles and estimated trips per day.

6.03.1.02 Detail of access locations for the Oil and Gas Location, including sight distance, turning radius of vehicles, and a template indicating this is...
feasible, sight distance, turning volumes in and out of the Oil and Gas Location for an average day, and what to expect during peak hours.

**6.03.1.03** Estimated truck traffic volumes converted to equivalent single axle loads and compared to existing volumes.

**6.03.1.04** Truck routing map and truck turning radius templates with a listing of required improvements that are necessary at intersections along the route.

**6.03.1.05** Complete traffic letter, determining operational changes and geometric modifications necessary as a result of Operator’s activities.

**6.03.1.06** Identification of the need for any additional traffic lanes, which would be subject to the final approval of the City’s engineer.

**6.03.1.07** Restriction of non-essential traffic to and from the Oil and Gas Location to periods outside of peak a.m. and p.m. traffic periods and during school hours of schools along the designated traffic routes (generally 7:00-9:00 a.m. and 3:00-6:00 p.m.).

**6.03.1.08** City may request consolidated haul routes and roadway improvements or upgrades based on contents of the traffic management plan to be covered in a Road Maintenance Agreement during the OGP review process.

### 6.04 Road Maintenance

#### 6.04.1 Access Roads

Access points to public roads shall be located, improved, and maintained to ensure adequate capacity for efficient movement of existing and projected traffic volumes, and to minimize traffic hazards.

**6.04.1.01** Permanent access roads shall be improved a minimum distance of two hundred (200) feet onto the access road from the point of connection to a public road. All access roads shall be in conformance with the City’s current Roadway Specification Manual. The access road shall be improved as a hard surface (concrete or asphalt) for the first one hundred (100) feet from the public road and then improved as a crushed surface (concrete or asphalt) for one-hundred (100) feet past the hard surface in
the appropriate depth to support the weight load requirements of the vehicles accessing the Oil and Gas Location. A geotechnical report and pavement design will be submitted to the City for approval. 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 one-hundred (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 Oil and Gas Location.

**6.04.1.02** Temporary access roads associated with the operation shall be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

**6.04.2 Mud Tracking**

In accordance with the Stormwater Management Plan (SWMP), the Operator shall take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets, in excess of *de minimus* levels, the streets shall be cleaned immediately by the Operator. If, for some reason, this cannot be done or needs to be postponed, the Operator shall notify the City of its plan for mud removal.

**6.04.3 Chains**

Traction Chains from heavy equipment shall be removed from all Operator vehicles before entering a City street.

**6.04.4 Culverts**

Operator shall construct all necessary culverts for road construction per any available City or County, as applicable, Drainage Plan. In the event no information is available, the Operator shall complete any necessary studies or analysis to determine the appropriate culvert size.

**6.04.5 Road Repairs**

Road repairs will be addressed as set forth in the Road Maintenance Agreement.
6.05 Landscaping
Operator shall submit a landscape plan for City approval during the Oil and Gas Location OGP application review process. Operator shall implement the landscape plan when new development is constructed within 1,500 feet of an Oil and Gas Location once access to City main water source is available.

6.06 Tree Mitigation
The Oil and Gas Location and Flowline should be constructed in a manner that minimizes the removal of and damage to existing trees in accordance with the City’s tree mitigation ordinance.

6.07 Cultural and Historical Resource Protection

6.07.1 General
The Operator shall comply with the City of Aurora Municipal Code, as amended, by not causing to be carried out any construction, alteration, removal, or demolition of a building or feature or make any changes that would impair the historical association of the landmark building, landmark site, or historic district, pursuant to those qualities depicted in the Code, without first obtaining approval. Operator will submit the permit application and await the planning department’s approval following referral to the historic preservation commission, if applicable. If there is a discovery of historical artifacts, Operator will notify the City.

6.07.2 Protection of Natural, Historical, and Archaeological Resources

The nature and location of an Oil and Gas Location shall not unreasonably interfere with or affect any unique natural resource, historical site or landmark, or known archaeological site.

6.08 Wildlife
This BMP is only applicable in the event that an Oil and Gas Location is located in a significant wildlife habitat or high priority habitat, as defined by the State Division of Wildlife, and/or in a natural area or open space. In such a case, the Operator shall consult with the State Division of Wildlife or the City Parks, Recreation, and Open Space Department to obtain recommendations for appropriate site-specific and cumulative impact mitigation procedures. If not applicable, Operator shall provide the City with a statement that it has investigated whether the Oil and Gas Location is located near a significant wildlife habitat and that this BMP is not applicable.
6.09 Building Electric

6.09.1 Any buildings or structures must meet the design standards contained in the Aurora Municipal Code. All site features shall be integrated into the building or site design.

6.09.2 Operator shall place a note on site plan elevation sheets, stating: “Operator certifies that all structures are in compliance with 8 Colorado Code Regulations § 1302-14 regarding placarding and certification of non-residential modular or factory-built structures.”

6.10 Removal of Debris

6.10.1 General

All construction-related debris shall be removed from the Oil and Gas Location for proper disposal in a timely manner. The Oil and Gas Location shall be maintained free of debris and excess materials at all times during operation. Operator shall also not stockpile debris at the Oil and Gas Location.

6.11 Removal of Equipment

All equipment used for drilling, re-completion, and maintenance of the facility shall be removed from the Oil and Gas Location within thirty (30) days of completion of the work, weather conditions permitting, unless otherwise agreed to by the applicable surface owner. Permanent storage of removable equipment on the Oil and Gas Location shall not be allowed.

6.12 Trailers

A construction trailer(s) is permitted as an accessory use during active drilling and well completion or workover operations only. No permanent residential trailers shall be permitted at the Oil and Gas Location; provided, however, that until six (6) months following the end of the Completion Phase on an Oil and Gas Location, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator’s personnel and the personnel of its subcontractors on a temporary basis.

6.13 Noxious Weed Control

The Operator shall be responsible for ongoing noxious weed control as defined under the Colorado Noxious Weed Act (C.R.S. § 35-5.5-101 et seq.) at the Oil and Gas Location, along access roads, and in disturbed areas under restoration as a result of related construction activities or operations per City or other applicable agency regulations.
6.14 Park and Open Space Area Setback
The Oil and Gas Location shall be sited a minimum of three hundred fifty (350) feet away from existing and proposed parks and open space areas. This distance shall be measured from the perimeter of the Oil and Gas Location. For Flowlines that pass within three hundred fifty (350) feet of a park or open space area, a mitigation plan which identifies measures to be taken to mitigate impacts to parks and open space areas shall be submitted to the City.

6.15 Reclamation
6.15.1 Interim Reclamation.
Operator must submit an Oil and Gas Location Interim Reclamation Plan to the City with each OGP.

6.15.2 Final Reclamation Plan.
Operator must submit a Final Oil and Gas Location Reclamation Plan to the City concurrently with the submission of the COGCC application to plug and abandon the last Well at the Oil and Gas Location.

6.15.3 Decommissioning of Flowlines
Operator shall properly drain and decommission in accordance with City and COGCC regulations all Flowlines associated with any Plugged and Abandoned Well and shall remove from service all Flowlines by either abandoning in place and filling with flow fill or removing the pipe subject to approval by the City.
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7.01 Surface Stakeholder Notification

When Operator submits an OGP application to the City, the Operator shall include a list of all property owners (names, property addresses and mailing addresses) within one mile from the edge of an Oil and Gas Location and all registered neighborhood...
organizations within one mile of the Oil and Gas Location, and the surface owners of the property upon which the Oil and Gas Location is located (“Notified Residents”). The City shall send out notices of the OGP application to Notified Residents when the review process commences for the purpose of receiving public comment.

7.01.2 Resident Notification of Neighborhood Meeting

When the City begins the OGP review process, the Operator shall send notification of a Neighborhood Meeting to all Notified Residents. The notice must include:

• Operator’s contact information
• Approximate date to begin drilling
• Information on the Neighborhood Meeting

Operator shall send proof of mailed notices to the City by affidavit or certificate of mailing.

7.01.3 Neighborhood Meeting

Upon the City’s completeness determination of the OGP application, the Operator shall hold a Neighborhood Meeting to facilitate engagement between the Operator and nearby Notified Residents of the applicable Oil and Gas Location. Operator shall notify all Notified Residents of the Neighborhood Meeting. Operator shall provide notice a minimum of ten (10) days in advance of the Neighborhood Meeting.

Notified Residents may submit written comments to the City about the OGP application, including the BMPs. The City shall transmit those comments which require an Operator response to the Operator. Operator shall respond to those comments within thirty (30) days in writing to the City. A Neighborhood Meeting may not be required if there are no residents within one (1) mile of the Oil and Gas Location, no comments are received from the initial notice of filing of OGP application and the City agrees.

7.01.4 Notice of Administrative Decision

The City shall provide Operator with a form letter for Notice of Administrative Decision for a pending OGP application. At least ten (10) calendar days prior to the scheduled decision on an OGP application, the Operator shall send out the Notice of
Administrative Decision to the Notified Residents. The Operator shall provide proof to the City of mailed notices by affidavit or certificate of mailing.

**7.01.5 Pre-Drilling Notice**

Operator will comply with the mailing requirements of the Move-In, Rig-Up Notice required by the COGCC rules

**7.02 Other Notifications**

**7.02.1 General**

All notices and other correspondence sent to the City shall be in writing and shall be delivered by: (A) certified mail with return receipt, or (B) hand delivery with signature or delivery receipt provided by a third-party courier service (such as FedEx, UPS, etc.) to the designated representative of the City as indicated below, or (C) email to the designated representative of the City as indicated below.

City of Aurora
Oil & Gas Division
15151 E. Alameda Parkway, #5900
Aurora, CO 80012
Attn: Oil & Gas Manager
Telephone: 303-739-7676
Email: jsmoore@auroragov.org

**7.02.2 Notification of Submittal of COGCC Permits, Orders, and Approvals**

At the time the Operator files any COGCC Form 2 or Form 2A for a Well or Oil and Gas Location within the City, the Operator will provide the City a copy of such filings and shall provide the City with notification of any decision with respect to any COGCC Form 2 or Form 2A for a Well or an Oil and Gas Location and Operator’s best estimate as to when the Construction Phase for such Well or Oil and Gas Location will begin.

**7.02.3 Notification of New Operational Phase**

Operator shall provide written notice to the City no less than thirty (30) days prior to the commencement of any of the following: Construction Phase (unless the
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Construction Phase commences within forty-five (45) days of the approval of the applicable Form 2 or Form 2A), Drilling Phase, Completion Phase, or any recompletion, re-drilling, or plugging and abandonment of a Well. Until the commencement of the Production Phase at the Oil and Gas Location, Operator shall notify the Oil & Gas Division Manager as to the status of development at each active Well monthly. Any notification provided by Operator to City may be used by the City for public notification.

7.02.4 Routine Maintenance

Operator may perform all surface and downhole well maintenance and operations on its Oil and Gas Location, Oil and Gas Facility, or Flowline that the Operator deems prudent and necessary. Operator may perform routine maintenance of Oil and Gas Facilities without prior notification to the City, including surface and downhole well maintenance.

7.02.4.01 If Operator intends to perform maintenance that may be excessively loud or performed with vehicles larger than a standard work vehicle, the City shall receive advance notification in order to best answer questions from citizens.

7.03 Incidents/Spills

7.03.1 Events or Incidents. Any COGCC or OSHA reportable injuries, accidents, or natural events shall be reported to the City within twenty-four (24) hours. Once the applicable forms are submitted to the agency, a copy of that form will also be provided to the City. In the event of a fire that is not controllable by Operator personnel, explosion, or need for emergency services response, 911 shall be called.

7.03.2 Spills. Operator must notify the City of any spill of any material on permeable ground on the Oil and Gas Location that has a reportable spill quantity under any law. The Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the Oil and Gas Location.
7.04 Annual Development Schedule

The Operator shall provide a summary of planned operations and an operational timeline (Development Schedule) to the City by January 31 of each year. The Operator may revise the summary and timeline from time to time provided that the Operator will keep the City informed of any revision to the Development Schedule. The Development Schedule should include a brief summary of major planned operations at all of Operator’s Oil and Gas Locations within the City for the coming year, including a proposed timeline of operations, and any new permitting activities.

7.05 Previously Drilled Wells

When an Operator purchases or acquires an interest in an Oil and Gas Location, previously drilled Well, or other Oil and Gas Facility, which was not subject to an Operator Agreement, the Operator must review the BMPs in effect in this Oil & Gas Manual at the time of purchase. Within ninety (90) days before the purchase date, the Operator must submit a written report demonstrating compliance with all BMPs or a plan to bring the Oil and Gas Location and all Oil and Gas Facilities into compliance by the purchase date.

SECTION 8.00-30.00 RESERVED

This report is informal in nature and may be changed by the Operator at any time. The report provides guidance to the City staff for planning workflows.
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Oil & Gas Manual

We steward access to the natural resources under our authority with integrity and respect for our citizens, businesses, and the environment.

City of Aurora

Oil & Gas Division

Jeffrey S. Moore, P.G., Manager
API Redline
SECTION 31.00 INTRODUCTION TO OIL & GAS MIDSTREAM PERMITTING

31.01 Scope ......................................................................................................... 31-2
31.02 Authority ..................................................................................................... 31-2
SECTION 31.00 INTRODUCTION TO OIL & GAS MIDSTREAM PERMITTING

31.01 Scope
Sections 31.00-38.00 of this Oil & Gas Manual (OGM), set forth the minimum acceptable criteria for permitting, designing, and constructing pipelines and pipeline facilities, including Central Gathering Facilities (CGF), Gathering Lines, and Associated Facilities within the City of Aurora. A successful permit application process results in the approval of an Oil & Gas Midstream Permit (OGMP).

31.02 Authority

31.02.1 Local Authority

The Local Government Land Use Control Enabling Act of 1974, C.R.S. § 29-20101 et seq. authorizes local governments to regulate the surface impacts of oil and gas operations in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare and the environment within its jurisdiction. It also authorizes local governments to adopt reasonable regulations for surface impacts of oil and gas operations that address plan for and regulate the use of land by regulating the surface impacts of oil and gas operations in a reasonable manner to address:

Pursuant to the Colorado Oil and Gas Conservation Act, C.R.S. § 34-60-131 local governments may adopt regulations that are more protective or stricter than state requirements.

Pursuant to the Colorado Air Pollution Prevention and Control Act (“APPCA”), C.R.S. § 25-7-108 local governments may enact local air pollution resolutions or ordinances that include more stringent emission control regulations than state requirements.

31.02.2 City Code of Aurora

[Placeholder for final code sections A.M.C. 135-101, 135-102, 135-103, 135-104] give authority to the Oil & Gas Manual to regulate Oil and Gas Locations, Oil and Gas Facilities, pipelines, and all other oil and gas related operations.
SECTION 32.00 OIL & GAS MIDSTREAM PERMIT (OGMP)
APPLICATION PROCESS

32.01 General/Applicability

32.01.1 Permitting of Oil & Gas Midstream Locations and Associated Facilities

The Oil & Gas Midstream Permit (OGMP) application process shall apply to the CGF, Gathering Lines, and Associated Facilities within the City of Aurora.

Commented [CJM1]: We would note this code makes little distinction between these different processes. Further, will a permit be required for each? I.e. pipeline, midstream facility, etc.?

Commented [CJM2]: Please see attached comment letter for our concern around the subsurface regulation of gathering lines.
32.01.2 Future Increase in Oil & Gas Midstream Location Size

Oil & Gas Midstream locations should be constructed only to the extent approved and are fixed in size and geographical extent at the time the OGMP is approved. In the future, if an Operator desires to increase the size of an Oil & Gas Midstream location, or add additional Facilities, then the Operator shall submit a new permit application.

32.02 OGMP Application Process

The purpose of the pre-application process is for the Operator to provide a high-level overview of the proposed OGMP application to the City. City staff will provide feedback to the Operator on any BMPs or issues of concern.

Operator shall first obtain any necessary permits and agreements pursuant to these regulations prior to construction. The Operator shall submit all required City permits and applications such as but not limited to building permit, Stormwater and Erosion Control Permit, license agreements, rights-of-way permit, and OGMP application for the CGF, Associated Facilities, and Gathering Lines. The review by the City of these permits is to ensure the proposed Gathering Lines, Associated Facilities, and CGF comply with this Oil & Gas Manual and all applicable City of Aurora Municipal Code requirements.

32.02.1 Pre-Application Meeting

32.02.1.01 Operator shall request a Pre-Application Meeting with the Office of Development Assistance prior to submitting an application for an Oil & Gas Midstream Permit (OGMP). Appropriate City staff (as determined in the sole discretion of the Oil & Gas Manager) may attend. The City may waive the Pre-Application Meeting or PreSubmittal Meeting requirement for any Oil & Gas Midstream application.

32.02.1.02 At the Pre-Application Meeting, Operator shall present the proposed project to the City to determine appropriate materials needed for the application, and any special conditions for the CGF, Gathering Lines, and Associated Facilities.

32.02.1.03 A map and detailed description of the CGF, Gathering Lines, and Associated Facilities as applicable, must accompany the request for a Pre-Application Meeting.
32.02.1.04 The City shall provide Operator with comments from the PreApplication Meeting in writing.

32.02.2 Pre-Submittal Meeting

At the Pre-Submittal Meeting, the Operator shall demonstrate, prior to entering the formal OGMP application process, its ability to comply with all BMPs.

32.02.2.01 Following receipt of City comments from the Pre-Application Meeting, the Operator shall request a Pre-Submittal Meeting with the City Staff to demonstrate the Operator’s ability to comply with BMPs.

32.02.2.02 At the Pre-Submittal Meeting, Operator shall request that a portal be opened to allow the application to be submitted digitally.

32.02.3 Submission of OGMP Application

Operator may then submit the OGMP application.

32.02.4 Pre-Acceptance Completeness Review

Upon receipt of the Operator’s OGMP application, the City will initiate a Pre-Acceptance Review to determine whether the OGMP application is sufficient to begin the formal review process. During the Pre-Acceptance Review, the City will identify any deficiencies in the OGMP application and will notify the Operator of its decision in writing. Operator must demonstrate that the Operator has incorporated all BMPs from this OGM in its application.

32.02.5 Acceptance of OGMP Application

If no deficiencies are identified, an invoice of the OGMP application fee listed in the City Code will be sent to the Operator. The OGMP application fee must be paid prior to the City and outside agencies beginning review of the OGMP application.

If deficiencies in the OGMP application are identified, the Operator shall address the deficiencies and resubmit the OGMP application. The City will review the resubmitted application and notify the Operator in writing of its completeness determination.

Commented [CJM11]: How can we demonstrate? What will the City require?

Commented [CJM12]: It appears the Pre-Submittal meeting is to show we can comply with BMPs and request a portal? That is the entire reason for the meeting?

Commented [CJM13]: Operators need to have predictability around how long the permitting process takes. Suggest adding language how long the pre-acceptance completeness determination should take. Suggest 3-5 business days.

Commented [CJM14]: How do you demonstrate this? Slippery slope. By receiving the permit isn’t the Operator stating that they will comply?

Commented [CJM15]: Suggest timeline of within 3-5 days.

Commented [CJM16]: Suggest timeline of within 3-5 days.
32.02.6 First Review

In the First Review, the City will review the completed OGMP application and provide questions or comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments.

32.02.7 Neighborhood Meeting

Operator shall host a Neighborhood Meeting to inform the public of their application.

32.02.2.01 Operator shall notify all surface owners within one (1) mile of the Oil & Gas Location, of the time and location of the Neighborhood Meeting. Surface owners shall be notified a minimum of ten (10) days in advance.

32.02.2.02 Operator shall respond to all comments received at the Neighborhood Meeting in writing.

32.02.8 Second Review

In the Second Review, the City will review the Operator’s response to its questions or comments from the First Review, including Operator Responses to Neighborhood Meeting comments. The City will provide any further questions and comments to the Operator in writing. The Operator will then respond in writing to the City to address all questions and comments from the Second Review.

32.02.9 Civil Construction Plans

Operator can submit its Civil Construction Plans concurrently with the second City review of the CGFP.

32.02.10 Additional Review

Subsequent rounds of review may be necessary until Operator has, in the sole discretion of the Oil & Gas Manager, sufficiently responded to the City’s questions and comments.

32.02.11 Operator Response Timing

Any time the City provides written comments to an Operator submittal, the Operator shall reply in a timely manner. If comments are not received from the
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Operator within ninety (90) days of the City’s response, the Operator’s application will be deemed abandoned.

32.02.12 Compatibility with Approved Master Plans

The location and operations of the Oil and Gas Location shall be compatible with the approved Master Plan for the subject property.

32.02.13 Limit on Commencement of Construction

No construction activities shall begin until a valid Oil & Gas Midstream Permit (OGMP) has been received by the Operator. The Operator shall not move any heavy equipment or begin construction at the CGF, Gathering Lines, or Associated Facilities based on COGCC approval until the Operator has received administrative approval after the OGMP application review process by the City pursuant to this Oil & Gas Manual and all applicable City, State, and Federal permits.

32.02.14 Administrative Approval of OGMP

OGMP applications are approved by the Oil & Gas Division on an administrative basis. Once all questions have been answered by the Operator to the satisfaction of the City (at the sole discretion of the Oil & Gas Manager), a Letter of Administrative Decision is provided to the Aurora City Council. The City Council may elect to call-up the approved OGMP for further discussion. The available call-up period for City Council is two regularly scheduled council meetings.

32.02.15 Issuance of OGMP

Once any City Council call-up requirements are complete, the Oil & Gas Midstream Permit (OGMP) will be issued to the Operator by the Oil & Gas Division with or without conditions. No installation of pipelines or Associated Facilities may begin until Operator receives the NTP.

32.02.16 Fulfillment of OGP Conditions

The Operator shall satisfy any conditions required by the OGMP.

32.02.17 Notice to Proceed (NTP)

Upon satisfaction of all conditions required by the OGMP, the City and Operator may execute a Water Delivery Agreement, Road Maintenance Agreement, and other agreements as necessary. Upon approval and execution of all required
agreements, the City may issue a Notice to Proceed (NTP) with or without conditions. After issuance of the NTP, Operator may begin drilling activities at the Oil and Gas Midstream location, if all additional approvals from COGCC have been received.

32.02.18 Time Limits

An administratively approved signed OGMP shall be valid for a period of three (3) years from the date of approval. If construction of the pipeline or Associated Facilities has not begun within that period, a new application must be submitted by the Operator.

32.02.19 Denial

If it is established by competent evidence that a proposed Oil & Gas Midstream application fails to meet any of the specifications in this Oil & Gas Manual, the permit for such Oil & Gas Midstream location may be denied.

32.03 Required Application Contents

An Oil & Gas Midstream Permit (OGMP) application to the City contains the following (together, the Submittal Requirements) as described in the current City Code and Criteria. Application requirements will be at the discretion of the City based on the type of submittal):

32.03.1 Master Plan

To include the following:

32.03.1.01 All the planned components and land uses for the site

32.03.1.02 Public improvement plan

32.03.1.03 Context Map

32.03.2 Letter of Introduction for Plans for Gathering Line Submittal Materials

including items below:

32.03.2.01 The name, address, email, and telephone number of the Operator.

32.03.2.02 A summary statement of the project

32.03.2.03 A description of the Gathering Line, including the product(s) or substance(s) being transported and its/their source, size, terminus or...
32.03.2.04 All public utility crossings labeling the diameter and type of utility crossing to include bridges, culverts, water, wastewater, and stormwater infrastructure. Also, identify all public utilities within a one hundred fifty (150) foot buffer from the Gathering Line.

32.03.2.05 A description of the route or location of the Gathering Line and reasons for its selection.

32.03.2.06 Procedures to be employed in mitigating any adverse impacts of the proposed routes or sites of the Gathering Lines.

32.03.2.07 An outline of the planned construction, including startup and commissioning schedule, and include timing of each. The City acknowledges that this outline is subject to change, due to factors including, but not limited to, contractor availability, weather, ability to close ROW tracts, and the timing of third-party facility completion.

32.03.2.08 Information from Neighborhood Meeting conducted to include the location, date, time, attendance, and method of advertising.

32.03.2.09 A description of the hazards, if any, of fire, explosion, and other dangers to the health, safety, and welfare of the Operator’s employees and the public.

32.03.2.10 A Decommissioning Plan, which shall address how the Gathering Line will be properly cleaned, capped, and maintained if the Gathering Line will be Properly Abandoned in Place or whether the Gathering Line will be removed from the ground.

32.03.2.11 A description of any haul routes during construction, identifying the roads and bridges involved, and the weight of the loads.

32.03.2.12 Existing land use within or adjacent to the Gathering Line within 1,800 feet.
A Geotech reports required for Gathering Line crossings or any Gathering Line encroaching in a public right-of-way, if one does not already exist for that specific area or if required by the Department of Public Works.

Present zone and overlay zoning districts, which include floodplains and floodways, if appropriate.

Operator shall provide either authorization letters or agreements from all impacted property owners to verify application can be accepted.

Signature of the applicant.

Easements or rights-of-way for the Gathering Line from other landowners or a statement that the Operator is currently in good faith negotiations with the owners of surface properties, irrigation ditch companies and/or affected irrigation ditch easement owners of record at the point crossed by the Gathering Line.

A statement which provides evidence of compliance with the following standards:

The Gathering Line will not have an undue adverse effect on existing and future development of the surrounding area as set forth in applicable City Master Plans.

The design of the proposed Gathering Line mitigates negative impacts on the surrounding area to the greatest extent feasible.

The disturbed area shall be maintained during construction by the Operator or property owner in such a manner to control soil erosion, dust, and the growth of noxious weeds.

Site Plan for the CGF and Associated Facilities, to include the following:

Commented [CJM40]: This is extremely constraining and may not be a viable provision. In certain instances, operators are not able to secure independent authorization and may need to use other legal means. Operators have legal rights they are allowed to exercise, and this provision should account for this.

Commented [CJM41]: This is overly burdensome. If operators put a line in the ground they are required, by law, to have legal access to that subsurface area.

Commented [CJM42]: Who provides this? How does one determine this?

Commented [CJM43]: If operators get an easement across a landowner and that is where the landowner prefers to locate the line, that should be delegated to the property owner.

Commented [CJM44]: 32.03.03.09 – It is unreasonable to fence and landscape along the pipeline route, and in some cases it may not be an option.

Commented [CJM45]: This would mean a full construction plan for each section and associated facility? In other words this is a well construction plan that is being applied to a pipeline development.
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32.03.01 Proposed location of CGF and Associated Facilities on CGF property
32.03.02 Road access
32.03.03 Haul routes
32.03.04 Existing easements and rights-of-way
32.03.05 Visible improvements within 500 feet
32.03.06 Distances to the nearest occupied structure
32.03.07 Gathering Line Routes
32.03.08 Interim Reclamation Plan
32.03.09 Landscape Plan (including fencing and other criteria listed in the BMPs)
32.03.10 Photometric Plan
32.03.11 Visual Mitigation Plan
32.03.12 Air Quality Plan
32.03.13 Fugitive Dust Suppression Plan
32.03.14 Emergency Response Plan
32.03.15 Fluid Disposal Plan
32.03.16 PHA-HAZOP Letter- The Operator will provide a letter that the PHA-HAZOP has been completed, and the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.
32.03.17 Noise Management Plan
32.03.18 Operations Plan
32.03.19 Project Development Schedule
32.03.3.20  Security Plan

32.03.3.21  Traffic Letter or other analysis requested in the Pre-Application Notes & Traffic Management Plan

32.03.3.22  Wildlife Impact Mitigation Plan (if applicable)

32.03.3.23  Road Maintenance Agreement

32.03.3.24  Recorded Surface Use Agreement, if applicable

32.03.3.25  Stormwater and Erosion Control Plan (Grading, Drainage and Erosion Plan)

32.03.3.26  License Agreements, if applicable

32.03.3.27  A certified list of the names, addresses, and the corresponding Parcel Identification Numbers assigned by the County Assessor of owners of surface properties located within one hundred fifty (150) feet of the CGF and Associated Facilities. The source of such list shall be the records of the County Assessor, or an ownership update from a title, abstract company, or attorney derived from such records, or from the records of the County Clerk and Recorder. If the list was assembled from the records of the County Assessor, the Operator shall certify that such a list was assembled within thirty (30) days of the application submission date.

32.03.3.28  Evidence of Insurance

32.03.3.29  Such additional information as may be reasonably required by the City.

32.03.3.30  Fee Payment

The Operator shall be subject to an administrative fee associated with plan review and report analysis.

32.03.4  Narrative list of applicable BMPs addressed

The Operator shall include those BMPs which (A) the COGCC has the ability to respond to and resolve potential complaints regarding the BMP and (B) the
COGCC has enforcement ability to which it can exercise through inspection to ensure compliance with the BMPs.
SECTION 33.00 SAFETY AND SECURITY

33.01 Security Plan

33.01.1 General

A Security Plan must be included with the OGMP application to indicate how the Oil and Gas Facility will be operated and maintained free from purposeful and inadvertent interference from anyone except the Operator. The Security Plan may...
contain a description of fencing, cattle guards, a remote security system, warning and identification signs, and gating.

33.01.2 Security Fencing

Permanent security fencing shall be installed around the CGF and Associated Facilities and shall be secured. An internal security fence may include chain-link fence with security wire immediately surrounding the CGF and Compressor Station, with visual mitigation of the chain-link fence addressed by BMPs used in the visual mitigation plan. Gating systems shall meet City’s Roadway Specification Manual applicable at the time of the OGMP application.

33.02 Emergency Response Plan (ERP)

33.02.1 Detailed Emergency Response Plan

The Operator is required to complete a detailed Emergency Response Plan for all operations in the City of Aurora, and CGF, Gathering Lines, and Associated Facilities in accordance with the provisions of this Section, and Operator shall notify and work with Aurora Fire Rescue, Aurora Public Safety and Bennett Fire to prepare for an emergency if requested by them to do so.

33.02.2 Required Elements of the Emergency Response Plan

The Emergency Action Plan shall consist of at least the following information:

33.02.2.01 Name, address, and phone number, including twenty-four (24) hour emergency numbers for at least two (2) persons responsible for emergency field operations as well as the contact information for any subcontractor of Operator engaged for CGF, Gathering Line, and Associated Facilities emergencies.

33.02.2.02 An as-built CGF, Gathering Line, and Associated Facilities map, to be provided after the CGF, Gathering Line, and Associated Facilities are placed in service, in a format suitable for input into a GIS system depicting the locations and type of above-ground facilities and associated equipment for emergency response and management purposes.
### 33.02.2.03
A detailed plan for responding to emergencies that may include any or all of the following: explosions, fires, gas, oil, or water pipeline leaks or ruptures. A provision that any spill outside of the containment area that has the potential to leave the facility or to threaten waters of the state, or as required by the City-approved Emergency Response Plan, shall be reported to the City’s LGD.

### 33.02.2.04
Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.

### 33.02.2.05
A statement and detailed information indicating that the Operator has adequate personnel, supplies, and training to implement the Emergency Response Plan immediately at all times during construction and operations.

### 33.02.2.06
The Operator shall have current Safety Data Sheets (SDS) for all chemicals available upon request. The SDS shall be provided immediately upon request to City officials, a public safety officer, or a health professional as required by COGCC. The contractors of the Operator are responsible for the management of their own SDS and are to be made available upon request.

### 33.02.2.07
All “walkthroughs” or trainings associated with the Emergency Response Plan shall be coordinated with the City or Aurora Fire Rescue, upon their request.

### 33.02.2.08
Operator shall reimburse the appropriate emergency agencies for their expenses resulting from the Operator’s operations, to the extent required by Colorado Revised Statutes.

### 33.02.2.09
Operator shall provide the City with its emergency shutdown protocols and promptly notify the City of any emergency shutdowns related to onsite upset conditions that would have an impact to any area beyond the confines of the CGF, Gathering Line, and Associated Facilities.

### 33.02.2.10
Operator shall use non-PFAS foam such as Novacool or equivalent if foam is necessary to respond to an accident.
33.02.3 Approval of Emergency Action Plan

The City and Aurora Fire Rescue must approve the Emergency Plan before operations commence. Operator shall consult with Sable Altura Fire Rescue and/or Bennett Fire, if applicable.

33.02.4 Emergencies

In case of an emergency, the Operator will have appropriate response foam on hand, and the capacity to apply such, to respond to emergencies at the CGF, Gathering Line, and Associated Facilities. The Operator will have a tank large enough to hold the water needed for putting out a fire of the largest building at the CGF.

33.02.5 Annual Update of Emergency Action Plan

The Emergency Plan shall be filed with the City, Bennett Fire, if applicable, and Aurora Fire Rescue and updated on an annual basis or as conditions change (responsible field personnel change, ownership changes, etc.). As part of the evacuation plan, Emergency Responders will notify surrounding residents.

33.03 PHA-Hazard and Operability Study

33.03.1 PHA-HAZOP

A third party PHA-HAZOP certified facilitator shall coordinate the Hazard and Operability Study with the Operator after the permitting phase. If any of the findings by the PHA-HAZOP certified facilitator is applicable, this information will be added to the Emergency Response Plan and the Aurora Fire Rescue training. The Operator will provide a letter that the Engineer of record has incorporated all applicable PHA-HAZOP recommendations in the design.

33.03.1.01 The Engineer or record letter shall include the credentials of pertinent individuals that are responsible for any studies, design, and operational implementation, such as the “certified facilitator, Engineer of record, data analyst, design team, etc.”

33.04 Photometric Plan

33.04.1 A Photometric Plan must be included with the OGMP application.
33.04.2 Lighting shall be downcast and shall not shine beyond the boundaries of the CGF and Associated Facilities.

33.05 Discharge Valves

33.05.1 General

Open-ended discharge valves on all storage tanks, pipelines, and other containers within the CGF, Gathering Line, and Associated Facilities shall be secured and shall not be accessible to the general public. Open-ended discharge valves within the CGF, Gathering Line, and Associated Facilities shall be blinded and locked and where feasible placed within the interior of the secondary containment area.

33.06 Chemical Disclosure and Storage

33.06.1 General

Operator shall disclose the referenced chemicals to the Aurora Fire Rescue and Bennett Fire as part of the Emergency Response Plan pursuant to the process set forth in the ERP. Chemicals that will be disclosed include methanol, tri-ethylene glycol, corrosion inhibitor, and other operational required chemicals used for the safe operation of CGF and Associated Facilities.

33.07 Automatic Safety Protective Systems and Surface Safety Valve

33.07.1 General

An automated safety system, governed by safety devices and a programmable logic computer, will be installed at the CGF, Gathering Line, and Associated Facilities. The automated safety system shall include the installation, monitoring, and remote control of Safety shutdown valves (SDVs), among many other engineered measures and devices that are implemented to greatly reduce or eliminate the potential for an upset condition.

33.07.1.01 The SDV will be equipped to operate remotely via the automated safety protective system, which monitors multiple flowing pressures and rates which have predetermined maximum and/or minimum threshold values programmed and will remotely shut in the CGF, Gathering Line, and Associated Facilities should certain upset conditions be detected. Additionally, the automated safety system...
provides the ability to remotely shut-in the CGF, Gathering Line, and Associated Facilities on demand through Operator remote intervention. The Automatic Safety Protective System will have documented quarterly testing to ensure functionality.

33.07.1.02 Automated Safety Systems shall be maintained per OSHA PSM guidance and annually documented compliance.

33.07.1.03 Automated Process and Safety Systems shall be maintained per OSHA PSM guidance, and a Computerized Maintenance Management System implemented for compliance and auditable periodic testing.

33.08 Flammable Material
All ground within twenty-five (25) feet of any tank, or other structure containing flammable or combustible materials, shall be kept free of dry weeds, grass, rubbish or landscaping.

33.09 General Maintenance
Operator shall operate and maintain all equipment pursuant to manufacturer specifications consistent with technological limitations and reasonable and customary maintenance practices.

33.10 Miscellaneous
33.10.1 Lightning Protection
Lightning protection mitigation measures will be considered by the Operator during the CGF and Associated Facilities design and installed per industry best practice to mitigate lightning strike events and/or consequences.

33.11 Insurance
33.11.1 General
The Operator shall provide liability and insurance under the conditions, and in the amounts, set forth below.

33.11.2 Operator shall maintain or cause to be maintained, with insurers authorized by the state of Colorado and carrying a financial strength rating from AM. Best of no less than A- VII (or a similar rating from an equivalent recognized rating agency), at a

Commented [CJM59]: OSHA PSM is not required for pipelines. DOT regulations apply to pipelines. This is adding in CGF requirements to a pipeline rule.

Commented [CJM60]: Please clarify what this will entail for compliance purposes.

Commented [CJM61]: Please clarify what this will entail for compliance purposes.

Commented [CJM62]: Please see associated comment letter for our concerns on this section. This gives us a great deal of concern for several reasons, including availability of such insurance coverage as well as how these limits were determined.
minimum, the following types of insurance with limits no less than the amounts indicated:

33.11.2.01 Commercial General Liability insurance on an occurrence-based form including coverage for bodily injury or property damage for operations and products and completed operations with limits of not less than $1,000,000 each and every occurrence.

33.11.2.02 Automobile Liability insurance with limits of not less than $1,000,000 each and every occurrence.

33.11.2.03 Workers’ Compensation insurance- Statutory Workers’ Compensation Coverage for the employee’s normal State of employment/hire. Including Employer’s Liability insurance with limits of not less than $1,000,000 Each Accident, Disease- Each Employee, Disease - Policy Limit.

33.11.2.04 Umbrella/Excess Liability - in excess of General Liability, Employer’s Liability, and Automobile Liability with limits no less than $25,000,000 per occurrence; provided, however, that for so long as the Construction Phase is ongoing at the CGF, Gathering Line, and Associated Facilities, Operator will maintain such insurance with limits no less than $100,000,000 per occurrence.

33.11.2.05 Environmental Liability/Pollution Legal Liability insurance- with limits of not less than $5,000,000 per pollution incident, with coverage being required beginning with the date that is eight (8) years from the date of CGF, Gathering Line, and Associated Facilities construction. (the “Required Date”). Coverage must include gradual pollution events. This insurance may be on a claims-made basis; however, the retroactive date must precede the Required Date.

33.11.3 Operator shall waive and cause its insurers under the above policies to waive for the benefit of the City any right of recovery or subrogation which the insurer may have or acquire against the City or any of its affiliates, or its or their employees, officers or directors for payments made or to be made under such policies.
33.11.4 As it pertains to the risks and liabilities assumed by Operator, Operator shall add the City and its elected and appointed officials and employees as Additional Insureds under general liability (including operations and completed operations), auto liability, and umbrella liability.

33.11.5 Operator shall ensure that each of the policies is endorsed to provide that they are primary without right of contribution from the City or any insurance or selfinsurance otherwise maintained by the City, and not in excess of any insurance issued to the City.

33.11.6 Operator shall ensure that each of the policies above (excluding workers’ compensation and OCC/COW) are endorsed to state that the inclusion of more than one insured under such insurance policy shall not operate to impair the rights of one insured against another insured and that the coverage afforded by each insurance policy shall apply as though a separate policy had been issued to each insured.

33.11.7 All policies shall be endorsed such that they cannot be canceled or non-renewed without at least thirty (30) days’ advanced written notice to the Operator and the City, evidenced by return receipt via United States mail, except when such policy is being canceled for nonpayment of premium, in which case ten (10) days advance written notice is required. Language relating to cancellation requirements stating that the insurer’s notice obligation is limited to “endeavor to” is not acceptable.

33.11.8 Operator shall, prior to permit issuance, deliver Certificates of Insurance reasonably acceptable to the City confirming all required minimum insurance is in full force and effect.

33.11.9 Deductibles or retentions shall be the responsibility of Operator. Deductibles or retentions must be listed on the Certificate of Insurance required herein and are subject to the reasonable approval of the City.

33.11.10 Operator shall require any of its subcontractors to carry the types of coverage and in the minimum amounts in accordance with the requirements set out in Section 1.A, 1.B., and 1.C. Operator shall be responsible for any damage or loss suffered by the City as a result of non-compliance by Operator or any subcontractor with this Section.

33.11.11 In the event that Operator’s coverage lapses, is canceled, or otherwise not in force, the City reserves the right to obtain the insurance required herein and charge all...
costs and associated expenses to Operator, which shall become due and payable immediately.

33.12 Risk Management

As part of Operator's application to the City, Operator shall provide a risk management plan, which will include the identification of potential risks, methods of risk avoidance, and controls that implement techniques to prevent accidents and losses and reduce the impact or cost after the occurrence of identified potential events.
SECTION 34.00 PROTECTION OF WATER QUALITY

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SECTION 34.00 PROTECTION OF WATER QUALITY

34.01 General

34.01.1 Water Sources

The City, through Aurora Water, will identify Water Sources and Critical Infrastructure located near Operator’s infrastructure, and the Water Sources and
Critical Infrastructure will be noted on Operator’s Site Plans that will be provided during the review process. The Operator will then note the distance of the Water Sources and Critical Infrastructure from the edge of the CGF and Associated Facilities.

34.01.2 Water Supply

The Operator shall comply with applicable laws, rules, and regulations concerning the source(s) of water used in the construction and operations phase.

34.02 Surface Water Protection

34.02.1 Maintenance

Routine field maintenance of vehicles or mobile machinery shall not be performed within five hundred (500) feet of any Waters of the United States, as defined by the EPA. All fueling must occur over impervious material, and spills must be cleaned up and properly disposed of.

34.02.2 Wastewater and Waste Management

Operator must submit a waste management plan to the City that complies with the following:

34.02.2.01 All fluids shall be contained, and there shall be no discharge of fluids with the exception of unimpacted stormwater per federal Spill Prevention, Control, and Countermeasure Plan (SPCC) regulations.

34.02.2.02 Waste shall be stored in tanks, transported by tanker trucks and/or pipelines, and disposed of at licensed disposal or recycling sites.

34.02.2.03 A copy of the Operator’s Spill Prevention, Control, and Countermeasure Plan (SPCC) will be submitted to the City as part of the wastewater and waste management plan. The SPCC shall meet all federal requirements associated with spill prevention and mitigation practices.

34.02.3 Stormwater Management

Operator must apply for and obtain a City stormwater and erosion control permit.
Erosion and sedimentation control are required.

34.03 Groundwater Protection

34.03.1 Groundwater Pollution Mitigation.
Operator shall avoid causing degradation to surface or ground waters within the City and to wetlands within the City. If Operator is responsible for degradation to water, it will pay its proportionate share to restore water quality as close to baseline as possible.

34.03.2 Class II Underground Injection Control Wells
For operations associated with the CGF, the Operator shall not develop, use, operate or contract with any third party for the use of any Class II Underground Injection Control Wells within the City Limits or within a four (4) mile buffer of the City’s existing or planned critical infrastructure. The City shall provide Operator with a map that defines the critical infrastructure.

34.04 Water During Drilling Phase

34.04.1 Water Supply
Operator will enter into a separate agreement with the City for the delivery of groundwater through a commercially exempt well in accordance with the Colorado Division of Water Resources if City water infrastructure is unavailable.

34.05 Construction of Gathering Line

34.05.1 General
The Operator shall construct a Gathering Line for the transportation of hydrocarbons and produced water to the CGF.

34.05.2 Temporary Use of Tanks
Operator shall be permitted to utilize temporary tanks during Gathering Line maintenance operations, provided Operator has obtained City approval regarding the location and required screening for temporary tanks if the maintenance or temporary tanks are present longer than a week. For maintenance operations that extend greater than seven (7) days, Operator shall give City prior notice of
maintenance activities within three (3) days and planned number of temporary tanks.

34.06 Berms for Fluid Containment

34.06.1 General

The Operator shall utilize steel-rim berms around all permanent facility tankage at the CGF and Compressor Station with sufficient capacity to contain the maximum volume of the largest tank on location, plus a twenty-five (25)-year twenty-four (24)-hour rain event, plus sufficient freeboard to prevent overflow.

34.06.1.01 All berms and containment devices shall be inspected quarterly by the Operator and maintained in good condition.

34.06.1.02 No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel, or such sources are rated in accordance with industry codes and standards.

34.06.2 Permanent Berms

Permanent containment berms shall be constructed of earthen berms or steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.

34.06.3 Secondary Containment

Secondary containment shall be constructed with a synthetic or engineered liner that is mechanically connected to the steel ring to prevent leakage.

34.07 Floodways

Additional BMPs related to water preservation or protection shall be imposed by the City staff during the OGMP application process in order to mitigate risks of potential contamination to a floodway.

34.08 Drainage

34.08.1 Planning Process & Preliminary Drainage Reports The OGMP process may require the submittal of a Preliminary Drainage Report for Oil & Gas Facilities and Pumping Stations.
34.08.2 Civil Plans—Process Public Works Engineering will require a civil plan PreSubmittal Meeting to be held. To set up a meeting, please contact the Aurora Public Works Department.

34.08.3 Civil Plans—Content and Naming Convention Operator Agreements and associated applications and checklists for Oil & Gas Facilities have been developed using the term “Storm Water Management Plans (SWMPs)” in reference to the Civil Plans for these sites. The Civil Plans for Oil & Gas Facilities include features that go beyond typical SWMPs. Drainage Reports (both Preliminary and Final) and Civil Plan submittals will be reviewed using City standards.

34.08.4 Civil Plans—Submittal Package Civil Plan submittals for Oil & Gas Facilities will be determined on a case by case basis at civil plan pre-submittal meeting and may include: Final Drainage Report, Storm Water Management Report, and an Inspection and Maintenance Plan. Any grading within an existing utility easement may require structural loading evaluation as determined at the civil plan presubmittal meeting. The structural loading evaluation shall be submitted with the first submittal of civil plans.

34.08.5 Subsurface Utility Investigation/Loading Information For Oil & Gas Facility Civil Plans, the City of Aurora Roadway Specifications §SUE note 22 (which refers to SB 18-167 and will be updated to refer to CRS 9-1.5) is a required note to be placed on the plans. In addition, Aurora Water requires any crossing of existing utilities or tie-ins to provide pre-design potholing.

34.08.6 Oil and Gas Pipeline Civil Plans—Content Civil Plans for Oil and Gas Pipelines shall include Plan & Profile sheets (P&Ps) where such pipelines cross City ROW, utility easements, floodplains, or other critical areas as determined on a case-by-case basis. The Subsurface Utility Investigations described above shall be used to provide depictions of existing utilities on those profiles. The P&Ps shall be included with the SWMP submittal

34.08.7 Drainage Easements/License Agreements For all Oil & Gas Facilities, the need for Easements and License Agreements shall be evaluated on a case-by-case basis. If there is a need for a drainage or license agreement these documents must be executed prior to civil plan approval
34.08.8 Oil and Gas Pipeline CAD Files and As-Builts. 3-D CAD files that include the entire pipeline shall be submitted to the City with the Signature Set of Civil Plans. In addition, the City requires as-builts for entire pipeline alignments upon construction completion, for pipelines external to pad sites. This shall be noted on the Site Plans, Civil Plans, and in Storm Water Permits.

34.08.9 CAD Submittal Standards. The City has developed CAD Data Submittal Standards to streamline the process of importing AutoCAD information into the city’s Enterprise GIS. A digital submission meeting the CAD Data Submittal Standards is required before the final Site Plan mylars can be routed for signatures or recorded. Please review the CAD Data Submittal Standards, including templates and required layer file labeling, at http://tinyurl.com/AuroraCAD. Email your Case Manager the appropriate Site Plan and Pipeline Easement files before submitting your final Site Plan mylars. Once received, the City’s AutoCAD Operator will run an audit report and your Case Manager will let you know whether the file meets or does not meet the City’s CAD Data Submittal Standards. Please email CADGIS@auroragov.org for questions or more detailed instructions.

Commented [CJM72]: We need the right to keep certain information confidential. Again, this is proprietary business information issue as well as a significant safety issue.
SECTION 35.00 PROTECTION OF AIR QUALITY

The BMPs in this Section relate to the CGF and Associated Facilities only.
35.01 Air Quality Monitoring Plan

35.01.1 General

In order to minimize degradation to air quality, Operator shall eliminate, capture, or minimize all potentially harmful emissions and minimize dust associated with onsite activities and traffic on access roads. Operator shall comply with all applicable state and federal regulations, including regulations promulgated by CDPHE, COGCC, and US EPA.

35.01.2 Minimization of Emissions

To protect air quality, the following will be required:

35.01.2.01 **Where electricity is available,** the use of electric equipment and electric line power to operate all permanent production equipment. Generators will be allowed until such source of electricity is available. Gas powered compressor stations are exempt from this requirement.

35.01.2.02 Natural gas engines and turbines will be operated and maintained in accordance with the CDPHE and the US EPA regulations and emissions standards.

35.01.2.03 The use of no-bleed continuous and intermittent pneumatic devices that do not bleed natural gas to the atmosphere. 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.

35.01.2.04 Any combustion device, 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.

35.01.2.05 Year-round compliance with the odor standards pursuant to COGCC and CDPHE regulations.
35.01.2.06 Venting is prohibited unless necessary for safety. If emergency venting is required, or if accidental venting occurs, the Operator shall provide notice to the City of such event as soon as, but in no event later than twenty-four (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.

35.01.2.07 Reduction of emissions from oil and gas well maintenance activities. For planned maintenance activities involving the intentional flaring of gas, the Operator shall provide forty-eight (48) hour advance written notice to the City of such proposed flaring. Such notice shall identify the duration and nature of the flaring event, a description as to why flaring is necessary, what steps will be taken to limit the duration of flaring, and what steps the Operator proposes to undertake to minimize similar events in the future.

35.01.2.08 Telemetric control and monitoring systems to detect when pilot lights on control devices are extinguished.

35.01.2.09 Exhaust from all engines, motors, coolers, and all other equipment must be vented up and away from the nearest residences.

35.01.2.10 Operator shall participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at sites.

35.01.3 Air Monitoring and Leak Detection

35.01.3.01 Leak Detection and Repair The Operator shall develop and maintain a Leak Detection And Repair (LDAR) program as required by CDPHE using modern leak detection technologies such as infrared cameras. The Operator shall conduct quarterly IR camera monitoring or alternative instrument monitoring method of all permanent production equipment.

35.01.3.02 Except when an emergency circumstance would necessitate an immediate repair, Operator must repair leaks as quickly as
practicable. If more than five (5) days repair time is needed after a leak is discovered, an explanation of why more time is required must be submitted to the City. At least once per year, the Operator shall notify the City five (5) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

35.01.3.03 Data related to LDAR during any phase shall be made available to the City upon request.

35.01.4 Ozone Air Quality Action Days

The Operator shall respond to Ozone Air Quality Action Day advisories posted by the CDPHE for the Front Range Area by implementing their suggested air emission reduction measures as feasible. Emission reduction measures shall be implemented for the duration of an Ozone Air Quality Action Day advisory and may include measures such as:

35.01.4.01 Minimization of vehicle and engine idling.
35.01.4.02 Reducing truck traffic and worker traffic.
35.01.4.03 Delaying vehicle refueling.
35.01.4.04 Postponement of construction and maintenance activities to the maximum extent practicable.

35.01.4.05 Within thirty (30) days following the conclusion of each annual Ozone Air Quality Action Day season, Operator must submit a report to the City that details which measures it implemented during any Ozone Air Quality Action Day advisories.

35.01.5 Compliance Reports

The Operator must submit bi-annual reports to the City certifying (i) compliance with these air quality requirements and documenting any periods of material noncompliance, including the date and duration of each such deviation and a compliance plan and schedule to achieve compliance, (ii) that the equipment at the

Commented [CJM75]: We do not keep the video records due to the IT storage space required and the difficulties of maintaining accessible records like these. Also, this should not be indefinite. Those records should have a time limit of three year retention.

Commented [CJM76]: Does this mean twice a year or every 2 years? Once a year is more than enough.
API Redline

CGF and Associated Facilities 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. The bi-annual report must contain a certification as to the truth, accuracy, and completeness of the reports, signed by a Responsible Official. The Operator will also provide the City 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 at the CGF and Associated Facilities.

35.01.6 Combustion Devices

To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:

35.01.6.01 A combustion device shall be available at the CGF and Compressor Station during operations for maintenance or emergencies only.

35.01.6.02 The combustion device must be fired with natural gas and designed to operate with a ninety-eight (98) percent or higher hydrocarbon destruction efficiency.

35.01.6.03 The combustion device must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions mean observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

35.01.6.04 The combustion device must be operated with a flame present at all times when emissions may be vented to it, or another mechanism that does not allow uncontrolled emissions.

35.01.6.05 All combustion devices must be equipped with an auto-igniter unless manned while in use.

Commented [CJM77]: Is this a defined term. Also, this is duplicative of Title V reporting.
35.01.7 Burning

No open burning except for the use of combusters or flares shall occur on the site of any oil and gas operation, as per City Code.

35.02 Odor

35.02.1 Odor Prevention

Operator will prevent odors by routing to closed-loop systems. Odor emitting from the CGF and Associated Facilities must be controlled immediately. Operator must minimize odors by proactively addressing and resolving citizen concerns within twenty-four (24) hours.

35.03 Noise Mitigation

For the CGF and compressor station, the following noise mitigation apply:

35.03.1 Operator shall comply with noise requirements set forth in the City’s zoning code for all construction activities.

35.03.2 Operator shall adhere to the City’s noise ordinance:

35.03.3 Operator may be required to provide for additional noise mitigation based on the following site-specific characteristics considering the distance from the nearest residential structure:

35.03.3.01 Nature and proximity of adjacent development (design, location, use)

35.03.3.02 Prevailing weather patterns, including wind directions

35.03.3.03 Type and intensity of the noise emitted

35.03.3.04 Vegetative cover on or adjacent to the site or topography

35.03.4 Based on the foregoing, if there is a Residential Building Unit within one thousand three hundred twenty (1,320) feet of the CGF or compressor station location, the City may require one or more of the following additional noise abatement measures or BMPs depending on the site including:

Commented [CJM78]: Operators should be allowed to control odors through whatever means will allow them to comply.

Commented [CJM79]: Verified complaints, and there may be certain odors at some points. Immediately may be difficult.
35.03.4.01 A Noise Management Plan specifying the hours of maximum noise and the type, frequency, and level of noise emitted, and the mitigation methods to be employed to control both A and C scale noise.

35.03.4.02 A Baseline Noise Mitigation Study shall be conducted to ascertain baseline noise levels at the CGF to demonstrate that noise is expected to be mitigated to the maximum extent practicable, and a copy will be provided to the City.

35.03.5 All noise mitigation measures shall be paid for by the Operator.

35.03.6 Noise Mitigation Barriers The Operator shall use a combination of berms, bales, and other measures during the construction of the CGF and Associated Facilities. During the operations of the CGF and Associated Facilities, the Operator shall use a combination of equipment enclosures, structures, or pre-engineered buildings, berms, landscaping, and other visual mitigation measures to ensure compliance with the City’s noise ordinance.

35.04 Electric Equipment

Operator shall use electric line power, to power permanent production equipment, such as compressors and motors, in order to mitigate noise and to reduce emissions.
SECTION 36.00 PROTECTION OF SURFACE QUALITY

36.01 License Agreements
Operator shall use Gathering Lines to be built in accordance with specifications set forth in Section 38 of this Oil & Gas Manual. Operator will utilize Gathering Lines once operations commence. The Operator’s obligation to build and utilize such Gathering Lines is subject to the Operator obtaining all necessary rights-of-way, crossings, licenses and easements, and the City issuing Operator the necessary Public Improvement Permits.

36.02 Fugitive Dust Suppression
36.02.1 Minimize Dust
Dust associated with on-site activities and traffic along pipeline ROW shall be minimized throughout construction and operational activities such that there are no visible dust emissions from access roads or the CGF, Gathering Line, and Associated Facilities unless infeasible given wind conditions. If dust is not suppressed, the City may require the surface to be improved to a dust-free surface.

Commented [CJM81]: This seems like an impossible standard to meet. Sites will always have some amount of dust from traffic. Otherwise they are underground. This seems like it could be tailored better.
36.02 Water Use

No untreated produced water or other process fluids shall be used for dust suppression.

36.02.3 Safety Data Sheets (SDS)

Safety Data Sheets (SDS) for any chemical-based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use.

36.03 Visual Mitigation

36.03.1 General

Operator shall submit a landscape and screening plan to mitigate visual impacts from the CGF and Associated Facilities for City approval during the OGMP review process.

Visual impacts from the CGF and Associated Facilities, including security fencing, shall be mitigated through a combination of equipment enclosures, structures or pre-engineered buildings, landscaping, opaque fencing, or other similar measures from the public right-of-way and critical public views. Critical public views are defined as views from existing adjacent surface property owners as of the date of the OGMP application. Visual mitigation may be reduced or waived if written approval is provided by the adjacent surface property owners, and the City determines that the reduction or waiver is not visible from the public right-of-way or impairs critical public views.

36.03.2 Color

All permanent above-ground associated production equipment, structures, and stationary equipment on each CGF, Gathering Line, Associated Facilities shall be painted in a tan or brown matte finish unless a different color is necessary for safety per regulations.

36.04 Traffic

36.04.1 Transportation and Circulation

The Operator will submit a traffic management plan for the City to review and, if acceptable, approve that includes detailed descriptions of all proposed haul routes.
for equipment, pipe, and all other material to be hauled on the public and private streets and roads during pipeline and facility construction. The traffic management plan shall include the following:

**36.04.1.01** Estimated weights of vehicles when loaded, a description of the vehicles, including the number of wheels and axles of such vehicles and estimated trips per day.

**36.04.1.02** Detail of access locations for each CGF, Gathering Lines, and Associated Facilities, including sight distance, turning radius of vehicles, and a template indicating this is feasible.

**36.04.1.03** Truck traffic volumes converted to equivalent single axle loads and compared with existing volumes. Trucks anticipated on roadways that are being accessed to equivalent single axle loads using existing volumes and proposed with extraction activities.

**36.04.1.04** Truck routing map and truck turning radius templates with a listing of required improvements that are necessary at intersections along the route.

**36.04.1.05** Complete traffic letter, determining operational changes and geometric modifications necessary as a result of Operator’s activities.

**36.04.1.06** Identification of the need for any additional traffic lanes, which would be subject to the final approval of the City’s engineer.

**36.04.1.07** Restriction of non-essential traffic to and from CGF, Gathering Lines, and Associated Facilities to periods outside of peak a.m. and p.m. traffic periods and during school hours of schools along the designated traffic routes (generally 7-9 a.m. and 3-6 p.m.).

**36.04.1.08** City may request consolidated haul routes and roadway improvements, or upgrades based on the contents of the traffic management plan.
36.04.1.09 Road Repairs will be addressed as set forth in the Road Maintenance Agreement. A separate Road Maintenance Agreement shall be required for Operator.

36.05 Road Maintenance

36.05.1 Access Roads

Access points to public roads shall be located, improved, and maintained to ensure adequate capacity for efficient movement of existing and projected traffic volumes and to minimize traffic hazards.

36.05.1.01 Permanent access roads must be improved a minimum distance of two hundred (200) feet on the access road from the point of connection to a public road. All access roads shall be in conformance with the City’s Roadway Specification Manual applicable at the time of OGMP application for CGF, Gathering Lines, and Associated Facilities. The access road must be improved as a hard surface (concrete or asphalt) for the first one hundred (100) feet from the public road, unless the public road is not already a hard surface, in which case, Operator shall meet the current standards of the public road and the access road must be improved as a crushed surface (concrete or asphalt) for one hundred (100) feet past the hard surface in the appropriate depth to support the weight load requirements of the vehicles accessing the CGF, Gathering Line, and Associated Facilities.

36.05.1.02 A geotechnical report and pavement design will be submitted to the City for approval. If an access road intersects with a pedestrian trail or walk, the Operator must pave the access road as a hard surface (concrete or asphalt) a distance of one hundred (100) feet on 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 unless the trail or walk is not already a hard surface, in which case, Operator shall meet the current standards of the trail or walk. Temporary access roads associated with the operation must be reclaimed and revegetated to the original
state within sixty (60) days after discontinued use of the temporary access roads.

36.05.1.03 For the CGF, all required roadways for the project shall be evaluated and included in a Public Improvement Plan.

36.05.1.04 Temporary access roads associated with the operation shall be reclaimed and revegetated to the original state within sixty (60) days after discontinued use of the temporary access roads.

36.05.2 Mud Tracking

In accordance with the Storm Water Management Plan, the Operator shall take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets, in excess of de minimus levels, the streets shall be cleaned within twenty-four (24) hours by the Operator. If, for some reason, this cannot be done or needs to be postponed, the City shall be notified of the Operator’s plan for mud removal.

36.05.3 Culverts

Operator shall construct all necessary culverts for road construction per any available City or County, as applicable, Drainage Plan. In the event no information is available, the Operator shall complete any necessary studies or analysis to determine the appropriate culvert size.

36.05.4 Road Repairs

Road repairs will be addressed as set forth in the Road Maintenance Agreement.

36.06 Tree Mitigation

CGF, Gathering Line, and Associated Facilities shall be constructed in a manner to minimize the removal of and damage to and replacement of existing trees in accordance with the City’s tree mitigation policy.
36.07 Cultural and Historical Resource Protection

36.07.1 General

The Operator shall comply with the City of Aurora Municipal Code, as amended, by not causing any construction, alteration, removal, or demolition of a building or feature or make any changes that would impair the historical association of the landmark building, landmark site, or historic district, pursuant to those qualities depicted in the Code, without first obtaining approval. Operator will submit the permit application and await the planning department’s approval following referral to the historic preservation commission, if applicable. If there is a discovery of historical artifacts, Operator will notify the City.

36.07.2 Protection of Natural, Historical, and Archaeological Resources

The nature and location of an Oil and Gas Midstream location or facility shall not interfere with or affect any unique natural resource, historical site or landmark, or known archaeological site.

36.08 Wildlife/WIMP

This BMP is only applicable in the event that a Facility is located in a significant wildlife habitat or high priority habitat, as defined by the State Division of Wildlife, and/or in a natural area or open space. In such a case, the Operator shall consult with the State Division of Wildlife or the City Parks, Recreation and Open Space Department to obtain recommendations for appropriate site-specific and cumulative impact mitigation procedures. If not applicable, Operator shall provide the City with a statement that it has investigated whether the Facility is located near a significant wildlife habitat and that this BMP is not applicable.

36.09 Buildings, Structures, and Associated Appurtenances

Any buildings or structures must meet the design standards contained in the Aurora Municipal Code. All site features shall be integrated into the building or site design.

36.10 Removal of Debris

All construction-related debris shall be removed from the CGF, Gathering Line, and Associated Facilities for proper disposal in a timely manner. The CGF, Gathering System, Flowlines, and Associated Facilities shall be maintained free of debris and excess materials at all times during operation. Operator shall also not stockpile debris at the CGF, Gathering Line, and Associated Facilities.
### 36.11 Trailers
A construction trailer(s) is permitted as an accessory use during construction only. No permanent residential trailers shall be permitted at the CGF, Gathering Line, and Associated Facilities; provided, however, that until six (6) months following the end of the construction phase on the CGF, Gathering Line, and Associated Facilities, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator’s personnel and the personnel of its subcontractors on a temporary basis.

### 36.12 Noxious Weed Control
The Operator shall be responsible for ongoing noxious weed control as defined under the Colorado Noxious Weed Act (C.R.S. § 35-5.5-101 *et seq.*) at the CGF, Associated Facilities, along access roads, and in disturbed areas under restoration as a result of related construction activities or operations per City or other applicable agency regulations.

### 36.13 Park and Open Space Area Setback
The CGF, Gathering Line, and Associated Facilities, shall be sited a minimum of three hundred fifty (350) feet away from existing and proposed parks and open space areas. This distance shall be measured from the perimeter of the CGF, Gathering Line, or Associated Facility. For Gathering Lines that pass within three hundred fifty (350) feet of a park or open space area, a mitigation plan which identifies measures to be taken to mitigate impacts to parks and open space areas shall be submitted to the City.

### 36.14 Reclamation

#### 36.14.1 Interim Reclamation.
Operator must submit an Oil & Gas Facility Interim Reclamation Plan to the City with each OGMP.

Operator must submit a Final Oil & Gas Facility Reclamation Plan to the City concurrently with the submission of the COGCC permit to decommission any CGF, Gathering Line, or Associated Facility.

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**Commented [CJM89]:** This section does not apply to drilling pads. What is this seeking to fix?
36.14.3 Decommissioning of Gathering Lines

Operator shall properly drain and decommission in accordance with City, COGCC, DOT and PHMSA rules and regulations all Gathering Lines associated with any Plugged and Abandoned Well or Wells which are plugged, abandoned, and decommissioned by oil and gas upstream affiliate Operator(s), and shall remove from service all Gathering Lines related to the plugged wells by either abandoning in place and filling with flow fill or removing the pipe subject to approval by the City.

36.15 Damages

The initial cost of installing the Gathering Line and of maintaining such easements shall be borne by the Operator. In the event that Operator relocates an access road or Gathering Line causing damage to improvements owned by the City, the Operator shall repair the damage pursuant to the appropriate permit. If Operator fails to make the necessary repairs, Operator shall promptly reimburse the City for such damage upon receipt of a reasonable itemized statement that documents the cost to repair the damage; provided that, such reimbursement shall be received by the City no later than forty-five (45) calendar days from the date of the itemized statement. Notwithstanding the foregoing, nothing in this paragraph prevents an independent developer from seeking an agreement with Operator to relocate Gathering Lines. In the event that a relocation of the Gathering Line is needed, the City and the Operator will work cooperatively to identify an alternative route and Operator shall be permitted to maintain use of the existing Gathering Line until six (6) months after City’s approval of any necessary permits for such alternative routes.

Commented [CJM90]: We would note that much of this constitutes subsurface regulation.
## SECTION 37.00 GENERAL OIL & GAS MIDSTREAM PERMIT REQUIREMENTS

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### 37.01 Surface Stakeholder Notification

#### 37.01.1 Notice of Application

When Operator submits an OGMP application to the City, the Operator shall provide a list of all property owners (names, property addresses and mailing
addresses) and all registered neighborhood organizations within one mile of the CGF and Associated Facilities and the surface owners of the property upon which the CGF or Associated Facilities is located (Notified Residents). The City shall send out notices of the OGMP application to notified residents when the review process commences for the purpose of receiving public comment.

37.01.2 **Resident Notification of Neighborhood Meeting**

When the City begins the OGMP review process, the Operator shall send notification of a Neighborhood Meeting to all Notified Residents. The notice must include:

- Operator’s contact information
- Approximate date to begin drilling
- Information on the Neighborhood Meeting

Operator shall send proof of mailed notices to the City by affidavit or certificate of mailing.

37.01.3 **Neighborhood Meeting**

Upon City acceptance of the OGMP application, the Operator shall hold a meeting to facilitate engagement between the Operator and nearby residents (Neighborhood Meeting). Operator shall notify all Notified Residents of the Neighborhood Meeting. Operator shall provide notice a minimum of ten (10) days in advance of the Neighborhood Meeting.

Notified Residents may submit written comments to the City on the OGMP application, including the BMPs. The City shall transmit those comments which require an Operator response to the Operator. Operator shall respond to those comments within thirty (30) days in writing to the City. A neighborhood meeting may not be required if there are no residents within one (1) mile of the CGF or Associated Facilities location, no comments are received from the initial notice of the filing of OGMP Application, and the City agrees.

37.01.4 **Notice of Administrative Decision**

The City shall provide Operator with a form letter for Notice of Administrative Decision for a pending OGMP application. At least ten (10) calendar days prior to
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the scheduled decision on an OGMP application, the Operator shall send out a Notice of Administrative Decision to the Notified Residents. The Operator shall provide proof to the city of mailed notices by affidavit or certificate of mailing.

37.02 Other Notifications

37.02.1 General

All notices and other correspondence sent to the City shall be in writing and shall be delivered by: (A) certified mail with return receipt, or (B) hand delivery with signature or delivery receipt provided by a third-party courier service (such as FedEx, UPS, etc.) to the designated representative of the City as indicated below, or (C) email to the designated representative of the City as indicated below.

City of Aurora
Oil & Gas Division
15151 E. Alameda Parkway, #5900
Aurora, CO 80012

Attn: Oil & Gas Manager
Telephone: 303-739-7676
Email: jsmoore@auroragov.org

37.02.2 Notifications to the City Regarding Commencement of Construction at CGF and Pipeline Operations

Written notice to the City no less than thirty (30) days prior to the commencement of any of the following: Construction, planned maintenance, and abandonment. Operator must obtain all necessary permits prior to construction. Any notification provided by Operator to City may be used by the City for public notification. All Notifications shall be submitted to the Planning Local Government Designee (LGD) with copies to the Public Works City Engineer and the Water Department Environmental Services Manager.

37.02.3 Routine Maintenance

Operator may perform all maintenance and operations on the CGF, Gathering Lines that the Operator deems prudent and necessary as long as in accordance with
requirements set forth by easement language and state and federal requirements. Operator may perform routine maintenance of CGF, Gathering Line, and Associated Facilities without prior notification to the City.

37.02.3.01 If Operator intends to perform maintenance that may be excessively loud or performed with vehicles larger than a standard work vehicle, the City appreciates advance notification in order to best answer questions from citizens.

37.03 Incidents/Spills

37.03.1 Events or Incidents. Any COGCC reportable safety event or OSHA reportable injuries shall be reported to the City within twenty-four (24) hours. Once the applicable forms are submitted to the agency, a copy of that form will be provided to the City. In the event of a fire, explosion, or need for emergency services response, 911 shall be called.

37.03.2 Spills. Operator must notify the City of any spill of any material on permeable ground on the CGF, Gathering Line, and Associated Facilities that have a reportable spill quantity under any law. Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the CGF, Gathering Line, and Associated Facilities.

37.04 Annual Development Schedule

The Operator shall provide a summary of planned operations and an operational timeline (Development Schedule) to the City by January 31 of each year. The Operator may revise the summary and timeline from time to time provided that the Operator will keep the City informed of any revision to the Development Schedule. The Development Schedule should include a brief summary of major planned operations at all of Operator’s Oil & Gas Midstream locations and Associated Facilities within the City for the coming year, including a proposed timeline of operations, and any new permitting activities. This report is informal in nature and may be changed by the Operator at any time. The report provides guidance to the City staff for planning workflows.

37.05 Previously Installed Facilities

When an Operator purchases or acquires an interest in an Oil & Gas Midstream location or facility, the Operator must review the BMPs in effect in this Oil & Gas Manual at the time of purchase. Within ninety (90) days of purchase, the Operator must submit a written report demonstrating compliance with all BMPs or a plan to bring the Oil & Gas Midstream location or facility and all Associated Facilities into compliance.
37.06 Construction Work Hours

Operator shall only construct CGF, Gathering Line, and Associated Facilities, during hours as specified in Aurora Zoning Code unless exceptions are requested by the City and approved by the City during the OGMP process.

37.07 CGF and Associated Facilities Documentation

CGF and Associated Facilities documentation will be held in accordance with OSHA Process Safety Information and continuous review per OSHA requirement.

37.08 Mechanical Integrity Program

Mechanical Integrity Program shall be developed and implemented per industry best practices.

37.09 Operations and Maintenance of the CGF Work Hours

All facilities on the CGF property shall be staffed with the appropriate number of operators to ensure the safe, and reliable operation of the CGF, Gathering Line, and Associated Facilities.

37.10 Platting Requirements

The site configuration of the parcel must comply with subdivision standards and should not limit access for adjacent unplatted properties. Cross access agreements may be necessary to ensure that other properties are not negatively impacted.

Commented [CJM98]: These hours could pose a significant problem based on how operators build pipelines and CGF’s.
SECTION 38.00 PIPELINE CONSTRUCTION REQUIREMENTS

38.01 Easements ........................................................................................................ 38-2
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38.01 Easements
All pipeline rights-of-way (ROW) or easements shall be located outside existing and future road ROWs based on the latest available roadway information.

38.02 License Agreements
License Agreements are required for all crossing of City ROW and City easements.

38.03 Stormwater Management
Operator must apply for and obtain a City stormwater and erosion control permit. Erosion and sedimentation control is required.

38.04 General Requirements

38.04.1 Following construction, the site shall be left in as good a condition as prior to construction, and Operator shall work with the applicable surface owner on restoration. Operator shall restore the site to a substantially similar condition as it existed prior to construction unless otherwise agreed by the City in writing.

38.04.2 All new pipelines shall have the legal description of the location recorded with the Clerk and Recorder of the City within thirty (30) days of completion of construction and provide the City GIS feature classes in the projection identified by the City.

38.04.3 Operator will submit to City all records required to be submitted to PHMSA or the PUC, including those related to inspections, pressure testing, pipeline accidents, and other safety incidents.

38.04.4 Once the non-water pipelines are no longer in use, they shall be properly abandoned in place using flow fill or similar or removed. At this time, the easement shall be released to the property owner or to the City. All pipelines, installed greater than fifty (50) years ago, shall be properly abandoned or re-certified by a third party, and the certification shall be provided to the City.

38.05 Pipeline Location Requirements

38.05.1 Operator is responsible for locating all existing and proposed utility crossings and ensure a minimum vertical separation of ten (10) feet below said crossing. If, during the crossing design, a reduced vertical separation is requested due to site-specific factors, the City Engineer can approve a crossing with as little separation as five (5) feet or other distance when applicable, feasible and appropriate. Some crossing locations may be subject to additional requirements, including enhanced stabilization.

38.05.2 All pipeline utility crossings shall be perpendicular or a minimum crossing angle sixty (60) degrees.
38.05.3 Horizontal offsets to all existing and proposed City utilities shall be a minimum of ten (10) feet edge to edge with the exception of critical infrastructure or planned critical infrastructure, then the horizontal offset shall be a minimum of thirty (30) feet. Construction equipment is not allowed on top of critical infrastructure unless additional protection, as approved by the City, is applied.

38.05.4 The pipeline shall not have an undue adverse effect on existing and future development on the surrounding area as set forth in applicable City Master Plans and mitigates negative impacts on the surrounding area to the greatest extent feasible.

38.05.5 The nature and location or expansion of the pipeline will not unreasonably interfere with any significant wildlife habitat and will not unreasonably affect any endangered wildlife species, unique natural resource, known historical landmark, or archaeological site within the affected area.

38.05.6 No adverse impact, from stormwater runoff, to the public ROWs, of water supply and/or surrounding properties will result because of the pipeline.

38.05.7 Operator shall mitigate any conflicts with any mutual irrigation ditch and/or structures used to transport water within the easement or ROW of the pipeline.

38.05.8 No pipeline shall be constructed in any zoning district until approved by the City.

38.05.9 Pipeline route shall follow quarter-sections, or existing ROW and may not traverse properties diagonally unless the diagonal distance is less than two hundred fifty (250) feet unless specified by landowner or developer, with coordination of the City. For all routes on a non-platted parcel of land that do not meet the criteria in this paragraph, the Operator shall consult the City as to an acceptable pipeline route.

38.05.10 No pipelines shall be allowed in City ROW, with the exception of ROW crossings, and the edge of the closest pipeline to ROW must be a minimum distance of thirty (30) feet. Any pipeline which is located within an easement obtained on or after the Effective Date, and within an existing and/or future ROW, shall be moved at the expense of the Operator and/or permitted upon receipt of notice by City of its intent to improve or construct a roadway within the ROW.

38.05.11 Maximum pipeline corridor width shall be seventy-five (75) feet. Temporary construction easements are not included in maximum width.
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38.05.12 Unless infeasible, all pipelines shall be sited a minimum of one hundred fifty (150) feet away from general residential, commercial, and industrial buildings, as well as the high-water mark or floodplain of any water of the United States as defined by the EPA. This distance shall be measured from the nearest edge of the pipelines. Gathering Lines that pass within one hundred fifty (150) feet of general residential, commercial, and industrial buildings or the high-water mark or floodplain of any water of the United States as defined by the EPA shall incorporate leak detection, secondary containment, or other mitigation, as appropriate. The mitigation plan for such pipelines shall be submitted to the City.

38.05.13 Floodways, creeks, ditches, and other conveyances shall be bored underneath at a depth no less than twenty (20) feet as determined by a Professional Engineer stamped geotechnical report and horizontal directional drill design.

38.06 Testing and Maintenance

38.06.1 All steps and or phases of construction shall be inspected by Operator’s third-party inspectors or the City.

38.06.2 If applicable, DOT Operational Control Center (OCC) will be used to monitor and control the DOT-regulated pipelines. Safety and pipeline systems actively monitor for rupture, leak, and flow anomalies.

SECTION 39.00-89.00 RESERVED
SECTION 90.00 INSPECTIONS

90.01 General

90.01.1 Operator Monitoring

The Operator will conduct its air, groundwater, and plugged and decommissioned well monitoring programs as required by the Oil and Gas Manual.
90.01.2 Access for Inspections

Operator shall allow the City access to the Oil and Gas Location, Oil and Gas Facility, Flowlines, CGF, Gathering Lines, and Associated Facilities easements for the purpose of undertaking compliance inspections, provided the City personnel are equipped with all appropriate personal protection equipment (PPE), that such personnel comply with the Operator’s customary safety rules and are accompanied by an Operator’s representative, with the exception of Stormwater and Erosion Control Permit inspections for Facilities.

90.01.3 Notification for Inspections

Operator shall allow the City access to the Oil and Gas Location, Oil and Gas Facility, Flowlines, CGF, Gathering Lines, and Associated Facilities easements upon reasonable notice to the Operator. Reasonable notice may include notification by City staff at the Oil and Gas Location or Oil and Gas Facility.

90.01.3 Inspection Results

The City shall provide the Operator with the results of any inspection within three (3) business days of the inspection. Additionally, the City reserves the right to contact the appropriate COGCC, CDPHE, PUC, or PHMSA area inspector if noncompliance issues related to state laws, rules, or regulations are identified as a result of field inspections or if non-compliance issues are not resolved expediently. Operator shall promptly address any compliance issues noted by the City staff.

90.02 Cost of Inspections

90.02.1 General

The Operator shall reimburse the City for inspection costs reasonably incurred to inspect the Operator’s facilities to determine compliance. The City may impose an inspection fee on Operator. The fee will cover the City’s reasonable cost of the compliance inspection. Operator shall pay the invoiced amount within thirty (30) business days of date of receipt.
SECTION 91.00 ENFORCEMENT

91.01 General ........................................................................................................ 91-2
SECTION 91.00 ENFORCEMENT

91.01 General
The City may impose penalties for the violations of these BMPs or specifications under [Placeholder for new code: Aurora Municipal Code 135-103].

Any Operator or their employees, agents, or assigns violating any provision of this Oil & Gas Manual shall be subject to the penalties of A.M.C. Section 1-13. Each day of such unlawful operation shall constitute a separate violation.

SECTION 92.00-99.00 RESERVED
API Redline