



O A K W O O D  
H O M E S

*A Berkshire Hathaway Company*

November 1, 2019

City of Commerce City  
Mr. Brian McBroom  
City Manager  
7887 East 60<sup>th</sup> Avenue  
Commerce City, CO 80022

Clayton Properties Group II, Inc. dba Oakwood Homes understands the City Council of Commerce City is considering new oil and gas regulations on first reading on November 4, 2019 and is respectfully submitting this letter to be considered during your deliberations.

Oakwood was only recently made aware of the legislative schedule for these regulations, which appears to be very fast even though extensive work was being completed to revise the current regulations. We understand the Planning Commission considered these regulations on October 30 and we regret we were unable to have formal comments prepared in advance of that meeting.

Over the last several days, we consulted with the City Attorney's Office and the City Manager's Office and were encouraged to review the regulations and identify any potential revisions. We believe we understand the intent of the setback provisions, but in current form we strongly recommend edits in several key sections of the document.

A redlined version of the regulations was provided to the City Attorney and on November 1, 2019 for review and response. Two separate conversations were held on November 1 to articulate proposed amendments that meet the intent of the policy direction from City Council and adherence to the setback limitations in the original draft.

In summary, we believe our proposed revisions:

- Maintains the setback principles of the original draft
- Consistent with the intent of original draft
- Reliable and transparent for land owners and operators
- Consistent with recent discussions with City Attorney's Office
- Consistent with private agreements already executed

21-3216

5 b i: Clarification that “site” means “proposed Production Site” and match defined terms

21-5266

Section 2a and Section 3k: Clarification to match defined terms

21-5266

Section 6 a: Clarification to match defined terms

a i: Clarification that “entitled” means “zoned and entitled”

The main concern with this provision is that if an operator seeks to obtain permits within 1,000 feet of an area entitled for residential use the site may not be eligible for oil and gas permits. We believe the intent of the regulations are to restrict oil and gas production sites within 1,000 feet of residential units or platted lots. Although a property may be zoned for residential use, there may be instances where the land owner enters into a surface use agreement to encroach closer than 1,000 feet to “zoned or entitled residential use” but not within 1,000 feet of a platted lot or wall of a dwelling.

We are proposing an extensive revision to include the exemption from the 1,000 feet if a surface use agreement has been executed between the land owner and operator. This is not intended to be a waiver of the setback requirement or to contract over the regulations with a lower setback. Two additional sections are proposed which reiterates the 1,000-foot limit on new residential lots (plats) during the initial drilling phase and the lesser setback during the production phase. When the wells enter the production phase, the lesser setbacks from Section 21-6280 would apply with the addition of the table to the regulations.

21-6280

Clarification that the setback is measured from the Production Site to the nearest proposed residential lot.

In conclusion, please consider the proposed revisions as you consider the Ordinance on 1<sup>st</sup> reading on November 4, 2019. We will be in attendance to provide verbal testimony as appropriate.

Thank you for your time and consideration on this matter.

Sincerely,

James A. Hayes, AICP  
Director of Land Acquisition and Development  
Clayton Properties Group II, Inc. dba Oakwood Homes  
4908 Tower Road  
Denver, CO 80249

Cc: Brian McBroom, City Manager  
Robert Sheesley, City Attorney  
Roger Tinklenberg, Deputy City Manager

For a better quality of life.



HOME BUILDERS  
ASSOCIATION  
of  
METRO DENVER®

November 4, 2019

Mayor Sean Ford and City Council  
7887 E. 60<sup>th</sup> Avenue  
Commerce City, CO 80022

Dear Honorable Mayor and City Councilmembers:

On behalf of the members of the Home Builders of Metro Denver (HBA) we thank you for the opportunity to submit comments on your upcoming oil and gas regulations proposal. Our membership consists of land developers, homebuilders, and the independent specialty trade contractors associated with home building. Our membership territory consists of 34 municipalities and 8 counties throughout the Denver Metropolitan area, and many of our members are currently in the process of developing and building homes or are considering future residential projects within the city limits of Commerce City.

The HBA respectfully requests that you consider the following impacts to developable land when imposing restrictive setbacks on new residential developments from oil and gas wells. Ultimately, large setbacks can reduce the developable land that is zoned for residential projects. The setbacks in place can affect up to 72 acres of land around just one oil and gas well. Reducing the setbacks after the drilling phase will significantly improve the ability for the members of the HBA to continue to build homes for the residents and future residents of Commerce City.

<b>Setbacks</b>	<b>Acres Affected by Setbacks</b>
<b>1000</b>	<b>72</b>
<b>500</b>	<b>18</b>
<b>400</b>	<b>11.53</b>
<b>300</b>	<b>6.48</b>
<b>150</b>	<b>1.62</b>

Please consider the recommended changes to the ordinance to include:

21-3216

5 b i: Clarification that "site" means "proposed Production Site" and match defined terms

21-5266

Section 2 and Section 3k: Clarification to match defined terms

21-5266

Section 6 a: Clarification to match defined terms

a i: Clarification that "entitled" means "zoned and entitled"

The main concern with this provision is that if an operator seeks to obtain permits within 1,000 feet of an area entitled for residential use the site may not be eligible for oil and gas permits. We believe the intent of the regulations are to restrict oil and gas production sites within 1,000 feet of residential units or platted lots. Although a property may be zoned for residential use, there may be instances where the land owner enters into a surface use agreement to encroach closer than 1,000 feet to "zoned or entitled residential use" but not within 1,000 feet of a platted lot or wall of a dwelling.

We are proposing an extensive revision to include the exemption from the 1,000 feet if a surface use agreement has been executed between the land owner and operator. This is not intended to be a waiver of the setback requirement or to contract over the regulations with a lower setback. Two additional sections are proposed which reiterates the 1000-foot limit on new residential lots (plats) during the initial drilling phase and the lesser setback during the production phase. When the wells enter the production phase, the lesser setbacks from Section 21-6280 would apply with the addition of the table to the regulations.

21-6280

Clarification that the setback is measured from the Production Site to the nearest proposed residential lot.

The City Council is encouraged to consider additional amendments to the proposed regulations to match COGCC standards and a private Surface Use Agreement in the City as follows:

Section 6 d: Clarification to match the State of Colorado measurement standards from production site to wall of an occupied building.

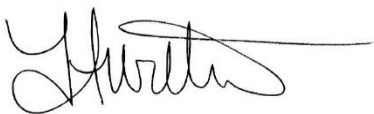
21-6280

Section 1 and 2: Add Residential Building Units consistent with COGCC

Restatement of the methodology for measuring the setback consistent with COGCC

The HBA and its members encourage you to consider all of the proposed revisions upon first reading of the ordinance this evening. I will be in attendance to testify to the importance of the revisions for the homebuilding industry. If you have any questions, please don't hesitate to reach out to me at any time.

Sincerely,



Heidi K. Williams  
Director of Government Affairs  
303-819-9722



December 17, 2019

Commerce City Public Works  
Domenic Martenelli  
7887 E. 60<sup>th</sup> Ave.  
Commerce City, CO 80022

VIA EMAIL

SUBJECT: Comments re: Commerce City's Proposed Oil and Gas Ordinance

**Dear Mr. Martenelli:**

The Colorado Petroleum Council (CPC) appreciates the opportunity to review and comment on Commerce City's Proposed Oil and Gas Ordinance. We appreciate your belief that a robust stakeholder process is vitally important to identifying and resolving highly technical and complex issues in cases such as this. We sincerely appreciate your outreach thus far.

CPC is a division of the American Petroleum Institute (API) and represents all facets of the oil and natural gas industry in Colorado. CPC and its member companies are committed to ensuring a strong, viable oil and natural gas industry capable of meeting the energy needs of Colorado in a safe and environmentally responsible manner. We hope you will view us as a resource as this stakeholder process moves forward.

**A. Proposed Regulations**

As an initial matter, we would like to begin by stating we appreciate the city hosting a stakeholder meeting prior to the release of this proposal. However, some of the provisions of this code are concerning to our industry. This code proposal in some places has extended beyond any regulatory proposal we have seen at a municipal or county level. Working together, these provisions may indeed prove difficult for our members to navigate.

The city has proposed to implement an Alternative Site Analysis requirement for those wells that are proposed within 2000' of specific locations. We do appreciate the city acknowledging the difference between urban and rural development, however the ALS provision is worded such that essentially the city retains control over the location of the well. In other words, applicants are required to submit three possible sites, with the city approving the ultimate location. This process may contradict the many hours of technical analysis utilized by applicants to determine the best location. Further, the city evaluates any site based on factors that may or may not be relevant to the basis for any suggested location. We would propose that the city together with the operator to choose a site, which I am sure is the city's desired goal as well.



Further, the proposed code contains several broad provisions that allow the city broad leeway to deny a permit for what may amount to possibly subjective reasoning. By way of example, the code stipulates that no development may have adverse impact on any building or home that is within 2500', but does not clarify what that harm may entail. In other words, non-specific provision of this kind can lead to significant uncertainty for those apply for a permit.

The proposed zoning provisions also prove to be of significant concern. It is our understanding, based on the current Commerce City zoning map, that this will at the minimum significantly reduce available locations, and at the worst possibly zone oil and gas out of Commerce City. While certainly the code acknowledges as such with the inclusion of a zoning change application provision, and this is certainly helpful, based on the wording of the code there are no assurances that operators will be successful in either getting the aforementioned zoning change or approval of their permit.

The code also has a troubling limitation in its proposed timing restrictions. Essentially the code requires an operator to fully disclose all future drilling plans, and then complete all proposed wells within a three-year time frame. However, several provisions of the code directly contradict a permit applicants' ability to comply with such a time frame. Furthermore, other factors such as commodity prices may play a role. There must be some sort of vested right when receiving permits from the city.

The code also contains some strident insurance and bonding requirements. As an initial matter, these are the largest guarantee provisions proposed by any jurisdiction in the state. Furthermore, we would suggest that these requirements may go beyond any financial costs that may be incurred for any issues. These provisions do not seem to be required for any other permit within the city. Finally, one suggested provision requires operators to waive their private contractual rights. This is a concerning standard being proposed by the city. Indeed, such a provision could result in a breach of contract action which would require private compensation. We encourage the city to set more reasonable and applicable requirements.

The code also contains a provision allowing unfettered access to well sites by inspectors. We do not oppose inspections or access; however, the city not allowing operators to escort or otherwise implement safety protections that benefit both the inspect and operator could be a health and safety issue. Thus, if the city chooses to implement such a provision, we would request that it disclose to operators all health and safety certifications obtained by said inspectors and assume all liability for any inspector that chooses to enter a well site without proper safety protocols. This is simply a protection for both

The city is also proposing a strict liability provision for permit applicants. Again, we would note that this provision targets a single industry. If the city intends to impose strict liability for all emergency



calls, we would suggest this be a policy that is implemented across the board to all industries and individuals who may utilize emergency services.

Finally, the code contains provisions allowing for revocation of the permit for any violation, no matter the size, imposes flowline regulations that may actually reduce safety as well as damage sensitive areas or private property, imposes a prohibition on the sale and transfer of assets, and requires the imposition of double fines for violations. These provisions are troubling as they simply work to prohibit or severely limit any production that might be proposed within the city.

Again we appreciate the opportunity to comment on this proposal. Also, we would again appreciate your willingness to continue the stakeholder process. We support those regulations that are necessary and reasonable for the city to achieve its outlined goals of the public's health, safety and welfare.

Thank you for your time and we are looking forward to providing any further comments as needed. If you have any questions, please do not hesitate to contact me at (720) 878-7688, or [mcgownec@api.org](mailto:mcgownec@api.org).

Sincerely,

Chris McGowne  
Associate Director  
Colorado Petroleum Council

Ryan Seastrom  
Community Outreach Coordinator  
Colorado Oil & Gas Association





November 1, 2019

Mr. Domenic Martinelli, LEED GA  
The City of Commerce City  
7887 E. 60<sup>th</sup> Avenue  
Commerce City, CO 80022

Dear Domenic:

Here are our team's comments on the top few items we are most concerned with.

1. The requirement to place oil and gas in Industrial zones as well as layering on the setbacks essentially blocks all of Commerce City off for development. The measurement from the edge of parcel boundaries that could possibly have residential at one point is overly broad and restrictive. We can no longer site locations in PUDs that specifically allow oil and gas. Also, no developer will want to work with us on siting an oil and gas location on their property because the reverse setbacks are so severe (up to 1000').
  - a. Site Eligibility is effectively a full application before the OGP because without eligibility the site cannot be submitted for OGP. Essentially creates 2,000 feet setback AND requires Industrial zoning—even in PUD.
  - b. The Alternative Site Analysis requires three alternative sites from which operators can access minerals. Seems excessive given property rights. Remove requirement that SUAs cannot be a consideration. The alternative city analysis provisions are not clear. Specifically, it sets a reciprocal setback from platted home sites that we have no idea if they will ever be built. Further, it does not establish a vested right where the City Council had to approve the proposed well site.
  - c. Intermittent streams are a very broad classification and could include any small depression. Recommend using wildlife or Army Corps definitions.
2. Permit length of 3 years to drill and complete a well is not feasible. Layering in the state process that could take a full year once we have local disposition, we would be left with 2 years to be done on the pad. This might be possible with a 4 well pad, but extremely difficult if not impossible with anything larger. We would need electrification, midstream, air monitoring, and many other requirements they

are layering on to be done in that amount of time. XOG would recommend 3 years to break ground like the COGCC uses.

3. Permits are non-transferable. Assignability and transferability of the oil and gas permit is eliminated. This is a major issue. Need to be able to transfer between company affiliates, subsidiaries and be able to sell. This provision renders the permits valueless and therefore the acreage within the city valueless. This is a financial hurdle that is also an effective ban. Why would any company permit and develop something they couldn't monetize? It's like asking a home builder to get new building permits again if they want to sell their home.
4. P&A'ing existing wells within the same formation as being developed does not need to be regulated. Operators will voluntarily do this because it is in their best interest anyway. However if there are cases that a vertical well must stay it is because there is potential to develop another bench or formation up-hole or down-hole. Also, there are frequently other partners in the well and mineral owners that will be harmed. This does not need to be regulated.
5. Continuous air monitoring for the life of the well is excessive. The AQCC and COGCC are both going through rulemaking. The COGCC and CDPHE are launching their own monitoring programs. In addition, the most emissions are released during drilling and completion which occurs in the first year or two of the life of the well. Monitoring for 20-30 years when production is very low is excessive. The cost of gathering the data and paying for a consultant at both the company and at the city to analyze the data when there are no emissions is unnecessary. Tankless sites which is what the BMPs all speak to do not even need an air permit, so emissions are not an issue with the requirements the city is asking for anyway. Also what is a 'pollutant'. We're not even sure what we should be monitoring?
6. Abandoning pipelines in place should be an option when we are removing a facility. The landowner should have a say what happens on their property and as long as the flowline is abandoned in place and cement is pumped the entire length of the pipe, there will be no environmental, health, or safety issues with leaving it there.
7. Extraction would also like as part of the zoning added that oil and gas development can occur on lands which have a PUD approved showing oil and gas development as an allowed to use.

Let me know if you need anything else and thank you for your consideration.

Thanks,

Johanna Ostrum

July 17, 2019

The Honorable Sean Ford  
Mayor  
City of Commerce City  
7887 E 60<sup>th</sup> Ave  
Commerce City, CO 80022  
sford@c3gov.com

Mr. Brian McBroom  
City Manager  
City of Commerce City  
7887 E 60<sup>th</sup> Ave  
Commerce City, CO 80022  
bmcroom@c3gov.com

Dear Mayor Ford and Mr. McBroom,

We are writing to express L.C. Fulenwider, Inc.'s enthusiastic support for Extraction Oil & Gas' proposed Operator Agreement with Commerce City.

Fulenwider has owned property and mineral rights in Commerce City since the early 1900s, decades before the city's incorporation. As the landowners of Reunion, the 3,240-acre master planned community, we are deeply invested in protecting the city's character, quality of life and environmental health. We have elected to partner with Extraction Oil & Gas to develop our mineral resources because they share our commitment to careful, long-term land stewardship.

Extraction has established itself as an industry leader in public safety and environmental protection. Their operations will be screened from view and measures will be implemented to protect air quality, conserve water, reduce traffic and minimize noise pollution.

With approval of the Operator Agreement, Extraction will generate more than \$350 million in tax revenue. Commerce City will receive \$34 million in new tax revenue. School districts serving Commerce City will receive \$137 million in additional tax revenue.

Fulenwider respects Commerce City's commitment to retain local control over oil and gas development within city limits. The high standards set in Extraction's Operator Agreement exceed the rigorous protections set by the State Legislature this year in Senate Bill 181. We trust Extraction to fulfill all obligations included in the agreement.

We ask that you approve the Extraction Oil & Gas Operator Agreement. This agreement will allow us to fulfill our promise to carefully steward and responsibly develop our Commerce City property. In addition, the revenue generated by this development will have a positive and lasting impact for our schools and community. Thank you for considering our comments.

Sincerely,



Rick Wells  
Senior Vice President



Blake Fulenwider  
Vice President



November 1, 2019

Domenic Martinelli  
City of Commerce City  
Community Development Department  
7887 East 60<sup>th</sup> Avenue  
Commerce City, CO 80022

RE: Draft Oil and Gas Land Development Code Changes  
TCHD Case No. 5953

Dear Mr. Martinelli:

Thank you for the opportunity to review and comment on the Draft Oil and Gas Land Development Code Changes for Commerce City. Tri-County Health Department (TCHD) staff has reviewed the application for compliance with applicable environmental and public health regulations and principles of healthy community design. After reviewing the application, TCHD has the following comments.

**Section 21-3216, 10. Permit Period**

In subsection a. COGGCC should be COGCC.

**Section 21-5266 (4) Third Party Technical Review**

Third Party Technical Review is best management practice to ensure that a proposed oil and gas operations is adequately addressing all health, safety, and nuisance conditions. TCHD commends the City for providing the allowance of a third party review under specific circumstances as articulated in Section 21-5266 (4). TCHD performs this type of third party review for environmental and public health impacts of proposed land use applications in Adams, Arapahoe and Douglas Counties and would be happy to conduct these type of reviews to assess environmental and public health impacts of proposed oil and gas operations.

**Section 21-5266 (6) Setbacks and Floodplain Restriction**

This section states the following:

- (a) No Oil and Gas Facility may be located less than 1000' from the following:
  - (i) Any existing residential, platted residential, or property currently entitled for residential use, not including properties zoned Agricultural over 10 acres in size;
  - (ii) Any building classified as a High Occupancy Building Unit, as defined by the COGCC;
  - (iii) Any Public Park or public recreation facility, not including trails or city designated open space;

- (iv) Outdoor venues, playgrounds, permanent sports fields, amphitheaters, or other similar place of outdoor public assembly; or
  - (v) Senior living or assisted living facilities;
- (b) No Oil and Gas Facility may be located less than 500' from the following:
- (i) Public Water Supply Wells; and
  - (ii) Reservoirs.

This section also indicates that measurements shall be taken from the edge of the proposed production site to the parcel boundary; and for agricultural properties under 10 acres in size, the measurement shall be taken from the nearest edge of any occupied dwelling unit.

TCHD has reviewed several studies and articles related to oil and gas setbacks from residences, other occupied buildings, and outdoor activity areas.

In a study entitled “Adequacy of Current State Setbacks for Directional High-Volume Hydraulic Fracturing in the Marcellus, Barnett, and Niobrara Shale Plays”, available here <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5010420/>, the authors concluded the following:

*“Current natural gas well setbacks in the Barnett Shale of Texas, the Marcellus Shale of Pennsylvania, and the Niobrara Shale of Colorado cannot be considered sufficient in all cases to protect public health and safety. Based on historical evacuations and thermal modeling, people within these setback distances are potentially vulnerable to thermal injury during a well blowout. According to air measurements and vapor dispersion modeling, the same populations are susceptible to benzene and hydrogen sulfide exposure above health-based risk levels. Texas, Pennsylvania, and Colorado should consider adopting more generous setback distances, particularly in reference to vulnerable populations; however, distance is not an absolute measure of protection. Unfortunately, there is no defined setback distance that assures safety. As mitigation technology advances, current setback distances may eventually be sufficient to protect the public. Unfortunately, current mitigations are not fail-safe, and each has its limitations (U.S. Forest Service 2011). The results of our analysis based on three states suggest that assuming the threat posed to health originates from either the center of the drill pad or some small distance surrounding it requires reevaluation. A combination of a reasonable setback with accompanying controls on all aspects of the process is the best method for reducing the potential threats to public health.”*

Among other findings, the study indicated that at the current Colorado outdoor recreational distance of 350 feet, second degree burn blisters would be expected to form approximately 22 seconds after a blowout or explosion. The study notes that well blowouts are uncommon (with estimates ranging from 0.01% to 0.17%) but can have major repercussions, including large home evacuation events with evacuation radiuses of 0.5 miles or more, when they do occur.

In an article entitled “Setback distances for unconventional oil and gas development: Delphi study results”, available here

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6095590/>, the results of a study intended to elicit expert consensus on setback distances from oil and gas development to human activity areas were discussed. The panel of 18 experts consisted of health care providers, public health practitioners, environmental advocates, and research scientists.

The results of the study suggest that setback distances from oil and gas activity to any area where human activity takes place should be greater than one-quarter mile, and additional setbacks should be used for settings where vulnerable groups are found, including schools, child care centers, and hospitals.

“Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland” available here

[http://www.marcellushealth.org/uploads/2/4/0/8/24086586/final\\_report\\_08.15.2014.pdf](http://www.marcellushealth.org/uploads/2/4/0/8/24086586/final_report_08.15.2014.pdf), provides an assessment of impacts that could occur as a result of unconventional natural gas development and production (UNGDP) in western Maryland. The study concluded that there is a “high likelihood” that UNGDP-related changes in air quality will have a negative impact on public health in Garrett and Allegany Counties. As a result, the following mitigation measures were recommended:

*Require a minimal setback distance of 2000 feet from well pads and from compressor stations not using electric motors.*

*Require electrically powered motors wherever possible; do not permit use of unprocessed natural gas to power equipment. This recommendation is designed to reduce VOCs and PAHs emissions from drilling equipment and compressors.*

*Require all trucks transporting dirt, drilling cuttings to be covered.*

*Require storage tanks for all materials other than fresh water and other UNGDP equipment to meet EPA emission standards to minimize VOC emissions.*

*Establish a panel consisting of community residents and industry personnel to actively address complaints regarding odor.*



*Conduct Air Quality Monitoring*

*Initiate air monitoring to evaluate impact of all phases of UNGDP on local air quality (baseline, development and production).*

*Conduct source apportionment that allows UNGDP signal to be separated from the local and regional sources.*

*Conduct air monitoring with active input from community members in planning, execution, and evaluation of results.*

*Conduct air monitoring in a manner to capture both acute and chronic exposures, particularly short-term peak exposures.*

*Clearly communicate to community members expectations about what is achievable through air monitoring.*

“The Assessment of Potential Public Health Effects from Oil and Gas Operations in Colorado” published by the Colorado Department of Public Health and Environment (CDPHE), and dated February 21, 2017, available here <https://drive.google.com/file/d/0B0tmPQ67k3NVVFc1TFg1eDhMMjQ/view> concludes the following about health risks related to air quality:

*Based on currently available air monitoring data, the risk of harmful health effects is low for residents living near oil and gas operations.*

*Studies of populations living near oil and gas operations provide limited evidence of the possibility for harmful health effects. This needs to be confirmed or disputed with higher quality studies.*

*At this time, results from exposure and health effect studies do not indicate the need for immediate public health action, but rather indicate the need for more detailed exposure monitoring and systematic analyses of health effects of residents living near oil and gas operations.*

Of note, the study only considered health effects related to air quality and not other potential concerns (e.g., explosions from well blowouts).

A very recently published study, “Human Health Risk Assessment for Oil & Gas Operations in Colorado” published on October 17, 2019 by The Journal of the Air and Waste Management Association, available here [https://drive.google.com/file/d/1pO41DJMXw9sD1NjR\\_OKyBJP5NCb-AO0I/view](https://drive.google.com/file/d/1pO41DJMXw9sD1NjR_OKyBJP5NCb-AO0I/view) found that “Exposure modeling for *most* chemicals indicated that acute exposures were below guideline levels for all hypothetical people and facilities.” However, “at the 500 foot distance, for a small number of chemicals (including benzene, toluene,

and ethyltoluenes,) the highest estimated acute exposures exceeded guideline levels at the most exposed (downwind) locations, in isolated cases by a factor of 10 or more during oil and gas development activities, particularly during flowback activities at smaller well pads. Those highest predicted acute exposures decreased rapidly with distance...but remained above guideline levels out to 2000 feet under a relatively small number of oil and gas development scenarios". Exposures to these chemicals can cause short-term negative health impacts, such as headaches, dizziness, and respiratory, skin, and eye irritation. The study calls for additional measurements to better understand how the model represents real-world conditions and how often people might be exposed worst-case conditions.

According to the State Toxicologist, "The health effects related to short-term exposures to VOCs modeled in this study are consistent with concerns from people using the Oil and Gas Health Information Line. These include headaches, dizziness, respiratory problems, and irritation of the eyes and skin. About 60% of health concerns reported to the Oil and Gas Health Information and Response Program since it started in 2015 have been about these kinds of health effects. More than 750 reported health concerns that include these short-term health effects since 2015."

In summary, at present, there is insufficient scientific data to precisely determine an optimal setback distance of an oil and gas facility from neighboring community buildings such as residences, schools, childcare centers, or other occupied buildings. Given this current uncertainty and the emphasis of the recently passed SB 19-181 on the need for greater priority to be placed on protecting and minimizing adverse impacts to public health, safety, and welfare, TCHD supports the County's plan to increase setbacks from outdoor activity areas and occupied buildings. However, based on the studies cited above, TCHD recommends that the County increase setback distances to a distance greater than the currently proposed 1000 feet, to at least 2000 feet from property lines, particularly, for settings where vulnerable groups (e.g. children in schools, childcare centers) are found. Such a precautionary approach allows greater time to understand the implications of the recent modeling study and potential additional data collection and also allows the City, in the event that future studies indicate that a smaller setback is sufficient to mitigate potential health effects and other impacts, to implement a less restrictive setback, a course correction that would be more difficult if future studies supported a need for setbacks greater than the currently proposed 1000 feet.

### **Section 21-5266 (8) Environmental Standards**

Section (c) (iv) Sanitary Regulations, states "During extended construction and maintenance Operations, the Operator shall, at convenient places within the Oil and Gas Well Site, provide fly-proof outside toilets, which shall be maintained in a sanitary condition. Toilets shall not be permitted in any water reservoir area and shall not be permitted where they may pollute a water supply."



Proper wastewater management promotes effective and responsible water use, protects potable water from contaminants, and provides appropriate collection, treatment, and disposal of waste that protects public health and the environment. TCHD, as the local public health agency, plays a role in reviewing whether a new proposed land use has addressed the domestic water and wastewater needs and is the regulating agency for On-Site Wastewater Treatment Systems (OWTS). Because of the nature of oil and gas operations and the typical location of this land use, not in close proximity to existing wastewater facilities, many of the oil and gas sites utilize portable above-ground wastewater storage systems (“vaults.”) It is unclear from this description if the intention is to utilize portable toilets (porta-potties), or a more substantial vault system. It may depend on whether or not personnel will be temporarily housed on the site. For personnel temporarily housed on site, TCHD recommends a vault system for wastewater collection.

To ensure public health is protected, the system utilized for collecting and storing domestic wastewater shall be operated and maintained in a sanitary manner, to include pumping and hauling of the wastewater by a Systems Cleaner licensed by TCHD. TCHD maintains a list of licensed System Cleaners which can be found here <http://www.tchd.org/745/Finding-Certified-Septic-Professionals>.

TCHD has no objection to the use of portable toilets for workers who are on site for the work day only, provided the units are properly cleaned and maintained. TCHD recommends that a portable hand sink be provided near the restrooms.

### **Section 21-6280 Additional Subdivision Standards relating to Oil and Gas Sites**

The section states that the required setbacks from new residential lots to well sites are 300 feet for 1-10 wells, 400 feet for 11-24 wells, and 500 feet for 25 or more wells. For permitted Well Sites, where the maximum number of wells issued under an Oil and Gas Permit have not yet been drilled, or where all permitted wells have not entered the production phase, no new residential lots may be platted within 1,000’.

In the interest of public health, safety, and welfare, TCHD recommends that required setback distances from new wells to existing residential development and from new residential development to existing wells be consistent.

### **Best Management Practices (“BMP Document”)**

In order to protect the public health, safety, and welfare, and the environment, TCHD recommends the Best Management Practices be required of all oil and gas development in the City. The Intermountain Oil and Gas BMP Project offers Best Management Practices (BMP), available here <http://www.oilandgasbmps.org/>.

### *C. Air Quality*

#### *Section 1, Minimization of Emissions*

Subsection d. states the operator shall comply with the transportation and circulation section addressing traffic provisions as detailed in this BMP Document. TCHD encourages the City to designate a primary traffic route for all construction traffic and deliveries. If the trucks servicing the site will be traveling on a local school bus route, we encourage the City to work with applicants to minimize traffic during hours when school buses are in operation.

#### *Section 4, Ozone Air Quality Action Days*

TCHD recommends that the City include delaying flowback and well liquids unloading on high ozone days.

#### *Section 8, Fugitive Dust*

Subsection e. refers to Material Safety Data Sheets. The Current terminology for these is Safety Data Sheet (SDS).

#### *Section 10, Reduced Emission Completions (Green Completions)*

Subsection a. says that operators shall employ reduced Emission Completions, also known as green completions. TCHD commends Commerce City for requiring green completions as a method to reduce air emissions.

### *D. Water Quality Protection*

#### *Section 9, Water Quality Monitoring Plan*

TCHD commends the City for requiring applicants to identify and offer to sample wells located within one-half mile of the proposed well or facility.

### *F. Visual and Noise Mitigation*

#### *Section 5, Trailers*

This section indicates that temporary residential and/or security trailers are permitted until 90 days following the end of the completion phase. Please see above comments under Section 21-5266 (8) regarding wastewater collection for temporary living quarters.

#### *Section 6, Noise*

TCHD recommends COGCC regulations with regard to noise be followed at a minimum. TCHD recommends that, in the Baseline Noise Mitigation Study, measurement of sound level in the dB(A) scale and dB(C) scale should be determined by averaging minute-by-minute measurements made over a minimum of 15-minute sample duration for each location of measurement. Baseline noise measurements should be taken along the perimeter of the well site with at least one measurement for every north, south, west and east perimeter direction with no less than four measurements. If noise mitigation

sound walls are installed, measurements should be taken outside of the walls. A copy of these measurements should be provided to the city.

TCHD recommends subsection c. read "The City may require Operator to implement additional noise mitigation if there is a founded noise complaint filed with the City, or a Residential Building Unit, Public Park, or High Occupancy Structure within 2000' of the Well Site..."

*G. Community Outreach, Notification, Reporting and Oversight; Hazards and Emergencies*

*Section 7, Emergency Response Plan*

TCHD requests that Emergency Preparedness Plans include specific information related directly to a leak or spill from the domestic wastewater collection system. In the event that there is a domestic wastewater spill or leak, TCHD should be contacted immediately.

Please feel free to contact me at 720-200-1575 or [kboyer@tchd.org](mailto:kboyer@tchd.org) if you have any questions about TCHD's comments.

Sincerely,



Kathy Boyer, REHS  
Land Use and Built Environment Specialist III

cc: Sheila Lynch, Monte Deatrich, TCHD

**(1) Setbacks and Floodplain Restriction.**

(a) No Oil and Gas Facility may be located less than 1000' from the following:

(i) Any existing residential, platted residential, or property currently entitled for residential use, not including properties zoned Agricultural over 10 acres in size;

(ii) Any building classified as a High Occupancy Building Unit, as defined by the COGCC;

(iii) Any Public Park or public recreation facility, not including trails or city designated open space;

(iv) Outdoor venues or recreation areas, such as playgrounds, permanent sports fields, amphitheaters, or other similar places of outdoor public assembly; or

(v) Senior living or assisted living facilities;

(b) No Oil and Gas Facility may be located less than 500' from the following:

(i) Public Water Supply Wells; and

(ii) Reservoirs.

(c) No Oil and Gas Facilities may be located in the Floodplain.

(d) Measurements shall be taken from the edge of the proposed production site to the parcel boundary. For agricultural properties under 10 acres in size, the measurement shall be taken from the nearest edge of any occupied dwelling unit.

**(2) Prohibition. The following facilities are prohibited within the City:**

(a) Injection Wells for disposal of oil and gas Exploration and Production Wastes;

(b) Gas Storage Wells;

(c) Disposal pits;

(d) Commercial disposal facilities;

(e) Centralized Exploration and Production Waste management facilities; and

(f) Subsurface disposal facilities.

**(3) Air Quality Standards and Monitoring.**

(a) Operator must eliminate, capture, or minimize all potentially harmful emissions, including, but not limited to, methane and other hydrocarbons, Volatile Organic Compounds (VOCs) and such as Benzene, Toluene,

**Commented [HS1]:** Consider revisions to make this language consistent with COGCC's 100 series rule definition of "Designated Outside Activity Areas"

**Commented [HS2]:** Consider adding a provision in the regulation or supporting/guidance document indicating that if a public water system has completed a source water protection plan for their community or water supply, the operator must discuss potential impacts to the water provider and implement appropriate BMPs to reduce potential contamination agreed upon between the operator and water provider.

Consider adding the following to this list: surface water bodies (if added, does this include manmade ditches, and canals, intermittent and ephemeral streams?) and domestic, commercial and irrigation wells.

**Commented [HS3]:** Delete apostrophe

Ethylbenzene and Xylene (BTEX), and oxides of nitrogen through compliance with these provisions and the BMP Document.

(b) Operator shall minimize dust associated with onsite activities and traffic on access roads pursuant to the terms as identified herein.

(c) Operator shall comply with all applicable state and federal regulations including regulations promulgated by CDPHE, COGCC and US EPA.

(d) The Operator, at a minimum, shall conduct on site air quality sampling and monitoring of emissions at each well site that may be reasonably associated with oil and gas production or related Operations, including any volatile organic compounds (VOCs), pollutants, and other greenhouse gas emissions. Such sampling and monitoring shall be compliant with the following requirements:

(e) Baseline sampling conducted over a 90 day period to commence no sooner than within 6 (six) months prior to well site construction;

(f) Continuous sampling during the drilling and completions phase;

(g) Continuous monitoring for the lifetime of each wellsite; and

(h) Real-time reporting of air quality data to the City. \_\_\_\_\_

(i) The Operator shall reimburse the City for all additional air quality sampling or monitoring as deemed reasonably necessary by the City in response to a reportable safety event, as defined by COGCC Rule 602(c), a spill, release, or a reported and substantiated nuisance that occurs outside of drilling and completion Operations. Such costs will be payable within one month of invoicing.

A. Air Quality. Operator shall comply with these air quality standards to: protect human health and safety; prevent injury to plant and animal life; prevent damage to property; prevent unreasonable interference with the public welfare; preserve visibility; and protect scenic, aesthetic, and historic values in the City. These standards are established to prevent or mitigate the degradation of the City's air and visibility resources; prevent odors and other air pollution problems; and to improve the quality of life and the general welfare in the City.

#### 1. Minimization of Emissions.

a. Operator shall use electric equipment for permanent production equipment, such as electric compressors and pneumatic valves, and use line power as detailed in this BMP Document.

b. Air emissions from the Operations shall be, at a minimum, in compliance with the permit and control provisions of the Colorado Air Quality Control Program, C.R.S. § 25-7-101 et seq. as may be amended.

c. All fossil-fuel powered engines used for drilling and completions on Well Sites shall employ the latest emission-reduction technologies that are economically practicable.

d. Operator shall comply with the transportation and circulation section addressing traffic provisions as detailed in this BMP Document.

e. Operator shall utilize pipelines as detailed in this BMP Document.

f. Operator shall, through a manufacture-test or other recognized data analysis method, demonstrate hydrocarbon destruction or control efficiency that complies with a design destruction efficiency of 98% or better.

**Commented [HS4]:** Consider adding methane and other hydrocarbons as well as NOx to be consistent with the language contained in SB19-181.

**Commented [HS5]:** What do you mean by "pollutants" here? NOx, methane, other hydrocarbons, particulate matter, hazardous air pollutants (such as formaldehyde)? Given how the term "Pollutant" is defined in the definitions section (Sec.21-11200 (345)), you may want to consider not using the term "pollutant." One option could be to explicitly state the pollutants they should monitor for instead (e.g. Adams County Development Standards and Regulations Section 4-10-02-03-03-03.15.g. states that the County may require an ambient air monitoring plan which includes monitoring by a consultant approved by the County of "all potential emissions, including but not limited to methane, VOCs, Hazardous Air Pollutants (HAPS), Oxides of Nitrogen (NOX), Particulate Matter (PM) and Fine Particulate Matter (PM 2.5)". Alternatively, rather than explicitly stating the pollutants, you may want to consider requiring that the operator submit an air quality sampling plan (e.g. Draft Erie UDC 10.12.2 Section E.8.b.ii. does not explicitly identify pollutants but requires a "monitoring program conducted by a consultant mutually agreed upon by both the operator and the Town").

**Commented [HS6]:** If greenhouse gas emissions are to include methane (or CO2), there must be a realization that there is a high background concentration and that there are many other sources.

**Commented [HS7]:** Objectives for the monitoring need to be clearly defined. This requirement is extremely vague and does not define the objective for the monitoring. For example, monitoring can occur for health assessments of nearby citizens, trends, source assessment, air toxics and greenhouse gas inventories, or for modeling inputs. The type of monitoring required can be different for each objective. Also, VOCs encompass a wide range of compounds and different activities may release different compounds.

**Commented [HS8]:** This should be expanded to include a definition of "continuous sampling" and the type of monitoring required based upon the monitoring objectives.

**Commented [HS9]:** What is meant by "lifetime"? Does it mean until the wells are plugged and abandoned and the site is reclaimed? What is "continuous monitoring"? An instrument giving hourly readings, or a sorbent tube that samples for a week before being changed? How many sample locations since wind directions are variable?

- g. Operator shall use no-bleed continuous and intermittent pneumatic devices. This requirement can be met by replacing natural gas with electricity or instrument air, or routing the discharge emissions to a closed loop-system or process.
- h. Any flare, auto ignition system, recorder, vapor recovery ~~device-unit (VRU)~~ 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.
- i. Operators shall not use glycol dehydrators or desiccant gas processing dehydrators.
- j. Compressor engines are prohibited within the City limits except for wellhead, sales, and gas lift compressors, air and/or gas gathering compressors which shall be located on the Well Sites. Operator shall use enclosures of compressor engines where necessary to provide visual and/or noise mitigation. Any compressors that are used as part of the ~~vapor recovery units~~ VRUs (air pollution controls) will be limited to 6-8 small engine drive units. VRU compressors will be installed with sound walls to buffer noise.
- k. Operator shall comply with odor requirements, as established by COGCC and CDPHE regulations, year round.
- l. Operator's Well Site and equipment design shall reduce emissions of associated gas from hybrid gas-oil wells (i.e., gas that is co-produced from a well that primarily produces oil).
- m. Operator shall use current best management practices during well liquids unloading (i.e. maintenance activities to remove liquids from existing wells that are inhibiting production), designed to minimize hydrocarbon emissions to the greatest extent practicable. This may require practices and technology beyond those specifically listed in this BMP Document.
- n. Operator shall reduce emissions from oil and gas pipeline maintenance activities such as pigging or blowdowns. Any maintenance activity involving the intentional venting of gas from a well tank, compressor or pipeline, beyond routine pipeline maintenance activity and pigging, requires forty eight (48) hour advance written notice to the City of such proposed venting. Such notice shall identify the duration and nature of the venting event, a description as to why venting is necessary, a description of what vapors will likely be vented, what steps will be taken to limit the duration of venting, and what steps Operator proposes to undertake to minimize similar events in the future. If venting is required, or if accidental venting occurs, Operator shall provide such notice to the City of such event as soon as possible, but in no event longer than 24 hours from the beginning of the event, including without limitation the information listed above, an explanation as to the cause, and how the event will be avoided in the future; notices shall be supplemented as additional information becomes available.
- o. Operator shall eliminate or minimize flaring to the maximum extent practicable.
- p. Operator shall comply with dust suppression techniques in this BMP Document.
- q. Operator shall comply with odor requirements in this BMP Document.
- r. Operator shall consolidate product treatment and storage facilities within a Well Site.
- s. Operator shall centralize compression facilities within a Well Site.
- t. Operator shall use telemetric control and monitoring systems, including surveillance monitors, to detect when pilot lights on control devices are extinguished.
- u. Operator shall comply with all CDPHE rules and regulations, including air permits, if any, and all OSHA work practice requirements with respect to benzene.

**Commented [HS10]:** Why limit to just benzene? Shouldn't they be required to comply with all applicable CDPHE and OSHA rules?

v. Operator shall participate in Natural Gas STAR program or other equivalent voluntary programs to encourage innovation in pollution control at each Well Site.

w. Operator shall use pressure-suitable separator and vapor recovery unit (VRU) where applicable.

x. Operator shall ensure that adequate pipeline takeaway capacity construct pipeline infrastructure is in place prior to the Production Phase.

y. For hydraulic fracturing pumps, Operator shall use Tier 4 or better engines.

2. Leak Detection and Repair.

a. Operator shall develop and maintain an acceptable leak detection and repair ("LDAR") program as required by CDPHE using modern leak detection technologies such as infrared ("IR") cameras for equipment used at a Well Site.

b. At least once per year, the Operator shall notify the City ten (10) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

c. For a five (5) year period beginning with the start of the Production Phase per well location at the each Well Site, Operator shall conduct quarterly IR camera monitoring of all equipment at each Well Site.

d. Thereafter, Operator shall conduct IR camera monitoring at least twice annually until all the wells on the Well Site are plugged and abandoned.

e. Except when a circumstance would necessitate an immediate repair, Operator must repair leaks as soon as possible. If more than 48-hours repair time is needed after a leak is discovered, an explanation of why more time is required must be submitted to the City.

f. Operator shall conduct continuous pressure monitoring to detect leaks.

3. Ambient Air Modeling. Operator shall provide access to the Well Sites to the City's designated personnel or agent to allow air sampling to occur, without condition. Operator will provide a regionally based air modeling and emissions inventory.

4. Ozone Air Quality Action Days.

a. On Air Quality Action Day advisories posted by the CDPHE for the Front Range Area, the Operator shall implement CDPHE-suggested air emission reduction measures, including the following, for the duration of an Air Quality Action Day advisory:

i. Minimize vehicle and engine idling;

ii. Reduce truck traffic and worker traffic;

iii. Delay vehicle refueling;

iv. Suspend or delay use of fossil fuel powered ancillary equipment; and

v. Postpone construction activities, if practicable.

**Commented [HS11]:** Similar to the comments above concerning air quality sampling and monitoring, this section on modeling should be thought through more and further defined to include modeling objectives.

**Commented [HS12]:** Consider adding the following:  
Properly maintain vehicles and equipment;  
Postpone non-essential operational activities such as pigging, well unloading and tank cleaning;  
Use low or no VOC paints and cleaning solvents

- b. *Within 30 days following the conclusion of each annual Air Quality Action Day season, Operator must submit a report to the City that details which measures it implemented during any Action Day advisories.*
5. *Electric Equipment.*
- a. *All permanent production equipment, such as compressors, motors and artificial lift equipment, shall utilize electric line power to mitigate noise and to reduce emissions.*
- b. *All drilling rigs capable of drilling to Total Depth (TD) on a well shall be required to utilize electric line power unless the Director waives this BMP in writing for a specific location or for any well not located within 2000' of a Residential Building Unit or not within 2000' of a High Occupancy ~~Structure~~Building Unit.*
- c. *At any location where Operator is not required by this BMP to utilize line power for drilling, Operator will utilize line power if available in sufficient quantity from the utility provider.*
- d. *At any location where line power is not used for drilling, Operator shall provide to City at City's request the source(s) used for power.*
- e. *Operator shall minimize use of diesel generators for temporary power, including the use of liquified or compressed natural gas for power generation to further reduce emissions and noise.*
6. *Exhaust. The exhaust from all engines, motors, coolers and other mechanized equipment shall be vented up or in a direction away from the nearest occupied building.*
7. *Flares and Combustion Devices. To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:*
- a. *Flares shall be fired with natural gas and designed to operate with a 98% ~~ef~~or higher hydrocarbon destruction efficiency.*
- b. *Flares shall be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions means 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.*
- c. *Flare shall be operated with a flame present at all times when emissions may be vented to it, or shall utilize another mechanism that does not allow uncontrolled emissions.*
- d. *All combustion devices must be equipped with an operating auto-igniter.*
8. *Fugitive Dust.*
- a. *Silica dust must be contained to the maximum extent practicable during the hydraulic fracturing process.*
- b. *Dust associated with on-site activities 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 any Well Site to the extent practical given wind conditions.*
- c. *No untreated produced water or other process fluids shall be used for dust suppression.*



d. The Operator will not create dust or conduct dust suppression activities within 300' of the ordinary high water mark of any waterbody, unless the dust suppressant is water.

e. Material Safety Data Sheets (MSDS) for any chemical-based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use.

f. If a resident of a Residential Building Unit within 2000' of a Well Site complains of dust (either directly to the Operator, to the COGCC, or to the City) Operator shall determine whether the dust is caused by Operator's Operations. Operator shall report its conclusions, including the factual basis for the conclusions, to the City and the complainant. If the dust is caused by Operator's Operations, Operator shall resolve the dust concern to the maximum extent practicable within 24 hours.

9. Odor Containment.

a. Operator shall control and prevent odors from Operations from affecting adjacent properties and shall proactively address and, to the extent possible, resolve complaints filed by impacted members of the community.

b. Operator shall use a filtration system or additives to the drilling and fracturing fluids to minimize odors.

c. Operator shall not use fragrance to mask odors.

d. Operator shall implement one or more of the following measures as necessary:

i. Running mud through a cooler to reduce odor;

ii. Wiping down the drill pipe each time that the drilling operation "trips" out of the hole.

iii. Increase additive concentration;

iv. Operator will employ the use of drilling fluid with low to negligible aromatic content during drilling operations after surface casing is set for the protection of fresh water aquifers;

v. Operator will haul drill cuttings off on a daily basis and will cover trucks transporting drill cuttings; and

vi. Utilizing an electric drilling rig, where practicable.

e. If a resident of a Residential Building Unit within 2000' of a Well Site complains of odor (either directly to the Operator, to the COGCC, or to the City) Operator shall determine whether the odor is caused by Operator's Operations. Operator shall report its conclusions, including the factual basis for the conclusions, to the City and the complainant. If the odor is caused by Operator's Operations, Operator shall resolve the odor concern to the maximum extent practicable within 24 hours.

10. Reduced Emission Completions (Green Completions).

a. Operator shall employ reduced emission completions ("Green Completions") in compliance with federal and state requirements.

b. Operator shall safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery/operation.

**Commented [HS13]:** Consider either adding a definition for "trips" or reword this provision as follows: Wiping down the drill pipe to remove drilling fluid as pipes exit the wellbore"

- c. *Operator shall install gas gathering lines, separators, and sand traps capable of supporting green completions, per the provisions of COGCC Rule 805, as may be amended.*
- d. *Operator shall comply with 40 CFR 60 (Subpart OOOO), as may be amended, for green completions.*
- e. *Operator shall not conduct or permit uncontrolled venting other than where necessary for safety.*
- f. *If allowed, temporary flowback flaring and oxidizing equipment shall include the following:*
  - i. *Adequately sized equipment to handle 1.5 times the largest flowback volume of gas from a vertical/directional and/or horizontally completed well respectively as reported to the COGCC in a ten mile radius;*
  - ii. *Valves and porting available to divert gas to flaring and oxidizing equipment: pursuant to the above Rules 40 CFR 60 (Subpart OOOO) for green completions & COGCC Rule 805, as each may be amended;*
  - iii. *Auxiliary fueled with sufficient supply and heat to combust or oxidize non-combustible gases in order to control odors and hazardous gases; and*
  - iv. *Flowback combustion devices shall be equipped with a reliable continuous ignition source over the duration of flowback, except in conditions that may result in a fire hazard or explosion.*