<table>
<thead>
<tr>
<th>Referral Comment No.</th>
<th>Mapped?</th>
<th>Reviewer Initials</th>
<th>County Comment</th>
<th>Applicant Response (date)</th>
</tr>
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<tr>
<td>1</td>
<td>Yes</td>
<td>CD</td>
<td>Staff has reviewed comments and is evaluating how Conditionals of Approval (COAs) may be used to mitigate impacts.</td>
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<td>2</td>
<td>Yes</td>
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<td>Staff has reviewed comments and is evaluating how Conditionals of Approval (COAs) may be used to mitigate impacts.</td>
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<td>3</td>
<td>No</td>
<td>CD</td>
<td>Staff has reviewed comments and is evaluating how Conditionals of Approval (COAs) may be used to mitigate impacts.</td>
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</tbody>
</table>
**Referral Agency Comments:**

1. **Colorado Department of Public Health and Environment:**
   a. This project may require an Air Pollutant Emissions Notice (APEN). A link for additional information about APEN’s was provided by CDPHE in the attached letter.
   b. The proposed well pad is located in the Denver Metro North Front Range ozone non-attainment area, so electrical equipment and devices should be utilized to the maximum extent practicable in order to reduce emissions. Flaring of natural gas should be limited to emergencies only to the maximum extent practical and should be controlled with an enclosed combustor with 98% efficiency.
   c. Implement BMP’s to reduce Odors during each phase. Examples include but are not limited too;
      i. Chillers and chemicals to mask or neutralize hydrocarbon odors from drilling mud
      ii. Squeegee to remove drilling fluids from drilling pipe as the pipe is removed from the wellbore
      iii. Covered containers to store drilling mud
      iv. Minimize use of diesel fuel
   d. Implement measures to control unnecessary and excessive venting during plugging and abandonment operations.
   e. The division recommends testing for and properly disposing of technologically enhanced naturally occurring radioactive materials (TENORM).

2. **City of Thornton:**
   a. The site is located in the City of Thornton’s future growth area with future zoning identified as Residential Estate. As a result, additional mitigation (landscaping/screening) for non-compatible land uses should be implemented.
   b. Roadway improvements, setbacks from future Right – of – Ways, a turning lane from Quebec Street, along with other roadway improvements and considerations have been requested by the City of Thornton.
   c. The city has requested the operator to engage with Thornton Fire Department regarding emergency response planning, including initial and ongoing response training with the operator on site.
   d. Notify the City of Thornton Emergency Communications Center prior to any flaring activities.

3. **Colorado Department of Parks and Wildlife:**
   a. Reclamation and landscaping should include diverse native vegetation representative of a native habitat.
   b. If prairie dog colony is discovered the potential may exist for Burrowing owls to be present. Burrowing owls are protected by both state and federal laws. If earth-moving activities begin between March 15th and October 31st, a burrowing owl survey should be completed.

4. **Tri-County Health (TCHD)**
   a. Domestic Wastewater Management: TCHD maintains a list of licensed wastewater system cleaners, which can be used to verify the subcontractor providing wastewater service is licensed to perform the work.
   b. Baseline Water Quality Testing: TCHD recommends that any owner of a water well located within one-half mile of the proposed oil and gas operation have the opportunity to obtain a baseline test prior to the initiation of development activities.
   c. Water Supply for Use by Workers: TCHD will need to review information regarding the source of water for workers as well as any proposed potable water systems.
   d. Non-potable water storage should be marked with a sign indicating the water is non-potable.
   e. All storage tanks must have a secondary containment area, a routine monitoring system, and best management practices implemented in order to prevent the release of contaminants.
f. Contact TCHD immediately in the event of a leak or spill from domestic wastewater system.
g. TCHD recommends including a regulatory analysis determining the applicability of state and federal air quality permitting requirements.
h. TCHD encourages the applicant to follow best management practices for erosion control specifically to minimize excessive dust from land disturbing activities.
i. TCHD recommends the applicant incorporate traffic control best management practices including, but not limited to limiting traffic during specific hours if the designated truck route overlaps with a local school bus route(s).

5. **County Staff:**
   a. **Landscaping:**
      i. Please provide an overall site plan showing the location of the lease area on the larger parcel. Please include the setbacks of the well pad from all property lines and the nearest right-of-way, residential structures, and the Tower well pad. Staff is concerned about the proximity of future residential uses adjacent to the site, as well as the pad visibility from public right-of-way. The landscape must show adequate visual mitigation.
      ii. The plan must include the proposed irrigation method (water truck, drip system, etc).
      iii. The landscape notes indicate all trees will be mulched with red cedar mulch, however, this is not reflected in the table for % non-living material. Please revise table.
      iv. Please provide additional detail on proposed berm (height, slope ratio, etc).
January 16, 2019

Adams County Community & Economic Development Department
Christine Dougherty, Case Manager
4430 S. Adams County Parkway
1st Floor, Suite W2000
Brighton, Colorado 80601

RE: Request for Comments – Case No. USR2018-00012 & USR2018-00013

1. Since both projects are located in the same quarter section of land my comments will apply to both requests for the proposed development of wells and well pads and are as follows:

Site Location/Description:

The acreages of the two sites need to be described by meets and bounds description so that they can be located within the existing one-quarter section of land.

Land Use Compatibility:

These two sites should not be approved for development because of existing residential development on both the Northerly and Southerly sides. These proposed developments would be more compatible with industrial type zoning and not the existing residential areas that have been in place for years.

Access Road:

The proposed roadway to these sites should be more than just a gravel road surface because of “tracking” onto Quebec Street and should be designed for the heavy loads that the trucks will have both coming and going from the site.

Fencing:

Fencing should be screened because of the appearance of this type of development would not be very pleasant to look at from the existing residential neighborhoods and from the travelers on the 470 highway.

Noise Mitigation:

The noise created by these two developments could be mitigated so as not to create unpleasant sounds to the existing quiet neighborhoods. I built in Boston Farms Subdivision because of its location and away from heavy traveled roads and away from commercial and industrial areas just to be in a quiet neighborhood.

Sanitary Sewer:

There is no mention in this request for sanitary sewer facilities which should be provided for all the workers and by its omission leaves questions as to how the important need for these facilities will be handled.

Abandonment:

This type of development, after its sub-economic to operate, should be restored to its original condition. However, since follow-up inspections by the controlling agencies don’t seem to happen, this can leave “eye sores” for the general public, and more importantly for the people who live close to these developments. (An example – the old facility located on 136th Avenue between
Quebec and Yosemite Streets.)

Water Contamination:

The people who reside in the Boston Farms Subdivision have the Laramie-Fox Hills aquifer as their only source for their domestic water supply. Any contamination created by the two proposed projects would be major concerns. I have had to replace my own well due to contamination. If for any reason this proposed development creates any problems whatsoever, then at the expense of the developer, water testing should be done prior to commencement of construction and periodically during production for the life of the development. This testing of the water in the Laramie-Fox Hills aquifer should meet Adams County and State of Colorado requirements with the results of the testing being provided at all entities concerned.

Summary:

This project is not a good fit with the surrounding area and should be situated in a more industrialized area

Sincerely,

Raymond W. Bayer
9015 E. 139th Ct.
Brighton, CO 80602
Dear Christine Dougherty,

Thank you for your very prompt response. Unfortunately, I have not yet had time to follow up on your information. Is it possible that you could forward me the contact names and numbers for the agencies you mention who work directly with Adams County? If not, I can contact the agency's main number and proceed from there.

For the purposes of meeting tomorrow's deadline for feedback I would offer that the County should make more information available to the public especially homeowners about any potential impact including financial (property rights) or hazard to the local community prior to approving any additional hydrocarbon wells and how property values may be increased or decreased. This information should be presented comprehensively to homeowners prior to seeking approval from the Adams County Commissioners. Currently, little information, other than a slew of notices regarding expansion of wells has come through the mail to homeowners. There was an opportunity for a community meeting, which I did attend, but that was basically a "show and tell gallery walk" event in Todd Creek with no opportunity to hear the questions or concerns other folks had nor was any information provided about long terms plans. Although, now I am hearing that some of applications by the oil and gas folks are expiring through inaction but I admit there is a lot I do not know in this area and the same is true for my neighbors.

In reviewing the ADCO website, it speaks generally to regulations, applications and commentary from various organisations but I did not see any type of progress or annual reports describing the current overall status or if any issues had occurred within the County like in other places within Colorado. Perhaps, I did miss them on the website and if they are available can you point me in the right direction? My final question is when will the Commissioners be acting on these permits?

Thank you - Dr. Oliver Grenham

On Tue, Jan 8, 2019 at 9:09 AM Christine Dougherty <CDougherty@adcogov.org> wrote:

Dear Dr. Oliver Grenham,

Please see my answers to your comments in Red.

1. Given that our water comes directly from a well installed on our property and the submerged pump is currently at about 1000 feet - can Adams County assure me that the water table will not drop as a result of installing multiple horizontal wells to an unknown depth? The applicant is required to obtain water consistent with the Colorado State laws. Generally, water is acquired from established shares designated for agriculture or industrial
use. If new wells need to be drilled, that request would be reviewed and processed by the Colorado State Engineer of Division of Water Resources – Department of Natural Resources.

2. If our water well becomes unusable either due to a drop in the water table or through pollutants how will Adams County correct the situation? Impacts to ground water aquifers are regulated by the Colorado Oil and Gas Conservation Commission, and they would be the lead agency on any enforcement actions as a result of impacts to an aquifer.

Adams County does require oil and gas operators to provide baseline testing to any water well located within one-half mile of the proposed facility at no cost to the owner. After development has occurred, water well owners can obtain annual testing through an Adams County/Tri-County Health partnership, again at no cost to the owner.

3. Given that we own the mineral rights for 2.3 acres, how will the current value of those mineral rights be impacted by the continuation of both projects with a total of 66 horizontal wells which will be in very close proximity? This is beyond the scope of Adams County’s review processes.

4. What assurance can Adams County provide to ensure that our valuable mineral interests are not being stripped away which are directly below our property? This is beyond the scope of Adams County’s review processes.

Once I know the answers to the above questions, I will be able to provide further commentary.

Sincerely - Dr. Oliver Grenham

13950 Boston Street,
Brighton, CO 80602
Dear Christine Dougherty,

The purpose of this email is to seek feedback concerning the impact of projects USR2018-00012 and USR2018-00012 located on parcel number 0157121000016 as both projects are a short distance from my residence at 13950 Boston St, Brighton, CO 80602. Should the project application be approved, I want to know the following:

1. Given that our water comes directly from a well installed on our property and the submerged pump is currently at about 1000 feet - can Adams County assure me that the water table will not drop as a result of installing multiple horizontal wells to an unknown depth?

2. If our water well becomes unusable either due to a drop in the water table or through pollutants how will Adams County correct the situation?

3. Given that we own the mineral rights for 2.3 acres, how will the current value of those mineral rights be impacted by the continuation of both projects with a total of 66 horizontal wells which will be in very close proximity?

4. What assurance can Adams County provide to ensure that our valuable mineral interests are not being stripped away which are directly below our property?
Once I know the answers to the above questions, I will be able to provide further commentary.

Sincerely - Dr. Oliver Grenham

13950 Boston Street,

Brighton, CO 80602
January 15, 2019

VIA E-MAIL (CDOUGHERTY@ADCOGOV.ORG)

Christine Dougherty
Adams County Dept. of Community & Economic Dev.,
4430 South Adams County Pkwy., Suite W2000A
Brighton, Colorado 80601-8216

Re: USR2018-00012—Tower Pad Use by Special Review (the “Application”)

Dear Ms. Dougherty:

Our firm represents HT Parterre Land LP (“HTP”), owner of several parcels of real property (generally called “Parterre”) located generally west of Quebec Street near the interchange with E-470 in the City of Thornton (the “City”). We write in response to the Request for Comments that HTP received in connection with the above-referenced Application.

As you are likely aware, HTP is presently planning for the development of Parterre into a mixed-use commercial and residential community containing approximately 3,000 residential dwelling units. HTP plans to establish residential lots immediately west of Quebec Street in the vicinity of the property that is the subject of the Application. We note that certain of the well pads described in the Application will be located approximately 260 feet from Quebec Street, certain of the wellheads will be approximately 310 feet from Quebec Street, and certain production facilities are proposed to be located 680 feet from Quebec Street.

HTP does not support or oppose the Application as currently presented. HTP notes that the City presently prohibits residential development within 200 feet of well sites and 350 feet of production facilities. In the event these limitations were to become more restrictive, however, HTP may be prevented from establishing proposed residential lots as part of the Parterre project, which may have a significant impact on the overall project. To that end, HTP requests that the Applicant locate wellheads and production facilities as far as reasonably possible from HTP’s proposed residential lots. HTP is willing to work with the County and the applicant as necessary to ensure that the well sites and production facilities proposed as part of the Application can be operated safely in concert with HTP’s plans for the development of Parterre.

Very truly yours,

Brian J. Connolly
For the Firm

BJC/abm
Good morning, Christine:

The Colorado Department of Public Health and Environment (Department) appreciates the opportunity to comment on this proposal. Please note that the following requirements are not intended to be an exhaustive list and it is ultimately the responsibility of the applicant to comply with all applicable rules and regulations.

The Department respectfully recommends that Great Western employ best management practices throughout the project area and is providing comments on the following topics:

- Minimizing emissions from the well site
- Air Pollutant Emissions Notice (APEN)
- Odors from drilling and completion activities
- Plugging and abandonment
- Management of exploration and production waste

**Air Pollutant Emissions Notice (APEN)**

In Colorado, most businesses that are or will be emitting air pollutants above certain levels are required to report those emissions to the Division by completing an Air Pollutant Emissions Notice (APEN). This is a two in one form for reporting air emissions and to obtain an air permit, if a permit will be required. While only businesses that exceed the AQCC reporting thresholds are required report their emissions, all businesses - regardless of emission amount - must always comply with the Colorado AQCC regulations.

This project may require an Air Pollution Emission Notice (APEN) under general permit GP07. Additional information on APENs and air permits can be found at [https://www.colorado.gov/pacific/cdphe/apen-and-permitting-guidance](https://www.colorado.gov/pacific/cdphe/apen-and-permitting-guidance). This site explains the process to obtain APENs and air quality permits, as well as information on calculating emissions, exemptions, and additional requirements. You may also view AQCC Regulation Number 3 at [https://www.colorado.gov/pacific/cdphe/aqcc-reg](https://www.colorado.gov/pacific/cdphe/aqcc-reg) for the complete regulatory language. If you have any questions regarding Colorado’s APEN or air permitting requirements or are unsure whether your business operations emit air pollutants, please call the Small Business Assistance Program (SBAP) at 303-692-3175 or 303-692-3148.
Minimizing emissions from the well site

The project area is within the Denver Metro/North Front Range (DMNFR) ozone nonattainment area. Many sources contribute to ozone formation including oil and gas exploration and production. In particular, the use of diesel or gas-powered equipment and devices and the flaring of natural gas produces nitrogen oxides (NOx) as well as additional volatile organic compound (VOC) emissions, which contribute to ozone formation. In order to minimize emissions from equipment and devices, the Department recommends that Great Western utilize electrical power to the maximum extent practicable for all drilling and completion activities.

Currently, natural gas pipelines in the DMNFR ozone nonattainment area are at or near capacity and some operators have requested approval to flare natural gas. In addition to wasting a resource, flaring contributes to ozone formation. The Department recommends that Great Western limit the use of flares to emergency situations only the maximum extent practicable in order to facilitate emission reduction efforts. Emergency flaring should be controlled with an enclosed combustor with a 98% destruction efficiency. Additionally, the Department recommends that Great Western not commence commercial production at this location until adequate pipeline takeaway capacity is available. This will ensure that closed-loop green completion techniques are utilized to the maximum extent practicable and that the flaring of natural gas will be minimized, thus reducing emissions from the wellsite.

Odors from drilling and completion activities

The Form 2A associated with the Gus well pad indicates that Great Western will be using oil based drilling fluids at this location. The Department recommends that Great Western implement methods and practices to reduce odors during each phase of the exploration and production process throughout the duration of the project, including but not limited to: using chillers and chemicals to mask or neutralize hydrocarbon odors emulating from drilling mud; using a squeegee to remove drilling fluids from the drilling pipe as they exit the wellbore and; using covered containers to store the drilling mud on the well site and; minimizing the use of diesel fuels as additives in drilling mud.

Plugging and abandonment

The Department recommends that Great Western implement measures to control unnecessary and excessive venting during plugging and abandonment operations to protect public health and the environment, and to ensure that vapors and odors from well plugging operations do not constitute a nuisance or hazard to public welfare.

Management of exploration and production waste
The Department recommends that Great Western test for and properly dispose of technologically enhanced naturally occurring radioactive materials (TENORM).

**Conclusion**

The Department appreciates the opportunity to submit these comments and as this project develops over the coming months, the Department may submit additional comments in an effort to minimize the impacts from oil and gas operations on public health and the environment.

Sincerely,

Sean Hackett  
Energy Liaison  
Colorado Department of Public Health and Environment

P 303.692.3662 | F 303.691.7702  
4300 Cherry Creek Drive South, Denver, CO 80246  
sean.hackett@state.co.us | www.colorado.gov/cdphe

On Wed, Dec 26, 2018 at 2:33 PM Sean Hackett <hackettsm@gmail.com> wrote:

---------- Forwarded message----------
From: Christine Dougherty <CDougherty@adcogov.org>  
Date: Wed, Dec 26, 2018 at 1:38 PM  
Subject: Request for Comments USR2018-00013  
To: Christine Dougherty <CDougherty@adcogov.org>

**Request for Comments**
Great Western - Gus well pad

December 26, 2018

Adams County Community and Economic Development Department is requesting comments on the following request:

**Request for a Use by Special Review Permit to allow thirty-six (36) horizontal well on one (1) well pad for the production of oil and gas.**

This request is located at approximately southeast of 145th Ave and Quebec St.

The Assessor's Parcel Number is 0157121000016.

Please forward any written comments on this application to the Department of Community and Economic Development at 4430 South Adams County Parkway, Suite W2000A Brighton, CO 80601-8216 by January 16, 2018 so that your comments may be taken into consideration in the review of this case. Please send your response by way of e-mail to cdougherty@adcogov.org.

The complete Use by Special Review Permit application can be found at www.adcogov.org/planning/currentcases.

Additional Oil and Gas information can be found at www.adcogov.org/oil-and-gas-information.
Thank you for your review of this case.

Christine Dougherty
Oil & Gas Liaison, Community & Economic Development Department
ADAMS COUNTY, COLORADO

4430 South Adams County Parkway, 1st Floor, Suite W2000A
Brighton, CO 80601

O: 720.523.6891 | cdougherty@adcogov.org www.adcogov.org
January 14, 2019

Christine Dougherty
Case Manager
4430 S. Adams County Parkway, Suite W2000
Brighton, CO 80601-8216

RE: Great Western – Gus well pad – Request for a Use by Special Review Permit to allow thirty-six (36) horizontal well on one (1) pad for the production of oil and gas.

Ms. Dougherty:

The City of Thornton has the following comments regarding the Great Western – Gus well pad Use by Special Review Permit application submittal. Based on the response to the comments below, the City of Thornton may have additional comments or request for information.

Future Land Use
The site is designated “Residential Estate” within the City of Thornton’s Comprehensive Plan. The Residential Estate category includes single family residential lots one or more acres in size which typically are not served by a public-water and/or wastewater system. Based upon the types of land uses anticipated on this property, and on neighboring properties, additional measures relating to mitigation of incompatible land use (industrial/oil and gas operations) should be implemented.

Site Mitigation
The proposed landscape plans include minimal planting, screening and berming. Please consider additional screening/landscaping, particularly during the drilling phase of operations. The City of Thornton also requests to review a lighting plan and believes that the plan should propose to eliminate any light trespass from the site.

Traffic Management
This development also proposes to use the 144\textsuperscript{th} & Quebec intersection. The associated traffic study also does not mention improvements that were required last year as follows:

- Thornton may not have ROW for the ultimate cross section of Quebec Street. However, the development should not encroach into what would be the future ROW needed for the ultimate cross section of Quebec Street.

- The construction and use of the proposed access onto Quebec Street must be a minimum of 24 feet wide with 35 foot minimum paved radii at the intersection with Quebec Street.

- Asphalt should be a minimum 6 inches thick for the first 24 feet of the access leading from existing edge of pavement of Quebec Street.

- The access leading from Quebec Street should be improvement for a minimum of 200 ft.

- Mud or debris tracked on Quebec Street must be cleaned in accordance with Section 38-394 of City Code.

- A left turn lane from Quebec Street into the access into the access will be required. The construction of the turn lane must be in compliance with Thornton standards and specifications.
• The proposed access onto Quebec Street may be required to be relocated in the future depending on how adjacent development occurs.

Previously, it was commented that a northbound right turn lane from Quebec Street into the access was required. Traffic to/from the site must be to the north as indicated in the preferred route in the traffic study. Based on this, a northbound right turn lane is no longer required. Signs prohibiting westbound to southbound left turn from the access must be installed.

**Emergency Response**

The City requests that the operator engage with the Thornton Fire Department regarding emergency response planning. Additionally, the City requests initial and ongoing response training with the operator on the site. Furthermore, the City requests that no flaring occur at this site, but if flaring does occur that the City of Thornton Emergency Communications Center be notified in advance.

Please contact me at 303-538-7596, or via e-mail at Katelyn.Puga@cityofthornton.net for updates and/or questions related to this response.

Sincerely,

Katelyn Puga
Planner I

Enclosures

cc: Darrell Alston
January 14, 2019

Ms. Christine Dougherty  
Community & Economic Development Department  
4430 South Adams County Parkway, Suite W2000A  
Brighton, CO 80601

Re: Gus Well Pad, USR2018-00013

Dear Ms. Dougherty:

Thank you for the opportunity to comment on the proposed construction of Gus LD Pad, which will comprise of the construction of one well pad with up to thirty-six wells and a single access road. The 18.649 acre proposed well site is owned by the Castordale family and is operated by Great Western Oil and Gas. The proposed site is located at the SENE quarter of Section 21, Township 1 South, Range 67 West and is bounded on the north by private property and E470, on the west by Quebec Street, on the south by various parcels of private property, and on the east by parcels of Adams County property.

The mission of Colorado Parks and Wildlife (CPW) is to perpetuate the wildlife resources of the state, to provide a quality state parks system, and to provide enjoyable and sustainable outdoor recreation opportunities that educate and inspire current and future generations to serve as active stewards of Colorado’s natural resources. Our goal in responding to land use proposals such as this is to provide complete, consistent, and timely information to all entities who request comment on matters within our statutory authority.

Current CPW policy directs our efforts towards proposals that will potentially have high impacts to wildlife and wildlife habitat. The emphasis of CPW’s concerns is on large acreages, critical habitats, wildlife diversity, and impacts to species of special concern, or those that are state or federally endangered. CPW would expect to find small passerine birds, wild turkeys, and small mammals, including possibly black-tailed prairie dogs, in the vicinity of the proposed well pad. Due to the low availability of undeveloped habitat surrounding the site, impacts of the development, as proposed, may be characterized as minimal.

Natural Vegetation

CPW recommends that land within the project area be restored to native habitat, if possible. To improve wildlife habitat after construction, CPW recommends using native plant species along the project area. CPW also recommends planting trees, shrubs, and grasses so that they are mixed within the landscape. A landscape that has a good mix of trees, grasses, and shrubs is more beneficial to wildlife than a landscape with all trees in one area and all grasses and shrubs in others.
Burrowing Owls

If prairie dog towns are present on the sites or if prairie dogs establish themselves on the property prior to development - CPW recommends that a burrowing owl survey be conducted prior to earth moving. Burrowing owls live on flat, treeless land with short vegetation, and nest underground in burrows dug by prairie dogs, badgers, and foxes. These raptors are classified as a state threatened species and are protected by state and federal laws, including the Migratory Bird Treaty Act.

These laws prohibit the killing of burrowing owls or disturbance of their nests. Therefore, if any earth-moving will occur between March 15th and October 31st, a burrowing owl survey should be performed. Guidelines for performing a burrowing owl survey may be obtained from District Wildlife Manager Jordan Likes, by visiting the CPW website at http://cpw.state.co.us or by calling the CPW Northeast Region Office at (303) 291-7227.

Please contact us if we can be of assistance in implementing your proposal to minimize negative impacts and maximizing potential enhancements to support living with wildlife in our community. If you have any further questions, please contact District Wildlife Manager Jordan Likes at (303) 291-7135.

Sincerely,

Crystal Chick
Area Wildlife Manager

Cc: M. Leslie, T. Kroening, J. Likes
January 16, 2019

Christine Dougherty  
Adams County Community and Economic Development  
4430 South Adams County Parkway, Suite W2000A  
Brighton, CO 80601  

RE: Great Western – Gus Well Pad, USR2018-00013  
TCHD Case No. 5353

Dear Ms. Dougherty,

Thank you for the opportunity to review and comment on the Use by Special Review to allow thirty-six (36) horizontal wells on one well pad for the production of oil and gas located southeast of 145th Avenue and Quebec Street. 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 the following comments.

**Domestic Wastewater Management**

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.

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](http://www.tchd.org/745/Finding-Certified-Septic-Professionals). If you have any questions regarding installation or operation of a portable above-ground wastewater storage system, or the process to obtain a Systems Cleaner license, please contact Mike Weakley at 720-200-1593 or mweakley@tchd.org.

**Baseline Water Quality Testing**

Water quality is unregulated in domestic and irrigation wells in Colorado and monitored in a limited manner for commercial wells. This means water quality testing is typically not required, and the water quality is often unknown. In general, TCHD supports
baseline water quality testing to establish the existing water quality relative to the water well's permitted use and to identify water quality issues that should be known and addressed by the well’s owner. Baseline water quality testing can also provide an understanding of pre-existing conditions should the water quality change in the future. Baseline and subsequent water quality testing data can support a determination of whether water treatment may be needed to protect the health of well water users and the health of the environment.

Specific Recommendations for Water Wells within ½ mile:
TCHD believes that any owner of a well within one-half mile of the proposed oil and gas operation should have the opportunity to obtain a baseline water quality test prior to the change in land use. One-half mile is the area of influence established by the Colorado Oil and Gas Conservation Commission’s Final Rule 609 Statewide Groundwater Baseline Sampling and Monitoring.

TCHD recommends the following for well permits and water rights holders located within one-half mile of the proposed oil and gas well as they are likely used or will be used for drinking water for humans or animals.

- That the County or applicant notify owners of the wells or groundwater rights owners of the proposed application;
- That the County refer well owners who want to test their wells to TCHD for guidance on recommended testing parameters, procedures for selection of qualified sampling professionals and laboratories, and sharing of data; and
- That the County refers well owners desiring guidance for wellhead protection to TCHD.

Water Supply for Use by Workers
Providing clean and safe water for use by workers for ware washing, food preparation, hand washing, and showering is important. The majority of foodborne illnesses can be traced to improper food handling procedures in home, retail, or office kitchens. Improper transport, storage, cross-connections, and backflow also pose dangers to potable water quality.

TCHD will need to review information regarding the source of water for workers as well as any proposed potable water system used by workers. If the drinking water is to be hauled, a public water system identification number for the water hauler must be provided to TCHD.

Potential Temporary Water Storage
Non-potable water is often used onsite at oil and gas sites. The storage tank should be marked with a sign indicating the water is non-potable. In addition, these very large water storage tanks have the potential to collapse if not properly constructed with appropriate quality controls. A collapse can result in significant damage to the environment, property, and individuals that may be nearby. TCHD recommends the
applicant employ proper quality control techniques when constructing the water storage tank.

**Above Ground Storage Tanks**
Fuel is often stored onsite at oil and gas sites. All storage tanks must have a secondary containment area, a routine monitoring system to check for leaks, and best management practices implemented in order to prevent the release of contaminants into the soil and water supplies.

**Emergency Response Plan/Spill Reporting**
One of the most common environmental releases associated with oil and gas drilling operations is the inadvertent surface spill of chemicals, produced water, or flowback water. No Emergency Response Plan was available for review with the referral materials. The Emergency Response Plan should include response and notification procedures for responding to and effective strategies for minimizing the risk of hydrocarbon spills, hazardous chemical spills, and produced water spills. If a spill or incident were to occur, the emergency response to spills should be indicated in the Spill Prevention, Control, and Countermeasures Plan that is kept onsite.

Specific information related directly to a potential leak or spill from the domestic wastewater system should also be addressed. In the event there is a domestic wastewater spill or leak, TCHD should be contacted immediately.

**Air Quality Permitting**
Air pollutant emissions including flares are regulated by the Colorado Department of Public Health and Environment. Vapor recovery equipment should be used to control the release of vapors into the environment. The use of green completion technology is strongly encouraged at every site. If the site is to use multiple flares and combustors, the oil and gas industry permits should include a regulatory analysis determining the applicability of state and federal air quality permitting requirements and air pollution control regulations for the proposed emissions source(s). More information as well as all forms can be found online at [https://www.colorado.gov/pacific/cdphe/all-permits](https://www.colorado.gov/pacific/cdphe/all-permits).

**Dust Control and Mitigation**
TCHD encourages the applicant to follow best management practices for erosion control on the site, specifically to minimize excessive dust from land disturbance. This will help minimize the environmental impact resulting from any construction and land disturbance on the site. TCHD encourages any reclamation, including site pad minimization, and reseeding activities to occur as early as possible. This prevents erosion, helps control excessive weeds, and can provide some benefit to air quality.

**Traffic Safety**
Oil and gas production and monitoring wells involve significant truck traffic to and from a site during the construction and drilling process. TCHD recommends the applicant incorporate traffic control best management practices and TCHD encourages the
County 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 County to work with the applicant to minimize traffic during hours when school buses are in operation.

Please feel free to contact me at 720-200-1585 or aheinrich@tchd.org if you have any questions.

Sincerely,

Annemarie Heinrich, MPH/MURP
Land Use and Built Environment Specialist

cc: Sheila Lynch, Monte Deatrich, TCHD