

Minutes of the Oil and Gas Advisory Committee
City of Aurora, Colorado
January 19, 2022

Virtual Meeting

Meeting was called to order at 4:04 p.m. by Chairman Pierce.

The following were present:

Brad Pierce, Committee Member, Chair, Citizen
Josh Reddell, Committee Member, Vice-Chairman, Citizen – ABSENT
Max Blair, Committee Member, Industry
David Carro, Committee Member, Surface Owner
Marc Cooper, Committee Member, Surface Owner
William Gollhofer, Committee Member, Citizen – ABSENT
Philip Holmes, Committee Member, Industry
Larry Quirk, Committee Member, Citizen – ABSENT
Jim Rogers, Committee Member, Industry – ABSENT
James Spehalski, Committee Member, Surface Owner
Tom Tobiassen, Committee Member, Citizen

Jeffrey S. Moore, City of Aurora, Oil & Gas Division Manager
Colin Brown, City of Aurora, Senior Planner
Forrest Thorniley, City of Aurora, Senior Inspector
Ian Best, City of Aurora, Assistant City Attorney
Cameron Venable, Colorado Oil and Gas Association
BJ Cox, GMT Exploration
Dennis Snow, GMT Exploration

1. Brad Pierce, Chairman, called the meeting to order at 4:04 p.m. There was a quorum of 7.
2. Chairman Pierce introduced himself and proceeded to call role. He asked that City of Aurora Staff introduce themselves. Jeffrey Moore introduced Cameron Venable. Mr. Venable is a Local Government Liaison with the Colorado Oil and Gas Association (COGA).
3. Approval of November 17, 2021 Minutes: Tom Tobiassen moved to approve the November 2021 minutes. James Spehalski seconded the motion. The motion passed.
4. Presentation on Plugging and Abandoning Wells: Representatives from GMT Exploration provided a presentation on the process of plugging and abandoning wells in the DJ Basin. The representatives are Max Blair, Regulatory Manager, BJ Cox, Field Superintendent, and Dennis Snow, Vice President of Operations.

The topics covered in the presentation are a summary of current state regulations, factors for the end of life of a well, differences between horizontal and vertical wells, the economics of old wells, and an overview of the plugging and abandoning process.

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- Summary of State Regulations:
 - The Colorado Oil and Gas Conservation Commission (COGCC) has various sets of rules related to the plugging and abandonment (P&A) of wells.
 - The Operator is responsible for P&A of a well at the end of its life.
 - Operators must submit P&A plans for review and approval by the COGCC.
 - Financial Assurance Rulemaking by the COGCC will establish new bond amounts that will provide assurance that the Operator is financially capable of fulfilling every obligation imposed by the COGCC.
 - The COGCC Orphan Well Program exists to P&A wells and reclaim sites from Operators that no longer exist or that may be financially capable of P&A their wells.
 - Offset wellbore mitigation from new horizontal wells has led to an increase in P&A activity in the state.
 - The COGCC defines plugging and abandonment as the cementing of a well, the removal of its associated production facilities, the abandonment of its flowline(s) and the remediation and reclamation of the wellsite.
- Factors that Lead to End of Life of a Well:
 - If the well is a dry hole, it must be properly plugged. A dry hole is a well that contains no hydrocarbons.
 - If the reservoir the well is producing from is depleted, the well has reached its economic end of life, or there has been equipment failure.
 - The reservoir can become depleted of hydrocarbons if the well has been producing for a long period of time.
 - Even if the reservoir is not fully depleted, a well may still be plugged because it is not producing enough hydrocarbons in sufficient amounts to offset the cost to operate the well.
 - Essential equipment can fail for various reasons (age, corrosion, mechanical failure, etc.). It may cost an Operator more money to replace the equipment that the well is expected to produce, which can lead to the well being plugged.
 - Access to a pipeline to transport production (oil, gas, and water) may be lost for various reasons. Flaring natural gas production to produce oil is no longer permitted in Colorado, so natural gas must be transported via pipeline. Wells are typically shut-in while an Operator finds alternative solutions.
 - New, more stringent regulations on oil and gas operations can lead to P&A decisions. This is usually an economic decision as well since bring a well into compliance with new requirements often include additional/replacement of equipment.
- New Horizontal Wells and Old Vertical Wells:
 - Most new oil and gas development in Colorado use horizontal drilling and hydraulic fracturing.
 - New wells are being drilled in areas where older vertical wells exist.
 - Older vertical wells were not plugged and abandoned with horizontal drilling in mind.
 - The COGCC has offset wellbore mitigation rules that require an Operator to examine the completion, casing, and cement records of vertical wells within 1,500 feet of a new wellbore path.
 - If necessary, the Operator of the new well must re-enter the vertical to properly P&A the well again to ensure the protection of the surrounding aquifers.

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- An Operator must also review producing vertical and horizontal wells.
- Economics of an Older Well:
 - Most Operators perform a Well Profit Statement Review. This is a review that helps the Operator to determine the costs associated with operating a well, the amount of expected production, the revenue that a well will generate, and expected taxes to be paid on that well.
 - Some questions an Operator must address when deciding if a well is uneconomic and should be plugged are; is the well profitable? Can we reduce expenses? What are the fixed costs associated with the well? What sort of trend are the prices of oil and gas showing? What is the mechanical condition of the well? Will equipment need to be replaced? Are there any opportunities to re-work or re-complete the well to stimulate production?
 - In general, an Operator will P&A a well if it is uneconomic for 6 months or more.
- Plug and Abandonment Process:
 - Office Work:
 - First an Operator must identify wells that should be plugged. The economics of the well, offset horizontal well development, environmental considerations and other factors must be considered.
 - An Operator needs to work with the landowner and obtain permission from them to perform the work.
 - COGCC paperwork and forms must be completed (Form 6 and Form 27).
 - Proper notifications must be given to COGCC Inspectors (Form 42 and Form 44).
 - Operators must file final reports once the plugging and abandonment is complete.
 - Field Work:
 - An Operator must notify and review the agreed upon process and agreement with the landowner before starting any plugging work on a well.
 - Location preparation work involves shutting in the well, removing surface equipment, a process called Lock Out Tag Out the facility, finding the actual wellhead, welding on a new wellhead in some cases, dirt work, and removing and/or installing fences.
 - Work on the actual well involves moving in and setting up the workover rig, setting up any ancillary equipment that is needed, removing the wellhead, installing a blowout prevention device, and removing any existing downhole equipment.
 - An Operator must also provide adequate cement coverage over the hydrocarbon production zones and any aquifer.
 - An Operator must also cut and cap the wellbore 6 feet below the current surface grade and weld on a steel marker that shows the well name, operator, API number, and location.
 - In general, it takes 5-14 days to abandon a well. The cost varies depending on the condition of the well and surface location. On average, the cost to plug a well is between \$40,000 and \$150,000 per well.
 - In general, the pad layout for abandonment work requires a smaller footprint and less equipment than is required for drilling a new well. Usually 1 acre or less is required for abandonment operations.

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- Several pictures were shown that helped illustrate various stages of the process of plugging a well and surface reclamation.
- Once the well is plugged, an Operator must submit several forms to the COGCC and have the COGCC come inspect the site to verify the plugging and reclamation work was done correctly. The forms are Form 6 Subsequent, Form 27 Subsequent, Form 42/44 (flowline abandonment report), and final COGCC inspection and approval forms.
- Plug and Abandonment Challenges:
 - There are many different challenges that an Operator may encounter when plugging a well. Some of them are;
 - Lease/landowner requirements, location the actual wellhead and weather/livestock/wildlife considerations.
 - The well could be close to houses, or the site could need extract precautions like sound walls, air monitoring stations, etc.
 - Unidentified downhole issues with the well, or gas migration during the cementing process.
 - Reclamation issues like contaminated soil that requires additional excavation/sampling, waster generation/disposal, growing native grasses, and weather.

At the end of the presentation, the meeting was open for any questions that a Member may have. Philip Holmes asked how long it takes to get approval from the COGCC to plug a well. Mr. Snow said it takes a few weeks to get approval, but the COGCC has been quick to approve plugging requests in urgent situations. Max Blair said the COGCC has hired additional staff to help with the backlog of P&A well approval. Mr. Holmes asked how current costs to P&A a well compare to costs three or four years ago. Mr. Cox said the cost is higher than in past year. The cost of supplies, equipment and service costs have gone up over time.

Forrest Thorniley asked if they could describe the process for abandoning flowlines and how they determine if they flowline will be abandoned in place or completely removed. He also asked how they detect hydrocarbons that have been leaked by a flowline. Mr. Cox said that the decision to abandon a flowline in place or completely remove is partially made by the cost and partially made be logistical concerns. If the ground would be negatively impacted by excavating and removing the flowline, then sometimes it is better to cut and cap both ends of the flowline. GMT favors removing the flowlines and not abandoning them in place, but each situation is different. If any soil appears to be discolored or there is an odor present, GMT will stop work and perform soil sampling to determine if there has been a leak or there is contamination. If there is soil contamination, GMT will excavate and remove the soil until there is no more contamination present. Contaminated soil is removed from the site and new soil that will promote regrowth is brought in. Topsoil that has been removed from the site is saved so that it can be used in the reclamation process. In the past, an Operator could spread out the contaminated soil on site so that it was exposed to UV light, which would slowly remove the hydrocarbons from the soil. This practice is known as land farming, but is no longer allowed in Colorado.

David Carro asked if in the situation that reclamation has to occur, how does an Operator document that sampling has occurred and does a landowner work with an Operator to make sure the area is surveyed

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for potential contamination. He also asked if an Operator is plugging a well within a master planned community, does an Operator leave some sort of sign or marking of where the well is. Mr. Blair said there are COGCC rules related to soil sampling and there is oversight at the state level. He is not sure how widely available those sampling records are, but the COGCC does keep records of that sampling and can be requested through the COGCC. Mr. Blair said there is a lot of activity at the local level in the state as it relates to plugged wells and local zoning/planning regulations. There are many local jurisdictions that are enacting reciprocal setbacks, which are setbacks from existing and planned wells. Some local governments are trying to enact rules that would ensure there is enough space around a wellhead that would allow an Operator to re-enter a well in the future if necessary. Mr. Cox said an Operator leaves a below ground marker on all wellheads, and that there are COGCC requirements related to that marker.

Jeffrey Moore stated that the City does not have any authority over the P&A process. Mr. Moore asked how long cement and casing is expected to last. Mr. Cox said that in his experience, cement and casing can last up to 50 years based on older wells that he has worked on.

Chairman Pierce thanked the presenters for their time and for giving an excellent presentation.

5A. Colin Brown provided the following update of oil and gas applications since the November 17, 2021 Meeting: Crestone Peak Resources received the Notice to Proceed (NTP) for the Yellow well pad in early January. We are gathering signatures for the Eastern Hills South NTP. Hopefully that NTP should be fully signed and sent to Crestone by the end of the month.

Crestone Peak Resources Midstream currently has three lateral amendments in process. The Crow lateral amendment is currently under review. Two amendments have had a Pre-Application meeting, but Crestone Midstream has not submitted the applications yet. Both amendments should be submitted in the coming weeks.

5B. Forrest Thorniley provided the following update of oil and gas inspections since the November 17, 2021 Meeting: Since the November meeting, there have been no complaints or violations through the COGCC database. Crestone did have one reportable spill on January 7th. They lost 6 barrels of fluid from a separator during separator maintenance. All fluid did stay on the pad and directly under the separator. The soil has been excavated, but the City is waiting on final results from Crestone's consultant and a waste manifest. Forrest believes Crestone is hauling the contaminated soil to Republic Landfill.

Forrest conducted the 2021 4th quarter IR camera inspections. The 4th quarter inspections covered 37 facilities, including several new Crestone facilities, and 42 pipeline locations. He found 8 leaks during the 4th quarter inspections. During the 3rd quarter inspections, he found 20 leaks on 34 facility inspections. Overall there has been a reduction in leaks. One of the 4th quarter inspections included a new Crestone tank battery that has thousands of connections that had not been inspected yet internally. Forrest believes this reflects good work quality on Crestone's behalf.

5C. Historical Aurora Production and Review of 2021: Jeffrey Moore showed a presentation that he gave to the Planning and Economic Development Committee at the end of 2021. It summarizes some of the facts and figures from the Oil and Gas Division over the last year. Mr. Moore spoke about the Oil and Gas Division staff and staff background.

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Mr. Moore displayed a table that summarized the well status and well count of the wells located within the City. In 2021, there was a total of 162 existing wells within the City and 297 Operator Agreement approved wells that could be drilled in the future. He then provided a table that summarized the total number of existing and future wells by Operator. Crestone Peak Resources is the largest Operator in the City. He provided a map of the City that shows where the existing wells are located at within the City. He also showed a map of where a few wells that will be plugged and abandoned are located at.

Mr. Moore showed a few graphs that displayed the historical oil and gas production in the City. He reviewed the COGCC production data, starting in 1999, and compiled all of the historical production from wells within the City. Starting in 1999 and ending in 2021, the graphs showed oil production, natural gas production, produced water volume, and total number of wells. The graphs show a trend of increasing production over time, with the majority of the increase happening more recently. As of 2021, there is approximately 13,000 mcf per day of natural gas production, approximately 5,000 barrels per day of crude production, and approximately 500 barrels per day of water in production being generated from all wells within the City. Mr. Moore provided a summary of the number of permits that the City reviewed and approved in 2021. He also provided a summary of the number of well site inspections and results that the City has performed in 2021. He provided a summary of the City's Annual Inspections Fees and the amount of oil and gas royalties that the City received in 2021. He also provided an update on future initiatives that the Division would like to achieve in 2022 and in future years.

Max Blair suggested that Planning Development and Civil Plan review fees be added to the Inspection Fee table for future reports. Those fees can be in the tens of thousands of dollars for each application. Mr. Moore thought that was a great idea.

5D. 2022 Energy Symposium: Mr. Moore brought up the 2022 Energy Symposium in Rifle, Colorado in early April. He is going to find out if the current City travel policy will allow for some of the Division and Committee to attend the Energy Symposium. He will provide an update to the Committee once he determines what the City travel policy will allow.

5E. Oil and Gas Committee Roster: The City Clerk has requested that all Committees provide a Master Roster that contains member information, term start dates, term end dates and other relevant information. One change that the OGC needed to make is that all terms must end on June 30th of a given year. This is in the OGC by-laws. Another change is that if a new Member is replacing somebody who has resigned, that Member must finish that term. A few adjustments need to be made to the OGC Roster to align with the by-laws.

Brad Pierce asked if the roster spreadsheet was generated by the City Clerk's office. Mr. Moore said it was initially generated by the Clerk's office, but Colin Brown has been working to get it updated. Mr. Pierce said he thought that the Clerk's office would have similar spreadsheets for every board and commission. Mr. Moore said that the Clerk's office has not done that in the past, but that is what they are trying to do now. Some clarification questions on the roster were asked.

6. Public Comment Period: There were no public attendees or comments. Mr. Pierce said that he had attended the November 2021 PED meeting and provided a 4th quarter update. He asked the PED Committee if there was anything that they would like the OGC to look at or review. Council Member

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Jurinsky asked Mr. Pierce to review the City's oil and gas regulations in general. He will reach out to Council Member Jurinsky for some clarification on that request.

7. Election of Officers: The Chair and Vice Chair positions need to be elected. Mr. Pierce contacted Josh Reddell and asked him if he would like to be Vice Chair again. Mr. Reddell said he would. Mr. Pierce said he would be willing to be Chair again. Mr. Pierce asked the Committee if anybody else would like to be Chair. None of the other Members said they wanted to be Chair or Vice Chair. Marc Cooper made a motion to elect Brad Pierce as Chair and Josh Reddell as Vice Chair. James Spehalski seconded the motion. The motion passed.

8. 2022 Calendar and Discussion Topic Ideas: At the November 2021 meeting, a few members and City staff brought up that they would be unable to attend the March 2022 meeting. The March meeting will be rescheduled. A poll will be created and sent out to the Committee to see what date would work to reschedule the March meeting. Mr. Pierce said he is still working with Civitas for a field tour and will update the Committee as the details get figured out.

9. The general meeting was adjourned at 5:34 p.m.

Minutes Approved



Brad Pierce, Chairman

3/31/2022

Date