COTERRA ENERGY INC.
OPERATIONS MONITORING PLAN:
LAUER, D. Pad 1

February 2, 2025

As Amended February 6, 2025

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1.0 BACKGROUD AND PLANNED DEVELOPMENT

Coterra Energy Inc. ("Coterra") and the Pennsylvania Department of Environmental Protection (the "Department") entered into a Consent Order and Agreement on November 29th, 2022 (the "COA"). Section 4 of the COA imposes certain plugging and monitoring obligations for any new wells that will traverse under the Dimock/Carter Road Area, as defined in the COA, from surface hole locations outside the Dimock/Carter Road Area.

Coterra will submit unconventional new well permit applications for five (5) wells on the Lauer, D. P1 (the "Lauer Pad"). The Lauer Pad is located at 3057 Garrison Road, Springville Township, PA 18441. (41.680717° -75.852778°) in Susquehanna County. The new wells will be identified as follows:

- LAUER 10
- LAUER 12
- LAUER 14
- LAUER 16
- LAUER 20

Plugged and existing, active unconventional wells identified on Exhibit G of the COA, located within 2,000 feet measured horizontally from any of the new Coterra vertical wellbores or 2,000 feet measured from the surface above the entire length of the new Coterra horizontal wellbores are listed below in Table 1.1 (the "Monitored Gas Wells").

Table 1.1 Monitored Gas Wells

Well Name	API Number	Proximity
Costello, J. 1v	3711520036	Less than 1,000 ft
Costello, J. 2v	3711520043	Less than 1,000 ft
Ely, K. 2v	3711520015	Less than 1,000 ft
Ely, K. 4h-nw*(4V)	3711520034	Less than 1,000 ft
Ely, K. 6h-se	3711520041	Less than 1,000 ft
Gesford, K. 1v	3711520040	Less than 1,000 ft
Gesford, K. 2v	3711520033	Less than 1,000 ft
Gesford, K. 4v	3711520091	Less than 1,000 ft
Gesford, K. 5h-nw	3711520201	Less than 1,000 ft
Gesford, K. 7h-nw	3711520163	Less than 1,000 ft
Lewis, H. 1v	3711520035	Less than 1,000 ft
Lewis, H. 2v	3711520030	Less than 1,000 ft
Teel, C. 1v	3711520007	Less than 1,000 ft
Teel, C. 2v	3711520010	Less than 1,000 ft
Teel, C. 5	3711520024	Less than 1,000 ft
Ely, K. 5h-nw	3711520054	More than 1,000ft; Less than 2,000 ft

2.0 OPERATIONS MONITORING PLAN

Pursuant to Section 4.c of the COA, Coterra shall:

- utilize isolation mechanisms and continuous monitoring in real-time by Coterra's 24-hour Operations Control Center ("Control Center") for gas wells identified on Exhibit G of the COA in the Dimock/Carter Road Area within 2,000 feet measured horizontally from the vertical well bore and 2,000 feet measured from the surface above the entire length of the new Coterra horizontal wellbores;
- monitor all drinking water wells within 3,000 feet of Coterra's surface location for the new wellbores, subject to landowner consent, by conducting pre-drill and post-completion water sampling for dissolved methane;
- plug and abandon the wells identified on Exhibit G of the COA drilled by Cabot within 1,000 feet measured horizontally from the vertical well bore and 1,000 feet measured from the surface above the entire length of the new Coterra horizontal wellbores in accordance with Paragraph 4.b of the COA; and
- report monitoring results to the Department.

2.1 Monitored Gas Wells

While not required by the COA, in order to understand the current status of Monitored Gas Wells, Coterra is implementing an evaluation plan. Coterra will notify the Department of the intended schedule of that plan. The evaluation plan will involve conducting a thorough assessment of the wellbore integrity for all Monitored Gas Wells. This assessment may include various tests and evaluations, such as pressure build-up testing, annular flow rate testing, or modern cement bond logs, results of which will be shared with the Department. Based on the results of these evaluations, Coterra may conduct remedial operations on Monitored Gas Wells in advance of drilling and/or completions work on associated gas wells as may be deemed appropriate by Coterra engineers.

In order to address scenarios specific to each gas well pad to be drilled, Coterra has developed a number of monitoring plans that allow Coterra to comply with its monitoring obligations under Sections 4.b.iv and 4.c.i of the COA. All monitoring plans incorporate monitoring thresholds applicable to each well. In the event that a threshold is triggered, the process outlined in each monitoring plan will be activated to promptly alert the Control Center. Subsequently, the Control Center will immediately contact responsible personnel who will deploy appropriate measures to investigate and respond to the threshold notification.

In addition to the findings of the evaluation plan referenced above, existing wellbore construction, the existing layout (including proximity of each Monitored Gas Well to the Lauer Pad development), and history of each Monitored Gas Well will be considered in developing the monitoring plan assigned during the offset drilling and completion of each new Lauer Pad well. Below are various monitoring components which may be utilized to assist in monitoring efforts depending on Coterra's evaluation:

- Setting and configuring pressure alarms on the tubing and casing;
- Installing flow meters to measure the annular flow rates on accessible annuli;
- Installing inline orifice plates with upstream transducers on annular piping;
- Replacing 5,000 psi production wellheads with two 10,000 psi 5 1/8" valves;
- Installing two retrievable bridge plugs in the production tubing;
- Installing a temporary 500-hundred-barrel gas buster tank with a diffuser;
- Installing a cast iron bridge plug inside the casing of a Monitored Gas Well;
- Having 24-hour manned coverage on location to actively monitor the Monitored Gas Wells.
- Performing any additional monitoring or remedial measures as may be dictated by circumstances realized in the field.

Based on currently available information, two different monitoring plans will be utilized to monitor the sixteen Monitored Gas Wells associated with the new Lauer Pad development.

A comprehensive assessment of the layouts of each Monitored Gas Well in relation to the Lauer Pad drilling and completion activity will be conducted. Specifically, the Lauer Pad completions plan will be reviewed, and an assessment will be conducted to identify the stages that may impact the Monitored Gas Wells.

2.1a Monitoring Plan 1

Table 2.1a Monitored Gas Wells in Exhibit G

Well Name	API Number	Proximity
Ely, K. 5h-nw	3711520054	More than 1,000ft; Less than 2,000 ft

Monitoring Plan 1 is appropriate for Monitored Gas Wells identified in our comprehensive assessment that will have minimal communication with the Lauer Pad development shown in Table 2.1a. This encompasses existing gas wells that are more than 1,000 feet away from the planned Lauer wells or wells that have minimal risk of communication with the Lauer Pad development. The implementation of Monitoring Plan 1 typically involves configuring remote pressure alarms on both the tubing and casing of the Monitored Gas Wells to facilitate real-time notification to the Control Center in the event that pressure exceeds 90% of the maximum allowable working pressure. Thus, if this threshold is exceeded, the Control Center would notify appropriate personnel to suspend the nearby offset drilling or completion activity on the current stage and the Department would be notified in accordance with the AOR Guidelines[1] and as outlined in section 2.4. However, the only gas well identified in Table 2.1a is the Ely, K. 5h-nw which has already been plugged and abandoned and will not have alarms set for monitoring. In

[1] In addition, in accordance with best management practices, Coterra will follow the Department's "Guidelines for Implementing Area of Review ("AOR") Regulatory Requirements for Unconventional Wells 800-0810-001" ("AOR Guidelines") for monitoring of any additional existing gas wells within 2000' of the new Lauer Pad gas wells.

this case, visual monitoring of the Ely, K. 5h-nw will be employed as the offset hydraulic fracturing in the new gas wells approaches the Ely, K. 5h-nw.

2.1b Monitoring Plan 2

Table 2.1b Monitored Gas Wells in Exhibit G

Well Name	API Number	Proximity
Costello, J. 1v	3711520036	Less than 1,000 ft
Costello, J. 2v	3711520043	Less than 1,000 ft
Ely, K. 2v	3711520015	Less than 1,000 ft
Ely, K. 4h-nw*(4V)	3711520034	Less than 1,000 ft
Ely, K. 6h-se	3711520041	Less than 1,000 ft
Gesford, K. 1v	3711520040	Less than 1,000 ft
Gesford, K. 2v	3711520033	Less than 1,000 ft
Gesford, K. 4v	3711520091	Less than 1,000 ft
Gesford, K. 5h-nw	3711520201	Less than 1,000 ft
Gesford, K. 7h-nw	3711520163	Less than 1,000 ft
Lewis, H. 1v	3711520035	Less than 1,000 ft
Lewis, H. 2v	3711520030	Less than 1,000 ft
Teel, C. 1v	3711520007	Less than 1,000 ft
Teel, C. 2v	3711520010	Less than 1,000 ft
Teel, C. 5	3711520024	Less than 1,000 ft

Monitoring Plan 2 is appropriate for Monitored Gas Wells identified in our comprehensive assessment that have future plugging plans shown in Table 2.1b. A bridge plug will be set inside such Monitored Gas Wells. A flow meter or an inline orifice plate with an upstream transducer will be installed on the backside vent header, precisely between the wellhead and the vent storage tank. A flow meter or a differential pressure alarm will be configured to promptly notify the Control Center should the flow rate or differential pressure have significant increases or otherwise anomalous changes beyond that which would be typically expected between proximal gas wells during drilling and completions activities. If the flow rate or differential pressure has a significant increase or change, the Control Center will notify appropriate personnel to suspend the nearby offset drilling or completion activity on the current stage and the Department will be notified in accordance with the AOR Guidelines[1] and as outlined in section 2.4. There are several wells identified on this list that are already plugged and abandoned or are in the process of being plugged and abandoned in accordance with previous operations monitoring plans for drilling and completions activity in the Dimock/Carter Road Area. Such monitored gas wells will not have metering or pressure alarms set for notification through the Control Center; rather, visual monitoring will be employed for these gas wells as the offset hydraulic fracturing in the new gas wells approaches.

Coterra's monitoring plan assignments are based on currently available data, as described above. The results of the evaluation plan and other circumstances, such as real-time monitoring, may provide information indicating that a different monitoring plan would be more appropriate for a

given Monitored Gas Well. Should this occur, Coterra will communicate any changes to the Department as part of its reporting obligations in Section 4.c of the COA.

2.2 Monitoring Drinking Water Wells

COA Section 4.c.ii outlines Coterra's obligations regarding monitoring of drinking water wells within 3,000 feet of the surface locations of each new wellbore. Beyond the requirements specified in the COA, Coterra has elected to conduct a round of pre-drill sampling, subject to landowner consent, at all drinking water supplies within a 3,000-foot radius of the surface locations of the new Lauer Pad wellbores and analyze each sample for Coterra's full, standard pre-drill suite of parameters (see minimum parameter list in Table 2.2 for reference). Further, subject to landowner consent, Coterra plans to collect an additional pre-drill dissolved methane sample from each drinking water supply within 3,000 feet of the Lauer Pad surface hole locations prior to setting conductors. In addition, pursuant to COA Section 4.c.ii., Coterra will collect dissolved methane samples from each drinking water supply within the 3,000-foot radius of the surface locations of the new Lauer Pad wellbores post-completion, subject to landowner consent. All results will be shared with the Department pursuant to Paragraph 4.c.iv of the COA.

Table 2.2 - Pre-Drill Sampling Analyte List

Dissolved Gases	VOCs	Wet Chemistry/Miscellaneous
Ethane	Benzene	Oil & Grease
Isobutane	n-Butylbenzene	Alkalinity (as CaCO3)
Methane	sec Butylbenzene	Bromide
n_butane	Ethylbenzene	Chloride
Propane	Isopropyl Benzene	Ethylene Glycol
Metals	p-Isopropyltoluene	Hardness
Aluminum	Naphthalene	MBAS
Arsenic	n-Propylbenzene	Total Nitrite/Nitrate Nitrogen
Barium	Toluene	Sulfate
Cadmium	Xylenes (Total)	Sulfide
Calcium	1, 2, 4 Trimethylbenzene	TDS
Chromium	1, 3, 5 Trimethylbenzene	TSS
Iron	**Field Parameters**	Turbidity
Lead	Conductivity	
Lithium	Dissolved Oxygen	
Magnesium	ORP	
Manganese	pH	
Potassium		
Selenium		
Sodium		
Strontium		
Vanadium		
Zinc		

2.3 Plugging of COA Exhibit G Wells Associated With the Lauer Pad

Section 4.b of the COA imposes plugging obligations for existing gas wells listed in Exhibit G of the COA. Table 2.3 lists the Monitored Gas Wells identified in Exhibit G that will be plugged in connection with development of the Lauer Pad as outlined in Section 4.c.iii of the COA.

Table 2.3 Monitored Gas Wells in Exhibit G To Be Plugged

Well Name	API Number
Costello, J. 1v	3711520036
Costello, J. 2v	3711520043
Ely, K. 2v	3711520015
Ely, K. 4h-nw*(4V)	3711520034
Ely, K. 6h-se	3711520041
Gesford, K. 1v	3711520040
Gesford, K. 2v	3711520033
Gesford, K. 4v	3711520091
Gesford, K. 5h-nw	3711520201
Gesford, K. 7h-nw	3711520163
Lewis, H. 1v	3711520035
Lewis, H. 2v	3711520030
Teel, C. 1v	3711520007
Teel, C. 2v	3711520010
Teel, C. 5	3711520024

Prior to plugging, during the development of the Lauer Pad, the Monitored Gas Wells in Table 2.3 will be monitored as outlined in Section 2.1b, above, to satisfy Coterra's obligations in Sections 4.b.iv and 4.c.i of the COA. It should be noted that the Costello, J. 1v, Costello, J. 2v, Ely, K. 2v, Ely, K. 4h-nw*(4V), Gesford, K. 4v, Lewis, H. 1v, and Lewis, H. 2v are already plugged and abandoned, and that the Ely, K. 6h-se is in the process of being plugged and abandoned.

The remaining unplugged Monitored Gas Wells in Table 2.3 will be plugged after completion operations of the new gas wells on the Lauer Pad, unless safety or operational considerations dictate a well be plugged sooner. At that time, Coterra will have the most up-to-date information on the status of the wells to develop the most appropriate plugging plans. Plugging shall be in accordance with the requirements of 58 Pa.C.S. § 3220 and 25 Pa. Code §§ 78a.91-78a.98, or an appropriate Department-approved alternative under 25 Pa. Code § 78a.75. No later than 60 days after the completion of the proposed wells on the Lauer Pad, Coterra will begin filing notices of intent to plug the remaining unplugged Monitored Gas Wells in Table 2.3, which shall include the respective plugging and abandonment plans and will follow the applicable plugging and abandonment procedures provided under Pennsylvania law. Any adjustments to the plugging and abadonment schedule shall be coordinated with the Department based on safety and/or operational considerations.

2.4 Reporting Monitoring Results to the Department

Coterra will report gas well and drinking water well monitoring results to the Department in accordance with its obligations in Section 4.c.iv of the COA.

Specifically, for monitoring results associated with the Monitored Gas Wells, annular pressure and/or flow data and associated time series graphs will be submitted when available following the drilling and/or completion of all new Lauer Pad gas wells or as otherwise requested by the Department. If any AOR thresholds are exceeded, Coterra will follow the recommendations specified in the AOR Guidelines. Additionally, any other diagnostic logs, tests, or evaluations conducted pursuant to Section 2.1 above will be made available to the Department as requested.

Regarding drinking water supply monitoring results, copies of all analytical data packages will be provided to the Department following receipt of the final reports from the respective laboratories.