

CCR 0994-23-02 Well Pad

Dust Mitigation Plan

ECMC Rule 304.c.(5)

ECMC Rule 427. Dust



**Laramie Energy, LLC
3199 D Rd. Bldg A2
Grand Junction, CO 81504**

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1. INTRODUCTION

The CCR 0994-23-02 Dust Mitigation Plan was developed in compliance with the Colorado Energy and Carbon Management Commission's (referred to hereinafter as ECMC or the Commission) Rule 304.c.(5) *Dust Mitigation Plan* and Rule 427 *Dust* under 400 Series of the Commission's rules. The CCR 0994-23-02 Dust Mitigation Plan addresses the requirements of ECMC Rule 304.c.(5) as part of the Form 2A Location Assessment Permit Application.

2. CCR 0994-23-02 WELL PAD

Laramie Energy, LLC (Laramie) (Operator # 10433) is pursuing a Form 2A for an Oil and Gas Location Assessment permit in Mesa County, Colorado. The CCR 0994-23-02 Well Pad (CCR Pad) is a proposed, new location. Laramie is proposing to drill two (2) new horizontal wells at the CCR Pad in Section 23 of Township 9 South, Range 93 West, 6th P.M. The CCR Pad is adjacent to existing infrastructure, reducing surface disturbance proposed in the 2024 CCR 0994-23-02 Oil and Gas Development Plan (OGDP).

The site's location is within Laramie's Plateau Valley operations area and will be tied into to existing infrastructure to minimize dust and traffic impacts. Laramie operates support facilities in the area that will accommodate operations at the CCR Pad. The surface lands are privately owned. The Area of Disturbance, Working Pad Surface (WPS), buried gas pipeline and water lines Right-of-Way (ROW), and access road will be constructed on surface owned by Colorado Canyon Ranch, LLC (CCR).

Laramie will utilize a closed-loop drilling system at the CCR Pad. Both water-based bentonite drilling fluids and oil-based drilling fluids will be utilized for the two new horizontal wells. The site will operate in accordance with applicable local, state, and Federal regulations.

The well pad is located approximately 6.5 access/travel miles east of Collbran, Colorado. The nearest public road intersection is Mesa County Road 64 3/10 (64 3/10 Rd) (also known as Brush Creek Road) and HWY 330. The CCR Pad is located approximately 1,560 feet southeast (mapped distance) from the nearest public road, 64 3/10 Rd.

OGDP Title: 2024 CCR 0994-23-02 OGDP

Location Name: CCR 0994-23-02

Location ID: New Location

Legal Description: NWNE of Section 23, Township 9 South, Range 94 West, 6th P.M.

Location Coordinates: Latitude: 39.268132°; Longitude: -107.847692°

Elevation: 7142 feet

County: Mesa

General Location: 6 mapped miles east of Collbran, Colorado.

Zone District: Agricultural, Forestry, Transitional District (AFT)

Surface Owner: Colorado Canyon Ranch, LLC

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Operations will be conducted in the following phases at the CCR Pad: construction, production equipment installation, drill rig mobilization, drilling, completions and flowback (including equipment mobilization, staging, and demobilization), production, interim reclamation, inspections, and final grading/reclamation of the site. Inspection activities will occur during the lifespan of the site. Laramie anticipates that the well pad will remain in production for approximately 30 years, based on the average lifespan of wells within the area. **Table 1** details the anticipated timeframe for each operational phase.

Table 1. Timeframe for Operational Phases

Phase/Activity /Stage	Timeframe (Days)
Construction	50
Production Equipment Installation	30
Drilling Mobilization	7
Drilling	46
Drilling Demobilization	7
Completions Mobilization	10
Completions and Flowback	48
Completions Demobilization	10
Interim Reclamation	14
Production	Up to 30 years

3. CCR 0994-23-02 WELL PAD DUST MITIGATION PLAN

The CCR Dust Mitigation Plan (DMP) details the treatment of unpaved roads and disturbed surfaces to reduce dust produced by vehicle traffic, and construction activities, or wind. The application of the DMP will reduce airborne particulate matter during operations and vehicular transportation to ensure compliance with ECMC and local jurisdictional requirements.

Laramie implements fugitive dust controls throughout the Plateau Valley operations area. Employees are trained to identify conditions and operate to minimize fugitive dust emissions. The subject pad will comply with standards as stated in ECMC Rule 427 Dust section of the 400 series.

In order to minimize and mitigate fugitive dust, Laramie has incorporated several practices. Appropriate speed limits have been designated for vehicles on unpaved roadways. Restriction of land disturbance construction activity during high-wind days are also enforced. Field employees will notify operations if dust is observed. Water trucks are utilized to wet roadways, as needed, when natural moisture is insufficient to prevent airborne dust. Water trucks apply magnesium chloride or fresh water to roadways depending on location. Laramie's access roads within the transportation route are treated with fresh water to reduce dust emissions.

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4. SOIL TYPE – ECMC RULE 427.a.(1)

A soils report from the Natural Resource Conservation Service (NRCS) indicates the CCR Pad Area of Disturbance, Working Pad Surface, and access road are all within the same NRCS Map Unit: Fughes clay loam, 2 to 6 percent slopes (Map Unit 37).

Table 2. NRCS Map Unit and Disturbance

Disturbance	Map Unit	NRCS Soil Description	Disturbance Per NRCS Soil Map Unit (Acres)
Well Pad, Access Road & Pipeline	37	Fughes clay loam, 2 to 6 percent slopes	10.2

Fughes clay loam, 2 to 6 percent slopes (Map Unit 37)

The Fughes clay loam is composed of Fughes and similar soils (90%) with minor components (10%). The Fughes clay loam occurs at an elevation of 6,800 feet to 7,400 feet and is classified as “prime farmland if irrigated”. Classified as hydrologic soil group C with a high runoff class. The depth to water table is more than 80 inches.

The Fughes is a well drained clay loam / silty clay loam. The setting landform is terraces and mesa. Fughes parent material is mixed rock alluvium derived from sedimentary rock and/or mixed rock colluvium derived from sedimentary rock.

Table 3. Fughes-Hesperus Complex (Map Unit 39) Profile

Location	Composition	Typical Profile	
Area of Disturbance, Working Pad Surface, Pipeline and Access Road	Fughes	H1 - 0 to 7 inches	clay loam
		H2 - 7 to 18 inches	clay loam
		H3 - 18 to 50 inches	clay loam
		H4 - 50 to 60 inches	silty clay loam

5. PROPOSED VEHICLE SPEED LIMIT – ECMC RULE 427.a.(2)

Vehicles will utilize public roads and a private proposed access road to access the CCR Pad. Approximately 2,542 feet of new unpaved, gravel private access road will be used to reach the CCR Pad. The new access road will result in 1.9 acres of disturbance. Laramie will maintain the new access road to ensure safe and reliable access. Private access unpaved roads maintained by Laramie within the Plateau Valley operations area will not exceed speeds of 25 miles per hour (m.p.h.) During dry conditions or when dust is visible, vehicles will reduce speeds based on conditions. Field employees will notify operations if dust is observed.

6. SOIL DISTURBANCE – ECMC RULE 427.a.(3)

The construction of the CCR Pad will result in approximately 10.2 acres of disturbance, which includes the Area of Disturbance, Working Pad Surface, access road, and buried pipeline segment (gas pipeline and water line). The Area of Disturbance will be 7.5 acres and the Working Pad Surface will be 4.3 acres.

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CCR Pad access road will result in 1.9 acres of new disturbance to construct the new access road. Approximately 2,542 feet of new access road would be constructed to access the subject well pad.

Approximately 703 feet of buried pipeline will be installed to tie into existing pipeline and water gathering line infrastructure, resulting in 0.8 acres of short-term disturbance.

Interim reclamation will begin after all wells are drilled and completed as planned with production facilities installed at the pad. During interim reclamation, the cut and fill slopes will be reshaped and contoured, reclaiming approximately 5.2 acres. The long-term disturbance associated with this pad will be 4.2 acres for the production phase (2.3 acres for Production Pad Surface plus 1.9 acres for the access road).

Table 4. Disturbance Acreage

Well Pad		Disturbance in Acres
Area of Disturbance		7.5
Working Pad Surface		4.3
Area to be Interim Reclaimed		5.2
Production Pad Surface (after Interim Reclamation)		2.3
Access Road		Disturbance in Acres
Proposed Access Road Acreage (2,542 feet length)		1.9
Pipeline		Disturbance in Acres
Proposed Pipeline (703 feet length)		0.8
Disturbance Totals - Acres		
TOTAL DISTURBANCE	Short-term	Long-term
10.2	6.0	4.2

7. ACCESS ROAD – ECMC RULE 427.a.(4)

The CCR Pad Working Pad Surface, new buried pipeline segment, and proposed access road will be located on private surface lands owned by CCR.

The new access road will connect to Mesa County public road 64 3/10 Road. On August 20, 2024, Mesa County issued the driveway permit (Access Permit #: DW24-0139). At the intersection of the CCR access road entrance with 64 3/10 Rd, the public road is graveled. Laramie will apply gravel to the CCR Pad access road and well pad. Initial gravel application shall be a minimum of 6 inches. Laramie will provide timely, year-round road maintenance and cleanup of privately owned access roads. A typical maintenance schedule will include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement, and dust abatement.

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Unpaved roads and staging areas operated by Laramie shall be watered as necessary to maintain no visible vehicle travel dust emissions when being used by construction vehicle traffic. Laramie will maintain the site-specific access road and private lease road for the CCR Pad.

8. TRUCK TRIPS – ECMC RULE 427.a.(5)

The following **Table 5** summarizes the expected average Vehicles Per Day (VPD) trips and maximum trips per activity for the operational life of the well pad. One (1) vehicle accessing the pad will result in two (2) trips: one trip for entering the site and one trip for leaving the site.

Table 5: Trip Generation – Total Trips Accessing CCR Pad

STAGE	TIME INTERVAL (DAYS)	TOTAL MAXIMUM TRIPS GENERATED PER ACTIVITY	AVERAGE VPD TRIPS PER ACTIVITY
Construction	50	280	5.6
Production Installation	30	644	21.5
Drill Rig Mobilization	7	192	27.4
Drilling	46	590	12.8
Drilling Demobilization	7	192	27.4
Completions Mobilization	10	530	53
Completions; Flowback	48	4,128	86
Completions Demobilization	10	530	53
Production			2
Interim Reclamation	14	64	4.6
Inspections			0.07

The first 222 days of operations will incur the most vehicular trips, encompassing mobilization, drilling, completions, and flowback activities. After interim reclamation activities, vehicle trips will average 60 trips per month (an average of 1 vehicle accessing the well pad daily).

9. SUPPRESSING FUGITIVE DUST – ECMC RULE 427.a.(6)

During construction and earthwork activities, employees and contractors will report if wind speeds increase, and dust is observed. Laramie will implement dust abate measures, as stated in the DMP, to reduce and prevent dust caused by wind.

To prevent dust from wind when the site is not actively being accessed, Laramie will employ watering. Inactive excavated or graded soils and soil piles shall be sufficiently watered or sprayed with a soil stabilizer to create a surface crust or shall be covered. Employees and contractors will be notified if weather events that may promote dust are predicted or observed.

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During completions activities, frac sand (proppant) will be utilized. Approximately 20,000,000 pounds of proppant will be required for the hydraulic fracturing per well, resulting in a total of 40,000,000 pounds of proppant for the two horizontal wells. Onsite storage of proppant will consist of a 6-pack of silos that will hold 2,500,000 pounds of proppant. Delivering of the proppant will result in approximately 864 trucks (1,728 vehicular trips) to the site.

10. MINIMIZING FUGITIVE DUST – ECMC RULE 427.b.

Laramie will adhere to ECMC Rule 427.b. Laramie will implement fugitive dust controls throughout the Plateau Valley operations area as stated in the CCR Pad Dust Mitigation Plan to minimize dust caused by operations. The Groundhog Gulch Pond is located on property owned by Laramie. Laramie owns the water rights of Groundhog Gulch Pond. Water from the pond is an available source when there are no calls on the river. Historically, the Buzzard Creek goes on call during late spring and remains on call until September. During years of reduced precipitation, the water may go on call at Cameo (Colorado River). When Buzzard Creek is not on-call, Laramie is able to fill Groundhog Gulch Pond. Groundhog Gulch Pond is also able to receive irrigation water run-off from Erie Canal during the irrigation season. Fresh water may also be purchased from Currier Reservoir. The Currier Reservoir established water rights are sourced from the reservoir supplied by Sheep Creek. Fresh water transported via truck will be used for drilling activities and/or dust abatement.

11. APPLYING DUST SUPPRESSANT – ECMC RULE 427.c.

Laramie will utilize fresh water and/or magnesium chloride as a dust suppressant depending on conditions and location. Any chemical-based dust suppressant shall be applied per manufacturer's recommendations and in sufficient quantities to maintain compliance.

11.1. PROHIBITED FLUIDS FOR DUST SUPPRESSION – ECMC RULE 427.c.1.

Laramie will not apply the following fluids for dust suppression as state in ECMC Rule 427.c.(1):

- Produced water
- E&P Waste or hazardous waste
- Crude oil or any oil not specifically designed for road maintenance
- Solvents
- Any process Fluids

11.2. DUST MITIGATION NEAR WATER BODIES - ECMC RULE 427.c.(2)

Laramie will adhere to ECMC 427.c.(2) and will only utilize fresh water (*potable or non-potable*) to conduct dust suppression activities within 300 feet of the ordinary high-water mark of any water body. Fresh water sources are detailed in **Table 6**.

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Table 6: Fresh Water Sources

Name	Owner	Parcel #	Coordinates: Latitude/ Longitude	Water Source
Groundhog Gulch Pond	Laramie Energy, LLC 1001 17 th Street Suite 1900 Denver, CO 80202	2661-282-00-319	39.251261° / -107.781546°	Pond (Surface Water)
Currier Reservoir	Vander Laan Merial C PO Box 27059 Denver, CO 80227-0059	2657-071-00-003	39.290369° / -107.718387°	Reservoir (Surface Water)
Takeout From Buzzard Creek of Water Sources Listed Above		2665-144-00-020	39.272855° / -107.851437°	Water Sources Listed Above

11.3. SAFETY DATA SHEETS – ECMC RULE 427.c.(3)

Laramie will maintain SDS for any chemical-based dust suppressant utilized within the CCR Pad working pad surface and access road. Records will be made available upon request. Any chemical-based dust suppressant shall be applied per manufacturer’s recommendations and in sufficient quantities to maintain compliance.

12. SURROUNDING AREA - ECMC RULE 427.d.

The DMP was designed to mitigate and minimize dust impacts to any receptors, including wildlife and vegetation in the surrounding area.

HPH (aquatic sportfish waters) would not be impacted associated with dust but rather the impacts from the type of dust suppressant used (such as mag chloride vs. fresh water). Laramie has committed to using only fresh water for dust suppression within 300 feet of the ordinary high-water mark of Buzzard Creek during pre-production and production transportation activities associated with the CCR Pad in order to mitigate potential impacts to aquatic sportfish habitat present along Buzzard Creek.

There are two (2) RBUs within 2,000 feet of the proposed CCR Pad. In addition, there are two RBUs situated near the intersection of HWY 330 and 64 3/10 Road (as known as Brush Creek Road). HWY 330 is paved in the area and intersection of 64 3/10 Road & HWY 330 apron is paved, reducing the potential impacts from dust at the intersection. 64 3/10 Road does transition to a gravel road north of the RBUs. In order to minimize impacts from proppant delivery, Laramie will utilize a fully enclosed sand containerized proppant delivery system that eliminates dust during transport.

13. CUMULATIVE DUST IMPACTS – ECMC RULE 427.e.

Laramie shall implement dust abatement measures as needed to prevent cumulative dust impacts from vehicular traffic, equipment operations, or wind events. BMPs such as creating efficient travel routes, reducing vehicular travel when possible, and observing wind and soil conditions will mitigate and minimize fugitive dust.

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14. BEST MANAGEMENT PRACTICES – ECMC RULE 427.a.(7)

Laramie has adopted the following best management practices to mitigate dust during construction and transportation activities:

- Vehicles will not travel at speeds over 25 m.p.h. on unpaved roads.
- During dry conditions or when dust is visible, vehicular speeds will be reduced.
- Restriction of land disturbance construction activity during high-wind days.
- Field employees will notify operations if dust is observed.
- Water trucks will be utilized to wet roadways, as needed, when natural moisture is insufficient to prevent airborne dust.
- Water trucks will apply magnesium chloride or fresh water to roadways depending on location.
- Construction activities that occur on unpaved surfaces shall be discontinued during periods when activities are causing visible dust plumes that cannot be avoided by approved dust suppression methods.
- Contractors shall conduct a visual inspection of the vehicle wheels and the wheels of the equipment loaded upon each vehicle to assess the presence of dirt.
- Laramie will use fresh water sources for dust suppression within 300 feet of the ordinary high-water mark of any water body within the Plateau Valley operations area.
- Proppant BMP: During the completions phase, Laramie will utilize a fully enclosed sand containerized proppant delivery system that eliminates the use of pneumatic transfer on location. This methodology utilizes a gravity choke feed system that reduces dust significantly. The dust levels from this system are minimal and below Occupational Safety and Health Administration (OSHA) permissible exposure limit which eliminates the need for additional Personal Protective Equipment (PPE).
- Proppant BMP: Operator will implement the use of traffic signs when leaving the location to remind drivers of specific routes to utilize.