

**Response to February 27, 2019 Inspection
Document Number: 682504527**

COGCC conducted an inspection of the LD07-01 pad (Location ID 460414) on February 27, 2019 (Document 682504527) and submitted the inspection on February 28, 2019. During that inspection, COGCC made the following observations:

Stormwater Comment (1): “Surface roughening (tracking) does not appear to be sufficient as slopes remain loose material insufficiently stabilized and at risk to erosion degradation. See photos 9-12, 15 and 17. Original corrective action remains applicable.”

Stormwater Corrective Action (1): “Install required stormwater and erosion control BMPs in accordance with Rule 1002.f and stabilize soil stockpiles in accordance with 1002.c”

Response (1): Please refer to the photo log below for responses to photos 9-12, 15, and 17. Noble would like to note that COGCC issued a corrective action date of 2/27/2019; however, the inspection was not submitted until the following day, on February 28, 2019.

Stormwater Comment (2): “Inspection doc. #682504514 documented ongoing wind erosion occurring on location and required operator to comply with 1002.e. Operator submitted FIRR doc. #401952598 stating a water truck is being used to mitigate wind erosion. Inspector did not observe a water truck on location that would be available to immediately address erosion concerns as they arise.

Though wind erosion was not occurring at time of inspection, location remains at risk to erosion degradation as soils observed on location and location's perimeter remain loose and unstabilized. See attached photo document.”

Stormwater Corrective Action (2): “Operator shall continue compliance with rule 1002.e and 1002.f and maintain BMPs to ensure the disturbance area remains stabilized/protected from erosion degradation.”

Response (2): Noble continues to maintain compliance with Rule 1002.e (minimizing disturbance footprint), by phasing construction activities. Activity is currently taking place on the planned facility pad; however, there has been no disturbance on the planned well pad within that same disturbance footprint.

As COGCC noted, Noble is employing a water truck to reduce wind erosion. The water truck is used for several pads in the area and must make trips to and from the water source to obtain water to apply to the pad. Therefore, it may not be seen on this pad at a given time, but it is close by and ready to deploy quickly.

Noble has provided additional information in the photo log below.

Stormwater Comment (3): Operator appears to have traveled over the surface roughening (ripping) on the east end of the location. BMP is no longer in proper functioning condition and requires maintenance.

Stormwater Corrective Action (3): Install required stormwater and erosion control BMPs in accordance with Rule 1002.f

Response (3): It is unclear from the photo provided by COGCC (photo 16) that the ripping requires maintenance; however, Noble has re-ripped this location to ensure the ripping is properly maintained. Please see additional comments in the photo log below.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 9. Photo taken from the north end of the disturbance area, facing northeast. Photo shows soil stockpile.

Noble Energy –2/28/2019

This photo was called out in the corrective action as one that documents that tracking was insufficient. From this distance, marks from tracking efforts are visible and the stockpile appears to be well-maintained.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 10. Continued from photo 9. Photo shows operator appears to have attempted to track the soil stockpile. Photo shows tracking does not appear to have been adequate as soils have not been sufficiently stabilized and remain loose material at risk to erosion degradation.

Noble Energy – 2/28/2019

The inspector has indicated that tracking does not appear to be sufficient. This photo shows the individual rows and treadmarks from the vehicle tracks, indicating the tracking was properly done and that the tracking is sufficient to mitigate erosion. Noble will continue to evaluate and maintain tracking, as needed.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 11. Continued from Photo 11. Photo shows tracking does not appear to have been adequate as soils have not been sufficiently stabilized and remain loose material at risk to erosion degradation.

Noble Energy – 2/28/2019

This photo appears to show a boot mark in the tracked stockpile. Noble strives to achieve sufficient, compliant, and effective stormwater BMPs. In the context of COGCC photos 9, 10, and 12, the tracking appears to be effective and well maintained. The tracking, along with other site BMPs, appear to be mitigating erosion.

Noble attempts to maintain effective and compliant BMPs regardless of the level of activity on location. The loose soil noted in this photo (COGCC photo 11) caused by an apparent boot print appears to be an isolated incident. The additional photos represent an otherwise well-maintained BMP (COGCC photos 10 and 12).

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



Noble Energy – 2/28/2019

The inspector has indicated that tracking does not appear to be sufficient. This photo shows the individual rows and treadmarks from the vehicle tracks, indicating the tracking was properly done and that the tracking was sufficient to mitigate wind erosion. Noble will continue to evaluate and maintain tracking, as needed.

COGCC Photo 12. Continued from photo 10, see comments under photo 11.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 15. Photo taken from the soil stockpiles on the east end of the location. See comments under photo 10.

Noble Energy – 3/1/2019

Noble has removed this soil stockpile and re-tracked this area.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 16. Photo taken from the east end of the location. Photo shows operator appears to have driven over the surface roughening BMP along the perimeter of the location. BMP is no longer in proper functioning condition and requires maintenance.

Noble Energy – 2/28/2019

It is unclear from this photo where the ripping is in disrepair. This photo appears to show indentations where the tines have dug into the soil and small blocks of turned over soil that are commonly generated by ripping activities, indicating the ripping is in good repair. However, Noble has re-ripped this location at the request of COGCC.

This photo also shows how several BMPs are used together at the perimeter to mitigate erosion and sediment migration. Filtrexx can be observed on the left side of the photo at the disturbance area fenceline. To the right of the Filtrexx you can see vegetation, which provides additional stormwater treatment and wind erosion mitigation. Farther right, ripping has been installed to slow water and increase infiltration, prior to reaching the vegetation and the Filtrexx. Finally, the slopes at the far right have been tracked to further minimize erosion and sediment loss. The pad construction area in this photo is located outside of the frame, to the right.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 17. Photo taken from the soil stockpiles on the south end of the location. See comments under photo 10.

Noble Energy – 3/1/2019

Noble began removing this soil on 3/1/2019 and placed it on pad side slopes to enable revegetation of those slopes. Any remaining stockpiled soil was re-tracked at the end of the day.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 18. Photo shows Operator has installed an 8 inch diam. "Filtrexx SiltSoxx" wattle as a perimeter control. Operator has installed BMP by placing wattle upon the surface of the soil and staking in place. The following photos are examples that show that due to site conditions found commonly within rangeland (bumpy, rocky, changes in elevation affecting ground surface contact), this "lay on surface" installation practice is not appropriate or sufficient to allow this perimeter control to mitigate stormwater runoff on rangeland; BMP does not achieve a 100% ground surface contact to interrupt and mitigate stormwater runoff.

Noble Energy – 2/28/2019

Based on manufacturer's specifications, Noble believes that Filtrexx can properly be used in rangeland without trenching. Noble has deployed approximately 4,000 feet of Filtrexx at this location, and believes the imperfections noted in the inspector's photos are not indicative of inadequate BMP installation. Proper surface contact has been achieved on over 99% of the installation and will effectively minimize sediment migration. This, taken into consideration with the other BMPs used at this location, suggests that BMPs are properly selected and installed.

Noble does not believe that an all or nothing approach is in line with good engineering practice. When a BMP is effective at minimizing soil erosion and sediment migration, it is beneficial to use that BMP, particularly when used as part of a BMP treatment train. Please also refer to COGCC Photo 16 in this photo log.

Trenching also requires the removal of vegetation, which itself provides stormwater treatment. Trenching would also create disturbed soils at the perimeter of our location, where sediment would be more likely to migrate off-site.

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Location ID: 460414

COGCC – 2/27/19



COGCC Photo 19. See comments under photo 18.

Noble Energy – 2/28/2019

Please refer to the comments related to COGCC Photos 16 and 18.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 20. See comments under photo 18.

Noble Energy – 2/28/2019

Please refer to the comments related to COGCC Photos 16 and 18.

Name: LD07-01 Pad
Location ID: 460414

COGCC – 2/27/19



COGCC Photo 21. See comments under photo 18.

Noble Energy – 2/28/2019

Please refer to the comments related to COGCC Photos 16 and 18.