

COGCC conducted an inspection of the LC11-13 location (Location ID 445209) on April 3, 2017 (Document 682401989). During that inspection, COGCC made the following observations:

1. Protection of Soils: Topsoil does not appear to be protected from the construction of a road connecting the two pads and it is unclear where or how the topsoil has been stored and separated from contamination of fill material.

Response: A flowline was being built between the two pads. The contaminated fill in question was actually native soil (Epping Silt Loam) spoils from the excavation to lay the flowline. The material was removed long enough to lay the flowline and then replaced. The topsoil pile was not contaminated from imported fill

2. Surface Disturbance Minimization: It appears another access road point has been created along the western location, and without installing proper stormwater BMPs. The Operator shall use permitted access road points that were approved in the 2A process.

Response: The access point was actually a permitted ROW for a flowline between pads. The flowline ROW was excavated the flowline was laid then and backfilled.

3. Storm Water: The current BMPs do not appear to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. Did not observe any vehicle tracking pads at any of the access road points to control potential sediment discharges and to minimize rutting and vehicle tracking. Current BMPs installed to control sediment laden stormwater runoff have not been properly installed. The BMPs do not appear to be controlling sediment laden stormwater runoff from access road points and other portions of the location. Some areas have fill material blocking the BMP from properly functioning.

Response: Noble Energy completed repairs on the BMPs installed as per the Noble BMP manual. A copy of Noble's BMP manual was provided to the COGCC for reference. Additional Hydro-mulch has been applied, sediment traps have been cleaned, and erosion areas around the pad have been repaired. Noble will continue to maintain BMPs as needed.

Tracking pads were not installed because there were not issues with carrying sediment off site or issues with rutting.

Sediment traps are used in conjunction with other BMPs as needed to minimize the transportation of sediment in stormwater runoff. Noble uses sediment traps in conjunction with other BMPs to control transportation of sediment in stormwater runoff. The reference to Noble needing sediment traps with a capacity of 3600 ft<sup>3</sup> per acre was suggested when the only BMP on site was a sediment trap.

COGCC conducted an inspection of the LC11-13 location (Location ID 445209) on July 11, 2017 (Document 682402391). During that inspection, COGCC made the following observations:

1. Weeds: Weedy, annual Russian thistle (*Salsola tragus*) and Kochia (*Kochia scoparia*) were observed throughout most disturbance areas, including topsoil stockpiles. Operator needs to control and manage both Russian thistle and Kochia using the best available practices, as this is weed waste and will spread onto adjacent lands. At maturity, Russian thistle often breaks off at the soil line and tumble long distances with the wind, widely dispersing seed for several kilometers (Stallings et al. 1995). Seed remains viable 2-3 years (Larimer County 5th Edition Weed Management Reference Guide).
2. Protection of Soils: All topsoil stockpiles have significant weed cover including Russian thistle and Kochia with no perennial vegetation that would compete with the weedy vegetation and generally work to decrease weed growth.
3. Noxious Weeds: Vegetation in portions of the interim reclamation area is predominantly undesirable weedy plant species, Russian thistle and Kochia, and is likely hindering the establishment of desirable vegetation. These areas will need to be reseeded to establish a uniform vegetation cover of at least eighty (80) percent of reference area levels.
4. Storm Water: Noble Energy (Operator) does not appear to have implemented and maintained Best Management Practices (BMPs) to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation per Rule 1002.f.(2). Operator does not appear to have implemented BMPs in accordance with good engineering practices per Rule 1002.f.(2). Sediment discharge was observed along the southeast Tombstone pad. See attached inspection photos for more detail. Previous inspection noted BMPs have not been properly installed to control stormwater runoff from portions of the location. During the current inspection (7/11/17) these issues were still observed.
5. General: Noble Sent in FIRR Document #404277395 stating that the “Noble Energy completed repairs on BMPs installed as per Nobles BMP manual”. Per this inspection, stormwater controls were inadequate and the Operator had not installed sediment traps or other BMPs in accordance to their own BMP manual. The operator has failed to implement their suggested BMP specifications. For example, the five sediment traps installed for this location (totaling 13.30 acres of disturbance) have a sediment trap volume capacity of both dry and wet storage that equals approximately 182 ft<sup>3</sup>. Based off Noble’s own BMP Manual, the required sediment trap volume for one acre is 3,600 ft<sup>3</sup>. Therefore, based off Nobles BMP Manual, the sediment trap volume for the entire location would require approximately 47,880 ft<sup>3</sup> of sediment trap volume.

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Location ID: 445209

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#### COGCC – 7/11/17



Photo 1 Photo taken from the southwest Holliday pad, facing South. Sediment trap size was measured at ~5’x4’x1.5’ (width x length x depth= 30ft<sup>3</sup>) with a stabilized outlet. Silt fence BMP has not been properly installed. Silt fence is only pinned down and not buried/back-filled/compacted. Also, silt fence stakes should be installed to the outside of the silt fence, not inside of the silt fence.

#### Noble Energy – 7/27/17



Photo NBL1. The silt fence that was being used to keep newly fledged Killdeer from returning to the location and not a stormwater BMP has been removed. Perimeter ripping was completed and the sediment trap was re-installed and enlarged with a rock outwash and rock socks. Sediment traps are used in conjunction with other BMPs as needed to minimize the transportation of sediment in stormwater runoff



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**COGCC – 7/11/17**



Photo 2. Photo taken from the southwest Holliday pad, facing Southeast. Silt fence BMP has not been properly installed. Silt fence is only pinned down and not buried/back-filled/compacted. Also, silt fence stakes should be installed to the outside of the silt fence, not inside of the silt fence

**Noble Energy – 7/27/17**



Photo NBL2. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Once the weeds have died, slopes may be re-sloped and seeded or hydro-mulch may be reapplied for stabilization. The silt fence was not used as a stormwater BMP and has been removed as it was no longer needed for wildlife mitigation.

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1. Noxious Weeds: Vegetation in portions of the interim reclamation area is predominantly undesirable weedy plant species, Russian thistle and Kochia, and is likely hindering the establishment of desirable vegetation. These areas will need to be reseeded to establish a uniform vegetation cover of at least eighty (80) percent of reference area levels.

**COGCC – 7/11/17**



Photo 3. Photo taken between the Holliday pad and Tombstone pad on top of the topsoil stockpiles, facing South. Topsoil stockpile has predominately Russian thistle growth and Kochia growth which is not in compliance with Rule 1002.c. and Rule 1003. Hydromulch application was observed on the topsoil stockpile but is only a temporary BMP.

**Noble Energy – 7/27/17**



Photo NBL3. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died.



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**COGCC – 7/11/17**



Photo 4. Photo taken from the southeast Holliday pad, facing North. Sediment trap size was measured at ~5'x4'x1.5' (width x length x depth= 30ft<sup>3</sup>) with a stabilized outlet.. Silt fence has not been properly installed. Silt fence is only pinned down and not buried/back-filled/compacted. Also, silt fence stakes should be installed to the outside of the silt fence, not inside of the silt fence. Russian thistle growth observed throughout most disturbance areas.

**Noble Energy – 7/27/17**



Photo NBL4. The sediment trap was enlarged and the ditches draining to this sediment trap were recut and cleaned out. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died. The silt fence was not used as a stormwater BMP and has been removed as it was no longer needed for wildlife mitigation. Sediment traps are used in conjunction with other BMPs as needed to minimize the transportation of sediment in stormwater runoff



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**COGCC – 7/11/17**



Photo 5. Photo taken from the southeastern Holliday pad, facing North. Sediment trap size was measured at ~5’x4’x1.5’ (width x length x depth= 30ft<sup>3</sup>) with a stabilized outlet.

**Noble Energy – 7/27/17**



Photo NBL5. The sediment trap has been re-installed and enlarged. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died. Sediment traps are used in conjunction with other BMPs as needed to minimize the transportation of sediment in stormwater runoff



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2. Protection of Soils: All topsoil stockpiles have significant weed cover including Russian thistle and Kochia with no perennial vegetation that would compete with the weedy vegetation and generally work to decrease weed growth.

**COGCC – 7/11/17**



Photo 6. Photo taken from the southeastern Holliday pad, facing West. Silt fence improperly installed outside of the perimeter ditch, then surface roughening with filtrex BMP along a portion of the southeastern perimeter. Silt fence is only pinned down and not buried/back-filled/compacted. Also, silt fence stakes should be installed to the outside of the silt fence, not inside of the silt fence.

**Noble Energy – 7/27/17**



Photo NBL6. The sediment trap has been re-installed and enlarged and the perimeter ditch has been re-cut and cleaned out. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died. The silt fence was not used as a stormwater BMP and has been removed as it was no longer needed for wildlife mitigation



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**COGCC – 7/11/17**



Photo 7. Photo taken from the southeast location of the Tombstone pad, facing South. Sediment trap size was measured at ~7'x4.5'x2' (width x length x depth= 63ft<sup>3</sup>) with a stabilized outlet. Sediment discharge was observed beyond the outlet area and beyond the filtrex BMP along the corner of the fence. Refer to photos 9 & 10..

**Noble Energy – 7/27/17**



Photo NBL7. The sediment trap has been re-installed and enlarged. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died. Sediment traps are used in conjunction with other BMPs as needed to minimize the transportation of sediment in stormwater runoff



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**COGCC – 7/11/17**



Photo 8. Close up photo taken from the outlet area of the sediment trap illustrating sediment build up which indicate the sediment trap is not built to a sufficient size.

**Noble Energy – 7/27/17**



Photo NBL8. The rock outwash was re-installed removing sediment. The sediment trap has been re-installed and enlarged. Sediment traps are used in conjunction with other BMPs as needed to minimize the transportation of sediment in stormwater runoff



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**COGCC – 7/11/17**



Photo 9. Close up photo taken just beyond the sediment trap at the corner of the fence, illustrating stormwater runoff appears to be washing hydromulch material and sediment off location over the filtrex BMP.

**Noble Energy – 7/27/17**



Photo NBL9. Deposited sediment from the area was recovered and the sediment trap prior to the filtrex BMP was enlarged. Refer to photo NBL7



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**COGCC – 7/11/17**



Photo 10. Close up photo taken just beyond the corner of the fence, illustrating stormwater runoff appears to be washing hydromulch material and sediment off location.

**Noble Energy – 7/27/17**



Photo NBL10. Deposited sediment and hydromulched material was recovered and the sediment trap was enlarged.



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**COGCC – 7/11/17**



Photo 11. Photo taken from the southeast location of the Tombstone pad, facing North. Perimeter ditch with surface roughening BMP installed along the eastern perimeter. Portions of the fill slope may need additional stabilization as it appears hydromulch does not appear to be consistently observed throughout.

**Noble Energy – 7/27/17**



Photo NBL11. The slope has been re-stabilized, the ditch has been re-cut and cleaned out, and surface roughening/ripping was re-installed around the perimeter. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died.

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**COGCC – 7/11/17**



Photo 12. Photo taken from the northeast location of the Tombstone pad, facing Northwest. A berm ~18" has been constructed along the north, east and south pad perimeter, but does not appear to be properly compacted.

**Noble Energy – 7/27/17**



Photo NBL12. The berm has been repaired and re-compacted. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died.



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**COGCC – 7/11/17**



Photo 13. Photo taken from the entrance of the Tombstone pad, facing West. Straw wattle BMP does not appear to be properly installed and therefore not properly functioning.

**Noble Energy – 7/27/17**



Photo NBL13. The straw wattle was removed and the ditch has been re-cut. The ditch has been extended to the newly installed sediment trap to capture sediment in stormwater runoff from the access road and slope. Weeds have been mowed where accessible, and weeds have been sprayed site-wide. Hydromulch will be reapplied once the weeds have died.