

SGV 1J (Facility ID 288688)
Form 19 (Report of Corrective Actions Completed)
Narrative Attachment
Document Date – 07/28/2014

This Form 19 (Report of Corrective Actions Completed) was prepared for the purpose of requesting No Further Action (NFA) for remediation of impacted soil associated with a former pit at the SGV 1J Pad (Facility ID 288688) in Noble Energy's (Noble) Piceance area of operations. This document presents analytical evidence that observed impacts have been remediated to COGCC standards. A topographic map is included as an attachment to this form (Figure 1).

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Noble submitted the initial spill/ release and details report on 6/11/2014 (Document # 400624920).

Describe how source is to be removed:

Impacted soil within the pit was removed through excavation activities. After excavation activities were completed, confirmation soil samples were collected and submitted for laboratory analysis of total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Based on analytical results of samples collected during the pothole assessment described in the above mentioned Form 19, the required analytical suite was approved by the COGCC (via email from Carlos Lujan on 6/17/2014) to be reduced to TPH and BTEX. Please refer to the attached Table 1 for a summary of sample results from the pothole assessment. A pothole assessment map is provided as Figure 2. Laboratory analytical reports are included as an attachment.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Soil was excavated and treated onsite using soil shredding equipment and chemical oxidation via hydrogen peroxide. Once analytical data indicated previously impacted soil was compliant with COGCC Table 910-1 Concentration Levels, it was used to backfill the excavation. Please refer to the attached Table 2 for a summary of sample results used to confirm that the removed soil was treated to within COGCC standards.

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Groundwater was not encountered during remedial activities. Groundwater is estimated to be 295 feet below ground surface.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

The excavation was backfilled and the facility was re-contoured to original grade. All disturbed areas will be seeded with a weed free mix conforming to the surrounding location this fall.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? If yes, describe:

On June 24, 25, 26, and 27, 2014, confirmation soil samples were collected from sidewalls and the bottom of the excavated area (Southbottom@32', Southwestwall@29', Southwall@29', Southeastwall@29', Eastmiddlewall@29', Middlebottom@31', Westmiddlewall@29', Northbottom@20', Northeastwall@15, Northwestwall@15', and Northwall@10'). Soil samples were submitted for laboratory analysis of TPH and BTEX. Laboratory analytical results indicate all excavation soil samples were in compliance with COGCC Table 910-1 Concentration Levels. Sample locations are depicted on Figure 3 and laboratory analytical results are provided in Table 3. Laboratory analytical reports are included as an attachment.

Based on the analytical results, Noble requests a NFA designation for this pit.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Once impacted soil had been treated and analytical data indicated soil stockpiles were compliant with COGCC Table 910-1 Concentration Levels, the soil was re-used to backfill the excavation. Please refer to the attached Table 2 for a summary of sample results used to confirm that impacted soil was treated to within COGCC standards.