LINN Energy

Linn Operating, Inc.
Piceance Asset
Parachute, Colorado
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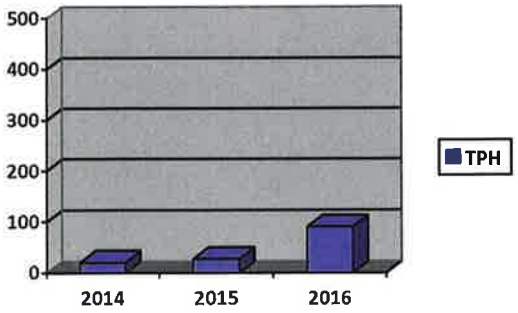
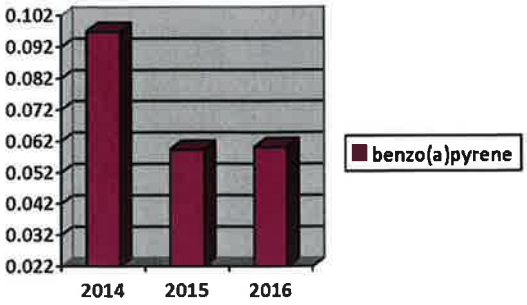
I11 697 Landfarming Plan – Facility ID #449048

- History
  - The I11 697 wellpad was built, but has never been drilled on. It has been used for a contractor's staging area for maintenance equipment used on the Garden Gulch Extension Road.

- Current Status
  - Approximately 9,136 cubic yards of spoil material that is being treated on this pad by land farming was transported in 2014 from the J13 697 wellpad materials from drilling, completions and from spoils that were uncovered during the interim reclamation of the J13 697 well pad in 2012. This material fails COGCC Table 910-1 for benzo(a)pyrene. Landfarming began in the summer of 2014. The lowest level of benzo(a)pyrene from soil samples taken bi-annually since 2014 is 0.029; the highest is 0.097; the latest sample taken on Oct. 9, 2016 was 0.0602. TPH has not exceed the COGCC Table 910-1 standards. This material was spread out on the well pad and was treated three times in 2016 (May 23, July 25, & Aug. 31).
  - In 2017, the landfarmed materials have been tilled three times with a Kubota farm tractor pulling a chisel point plow. Amendments applied during each tilling are phosphate and fulvic acid per pre-treatment analysis of nutrients in the soils.
  - A composite sample of the landfarmed material was taken on March 22, 2017. The lab results showed a substantial improvement in Benzo(a)pyrene from 0.0602 to 0.0158, meeting 910-1 standards. Discrete samples will be taken in Summer of 2017. Landfarming operations will continue once every 10-14 days until discrete samples confirm that the 910-1 standards were met.





- Treatment - 2017
    - Spoil will be turned over by a farm tractor with a chisel point plow 10 to 12 times (depending on weather and snow conditions) during the warm months in 2017. The soil will be turned over with the frequency established in the plan as a minimum or with a higher frequency if possible. The soil has been spread out to increase exposure to the atmosphere and sunlight as much as possible. Pre-treatment samples taken in the early spring will determine the amount of amendments that will be added to the spoil based on an analysis of nutrients present in the spoils.
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    - Amendments
        - Based on analysis, phosphorus fertilizer and fulvic acid will be added during each tilling operation to address the benzo(a)pyrene.

- Samples and lab tests
    - Phase I - Composite sample will be taken from 8 locations on the spoil pile in early summer and analyzed.
        - If composite sample passes, discrete samples will be taken to confirm the composite samples.
            - If discrete samples pass, spoil will be buried per COGCC rules.
            - If discrete samples fail, landfarming will continue.
        - If composite sample fails, landfarming will continue.
    - Phase
    - II - Composite sample will be taken from 8 locations on the spoil pile in late fall and analyzed.
        - Procedure will be the same as Phase I.

- Continuation
    - If discrete samples taken in summer of 2017 confirm that 910-1 is met, landfarming operations will cease.
    - If 910-1 standards are not met in 2017, the process will continue into 2018 until spoil passes COGCC Table 910-1, specifically benzo(a)pyrene.