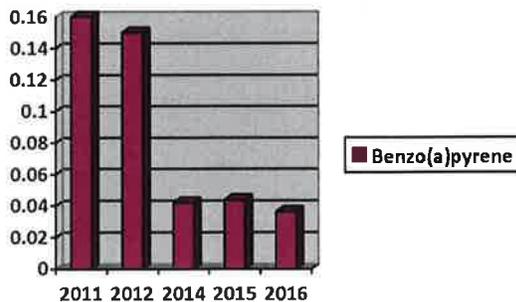


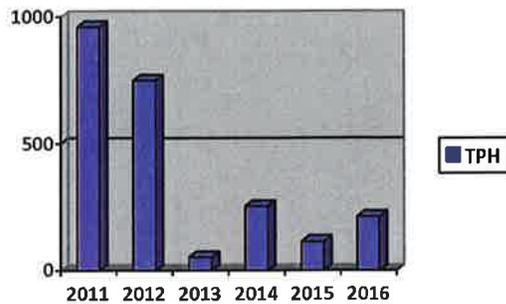
# LINN Energy

Linn Operating, Inc.  
Piceance Asset  
Parachute, Colorado  
May 17, 2017

## O06 696 Landfarming Plan – Facility #443338

- History
  - Two wells were drilled and completed on this well pad in 2010. Diesel based drilling mud was used during the drilling operations. Drill cuttings were mixed with clean dirt and stockpiled on location. The pit was used as a production pit until 2012 when the liner was removed and the pit bottom sampled and excavated until clean soil was achieved. The pad was then interim reclaimed with an allowance for landfarming spoil materials that did not meet COGCC Table 910-1 standards.
- Current Status
  - Spoil material that is being treated on site by land farming is from drilling, completions and from the bottom of the pit that has been previously closed. The well pad has previously had a partial interim reclamation performed with an allowance for approximately 5,261 cubic yards of material. This material fails COGCC Table 910-1 for benzo(a)pyrene. Landfarming began in the summer of 2011. The lowest level of benzo(a)pyrene from soil samples taken annually since 2011 was from the latest sample taken on Oct. 9, 2016 at 0.0364; the highest is 0.16. Composite and discrete sampling reported that TPH achieved the COGCC Table 910-1 standards in 2015. This material was spread out on the well pad and was treated three times in 2016 (May 31, July 22, & Sept. 19).
  - In 2017, the landfarmed spoils were spread out even more to an approximate average depth of 28” and has been tilled two times. Fulvic acid is the only amendment that has been added per Dave Nicholson’s recommendation based on the lab report of the soil nutrients.





- Treatment - 2017
  - Spoil will be turned over by an excavator and/or a Kubota farm tractor pulling a chisel point plow 8 to 10 times (depending on weather and snow conditions) in 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 on the production pad.
  - 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.
  - Amendments
    - Based on analysis, fertilizer will not be added, but fulvic acid will be added during each tilling operation to address 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
  - Based on the historical lab results of composite samples of the landfarm treatments, it is possible that discrete sampling data will indicate that the COGCC Table 910-1 standards will be met on all contaminants by the fall in 2017 and landfarming operations will cease. If not, the process will continue into 2018 until spoil passes COGCC Table 910-1, specifically benzo(a)pyrene.