Mike Bratcher
Environmental Specialist
NM Oil Conservation District – Division 2
811 S. First St.
Artesia, NM 88210

RE: **Linn Energy Turner A Battery (Turner A #51) – Remediation Work Plan**
UL/I, Section 19, T17S, R31E
API No. 30-015-28758

Mr. Bratcher,

Linn Energy (Linn) has retained Diversified Field Service, Inc. (DFSI) to address environmental issues for the site detailed herein.

The site is located south west of Maljamar NM, in Eddy County. The leak site resulted from a produced water leak. The source of the leak was due to corrosion on a pipeline located in the pasture just south of the facility. 100bbls of produced water was released and approximately 70bbls of fluid was recovered. A C-141 was submitted to the NMOCD on March 27, 2014 (2RP-1015) and the BLM Event Number is (NU12074TG). Also found inside the battery, the heater leaked a non-reportable amount, which will be remediated at the same time as the reportable release.

Site Assessment and Delineation

On May 15, 2014 DFSI personnel obtained surface and delineation samples of the pasture leak area, which included SP1-SP6. All but SP1 cleaned up below the required levels, SP2-SP6 were sampled to 2' and 4' bgs. SP1 was clear of chloride contamination but the TPH levels were still above the required limits. SP1 will be further delineated during the excavation procedures.

On May 16, 2014 DFSI personnel obtained surface and delineation samples of the heater treater area, which included SP1-SP2. SP1 cleaned up below the required levels at 10'bgs and SP2 cleaned up at 2'bgs.

Field samples were taken on 8 sample points each sample was tested for chlorides levels as well as TPH. The TPH samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples found under the BLM/NMOCD

standards, were taken to Cardinal Lab of Hobbs to obtain confirmation samples. And the results confirmed that bottom samples of each sample point were as follows:

Pasture Area:

SP1: 2' – 176 mg/kg chlorides, <0.300 mg/kg BTEX, 1170 mg/kg DRO>C10-C28
SP2: 2' – 144 mg/kg chlorides, <0.300 mg/kg BTEX, 105 mg/kg DRO>C10-C28
SP3: 2' – 608 mg/kg chlorides, <0.300 mg/kg BTEX, 60.9 mg/kg DRO>C10-C28
SP4: 2' – 320 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP5: 4' – 352 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP6: 2' - <16 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH

Heater Treater Area:

SP1: 10' – 384 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP2: 2' – 176 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH

DFSI has conducted a groundwater study of the area and has determined that according to the New Mexico Office of the State Engineer the average depth to groundwater for this area is 236 foot below ground surface. Therefore, no eminent danger of groundwater impact or threat to life is anticipated.

Conclusion

After careful review DFSI on behalf of Linn Energy would like to propose the following:

Option 1

Excavate the entire 7,771 sq. ft. area of compacted soil to 3'bgs, haul the contaminated soil to an approved disposal site, line with a 20 mil liner and backfill with fresh imported topsoil. Then reseed the entire area with a native vegetation mixture as per the BLM's guidelines for returning the site to its natural state.

Option 2

Excavate the entire 7,771 sq. ft. area of compacted soil to 3'bgs. Excavate an 80' x 80' x 8' deep hole, line the bottom and sides with a 20 mil liner, bury the contaminated soil, install a cap at 4' by using a 20 mil liner and backfill with the clean excavated soil and reseed area. The contaminated area will also be lined at 4' with a 20mil liner and the remainder of the soil that was excavated for the deep bury area will be used as well as pushing in the native sand for surface reseeding procedures to return this site to its natural state. Some imported topsoil maybe needed to finalize this procedure to ensure

proper growth. This option illuminates having to haul the contaminated soil to an approved facility and the disposal costs.

Side wall samples will be taking during the excavation procedure to ensure that all contaminates have been remediated. These samples will also be taken to an approved lab for confirmation before backfilling will take place.

Following the approval of one of the above plans, either Option 1 or Option 2 above and after the remediation has taken place, DFSI will submit all proper closure documentation to the NMOCD and BLM in accordance to the State and Federal Guidelines set forth.

Please feel free to contact me with any questions concerning this remediation plan request.

Sincerely,

Natalie Gladden
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cc Jeff Robertson
NM Bureau of Land Management

Attachments: Initial Form C-141
Site/Sample Map
Sample Data
Lab Analytical Data