Los Alamos County Landfill

System Update

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SCS FIELD SERVICES

Background

- The former Los Alamos Landfill operated from 1974 to 2009.
- The Landfill is owned and operated by the County. The Landfill was a municipal solid waste facility which also had taken construction debris during its active life.
- The estimated depth of the waste materials is in excess of 100 feet deep.
- The former Landfill is approximately forty-eight (48) acres in size. The land for the Landfill is leased through the Department of Energy (DOE).

Background (cont.)

- Although the Landfill is no longer an active landfill, presently there is a transfer station with a scale house which accepts solid waste and processes compost.
- A part of the surface of the closed Landfill contains solar panels. LFG vents have also been installed through the landfill surface to allow for venting of LFG that accumulates under a geosynthetic clay cover. The Landfill cells have no geosynthetic bottom liners.

Background (cont.)

- The Landfill is bound on the north by East Jemez Road and the Los Alamos Canyon, on the south by the Sandia Canyon, on the west by Diamond Drive, and on the immediate east by vacant DOE property with a mobile home park (Royal Crest) lying beyond the DOE property approximately 500 to 700 feet from the edge of the Landfill's eastern boundary.

Justifications

- Primary Justification for GCCS Installation
  - Safety of the community
    - The monitoring probes started show signs of methane migration away from the landfill.
    - The most critical issues concerned the mobile home park to the east.
  - Preliminary Steps
    - 2014 a temporary collection system was installed to mitigate the migration using a portable blower skid and surface collection system.
    - This system worked some what but since it was only connected to the vents directly below the cover material the efficiency was not totally effective.
  - Design and installation of the permanent GCCS was completed in 2018/2019
    - Once the system was brought online the probes were all within safe parameters

Gas Probes

- The Landfill has twelve (12) existing gas probes (MP-1 through MP-12) which were installed as part of its closure/post closure plan.
- Three (3) of the gas probes each monitor the inside of the transfer station building, the scale house, and the Administration Building (MP-4, MP-5, and MP-6, respectively).
- The gas probes were installed from a depth of fifty (50) feet to a maximum depth of one hundred (100) feet.

Project 2018

- Drilling and completion of seventeen (17) vertical landfill gas (LFG) extraction wells
- Installation of five (5) remote wellhead connections and risers (three and two in the MSW and C&D areas, respectively).
- Installation of 3,800 feet of below-grade 6-inch diameter HDPE SDR 17 header and lateral piping (3,225 and 575 feet in the MSW and C&D areas, respectively);
- Installation of five (5) 12-inch condensate drip legs (all in the MSW area) and two (2) 18-inch condensate drip legs (one in each of the MSW and C&D areas);

Effects on the Probes

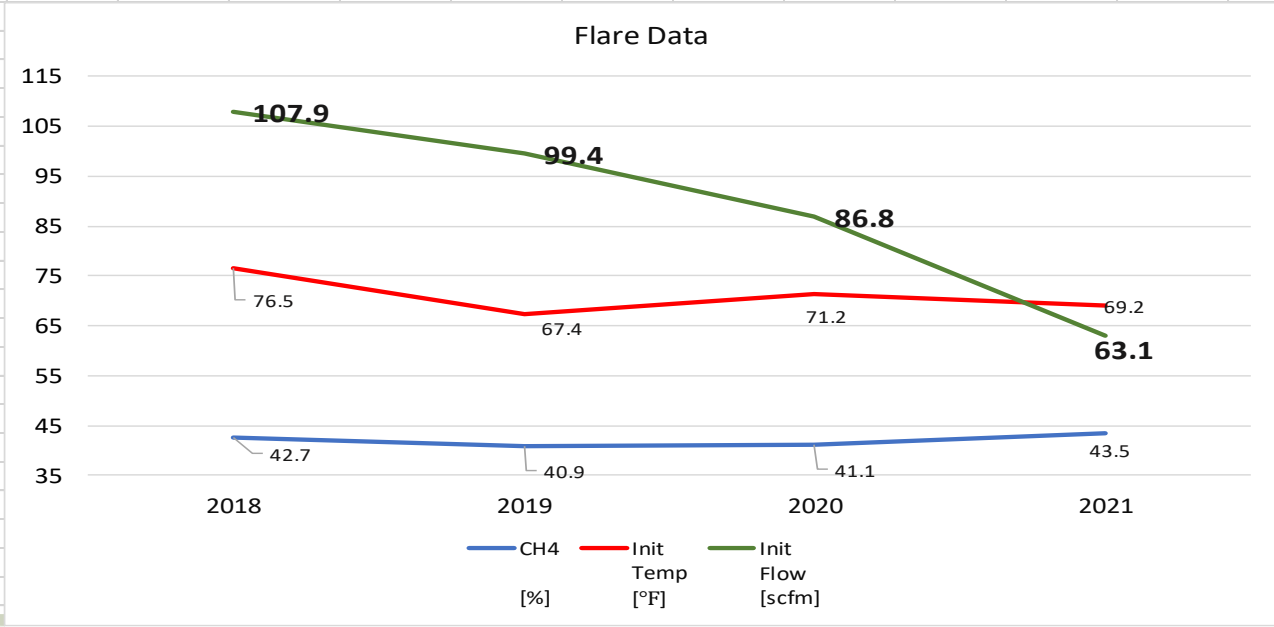
- Within the first 30 days of operation probes showed substantial improvement and within 90 days all probes were well below compliance levels.
- As of this month none of the probes have shown concern as to the compliance limits.

Beneficial Use

- The primary focus of the GCCS was to deal the probe issues.
- Limited total mass of the landfill limits the total collectable LFG
- Minimum flow requirements for export projects

Gas Production

Yearly Averages	CH4 [%]	CO2 [%]	O2 [%]	Bal Gas [%]	Init Temp [°F]	Adj Temp [°F]	Init Stat Press ["H2O]	Adj Stat Press ["H2O]	Init Flow [scfm]
2018	42.7	36.5	0.4	20.5	76.5	76.4	-3.5	-3.5	107.9
2019	40.9	35.4	0.4	23.2	67.4	67.3	-3.8	-3.8	99.4
2020	41.1	35.6	0.6	22.3	71.2	71.2	-3.9	-3.9	86.8
2021	43.5	35.6	0.6	20.4	69.2	69.1	-4.6	-4.6	63.1
Combined Operational Average	**42.0**	**35.8**	**0.5**	**21.6**	**71.1**	**71.0**	**-4.0**	**-4.0**	**89.3**



Blower/Flare