

A.1 Technology Name

Beacon Sampler

A.1.1 Source

Passive Soil Vapor Investigation Report, California Landfill Site, TRC Solutions (Concord, CA)

A.1.2 Summary

Media:	Soil gas
Study Type:	Site characterization
Technology:	Beacon
Peer Reviewed:	No
Publication Date:	April 2021

A.1.3 Site Description

General Site Description and Conditions

The Site is a former Class III solid waste landfill covering 88-acres, which stopped accepting wastes on March 31, 1992 and certified closed in 2002. Historic leaching resulted in landfill contaminants reaching subsurface soil and groundwater, and migrating downgradient.

Contaminants of Concern (COCs)

COCs include volatile organic compounds (VOCs), including tetrachloroethene (PCE) and trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC).

Sampling Frequency of COCs

One round of sampling has been performed to characterize lateral extent of soil vapor impacts in the vicinity of two soil vapor wells.

Technology Used

A total of 68 Beacon passive samplers were installed in a grid pattern in February 2011, in 1-inch borings to approximately 3 feet depth. A sampler vial fitted with a mesh screen at one end was inserted into a 1-inch diameter metal sleeve placed in the upper portion of the borehole. A wire secured to the top of the sleeve allows for retrieval of the sampler. The hole was plugged with aluminum and then covered with soil or concrete (in paved areas). After a sampling period of 18 days, the samplers were removed from the boreholes and submitted to Beacon Environmental Services, Inc. for analysis by thermal desorption, gas chromatography, and mass spectrometry by U.S. EPA Method 8260C.

A.1.4 Remedial Phase

28 The Beacon passive samplers were used to quantitatively characterize the lateral extent of soil
29 gas impacts.

30 A.1.5 Outcome

31 The limit of quantitation for the VOCs was reported to be 10 ng per sampler, with the highest
32 concentration of PCE reported to be 2,569 ng in mass. From the two orders of magnitude
33 decreases in concentration of adjacent samplers, it could be deduced that the shallow soil gas
34 impacts were localized in one of the wells. PCE soil gas impacts were reported to be more
35 widespread in the area of the second well. TCE was reported to be as high as 147 ng in mass
36 in one area, with all samplers adjacent to that location reporting below the limit of quantitation,
37 indicating a clearly localized area of soil gas impacts. Active soil gas samples collected in
38 January 2011 were compared to the Beacon passive sampling results. The Report concluded
39 good spatial correlation between the active and passive sampling.

40 A.1.6 References

41 List references or citations.

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