Data in Brief 9 (2016) 723–726

Contents lists available at ScienceDirect

Data in Brief

journal homepage: www.elsevier.com/locate/dib

Data Article

Data on biodegradation of total petroleum hydrocarbons using co-composting of cow manure/oily drill wastes

Mehdi Ahmadi [a,b], Moloud Dashtestani [c], Afshin Takdastan [a,b], Sahand Jorfi [a,b], Bahman Ramavandi [d,*]

[a] Environmental Technologies Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
[b] Department of Environmental Health Engineering, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
[c] Department of Environmental Engineering, Ahvaz Science and Research Branch, Islamic Azad University, Ahvaz, Iran
[d] Department of Environmental Health Engineering, Bushehr University of Medical Sciences, Bushehr, Iran

ARTICLE INFO

Article history:
Received 5 September 2016
Received in revised form
5 October 2016
Accepted 18 October 2016
Available online 24 October 2016

Keywords:
Oil based drilling wastes
Co- composting
Petroleum hydrocarbon
Bioremediation
Cow manure

ABSTRACT

Oil drill cuttings are challenging wastes in oil sites especially in Khuzestan province, a major oil producing region in Iran. As co-composting is a simple and eco- friendly technique for bioremediation of oil base drill cutting, this data article designed to describe co- composting of oil base drill cutting with cow manure. The data suggest that with optimized mixture of cow manure/oily drill wastes (here, 20:1) could engender more effective treatment of the wastes (with final total petroleum hydrocarbon of 0.01 g/Kg). The data will be informative for oil drilling companies and environmental agencies for choosing it as a practical bioremediation process of soil/wastes polluted by petroleum hydrocarbons.

Specifications Table

Subject area	*Environmental Engineering*
More specific subject area	*Bioremediation*

* Corresponding author.
E-mail addresses: b.ramavandi@bpums.ac.ir, ramavandi_b@yahoo.com (B. Ramavandi).

http://dx.doi.org/10.1016/j.dib.2016.10.008

Type of data	*Table*
How data was acquired	– *Data gathered from 4 pilots study with various cow manure/oil drilling wastes.* – *The petroleum hydrocarbon was analyzed using a gas chromatograph coupled with a flame ionization detector.*
Data format	*Analyzed*
Experimental factors	*TPH monitoring during 2 month of experiment for determination of best mixing ratio of cow manure/oil base drill cutting to bioremediation of drill cutting waste.*
Experimental features	*Bioremediation of oil base drill cutting by using co- composting process*
Data source location	*Ahvaz, Iran, 31°19′13″N 48°40′09″E*
Data accessibility	*Data are available in the article*

Value of the data

- This data provide a response for the question of "how oily wastes from crude oil drilling could be biologically degraded by co-composting technique as eco-friendly technique?"
- This data article focused on the greatest challenge of oil drilling companies i.e., environmental pollution by petroleum hydrocarbons, thus, this data can be use by these companies for bioremediation of their wastes.
- This data will be interesting for environmentalist with concern on soil pollution by oil as in this data set the progress in petroleum hydrocarbons bioremediation was obtained using only cow manure (and no use of any supplements).

1. Data

Data presented here describe the characteristics of oil base drill cutting waste and feasibility study of co- composting with cow manure. Table 1 shows characteristics of oil base drill cutting and cow manure in the beginning of the experiments. Table 2 illustrates the total petroleum hydrocarbons (TPH) concentration during the experiments in four pilots with different oil base cutting/cow manure ratio. Mineralization of organic pollutant by biological process during bioremediation of drill cutting showed in Table 3. Table 4 shows C/N ratio during the experiments. Table 5 depicts work plan conducted in the study.

2. Experimental design, materials and methods

2.1. Drill cuttings sample

The oil based drill cuttings wastes were collected from a pit beside a constructing oil well in an oil site in the Khuzestan province, Iran. The drilling fluid used in the oil well constructing was diesel fluid. Drilling waste sample was collected with a sterile scoop from up to a depth of 10–50 cm drilling fluid and put in the sterile polythene bag. The sample was transferred to the laboratory within 3 h in darkness and refrigerated condition (4 °C) for avoiding any photo-oxidation of hydrocarbons. The concentrations of TPHs, N, C, pH, and humidity were initially analyzed.

2.2. Cow manure

Cow manure was obtained from a village near to Ahvaz city with characterization given in Table 1.