



**Figure S3. Horizontal distributions of the methane plume on 30 August 2012.** The raw and interpolated (kriged) CH<sub>4</sub> plumes are shown for the 3 km (A and C) and 6 km (B and D) downwind distances corresponding to the flight path shown in Figure S2. The aircraft-based mass balance approach yielded whole landfill methane emission rates of 16 mol s<sup>-1</sup> and 18 mol s<sup>-1</sup> for the 3 km and 6 km two-dimensional crosswind planes, respectively. The average emission rate was 17 mol s<sup>-1</sup> (Cambaliza et al., 2014).