are more preserved and, consequently, they spent less time exposed to weathering processes after the spill.

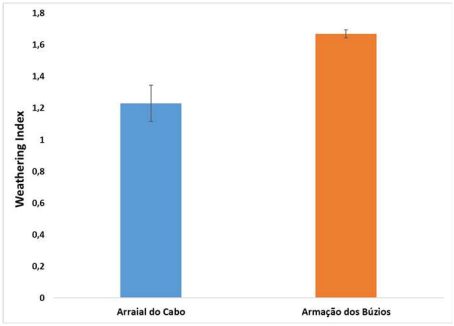

Figure 1. Average values of the weathering index of samples from Arraial do Cabo and Armação de Búzios. Weathering Index = (∑ n-C23-n-C31)/ (∑ n-C17-n-C22).

According to the ANP bulletin, the spill of 122m^3 of oil from the P-53 platform at Marlim Leste field in Campos Basin, occurred between March 24 and 25, 2019 [5]. In Figure 2a, it is possible to observe the map made by the Petroleum and Gas Production Coordination (COPROD/CGMAC/IBAMA) and the satellite image showing the oily feature of the slick with a clockwise trajectory, adrift between the 25th and 26th of March 2019, with an indication of the origin of an oil leak.

a) b)

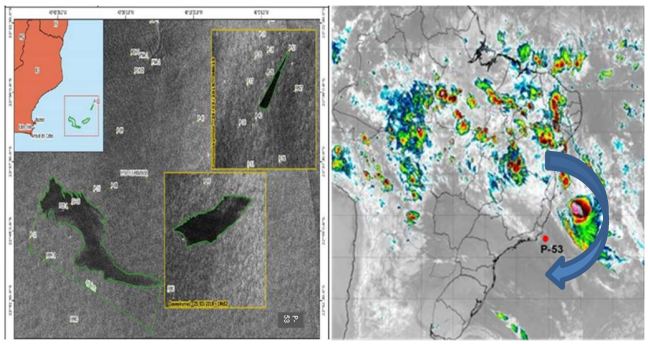

Figure 2. Map and satellite photos showing the oily feature of the slick, adrift between March 25 and 26, 2019, with an indication of the source of the oil leak (a). Satellite image of storm Iba showing the clockwise direction of the winds and the approximate location of platform P-53 (b).

In the same period of time that the oil slick was adrift in the ocean, tropical storm Iba had its highest intensity window recorded between March 24 and 25, 2019. On March 24, the storm reached maximum speed winds of 35 knots (65 km/h) and central pressure estimated at 1008 hPa, rotating clockwise [6]. In Figure 2b, the satellite image of tropical storm Iba, recorded by the National Institute of Meteorology (INMET) website, is located on the northern limit of the Campos Basin, close to the P-53 platform.

CONCLUSIONS

It was concluded that, with the use of different diagnostic ratios of *n*-alkanes, isoprenoids and tricyclic terpanes, it was possible to detect that the tarball samples collected at Prainha in Arraial do Cabo showed lower levels of weathering, having reached the beach earlier, probably on April 2, than those collected at Praia Brava in Armação de Búzios. It is also concluded that the formation of tropical storm Iba, with clockwise winds and a speed of 65 km/h, on the same day that 122 m^3 of oil was spilled from the P-53 platform, was decisive for the oil slick reached, in rare occurrence, in Arraial do Cabo after 7 days and in Armação de Búzios after 9 days of drifting at sea. Due to these results, we suggest that the change in the North-South direction of the oil slick trajectory, due to the increase in the frequency and intensity of meteorological events resulting from climate change, should be considered in the mathematical/computational models of slick trajectory in future accidents that may occur in the oil E&P regions of the Campos, Santos and Espírito Santo basins.

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