

SUBJECT: Properties of beached oil from Mississippi Canyon 252

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The following analysis is based a preliminary report of the conditions and release. We have no definitive analysis of oil collected from sea surface or shoreline. We believe the source oil is similar in properties to oils from nearby wells which are Sweet Louisiana Crudes. Oil observed from the air suggests that much of it is in the form of red and orange emulsions, but brown patches of oil have also been observed. Strong southerly winds contribute to the rapid emulsification of the oil. These winds continue to bring oil towards the shoreline over the next few days.

Properties of oil expected on shorelines

Oil reaching the shoreline in the next several days will likely be in the form of emulsified brown, red, or orange oil. Depending on the amount of oil, it could cover the shore as continuous bands extending up to several hundred yards, or small scattered globlets. Emulsified oil can have a weathered skin that encloses much fresher black or brown oil which can be released if they break. Oil adhering to vegetation or beached can continue to release a sheen of oil into near-shore waters.

Oil that comes ashore can be a mixture of oil that has weathered at sea anywhere from several days to over a week. Most of the oil on the sea surface is in the form of red or orange water-in-oil emulsion. Before beaching, the weathering process may have removed most of the acutely toxic aromatic compounds and many of the volatile constituents. The dominant hazard to biota is due to coating and smothering by sticky oil.

The level of emulsification and stability of the emulsion will vary. We expect that some of the emulsions coming to shore which were formed from the least weathered oil can de-water (lose water) once stranded. Emulsions coming to shore formed from more weathered oil can be very persistent; they are denser than the parent oil but still less dense than sea water. In either case, the oil can be very sticky and can potentially smother plants and animals. During periods of sustained southerly winds (out of the south) the sea level can be high and push oil high up on the shore. Oil can become stranded in this way as the sea level drops when the wind subsides. Oil in the intertidal zone can adhere to sediments creating a mix of sediment and oil which can be dense and could sink in near-shore waters if eroded from the shoreline by wave action.