

OSAT-2 Bioavailability Testing Work Plan

Purpose: Bioavailability tests on the three forms of ‘stranded’ oil (see below) will be conducted. These ‘water accommodated fraction’ (WAF) tests will involve stirring the oil in a water bath and analyzing the dissolved contents for the full suite of analytes utilized in OSAT-1 as indicators of bioavailability. The results can be compared to water benchmarks to provide one indicator (in a weight-of-evidence analysis) on potential ecotoxicity.

Testing Parameters: The sampling program is to include:

Types of oil	<ul style="list-style-type: none"> ▪ Buried supratidal oil ▪ Small surface residue balls (SSRBs) ▪ Surf zone submerged oil mats
Locations of oil (SSRBs would optimally be collected from amenity beaches; the other forms from barrier islands)	<ul style="list-style-type: none"> ▪ Florida ▪ Alabama ▪ Mississippi ▪ Louisiana
Water bath	<ul style="list-style-type: none"> ▪ ‘Instant Ocean’ with distilled water

Sampling: Each type of oil will be collected in three 8-oz jars, shipped ‘dry’ (no preservatives). A good faith effort will be made to obtain each oil type from all 4 States, but recognizing the tight time frame and difficulty of finding some forms of oil (e.g. submerged oil mats), obtaining all 12 independent sample sets may not be achievable.

Testing: The WAF tests will be conducted using 5-liter glass containers and a stir bar, allowing for 24-hour mixing. The water will then be centrifuged (to remove particulates) and extracted with a solvent for GC analysis.

Analysis:

- Hydrocarbon in oil: 43 PAHs, biomarkers and saturates in the extract from the ‘solid’ material. This will be a single analysis of the 12 samples (3 oil types x 4 States)
- Bioavailable fraction: Full analytic suite from OSAT-1 on the dissolved fraction (including BTEX + parent PAHs + alkylated PAHs) for each of the 12 sample types (3 oil types x 4 States). All tests to be run in duplicate (total of 24 WAFs).