Job Aid

for

Surface Washing Agent Selection

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Job Aid for SWA Selection

One of the first priorities in a response situation is to notify the appropriate regulatory agencies of the intent or need to use SWAs. Decision makers will expect pertinent information about the environment, weather conditions, type of oil, and proposed SWA products.

The following job aid was developed as a guidance document to aid in the selection of appropriate SWAs for a variety of coast6al marine conditions. The guide and tables were developed after the extensive laboratory and meso-scale (outdoors) testing at the National Spill Control School, Texas A&M University-Corpus Christi. These following tables are intended to assist in the selection of the preferred SWAs for a given application. Actual conditions may vary from the given range of parameters that were established in outdoor meso-scale tests. These tests were performed using an industrial pressure washer (or low energy applications if recommended by the manufacturer) at various seawater temperatures.

Table 1
To use this guide effectively the user should first determine the type of oil to be removed and the seawater temperature. Table 1 shows the laboratory evaluation of dispersion characteristics of SWAs on various oils and various seawater temperatures. It lists each of the NCP listed Lift-and-Float (LF) SWAs, in order of the agents with the lowest dispersion coefficient first.

Table 1 shows the preferred SWAs that could be used to remove crude oil, diesel, 6-oil, and asphaltic oils from various substrates (wood, concrete, and steel).

The seawater temperatures shown on Table 1 (10°, 20°, 30° Celsius) were selected to simulate the conditions found along the Texas gulf coast over the course of a year.

Table 2
After selection of the preferred LF SWA(s) for a specific water temperature and petroleum product, the user should refer to Table 2. It will provide information on the general cleaning capabilities of each SWA. Cleaning capabilities are ranked 1 through 4 with 1 being the most efficient.

These petroleum tests were conducted outdoors with an industrial pressure washer (or direct application if recommended by the manufacturers). Tests were conducted on weathered (24-hour outdoor exposure) crude, 6-oil, and asphaltic oils. Cleaning effectiveness was based on the loss of tackiness to the touch and removal of the stain.

The selection of a LF SWA from these tables will aid in the effective cleaning of coastal substrates while maintaining the optimal recoverability of the petroleum products.

The information in both of these tables was based on the observations and calculations from the Wood and Dittmar "Surface Washing Agents Application Observer's Guidance Document" (2019)

Table 1 - Laboratory Evaluation of Dispersion Characteristics of SWAs

In order of Lift and Float agents with the lowest to highest dispersion

Crude Oil

10ºc /50°f	20ºc/68°f	30ºc/86°f
Nokomis 5-W	F-500	Nokomis 5-W
De-Solv-It Industrial Formula	PES-51	F-500
GTS-OR	Dynamic Green	
	De-Solv-it Industrial Formula	
	BG Clean 401	
	GTS-OR	
	Water Works HD Degreaser Conc.	
	Nokomis 5-W	
	De-Solv-it Super Concentrate	

Diesel

10ºc /50°f	20ºc/68°f	30ºc/86°f
BG Clean 401	Dynamic Green	PES-51
Cytosol	Cytosol	Nokomis 5-W
F-500	F-500	Dynamic Green
De-Solv-it Super Concentrate	GTS-OR	Water Works HD Degreaser Conc.
Corexit EC 9580A	De-Solv-it Industrial Formula	GTS-OR
PES-51	Corexit EC 9580A	
Dynamic Green	De-Solv-it Super Concentrate	
De-Solv-it Industrial Formula	BG Clean 401	

6-Oil

10ºc /50°f	20ºc/68°f	30ºc/86°f
Cytosol	Water Works HD Degreaser Conc.	Corexit EC 9580A
Corexit EC 9580A	De-Solv-it Industrial Formula	Nokomis 5-W
Dynamic Green	Nokomis 5-W	Dynamic Green
De-Solv-it Super Concentrate	De-Solv-it Super Concentrate	F-500
F-500	Corexit EC 9580A	BG Clean 401
PES-51	F-500	De-Solv-it Super Concentrate
BG Clean 401		Cytosol
Nokomis 5-W		
Water Works HD Degreaser Conc.		
GTS-OR		

Asphalt

10ºc /50°f	20ºc/68°f	30ºc/86°f
De-Solv-it Industrial Formula	Corexit EC 9580A	Water Works HD Degreaser Conc.
GTS-OR	Cytosol	Corexit EC 9580A
Corexit EC 9580A	PES-51	Nokomis 5-W
Water Works HD Degreaser Conc.	De-Solv-it Industrial Formula	De-Solv-it Industrial Formula
BG Clean 401	De-Solv-it Super Concentrate	Dynamic Green
	Water Works HD Degreaser Conc.	Cytosol
	BG Clean 401	De-Solv-it Super Concentrate
	GTS-OR	BG Clean 401
	Nokomis 5-W	GTS-OR
	Dynamic Green	PES-51
	F-500	

Table 2 - Meso-Scale Evaluation of the Removal and Cleaning With SWAs on Various Substrates

After selecting the preferred LF SWA product(s) for a given water temperature and petroleum product, refer to Table 2 to identify the most effective cleaning performance of each SWA on various substrates. Their cleaning capabilities are ranked 1 through 4 with 1 being the most effective. The information in this table was based on the observations and calculations from the Wood and Dittmar "Surface Washing Agents Application Observer's Guidance Document" (2019).

Legend	
Category	**Description**
1	Highly Effective
2	Generally Effective
3	Slightly Effective
4	Do not use

Cleanliness Determination	
TT	**Tacky Touch**
C	**Clean/Stain Free**

SWA	Concrete		Wood		Steel		Vegetation
	TT	**C**	**TT**	**C**	**TT**	**C**	
F-500	1	2	1	1	1	2	4
GTS-OR	1	2	1	2	1	2	4
PES-51	1	2	1	2	1	2	4
Dynamic Green	2	3	1	3	1	3	4
De-Solv-it Super Concentrate	2	3	2	3	1	3	4
De-Solv-it Industrial Formula	1	2	1	2	1	1	4
Water Works HD Degreaser Conc.	1	3	1	3	1	3	4
BG Clean 401	1	3	1	3	1	3	4
Nokomis 5-W	1	3	1	3	1	3	4
Corexit EC 9580A	1	2	1	2	1	1	4
Cytosol	1	2	1	2	1	2	1