Surface Washing Agents

Meso-Scale Testing of NCP Listed Lift and Float Products

Project Research Conducted by:

National Spill Control School
Texas A&M University Corpus Christi

Project Funded by:

Texas General Land Office

Contract Number: 18-128-000-A668

November 2019

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National Spill Control School
Texas A&M University Corpus Christi
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1.0 Introduction

1.1 Overall Meso-Scale Testing Description

This market study was developed by the National Spill Control School at Texas A&M University Corpus Christi. It is the third phase of a four-phased FY 2018-19 project funded by the Texas General Land Office (TGLO under Contract Number 18-128-000-A668).

This project was developed to assess and compare the Surface Washing Agents (SWA) listed on the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This project and will provide valuable information about SWA product availability, performance, and safety. It is intended to serve as a resource and guidance tool for those regulatory agencies involved in the conditional approval and monitoring of SWA use in certain areas.

- Phase 1 - SWA Market Study
- Phase 2 - Laboratory Evaluation of SWA Performance
- Phase 3 - Meso-Scale Testing of SWAs
- Phase 4 - SWA Guidance Manual for Field Investigators

1.2 Study Objectives

Study objectives and goals for this meso-scale study were determined during initial stages of proposed research development. Identified goals and objectives include:

- To emulate natural environmental conditions at a large scale and apply the SWA to manufacturers' recommendations for dilution and application.
- To use full scale industrial equipment representative of current response OSROs.
- To use large open topped containers outdoors, large representative substrates.
- To have written and video observations for each SWA tested.
- To determine effectiveness, observe physical behavior, and evaluate the potential for product recoverability during full scale operations.
- Use proper disposal techniques.

Additional research goals align with laboratory-scale and comprehensive guidance document work.

1.3 Description of Physical, Chemical, and Biological Processes

During lab-scale testing of the 56 SWAs, each was evaluated for its physical, chemical, and biological characteristics. There was an effort to establish which SWAs could be categorized as lift and float and would be potential candidates for use in Texas waters. Some of the listed SWA products function more as dispersants and are not approved for application in waterways and should not be allowed to enter into any connected drainage system. SWA product SDS are submitted under different cover and should be referenced. Descriptions of processes in Section 1.3 derive from the NSCS SWA Market Study (H.A. "Tony" Wood and Andrew Dittmar, 2018).

1.3.1 Lift and Float

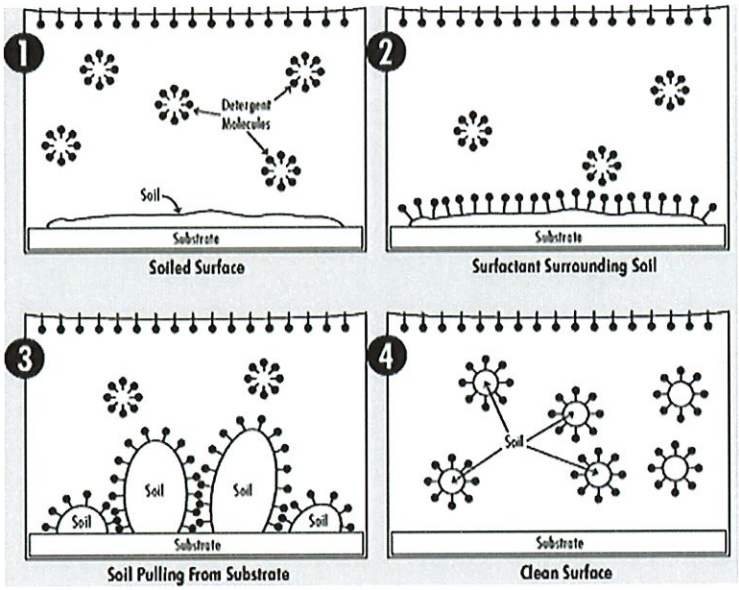
There are two primary physical-effect categories for surface washing agents. Generally, these are described as "lift-and-float" and "lift-and-disperse" agents. The categories describe the post-application process of how the surfactant/petroleum mixture interacts in the water column. They also give an indication of recoverability.

The process by which lift-and-float agents can be applied to the petroleum covered substrate, bind to the oily material, and are washed off via pressure washing at various temperatures and pressures, or removed by steam cleaning, are shown in Figure 1. If the applied SWA washes off and accumulates on the water's surface, either immediately or after a delayed amount of time, the product would be considered "lift and float". However, describing a SWA behavior as "lift and float" may be situationally inaccurate. Delayed effects, wave action, temperature, etc. could change the observed behavior. The term "lift and float" does not insinuate that the product will remain floating or on top of the water or ground and that the product may be mobile in the water column or subsurface ground after a period of time. Conversely, some lift-and float agents may initially disperse the oily mixture into the water column and then re-float after some period of time.

In Texas, surface washing agents that are pre-approved by the respective Coastal Zone Area Committees must be "lift and float" agents. The objective is to use products that provide maximum recovery and minimal environmental effects. When using lift-and-float agents the recovery of the agent/petroleum mixture can be accomplished with most types of surface skimming equipment and sorbent materials.

FIGURE 1-1

Surface Washing Agent Interaction on Impermeable Substrates



Source: "Chemistry of Cleaning", Essential Industries Inc.

This diagram illustrates how surfactants clean soil from a smooth substrate. SWA use the same process when removing petroleum from impermeable surfaces in the lift- and-float process.

1.3.2 Lift and Disperse

The other category type of surface washing agents are "lift and disperse" agents. These products perform like dispersants. They are emulsifying the oil product and disperse it in the water column. This method is not desirable to the lack of ability to recover the petroleum and chemical mixture. The act of dispersion may also lead to environmental concerns about aquatic toxicity. There is also evidence to suggest that the re-mobilization of petroleum and oily products may result in the accumulation of petroleum in the benthic areas of the water column. Dispersion of the oily products also might allow subsurface intrusion and mobility of the hazardous mixture. "Lift and disperse" agents should not be used in coastal settings. There is an additional monetary cost to use "lift and disperse" agents in containment areas where collection and hazardous waste disposal may be required. Some agents however are considered either "lift and float" or "lift and disperse" depending on the dilution ratio of the SWA that is used during application. This change of category based off dilution ratios could lead to questions about delayed effects. A SWA could floats the mixture and then, after a period of time, begin to disperse petroleum into the water column. Additional factors that might affect dispersion of the materials can include, but are not limited to: temperature, covered substrate type, salinity, biological coverage and other factors.

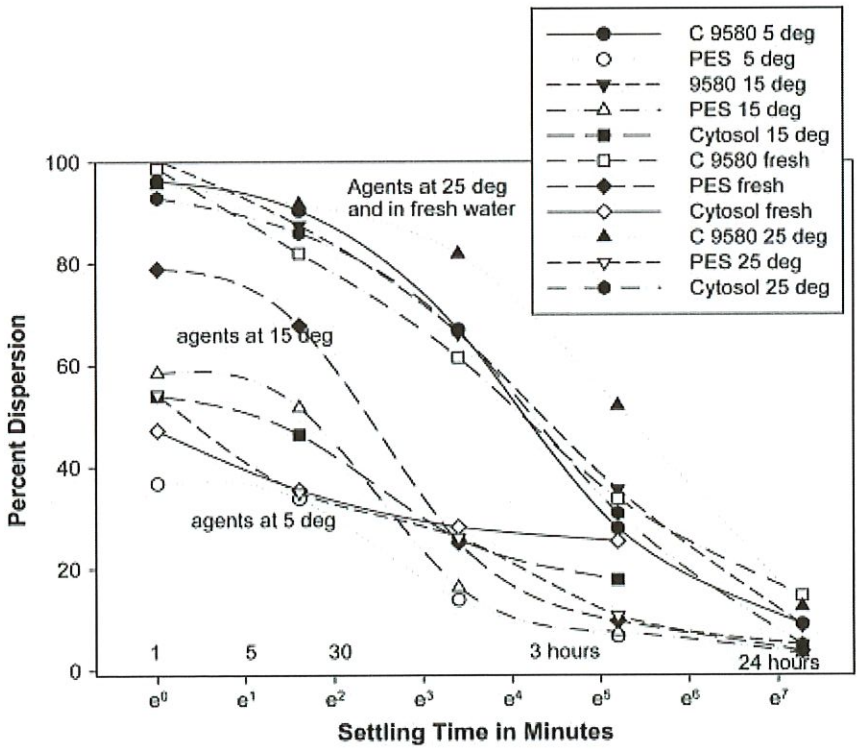
These factors represent just a few reasons that SWA use should be closely monitored by applicators, and in some cases should have regulatory oversight.

In a previous study (Fingas and Fieldhouse, 2011), dispersion trials were conducted for 3 of the surface washing agents: Corexit 9580, PES 51, and Cytosol. Laboratory test- based dispersion percentage on a high application energy rate, on dilution ratios, salinity, and temperature differences. They determined that salinity had minor effects on dispersion. All SWA product dispersions become unstable after a longer period of time. Figure 1-2 shows the dispersion percentage change to an unstable, lower dispersion percentage after time elapses. This insinuates that higher-pressure washing will lead to greater dispersion of surface washing agents into the water column, and that the pressure washing energy used will determine the amount of time for reformulation of the agent/petroleum mixture to rise to the surface.

Products with "lift and disperse" properties or products that are considered "lift and float" in stable energy conditions should not be used on shorelines with high energy wave action. These environments will cause higher dispersion in tidal zones and make recoverability impossible.

FIGURE 1-2

Timescale Dispersion of Major Surface Washing Agents



Source: "Chapter 21- Surface Washing Agents or Beach Cleaners", Oil Spill Science and Technology.

1.4 Meso-Scale Testing Methodology

Researchers, concluding the market study assessment, collected 1-gallon samples of NCP listed SWA along with application criteria derived from manufacturers recommendations. The supporting equipment for proper application and dispersion testing needs were determined and acquired. An appropriate testing location was selected and reserved near the TAMUCC boat barn. The location was selected for adequate testing space, proper and appropriately sized containment. Equipment storage and the university's oil-water separator were nearby. This site was ideal for SWA research techniques and wastewater disposal.

1.4.1 Equipment Acquisition

Following laboratory scale testing, researchers determined the SWA depicted in Table 1-1 showed "lift and float" capabilities and subsequently will be further tested in meso-scale research. The SWA in Table 1-1 have application criteria's that require pressure washing or direct contact washing methods.

Table 1-1

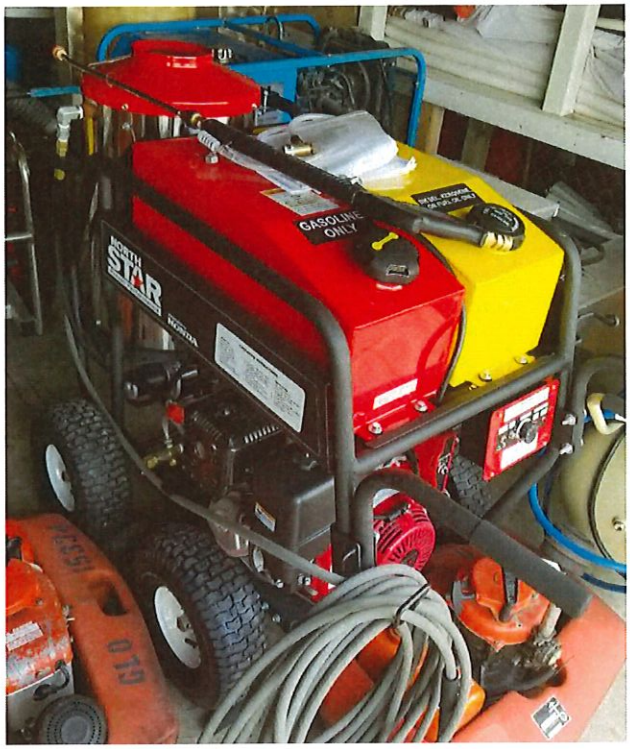
Lift and Float SWA

Surface Washing Agent	Occurances of Dispersion Below Control
F-500	8
GTS-OR	8
PES-51	6
Dynamic Green	8
De-Solv-it Super Concentrate	8
De-Solv-it Industrial Formula	8
Water Works HD Degreaser Conc.	7
BG Clean 401	8
Nokomis 5-W	9
Corexit EC 9580A	8
Cytosol	7

Researchers spoke with Gulf coastal OSRO's regarding response industry pressure washing equipment. It was determined that a full-scale washer with the greatest variety of adjustable pressure and temperature would be ideal to efficiently test all SWAs. A NorthStar Gas Wet Steam/Hot Water Pressure Washer was acquired (Figure 1-3). This washer equipped with a Honda GX390 engine can apply SWA up to 250°F through a ceramic refractory combustion chamber at 4 GPM and 3000 PSI. It is equipped with 6 quick-connect nozzles of varying angles (0°, 15°, 25°, and 40°), steam, or full chemical spray.

FIGURE 1-3

Full Scale Pressure Washer



During the lab-scale testing it was shown that certain SWA products are not applied by a pressure washer but require direct contact washing. This application of SWA chemicals was simulated using brushing, mopping, or sponge application. Researchers acquired additional brushes with different sizes and textures for proper application as well as to prevent cross contamination of SWA and oily materials. After the instructed residence time post-application, the SWA and oiled material is wiped or washed off according to manufacturer instruction.

SWA meso-scale testing was conducted on large representative substrates of concrete, wood, and steel. The concrete substrate was represented using ½" hardy board, wood substrates were represented using ½" plywood boards, and ¼" steel plates.

Natural environmental conditions were simulated during meso-scale testing by conducting the tests outdoors and away from any overhanging shade areas. In addition, each test were conducted in simulated saltwater conditions. This was done by collecting water for testing from Corpus Christi bay. The NSCS, prior to current SWA research, acquired multiple 160cc Honda GX160 Engine water pumps with 2" suction/discharge ports that have an output of 10,000 GPH. Researchers purchased 2" suction and discharge hoses ranging from 50-100ft.

Corpus Christi Bay water was collected and transported to the testing location using a Norwesco 325 gallon horizontal polyethylene tank. NSCS had an open topped 1000gal cylindrical polyethylene tank to serve as the test basin.

Researchers compiled all testing visual observations on an external database. This 1.6TB database is on file at the NSCS and can be provided to TGLO upon request. Visual observations were conducted either through stop motion photography or videography for 1 hour following initial SWA application. This visual database will allow viewers to determine how the SWA acts comparative at different temperatures and if at what point it begins to disperse or not.

For validation of each test, all testing equipment must be fully cleaned of all chemicals, petroleum products, and wastewater before the next test can take place. OMG Solutions have created a remediation product, ELMN8, for equipment and soil remediation, and ELMN8+, for liquid remediation. Application of this product will break down the hydrocarbon bonds in the petroleum products and bind oxygen to produce H20 and CO2. Equipment was properly soaked and rinsed clean for each test, and water waste was broken down to proper disposal levels. After each application of ELMN8+, a Hanby TPH Water test was conducted to ensure full breakdown of hydrocarbon compounds.

Additional assurance of oily waste collection was completed by pumping the semi-neutralized waste through the TAMUCC oil/water separator unit.

1.4.2 Application Techniques

Each SWA test was conducted with substrates applied with the 3 petroleum oils (crude, asphaltic, and 6-oil) that were allowed 24 hours of weathering processes. Oiled substrates were placed in direct view of the sun and elements. Each oil was applied in vertical strips using plastic guidelines that are 1in wide, 12in long, and spaced 2in apart. The petroleum applied substrates were placed horizontally in large plastic lined containers to ensure no release of oil occurred. Researchers conducted each SWA test in the staging area using the 1000gal open topped tank. All application equipment, PPE, and emergency response containment pads, rolls, and powders were placed for quick access in the potential event of a spill. Prior to meso-scale testing, researchers reserved a 2009 Chevy truck owned and operated by the University Field Operations team. The 325-gallon transport tank was secured in the truck bed along with 2 Honda water pumps and intake/discharge hoses. Shown in Figure 1-4, researchers traveled to the Corpus Christi Bay decommissioned loading dock located south of the University on Ocean Drive, indicated by the red circle. Bay water was collected to be transported back to the testing site.

FIGURE 1-4

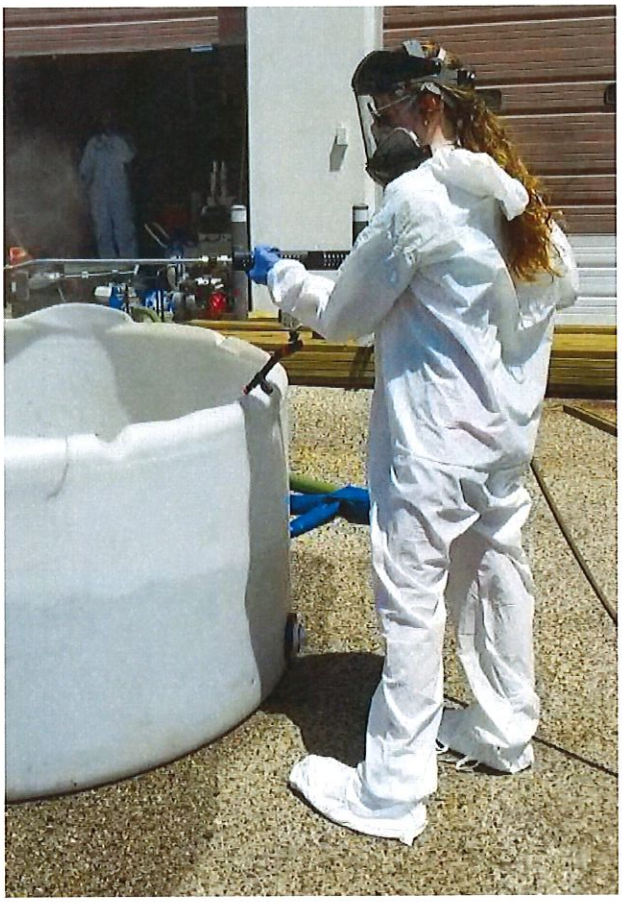
Meso-Scale Water Collection

Returning to the testing location, 162.5gal of bay water was pumped into the 1000gal open topped container for each test. Weathered substrates were placed vertically along one side of the tank at 0°, 90°, and 180° of the application point and secured with ratchet straps and bricks.

During the application process, oil is removed at high application pressure. Researchers ensure safe practices during each test by wearing a minimum of level C PPE liquid chemical resistant suits, half-face respirators, gloves, and a splash shield. This is represented in Figure 1-5. Additional researchers outside of testing area were prepped and prepared in Level C PPE for potential events of containment loss of petroleum and chemical waste. All PPE that was used during application processes were further contained and disposed of properly.

FIGURE 1-5

Testing Level C PPE



Researchers applied the SWA through explicit instruction of SWA manufacturer. For application involving a non-diluted SWA, the agent was directly applied through a brush or pressure washer. For application involving a diluted SWA, the agent was measured in a 5 gallon bucket and diluted with freshwater to recommended level, then applied through application instruction means. SWA that require special additional instructions were completed each test, such as: retention time of SWA on petroleum product, post-application rinse, and change in dilution application. All results were written and visually captured and compiled on an external database. This 1.6TB database is on file at the NSCS and can be provided to TGLO upon request.

The application of SWA was conducted 3 times: the first application consisted of 5 passes back and forth with the pressure washer or brush, depending on the product. The second application consisted of 25 passes back and forth, and the third application consisted of 50 passes back and forth. During this process, measurements of petroleum removal and drippage were noted in observations as well as if top layers/all layers were removed. Discussions with TGLO POC prior to testing regarded what could be considered as "clean" in response work. In certain cases, with

heavy weathering or persistently difficult oils, it would be considered "clean" if the oil is removed to a point that it was no longer sticky or tacky to touch.

Following each test application, waste and equipment was decontaminated using an undiluted ELMN8+ solution which breaks down the hydrocarbons. Application of ELMN8+ was conducted through medium/high pressure means at around 200°F. The breakdown process was allowed to continue for 10-15 minutes. Then a low pressure rinse was applied. Additional waste management processes included the use of the University oil/water seperator.

1.4.3 Testing Observations

After observing SWA performance with various substrates, petroleum products, and at various temperatures in the laboratory it was determined that testing in a larger scale setting was needed to observe and evaluate SWA performance on weathered oil in outdoor conditions.

To efficiently determine these cleaning capabilities, a 1-hour post application observation was conducted for each SWA at each temperature for 3 petroleum products. It was determined and agreed upon prior to testing with TGLO, that testing marine diesel would show no results because of its high evaporation tendencies. For visual observations, each camera was mounted on a tripod or clamp with a viewing scope of the three substrates. The GoPro was set to take a picture every minute, and the Canon camera was set to video record for the entire application and 1-hour post application period.

Researchers filled out written observation's forms for each SWA test. These forms describe the date/time of oil application on the substrates, date/time of SWA application after the 24hr weathering period, weather conditions at the time of the test, and weather conditions over the 24hr weathering period. Researchers filled out descriptive rows on the measured differences outside the oil application line due to weathering, 1st application and 5 passes back and forth, 2nd application and 25 passes back and forth, and 3rd application and 50 passes back and forth.

The total number of passes required to clean the oil to lose its tacky touch, as well as removing it completely from the substrate was determined. Speaking with TGLO POC, interpretations of when an oil spill is considered "clean" may vary for different groups and agencies. Because of this, the number of passes required for the oil to be cleaned to a tacky touch and completely removed was determined. Reference the written observation sheet in Section 5.0 Attachments.

1.4.4 Cleaning Capability Calculations

During the second phase of SWA testing, the laboratory-scale research, agents were tested to determine dispersion capabilities to distinguish which are "lift and float" and which are "lift and disperse". The 11 SWA proven to be considered "lift and float" underwent the process of meso-scale testing to determine their cleaning capabilities on the 3 testing oils: crude, asphaltic, and #6.

After oil application and the weathering process on the substrates was measured and noted, application of SWA occurred and any additional changes to the applied oil were measured to show its cleaning capabilities. These measurements in accordance to the application time and number of passes will help readers or response groups understand the predicted outcome of cleaning these SWA will have.

Figure 1-6 shows concrete and wood substrates after SWA application. The concrete substrate depicts removal and drippage of all 3 petroleum oils, but not stain removal after the 3rd application process. The photograph of the wood substrate depicts removal of all 3 petroleum oils and stain removal of crude and 6-oil.

FIGURE 1-6

Post Application Cleaning Assessments

Researchers did not conduct TPH analysis for oil dispersion during this testing phase. The focus of this phase was to evaluate full-scale SWA application and cleaning capabilities on the various substrates but not SWA dispersion into the water column.

Measurements were conducted after each application (and rinse/retention time if required) using a metric tape measure. This process of calculations will show the removal and oil drippage of each application process represented in real world SWA application and response operations. For an agent to be considered "cleaned" in the observation results, it is visually inspected to show

whether a stain remains on the substrates. For an agent to be considered to lose its "tacky touch", researchers physically touched each strip of oil application wearing vinyl gloves.

Beginning our projects meso-scale work, researchers aimed to reduce cleaning calculation errors and control consistency between all researchers and interns running tests. The use of physical measurement devices ensured each test to be accurate. The use of gloves to determine "tacky touch" cleaning ensured that if the oil application was not fully cleaned, the glove will show resistance to removal, thus not being considered clean. Additional control substrates without oil application allowed researchers a visual comparison to stain removal.

1.4.5 Waste Disposal

For validation of each test, all testing equipment must be fully cleaned of all chemicals, petroleum products, and wastewater before the next test can take place. OMG Solutions have created a remediation product, ELMN8, for equipment and soil remediation, and ELMN8+, for liquid remediation. Application of this product will break down the hydrocarbon bonds in the petroleum products and bind oxygen to produce H20 and CO2. Equipment was properly soaked and rinsed clean for each test, and water waste was broken down to proper disposal levels.

Under TAMUCC waste disposal requirements, all wastewater was disposed of property under supervision of the hazardous waste supervisor.

1.4.6 Assumptions Made for This Report

Researchers were able to accurately and consistently calculate cleaning capabilities of all SWA products determined to be "lift and float". Dispersion in this meso-scale testing setting was not influenced by wave action but did have wind and solar influence. Water column effects and dispersion were not calculated or included in this scope of research. In the meso-scale test setting, researchers were allowed to apply petroleum products and place in the sun for an extended period of time to receive weathering and coagulation effects. This was conducted to ensure real-world application variables that may be observed in an actual response situation, and further validate testing results. All testing procedures for each agent were carefully assessed and discussed with manufacturers to ensure representation of full-scale response activities.

2.0 Meso Scale Findings

2.1 National Contingency Plan Product Schedule

The United States Congress amended the Federal Water Pollution Control Act of 1948 to the Clean Water Act in 1972. This established the Environmental Protection Agency (EPA) authority in pollution control programs as well as lawfully enforcing the regulated standards from the CWA. In addition, the U.S. Congress required the EPA to keep an updated running list of all products that could legally be applied in U.S. navigable waterways. The EPA states that one of their top priorities are to prepare for, prevent, and respond to oil spills. With the focus in oil spills and hazardous substance releases, the EPA created the National Oil and Hazardous Substances Pollution Contingency Plan, or National Contingency Plan (NCP). The plan established the National Response Team and Regional Response Teams to aid in decision making. The NCP has been updated periodically since 1972 following Superfund legislation and the Oil Pollution Act of 1990 to the most current version.

The NCP Product Schedule is derived from the U.S. Environmental Protection Agency's (EPA) Office of Emergency Management (OEM) Regulations Implementation Division (RID). EPA lists and categorizes oil spill control agents by type:

- Bioremediation agents
- Dispersants
- Miscellaneous Oil Spill Control Agents
- Surface Collecting Agents
- Surface Washing Agents

There are 56 surface washing agents approved and listed in Subpart J, Section 300.915, of the NCP Product Schedule. (Source:40 CFR §300.920 (e)). It is specifically stated that "the listing of a product on the Product Schedule does not mean that EPA approves, recommends, licenses, certifies, or authorized the use of the product on an oil discharge."

The Texas General Land Office (TGLO) incorporated in the South Texas Coastal Zone Area Contingency Plan Section 3280.4 states that "surface washing agents may be considered when conventional flushing techniques are inadequate in removing oil residues to the required cleanup standard."

All current SWA products listed below and their contacts were initially derived from September 2017 NCP Product Schedule. The NSCS reviewed and edited this list to show current contacts, provided it to the EPA, and the current contact information is now shown in the March 2018 Update to the NCP Product Schedule. Please note that the list is sequential but not all numbers are shown. Numbers not showing have been dropped from the NCP list or were unable to be collected. It is likely that additional products will be dropped in the future.

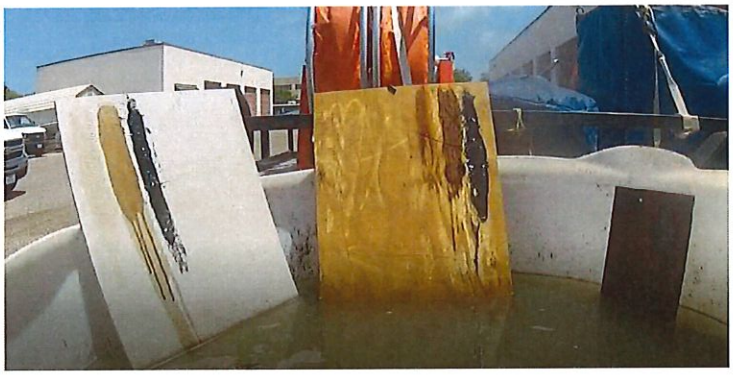
Descriptions of NCP Product schedule in Section 2.1 derive from the NSCS SWA Market Study report. (H.A. "Tony" Wood and Andrew Dittmar, 2018).

2.2 SWA Testing Profiles

Researchers compiled all testing visual observations on an external database to be submitted to TGLO under new copy. Visual observations were conducted either through stop motion photography or videography. Figure 2-1 shows the comparative timeline example of a SWA from initial application. This visual database will allow viewers to determine how the SWA acts comparative at different temperatures, weathering effects, and if at what point it is cleaned.

FIGURE 2-1

SWA 1st Application Timeline



Pre-Application

Initial Application

Post 1st Application

The following profiles are current at the time of this publication but may be subject to change. Refer to NCP Product Schedule for updated contact or status information if the following is outdated

SW-10 Corexit EC9580A

Nalco Environmental Solutions LLC
Mrs. Debby Theriot
7705 Highway 90-A
Sugar Land, TX 77478
Office Phone: 281-263-7709
Mobile Phone: 832-851-5164
Website: nalcoenvironmentalsolutionsllc.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Bubbling, drip of 6.5in	Partial evaporation, Drip of 14in	Drip of 10in	Drip of 4.5in	Evaporated/Soaked into wood	Drip of 18in	Bubbling, drip of 8in	Heavily Evaporated, drip of 12in	Drip of 15in
Observations at 5 passes	Drip of 12in	Drip of 25in (waterline)	Drip of 18in	Drip to 17.5in	Removed	Drip of 20in	Drip of 12in	Removed	Drip of 21in
Observations at 25 passes	Drip of 25in (waterline)	Removed	Partially removed	Drip of 25in (waterline)	-	Drip of 25in (waterline)	Drip of 22in	-	Partial Removal, Drip of 25in (waterline)
Pass Number to Tacky Touch	40	0	30	40	0	40	45	0	25
Pass Number for Clean	Maximum (50)	25	Maximum (50)	Maximum (50)	5	Maximum (50)	Maximum (50)	5	45
Notes	Corexit EC9580A was extremely effective at removing crude oil and stains by the first application. Portions of removal of 6-oil was observed by the second application, and fully removed by the third applicaiton at max 50 passes. Asphalt was observed to be tacky to the touch with a majority removal around 40 passes during the third application.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
Corexit EC9580A	8/19/2019 - 10am	8/20/19 - 12:03pm	94 F	Vid 2/ pic 2	30 min

SW-11 De-Solv-It Industrial Formula
Orange-Sol Blending and Packaging
Mr. Tim Farnsworth
1400 N Fiesta Boulevard
Gilbert, AZ 85233
Phone: 800-877-7771
Fax: 480-497-0444
Website: orange-sol.com

	Concrete			Wood			Steel		
	Asphalt	**Crude**	**6-oil**	**Asphalt**	**Crude**	**6-oil**	**Asphalt**	**Crude**	**6-oil**
Weathering	Drip of 1in	Drip of 8in	Drip of 1in	Drip of 7in	Soaked into Wood/Evaporated, Drip of 10in	Drip of 3in	Drip of 5in	Drip of 10in	Drip of 1in
Observations at 5 passes	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)	Drip of 25in (waterline)	Heavily removed	Drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)
Observations at 25 passes	No Change	-	Partial removed	No Change	Removed	Partial removed	No Change	-	Partial removed
Pass Number to Tacky Touch	Maximum (50)	1	25	Maximum (50)	5	25	Maximum (50)	1	25
Pass Number for Clean	Maximum (50)	5	Maximum (50)	Maximum (50)	10	Maximum (50)	Maximum (50)	5	Maximum (50)
Notes	**It was observed 10 minutes post meso-scale test additional asphalt and 6-oil was dripping and coming off. Possibility of the use of a retention time in the future may positively correlate on oil removal.** Observations show that all oil applied on substrates were immediately effected and began to drip after the first application pass. However little change were observed to asphaltic oils after the intial pass.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
Desolvit- Ind Formula	8/26/19 - 9am	8/27/19 - 10:30am	85 F	Vid 7-10	0 min

SW-19 Cytosol
CytoCulture International Inc.
Dr. Randall von Wedel
249 Tewksbury Avenue
Point Richmond, CA 94801
Phone: 510-233-0102
Fax: 510-233-3777
Website: cytoculture.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Drip of 10in	Heavily evaporation, Drip of 20in	Drip of 17in	Drip of 2in	Evaporated/Soaked into wood	Drip of 12in	Drip of 2in	Heavily Evaporated, drip of 21in	Drip of 19in
Observations at 1 Application	Drip of 25in (waterline)	Removed	Heavily removed, drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Heavily removed, drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Heavily removed, drip of 25in (waterline)
Observations at 5 passes	N/A								
Observations at 25 passes	N/A								
Pass Number to Tacky Touch	N/A								
Pass Number for Clean	N/A								
Notes	Cytosol is physically brushed on and allowed 1hr time of retention before being washed off substrates. Cytosol was shown to be effective on crude and 6-oil. Observations of asphalt show only surface layer of petroluem application was removed.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
Cytosol	8/18/19 - 10am	8/19/19 - 11:15am	87 F	195	60min

SW-30 F-500
Hazard Control Technologies, Inc.
Mr. Michael Greiner
150 Walter Way
Fayetteville, GA 30214
Phone: 770-719-5112
Fax: 770-719-5117
Website: hct-world.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Bubbling, drip of 4in	Drip of 6in	Drip of 2in	Drip of 4in	Drip of 8in	Drip of 3in	Drip of 5in	Drip of 8in	Drip of 8in
Observations at 5 passes	No change	Heavily removed	Drip of 25in (waterline)	Drip to 8.5in	Heavily removed	Partially removed	Drip of 12in	Heavily removed	Drip of 25in (waterline)
Observations at 25 passes	Drip of 4in	Removed	Partially removed	Drip of 11in	Removed	Heavily removed	Drip of 15in	Removed	Partially removed
Pass Number to Tacky Touch	Maximum (50)	5	15	Maximum (50)	5	10	Maximum (50)	5	15
Pass Number for Clean	Maximum (50)	20	Maximum (50)	Maximum (50)	15	45	Maximum (50)	20	Maximum (50)
Notes	Observations showed little to no change on asphaltic application. Majority of crude application and stain was removed at a low number of passes. 6-oil application was shown to be heavily removed by maximum number of passes (50), but not completely removed.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
F-500	8/22/19 - 10am	8/23/19 - 10:35am	92 F	Vid 6	0 min

SW-32 BG-Clean 401
Amiran BioChemicals LLC
Mr. Jason Wilde
7221 South 10th Street
Oak Creek, WI 53154
Phone: 414-571-6230
Fax: 414-571-6231
Website: biochemicals.amiran-technologies.com

	Concrete			Wood			Steel		
	Asphalt	**Crude**	**6-oil**	**Asphalt**	**Crude**	**6-oil**	**Asphalt**	**Crude**	**6-oil**
Weathering	Drip of 1in	Drip of 8in	Drip of 2in	Drip of 0in	Drip of 7in	Drip of 4in	Drip of 1.5in	Drip of 12in	Drip of 2in
Observations at 5 passes	Drip of 12in	Removed	Drip of 25in (waterline)	Drip of 7in	Heavy removed, Drip of 25in (waterline)	Drip of 25in (waterline)	Drip of 21in	Removed	Partial removed, Drip of 25in (waterline)
Observations at 25 passes	Drip of 25in (waterline)	-	Heavy removed, Drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Partial removed, Drip of 25in (waterline)	Drip of 25in (waterline)	-	Removed
Pass Number to Tacky Touch	Maximum (50)	1	25	Maximum (50)	5	30	Maximum (50)	1	5
Pass Number for Clean	Maximum (50)	5	Maximum (50)	Maximum (50)	25	Maximum (50)	Maximum (50)	5	Maximum (50)
Notes	**SWA requires application at 2 dilutions, first at lower pressure and high heat, 30min retention, and second at high pressure. This was done at each pass interval (5, 25, and 50).** SWA cleaning showed most effective on steel substrate, followed closely with concrete substrate. Observations show a higher application pass number on wood substrates but still effective. Observations showed crude oil to be effectively cleaned and stain free from application, but stains remained with asphaltic and #6 oils.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
BG Clean 401	8/20/19 - 1:15pm	8/21/19 - 2:15pm	93F	97	30 min

SW-38 Nokomis 5-W
Mar-Len Supply Inc.
Mr. Frank Winter
23159 Kidder Street
Hayward, CA 94545
Phone: 510-782-3555
Fax: 510-782-2032
Website: marlensupply.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Drip of 8in	Heavily removed	Drip of 17in	Drip of 7in	Heavily removed	Drip of 16in	Drip of 10in	Heavily removed	Drip of 20in
Observations at 5 passes	No change	Removed	Drip of 25in (waterline)	Drip to 8.5in	Removed	Drip of 24in	Drip of 12in	Removed	Drip of 25in (waterline)
Observations at 25 passes	Drip of 4in	-	Partially removed	Drip of 11in	-	Heavily removed	Drip of 15in	-	Partial Removal
Pass Number to Tacky Touch	Maximum (50)	0	35	40	0	25	45	0	30
Pass Number for Clean	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)
Notes	Slight rain of 0.5in during weathering period before testing. Nearly complete removal of crude and stain was observed. Partial removal and tacky touch was observed around an average of 30 passes, however stain removal was not observed. Little change to asphalt during application process.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
Nokomis 5-W	8/21/2019 - 9:30am	8/22/19 - 10:49am	91 F	65	10 min

SW-49 De-Solve-It Clean Away APC Super Concentrate
Orange-Sol Blending and Packaging
Mr. Tim Farnsworth
1400 N Fiesta Boulevard
Gilbert, AZ 85233
Phone: 800-877-7771
Fax: 480-497-0444
Website: orange-sol.com

	Concrete			Wood			Steel		
	Asphalt	**Crude**	**6-oil**	**Asphalt**	**Crude**	**6-oil**	**Asphalt**	**Crude**	**6-oil**
Weathering	Bubbling	Slight evaporation, Drip of 4in	Drip of 2in	No Change	Soaked into Wood/Evaporated, Drip of 5in	Drip of 1in	Bubbling	Slight evaporation, Drip of 5in	Drip of 2in
Observations at 5 passes	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)
Observations at 25 passes	No Change	-	No Change	No Change	-	No Change	No Change	-	No Change
Pass Number to Tacky Touch	Maximum (50)	1	40	Maximum (50)	1	40	Maximum (50)	1	35
Pass Number for Clean	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)
Notes	Observations show that all oil applied on substrates were immediately effected and began to drip after the first application pass. However little change were observed to asphaltic oils after the intial pass. 6-oil was observed to be tacky to the touch at around 40 passes, and not fully cleaned of stains off the surface.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
Desolvit- All Purpose	8/27/19 - 10am	8/28/19 - 11:30am	91 F	Vid 10	0 min

W-51 Dynamic Green
Wechem Inc.
Mr. Michael Wisecarver
5734 Susitna Drive
Harahan, LA 70123
Phone: 800-426-0512
Phone: 504-733-1152
Fax: 504-733-2218
Website: wechem.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Drip of 3in	Drip of 25in (waterline)	Drip of 18in	Drip of 6in	Drip of 25in (waterline)	Drip of 3in	Drip of 5in	Drip of 25in (waterline)	Drip of 21in
Observations at 5 passes	Drip of 12in	Heavily removed	Drip of 25in (waterline)	Drip of 12in	Heavily removed	Drip of 25in (waterline)	Drip of 13in	Heavily removed	Drip of 25in (waterline)
Observations at 25 passes	Drip of 19in, Spot removal	Removed	Heavily removed	Drip to 21in, Spot removal	Removed	Heavily removed	Drip of 23in, Spot removal	Removed	Heavily removed
Pass Number to Tacky Touch	Maximum (50)	5	15	Maximum (50)	5	10	Maximum (50)	5	10
Pass Number for Clean	Maximum (50)	Maximum (50)	Maximum (50)	Maximum (50)	Maximum (50)	Maximum (50)	Maximum (50)	Maximum (50)	Maximum (50)
Notes	Slight rain of 1in during weathering period before testing. Observations on crude and #6 oil show removal to be within 15 passes. It was observed for the asphaltic application that only 3-5 quarter sized chunks were removed during application. No oil strip was shown to be cleaned stain free during application process.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
Dynamic Green	8/25/19 - 10am	8/26/19 - 10:30am	87 F	Vid 6	0 min

SW-63 Green Technologies Solutions-Oil Recovery (GTS-OR)
International Technologies and Services Inc.
Mrs. Pilar Ortega
302 W. 5th Street, Suite 100 B
San Pedro, CA 90731
Phone: 310-791-4487
Fax: 877-744-9975
Website: itsenvironmental.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Bubbling, Drip of 2in	Drip of 6in	Drip of 3in	Bubbling, Drip of 1in	Drip of 5in	Drip of 2in	Bubbling, Drip of 3in	Drip of 9in	Drip of 3in
Observations at 5 passes	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)	Drip of 25in (waterline)	Removed	Drip of 25in (waterline)
Observations at 25 passes	Spot removal, Drip of 25in (waterline)	-	Partial Removal	Spot Removal, Drip of 25in (waterline)	-	Heavy Removal	Spot Removal, Drip of 25in (waterline)	-	Partial Removal
Pass Number to Tacky Touch	Maximum (50)	5	25	Maximum (50)	5	25	Maximum (50)	5	25
Pass Number for Clean	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)
Notes	SWA application on crude oil had a drip of 25in (waterline), and was completely removed after 30 minute retention time and rinse. Application on 6-oil showed begin removing a majority of oil around the second application/retention at 20-25 passes, and cleaning without stain was observed after third application/rinse at 50 passes. Application on asphaltic oil showed top layer removal after first application passes. Additional layer and quarter sized spots showed to be removed after the second applicaiton/rinse and 25 passes. Asphaltic oil was heavily removed by maximum 50 passes.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
GTS-OR	8/29/19 - 11am	8/30/19 - 1:30pm	95 F	Pic 0	30 min

SW-69 Water Works Heavy Duty Degreaser Concentrate
Keteca USA Inc.
Ms. Kathy Parks
4280 W. Opportunity Way
Phoenix, AZ 85086
Phone: 602-278-7789
Website: ketecawaterworks.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Drip of 2in	Drip of 18in	Drip of 8in	Drip of 2in	Drip of 12in	Drip of 7in	Drip of 1in	Drip of 15in	Drip of 12in
Observations at 5 passes	Drip of 3in	Partial removed, Drip of 25in (waterline)	Drip of 14in	Drip of 5in	Partial removed, Drip of 25in (waterline)	Drip of 12in	Drip of 3in	Partial removed, Drip of 25in (waterline)	Drip of 19in
Observations at 25 passes	Drip of 17in	Removed	Partial removed, Drip of 25in (waterline)	Drip of 17in	Removed	Heavy removed, Drip of 25in (waterline)	Drip of 24in	Removed	Drip of 25in (waterline)
Pass Number to Tacky Touch	Maximum (50)	5	35	Maximum (50)	5	30	Maximum (50)	5	40
Pass Number for Clean	Maximum (50)	30	Maximum (50)	Maximum (50)	30	Maximum (50)	Maximum (50)	30	Maximum (50)
Notes	Slight rain of 1in during weathering period before testing. Effective removal of crude oil was shown to be after 5 application passes, and removal of 6-oil was shown to average around 35 application passes. Application effectiveness on asphaltic oils showed to be effective with increasing applications but was not removed by maximum pass limit of 50.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
Water Works	8/29/19 - 9am	8/30/19 - 11am	90 F	Vid 1	0 min

M-12 PES-51
Practical Environmental Solutions.
Mr. Bill Sims
P.O. Box 12563
San Antonio, TX 78212
Phone: 210-493-7172
Fax: 210-493-7172
Website: pes51.com

	Concrete			Wood			Steel		
	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil	Asphalt	Crude	6-oil
Weathering	Drip of 4in	Drip of 8in	Drip of 10in	Drip of 14in	Drip of 10in	Drip of 15in	Drip of 2in	Drip of 7in	Drip of 4in
Observations at 5 passes	Drip of 8in	Removed	Partial removed, Drip of 25in (waterline)	Drip of 18in	Removed	Partial removed, Drip of 25in (waterline)	Drip of 6in	Removed	Drip of 25in (waterline)
Observations at 25 passes	Drip of 20in	-	Heavily removed	Drip of 24in	-	Heavy removed	Partial removed, Drip of 25in (waterline)	-	Partial removed
Pass Number to Tacky Touch	40	1	25	40	1	25	35	1	30
Pass Number for Clean	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)	Maximum (50)	5	Maximum (50)
Notes	Effective removal of crude oil was shown to be after 5 application passes. Removal of 6-oil was shown to average around 30 application passes with removal on concrete and wood surfaces quicker. Application effectiveness on asphaltic oils showed to be effective with increasing applications and removed by 40 passes. It was observed that small chunks of substrates were being broken off during application process due to the required psi pressure.								

SWA	Date of Oil Application	Date of SWA Application	Temperature	Visual Test ID	Retention time
PES-51	8/15/19 - 12:30pm	8/16/19 - 2:45pm	95 F	Vid 0	5 min

Cleaning capability results for SWA meso-scale testing show many agents have high removal of weathered crude oil by the first and second application.

The most persistent weathered petroleum oil in our scope of meso-scale testing was the asphaltic oil. This oil would quickly solidify at lower temperature and it was necessary to heat it prior to substrate application. During the weathering process, the black asphaltic oil was observed to slightly liquify and bubble at the surface when temperatures reached above 90°F in the sunlight. It was observed to have removal primarily by the third SWA application, with spot and section removal during the first and second application in some cases. In multiple SWA meso-scale application tests, asphaltic oils was not fully removed after the 3rd application process.

The 6-oil had a high viscosity at low-ambient temperatures. However, it was observed to have a higher removal rate and lower viscosity when temperatures reached above 88°F. The 6-oil was generally removed by the second application of SWA.

The most difficult aspect of cleaning for all agents was the removal of residual stains. It was observed that stain removal in most cases for the weathered asphaltic oil was a result of high pressure rather than chemical removal. However, multiple SWA applications showed to gradually remove layers of the asphaltic oil. In certain testing cases, enough layers were removed for the asphaltic application to lose its tackiness or spot removal. In the case of crude and #6 oil application and removal, most SWA were able to efficiently remove staining. It was observed in both laboratory and meso-scale testing that staining was especially difficult for wood substrates. This is likely the result due to the wood fiber's porosity allowing oils to soak into the substrate piece during the weathering time.

3.0 Summary

3.1 Conclusions

It was determined through meso-scale settings the cleaning capabilities of NCP listed SWA that are considered "lift and float" agents. SWA selected for further testing by NSCS researchers and TGLO personnel were applied through simulated full-scale response activities.

Large representative coastal substrates were applied with multiple oil products and allowed time to receive weathered effects. The selected 11 SWA were applied to the weathered oil through explicit instruction of respective manufacturers. This variety of SWA application allows researchers the ability to analyze their cleaning capabilities for multiple weather oil surfaces on multiple substrates.

Comparative SWA cleaning capabilities after data collection of meso-scale application showed significant trends of cleaning and product recoverability. Crude oil cleaning through SWA use showed an average removal after 1 application, with stain removal by the second application. 6-oil cleaning through SWA use showed an average removal after the second application, with certain case stain removal by the third application. Asphaltic oil cleaning through SWA use depicted certain agent's physical and chemical capabilities for removal by the second or third application. Asphaltic oil was observed at the 3rd application to remain on the substrates in certain cases.

Researchers where able to determine the most consistent and accurate method calculating cleaning capabilities while reducing human error using physical metric measurements. It is still considered to possibly have slight differences in results from the weather and climate differences at the time of application.

3.2 Applications of Meso-Scale Research

Applications of report phases are additionally stated in the NSCS SWA Market Study report (H.A. "Tony" Wood and Andrew Dittmar, 2018). This report will be not only giving Texas, but any Gulf State spill responders, valuable information regarding general background of the NCP listed SWA's and MOSCA's. Information regarding SWA cleaning capabilities in different substrate, weathering conditions, and spill product conditions will allow response companies the opportunity to assess which product would efficiently clean for their type of response.

This allows responders to expand their response options when applying these agents by knowing the optimal temperatures, substrates to spray, and weather effects on dispersion and cleaning capabilities. In addition to responders, the FOSC and other decision makers know the scope of agents that they may approve of in the pre-approval areas for SWA application.

Information gathered from this report will allow researchers to effectively write and publish a comprehensive guidance document on effective SWA application and response. Effectiveness and cleaning capability results will be written into a final guidance document that will be used by Texas and Gulf state responders.

4.0 References

ASTM, 2014. *F1280-14 Standard Guide for Ecological Considerations for the Use of Surface Washing Agents: Impermeable Surfaces*. ASTM International, Vol. 11.08.

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Robertson, D.R., Maddox, J.H. 2003. *Shoreline Surface Washing Agent Test and Evaluation Protocol for Freshwater Use in the Great Lakes Region.* International Oil Spill Conference, Vol. 2003, No. 1.

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Wood, H.A., Dittmar, A. 2019. *Surface Washing Agents: A Laboratory Scale Testing of NCP Listed Products in the Gulf Coast.*

5.0 Attachments

MESO_SCALE OBSERVATION SHEET

Protocols Reviewed: _____

SDS Reviewed: _____

SWA:_____

Oil Application	SWA Application	Temp	Visual Test ID	Retention Time
*Date/time	*Date/time			

Observations at 5 passes:

Observations at 25 passes:

Total Number of Passes for Tacky Touch:

Total Number of Passes for Clearing:

U.S. ENVIRONMENTAL PROTECTION AGENCY

NATIONAL CONTINGENCY PLAN

PRODUCT SCHEDULE

APRIL 2018
(4/25/2018)

Prepared by:

NCP Product Schedule Manager
U.S. Environmental Protection Agency
Office of Land and Emergency Management (OLEM)
Office of Emergency Management (OEM – RID)
1200 Pennsylvania Avenue, NW (Mail Code 5104A, Room 6450CC)
William Jefferson Clinton North Building
Washington, DC 20460

For Information Contact:

NCP Subpart J Information Line, at (202) 260-2342

Disclaimer: [Product Name] is on the U.S. Environmental Protection Agency's NCP Product Schedule. This listing does NOT mean that EPA approves, recommends, licenses, certifies, or authorizes the use of [Product Name] on an oil discharge. The listing means only that data have been submitted to EPA as required by Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan, Section 300.915. (Source: 40 CFR §300.920 (e))

Category Abbreviations	Currently Listed Products by Category	Number of Products
B	Bioremediation Agents	26
BA	Biological Additives (20)	
MC	Microbiological Cultures (19)	
EA	Enzyme Additives (1)	
NA	Nutrient Additives (6)	
D	Dispersants	18
M	Miscellaneous Oil Spill Control Agents	17
	Solidifiers (11)	
S	Surface Collecting Agents	2
SW	Surface Washing Agents	56
	Total Products	**119**

All changes and additions to the NCP Product Schedule are indicated in bold under the applicable product listing.

Changes to the Product Schedule:	PES 51 (M-12), updated contact information
New Listings to the Product Schedule:	PETROCLEAN™ (B-72)
New Deletions from the Product Schedule:	None
Product Schedule Changes Pending EPA Verification:	SYSTEM E.T. 20 (B-45); SUMP SAFE BIO-RECLAIM (B-69); COREXIT® EC9527A (D-1); NEOS AB3000 (D-2); COREXIT® EC9500A (D-4); SAF-RON GOLD (D-12); COREXIT® EC9500B (D-18); THICKSLICK 6535 (S-5); SILTECH OP-40 (S-6); COREXIT® EC9580A (SW-10); G-CLEAN OSC-1809 (SW-39); VERU-SOLVE™ MARINE 200 HP (SW-52); CORIBA 700 SR (SW-55), CORIBA 713 SR (SW-56); and EPA OIL FIELD SOLUTION™ (SW-61)
Contact Information Could Not Be Verified (last attempt dates provided with product listing):	BET BIOPETRO (B-48); LAND AND SEA RESTORATION PRODUCT 001 (VELITE) (B-55); BIODISPERS (D-9); WASTE-SET #3200® (M-19); and WASTE-SET #3400® (M-20); CN-110 (SW-9); NATURE'S WAY HS (SW-18); PETROTECH 25 (SW-21); DO-ALL #18 (SW-24); SOC-10 (SW-45); ETHOS CLEAN (SW-58); and OSR-10 (SW-59)

Note: Product manufacturer's data summary information can be found in the NCP Product Schedule Technical Notebook.
As a compendium to the NCP Product Schedule, the NCP Product Schedule Technical Notebook presents the product manufacturer's data summary information. The NCP Product Schedule Technical Notebook can be found at: *https://www.epa.gov/emergency-response/ncp-product-schedule-products-available-use-oil-spills.*

The NCP Product Schedule presents products (and aka's) in an alphabetical table of contents and by category type (i.e., Bioremediation Agents, Dispersants, Miscellaneous Oil Spill Control Agents, Surface Collecting Agents, or Surface Washing Agents). In addition, NCP Product Schedule users can navigate to the online Technical Notebook product bulletins by clicking on the product listing names (and aka's) under the category type. Products are numbered as they are listed. Numbering may not be consecutive if products were removed from the NCP Product Schedule. For example, Bioremediation Agents begin with B-19. Products numbered B-1 through B-18 were removed from the NCP Product Schedule.

Updated: 4/25/2018

*Listing maintained per requirements of the revised Subpart J, Federal Register, Volume 59, Number 17, September 15, 1994

PRODUCTS THAT HAVE BEEN REMOVED FROM THE NCP PRODUCT SCHEDULE*

BIOREMEDIATION AGENTS
ABR BI-CHEM PETROLEUM BLEND (B-20)
ADVANCED BIO CULTURES L-103 (B-25)
ADVANCED BIO CULTURES L-104 (B-26)
AE-BIOSEA PROCESS (B-15)
BACTOZYME (B-9)
BIOGEE HC (B-35)
BIO-ZYME 1000-HC (B-11)
BIOMAX (B-49)
BR (B-37)
DBC PLUS TYPE R-5 (B-8)
DBC PLUS TYPE L (B-7)
EEC BIOLOGICAL MEDIA (B-14)
EN-2000 CONCENTRATE (B-27)
ENZYT (LIQUID/CRYSTAL) (B-52)
HYDROBAC (B-1)
INIPOL EAP 22 (B-10), *No Longer Manufactured – 2005*
KBC 100 (B-46)
LRC-1 (B-50)
LRC-4 (B-51)
MAX BAC CUSTOMBLEN (B-13)
MEDINA MICROBIAL ACTIVATOR (B-44)
MICROPRO D (B-22)
MICROPRO NOW BAC (B-21)
MICROPRO SUPER CEE (B-23)
MICROPRO G (B-24)
MUNOX 212 (B-17)
MUNOX 512 (B-18)
MUNOX 112 (B-16)
NO-SCUM (B-2)
NUTRI-BIO 1000 (B-30)
PES-31 (B-39)
PETROBAC (B-3)
PETRODEG-100 (B-5)
PETRODEG-200 (B-6)
PETROVORE (B-47)
PHENOBAC (B-4)
PRISTINE SEA II (B-54), *Product No Longer Manufactured – 2005*
PRP (B-29)
PUTIDOIL (B-40)
WOODACE BRIQUETTES (B-12)
WST BIOBLEND H-JM (B-31)
WST BIOBLEND M-B4W (B-32)
WST BIOBLEND M-B4C (B-34)
WST BIOBLEND M-5 (B-38)
WST BIOBLEND M-4 (B-33)

DISPERSANTS
ANTECO OIL SPILL DISPERSANT
BIOGENESIS BG-CLEAN 401
COLD CLEAN 500
COREXIT 8667
COREXIT 9550
COREXIT 9554
DISPERSANT 11
EC.O ATLAN'TOL AT7
ECO/+
ENERGY III
ENERSPERSE 700
ENERSPERSE 1100
FINASOL OSR-7
FORMULA 98
GOLD CREW DISPERSANT
HAZCLEAN-ER
INIPOL IP 90
INPROVE COLLOIDAL
M.C. #1 DISPERSANT
MAGNOTOX
MICRO-BLAZE OUT
NAXCHEM DISPERSANT K
NK-3
NURTURE BIO-EMULSIFIER
OFC D-609
OIL SPILL ELIMINATOR
OSD/LT OIL SPILL DISPERSANT
PETROMEND MP-900-W
PETROTECH PTI-25
PETROTECH II
PROFORM-POLLUTION
SDS-300
SEA MASTER NS-555
SEACARE ECOSPERSE
SEACARE OSD
SLICKGONE NS
SLIK-A-WAY
SUPERSPERSE™ WAO2500
DISPERSANT (D-15), *Voluntary Removal*
TOXIGON-2000
VALUE 100
VECLEAN OIL DISPERSANT
WELLAID 3316
WITCOMUL 4016
WITCOMUL 4078
WITCOMUL 3234
YCC BLUECLEAN

MISCELLANEOUS OIL SPILL CONTROL AGENTS
ENVIRO-BOND 403 (M-11)
LIQUID OIL BOND-200 (M-3)
NOCHAR'S A610/A650 (M-9)
OIL BOND-100 (M-2)
OMNI-ZORB #8000 (M-16)
OMNI-ZORB #4000 (M-15)
OMNI-ZORB #2000 (M-14)
RE-ENTRY KNI (M-5)
RE-ENTRY D SOLVENT (M-8)
SEE-JELL (M-1)
SPILCAT (M-13)
WASTE-SET
AGGLOMERATE (M-21)

SURFACE COLLECTING AGENTS
COREXIT OC-5 (S-1)
OIL COMPRESS/BINDER (S-2)
OIL HERDER (S-3)
OIL SPILL REMOVER (S-4)

SURFACE WASHING AGENTS
COREXIT® EC7664A (SW-1), *Voluntary Removal*
CRUDEX (SW-5)
EDF EMULSA FIRE (SW-6)
FM-186-2SW (SW-29), *Voluntary Removal*
GRANCONTROL-O (SW-14)
JANSOLV-60 (SW-3)
OMNI-CLEAN OSD (SW-13)
PETRO-GREEN ADP-7 (SW-17)
PETRO TITE M.M.E. (SW-7)
RUFFNEK (SW-4)
SPLIT DECISION SC (SW-22), *Voluntary Removal*
SX-100 (SW-27), *Voluntary Removal*

*Listing maintained per requirements of the revised Subpart J, Federal Register, Volume 59, Number 17, September 15, 1994

ALPHABETICAL TABLE OF CONTENTS

LIST OF PRODUCTS (INCLUDING AKA's) ON THE NCP PRODUCT SCHEDULE*

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NCP PRODUCT SCHEDULE

BIOREMEDIATION AGENTS

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
B-19	MC	WMI-2000	WMI International, Inc. 2104 Brentwood Drive Houston, TX 77019 PHONE: (713) 526-5829 MOBILE: (832) 798-5610 FAX: (877) 347-7770 E-MAIL: wmiintlinc@gmail.com or teri@oxygenorchard.com (Mr. Joseph Jennings)	06/18/90 01/11/96+
B-36	MC	OPPENHEIMER FORMULA (aka, THE OPPENHEIMER FORMULA I, MICROSORB SC)	Oppenheimer Biotechnology, Inc. P.O. Box 1490 Pflugerville, TX 78691-1490 PHONE: (512) 474-1016 FAX: (512) 681-0367 E-MAIL: jen.neve@obio.com WEBSITE: www.obio.com (Ms. Jen Neve)	07/17/91 10/06/96+
B-41	MC	MICRO-BLAZE®	Verde Environmental, Inc. 9223 Eastex Freeway Houston, TX 77093 PHONE: (713) 691-6468 (800) 626-6598 FAX: (713) 691-2331 E-MAIL: bscogin@micro-blaze.com WEBSITE: www.micro-blaze.com (Mr. William L. Scogin)	12/18/91 01/21/97+
B-42	NA	VB591™, VB997™, BINUTRIX®	BioNutraTech, Inc. P.O. Box 290 Porter, TX 77365 PHONE: (281) 354-5900 MOBILE: (713) 301-0254 FAX: (281) 354-1997 E-MAIL: shruza@bionutratech.com WEBSITE: www.bionutratech.com (Ms. Sandra L. Hruza)	01/03/92 02/05/97+
B-43	MC	STEP ONE (aka, B&S INDUSTRIAL)	B&S Research, Inc. 4345 Highway 21 Embarrass, MN 55732 PHONE: (218) 984-3757 FAX: (218) 984-3212 E-MAIL: farmforprofit@frontier.com (Mr. H.W. Lashmett)	03/12/92 03/21/97+

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NCP PRODUCT SCHEDULE

BIOREMEDIATION AGENTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
B-45	MC	SYSTEM E.T. 20 *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Environmental Restoration Services 9211 Lakewood Drive Windsor, CA 95492 PHONE: (619) 253-0664 E-MAIL: ERS.BTI@gmail.com (Mr. John Chase) PHONE: (760) 746-5145 FAX: (760) 746-2034 (Mr. Jack Roberts)	01/28/93 11/14/95+
B-48	MC	BET BIOPETRO *Last Communication with Manufacturer: 5/18/2006* *Last Attempt: 8/29/2016*	BioEnviroTech 14615 FM 2920 Tomball, TX 77375 (Mr. Warren Butler)	11/10/93 08/31/00+
B-53	EA	OIL SPILL EATER II (OSE II)	OSEI Corporation (Formerly Sky Blue Chems) P.O. Box 515429 Dallas, TX 75251-5429 PHONE: (972) 669-3390 E-MAIL: oseicorp@msn.com WEBSITE: www.osei.us (Mr. Steven Pedigo, Chairmen, CEO, Inventor)	08/26/96 08/16/05# 09/22/09+
B-55	NA	LAND AND SEA RESTORATION PRODUCT 001 (VELITE) *Last Communication with Manufacturer: 4/02/2007* *Last Attempt: 8/30/2016*	Land and Sea Restoration LLC 4147 Acorn Hill San Antonio, TX 78217 (Mr. Shawn Parker)	09/10/99
B-56	NA	S-200C	RBL Environmental, LLC 1311 Dorothy Avenue Phoenixville, PA 19460 PHONE: (610) 520-7665 E-MAIL: jim.lynn@iepusa.com (Mr. James Lynn)	07/24/02
B-57	MC	SPILLREMED (MARINE)® (aka, AGROREMED, SPILLREMED (INDUSTRIAL), HYDROREMED, VAPORREMED)	Sarva Bio Remed, LLC 25 Marianne Drive, Suite 'B' York, PA 17406 PHONE: (717) 779-0040 PHONE: (877) 717-2782 FAX: (419) 710-5831 E-MAIL: sales@sarvabioremed.com WEBSITE: www.sarvabioremed.com (Mr. Satya Ganti)	01/08/07

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NCP PRODUCT SCHEDULE

BIOREMEDIATION AGENTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
B-58	NA	JE1058BS	Japan Energy Corporation Business Development Department, Bio Research Center 3-17-35 Niizo-Minami Toda-shi, Saitama 335-8502 Japan PHONE: (81) 48-433-2191 FAX: (81) 48-444-3223 E-MAIL: saeki@j-energy.co.jp (Mr. Hisashi Saeki)	12/03/07
B-59	MC	BIOWORLD BIOREMEDIATION HYDROCARBON TREATMENT PRODUCTS (BioWorld BHTP)	BioWorld Products International Headquarters 6734B W. Pershing Avenue Visalia, CA 93291 PHONE: (559) 651-2042 FAX: (559) 651-9041 E-MAIL: support@bioworldusa.com WEBSITE: www.bioworldusa.com (Ms. Diane R. Barnes)	11/24/08
B-60	MC	MUNOX SR®	Osprey Biotechnics 1833-A 57th Street Sarasota, FL 34243 PHONE: (941) 351-2700 FAX: (941) 351-0026 E-MAIL: ldanielson@ospreybiotechnics.com or vscuilla@ospreybiotechnics.com (Ms. Lauren Danielson, President & CEO or Mr. Vincent Scuilla, COO)	10/28/10
B-61	MC/NA	SOIL RX (aka, BIO-REGEN HYDROCARBON)	3 Tier Technologies LLC Worldwide Headquarters 250 National Place, Suite 142 Longwood, FL 32750 PHONE: (877) 226-7498 FAX: (877) 570-0072 E-MAIL: dburdette@3tiertech.com WEBSITE: www.3tiertech.com (Mr. Daniel J. Burdette, President)	11/17/10
B-62	MC/NA	PRO-ACT (aka, OILCLEAN w/ACTIVATOR)	Pro-Act Biotech a Unit of LLG.LLC 64 Church Street Warren, RI 02885 PHONE: (401) 245-7004 FAX: (401) 633-6270 E-MAIL: bill@proactbiotech.com WEBSITE: www.oil-clean.net (Mr. William Campion)	12/15/10

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NCP PRODUCT SCHEDULE

BIOREMEDIATION AGENTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
B-63	MC	BIOREM-2000 OIL DIGESTER™ (aka, BIOREM-2000 SC)	Clift Industries, Inc. P.O. Box 471578 Charlotte, NC 28247 CUSTOMER SERVICE: PHONE: (800) 996-9901 PRODUCT MANAGEMENT: PHONE: (704) 752-0031 FAX: (704) 544-2532 E-MAIL: matt@cliftindustries.com (Mr. Matt Barnhill)	12/15/10
B-64	MC	DRYLET™ MB BIO	DryLet, LLC 8300 FM 1960 West Suite #450 Houston, TX 77070 PHONE: (346) 980-9570 E-MAIL: sales@drylet.com (Mr. Scott Conley)	02/22/11
B-65	MC	DUALZORB® (aka, TRAILZORB, WHITZORB)	LBI Renewable P.O. Box 637 22 Plains Drive Buffalo, WY 82834 CUSTOMER SERVICE: PHONE: (307) 684-9340 FAX: (307) 684-5815 E-MAIL: aaron@lbirenewable.com (Mr. Aaron Larsen)	05/18/11
B-66	NA	REMEDIADE™ (aka, SP 7010)	GrowMate International, LLC 17150 Butte Creek Drive, Suite 100 Houston, TX 77090 PHONE: (281) 866-9042 FAX: (281) 866-9714 E-MAIL: victor@growmateintl.com WEBSITE: www.growmateintl.com (Mr. Victor J. Cardenas)	06/08/11
B-67	MC/EA/NA	ERGOFIT MICROMIX AQUA	Evadine Technologies, LLC 217 Deborah Drive New Braunfels, TX 78130 PHONE: (310) 929-7925 E-MAIL: info@evadinetech.com (Mr. Warren Russell)	07/27/11

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BIOREMEDIATION AGENTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
B-68	NA	SHAMANTRA GREEN (aka, SHAMANTRA BIO)	Molecular Mediation LLC C/- Molecular Mediation Pty Ltd Level 3, Suite 405 152 Bunnerong Road Eastgardens 2036 Australia PHONE: +612-9659-4553 FAX: +612-9659-5594 E-MAIL: info@molecularmediation.com E-MAIL: mark@molecularmediation.com (Mr. Mark Pilgrim, Manager)	08/17/11
B-69	MC	SUMP SAFE BIO-RECLAIM *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Teamwork Distributing P.O. Box 2506 Stony Plain, Alberta T7Z 1X1 PHONE: (780) 968-5367 (Plant) MOBILE: (780) 238-2741 FAX: (780) 958-9070 E-MAIL: marlin@xplornet.com E-MAIL: marlin@teamwrk.ca (Mr. Marlin Rudolph)	10/13/11
B-70	MC	WASTE AWAY®	Chem-X International, LLC (aka, CXI) 1100 East Sandy Lake Road Coppell, Texas 75019 PHONE: (972) 471-7775 FAX: (972) 393-2011 E-MAIL: dhowardcxl@outlook.com WEBSITE: www.cxinternational.com (Mr. David Howard)	02/07/13
B-71	MC	ACT TERRA FIRMA (aka, ACT-TF)	Franssen Enterprises, Inc. 511 N. McKinley Avenue Fort Lupton, CO 80621 PHONE: (303) 833-5393 FAX: (303) 833-2872 EMAIL: actcleaners@comcast.net WEBSITE: www.actcleaners.com (Mr. Todd Franssen)	04/07/14
B-72	**MC**	**PETROCLEAN™**	**Green Earth Naturally, L.L.C.** **2314 Ridgefield Street NE** **Roanoke, VA 24102** **PHONE: (540) 362-5636** **FAX: (540) 362-9447** **E-MAIL: bcarroll@greenearthnaturally.com** **WEBSITE: www.GreenEarthNaturally.com** **(Mr. Brian Carroll)**	

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NCP PRODUCT SCHEDULE

DISPERSANTS

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
D-1	D	COREXIT® EC9527A *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Nalco Environmental Solutions LLC 7705 Highway 90-A Sugar Land, TX 77478 PRODUCT MANAGEMENT: OFFICE: (281) 263-7709 MOBILE: (832) 851-5164 E-MAIL: debby.theriot@nalco.com (Ms. Debby Theriot)	03/10/78 12/18/95+
D-2	D	NEOS AB3000 (Hydrocarbon Solvent Based) *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	NEOS Company Limited Daisan Kendal Building 1-2, 3-chome Isobedori Chuo-ku, Kobe, Japan 651-0084 PHONE: (81) 78-331-9384 (Mr. T. Ishii, Manager)	04/22/85 01/26/96+
D-3	D	MARE CLEAN 200	Ichinen Chemicals Co., Ltd Mita Twin Building, East Wing 8F 4-2-8, Shibaura, Minato-ku Tokyo, Japan 108-0023 PHONE: (81) 3-6414-5601 FAX: (81) 3-6414-5621 (Mr. Tsuyoshi Imai)	02/23/88 01/26/96+
D-4	D	COREXIT® EC9500A *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Nalco Environmental Solutions LLC 7705 Highway 90-A Sugar Land, TX 77478 PRODUCT MANAGEMENT: OFFICE: (281) 263-7709 MOBILE: (832) 851-5164 E-MAIL: debby.theriot@nalco.com (Ms. Debby Theriot)	04/13/94 12/18/95+
D-5	D	DISPERSIT SPC 1000™ (aka, SEACARE E.P.A. (ECOSPERSE™ POLLUTION ABATEMENT))	U.S. Polychemical Corp. 584 Chestnut Ridge Road Chestnut Ridge, NY 10977 PHONE: (845) 356-5530 FAX: (845) 356-6656 E-MAIL: bruceg@uspoly.com (Mr. Bruce Gebhardt)	04/22/99
D-6	D	JD-109	GlobeMark Resources Ltd. 1312 Mill Creek Drive Salado, TX 76571 MOBILE: (254) 231-2251 E-MAIL: joannie@globemarkresources.com or fiddler656@gmail.com WEBSITE: www.globemarkresources.com (Ms. Joannie Docter)	09/20/00

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NCP PRODUCT SCHEDULE

DISPERSANTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED*; REMOVED#
D-7	D	JD-2000™	GlobeMark Resources Ltd. 1312 Mill Creek Drive Salado, TX 76571 MOBILE: (254) 231-2251 E-MAIL: joannie@globemarkresources.com or fiddler656@gmail.com WEBSITE: www.globemarkresources.com (Ms. Joannie Docter)	D-7
D-8	D	NOKOMIS 3-F4	Mar-Len Supply, Inc. 23159 Kidder Street Hayward, CA 94545 PHONE: (510) 782-3555 FAX: (510) 782-2032 (Mr. Frank Winter)	D-8
D-9	D	BIODISPERS *Last Communication with Manufacturer: 9/20/2012* *Last Attempt: 3/21/2018*	Petrotech America Corporation 130 William Street, Suite 802 New York, NY 10038 PHONE: (212) 933-9071, ext. 7001 FAX: (877) 226-4028 E-MAIL: Info@helpenvironmental.com (Mr. Lawrence Gallo)	D-9
D-10	D	SEA BRAT #4	B.R.A.T. Microbial Products Inc. P.O. Box 7089 Pasadena, TX 77508 PHONE: (713) 724-9226 E-MAIL: alabastercorp@gmail.com (Mr. John Sheffield)	D-10
D-11	D	FINASOL® OSR 52 (aka, SEACARE ECOSPERSE 52)	TOTAL FLUIDES 24 cours Michelet La Défense 10 92069 Paris La Défense Cedex France PHONE: +33-1-41-35-60-29 UNITED STATES: (713) 297-1996 24-HOUR EMERGENCY NUMBER: (713) 297-1996 E-MAIL: david.doucet@total.com WEBSITE: www.totalspecialfluids.com (Mr. David Doucet)	D-11

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NCP PRODUCT SCHEDULE

DISPERSANTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
D-12	D	SAF-RON GOLD (aka, SF-GOLD DISPERSANT) *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Sustainable Environmental Technologies, Inc. 55 Ivan Allen Jr. Boulevard, Suite 850 Atlanta, GA 30308 CUSTOMER SERVICE: PHONE: (404) 946-3585 24-HOUR EMERGENCY NUMBER: PHONE: (281) 845-9919 E-MAIL: support@sustainable-corp.com; bruce@sustainable-corp.com WEBSITE: updated information required (Mr. Bruce Richards)	01/03/05
D-13	D	ZI-400 (aka, ZI-400 OIL SPILL DISPERSANT)	Z.I. Chemicals 8605 Santa Monica Boulevard, #38201 Los Angeles, CA 90069 PHONE: (818) 827-1301 E-MAIL: admin@zichemicals.com E-MAIL: zichemicals@mac.com WEBSITE: www.zichemicals.com (Mr. Barnaby Zelman)	06/16/05
D-14	D	NOKOMIS 3-AA	Mar-Len Supply, Inc. 23159 Kidder Street Hayward, CA 94545 PHONE: (510) 782-3555 FAX: (510) 782-2032 (Mr. Frank Winter)	07/31/08
D-16	D	ACCELL CLEAN® DWD	Advanced BioCatalytics Corporation 18010 Skypark Circle, #130 Irvine, California 92614-6456 OFFICE: (949) 442-0880 GENERAL E-MAIL: info@abiocat.com WEBSITE: www.abiocat.com PRODUCT MANAGEMENT: MOBILE: (949) 981-6510 E-MAIL: cpodella@abiocat.com (Mr. Carl Podella)	07/18/11
D-17	D	FFT-SOLUTION®	Fog Free Technologies, LLC 4365 Dorchester Road Building 300, Suite 301 North Charleston, SC 29405 PRODUCT MANAGEMENT OFFICE PHONE: (843) 735-6626 MOBILE: (478) 697-2588 E-MAIL: doc@fogfreetechnologies.com WEBSITE: www.fogfreetechnologies.com (Mr. William Knight)	11/01/11

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NCP PRODUCT SCHEDULE

DISPERSANTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED*; REMOVED#
D-18	D	MARINE D-BLUE CLEAN™	AGS Solutions, Inc. 5647 Nunn Street Houston, TX 77087 PHONE: (713) 645-4933 FAX: (713) 645-4903 (Mrs. Linda Whiteley)	04/23/12
D-19	D	COREXIT® EC9500B *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Nalco Environmental Solutions LLC 7705 Highway 90-A Sugar Land, TX 77478 PRODUCT MANAGEMENT: OFFICE: (281) 263-7709 MOBILE: (832) 851-5164 E-MAIL: debby.therlot@nalco.com (Ms. Debby Therlot)	08/01/13

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NCP PRODUCT SCHEDULE

MISCELLANEOUS OIL SPILL CONTROL AGENTS

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
M-12	M	PES-51	Practical Environmental Solutions (formerly known as Petroleum Environmental Services) P.O. Box 12563 San Antonio, TX 78212 PHONE: (210) 493-7172 MOBILE : (210) 875-4011 FAX: (210) 493-7172 E-MAIL: simsbi@aol.com E-MAIL: bill.sims@pes51.com **WEBSITE: www.pes51.com** (Mr. Bill Sims)	08/31/92 09/13/95+
M-17	M-Solidifier	CIAGENT	CIAGENT Solutions, LLC 11760 Commonwealth Drive Louisville, KY 40299 PHONE: (502) 267-0101 PHONE: (800) 255-6073 FAX: (502) 267-0181 E-MAIL: dan@ciagent.com WEBSITE: www.ciagent.com (Mr. Dan Parker)	02/25/94 06/14/95+
M-18	M	ZYME-FLOW (aka, ZYME-TREAT, MARI-ZYME, UNITED 658 PETRO-ZYME)	United Laboratories, Inc. 320 37th Avenue St. Charles, IL 60174 PHONE: (630) 377-0900 x7408 PHONE: (800) 323-2594 FAX: (630) 377-0960 E-MAIL: nsherrel@unitedlabsinc.com (Ms. Nancy Sherrel)	03/29/94 03/12/97+
M-19	M-Solidifier	WASTE-SET #3200® *Last Communication with Manufacturer: 11/03/2008* *Last Attempt: 8/30/2016*	Environmental & Fire Technology, LLC 3374 West River Drive NW Grand Rapids, MI 49544 (Mr. Cal Blystra)	04/22/96
M-20	M-Solidifier	WASTE-SET #3400® *Last Communication with Manufacturer: 11/03/2008* *Last Attempt: 8/30/2016*	Environmental & Fire Technology, LLC 3374 West River Drive NW Grand Rapids, MI 49544 (Mr. Cal Blystra)	04/22/96
M-22	M	PX-700™	Enviro-Tech 1907 Southwest 47th Street Cape Coral, FL 33914 PHONE: (239) 997-6300 FAX: (239) 424-8408 E-MAIL: info@envirotechofamerica.com WEBSITE: www.px700.com (Mr. Charlie Jones)	02/27/98 10/05/98+

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NCP PRODUCT SCHEDULE

MISCELLANEOUS OIL SPILL CONTROL AGENTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED*; REMOVED#
M-23	M-Solidifier	ALSOCUP	REVCOM Associates 1550 Rimpau Avenue #53 Corona, CA 92881 PHONE: (951) 737-0104 E-MAIL: revcom@sbcglobal.net (Mr. Dave Naylor, President)	11/23/98
M-24	M-Solidifier	RAPIDGRAB 2000™	GlobeMark Resources Ltd. 1312 Mill Creek Drive Salado, TX 76571 MOBILE: (254) 231-2251 E-MAIL: joannie@globemarkresources.com or fiddler656@gmail.com WEBSITE: www.globemarkresources.com (Ms. Joannie Docter)	01/26/01
M-25	M-Solidifier	OIL SOLUTIONS POWDER (aka, AQUA N-CAP™ POLYMER)	Oil Solutions International 35 Mill Street Amityville, NY 11701 PHONE: (631) 608-8889 FAX: (631) 789-1676 E-MAIL: 4oilgreen@gmail.com WEBSITE: www.cleaningupoil.com (Mr. Dennis J. Traina, President)	11/09/06
M-26	M	ELASTOL (aka, SEPARATE; LIQUID ELASTOL)	Action Additives, Inc. 205 Industrial Road P.O. Box 965 Ducktown, TN 37326 PHONE: (423) 496-5000 PHONE: (800) 496-5110 (Mr. Tim Kaylor)	06/30/08*
M-27	M-Solidifier	OIL BOND®	Solidification Products International, Inc. P.O. Box 35 524 Forrest Road Northford, CT 06472 PHONE: (203) 484-9494 PHONE: (800) 758-3634 FAX: (203) 484-9492 E-MAIL: dgannon@oilbarriers.com (Ms. Donna Gannon)	06/03/10
M-28	M	OPFLEX®	Opflex Solutions P.O. Box 355 West Hyannisport, MA 02672 PHONE: (508) 345-6520 FAX: (508) 425-2990 E-MAIL: ssmith@opflexinventor.com WEBSITE: www.opflex.com (Mr. Scott Smith)	08/17/10

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MISCELLANEOUS OIL SPILL CONTROL AGENTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
M-29	M-Solidifier	GELCO 200	UESS, Ltd. Box 6088 Drayton Valley, AB, Canada T7A 1R6 PHONE: (780) 621-6870 E-MAIL: hugh.morrison@telus.net (Mr. Hugh Morrison)	08/17/10
M-30	M-Solidifier	NORSOREX® APX	D-NOV GmbH Perfektastrasse 86 A-1230 Vienna Austria, Europe OFFICE: 43-1-869-07-60-0 PHONE: 43-664-100-8567 FAX: 43-1-869-07-60-10 E-MAIL: office@d-nov.com WEBSITE: www.d-nov.com (Mr. Gerhard Karall, COO)	04/26/12
M-31	M-Solidifier	CAS 100©	Tradewinds Environmental Safety Services SA de CV Calle 1 "E" No. 245 por 30 y 36 Col. Campestre Merida, Mexico C.P 97120 PHONE: 52-1-999-227-4238 EMAIL: mharper@tessmexico.com (Mr. Michael Harper)	11/09/15
M-32	M	S-200 OILGONE®	RBL Environmental, LLC 1311 Dorothy Avenue Phoenixville, PA 19460 PHONE: (610) 520-7665 E-MAIL: jim.lynn@iepusa.com (Mr. James Lynn)	04/21/16
M-33	M-Solidifier	HYDRO-BOND™	Oil Spill Solutions, LLC 153 Foster Street Center, TX 75953 PHONE: (936) 598-6595 FAX: (936) 598-6338 E-MAIL: fred@fredwulf.com WEBSITE: www.oilspillsolutionsllc.com (Mr. Fred Wulf)	8/22/2016

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NCP PRODUCT SCHEDULE

SURFACE COLLECTING AGENTS

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED*; REMOVED#
S-5	S	THICKSLICK 6535 *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Desmi, Inc. 1119 Cavalier Boulevard Chesapeake, VA 23323 PHONE: (716) 662-0632 E-MAIL: pla@desmi.com WEBSITE: www.desmi.com (Mr. Peter Lane)	06/29/12
S-6	S	SILTECH OP-40 *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Desmi, Inc. 1119 Cavalier Boulevard Chesapeake, VA 23323 PHONE: (716) 662-0632 E-MAIL: pla@desmi.com WEBSITE: www.desmi.com (Mr. Peter Lane)	06/29/12

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SURFACE WASHING AGENTS

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SW-2	SW	TOPSALL #30 (Oil and Petroleum Cleaning Agent) (aka, SUPERALL #38)	Stutton North Corporation P.O. Box 724 Mandeville, LA 70470 PHONE: (985) 626-3900 FAX: (985) 674-0476 (Mr. David Anton) Superall Products LLP P.O. Box 2954 Spring, TX 77383 PHONE: (281) 351-4800 FAX: (281) 351-4855 WEBSITE: www.superall.com E-MAIL: info@superall.com (Mr. Sammy Roberts II)	01/07/85 08/21/95+
SW-9	SW	CN-110 *Last Communication with Manufacturer: 11/03/2008* *Last Attempt: 3/21/2018*	Chemex, Incorporated 107-B Balboa Drive Broussard, LA 70518 E-MAIL: chemex@msn.com (Mr. Gale Campbell)	05/25/89 04/16/96+
SW-10	SW	COREXIT® EC9580A *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Nalco Environmental Solutions LLC 7705 Highway 90-A Sugar Land, TX 77478 PRODUCT MANAGEMENT: OFFICE: (281) 263-7709 MOBILE: (832) 851-5164 E-MAIL: debby.theriot@nalco.com (Ms. Debby Theriot)	07/21/89 09/27/95+
SW-11	SW	DE-SOLV-IT INDUSTRIAL FORMULA	Orange-Sol Blending and Packaging 1400 N Fiesta Boulevard Gilbert, AZ 85233 PHONE: (800) 877-7771 FAX: (480) 497-0444 E-MAIL: albert.farnsworth@orange-sol.com WEBSITE: www.orange-sol.com (Mr. Albert Farnsworth or Mr. Jack Farnsworth at (480) 319-0141)	06/26/89 09/15/94# 07/07/10+
SW-12	SW	PREMIER 99	Gold Coast Chemical Products 2357 Stirling Road Dania Beach, FL 33312 PHONE: (954) 893-0044 FAX: (954) 893-8884 E-MAIL: noslime@goldcoastchemical.com (Mr. Eli Finkelberg or Ms. Maria Morris)	08/11/89 11/02/95+

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SURFACE WASHING AGENTS (continued)

BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
SW-15	SW	SIMPLE GREEN® (Water Based)	Sunshine Makers, Inc. 15922 Pacific Coast Highway Huntington Beach, CA 92649 PHONE: (800) 228-0709 PHONE: (562) 795-6000 FAX: (562) 592-3830 (Ms. Carol Chapin)	04/23/90 08/30/95+
SW-16	SW	AQUACLEAN	Madison Chemical Company, Inc. 3141 Clifty Drive Madison, IN 47250 PHONE: (812) 273-6000 FAX: (812) 273-6002 E-MAIL: cara.cyrus@madchem.com (Ms. Cara Cyrus)	07/08/91 06/14/95+
SW-18	SW	NATURE'S WAY HS *Last Communication with Manufacturer: 6/20/2016* *Last Attempt: 3/21/2018*	Integra Environmental, Ltd. 5825 Centralcrest Houston, TX 77092 PHONE: updated information required FAX: updated information required E-MAIL: updated information required WEBSITE: updated information required (Ms. Cathy Kaiser)	10/23/96
SW-19	SW	CYTOSOL	CytoCulture International, Inc. 249 Tewksbury Avenue Point Richmond, CA 94801-3829 PHONE: (510) 233-0102 EMERGENCY MOBILE: (510) 233-0102 FAX: (510) 233-3777 E-MAIL: rvwedel@gmail.com E-MAIL: cytoculture@gmail.com WEBSITE: www.cytsolbiosolvent.com WEBSITE: www.cytoculture.com (Dr. Randall von Wedel)	01/30/97
SW-20	SW	BIOSOLVE® PINKWATER®	The BioSolve® Company 329 Massachusetts Avenue Lexington, MA 02420 PHONE: (781) 482-7900 PHONE: (800) 225-3909 FAX: (781) 482-7909 E-MAIL: Info@biosolve.com WEBSITE: www.biosolve.com (Mr. Karl Loos or Mr. James Edgerly)	03/21/97

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SW-21	SW	PETROTECH 25 *Last Communication with Manufacturer: 9/20/2012* *Last Attempt: 3/21/2018*	Petrotech America Corporation 130 William Street, Suite 802 New York, NY 10038 PHONE: (212) 933-9071, ext. 7001 FAX: (877) 226-4028 E-MAIL: info@helpenvironmental.com (Mr. Lawrence Gallo)	03/02/98
SW-23	SW	PETRO-CLEAN	B.R.A.T. Microbial Products Inc. P.O. Box 7089 Pasadena, TX 77508 PHONE: (713) 724-9226 E-MAIL: alabastercorp@gmail.com (Mr. John Sheffield)	03/01/99
SW-24	SW	DO-ALL #18 *Last Communication with Manufacturer: 8/17/2012* *Last Attempt: 3/21/2018*	Radcob Solutions, Inc. 4800 North State Road 7 Suite #105 Lauderdale Lakes, FL 33319 PHONE: (954) 249-2178 FAX: (954) 640-7080 E-MAIL: updated information required WEBSITE: updated information required (Mr. Adam Goldberg)	07/14/00
SW-25	SW	SC-1000™	GEMTEK® Products 3808 North 28th Avenue Phoenix, AZ 85017 EMERGENCY NUMBER: (602) 265-8586 PHONE: (800) 331-7022 FAX: (602) 265-7241 E-MAIL: info@gemtek.com (Mr. Kim Kristoff)	07/09/01
SW-26	SW	GOLD CREW SW	Gold Crew Products & Services, LLC P.O. Box 12032 Orange, CA 92859 PHONE: (714) 288-8781 FAX: (714) 288-8730 E-MAIL: jfigueira@goldcrew.net WEBSITE: www.goldcrew.net (Mr. Jim Figueira) ECS 9014 Peacock Hill Avenue, Suite 200 Gig Harbor, WA 98332 PHONE: (877) 253-2665 (Mr. Ed Grubbs)	08/06/01

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SW-28	SW	NALE-IT	SPL Control LLC P.O. Box 627 Elemore City, OK 73433 PHONE: (580) 788-2187 E-MAIL: splcontrol@aol.com (Mr. Tom Lester)	11/05/01
SW-30	SW	F-500	Hazard Control Technologies, Inc. 150 Walter Way Fayetteville, GA 30214 PHONE: (770) 719-5112 FAX: (770) 719-5117 (Mr. Christopher L. Champion)	07/24/02
SW-31	SW	ENVIROCLEAN	Enviro Clean Services, LLC P.O. Box 721090 Oklahoma City, OK 73172-1090 PHONE: (405) 373-4545 FAX: (405) 373-4549 E-MAIL: info@eccgrp.com E-MAIL: jonathan.behymer@eccgrp.com WEBSITE: www.eccgrp.com (Mr. Jonathan Behymer)	10/27/03
SW-32	SW	BG-CLEAN™ 401	Amiran BioChemicals, LLC 7221 South 10th Street Oak Creek, WI 53154 PHONE: (414) 571-6230 FAX: (414) 571-6231 (Dr. Mohsen Amiran) PHONE: (414) 939-8405 FAX: (414) 571-6231 E-MAIL: samiran@amiran-technologies.com E-MAIL: jwilde@amiran-technologies.com (Mr. Sherwin Amiran or Mr. Jason Wilde at (703) 216-0194)	07/21/05
SW-33	SW	E-SAFE©	PLUTUS Environmental Technologies, Inc. 300 John L Marshall Drive Sevierville, TN 37862 PHONE: (865) 214-0350 E-MAIL: plutusceo@mail.com (Mr. James Hatcher)	11/27/06
SW-34	SW	SHEEN-MAGIC©	PLUTUS Environmental Technologies, Inc. 300 John L Marshall Drive Sevierville, TN 37862 PHONE: (865) 214-0350 E-MAIL: plutusceo@mail.com (Mr. James Hatcher)	11/27/06

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SW-35	SW	PROCLEANS	Eximco International, Inc. 5250 Gulfton, #2-B Houston, TX 77081 PHONE: (713) 432-7899 E-MAIL: procleans@procleans.com E-MAIL: eximco@eximco.net (Mr. Nat Brown)	06/16/08
SW-36	SW	SPILLCLEAN SPILLCLEAN ["Concentrate"] (aka, FIREMAN'S BRAND SPILLCLEAN)	Super Sat Ventures, Inc. S96 W34577 Jericho Drive Eagle, WI 53119 PHONE: (414) 840-9223 (Mr. Daniel W. Klein)	03/30/09
SW-37	SW	TXCHEM HE-1000™	Texas EnviroChem, Inc. 11410 Dumas Street Houston, TX 77034 PHONE: (713) 806-4099 (Mr. Pete Franks)	03/15/10
SW-38	SW	NOKOMIS 5-W	Mar-Len Supply, Inc. 23159 Kidder Street Hayward, CA 94545 PHONE: (510) 782-3555 FAX: (510) 782-2032 (Mr. Frank Winter)	05/11/10
SW-39	SW	G-CLEAN OSC-1809 (aka, OIL SPILL CLEANUP *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Green Earth Technologies 1136 Celebration Boulevard Celebration, FL 34347 PHONE: (330) 540-4220 FAX: (815) 331-0931 E-MAIL: mlukco@getg.com E-MAIL: jloch@getg.com WEBSITE: www.getg.com (Mr. Michael Lukco)	07/02/10
SW-40	SW	GREEN BEAST™ OIL SPILL & ODOR REMEDIATOR (aka, GREEN BEAST WASHING AGENT; ALL PURPOSE CLEANER & REMEDIATOR)	BioFusion Corporation 310 Godwin Avenue Ridgewood, NJ 07450 PHONE: (201) 447-6241 FAX: (201) 444-2307 E-MAIL: gubb@biofusion.com (Mr. David Gubb)	07/06/10

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SW-41	SW	TULXA	Grupo Arthuriana S.A. de C.V. Cuernavaca No. 43 Colonia Condesa Delegación Cuauhtémoc Mexico, Distrito Federal C.P. 06140 PHONE: 011 52 (55) 52 41 11 90 FAX: 011 52 (55) 53 61 13 54 E-MAIL: sgarcia@arthuriana.com.mx, sgarcia@onsite.com.mx, bescorcia@arthuriana.com.mx, bescorcia@onsite.com.mx WEBSITE: www.grupoarthuriana.com.mx (Ms. Susana Garcia Ballesteros or Ms. Bertha Escorcia Rodriguez)	07/13/10
SW-42	SW	MARINE GREEN CLEAN™	AGS Solutions, Inc. 5647 Nunn Street Houston, TX 77087 PHONE: (713) 645-4933 FAX: (713) 645-4903 E-MAIL: agssolutionsinc@gmail.com WEBSITE: www.agstx.com (Mrs. Linda Whiteley)	07/28/10
SW-43	SW	MARINE GREEN CLEAN PLUS™	AGS Solutions, Inc. 5647 Nunn Street Houston, TX 77087 PHONE: (713) 645-4933 FAX: (713) 645-4903 E-MAIL: agssolutionsinc@gmail.com WEBSITE: www.agstx.com (Mrs. Linda Whiteley)	07/28/10
SW-44	SW	CLEAN GREEN (aka, CLEANGREEN® PLANET WASH)	U.S. AG, LLC P.O. Box 368 Luthersville, GA 30251 PHONE: (770) 927-3206 FAX: (770) 927-3968 E-MAIL: unitedstatesag@yahoo.com WEBSITE: www.unitedstatesag.org (Mr. Carl Schneider)	08/05/10
SW-45	SW	SOC 10 (SURFACE OIL CLEANER) *Last Communication with Manufacturer: 8/05/2010* *Last Attempt: 3/21/2018*	Oil Treatment International AG Seestrasse 5 CH-6300 Zug Switzerland PHONE: 01141-41-727-2100 FAX: 01141-41-727-2109 (Mr. Paul Schuler)	08/05/10

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BULLETIN NUMBER	PRODUCT CATEGORY LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED; RELISTED+; REMOVED#
SW-46	SW	BIOGRASS EXTRA®	Química del Desierto, S. De R.L. de C.V. Trasviña y Retes 6103-2 Col. Panamericana Chihuahua, Chihuahua, Mexico C.P. 31210 PHONE: +52-1-614-110-2650 E-MAIL: erich.wolf@biograssextra.com WEBSITE: www.biograssextra.com (Ing. Erich Wolf)	08/17/10
SW-47	SW	ENVIRONMENTAL 1 CRUDE OIL CLEANER (aka, ENVIRONMENTAL 1 WASHING AGENT)	Environmental 1, LLC P.O. Box 9 Jackson, TN 38302 PHONE: (615) 269-0506 FAX: (615) 269-0025 E-MAIL: info@environmental-one.com E-MAIL: mfb@environmental-one.com WEBSITE: www.environmental-one.com (Ms. Mary Frances Blankenship, President)	08/25/10
SW-48	SW	SANDKLENE 950	MDEChem, Inc. 923 10th Street PMB 101 Floresville, TX 78114 PHONE: (830) 393-5293 E-MAIL: corporateoffice@mdechem.com WEBSITE: www.mdechem.com (Mr. Paul Sack)	10/04/10
SW-49	SW	DE-SOLV-IT CLEAN AWAY APC SUPER CONCENTRATE	Orange-Sol Blending and Packaging 1400 N Fiesta Boulevard Gilbert, AZ 85233 PHONE: (800) 877-7771 FAX: (480) 497-0444 E-MAIL: albert.farnsworth@orange-sol.com WEBSITE: /www.orange-sol.com (Mr. Albert Farnsworth or Mr. Jack Farnsworth at (480) 319-0141)	11/10/10
SW-50	SW	EO ALL PURPOSE SOAP-LAVENDER	EO Products/Small World Trading Company 90 Windward Way San Rafael, CA 94901 PHONE: (415) 945-1900 FAX: (415) 945-7117 E-MAIL: joyce@eoproducts.com or sam@eoproducts.com WEBSITE: www.eoproducts.com (Ms. Joyce Tsang or Mr. Sam Borri)	11/17/10

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SW-51	SW	DYNAMIC GREEN™	Wechem, Inc. 5734 Susitna Drive Harahan, LA 70123 PHONE: (800) 426-0512 PHONE: (504) 733-1152 FAX: (504) 733-2218 E-MAIL: mwisecarver@wechem.com or okropog@wechem.com WEBSITE: www/wechemc.com (Mr. Mike Wisecarver)	12/07/10
SW-52	SW	VERU-SOLVE™ MARINE 200 HP *Last Communication with Manufacturer: 8/29/2012* *Last Attempt: 3/21/2018*	VeruTEK® Technologies 65 West Dudley Town Road, Suite 100 Bloomfield, CT 06002 PHONE: updated information required FAX: updated information required E-MAIL: bmcavoy@verutek.com WEBSITE: www.verutek.com (Ms. Bethany McAvoy)	12/09/10
SW-53	SW	NATURAMA G3 A-5	Green Life Development, Inc. 5112 W. Charleston Boulevard, Suite C Las Vegas, NV 89146 PHONE: 702-966-1284 MOBILE: 702-355-5102 FAX: 702-448-6977 E-MAIL: david@greenlifedevelopment.com WEBSITE:www.greenlifedevelopment.com (Mr. David A. Levy)	01/26/11
SW-54	SW	SAFE KLEEN	Anti Slip Solutions Ltd. Bridge House Severn House Riverside North, Bewdley, Worcestershire, DY12 1AB, UK PHONE: 44(0)1299-406-011 FAX: 44(0)1299-406-023 E-MAIL: info@safe-grip.co.uk (Mr. Dan Bayliss)	02/25/11
SW-55	SW	CORIBA 700 SR (aka, CORIBA 700 ER, CORIBA 700 OS) *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Coriba Technologies, LLC 5708 Cadron Creek North Little Rock, AR 72116 PHONE: updated information required E-MAIL: ronrios@bellsouth.net (Mr. Harvey G. Cobb)	02/25/11

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SW-56	SW	CORIBA 713 SR (aka, CORIBA 713 ER, CORIBA 713 OS) *LISTING CHANGES PENDING, FOLLOWING VERIFICATION BY MANUFACTURER AND EPA*	Coriba Technologies, LLC 5708 Cadron Creek North Little Rock, AR 72116 PHONE: updated information required E-MAIL: ronrios@bellsouth.net (Mr. Harvey G. Cobb)	02/25/11
SW-57	SW	JEP-MARINE CLEAN (aka, ECOVOOM-MARINE)	Nuance Solutions* 900 E. 103rd Street, Suite D Chicago, IL 60628 PHONE: (800) 621-8553 FAX: (800) 621-1276 (Mr. Neil Houtsma)	05/11/11
SW-58	SW	ETHOS CLEAN *Last Communication with Manufacturer: 9/27/2012* *Last Attempt: 3/21/2018*	MAG7 Venture Group, LLC, DBA MAG 7 Technologies 1 Lepage Place, Suite 100 Syracuse, NY 13206 PHONE: updated information required FAX: updated information required E-MAIL: updated information required WEBSITE: updated information required (Mr. Greg Goodell or Mr. Trevor Quig)	06/28/11
SW-59	SW	OSR-10 *Last Communication with Manufacturer: 9/27/2012* *Last Attempt: 3/21/2018*	MAG7 Venture Group, LLC, DBA MAG 7 Technologies 1 Lepage Place, Suite 100 Syracuse, NY 13206 PHONE: updated information required FAX: updated information required E-MAIL: updated information required WEBSITE: updated information required (Mr. Greg Goodell or Mr. Trevor Quig)	06/28/11
SW-60	SW	ACCELL CLEAN® SWA	Advanced BioCatalytics Corporation 18010 Skypark Circle, #130 Irvine, CA 92614-6456 OFFICE: (949) 442-0880 GENERAL E-MAIL: info@abiocat.com WEBSITE: www.abiocat.com PRODUCT MANAGEMENT: MOBILE: (949) 981-6510 E-MAIL: cpodella@abiocat.com (Mr. Carl Podella)	07/13/11

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SW-61	SW	EPA OIL FIELD SOLUTION™ (aka, HYDRO-CLEAN™, GLOBAL ENVIRONMENTAL CLEANER™, AWAN PRA OIL FIELD SOLUTION™) *Last Communication with Manufacturer: 10/19/2016* *Last Attempt: 3/21/2018*	Environmental Protection Associates, Inc. 2578 Enterprise Road, Suite 141 Orange City, FL 32763 PHONE: updated information required E-MAIL: updated information required WEBSITE: updated information required (Mr. Nathan Hall)	10/13/11
SW-62	SW	PETROMAX PSC 3 (aka, PETROMAX SOIL CLEANING AND WASHING AGENT)	Saxon Petrotechnologies S.A. Ancona 14-Bis Carrasco, Montevideo Uruguay PHONE: 598-2-604-1006 US Contact: (305) 600-4927 FAX: (508) 256-8318 E-MAIL: svb@saxon-technologies.com WEBSITE: www.alfaluz.net (Mr. Scot von Bergen)	03/05/12
SW-63	SW	GREEN TECHNOLOGIES SOLUTIONS-OIL RECOVERY (GTS-OR)	International Technologies and Services 302 W. 5th Street, Suite 100 B San Pedro, CA 90731 PHONE: (310) 791-4487 FAX: (877) 744-9975 E-MAIL: pilarladybug@itsenvironmental.com WEBSITE: www.ITSEnvironmental.com (Ms. Pilar Ortega)	07/12/12
SW-64	SW	NONTOX™ SURFACE WASHING AGENT	Bio-Organic Catalyst, Inc. (wholly owned subsidiary of Neozyme International, Inc.) 711 West 17th Street, Suite E-6 Costa Mesa, CA 92627 PHONE: (949) 515-1301 PHONE: (800) 982-8676 FAX: (949) 515-1314 E-MAIL: parker@bio-organic.com WEBSITE: www.bio-organic.com (Mr. Parker Dale)	01/23/14
SW-65	SW	SIMPLE GREEN® 2013 Reformulation	Sunshine Makers, Inc. 15922 Pacific Coast Highway Huntington Beach, CA 92649 PHONE: (800) 228-0709 PHONE: (562) 795-6000 FAX: (562) 592-3830 (Ms. Carol Chapin)	07/09/13

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SW-66	SW	FORMULA 206-1x BIO-WASH™ (aka, CAST OFF™, FORMULA 206-1x)	Natural Soap Formulas, Inc. 3200 S Andrews Avenue, Suite 113 Fort Lauderdale, FL 33316 PHONE: (888) 759-7256 PHONE: (954) 789-5656 SKYPE: KaylinDaire2 E-MAIL: kaylin@naturalsoapformulas.com (Ms. Kaylin D'Aire)	05/07/15
SW-67	SW	RHAMNOWASH 10	Rhamnolipid, Inc. 511 West Bay Street, Suite 350 Tampa, FL 33606 PHONE: (917) 576-7381 DIRECT: (704) 564-6445 EMAIL: greccosg@rhamnolipid.com WEBSITE: www.rhamnolipid.com (Mr. Samuel G. Grecco)	08/03/15
SW-68	SW	ADP-7	Petro-Green, Inc. 3952 Candlenut Lane Dallas, TX 75244 MAILING ADDRESS: P.O. Box 814665 Dallas, TX 75381 PHONE: (214) 484-7336 FAX: (214) 484-7336 EMAIL: adp7@petro-green.com WEBSITE: www.petro-green.com (Mr. Michael Paddock)	08/22/16
SW-69	SW	WATER WORKS™ HEAVY DUTY DEGREASER CONCENTRATE (aka, HEAVY DUTY DEGREASER CONCENTRATE)	Keteca USA, Inc. 4280 W. Opportunity Way Phoenix, AZ 85086 Phone: (602) 278-7789 Fax: (602) 278-7749 E-mail: sales@ketecausa.com Web site: www.ketecawaterworks.com (Ms. Kathy Parks)	09/07/16

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