

Job Aid 4
Dispersant Application Platforms and Other Available Resources

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4.a OSRO dispersant platforms, personnel, products and general response timeframes

i. Characteristics of dispersant spraying platforms available to operators in California

Application system	Distance from shore (miles)	Sorties per day	Gallons of dispersant sprayed per sortie	Gallons of dispersant sprayed per day	Volume of oil treated per day (gallons) (1:20 DOR)
C-130	10	4	4125	16,500	330,000
	30	4		16,500	330,000
	100	3		12,375	247,500
	200	3		12,375	247,500
DC-4 ^a	10	6	2100	12,600	252,000
	30	5		10,500	210,000
	100	4		8,400	168,000
	200	3		6,300	126,000
Helicopter	1	30	250	7,500	150,000
	10	21		5,250	105,000
	30	11		2,750	55,000
Vessel	1	3	1000	3,000	60,000
	10	2		2,000	40,000
	30	1		1,000	20,000
	100	1		1,000	20,000

ii. Dispersant spraying capacity of platforms as a function of distance ^a

Platform	Operating distance (miles)	Number of sorties per day	Payload (barrels)	Volume of dispersant sprayed per day (barrels)	Volume of oil dispersed per day (barrels) ^b
C-130	10	4	130.8	523.2	10464
	30	4	130.8	523.2	10464
	100	3	130.8	39234	7848
	200	3	130.8	392.4	7848
DC-4 ^c	10	6	47.6	285.6	5712
	30	5	47.6	238.1	4761
	100	4	47.6	190.4	3808
	200	3	47.6	142.8	2856
Helicopter	1	30	5.7	169.8	3396
	10	21	5.7	119.7	2394
	30	11	5.7	62.3	1245
Vessel ^d	1	3	23.8	71.4	1428
	10	2	23.8	47.6	952
	30	1	23.8	23.8	476
	100	1	23.8	23.8	476
^a Based on response to a batch spill of 3180 m ³ (20,000 barrels). ^b Assuming 20 volumes of oil are dispersed per 1 volume of dispersant sprayed. ^c Values reported in literature for payload of DC-4 range from 2000 to 2500 gallons (7.5 to 9.5 m ³); value used here is 2000 gallons (= 47.6 barrels) as per ASI, Houma, LA. ^d Modeled after Clean Seas boom type vessel spray system.					

iii. OSRO Dispersant Application Platforms and Response Times in California

To meet USCG requirements for dispersant use in pre-authorization zones:

- ✓ 50% of dispersant Effective Daily Application Capacity (EDAC) must be achieved through fixed wing aircraft
- ✓ Dispersant application must be completed within 7-12 hours
- ✓ Aerial tracking capability is to arrive on-scene prior to dispersant use

OSRO	Equipment Types	Response Times to CA	Amount of Dispersant That Can Be Applied
MSRC Tracy Sedlack 713-471-2680 (C) sedlack@msrc.org	Aerial		
	C-130 from Moses Lake, WA C-130 from Melbourne, FL	6.3 hrs to CA staging area after spill notification	4125 gal/sortie 150' swath width
	Dispersant Location, Type, Amount		
	990 West Waterfront Drive, Eureka, CA		Corexit 9500: 660 gallons
	Chevron Environmental Management Co., Richmond, CA		Corexit 9500: 9405 gallons
	Marathon Marine Terminal, Long Beach, CA		Corexit 9500: 12870 gallons
MSRC Santa Barbara Group Kyle Hanson 805-755-4101(O) 805-455-5502 (C)	Aerial		
	Helicopter	Can be mobilized to staging area within MSRC Santa Barbara Channel AOR and applying dispersants by hour 4	250 gal max capacity; swath width 50' – 60'
	Vessel		
	Two 65' fast response vessels with fully integrated dispersant systems, covering Santa Barbara Channel.	Response times are based on federal requirements. If for an offshore platform spill response, timeframe is generally 2-6 hr	Each of the vessels has: 250 gallon capacity, swath width = 52'
	Dispersant Location, Type, Amount		
	Carpinteria, CA:		Corexit 9500: 8484 gallons Corexit 9527: 9173 gallons

OSRO	Equipment Types	Response Times to CA	Amount of Dispersant That Can Be Applied
NRC Chris Eilers 631-328-2517 ceilers@nrcc.com	Aerial		
	DC-4 in Atwater, CA	2 hr mobilization time, fly time based on spill location	2100 gallons
	One other dispersant aircraft (DC-6) and dispersant spotter aircraft available throughout US to NRC clients.		
	Vessel		
	6 NRC OSRVs or vessel spray systems available throughout US to NRC clients.		
	Dispersant Location, Type, Amount		
	NRC Equipment Storage Site, Alameda, CA		Corexit 9500: 4240 gallons
	NRC Equipment Storage Site, Long Beach, CA		Corexit 9500: 4240 gallons
	Additional out-of-state dispersant available within 36-60 hrs.		

iv. Estimated dispersant dosages based on average oil thickness and dispersant-to-oil ratios

Average oil thickness (inches) (mm)	Relative thickness	Dispersant-to-oil ratio (DOR)						
		Oil concentration (volume of oil/unit area)	1:1	1:5	1:10	1:20	1:50	1:100
.0004 in (0.01 mm)	Very light to light	Gallons/acre	10.7	2.14	1.1	0.5	0.2	0.1
.001 in (0.02 mm)	Light	Gallons/acre	21.4	4.3	2.1	1.1	0.4	0.2
.002 in (0.05 mm)	Light	Gallons/acre	53.5	10.7	5.4	2.7	1.1	0.5
.004 in (0.1 mm)	Light to moderate	Gallons/acre	107	21.4	10.7	5.4 **	2.1	1.1
.019 in (0.5 mm)	Moderate	Gallons/acre	535	107	53.5	26.8	10.7	5.4
.04 in (1.0 mm)	Moderate to heavy	Gallons/acre	1070	214	107	53.5	21.4	10.7
.08 in (2.0 mm)	Heavy	Gallons/acre	2140	428	214	107	42.8	21.4
0.12 in (3.0 mm)	Heavy	Gallons/acre	3210	642	321	160.5	64.2	32.1

The 5 gallons/acre number was generated, assuming a light to moderate oil thickness and a DOR of 1:20. However, the table also makes it apparent that many other ratios may be appropriate depending on the volume or thickness of the spilled oil. How the oil behaves in the environment once it is spilled, and the dispersant application platform chosen, will also add a number of variables the FOSC will need to consider.

4.b NCP Product Schedule and dispersant products available to FOSC

Federal listing of oil spill cleanup agents (OSCA's), including dispersants, is addressed by the US EPA under Subpart J of the National Contingency Plan. The product schedule is updated frequently, is available at the link below, and should be referred to before determining which listed dispersants are currently available for FOSC use.

<https://www.epa.gov/emergency-response/national-contingency-plan-subpart-j>

Although any dispersant listed on the NCP Product Schedule is technically available for FOSC use, it is the policy of the RRT IX that only dispersants also licensed by the State of CA be used by the FOSC.

4.c Dispersant products licensed by the State of California

The State of California, via CDFW-OSPR, operates an OSCA review and licensing program that is distinct from the NCP Product Schedule managed by US EPA. In addition to OSCA licensing mandates and regulations, the OSPR Administrator must approve the use of OSCAs considered for responses to oil spills in, on or potentially affecting California state waters.

The four dispersants currently licensed by CDFW-OSPR are:

- Corexit EC9500A (formerly Corexit 9500)
- Corexit EC9527A (formerly Corexit 9527)
- Nokomis No. 3-AA (formerly known as Slick-A-Way)
- Nokomis No. 3 aka 3-F4

California licensed OSCAs are subject to renewal every 5 years. For more information on the California licensing regulations and procedures, please refer to:

<https://www.wildlife.ca.gov/OSPR/Preparedness/Oil-Spill-Cleanup-Agents>

For more information on individual licensed OSCAs, or the process for receiving OSPR Administrator approval for use, please contact the OSPR OSCA licensing representative at: 831-649-2888 or ellen.faurot-daniels@wildlife.ca.gov

4.d Approval processes for use of dispersant products on the NCP but not licensed by the State of California

There are many more dispersants on the NCP Product Schedule than are licensed by California for use in state waters. It is also, however, the policy of the RRT IX that only dispersants licensed by the State of CA be used by the FOSC, even for spills in federal waters that lie outside the state waters boundary.

If the FOSC suggests use of a dispersant on the NCP Product Schedule but not licensed by California, that dispersant may require NEBA analyses and ESA Section 7 consultations before the RRT IX can recommend or approve its use, regardless of zone type.