

Date: 1615 EDT July 13, 2007  
To: NOAA SSC Frank Csulak



FROM: NOAA/NOS Office of Response and Restoration  
Emergency Response Division  
Seattle, WA 98115

SUBJECT: Grounded Tug Russell B. Murray, Hampton Roads

FOR ADDITIONAL INFORMATION, PLEASE CONTACT CJ Beegle-Krause  
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We have looked at the issue of a potential spill from a grounded vessel. These notes are based on the following information:

The Tug Russel B Murray reported as grounded at approx. 0900 hr today outside the Newport News channel. The tug is carrying approx. 34,000 gallons of diesel. Location is given as 36 deg 57.800'N, 076 deg 23.040'W. The vessel is not currently leaking oil, and is undergoing repair of a hole in preparation for lightering operations.

If any of this initial information is incorrect, please let us know ASAP as it would affect any trajectory implications.

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#### 1) 48-hour Wind Forecast

Friday:

Afternoon: Winds from the E at 5-10 knots.

Evening: Winds from the E to SE at 10-15 knots.

Night: Winds from the SW at 10-15 knots.

Saturday

Morning: Winds from the SW at 10-15 knots.

Afternoon: Winds from the S at 10-15 knots.

Night: Winds from the S at 10-15 knots.

#### 2) Trajectory

Since the vessel is not currently leaking, we can only estimate scenarios for release over the forecast period. All forecast winds have a southerly component, indicating that the oil would move northward with the winds, and further up or down the James River depending on the phase of the tide and the exact winds at the time of release. Oil released over the next 24 hours could reach as far up-river as the Newport News side of the James River Bridge, and as far downriver as Old Point Comfort.

#### 3) Weathering and Fate

##### **Diesel**

Light refined products, such as diesel (or Fuel Oil No 2), typically have very high evaporation rates and do not tend to create persistent slicks. However, the terminology for refined products is not standardized, and, sometimes, heavier intermediate fuel oils are referred to as 'marine diesel'. These heavier products are much less volatile than normal Fuel Oil #2 and can form a more persistent slick.

When spilled, the diesel spreads quickly into thin films, often forming patches of rainbow and silver sheens. If the sheens reach the shoreline in a few hours, a slight staining, or

greasy film-like bathtub ring is common. These oils usually do not form a stable emulsion and, as a result, do not form a heavy or sticky residual to clean up.

Note that lighter refined products do have a relatively high concentration of light aromatic compounds and tend to be more soluble and more toxic than heavier oils. These oils do not generally present an involved cleanup problem. However, they can result in an initial toxic shock to biota and can persist as a biological threat in low energy marine environments.

Oil Name = DIESEL FUEL OIL (SOUTHERN USA 1997)

API = 37.6

Pour Point = 7 deg F

Wind Speed = constant at 10 knots

Wave Height = computed from winds

Water Temperature = 65 deg F

Time of Initial Release = July 13, 1300 hours

Total Amount of Oil Released = 34,000 gal

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Hours Into Spill	Released gal		Evaporated percent		Dispersed percent		Remaining percent
1	34,000	-	2	-	0	-	98
2	34,000		5		1		94
4	34,000	-	11	-	4	-	86
6	34,000		17		10		73
8	34,000	-	22	-	19	-	60
10	34,000		26		28		47
12	34,000	-	28	-	37	-	35
14	34,000		30		44		26
16	34,000	-	31	-	50	-	19
18	34,000		32		55		14
20	34,000	-	32	-	58	-	10