



Michael J. Utsler

Chief Operating Officer
Gulf Coast Restoration Organization

BP
1250 Poydras
New Orleans, LA 70113

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Mr. Harold "Rusty" Wright
1201 Elmwood Park Boulevard
New Orleans, LA 70123

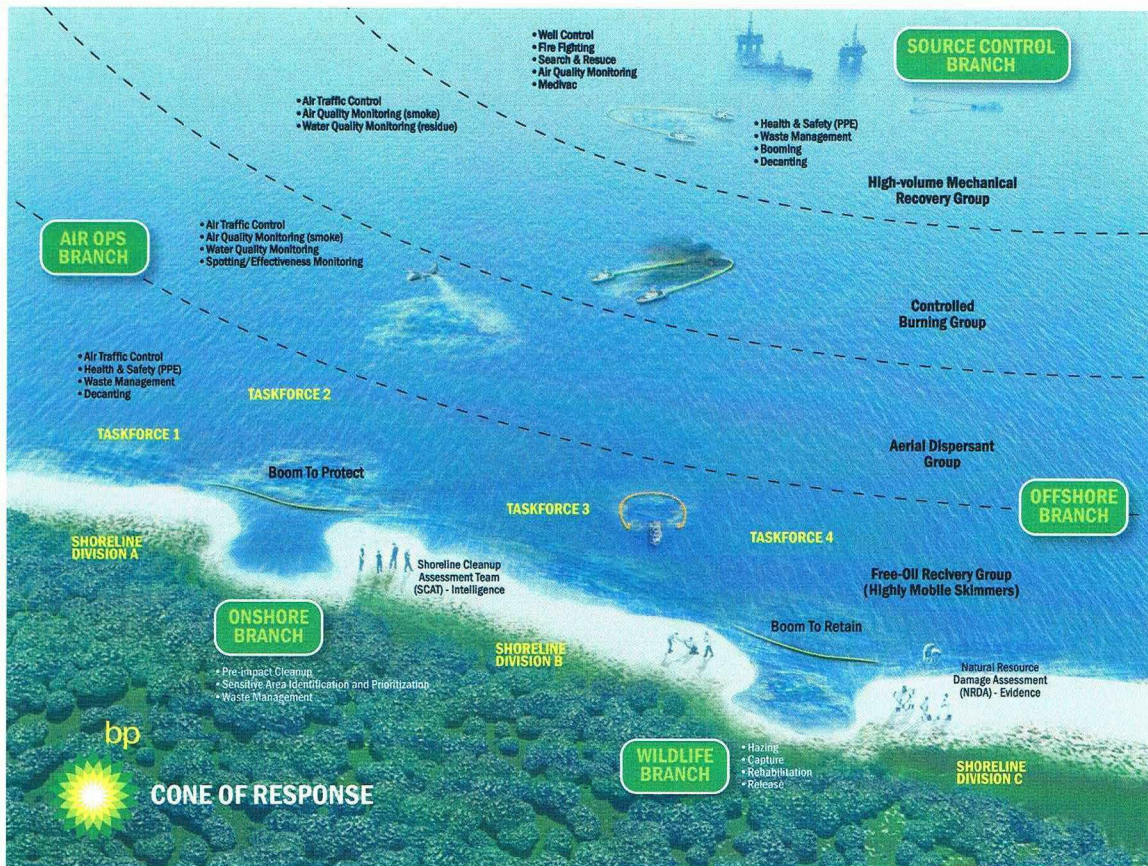
Dear Mr. Wright:

The Bureau of Ocean Energy Management, Regulation and Enforcement ("BOEM") requested BP Exploration & Production Inc. ("BP") to provide the reported daily volume of oily water recovered by skimmer for the Marine Spill Response Corporation ("MSRC"), the National Response Corporation ("NRC") and the Clean Gulf Associates ("CGA") fleets during the Deepwater Horizon Oil Spill response (the "Response") as well as the total daily skimmed volumes BP recorded the total daily volume of oily water collected, and for some but not all of the skimming vessels, the total daily volume of oily water collected on a per vessel basis. The estimated total daily volume of oily water recovered for each day of the Response from all skimming vessels, and for certain vessels on a per vessel basis, is set forth below along with additional information that provides the context necessary to meaningfully interpret the data.

While we believe the data is representative of the daily skimming operations throughout the response, there are inevitably operational complexities of conducting such a large effort which will impact the data reported, including:

- Protocols and capabilities for reporting were not consistent across the various companies and agencies
- Timing of report submittal varied by company, vessel and barge
- Variable decanting frequencies
- As periodic audits were carried out, true-ups reflecting adjustments for an operational period were reported in one day to align total volume

When reviewing the data it is important to keep in mind that skimming was only one part of an integrated response strategy, as illustrated in the following graphic:



The amount of skimming capacity deployed each day was determined based on many factors. For each operating period, Unified Area Command (the “UAC”) evaluated conditions for optimizing oil recovery and response activities consistent with agreed priorities. For example, when subsea and/or aerial dispersants were determined to be more effective in reducing risk of oil reaching shoreline and sensitive areas, skimming operations were directed to areas that would not interfere with source control and subsea and/or aerial dispersant application. Similarly, when conditions favored controlled burns as more effective in reducing impact of oil to shoreline and sensitive areas, skimming operations were conducted in areas that would not conflict with controlled burns. For these reasons, skimming vessels were not always in skimmable oil.

Coming into the Response, the sense was that the best way to increase the amount of oil skimmed was to increase the number of skimmers deployed. The UAC’s experience in the Response demonstrated that this was not the case. A review of the oil footprint, number of skimmers deployed, and barrels recovered by skimming operations each day shows that, above a relatively low threshold number of skimmers, there is virtually no correlation between number of skimmers or skimming capacity and the volume of oil recovered by skimming operations, even during times when the skimming fleet reached over 400 vessels with a large range of capabilities. In fact, there were only 19 skimmers deployed on the day in which the largest volume of oily water was recovered. By the time the skimmer levels climbed into the hundreds, it became apparent that it had reached a point of diminishing returns from too many skimmers on the water. Just increasing the number of skimmers deployed did not result in an increase in the volume of oil skimmed.

Maximizing the Encounter Rate (i.e. the area of skimmable oil the skimmers encounter based on the swath width, speed, storage, flexibility and weather robustness) was a much more leveraging factor than the number of skimmers deployed.

The UAC considered the following factors in determining the skimmer deployments for a given day:

Number of skimmers depended primarily on:

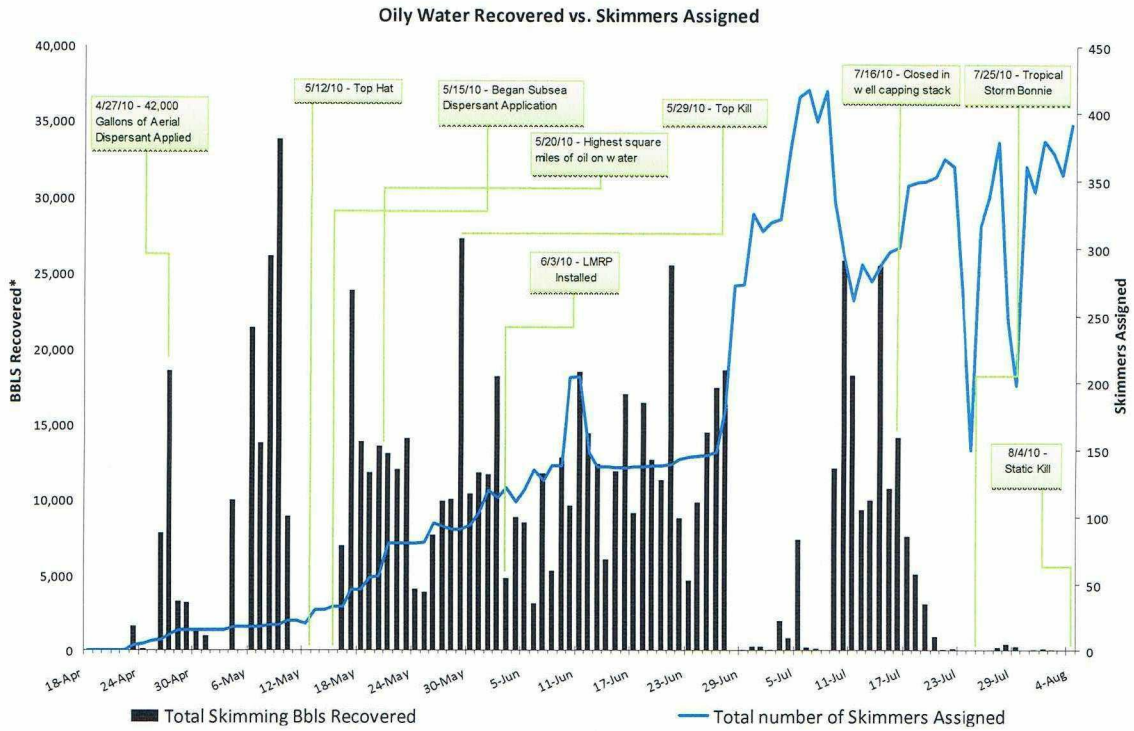
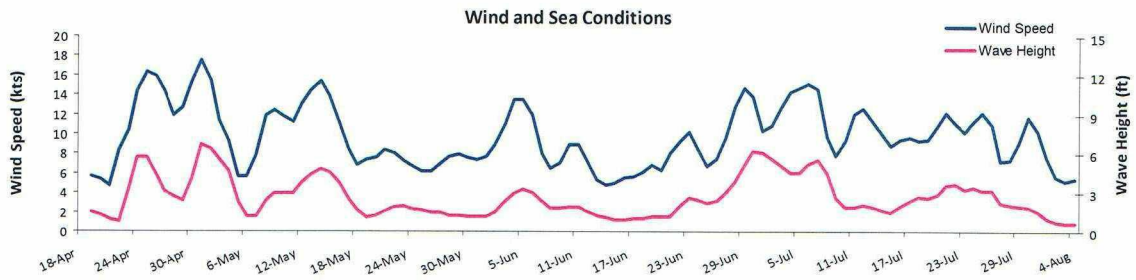
- Weather conditions, sea state and temperature
- Simultaneous operations (controlled burns, source control, aerial and subsea dispersant applications)
- Oil type, condition, viscosity, thickness
- Currents

The type of skimmers depended on:

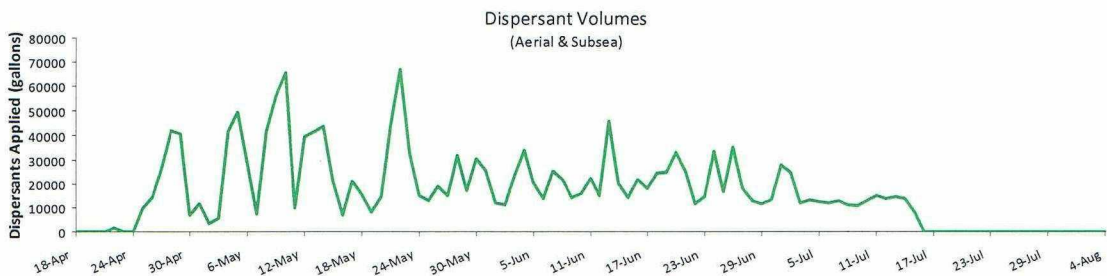
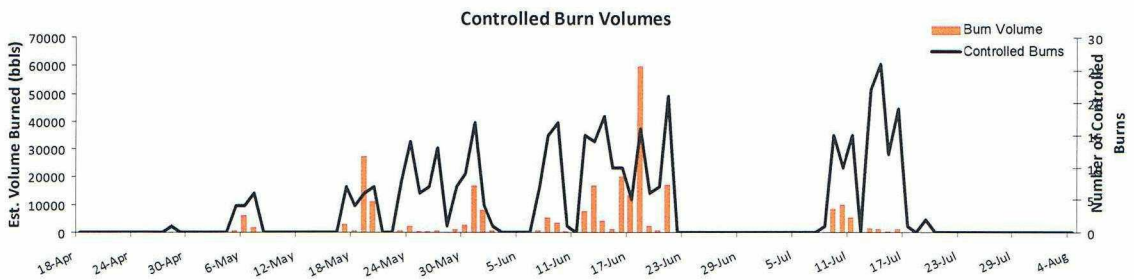
- Location of oil (deep water/open ocean, shallow water, etc.)
- Time to oil (fast enough to react to streamers spotted)
- Capacity/efficiency
- Oil type, viscosity range
- Availability of air assets to coordinate fleets and direct skimmers to oil
- Sensitivity to sea grass, waves, currents
- Ability to cover large area
- Access to support needed
- Maneuverability

The following graphs provide:

- A representative view of the sea states and wind speeds across the theater
- The daily reported volume of oily water skimmed and the number of skimmers deployed
- The daily reported volume of oil burned and the number of controlled burns
- The daily volume of dispersants applied from aerial and subsea operations



* Barrels recovered represent the volume skimmed less the volume decanted overboard



The following tables summarize the skimmers deployed from the MSRC, NRC and CGA fleets and the volumes recovered by these assets throughout the response. The tables have been divided into three illustrative phases:

- Phase I: Prior to Application of Sub-sea Dispersants (April 25 – May 15)
- Phase II: Rapid Build Up of Skimmer Capacity (May 16 - June 6)
- Phase III: From Highest Skimmer Fleet to Static Well Kill (June 7 – August 4)

Phase I: Prior to Application of Sub-sea Dispersants

	25-Apr	26-Apr	27-Apr	28-Apr	29-Apr	30-Apr	1-May	2-May	3-May	4-May	5-May	6-May	7-May	8-May	9-May	10-May	11-May	12-May	13-May	14-May	15-May	
Oil Footprint (sq. mi.)						1833	1833	2109	3220	3434	4813	4813	4813	1952	2660	1914	3441	3983	3799	4744	5180	
Avg. WSPD (meters/sec)	7.5	9.3	7.7	5.1	5.6	9.1	8.9	10.2	7.0	4.6	2.6	1.5	4.7	6.1	7.6	5.5	5.0	6.7	8.4	7.3	8.0	
Average of WVHT (meters)	1.7	5.5	1.0	0.9	0.6	5.7	1.8	2.2	1.7	1.1	4.7	0.3	0.4	4.6	1.1	0.7	0.9	1.1	1.4	1.4	1.5	
Offshore Vessels																						
MS Responder	565	133	1357	1945	242	0	0	0	0	680	1048	821	3245	1500	875	0	0	3500	0	0	0	
TX Responder	100	13	1587	2300	1100	0	0	0	0	600	2000	800	1926	2661	0	0	0	3320	0	0	0	
LA Responder	45	272	83	3600	1700	0	0	0	0	1260	1825	375	1300	1947	1675	0	0	2075	0	0	0	
GC Responder	250	750	284	2716	1205	0	0	0	0	800	730	1720	1150	3350	1000	0	0	3400	0	0	0	
FL Responder	0	0	0	0	611	0	0	0	0	680	3523	-23	3434	3980	1970	0	0	3872	0	0	0	
SO Responder				0	94	0	0	0	0	632	928	1094	791	2095	0	0	0	2837	0	0	0	
DE Responder										550	100	900	1265	800	60	0	0	1106	0	0	0	
VA Responder										688	1557	-156	142	1206	0	0	0	1072	0	0	0	
ME Responder																0	0	1736	0	0	0	
NJ Responder																	0	0	1250	0	0	0
CA Responder																						
MS Responder																						
Energy	151	0	100	49	10	0	0	0	0		250	50	175	110	0	0	0	250	0	0	0	
Admiral	0	0	50	250	10	0	0	0	0	50	140	55	105	300	0	0	0	300	0	0	0	
Lana Rose	0	0	40	0	10	0	0	0	0	40	41	48	48	96	0	0	0	48	0	0	0	
Pauline T												500	425	480	0	0	0	400	0	0	0	
Libert												55	75	0	0	0	0	40	0	0	0	
Resolve Pioneer												20	65	125	0	0	0	200	0	0	0	
Guardian																						
Perseverance																						
Seashore 6													180	75	0	0	0	400	0	0	0	
CGA-200 (HOSS)	40	0	560	600	710	0	0	0	0	300	1500	500	2955	2820	200	0	0	200	0	0	0	
CGA/AMPOL Rec.	0	0	0	100	60	0	0	0	0	20	20	0	0	60	0	0	0	0	0	0	0	
CGA/AMPOL res.	0	0	0	0	0	0	0	0	0	10	55	20	3	87	0	0	0	0	0	0	0	
CGA/Noonie"G"	0	0	0	60	0	0	0	0	0	20	40	0	50	40	0	0	0	0	0	0	0	
CGA/Ms. Caroline			10	20	15	0	0	0	0	50	20	40	60	50	0	0	0	0	0	0	0	
CGA/Intl.Trooper			10	60	1	0	0	0	0	50	30	50	98	40	0	0	0	0	0	0	0	
CGA/Mr. Alex			10	50	20	0	0	0	0	20	30	80	60	30	0	0	0	0	0	0	0	
Kim B.																						
Bryce Glen																						

MSRC
 NRC
 CGA

During this phase:

- The number of skimmers deployed increased gradually to 32

Phase II: Rapid Build Up of Skimmer Capacity

	16-May	17-May	18-May	19-May	20-May	21-May	22-May	23-May	24-May	25-May	26-May	27-May	28-May	29-May	30-May	31-May	1-Jun	2-Jun	3-Jun	4-Jun	5-Jun	6-Jun
Oil Footprint (sq. mi.)	6004	8404	15146	17869	10395	9750	6095	*6095	8250	O DAT	10500	8732	6872	6113	8141	8826	6352	7159	8141	6929	4110	5137
Avg. WSPD (meters/sec)	6.1	3.1	3.9	3.5	4.0	4.4	4.5	3.5	3.3	3.7	2.5	3.4	4.8	3.8	3.7	4.2	3.4	4.2	6.1	6.4	8.3	6.1
Average of WVHT (meters)	1.2	0.8	0.4	0.3	0.3	0.5	0.7	0.6	0.5	0.4	0.5	0.4	0.4	0.3	0.3	0.4	0.3	0.4	0.7	1.0	1.0	1.0
Offshore Vessels																						
MS Responder	350	3452	782	1801	50	181	1989	624	397	272	831	2126	310	3090	1659	341	-1500	1210	0	497	0	0
TX Responder	100	330	1570	500	1104	1696	810	958	-1299	1776	303	652	200	1213	1456	50	770	561	50	0	774	0
LA Responder	0	1450	850	100	1250	710	370	1170	1575	200	-350	715	-174	1462	-1053	377	3289	1533	19	-174	730	0
GC Responder	190	1710	350	1278	-125	1600	1050	650	-75	475	850	-2716	1052	1844	-90	199	238	1523	532	793	-54	0
FL Responder	1450	300	2594	2110	1425	1225	-25	2916	2414	-342	-67	-740	0	0	0	996	73	0	0	0	0	3531
SO Responder	400	1085	116	88	2436	878	377	1193	196	-196	498	-50	947	142	0	100	91	1173	624	2740	1171	0
DE Responder	2750	-948	-1342	1525	-32	9	-149	341	73	1607	0	-339	970	372	2228	97	-71	263	88	-63	0	0
VA Responder	410	3222	981	1132	-209	1867	692	1447	-416	-154	155	755	-2479	1845	737	-192	-1173	1135	0	992	570	0
ME Responder	435	1201	-447	61	1000	665	674	358	-305	-1507	1285	707	-396	-230	462	0	2300	0	1308	513	0	0
NJ Responder	902	2391	907	1799	411	1631	963	206	-1090	130	1200	-1200	0	2125	-3	-412	-365	0	0	0	2060	0
CA Responder																						
MS Responder																						
Energy	0	30	85	100	0	70	160	300	75	25	300	150	0	0	0	0	0	0	0	0	0	0
Admiral	0	100	195	88	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lana Rose	0	48	100	100	100	68	120	70	60	35	0	100	70	100	150	50	100	110	0	0	0	0
Pauline T	0	400	250	400	125	100	100	350	135	10	0	250	500	0	350	100	250	250	0	0	0	0
Libert	0	90	40	15	0	90	120	90	100	65	85	75	80	59	185	0	140	300	0	0	0	0
Resolve Pioneer	0	70	42	120	25	567	83	93	122	23	113	211	85	59	193	122	55	149	0	0	0	0
Guardian																						
Perseverance																						
Seashore 6	0	100	400	100	0	0	260	270	190	130	0	180	320	400	250	0	330	170	0	0	0	0
CGA-200 (HOSS)	0	910	865	1340	1530	445	930	2025	625	213	700	310	160	2007	665	170	160	646	229	0	0	0
CGA/AMPOL Rec.	0	100	100	100	80	45	100	95	33	5	65	0	0	0	0	70	130	0	0	0	0	30
CGA/AMPOL res.	0	80	30	70	70	0	0	85	65	10	95	0	0	0	0	40	125	90	0	0	0	0
CGA/Noonie"G"	0	50	10	70	40	20	30	100	70	10	65	60	30	50	75	10	100	0	0	0	0	0
CGA/Ms. Caroline	0	40	20	30	35	0	75	0	0	0	0	0	0	0	0	45	55	68	0	0	0	0
CGA/Intl. Trooper	0	80	40	60	50	70	50	50	100	0	0	0	100	0	0	0	40	100	45	0	0	0
CGA/Mr. Alex	0	75	30	85	40	0	55	0	0	0	0	0	0	0	0	30	90	90	0	0	0	0
Kim B.																						
Bryce Glen																						



MSRC



NRC



CGA

During this phase:

- The number of skimmers deployed increased to as high as 417 (July 6)
- Reported the highest estimated square miles of oil on water (May 20)
- Excluding weather impacts, the rate of oil recovered varied significantly, with an average of over 10,000 barrels per day
- Operational improvements were made to increase the Encounter Rate such as increased skimming swath and boom configurations, improved air to vessel communications and coordination, and increased capability to identify skimmable oil

Phase III: From Highest Skimmer Fleet to Static Well Kill

	7-Jun	8-Jun	9-Jun	10-Jun	11-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun
Oil Footprint (sq. mi.)	3961	4235	8918	7375	5667	8842	10579	9550	12225	9927	8663	9544	13026	10619	11209	5872
Avg. WSPD (meters/sec)	4.0	2.3	3.8	4.9	5.2	3.8	2.2	2.2	2.9	2.6	3.0	3.1	3.4	4.1	2.3	6.0
Average of WWHT (meters)	0.7	0.4	0.5	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	4.7
Offshore Vessels																
MS Responder	133	58	662	4669	465	646	0	2122	1276	-1699	0	0	570	633	5909	1002
TX Responder	43	21	335	3536	100	977	50	125	51	445	140	67	656	94	3765	0
LA Responder	2444	-16	4106	1295	374	739	-584	-43	1034	333	3121	-1268	-201	700	4600	998
GC Responder	1769	571	748	4741	0	0	0	343	414	1343	-1800	5093	1207	-2550	6090	290
FL Responder																
SO Responder	499	0	148	2066	0	965	275	160	52	-191	250	858	4031	799	403	34
DE Responder	1350	0	301	550	940	685	635	264	95	-653	1032	238	-36	-1266	431	252
VA Responder	0	462	1358	1793	2216	1044	0	-453	820	-1122	482	501	-1747	0	0	0
ME Responder	-752	0	983	1839	2325	-25	-1220	751	557	353	-692	-726	853	322	3446	0
NJ Responder																
CA Responder																
MS Responder																
Energy	0															
Admiral	0	0	0	0	0	0	0	0	0	0	0	300	20	0	0	0
Lana Rose	10	15	25	50	15	0	40	0	0	0	0	150	150	150	0	25
Pauline T	450	0	300	0	200	250	320	500	5	0	0	470	470	0	500	0
Libert	80	80	140	0	160	140	100	35	40	65	100	60	60	60	0	0
Resolve Pioneer	117	6	64	2	35	245	90	42	80	0	0	0	0	0	140	0
Guardian																
Perseverance																
Seashore 6	500	80	160	95	335	385	0	51		0	0	0	0	0	0	0
CGA-200 (HOSS)	300	3200	760	240	709	905	509	-542	348	-1889	230	1375	-1016	-30	2389	570
CGA/AMPOL Rec.		15														
CGA/AMPOL res.																
CGA/Noonie"G"	0	0	10	20	20	15	40	80	65	90	100	105	105	150	60	0
CGA/Ms. Caroline	80	20	0	0	58	75	85	0	20	10	90	100	100	100	0	Demc
CGA/Intl. Trooper	0	91	40	30	90	70	0	0	0	0	95	110	0	160	11	0
CGA/Mr. Alex	95	40	51	70	80	40	90	85	40	130	85	0	0	90	165	0
Kim B.																
Bryce Glen																

Phase III: From Highest Skimmer Fleet to Static Well Kill (Continued)

	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul
Oil Footprint (sq. mi.)	5386	5386	7812	12177	9577	9902	*9902	*4038	*4039	5283	4347	*4347	2362	2322	2743	2989	3309
Avg. WSPD (meters/sec)	5.9	3.9	3.3	3.2	5.1	6.4	8.2	8.0	5.1	2.9	8.8	7.9	5.4	9.5	8.5	4.4	2.0
Average of WVHT (meters)	0.9	0.7	0.6	0.7	0.9	1.1	1.5	2.1	2.0	1.5	1.6	1.6	0.9	1.6	2.2	1.3	0.6
Offshore Vessels																	
MS Responder	-128	331	4628	1800	159	0	0	0	0	0	0	0	1532	0	0	0	483
TX Responder	0	0	0	0	0	0	0	0	0	0	0	200	0	0	0	0	200
LA Responder	1206	0	316	199		0	0	0	0	0	0	0	0	0	0	0	965
GC Responder	660	1650	0	1578	900	0	0	0	0	0	0	35	650	0	0	0	1895
FL Responder			314									19472	0	0	0	0	1789
SO Responder	0	133	1427	3442	798	0	0	0	0	0	0	0	141	0	0	0	494
DE Responder	0	528	808	4267	2035	0	0	0	0	0	0	0	548	0	0	0	488
VA Responder	1153	0	114	297	1544	0	0	0	0	0	0	0	520	0	0	0	2146
ME Responder	0	1607		386	20	0	0	0	0	0	0	0	732	0	0	0	1396
NJ Responder												13828	0	0	0	0	556
CA Responder																	
MS Responder																	
Energy		125	300	50	0	0	0	0	0	0	0	0	0	0	0	0	0
Admiral	0	300	150	160	0	0	0	0	0	0	0	0	0	0	0	0	0
Lana Rose	0	0	150	75	0	0	0	0	0	0	0	0	0	0	0	0	0
Pauline T	0	0	350	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Libert	0	0	280	150	88	0	0	0	0	0	0	0	0	0	0	0	0
Resolve Pioneer	0	200	132	20	0	0	0	0	0	0	0	0	0	0	0	0	0
Guardian		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perseverance		127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seashore 6	0	0	0	128	0	0	0	0	0	0	0	0	0	0	0	0	0
CGA-200 (HOSS)	942	0	450	1017	1233	0	0	0	0	0	0	0	0	0	0	0	255
CGA/AMPOL Rec.																	0
CGA/AMPOL res.																	0
CGA/Noonie"G"	0	20	95	0	0	0	0	0	0	0	0	0	0	0	0	0	30
CGA/Ms. Caroline																	
CGA/Intl.Trooper	0	50	48	55	75	0	0	0	0	0	0	0	0	0	0	0	160
CGA/Mr. Alex	0	0	65	40	80	0	0	0	0	0	0	0	0	0	0	0	10
Kim B.														0	0	0	45
Bryce Glen														0	0		0

Phase III: From Highest Skimmer Fleet to Static Well Kill (Continued)

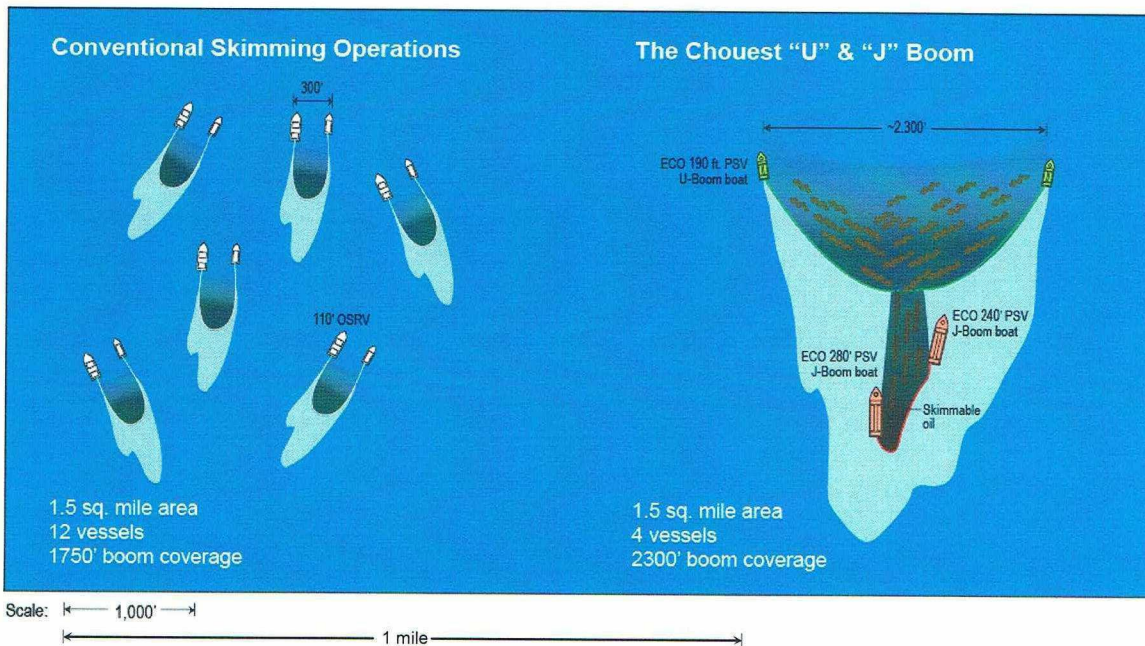
	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul
Oil Footprint (sq. mi.)	2607	1952	1593	1624	2619	2672	2402	2527	3151	3982	4370	1956	1586	2801	2440	1386	655
Avg. WSPD (meters/sec)	5.7	6.6	6.4	6.4	4.6	4.5	4.5	5.6	4.8	4.0	5.8	7.0	6.1	4.0	5.5	7.8	5.5
Average of WVHT (meters)	0.5	0.6	0.6	0.6	0.4	0.5	0.5	0.9	0.9	0.7	0.8	1.1	1.4	0.9	0.7	1.5	0.7
Offshore Vessels																	
MS Responder	1947	1011	0	0	1573	0	1299	0	0	0	0	0	0	0	0	0	0
TX Responder	100	100	0	0	400	0	0	0	0	0	0	0	0	0	0	0	0
LA Responder	749	2700	0	0	803	0	536	0	0	0	0	0	0	0	0	0	0
GC Responder	200	760	0	0	200	0	420	0	0	0	0	0	0	0	0	0	0
FL Responder	660	1728	0	0	207	0	1075	0	0	0	0	0	0	0	0	0	0
SO Responder	109	83	0	0	543	0	0	0	0	0	0	0	0	0	0	0	0
DE Responder	3832	372	0	0	907	0	0	0	0	0	0	0	0	0	0	0	0
VA Responder	3195	1472	0	0	5067	0	0	0	0	0	0	0	0	0	0	0	0
ME Responder	472	491	0	903	2192	0	1772	0	0	0	0	0	0	0	0	0	0
NJ Responder	986	199	0	0	211	0	199	0	0	0	0	0	0	0	0	0	0
CA Responder					536	0	150	0	0	0	0	0	0	0	0	0	0
MS Responder					1385	0	0	0	0	0	0	0	0	0	0	0	0
Energy	50	285	312	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Admiral	100	310	330	330	300	200	80	0	0	80	0	0	0	0	0	0	0
Lana Rose	50	80	50	100	50	100	100	0	50	49	0	0	0	0	0	0	0
Pauline T	160	250	0	0	410	250	100	0	50	220	0	0	0	0	0	0	0
Libert	75	243	80	220	185	105	0	0	213	52	0	0	0	0	0	0	0
Resolve Pioneer	175	79	175	60	0	35	91	0	29	47	0	0	0	0	0	0	0
Guardian	0	103	240	330	300	330	330	0	0	275	0	0	0	0	0	0	0
Perseverance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seashore 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CGA-200 (HOSS)	1585	722	0	0	1138	0	0	50	0	0	0	0	0	0	0	0	0
CGA/AMPOL Rec.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CGA/AMPOL res.	95	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0
CGA/Noonie"G"	110	70	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0
CGA/Ms. Caroline																	
CGA/Intl. Trooper	80	20	0	0	95	0	20	0	0	0	0	0	0	0	0	0	0
CGA/Mr. Alex	75	40	0	0	55	0	30	0	0	0	0	0	0	0	0	0	0
Kim B.	35	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bryce Glen	120	125	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0

MSRC
 NRC
 CGA

During this phase:

- Volume skimmed varied significantly, with an average of just over 7,200 barrels per day
- Skimmed volumes began to decline steadily with the successful well cap on June 15, 2010 stopping the release of oil

Throughout the response BP's goal was to protect and minimize the impact to the Gulf Coast and skimming was an important part of this effort. Many factors including the number of skimmers deployed, weather conditions, the use of additional recovery and removal options and other variables impacted the amount of oil skimmed in a response of this magnitude and duration. Throughout the Response, the UAC continued to apply the learning's from oil spill response experts and the learning's achieved through experience to drive the effectiveness of our skimming resources. Insights and learning's in the area of simultaneous operations and coordination were many and spanned numerous response tools. An example of enhanced booming which has the potential to increase the encounter rate that is, the area of skimmable oil that the skimmers encounter of skimming assets is illustrated in the following graphic:



One of the key learning's was that maximizing the encounter rate was a much more leveraging factor than the number of skimmers deployed.

Please let me know if you require any additional information regarding the skimming operations for the Deepwater Horizon Oil Spill response effort.

Regards,

Michael J. Utsler

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