

**Petroleum Spills from  
Federal Outer Continental Shelf Oil and Gas Facilities  
Caused by Major Hurricanes, 2002 to 2008  
Lili (2002), Ivan (2004), Katrina (2005), Rita (2005), Gustav (2008) and Ike (2008)**

Within the Gulf of Mexico (GOM), the threat of hurricanes and the potential damage they can cause are a very real concern. The creation of precautionary plans and evacuation preparations start well in advance of the beginning of hurricane season, which is June 1<sup>st</sup>. The preparations of offshore companies include the construction of plans to evacuate nonessential and essential personnel; implementation of safety procedures; and protection of the process equipment, facility, and environment. The Minerals Management Service (MMS) actively participates with industry. MMS has provided industry with a measure of safety that continues to improve over time through current regulations; inspections of safety devices on production equipment and pipelines; annual above-water structural inspections; and 100-year storm design standards. Lessons learned from the most recent storm seasons in combination with the latest technological advances are incorporated into current procedure and design requirements.

Historically, MMS recorded hurricane-related spills from Federal Outer Continental Shelf (OCS) (<http://www.mms.gov/aboutmms/ocsdef.htm>) oil and gas facilities that were observed, and generally required some intervention after the storms. In 2002, MMS identified petroleum losses from tanks on platforms and rigs destroyed by Hurricane Lili, and counted those as spills even though no evidence of a release was observed and no response was required. Hurricane Ivan (2004) was the first hurricane for which unrecovered petroleum amounts on destroyed, heavily damaged, and/or missing structures (platforms, rigs and pipelines) were inventoried and reported as spills in a comprehensive manner. This collection of 'unseen' and relatively 'passive' spills was performed to calculate spill estimates for Hurricanes Katrina, Rita, Gustav and Ike. This change in reporting has caused an increase in the number of spills and volume spilled as these were all structurally destructive hurricanes. See Table 1.

Table 1. Structural Damages to Federal OCS Facilities During Major Hurricanes, from 2002 through 2008

Hurricane	Lili	Ivan	Katrina	Rita	Gustav & Ike*	Total
<b>Estimated Platforms in Path</b>	1,200	150	1,350	1,700	2,127	N/A
<b>Platforms Destroyed</b>	7	7	44	69	60	187
<b>Platforms Extensively Damaged</b>	10	24	21	32	31	118
<b>Drilling Rigs Destroyed</b>	2	2	5	6	4	19
<b>Drilling Rigs Extensively Damaged</b>	2	10	17	27	1	57
<b>Estimated Miles of Pipeline in Path</b>	N/A	10,000	10,000	12,000	N/A	N/A
<b>Pipeline Segments Damaged</b>	118	184	363	285	306	1,256

\*Note: Hurricanes Gustav and Ike occurred less than 2 weeks apart and impacted much of the same geographic area. The damages for the two storms have been combined as it would be difficult to differentiate damages between the two storms.

The loss of hydrocarbons from wells on the Federal OCS during Hurricanes Lili (2002), Ivan (2004), Katrina (2005), Rita (2005), Gustav (2008), and Ike (2008) was minimized by the successful operation of the safety valves that are required to be installed at least 100 feet below the mudline in each wellbore. The pipeline valves limited the potential losses from damaged pipeline segments. All OCS facilities in areas threatened by the storms' approach were shut in prior to the hurricanes so that oil losses were mostly limited to the oil stored on the damaged platforms and rigs or contained in damaged pipeline sections between the check valves. The hydrocarbons lost during the hurricanes were thoroughly dispersed offshore by the hostile sea conditions which eliminated the potential for oiling the shores.

**There were no accounts of environmental consequences resulting from spills from OCS facilities which occurred during these major hurricanes from 2002 through 2008:**

- no spill contacts to the shoreline
- no oiling of marine mammals, birds, or other wildlife
- no large volumes of oil on the ocean surface to be collected or cleaned up
- no identified environmental impacts from any OCS spills from these hurricanes

**Petroleum Spills of 1 barrel (bbl) or more from the 2002-2008 Hurricanes, see Table 2:**

- There were 231 spills totaling about 25,600 bbl identified as having occurred during or soon after the storms: 8 (totaling 1,631 bbl) from Lili, 36 (totaling 4,645 bbl) from Ivan; 73 (totaling 4,729 bbl) from Katrina; 56 (totaling 8,734 bbl) from Rita; and 58 (totaling 5,857 bbl) from Gustav/Ike.
- There were no MAJOR spills caused by any of the 2002 – 2008 hurricanes. The U.S. Coast Guard (USCG) defines a MAJOR offshore spill as a spill of 100,000 gallons (2,381 bbl) or more (based solely on size, not impacts).
- Of the 231 spills, 206 (89%) were MINOR, less than 238 bbl, in size. These MINOR spills totaled less than 7,600 bbl, or about 30 percent of the spillage.
- There were a total of 25 MEDIUM spills, 238 to 2,380 bbl in size, totaling about 18,000 bbl (70% of the spillage): 3 from Lili, 6 from Ivan, 5 from Katrina, 6 from Rita, and 5 from Gustav and Ike. Only 5 of these MEDIUM spills were 1,000 bbl or greater: 1 from Ivan (1,720 bbl), 3 from Rita (2,000 bbl , 1,572 bbl, and 1,494 bbl), and 1 from Gustav/Ike (1,316 bbl).
- Platforms and rigs were the source of 111 (48%) of the spills, totaling 16,838 bbl (66% of the spillage).
- Pipelines were the source of 120 (52%) of the spills identified, totaling 8,758 bbl (34% of the spillage)
- There were 80 spills of 50 bbl and greater. See Tables 3 thru 7 for brief summaries of these spills by their storm.

<b>U.S. Coast Guard (USCG) Offshore Spill Size Classifications</b> (size based solely on spill size, not impacts)	
MINOR:	Less than 238 barrels (Less than 10,000 gallons)
MEDIUM:	238 to 2,380 barrels (10,000 to 99,999 gallons)
MAJOR:	2,381 barrels and more (100,000 gallons and more)

Table 2. Losses of Crude and Refined Petroleum Products<sup>1</sup> of 1 bbl and Greater from Federal OCS Facilities During Major Hurricanes, 2002-2008

Hurricane	Lili	Ivan	Katrina	Rita	Gustav & Ike	Total
<b>All Spills</b>						
number of spills	8	36	73	56	58	231
bbl spilled	1,630.8	4,645.0	4,728.9	8,734.0	5,856.8	25,595.4
<b>Spills by U.S. Coast Guard (USCG) Offshore Spill Size Category<sup>2</sup>:</b>						
<b>MINOR - 1 to 237 bbl (1 to 9,999 gallons [gal])</b>						
number of spills	5	30	68	50	53	206
bbl spilled	42.6	969.9	2514.6	1532.7	2525.5	7585.3
percent of number of spills	62.50%	83.33%	93.15%	89.29%	91.38%	89.18%
percent of bbl spilled	2.61%	20.88%	53.18%	17.55%	43.12%	29.64%
<b>MEDIUM - 238 to 2,380 bbl (10,000 to 99,999 gal)</b>						
number of spills	3	6	5	6	5	25
bbl spilled	1,588.2	3,675.1	2,214.2	7,201.3	3,331.3	18,010.1
percent of number of spills	37.50%	16.67%	6.85%	10.71%	8.62%	10.82%
percent of bbl spilled	97.39%	79.12%	46.82%	82.45%	56.88%	70.36%
<b>MAJOR - 2,381 bbl and greater (100,000 gal and greater)</b>						
number of spills	NONE	NONE	NONE	NONE	NONE	NONE
<b>Other Spill-Size Categories:</b>						
<b>Spills 50 to 999.9 bbl</b>						
number of spills	3	13	24	14	21	75
bbl spilled	1,588.2	2,778.4	4,201.3	3,317.2	4,081.9	15,966.9
<b>Spills 1,000 bbl and greater</b>						
number of spills	0	1	0	3	1	5
bbl spilled	0.0	1,720.0	0.0	5,065.7	1,316.0	8,101.7
<b>Size of largest spill in bbl:</b>	741.0	1,720.0	960.0	2,000.0	1,316.0	2,000.0
<b>Spills by Source:</b>						
<b>Platforms and Rigs</b>						
number of spills	6	9	30	28	38	111
bbl spilled	1,613.0	1,073.1	3,059.3	7,421.7	3,670.8	16,837.8
percent of number of spills	75.00%	25.00%	41.10%	50.00%	65.52%	48.05%
percent of bbl spilled	98.91%	23.10%	64.69%	84.97%	62.68%	65.78%
<b>Pipelines</b>						
number of spills	2	27	43	28	20	120
bbl spilled	17.8	3,571.9	1,669.6	1,312.3	2,186.0	8,757.6
percent of number of spills	25.00%	75.00%	58.90%	50.00%	34.48%	51.95%
percent of bbl spilled	1.09%	76.90%	35.31%	15.03%	37.32%	34.22%

<sup>1</sup> Includes crude oil, natural gas condensate, diesel, lube oil, jet fuel, mineral oil, etc. lost from storm-damaged platforms, rigs and pipelines. Ivan was the first hurricane for which unrecovered petroleum from destroyed, heavily damaged, and/or missing structures was inventoried and counted as spills in a comprehensive manner; Katrina, Rita, Gustav and Ike estimates were compiled in the same manner. High values were used when the estimated volume was reported as a range of values; "worst case" volume used when estimate was not calculable. These were generally unobserved, instantaneous releases that were thoroughly dispersed offshore by the hostile sea conditions. There were no substantial pools or flows of oil on the ocean to clean up after the storms. There were no accounts of environmental consequences resulting from spills from OCS facilities.

<sup>2</sup> USCG Offshore Spill Size Categories are based on spill size only, not impacts. No coastal impacts from these spills were reported.

Notes: one barrel (bbl) = 42 U.S. gallons (gal); columns may not add due to rounding

SOURCE: U.S. Department of Interior, Minerals Management Service, Office of Regulatory Programs, Accident Investigation Board

## Other Information:

This information focuses on petroleum spillage from facilities associated with oil and gas activities that occurred in Federal OCS waters. Specifically **excluded** from the Hurricane Katrina and Rita spill information in Tables 2, 5, and 6 are:

- Over 250,000 bbl of oil spilled onshore and in Louisiana State waters during Hurricane Katrina. This included the following crude oil spills of 1,000 bbl and greater:
  1. 90,000 bbl Bass Enterprises - Cox Bay
  2. 33,900 bbl Chevron – Empire Terminal
  3. 25,435 bbl Shell Pipeline – Pilot Town Terminal
  4. 25,110 bbl Murphy Oil Refinery
  5. 10,989 bbl Bass Enterprises – North
  6. 3,315 bbl Shell Pipeline – Naim Terminal
  7. 1,845 bbl Sundown Energy – East
  8. 1,276 bbl Chevron – Fourchon Terminal
  9. 1,150 bbl ConocoPhillips – Alliance Refinery

These nine spills totaled to 193,020 bbl of which approximately 97,000 bbl were reported to have been recovered. Most of the remaining spillage was reported as dispersed during Hurricane Katrina. Source: Louisiana Department of Environmental Quality, December 2007.

- Over 22,000 bbl of oil spilled onshore and in Louisiana State waters during Hurricane Rita. This included the following crude oil spills of 1,000 bbl and greater:
  1. 6,000 bbl Conoco Phillips – Refinery, Tank #84
  2. 2,498 bbl BP America – Grand Cheniere
  3. 2,285 bbl Williams Field Services

These three spills totaled to 10,783 bbl of which approximately 7,500 bbl were reported to have been recovered. Most of the remaining spillage was reported as dispersed during Hurricane Rita. Source: Louisiana Department of Environmental Quality, December 2007.

- On November 11, 2005, the integrated tug and barge Rebel/DBL 152 struck the submerged remains of the WC 229 A platform which had been destroyed by Hurricane Rita. A cargo tank was penetrated releasing approximately 45,000 bbl of heavy slurry oil which sank to the sea floor. Spill response operations to locate and recover the oil were severely hampered by many weather-related interruptions in December and January. Source Pfeifer et al, 2008, <http://www.iosc.org/papers/2008%20048.pdf>

The damage to offshore facilities inflicted by Hurricanes Katrina and Rita exceeded that of all previous storms to an industry which had not fully recovered from 2004's Hurricane Ivan. Nearshore and onshore damages were more widespread, resulting in a large number of support bases being unable to serve as jump-off points to help in the recovery effort. Support resources such as marine vessels, barges, skilled craftsmen, and supplies optimized for normal operations were quickly overwhelmed. Onshore damage to homes and offices also stressed individuals and companies as they responded to the offshore situation. To a certain extent, onshore situations had to be addressed first, causing a delay of a couple of weeks in the offshore response.

In spite of these problems, the oil and gas industry responded very well. However, repairs and abandonments for all damaged facilities could not be completed in the year immediately following these hurricanes due to a finite number of rigs, support equipment and personnel. Currently, repairs and abandonments are continuing to be performed for structures destroyed during Hurricanes Ivan, Katrina, Rita, Gustav and Ike.

Table 3. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Lili, October 3, 2002

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
SS 119	Platform #14	00069	350.0	350.0	0.0	350 bbl crude oil	Murphy Exploration & Production Company	Well was decapitated during Hurricane Lili, causing loss of well control.	15	50
SS 126	Platform B JU Rig Dolphin Titan 105	G12940	497.2	0.0	497.2	445.2 bbl diesel oil, 16.4 bbl hydraulic oil, 35.6 bbl refined oil	Vastar Resources, Inc.	Jack-up Rig Dolphin Titan 105 capsized during Hurricane Lili. The lost products had been stored on the rig.	30	37
SS 207	Platform A JU Rig Rowan Houston	G01523	741.0	0.0	741.0	741 bbl diesel oil	RME Petroleum Company	Jack-up Rig Rowan Houston capsized during Hurricane Lili. The lost diesel had been stored on the rig.	40	94

Note: Planning Area : SS = Ship Shoal (<http://www.gomr.mms.gov/homepg/lseale/pdf/la5.pdf>)

<b>U.S. Coast Guard (USCG) Offshore Spill Size Classifications</b> (size based solely on spill size, not impacts)	
MINOR:	Less than 238 barrels (Less than 10,000 gallons)
MEDIUM:	238 to 2,380 barrels (10,000 to 99,999 gallons)
MAJOR:	2,381 barrels and more (100,000 gallons and more)

Table 4. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Ivan, September 15, 2004

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
MC 020	Platform A	G04935	510.1	410.2	99.9	410.2 bbl crude oil, 55 bbl diesel oil, 24 bbl jet fuel, 20.9 bbl refined oil	Taylor Energy Company	Mudslide caused by Hurricane Ivan destroyed platform.	19	479
MC 020	Platform A 6" Pipeline Seg #7296 (DOI)	G04935	1,720.0	1,720.0	0.0	1,720 bbl crude oil	Taylor Energy Company	Mudslide caused by Hurricane Ivan buried pipeline. Oil may still be encapsulated.	19	479
MP 151	18" Shell Nakika Pipeline Seg #13543 (DOT)	G02951	671.0	671.0	0.0	671 bbl crude oil	Shell Pipe Line Co.	Hurricane Ivan damaged pipeline.	6	200
MP 252	Platform A-Bud	G07824	52.0	0.0	52.0	52 bbl diesel oil	Shell Offshore Inc.	A sight glass was broken off the diesel storage tank during Hurricane Ivan.	57	277
MP 280	Jack-up Rig Ensco 64	G16515	55.3		55.3	55.3 bbl diesel oil in 79 bbl of 70% oil-based mud	Dominion Exploration & Production, Inc.	The rig legs broke, and the rig hull floated off of location during Hurricane Ivan.	80	302
MP 293	Platform A	G21712	264.0	133.0	131.0	133 bbl crude oil, 102 bbl diesel oil, 29 bbl refined oil	Noble Energy Inc.	Hurricane Ivan destroyed platform.	37	305
MP 293	Platform A 6" Pipeline Seg #2706 (DOI)	G21712	126.0	126.0	0.0	126 bbl crude oil	Noble Energy Inc.	Hurricane Ivan destroyed platform and damaged pipeline.	37	305
MP 305	Platform C	G01676	106.0	77.0	29.0	77 bbl crude oil, 21 bbl diesel oil, 8 bbl refined oil	Noble Energy Inc.	Hurricane Ivan destroyed platform.	26	244
MP 305	Platform C 8" Pipeline Seg #2808 (DOI)	G01676	200.0	200.0	0.0	200 bbl crude oil	Noble Energy Inc.	Hurricane Ivan destroyed platform and damaged pipeline.	26	244

continued

Table 4. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Ivan, September 15, 2004 (continued)

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
MP 306	Platform E	G01677	66.0	27.0	39.0	27 bbl crude oil, 21 bbl diesel oil, 18 bbl refined oil	Noble Energy Inc.	Hurricane Ivan destroyed platform.	29	255
MP 306	Platform E 8" Pipeline Seg #4598 (DOI)	G01677	260.0	260.0	0.0	260 bbl crude oil	Noble Energy Inc.	Hurricane Ivan destroyed platform and damaged pipeline.	29	255
MP 306	Platform E 6" Pipeline Seg #5788 (DOI)	G01677	250.0	250.0	0.0	250 crude oil bbl	Noble Energy Inc.	Hurricane Ivan destroyed platform and damaged pipeline.	29	255
SP 049	Platform A 10" Pipeline Seg #5625 (DOT)	G02177	123.0	123.0	0.0	123 bbl crude oil	Chevron Pipe Line Co.	Mudslide during Hurricane Ivan caused pipeline safety joint to break at SP 49 and pipe to break at SP 45.	12	300
SP 060	Platform A 8" Pipeline Seg #4715 (DOT)	G02137	95.0	95.0	0.0	95 bbl crude oil	Shell Offshore Inc.	Pipeline severed during Hurricane Ivan.	4	185

Notes: DOI = Pipeline regulated by the Department of the Interior, DOT = Pipeline regulated by the Department of Transportation

Planning Area: MP = Main Pass (<http://www.gomr.mms.gov/homepg/lseale/pdf/la10.pdf> & <http://www.gomr.mms.gov/homepg/lseale/pdf/la10a.pdf>),

MC = Mississippi Canyon (<http://www.gomr.mms.gov/homepg/lseale/pdf/nh16-10.pdf>) , SP = South Pass (<http://www.gomr.mms.gov/homepg/lseale/pdf/la9.pdf>)

<b>U.S. Coast Guard (USCG) Offshore Spill Size Classifications</b> (size based solely on spill size, not impacts)	
MINOR:	Less than 238 barrels (Less than 10,000 gallons)
MEDIUM:	238 to 2,380 barrels (10,000 to 99,999 gallons)
MAJOR:	2,381 barrels and more (100,000 gallons and more)

Table 5. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Katrina, August 29, 2005

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
GI 040	Platform B 8-pile fixed	00128	242.0	242.0	-	242 bbl crude oil	BP America Production Company	Hurricane Katrina destroyed platform. Oil lost from topsides (assumed crude).	14	83
GI 040	Platform F fixed	00128	141.0	141.0	-	141 bbl crude oil	BP America Production Company	Hurricane Katrina destroyed platform. Oil lost from topsides (assumed crude).	14	86
GI 041	Platform A 4-pile fixed	00129	204.1	204.1	-	204.1 bbl crude oil	BP America Production Company	Hurricane Katrina destroyed platform. Oil lost from topsides (assumed crude).	17	91
GI 047	Platform C 8-pile fixed	00133	195.0	195.0	-	195 bbl crude oil	BP America Production Company	Hurricane Katrina destroyed platform. Oil lost from topsides (assumed crude).	18	88
MC 109	Seg #9347 8" oil pipeline (DOI)	G05825	960.0	960.0	-	600-960 bbl crude oil	BP E & P, Inc.	Pipeline Segment #9347 to MC 109 A-Amberjack platform was severed during Hurricane Katrina.	18	1,100
MC 194	Platform A Cognac fixed	G02638	325.0	325.0	-	325 bbl crude oil	Shell Offshore Inc.	Waves during Katrina caused extensive damage to platform and sheared 1/2" needle valves off of oil sales tank.	15	1,023
MP 185	Rowan New Orleans jack-up rig	G25033	380.2	-	380.2	380.2 bbl diesel oil	Magnum Hunter	Jack-up rig inverted and sank on location during Hurricane Katrina.	46	140
MP 306	Platform D 8-pile fixed	G01667	129.6	106.0	23.6	106 bbl crude oil, 11.7 bbl diesel oil, 11.9 bbl refined oil	Noble Energy Inc.	Hurricane Katrina destroyed platform.	29	255

continued

Table 5. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Katrina, August 29, 2005 (continued)

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
SP 062	Platform A 8-pile fixed	G01294	194.7	180.0	14.7	180 bbl crude oil, 14.7 bbl refined oil	Apache Corporation	Hurricane Katrina destroyed platform.	17	340
SP 062	Seg #3968 8" oil pipeline (DOI)	G01294	50.0	50.0	-	50 bbl crude oil	Chevron U.S.A. Inc.	The pipeline's receiving platform, South Pass 62 A, was toppled during Hurricane Katrina.	17	340
SP 062	Platform B 8-pile fixed	G01294	110.5	85.0	25.5	85 bbl crude oil, 24.3 bbl lube oil, 1.2 bbl refined oil	Apache Corporation	Hurricane Katrina destroyed platform.	17	322
SP 077	Seg #5773 10" bulk oil pipeline (DOI)	G02184	132.0	132.0	-	132 bbl crude oil	Chevron U.S.A. Inc.	Mudslide separated 10" pipeline during Hurricane Katrina.	7	216
SP 077	Seg #15049 10" bulk oil pipeline (DOI)	G02184	55.0	55.0	-	55 bbl crude oil	Chevron U.S.A. Inc.	10" pipeline riser parted at C structure during Hurricane Katrina.	7	240
ST 036	Seg # 15118 6"-8" bulk gas pipeline (DOI)	G02624	50.0	50.0	-	50 bbl condensate	Chevron U.S.A. Inc.	Pipeline parted during Hurricane Katrina.	7	48
ST 135	Platform M 6-pile fixed	00462	51.2	47.6	3.6	47.6 bbl crude oil, 3.6 bbl refined oil	Chevron U.S.A. Inc.	Hurricane Katrina destroyed platform.	29	116
ST 151	Platform G 8-pile fixed	00463	101.1	47.6	53.5	47.6 bbl crude oil, 49.9 bbl jet fuel, 3.6 bbl refined oil	Chevron U.S.A. Inc.	Hurricane Katrina destroyed platform.	32	137
ST 151	Platform I 8-pile fixed	00463	51.2	47.6	3.6	47.6 bbl crude oil, 3.6 bbl refined oil	Chevron U.S.A. Inc.	Hurricane Katrina destroyed platform.	32	128
ST 151	Platform O 8-pile fixed	00463	50.0	47.6	2.4	47.6 bbl crude oil, 2.4 bbl refined oil	Chevron U.S.A. Inc.	Hurricane Katrina destroyed platform.	32	137

continued

Table 5. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Katrina, August 29, 2005 (continued)

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
ST 161	Platform A 8-pile fixed	G01248	51.2	50.0	1.2	50 bbl crude oil, 1.2 bbl refined oil	Apache Corporation	Hurricane Katrina destroyed platform.	32	117
ST 176	Platform A 8-pile fixed	G01259	97.4	95.2	2.1	95.24 bbl crude oil, 2.14 bbl refined oil	Chevron U.S.A. Inc.	Hurricane Katrina destroyed platform.	35	140
WD 094	Platform G 6-pile fixed	00839	307.0	307.0	-	307 bbl crude oil	BP America Production Company	Hurricane Katrina destroyed platform. Oil lost from topsides assumed to be crude oil.	27	153
WD 103	Platform A 8-pile fixed	00840	70.8	50.0	20.8	50 bbl crude oil, 7.1 bbl diesel oil, 13.7 bbl lube oil	Apache Corporation	Hurricane Katrina destroyed platform.	16	223
WD 104	Platform C 8-pile fixed	00841	158.6	130.0	28.6	130 bbl condensate, 9.5 bbl diesel oil, 19.1 bbl lube oil	Apache Corporation	Hurricane Katrina destroyed platform.	14	228
WD 133	Platform B 8-pile fixed	G01106	93.7	75.0	18.7	75 bbl crude oil, 18.7 bbl refined oil	Apache Corporation	Hurricane Katrina destroyed platform.	35	285

Notes: DOI = Pipeline regulated by the Department of the Interior, DOT = Pipeline regulated by the Department of Transportation

Planning Area: GI = Grand Isle (<http://www.gomr.mms.gov/homepg/lseale/pdf/la7.pdf>), MC Mississippi Canyon (<http://www.gomr.mms.gov/homepg/lseale/pdf/nh16-10.pdf>),

MP = Main Pass (<http://www.gomr.mms.gov/homepg/lseale/pdf/la10a.pdf>), SP = South Pass (<http://www.gomr.mms.gov/homepg/lseale/pdf/la9a.pdf>),

ST = South Timbalier (<http://www.gomr.mms.gov/homepg/lseale/pdf/la6.pdf>),

WD = West Delta (<http://www.gomr.mms.gov/homepg/lseale/pdf/la8.pdf> & <http://www.gomr.mms.gov/homepg/lseale/pdf/la8a.pdf>)

<b>U.S. Coast Guard (USCG) Offshore Spill Size Classifications</b> (size based solely on spill size, not impacts)	
MINOR:	Less than 238 barrels (Less than 10,000 gallons)
MEDIUM:	238 to 2,380 barrels (10,000 to 99,999 gallons)
MAJOR:	2,381 barrels and more (100,000 gallons and more)

Table 6. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Rita, September 24, 2005

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
EC 272	Platform A 4-pile fixed	G0204 7	66.7	-	66.7	66.7 bbl jet fuel	Chevron U.S.A. Inc.	Hurricane Rita destroyed platform.	79	182
EC 322	Platform A 8-pile fixed	G0225 4	659.4	582.0	77.4	582 bbl crude oil, 35.7 bbl diesel oil, 28.6 bbl jet fuel, 13.1 bbl motor oil	Pioneer Natural Resources	Hurricane Rita destroyed platform including wells A-1 and A-28. Damaged storage tank and production vessels.	95	230
EC 322	Platform A 8-pile fixed	G0225 4	53.4	53.4	-	53.4 bbl crude oil	Pioneer Natural Resources	Chronic seepage in 4th Quarter of 2005 around platform destroyed during Hurricane Rita.	95	230
EI 043	Seg #1844 gas pipeline 14"x4" Subsea Tie-In (DOT)	00078	100.0	100.0	-	100 bbl condensate	Gulf South Pipeline Company	Pipeline subsea tie-in damaged by drifting vessel during Hurricane Rita. Engineering review revised worst case estimate of 1,812 bbl to under 100 bbl.	20	17
EI 294	Platform A 4-pile fixed	G0356 9	76.6	44.0	32.6	44 bbl condensate, 11.9 bbl diesel oil, 20.7 bbl refined oil	B.T. Operating Company	Hurricane Rita destroyed platform.	73	204
EI 314	Platform F 4-pile fixed	G0198 1	165.6	165.6	-	165.6 bbl condensate	Forest Oil Corporation	Chronic seepage in 4th Quarter of 2005 around platform destroyed during Hurricane Rita.	78	230
EI 314	Platform J 4-pile fixed	G0198 1	2,000.0	2,000.0	-	2,000 bbl condensate	Forest Oil Corporation	Hurricane Rita destroyed platform Holes in conductor strings for wells A-2 & A-6. Pollution dome implemented until stopped leakage.	78	230

continued

Table 6. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Rita, September 24, 2005 (continued)

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
EI 330	Platform S 4-pile fixed	G02115	181.0	150.0	31.0	150 bbl crude oil, 31 bbl lube oil	Devon Energy Production Company	Hurricane Rita destroyed platform. Sealed containers and process tank lost with facility.	82	254
EI 333	Platform A 8-pile fixed	G02317	188.0	150.0	38.0	150 bbl condensate, 26 bbl lube oil, 12 bbl diesel oil	Devon Energy Production Company	Hurricane Rita destroyed platform, storage tanks and sealed containers lost.	80	231
EI 397	Platform A 3-pile fixed	G15271	100.8	100.8	-	100.8 bbl crude oil	W & T Offshore Inc.	Storage tank cracked during Hurricane Rita.	112	472
GC 237	Platform A-Typhoon mini tension leg platform (MTLP)	G15563	614.2	536.4	77.8	536.4 bbl crude oil, 42.7 bbl lube oil, 22.1 bbl hydraulic oil, 13 bbl refined oil	Chevron U.S.A. Inc.	Hurricane Rita inverted and destroyed mini tension leg platform (MTLP). Towed to EI 367, sunk for an artificial reef.	92	2,107
SM 146	Rowan Rig Ft. Worth jack-up rig	G09546	1,494.0	-	1,494.0	1,494 bbl diesel oil	Hunt Petroleum (AEC) Inc.	Rig's legs collapsed and hull floated off location. Hull not located as of September 2009.	79	232
SS 248	Seg #5902 4" oil pipeline (DOI)	G01029	75.0	75.0	-	75 bbl crude oil	Dominon Exploration & Production, Inc.	Pipeline riser on the SS 248 D structure broke loose during Hurricane Rita.	59	180
SS 250	Rowan Odessa jack-up rig	G27132	1,571.7	-	1,571.7	1,410.9 bbl diesel oil, 160.8 bbl refined oil	Remington Oil & Gas Corporation	Jack-up rig's legs collapsed during Hurricane Rita. Hull floated off location, found 6 miles away in SS 247.	69	182

continued

Table 6. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricane Rita, September 24, 2005 (continued)

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
VR 255	Seg # 3105 8" oil pipeline (DOT)	G06678	862.0	862.0	-	862 bbl crude oil	Shell Pipeline Company	8" oil pipeline fully severed by drill rig anchor drag during Hurricane Rita. Spillage worst case, assumes 100% capacity and 100% loss.	86	141
VR 255	Seg #11493 12" oil pipeline (DOT)	G01152	66.5	66.5	-	66.5 bbl crude oil	Shell Pipeline Company	12" riser was severed when Hurricane Rita destroyed the VR 255 B platform.	68	152
VR 313	Seg #5220 6" oil pipeline (DOI)	G01172	108.0	108.0	-	108 bbl crude oil	Dominon Exploration & Production, Inc.	Pipeline went down when Hurricane Rita destroyed the VR 313 A platform.	85	202

Notes: DOI = Pipeline regulated by the Department of the Interior, DOT = Pipeline regulated by the Department of Transportation

Planning Area: EC = East Cameron (<http://www.gomr.mms.gov/homepg/lseale/pdf/la2a.pdf>),

EI = Eugene Island (<http://www.gomr.mms.gov/homepg/lseale/pdf/la4.pdf> & <http://www.gomr.mms.gov/homepg/lseale/pdf/la4a.pdf>),

GC = Green Canyon (<http://www.gomr.mms.gov/homepg/lseale/pdf/ng15-03.pdf>), SM = South Marsh Island (<http://www.gomr.mms.gov/homepg/lseale/pdf/la3c.pdf>),

SS = Ship Shoal (<http://www.gomr.mms.gov/homepg/lseale/pdf/la5a.pdf>), VR = Vermilion (<http://www.gomr.mms.gov/homepg/lseale/pdf/la3b.pdf>)

<b>U.S. Coast Guard (USCG) Offshore Spill Size Classifications</b> (size based solely on spill size, not impacts)	
MINOR:	Less than 238 barrels (Less than 10,000 gallons)
MEDIUM:	238 to 2,380 barrels (10,000 to 99,999 gallons)
MAJOR:	2,381 barrels and more (100,000 gallons and more)

Table 7. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricanes Gustav & Ike, September 1, 2009 & September 13, 2009

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
EC 281	Platform A & AUX	G02050	140.4	137.5	2.9	137.5 bbl crude oil, 2.9 bbl refined oil	Stone Energy Corporation	Hurricane Ike destroyed platforms.	91	175
EI 292	Platform B	G00994	102.6	20.0	82.6	20 bbl condensate, 71.4 bbl jet fuel, 11.2 bbl refined oil	Mariner Energy, Inc.	Hurricane Ike destroyed platform.	73	210
EI 327	Platform A	G02910	61.5	55.0	6.5	55 bbl crude oil, 6.5 bbl diesel oil	EI Paso E&P Company, LP	Losses from oil tanks during Hurricane Ike.	78	262
EI 371	Platform B	G05525	204.6	150.2	54.4	150.2 bbl crude oil, 42.9 bbl jet fuel, 11.5 bbl refined oil	W & T Offshore, Inc.	Hurricane Ike destroyed platform.	93	415
EI 372	Platform A	G03786	52.0	52.0	0.0	52 bbl crude oil	EI Paso E&P Company, LP	Separator and flowline losses due to extensive damages from Hurricane Ike.	95	414
EI 397	Platform A	G15271	512.8	512.8	0.0	512.8 crude oil	W & T Offshore, Inc.	Hurricane Ike destroyed platform.	112	472
EI 397	Platform A	G15271	58.0	58.0	0.0	58 bbl crude oil	W & T Offshore, Inc.	Chronic seepage in 4th Quarter of 2009 around platform destroyed during Hurricane Ike.	112	472
GB 072	Platform A	G13363	200.0	200.0	0.0	200 bbl crude oil	Flextrend Development Company	Platform piping on oil tank broken during Hurricane Ike.	164	541
HIA 264	42" Pipeline Seg #7364 (DOT)	G09140	1,316.0	1,316.0	0.0	1,316 bbl condensate	High Island Offshore System, LLC	Natural Gas pipeline completely severed by anchor snag between HI A264 and WC167 valve platforms during Hurricane Ike.	73	150

continued

Table 7. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricanes Gustav & Ike, September 1, 2009 & September 13, 2009 (continued)

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
SM 149	Ensco 74 Jack-up Rig	G02592	550.0	0.0	550.0	490 bbl diesel, 60 bbl lube oil	Mariner Energy, Inc. & Ensco	Rig lost from SM 149 during Hurricane Ike. Was located when SKS Satilla struck submerged rig in HI 241 on 3/6/2009.	93	235
SS 253	Platform A	G01031	685.0	685.0	0.0	685 bbl crude oil	SPN Resources, LLC	Hurricane Ike destroyed platform.	47	187
ST 021	Platform G 8" Pipeline Seg #15078(DOI)	00263	68.8	68.8	0.0	68 bbl crude oil	Energy XXI GOM, LLC	Pipeline separated during Hurricane Ike.	4	46
ST 022	Platform F 6" Pipeline Seg #7273 (DOI)	00164	107.9	107.9	0.0	107.9 bbl condensate	Energy XXI GOM, LLC	Departing riser broken during Hurricane Ike.	4	50
ST 196	Platform A 6" Pipeline Seg #7953 (DOI)	G19829	56.0	56.0	0.0	56 bbl crude oil	Beryl Oil and Gas LP	Platform destroyed. Pipeline severed by Hurricane Ike.	37	105
VR 122	Platform B	G22620	50.0	48.1	1.9	48.1 bbl crude oil, 1.9 bbl diesel oil	Stone Energy Corporation	Hurricane Ike destroyed platform.	40	76
VR 267	Platform C	G01977	126.7	126.0	0.7	126 bbl crude oil, 0.7 bbl refined oil	Stone Energy Corporation	Hurricane Ike destroyed platform.	71	169
VR 281	Platform A	G15201	69.5	40.0	29.5	40 bbl crude oil, 29.5 bbl refined oil	St. Mary Land & Exploration Company	Hurricane Ike destroyed platform.	81	176
VR 284	Platform A	G09508	193.9	112.0	81.9	112 bbl crude oil, 58.1 bbl diesel oil, 23.8 bbl refined oil	Apache Corporation	Hurricane Ike destroyed platform.	84	186
VR 329	Platform A	G02876	169.7	169.5	0.2	169.5 crude oil, 0.2 bbl refined oil	Stone Energy Corporation	Hurricane Ike destroyed platform.	87	220

continued

Table 7. Petroleum Spills of 50 bbl and Greater from Federal OCS Facilities During Hurricanes Gustav & Ike, September 1, 2009 & September 13, 2009

Area Block	Structure	Lease	Total Petroleum (bbl)	Crude Oil & Condensate (bbl)	Refined Petroleum (bbl)	Products	Operator	Damage	Distance Miles	Water Depth Feet
VR 386	Platform B	G02278	196.1	31.2	164.9	31.2 bbl crude oil, 145.8 bbl diesel oil, 19.1 bbl refined oil	Merit Energy Company	Hurricane Ike destroyed platform. Vessels and equipment lost overboard.	103	324
VR 386	Platform B 4" Pipeline Seg #5812 (DOI)	G02278	209.0	209.0	0.0	209 bbl crude oil	Merit Energy Company	Hurricane Ike destroyed platform damaging departing riser.	103	324
VR 386	Platform B 8" Pipeline Seg #13296 (DOI)	G02278	267.5	267.5	0.0	267.5 bbl condensate	Merit Energy Company	Hurricane Ike destroyed platform. Damaged receiving riser.	103	324

Notes: Hurricanes Gustav and Ike occurred less than 2 weeks apart and impacted much of the same geographic area. The spills for the two storms have been combined as it would be difficult to differentiate damages between the two storms.

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Planning Area: EC = East Cameron (<http://www.gomr.mms.gov/homepg/lseale/pdf/la2a.pdf>), EI = Eugene Island (<http://www.gomr.mms.gov/homepg/lseale/pdf/la4a.pdf>),

HI = High Island (<http://www.gomr.mms.gov/homepg/lseale/pdf/tx7c.pdf>), SM = South Marsh Island (<http://www.gomr.mms.gov/homepg/lseale/pdf/la3c.pdf>),

SS = Ship Shoal (<http://www.gomr.mms.gov/homepg/lseale/pdf/la5a.pdf>), ST = South Timbalier (<http://www.gomr.mms.gov/homepg/lseale/pdf/la6.pdf>,

VR = Vermilion (<http://www.gomr.mms.gov/homepg/lseale/pdf/la3.pdf> & <http://www.gomr.mms.gov/homepg/lseale/pdf/la3b.pdf>)

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