

The Gulf of Mexico: Oil and Gas Industry Continues to Recover From Katrina

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Summary

The Gulf of Mexico upstream industry is gaining a clearer picture of the long-term impact of Hurricane Katrina as operators move to complete their assessments and tests.

- It appears increasingly likely that the Gulf of Mexico has suffered as much as a 17–18% decrease in medium-to-long-term *oil capacity* due to lost and damaged platforms, especially in the Mississippi Canyon area. This will result in a loss of 250,000 barrels per day, 1.25% of total US demand for crude oil.
- Losses to medium- and long-term *gas capacity* will also be experienced, but based on assessments to date, the losses will be a much lower share of pre-Katrina gas production than what is likely for oil.
- There is an important caveat. Inspection and testing of offshore pipelines and gathering systems continue and unpleasant surprises remain a possibility. In a related vein, the caution due to the uncertain status of subsea infrastructure is likely the primary reason for the measured ramp-up in both oil and gas production observed to date.

Katrina's Impact on Infrastructure is Still Being Measured

As we noted in the Friday assessment, three wild cards continue to introduce considerable uncertainty regarding how much production will actually be realized over the medium-to-long term: personnel availability, status of key supply infrastructure, such as ports, and condition of important downstream infrastructure, such as pipelines, transportation hubs, and processing facilities.

Relatively Slow Resumption of Production Reported

There is a disconnect between the generally upbeat tone of company assessments and the production numbers reported by the Minerals Management Service (MMS). This was especially noticeable over the weekend when the production volumes for oil and gas barely changed. If this disconnect is not a reporting fluke associated with either the long weekend or MMS reporting methodologies, it could portend a greater than currently projected problem for the resumption of the Gulf of Mexico oil and gas production over the medium-to-long term.

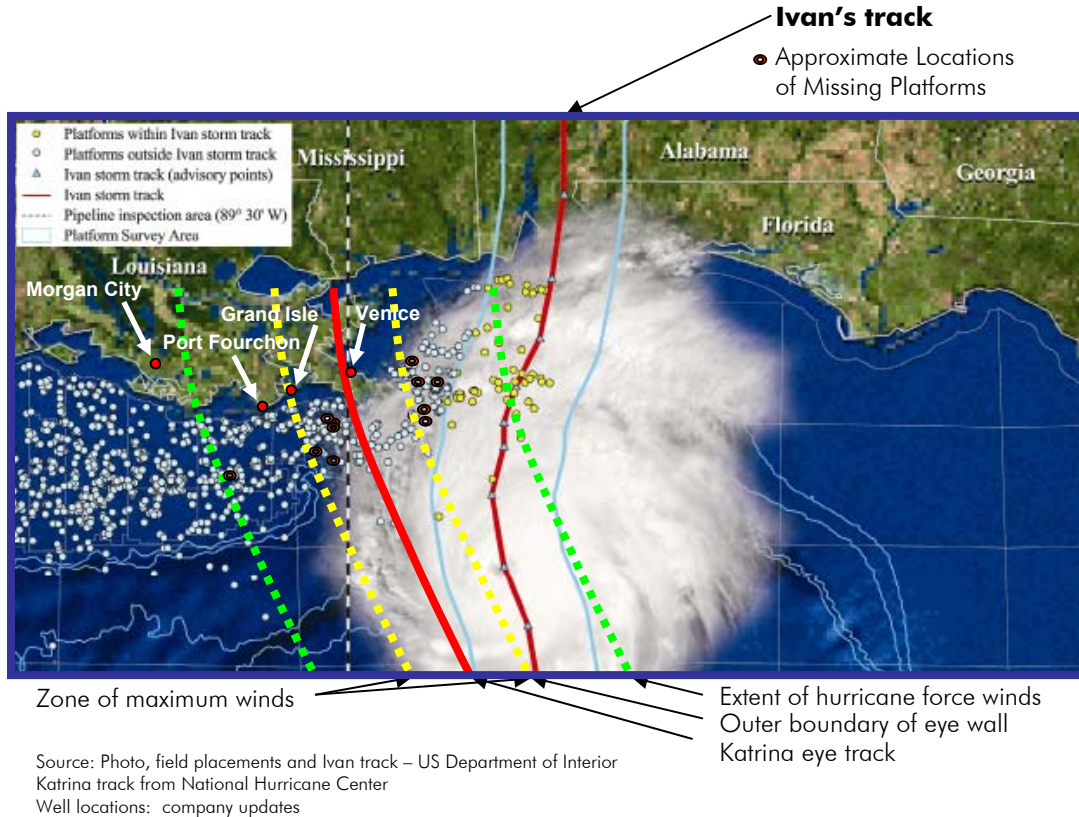
Impact on New Developments May Be Substantial

Also, we are starting to get a sense that with the overwhelming emphasis on the immediate need to restore production at existing fields, the first production for a number of large, new developments, such as the Pluto extension (10 – 15 mmcf/d) may be at risk, affecting company finances and the Gulf of Mexico's longer term output.

Platform Destruction and Damage

The Coast Guard reported over the weekend that Katrina destroyed 26 platforms, confirming our initial estimate on Friday that 25–30 platforms would ultimately be reported destroyed (Figure 1). They provided no details on location or operators. With some prominent exceptions discussed in the next section, most of these installations were located in mature fields and, as a result, were relatively low-rate oil and gas producers.

FIGURE 1: Impact of Katrina



The Industry Has Not Escaped Unscathed: Mississippi Canyon

Unfortunately, there are serious exceptions to this relatively benign story: Shell's Mars and West Delta 143 platforms and, perhaps, Marathon's South Pass 89B platform. Pre-Katrina Mars was the single highest volume Gulf of Mexico oil installation, handling 160–170 mbopd. Shell has not publicly provided a detailed damage assessment, but “before and after” pictures compared with module schematics appear to show that the Helmerich & Payne 201 drilling tower toppled across Mars’ power module, potentially exposing it to the full force of the storm. It is hard to imagine such damage being quickly repaired.

As serious as the Mars damage is, it may not be as serious as that done to the West Delta 143 transportation hub, which serves as a booster and transfer station for all of Shell's Mississippi Canyon production, which in addition to Mars, includes the Princess, Crosby, and Ursa fields. Total output for these fields is 240–260 mbopd with the oil volumes representing 17% of the Gulf of Mexico oil output. Therefore, serious damage to WD 143 resulting in losses of this magnitude would be a serious blow to US crude oil output, indeed to overall non-OPEC production.

In our earlier assessment, we noted unconfirmed reports of several other gathering/transportation hubs being damaged. Over the weekend, Marathon reported that all of its South Pass platforms have been seriously damaged, including the South Pass 89B, which is the transportation hub for deep-water gas production from the Mississippi Canyon–Pluto Field.

Production Recovery Is Relatively Gradual

On Saturday, 3 September, the MMS reported shut-in numbers of 1.1 million barrels of oil per day (mmbopd) and 5.325 billion cubic feet of gas per day (bcfpd). These volumes are improvements on the 1.4 mmbopd and 8 bcfpd shut-in during the storm. But two days later, on Monday, 5 September, the numbers improved only marginally with 1.04 mmbopd and 5.25 bcfpd being reported shut-in. Cumulative losses through the 5 September are reported as being in the range of 12 million barrels of oil and 64 billion cubic feet of gas.

This slowing of improvement is frankly worrying and is inconsistent with the generally encouraging reports from the majority of platform and pipeline operators. If this plateau is not an artifact of the holiday weekend or MMS reporting processes, it may be that the midstream and downstream infrastructure of gathering systems, pipelines, and processing plants may have been more heavily damaged than one would infer from company reports. At a minimum, it suggests there are substantial concerns over the condition of these assets, resulting in a cautious approach to the resumption production, which may seriously impact Gulf of Mexico oil and gas output for weeks.

Of other infrastructure, ports that service the oil industry may be the next most important after pipelines. Relevant examples for this discussion include Port Fourchon, Venice, and Grand Isle. Port Fourchon is an important support facility for the deep water fleet in the central Gulf of Mexico. It is also the onshore receiving site for the critical Louisiana Offshore Oil Port (LOOP) and its fuel source. Given the direct hit the port took from Katrina, there is concern about the damage it received and its current status, especially:

- LOOP performance
- the depth of its harbor
- the ease with which it can be re-supplied given blockages to the causeway that connect it to the mainland

The good news is that the LOOP suffered relatively little damage and is back up to as much as 75% of pre-Katrina capacity. Also, Port Authorities are reporting the harbor water depth is adequate for offshore supply boats and the port is operating at 20% of capacity. They expect that once blockages are removed from the causeway sometime this week, they will be able to quickly return to full capacity.

Other ports, however, do not appear to be bouncing back as quickly. Early reports from Venice suggest severe damage that will take weeks, if not months, to address. In another example, a large operator is evaluating relocating from Grand Isle, which serves as one of its Gulf of Mexico hubs, to Port Fourchon because of damage suffered at Grand Isle. This example not only illustrates the flexibility and responsiveness of the industry, but also that there are alternatives to the ports that have been damaged.

The Gulf of Mexico is a large, mature production province and, as such, has an elaborate and widely dispersed infrastructure of ports, service firm facilities, heliports, and logistical centers. For example, Morgan City, long a center for the Gulf of Mexico oil industry, is about 40 miles northwest of Port Fourchon.

Morgan City authorities are not reporting significant damage due to Hurricane Katrina and believe they have the capacity to serve as a temporary alternative for other damaged ports. That this is happening can perhaps be inferred indirectly from such anecdotal evidence as the number of flights increasing from Morgan City's heliport from 30 per day before the hurricane, to 200 a day last week. By way of comparison, Port Fourchon helicopter flights were on the order of 20–40 per day before the storm. Morgan City is also a major platform construction center and shore base for service firms throughout the region.

Yes, it will be more inconvenient to use other ports such as Morgan City; yes, it will be more expensive; and yes, it will take longer to ferry personnel, supplies, and equipment to platforms and rigs; but this analysis indicates it is unlikely that ports are on the critical path to production recovery.

Immediate Needs versus Long-Term Sustainability

Although the industry is making progress in its efforts to restore production at its existing installations, we do have questions about whether this focus (appropriate as it is) might not be impacting a number of ongoing new field developments. The primary source of this concern is the possible diversion of scarce engineering resources, port capacity, and construction equipment/materials, at least temporarily, to production restoration efforts, thereby, starving new developments.

The most likely scenario for this type of delay would be if the subsea pipeline and gathering system infrastructure experienced more damage than has been reported. Pipelines are often on the critical path for new project start-ups, especially for deep-water developments. Hence, if significant subsea pipeline damage is found to have occurred in a number of different areas, it will likely slow development and commissioning efforts at new fields.

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