Assam Gas Leak

Why in news?

Since 27th May 2020, natural gas has been continuously flowing out of a gas well in Assam following a blowout.

Where is the oil rig?

- The Baghjan 5 well is a purely gas-producing well in Tinsukia district.
- It is at an aerial distance of 900 metres from the Dibru-Saikhowa National Park.
- It was drilled by Oil India Limited (OIL) in 2006.
- It is one of the most prolific gas reservoirs owned by OIL.
- It produces around 80,000 standard cubic metres per day (SCMD) of gas from a depth of 3,870 metres.
- The current discharge is at 90,000 SCMD at a pressure of 4,200 PSI, far higher than the normal producing pressure of around 2,700 PSI.

Why do blowouts happen?

- Sometimes, the pressure balance in a well may be disturbed leading to 'kicks' or changes in pressure.
- If these are not controlled in time, the 'kicks' can turn into a sudden, uncontrolled release of gas/oil or blowout.
- The possible **reasons** behind blowouts include simple lack of attention, poor workmanship, bad maintenance, old age, sabotage, morpho-tectonic factors, etc.
- A device called a **blowout preventer** is usually installed in wells.

Why was there a blowout at Baghjan?

- The gas well at Baghjan was being **serviced**, and a new sand was being tested at another depth in the same well.
- The existing well-head (the exposed top portion) was also being repaired.
- For repairing the well-head, the well was temporarily killed or the producing zone was shut down.
- The **blowout preventer** was also **removed**.
- But suddenly, gas started to ooze out of the exposed well.
- Before anyone could do anything, it broke through our cement barrier.

- The inquiry is going on regarding how and why it happened, how the gas came out of the 'killed zone'.

Why is it so difficult to control?

- The control of a blowout depends on two things:
  1. The size of the reservoir and
  2. The pressure at which the gas/oil is flowing out.
- This reservoir was particularly difficult to control since it was a gas well and ran the risk of catching fire at any point.
- While many blowouts automatically collapse on their own, it can take up to months.
- To control a blowout, the first step is to pump in water, so that the gas does not catch fire.

What is being done?

- A crisis management team from OIL and ONGC intend to create a water umbrella to protect workers while they hook up the blowout preventer.
- For that, a temporary reservoir, channel cables or temporary pipelines have to be built from the Dangori river nearby.
- With very limited space and non-availability of open space above the well head, placement of the BOP is a huge challenge and entails a huge risk.
- It is planned to place the BOP on the well head through a hydraulically driven mechanical transporter.
- Drilling mud will have to be pumped in immediately after capping the well by the BOP.
- OIL has reached out to Singapore-based firm Alert Disaster Control.

How serious is the impact to the neighbourhood?

- As many as **1,610 families** with 2,500-3,000 people have been evacuated to relief camps.
- There are reports of deaths of a river dolphin, and a variety of fish.
- While the administration has kept an **ambulance** with paramedical staff on standby, locals have complained of symptoms like headache, etc.
- The gas (a mix of propane, methane, propylene and other gases) is flowing with the wind, towards the northeast.
- That is a radius up to 5 km and condensate is mostly falling on bamboo, tea gardens, banana trees and betel nut trees.
- Since the gas is moving through the air, the condensate is falling into **Dibru-Saikhowa National Park** too.
- Also close is the **Maguri-Motapung wetland** —an Important Bird Area

notified by the Bombay Natural History Society.

- The park is famous for its birds, butterflies, wild cats, and feral horses.
- The impact is visible in the sense that one can see,
    1. Traces of condensate on the water bodies,
    2. The numbers of birds have decreased, not because they have been killed but because they have flown away.

Source: The Indian Express