Operational Phase

Chapter 08

In this chapter we cover:

- **Operations, monitoring & maintenance**
  Maintenance timeline
- **Well standards**
- **Petroleum & gas flaring**
- **Noise, light & odour**
- **Air quality**

Current as of February 2022

THEGASGUIDE

GasFields Commission Queensland

Operational Phase

You are here

Trained field operators will need access to your property to monitor and maintain petroleum and gas infrastructure, including ongoing safety checks, well workovers, vegetation control and general repairs on and around well pads.

LANDHOLDER TIP:

Maintain regular and effective communication with your assigned land access/liaison officer.

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GasFields Commission Queensland

Operations, monitoring & maintenance

With commissioning and start-up, the construction phase is now over, and the landholder should look forward to less laborious times.

The operational phase switches the resource company's attention to safely operating and maintaining the infrastructure and equipment situated on your land.

Well production time frames can vary but some have been known to keep producing for upwards of 30 years. That's a potentially lengthy business partnership, so a good working relationship is essential, particularly considering the resource company's responsibility to maintain and monitor their infrastructure for its operational life.

The resource company will need regular access to their assets located on your land for ongoing inspections and monitoring by trained field operators. The resource company is obliged to contact the landholder with reference to the agreed access rules to notify of any upcoming activities, but the relationship between landholders and resource companies may evolve to a point where notifications become unnecessary, as both parties learn to understand, acknowledge and respect each other's business. Exceptions might occur with major events such as mustering, field days or extended equipment workovers.

Ongoing maintenance schedules vary depending on the type of infrastructure used and the operator, but you should reasonably expect a site visit pattern as per the next page.

Maintenance timeline

Ongoing maintenance schedules vary depending on the type of infrastructure used and the operator, but you should reasonably expect the site visit pattern.

Weekly

Routine inspections and maintenance.

Monthly

Gas testing of surface facilities, weed trimming and control spraying around aboveground infrastructure.

Quarterly

Servicing of well site components (e.g. engines, generator, drive head), calibration of measuring equipment.

Six monthly

Fencing checks.

Biannually

Change out engines and generator.

Annual

Pressure vessel inspections and safety checks, gas leak surveys, water and gas analysis.

Workovers (as required)

Well workovers, typically lasting between 3 - 6 days, involve bringing a rig onsite to clean, check, repair and/or treat the infrastructure inside the well to try to restore or increase the well's production.

Well standards

A Code of Practice overseen by Resources Safety & Health Queensland ensures that all petroleum and gas wells and associated bores are constructed, operated and abandoned to a consistent acceptable standard to ensure safety through long-term well integrity and the protection of groundwater resources.

The code identifies industry standards and good gas field practice for well design. It complements the resource company's internal risk assessment processes, operating standards and procedures by outlining a recommended process to ensure that:

- The environment and groundwater resources are protected
- Risk to the public and workers is managed to a level as low as reasonably practicable
- Regulatory and applicable Australian and international standards/requirements, as well as the resource company's standards, are understood and implemented where appropriate
- The life of a well or associated bore is managed effectively through appropriate design and construction techniques and ongoing well integrity monitoring.

Source: Petroleum and Gas Inspectorate – Code of Practice - For the construction and abandonment of petroleum wells and associated bores in Queensland (RSHQ, 2019)

DID YOU KNOW...

Increasingly, resource companies are using new technologies including remotely piloted small-scale aircraft systems, or drones to inspect gas wells, pipelines and processing facilities in Queensland. The drones are helping to drive improvements in safety and reduce the industry's environmental footprint.

TECHNICAL NOTE: NATURAL GAS

Natural gas is colourless and odourless but, like many fuels, it is highly flammable. It's important that safe work operating practices are established and followed when working near gas infrastructure. Contact your resource company first if you are planning any construction or other significant activities near any gas facilities.

Petroleum & gas flaring

Flaring involves burning off flammable substances that are unusable or which may present a safety hazard if not removed.

Flaring is commonly seen:

- At processing plants to safely remove stored gases in pipes, vessels and tanks during maintenance or emergency shutdowns
- At drilling rigs to safely remove gases encountered when drilling
- On exploration and appraisal wells until a sufficient amount of information is gathered to prove the viability of the reserve.

A flare is characterised by a vertical stack or pipe with a burner at the tip. Other components can be connected to the inlet of a flare and include valves, hoses, pipes regulators and connecting fittings.

Flaring is the one of the safest processes for burning unusable combustible vapours and liquids.

Flaring is covered by production and environmental regulations for Queensland's onshore gas industry. The requirements for flaring activities near homes and communities are built into each permit holder's environmental approval.

Petroleum companies conducting production testing for wells must obtain regulatory approval from DOR for any period longer than 30 days (up to a maximum of 13 months) for each well that is being production-tested, in which flaring can take place.

Noise, light & odour

In Queensland, resource companies are subject to strict environmental assessment processes and must be issued an EA by DES before they can begin operations on your land. An environmental management plan must be submitted to identify and manage the potential impacts of noise, light and odour.

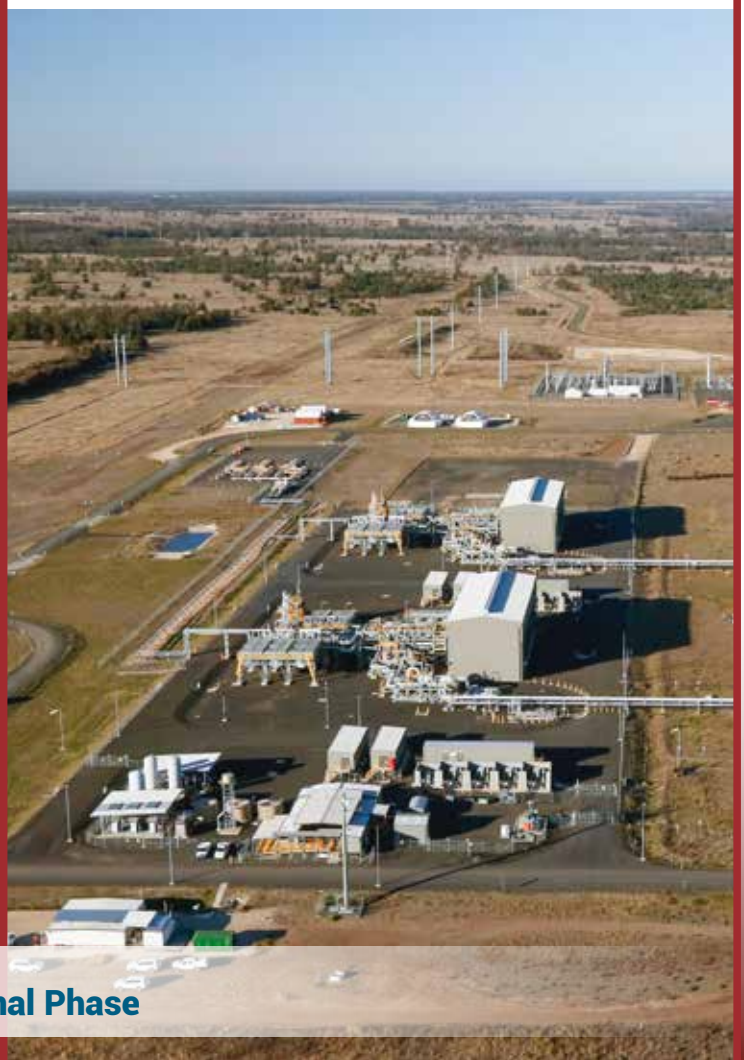
EA conditions require companies to not cause environmental nuisance from noise at a sensitive receptor (a place where noise is measured to investigate whether impacts are occurring) or from dust, odour, light or smoke at a sensitive place (including, for example, a dwelling, library, childcare centre, medical centre or a public park).

There are provisions for alternative arrangements between a resource company and a neighbouring landholder. An alternative arrangement refers to a written agreement between the holder of an EA and an affected or potentially affected person at a sensitive receptor site. The alternative arrangement dictates the way in which a particular nuisance impact will be dealt with.

Case study

INNOVATION AND IMPACT REDUCTION

Focus on community impact is essential early in the piece, when opportunities can be taken to design the field and facilities in a way that reduces impact. Origin, as operator of the APLNG upstream facilities, made the decision to use electric-driven compressors, which drove the extension of the Queensland electricity network further west into the Surat Basin and allowed for the use of more efficient compressors which make materially less noise and emissions than gas-driven compressors. Ground flares were also chosen to reduce the noise and visual impact of flaring events.



Noise

An EA will identify the acoustic values of the area where the proposed activities are to be carried out.

These acoustic values include:

- Health and biodiversity of ecosystems
- Human health and wellbeing, including ensuring a suitable acoustic environment for individuals to sleep, study or learn, and be involved in recreation, including relaxation and conversation
- The amenity of the community.

Assessing the implications of the above, DES will usually impose conditions in the EA for the protection of the acoustic environment. Noise management plans can also be required to address how activities will be carried out, according to best practice noise management principles.

Air quality

Environmental values relevant to air quality may include protecting:

- The health and biodiversity of ecosystems
- Human health and wellbeing
- The aesthetics of the environment, including the appearance of buildings, structures and other property
- Agricultural use of the environment.

Companies are required to provide background air quality monitoring data and, in certain instances, undertake air quality modelling to demonstrate that the air quality objectives are being maintained.

Resource companies must ensure that the release of dust, light, odour or any other airborne contaminants resulting from their activities do not cause an environmental nuisance to any sensitive receptor. Environmental authorities also include a suite of monitoring requirements for point source contaminant releases to air in order to demonstrate that companies are complying with their requirements.

Case study

AIR QUALITY IN THE SURAT BASIN

A three year study completed in 2018 by CSIRO's GISERA investigated the influence of CSG activities on air quality.

Since 2016 the data collected from the study has been streamed live to the DES website and it shows good ambient air quality in and around the towns of Condamine, Miles and Chinchilla.

The air quality monitoring found low concentrations of volatile organic compounds in these areas. These tiny compounds found in the air around Chinchilla were attributed to vehicle exhaust, as well as domestic and commercial sources within the town.

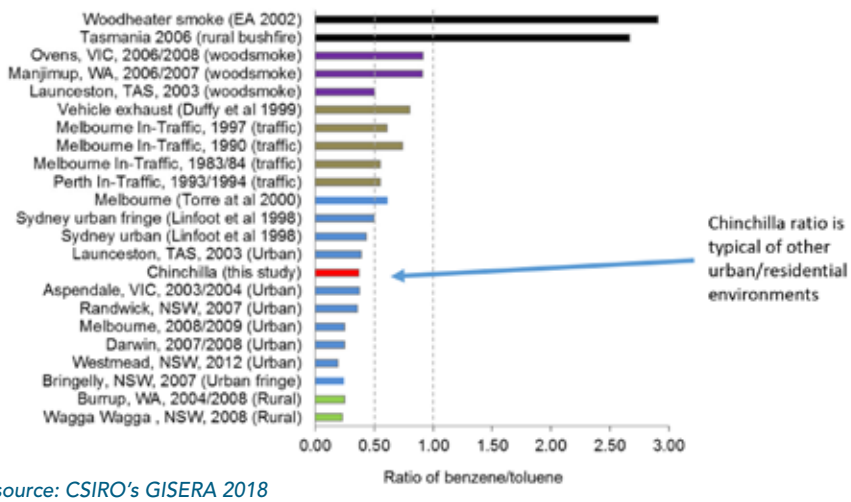
Other activities that typically affect air quality in rural areas include bushfires, dust from cattle movements, wind-blown dust and vehicles driving on unsealed roads.

Importantly, the study found that CSG activities did not contribute to elevated concentrations of fine particles which exceeded air quality objectives.

In April 2020 GISERA published further findings from research that represents Australia's most comprehensive investigations into hydraulic fracturing activities to date. This unique research opportunity monitored the impacts of hydraulic fracturing at six CSG wells prior to, during, and after hydraulic fracturing operations *(click here to view the reports findings)*.

The final reports present air, water and soil quality data measured before, during and after well pad development (including hydraulic fracturing) at coal seam gas wells in the Surat Basin.

Ratios of benzene/toluene from woodsmoke/fire, vehicle exhaust, urban and rural areas



Graph source: CSIRO's GISERA 2018