

Enquiries Ruth Brown  
Telephone 4699 4304  
Your Reference Complaint re Orana GPF  
Our Reference 101/0006140



Department of  
**Environment and  
Heritage Protection**

18  
15 December 2014

Ms Shay Dougall  
92 Flett's East Road  
HOPELAND QLD 4413

Dear Ms Dougall

**RE: Complaint re noise, light and fumes from Orana Gas Processing Facility  
(CR64570)**

I am writing in relation to your recent complaint reported to the Department of Environment and Heritage Protection's (EHP) Pollution Hotline on 28 October 2014. The complaint was in relation to noise, light and fume nuisance resulting from Origin's Orana Gas Processing Facility (GPF) during the period 25 – 28 October 2014. EHP provided a response to this complaint on 12 November 2014. In the letter we advised that Origin were implementing a noise, light and air monitoring program specifically relating to the Orana GPF. Origin's Environmental Compliance and Performance Manager has provided the following information in regard to the results of this monitoring program.

**Light Assessment**

*SLR Consulting Pty Ltd (SLR) was engaged by Origin Energy to conduct an assessment of the potential nuisance impacts associated with light emissions from the Orana GPF flare. Light monitoring was conducted on the night of 5 November 2014 between 8.30pm and 11.45pm. During this time, the flare gas rate was approximately 15 TJs per day.*

*Light measurements were taken at the Dougal property (located approximately 2.87km from the GPF flare), as well as various far and near field locations from the flare. Through direct measurements, SLR found that light levels at the GPF site generally fell below one lux at a maximum of 500 metres from the flare. Due to the shielding wall around the flare, and from general observations, it is SLR's opinion that most of the night time light around the GPF site comes from the safety and security lighting on and around the processing equipment.*

*At the Dougal property, the lux level was found to be 0.01 lux. On the night of testing, heavy rain resulted in a cloud of steam rising from and being lit up by the flare. The steam cloud resulted in light spill, and thus the results may be considered indicative of 'worst case;' scenario. Though the steam cloud and light surrounding the flare was clearly visible from the Dougal property, it did not cause an unacceptable level of light and was not above the recommended maximum light value of 1 lux as per the*

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*Australian Standard: AS 4282-1997 Control of the Obtrusive Effect of Outdoor Lighting.*

### Noise Assessment

Origin has continuously monitored noise levels around Orana GPF to determine noise emissions from petroleum activities during GPF commissioning and operation of the flare. Origin installed a noise logger at a near-field property adjacent to the Orana GPF during October and at a far-field location to the east of the GPF in early November, to determine noise impacts experienced at your property. Origin has stated that "the results of continuous monitoring during October from noise loggers around the GPF flare and adjacent properties have been used to predict noise levels experienced at the Dougal property." Extrapolated noise levels were 19 dBA  $L_{Aeq,15 min}$  for internal levels and 23 dBA  $L_{Aeq,15 min}$  for external levels. These levels were well below the noise limits in condition (E5) of Origin's Environmental Authority EPPG00968013:

- (E5) The emission of noise from the petroleum activity(ies) authorised under this environmental authority must not result in levels greater than those specified in Schedule E, Table 1 – Measured Noise Limits at Sensitive Receptors in the event of a valid complaint about noise being made to the administering authority.

Schedule E, Table 1 – Measured Noise Limits at Sensitive Receptors

Time Period	Metric	Short Term Noise Event	Medium Term Noise Event	Long Term Noise Event
7:00 am – 6:00 pm	$L_{Aeq,adj,15 min}$	45 dBA	43 dBA	40 dBA
6:00 pm – 10:00 pm	$L_{Aeq,adj,15 min}$	40 dBA	38 dBA	35 dBA
Noise from drilling activities undertaken from 10:00pm – 7:00am	$L_{Aeq,adj,15 min}$	30 dBA (measured indoors at any sensitive receptor)		
Noise from fixed plant in gas fields undertaken from 10:00pm – 7:00am	$L_{Aeq,adj,15 min}$	28 dBA (measured indoors at any sensitive receptor)		

Noise limits in Table 1 are taken to be measured noise levels outside a sensitive receptor unless stated otherwise.

$L_{Aeq}$  and Max  $L_{PA}$  are to be measured over any 15 minute period

$L_{ABG}$  is the deemed background noise levels which for the purposes of Schedule E- Table 1 – Measured Noise Limits at Sensitive Receptors are:

7:00 am - 6:00 pm: 35 dBA  
 6:00 pm – 10:00 pm: 30 dBA  
 10:00 pm – 6:00 am: 25 dBA  
 6:00 am – 7:00 am: 30 dBA

### Ambient Air Quality

Origin's coal seam gas has been analysed and consists primarily of methane (~97.98%) with very few trace elements and is therefore considered to be of low risk in terms of volatile organic compound (VOC) formation. Despite this fact, Origin has implemented a VOC monitoring program to assess any potential risks.

Origin has installed passive VOC samplers at two locations on a property neighbouring the Orana GPF, with monitoring being conducted since the beginning of September 2014. Origin has stated that the "results from September and October 2014 show very low concentrations of VOCs in samples collected. For the VOC suite analysed, concentrations were typically below the limits of detection and also well below air quality objectives outlined in the Queensland Environmental Protection (Air) Policy 2008."

Burning methane typically produces combustion by-products of carbon dioxide and water. Some oxides of nitrogen can be produced from atmospheric nitrogen in the air used in the combustion process. Natural gas combustion is a very clean process that is unlikely to cause hazardous products. Small quantities of very fine carbon particles may be produced if the combustion process is incomplete but the emission of plumes, fumes or smoke is uncharacteristic of gas combustion. There are therefore no relevant grounds to conduct or require an investigation of any further contaminants from this process.

As all the monitoring results show compliance with EA conditions and/or Australian Standards, and the issues raised in the complaint have been addressed by Origin, EHP considers no further action is required and has closed this complaint.

Should you require further information regarding this matter, please contact Ruth Brown on 4699 4304.

Yours sincerely



**Rob Spalding**  
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Environmental Services and Regulation