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Dear Neil

Could I please apply for a minor variation (if deemed necessary) covering the temporary 10 day alteration of the current emission limits from:

	A6	30 mgm ⁻³	PH ₃	(phosphine)
	A7	30 mgm ⁻³	PH ₃	
to	A6	100 mgm ⁻³	PH ₃	
	A7	0 mgm ⁻³	PH ₃	

The purpose of the alteration is to allow us to carry out essential maintenance work on the PH₃ gas bell.

Note that we also applied for a temporary limit change when we last carried out this work in 2004.

To comply with health and safety legislation we need to carry out an internal inspection of the gas bell every few years. As a consequence we need to empty the gas bell to allow safe access.

To do this we need to empty the gas holder seal water (approx. 1000m³) which will contain absorbed PH₃ gas. Simply running this water to our Effluent plant would result in unacceptable ground level concentrations of PH₃ near the Effluent plant (due to degassing of the PH₃ in the balance tank).

As a consequence we propose to degas the water on the Phosphine plant and send the resultant air stream (contaminated with traces of PH₃) to one of the stacks.

The level of PH₃ saturation of the gas holder water is unknown but calculations predict emissions from A1 for 4 days of:

Assume 50% saturation – approx. 40 mgm⁻³ PH₃

Assume 100% (worst case) saturation – approx. 80 mgm⁻³ PH₃

Hence the request for a temporary 10 day alteration of A1 PH₃ limit to 200 mgm⁻³.

Dispersion analysis (using ADMS 4) is attached and gives the following maximum ground level concentrations of PH₃ (in µgm⁻³).

Weather Conditions	Normal emission limits A6, A7 – 30 mgm ⁻³	Proposed 7 day limit A6 – 200 mgm ⁻³	Predicted worst case emission A6 – 80 mgm ⁻³
D5	3.8 µgm ⁻³	14.3 µgm ⁻³	5.7 µgm ⁻³
F2	8.2 µgm ⁻³	30.8 µgm ⁻³	12.3 µgm ⁻³

The Environmental Awareness Level (EAL) of PH₃ is 42 µgm⁻³. EA PPC Guidance states that an emission is considered to be trivial if it results in a maximum ground level concentration of <10% of the EAL (4.2 µgm⁻³ for PH₃). The table above therefore demonstrates that even the worst case predicted emission is only just above the triviality level for D5 weather conditions and all values are below the EAL.

We plan to carry out this essential maintenance work in early September.

Yours sincerely,



Dr Tom Dutton
HSE Director
Health, Safety & Environment Dept.

