



# THE HAVEN & HYDROGEN SULPHIDE

TOWN COUNCIL MEETING

14 NOVEMBER 2011

The purpose of this Report is to make available to Members information about the potential dangers of hydrogen sulphide – the gas generated by the rotting seaweed in the Haven - gathered from a range of sources.

## No. DETAIL

### 1) CONTEXT

- a) Residents, business owners and visitors are all too well aware of the smell that has been damaging Ventnor's social and economic life for over four years. It is known to be caused by the production from the Haven's trapped and rotting seaweed of hydrogen sulphide.
- b) During recent discussions with senior Isle of Wight Council officers about this major problem for the town, information about the levels of hydrogen sulphide being produced. We were informed that the maximum level that has been detected by measurement, using equipment borrowed from Southern Water, is 19 parts per million (ppm) at two inches above the water surface, falling to 0.5 ppm at the level of the walkways.
- c) In an email on 10 October the Isle of Wight Strategic Manager Highways & Transport, Peter Hayward told us: *I am pleased to be able to let you know that despite the odour the actual concentrations levels are not sufficient to cause any concern in respect of public health or for the health and safety of people working in the haven*
- d) Information made available to us by both Councillor Jim Morgan and County Councillor Chris Welsford has raised some concerns, in particular about the effect of long term, low level exposure where there remains significant uncertainty about the impact of health.

### 2) HYDROGEN SULPHIDE

- a) The Occupational Safety & Health Administration (OSHA) of the United States government defines the gas as:  
*a harmful and toxic compound. It is a colorless, flammable gas that can be identified by its "rotten egg" odor. Hydrogen sulfide has a low odor threshold, and its smell may be detected below 1 ppm. The minimal perceptible odor is reported as 0.13 ppm. The rotten egg odor is recognizable up to 30 ppm. It has a sweet odor at 30 ppm to 100 ppm. At concentrations above 100 ppm, detection ability is affected by rapid temporary paralysis of the olfactory nerves, resulting in loss of the sense of smell.*
- b) It lists the effects of relatively low level concentrations of the gas as: 0-10 ppm: irritation of eyes, nose and throat; 10-50 ppm: headache, dizziness, nausea, vomiting, coughing, difficulty breathing.
- c) The OSHA's proposed maximum exposure level sets a ceiling of 20ppm, allowing a peak of 50ppm for no more than 10 minutes.
- d) In 1996 a paper on the gas by the Oil, Chemical and Atomic Workers International Union went further:  
*The OSHA Permissible Exposure Limit (PEL) for a ceiling concentration is 20 ppm hydrogen sulfide, a level which may not ever be exceeded. The acceptable maximum peak, for 10 minutes...This level is too high and recent recommendations are that it be lowered to 10 ppm. You should remember, however, that H<sub>2</sub>S is an invisible gas, floating freely and unpredictably, and a reading even below a 10 ppm Permissible Exposure Limit (PEL) may not guarantee your safety.*
- e) A substantial New Zealand study from 2005 concluded that *little is known of the long-term, low-level exposures* and that further investigation is warranted.

---

### 3) REPONSES

- a) The Isle of Wight Council has accepted its responsibility for the problem and the consequent need to develop an effective solution to it.
  - b) As previously reported, this is currently taking the form of the development of a powerful and mobile pump to both extract the seaweed before it rots and introduce additional oxygen into the Haven's waters.
  - c) An initial test has given what are described as reasonable confidence levels as to this as a sustainable future to both Peter Hayward and Harbourmaster Cheetah Marine.
  - d) Members may want to consider whether any further discussions with the Isle of Wight Council would be appropriate at this time.
-