AIR QUALITY MANAGEMENT ST STEPHEN IN BRANNEL PARISH

From 2016 St Stephen in Brannel Parish has commissioned monitoring of air quality. The purpose of the analysis was to establish baseline PM10 air quality data in the St. Stephen area prior to the commissioning of the Energy from Waste (EfW) plant at Rostowrack Farm in St Dennis so that fears of air quality decline could be addressed. The Parish Council have continued monitoring, following the commissioning of the EfW plant, in order that a comparison of the baseline conditions could be made to the operating conditions.

The monitoring site in St. Stephen-in Brannel is located approximately four kilometres to the south of the EfW plant and although neither site is within an Air Quality Management Area (AQMA), they both lie within an area that has a significant china clay industry. A two-year study undertaken by the China Clay Area Dust Monitoring Forum1 from 2003 – 2005, indicated that the china clay industry increased ambient concentrations of PM10 levels by as much as 8 µg/m3 as a daily average, depending on location and weather conditions.

St-Stephen-in-Brannel Parish Council have purchased three further AQM DM11 PM10 monitors that are located in the villages of Treviscoe, Nanpean and St Dennis. The monitors in Treviscoe and Nanpean were installed during the summer of 2016 and valid data is available from the end of August 2016. The monitor in St Dennis was installed on the 12th October 2016.

Monitoring data from the AQM DM11 PM10 monitor can only be used for screening assessments to identify where there is a potential for an air quality objective to be exceeded. This is due to differences in the monitoring technique and in order to determine compliance with the national air quality objectives (NAQO) or limit values, a gravimetric sampler or a monitoring instrument "deemed equivalent by Defra" would be required. However, the AQM DM11 is a very useful tool and provides indicative or semi quantitative results.

The term PM10 refers to particulate matter with a diameter of approximately 10 µm or less and represents the respirable fraction of dust. Particles of this size are not filtered out by the nose and throat and can settle deep in the lungs causing health problem.

The health effects of particle pollution have been widely studied, and include premature death, worsening of lung and heart disease, often increasing admissions to hospital.

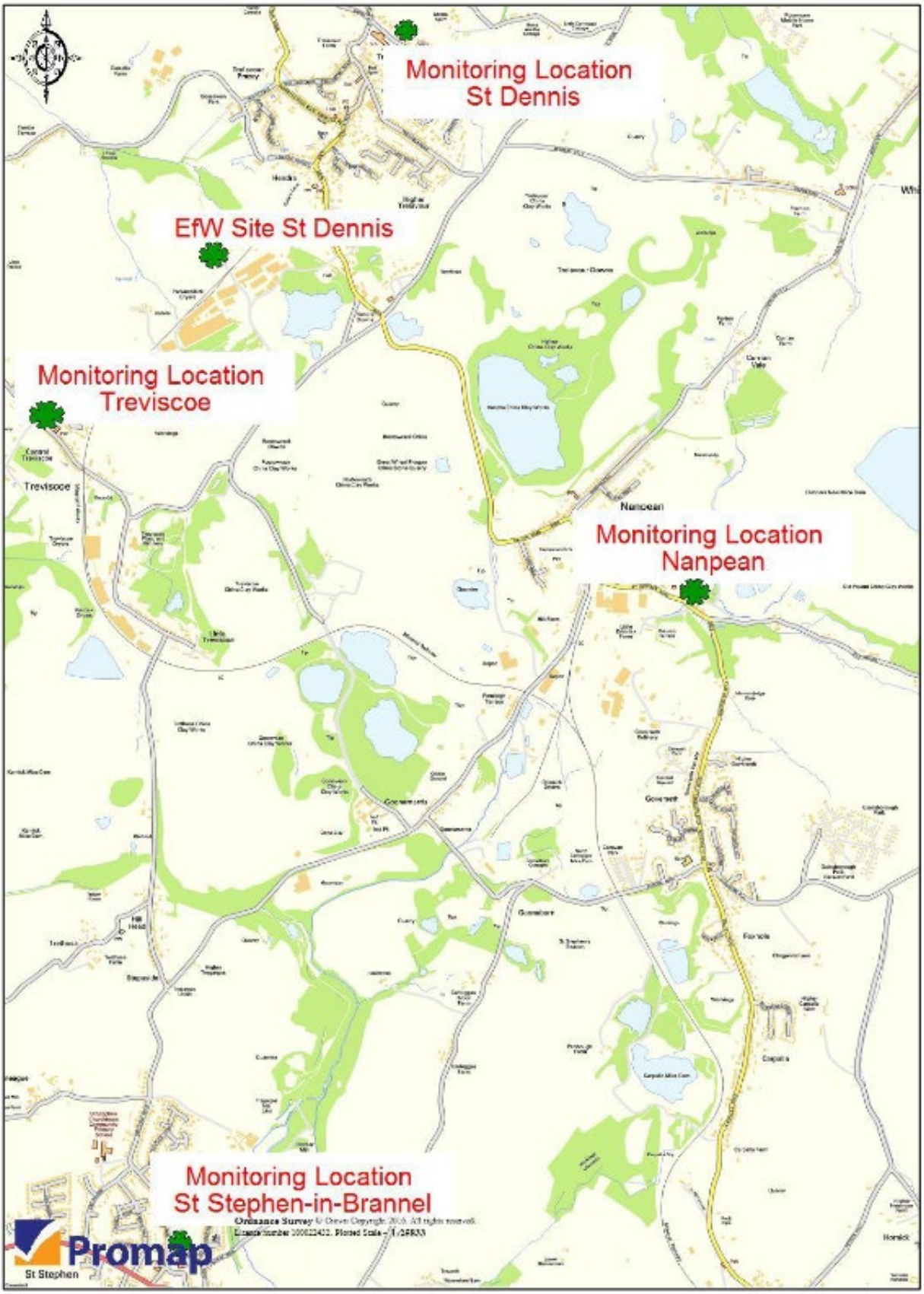
PM10s are made up of a wide range of materials and arise from a variety of sources, both man-made and natural. It is generally accepted that PM10 concentrations fall into two main categories:

- Primary particles include mobile sources i.e. road transport and stationary sources such as the burning of fuels for industrial, commercial and domestic purposes. Emissions of dust can also generate high concentrations of PM10 close to quarries and construction sites. Natural sources include sea spray and dust from the Saharan desert travelling vast distances.
- Secondary particulate matter is formed from chemical reactions of the gases ammonia (NH3), sulphur dioxide (SO2) and nitrogen oxides (NOx) in the atmosphere to form ammonium sulphates and ammonium nitrates. NH3 is emitted mainly from agricultural sources, particularly livestock waste. SO2 is formed by combustion of sulphur containing fuels such as coal. NOx is formed by combustion of fuels used in power generation, domestic heating and traffic. Secondary particulate matter is also formed from organic compounds by reactions that occur in the atmosphere.

The regular reports can be accessed here: https://ststepheninbrannel-pc.org.uk/air-quality-monitoring/

In view of the potential in the area for industrial redevelopment and housing development that encourage more travel by private vehicles, it is appropriate that the NDP include criteria relating to air quality, for example;

'All new development should demonstrate that singularly or cumulatively they will not cause increased risk to human health from air pollution or exceed adopted national standards for air quality management and includes appropriate mitigation under CLP policy 16'.


Monitoring Location
St Dennis
EfW Site St Dennis
Monitoring Location
Treviscoe
Monitoring Location
Nanpean
Monitoring Location
St Stephen-in-Brannel
Promap
St Stephen