Pollutant Data Definitions

The One Hour Daily Parameter Report contains the following abbreviations:

Abbreviation	Parameter Name	Parameter Type
01 OZONE	Ozone	Pollutant
02 NOX	Oxides of Nitrogen	Pollutant
03 NO2	Nitrogen Dioxide	Pollutant
04 NO	Nitric Oxide	Pollutant
06 CO	Carbon Monoxide	Pollutant
10 INTMP	Internal Temperature	Station Temperature
11 PM 2.5	Particulate Matter 2.5	Pollutant
12 VWDR	Wind Direction Resultant	Meteorological
13 SIGTHETA	Sigma Theta	Meteorological
14 VWSP	Wind Speed Resultant	Meteorological
15 SWSP	Wind Speed Scalar	Meteorological
16 AMBTMP	External Temperature	Meteorological
17 RELHUM	Relative Humidity	Meteorological
18 PRESS	Barometric Pressure	Meteorological
19 SOLAR	Solar Radiation	Meteorological
28 SO2 Tr	Trace level Sulfur Dioxide	Pollutant
29 CO Tr	Trace level Carbon Monoxide	Pollutant

Ozone

Ozone (O_3) is the primary constituent of smog. It is not usually emitted directly into the air, but at ground level is created by a chemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC's) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, and chemical solvents, as well as natural sources, emit NOx and VOCs that help form ozone. Sunlight and hot weather (predominant conditions in Southern California) cause ground-level ozone to form in harmful concentrations.

Oxides of Nitrogen

Oxides of nitrogen, or NOx, is the generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. NOx forms when fuel is burned at high temperatures, as in a combustion process. The primary contributors of NOx are motor vehicles and power plants. It is a primary ingredient in the formation of smog.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is one of the pollutants known generically as oxides of nitrogen. NO_2 is a by-product of combustion. The brown haze seen in the San Diego skyline on cold mornings is primarily due to NO_2.

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Nitric Oxides

Also a product of combustion, nitric oxide (NO) is converted to NO_2 in the atmosphere and then becomes involved in the photochemical processes and / or particulate formation.

Sulfur Dioxide

Sulfur dioxide**,** or SO_2, belongs to the family of sulfur oxide gases (SOx). Sulfur is prevalent in all raw materials, including crude oil, coal, and ore that contains common metals like aluminum, copper, zinc, lead, and iron. SOx gases are formed when fuel containing sulfur, such as coal and oil, is burned, or when gasoline is extracted from oil refinement, or when metals are extracted or isolated from ore. SO_2 dissolves in water vapor to form sulfuric acid, which can interact with other gases and particles in the air to form sulfates and other products, that can be harmful to people and their environment.

Carbon Monoxide

Carbon monoxide, or CO, is a colorless, odorless gas that forms when the carbon in fuels does not completely burn. It is a component of motor vehicle exhaust. Higher levels of CO generally occur in areas with heavy traffic congestion, especially during cold weather.

Internal Temperature

The stations internal temperature is monitored to insure that the state-of-art instruments inside, are not subject to extreme heat or cold. The temperature must remain between 20 and 30 degrees centigrade for the data to be considered valid.

Particulate Matter 2.5

Particulate matter also known as particle pollution, or PM, is the term used for a complex mixture of extremely small particles found in the air. Inhalable particles that are 2.5 microns or smaller are called $PM_{2.5}$. These particles can stay suspended in the air for long periods of time and the size of the particles is directly linked to their potential to cause health problems, with some particles so small they can penetrate into the deepest recesses of the lung.

Wind Direction Result

Wind direction, as well as its speed, is an important factor in determining, among other things, the movement of pollutants, and, predict which area might be affected.

Sigma Theta

Sigma-Theta data is often used to estimate the movement and rate of dispersion of a plume of a potentially hazardous substance. A plume can be defined as an effluent or an emission in air originating at a source, moving and dissipating into the atmosphere; its path, and, rate of diffusion can thus be predicted by Sigma-theta analysis.

Wind Speed Result and Wind Speed Average

Wind speed, along with its direction, is an important factor in determining, among other things, the movement of pollutants, and, predict which area might be affected.

External Temperature

The stations also monitor the temperature of the outside air.

Relative Humidity

The air contains a certain amount of moisture, and relative humidity is the ratio of the actual (partial) vapor pressure of the air to the saturation vapor pressure at a described temperature. That is, it is the ratio of water vapor in the air present at any particular moment, to the maximum amount of water vapor

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(100%) allowed in the air, before condensation occurs. The amount of water vapor, present in the air, plays an important role in the rate of photochemical and thermal reactions in our atmosphere.

Barometric Pressure

A barometer measures atmospheric pressure, which indicates how the weather might be changing within the next 24 hours. A steadily falling barometric pressure reading usually signals that a storm is approaching, while a rising pressure reading can normally be interpreted as sunnier skies ahead.

Solar Radiation

Solar radiation is a term used to describe the total spectrum of visible light, as well as near-visible (ultraviolet and infrared) electromagnetic radiation emitted from the Sun, which reaches the surface of the Earth.