



Solutions



Genetic Identification



Forensics



Environmental



Petroleum/Industrial



Food Safety



Value Added Services

Determination of Trace Oxygen (O₂)

On-site Analytical Solutions

Maxxam Analytics Inc. has developed many specialty services for plant operations. One service that is frequently requested by many of our clients is monitoring for trace oxygen sources in their process. Maxxam has developed analytical procedures for the detection of trace levels of oxygen in hydrocarbon gas streams.

Oxygen can be introduced into gas plant processes and oil facilities from tank vapour recovery units when leaks at tank hatches occur and compressor suction pressure is below atmospheric pressure. Oxygen in the system can contribute to rapid corrosion, sulphur deposition and degradation of amine and treatment chemicals. These low oxygen concentrations are measurable on-site in either sweet or sour systems. It is mandatory to analyze on-site, since oxygen will react in the sample cylinders yielding low results. On-site analysis also allows for real time data acquisition; therefore, immediate process optimization is possible.

Why Monitor for Oxygen?

There are several reasons why you should monitor for trace oxygen in your process systems.

- **To Minimize High Corrosion Rates**
 - Wet gas streams + O₂ = Corrosion

- **To Reduce Sulphur Deposition in Process Equipment**

- Typically occurs in areas of high temperature and/or differential pressure
- Claus type reaction may occur to create elemental sulphur

- **To Prevent Degradation Product Buildup in Treatment Chemicals**

- Organic acids being formed (ie Acetic, Glycolic, etc.)
- Heat Stable Salts

- **To Prevent Degradation of Amine for H₂S Removal**

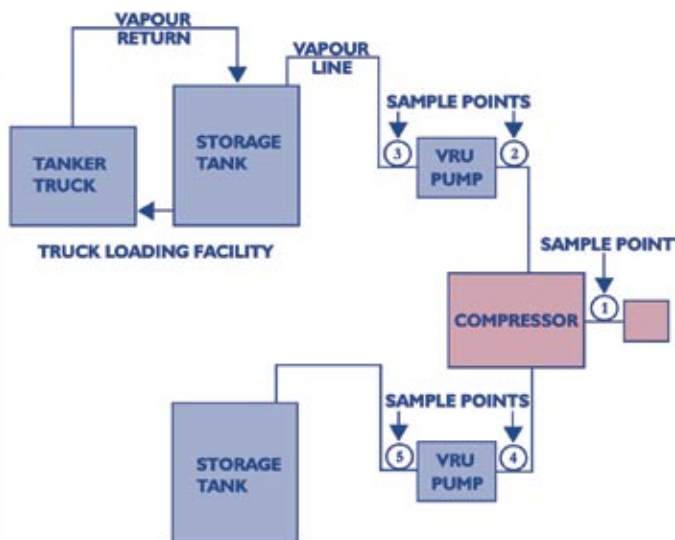
Potential Sources of O₂ Entrainment

- **From Vapour Recovery Operations**
 - Operate at low pressures, usually 3-5 oz.
 - Can occasionally draw vacuum
 - Truck loading operations
- **From Compressors and Pumps**
 - Seals on pumps and compressors leak and air is drawn into the process
 - Can have negative pressure situations
- **From Chemical Addition and Water Make-up**
 - Surge tanks and storage tanks operating without inert gas blanket
 - Air saturated chemical and water make-up

Please turn over for:

Typical Process System, Measurement Techniques, Sampling Procedures, Contact Us

Typical Process System



Measurement Techniques

Maxxam has continually improved and refined procedures for the analysis of trace levels of oxygen in process streams. The latest in analytical instrumentation has been employed resulting in a substantial lowering of the oxygen level detectable. Maxxam is now able to detect oxygen at levels as low as 15 parts per million (ppm).

Sampling Procedures

In order to obtain reliable measurements at low detection limits, Maxxam has pioneered

the development of a sampling procedure that virtually eliminates sample contamination. The specialized equipment and instrumentation necessary to ensure quality results are brought to your location in our self contained Mobile Laboratory.



Maxxam's On-site Mobile Laboratory

For more information about Trace Oxygen Analysis, please contact one of our Technical Sales and Service Representatives by calling (780) 378-8500.

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