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Surrounded by urban development, Met-Mex Peñoles, S.A. DE CV is using cutting edge technology to protect area citizens as

well as the environment. The large mining company, located in Torreon, Coahuila, Mexico, recently implemented a state-of-the-art monitoring and control system to regulate plant emissions based on current conditions (Fig. 1)

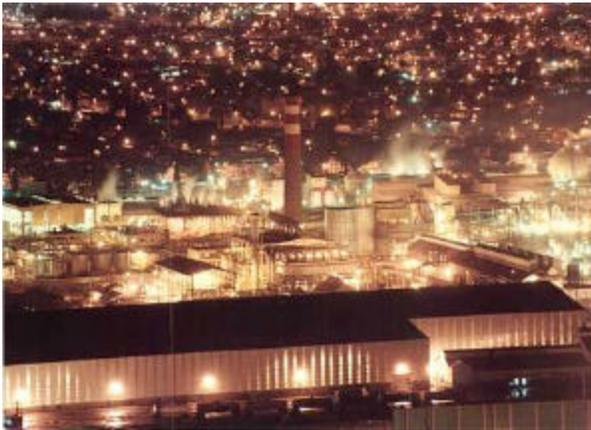


Figure 1: Peñoles site

Peñoles has established a monitoring network to track wind speed and direction while simultaneously measuring air quality. This information is relayed to a master site where the data is compiled and analyzed. Sulfur Dioxide (SO₂) particles, measured in parts-per-million (PPM), are closely regulated in relation to the wind. Necessary adjustments can then be made to maintain an acceptable level of air quality.

With the type of critical information being monitored, a dependable and reliable system is vital. Prior to installing their system, Peñoles thoroughly investigated all the options available on the market. They needed hardware capable of meeting today's demands with the flexibility and means to meet future needs. After

considering all the options, the obvious choice was an ESTeem/Allen Bradley system.

The ESTeem 192C modem was chosen due to its affordability, secure packet burst encrypted transmissions and a high data rate of 19,200 bps while maintaining a data accuracy of greater than one part in 100 million. Because the ESTeem modems possess the unique ability to operate as a master, remote or repeater node, there is a tremendous cost advantage over conventional systems.

ESTeem, the recognized leader in industrial wireless modems, worked with Peñoles engineers to design a tailor-fit wireless network capable of covering the territory. It was determined that 8 remote monitoring stations would provide full coverage of the surrounding area, a 1.5km radius (Fig. 2)



Figure 2: Monitoring site

To provide the most relevant information regarding wind conditions and emissions, the monitoring stations were positioned in remote locations. The ESTeem wireless modems allow communication links to

otherwise inaccessible areas and eliminate hardwiring and the cost of cellular communication.

Allen Bradley Programmable Logic Controllers (PLC) are used to collect data at the remote stations. This data is then transmitted via ESTeem radio modems to a master PLC located at the base station. . Because ESTeem wireless modems fully support Allen Bradley's DF1 protocol, they appear transparent to the PLC's. This allows the reading and writing between PLC's to be extended through several stations in a network.

The data is then compiled and scaled to produce an animated view of the data and shown in real-time on a PC (Fig. 3). Based upon this information, Peñoles engineers have a basis to make any necessary adjustments in plant emissions to maintain an acceptable SO₂ level.

Peñoles has successfully implemented a state-of-the-art wireless monitoring and control system to regulate plant emissions based on current conditions. The high-tech, low-cost system has been instrumental in reducing harmful SO₂ levels, protecting local residents and the environment.



Figure 3: Animated Screen