**KPK-Grant README**

**Overview**

The KPK-Grant deployment is led by the Air Toxics and Ozone Precursors Program (ATOPs) within the Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment (CDPHE). The deployment was initiated to respond to a community complaint surrounding the KPK-Grant pump jack, located near Legacy Elementary School in Longmont, CO. The Grant site, owned and operated by KPK, is a pump jack utilized for crude oil extraction. Operations throughout the crude oil extraction process lead to emissions containing benzene, a known carcinogen that has acute and chronic impacts at low concentrations, as well as other harmful volatile organic compounds. The goal of this deployment is to determine whether the KPK-Grant pump jack is emitting hazardous concentrations of air toxics, before and after KPK remedied the leak. This README file explains the instruments used, compounds detected, units of measurement, and specifications relevant for data interpretation.

**Measurement Specifications**

**BTEX (Benzene, Toluene, Ethyl Benzene, Xylenes)**

|  |  |
| --- | --- |
| **Instrument Manufacturer** | Pollution Analytical Equipment |
| **Instrument Model** | PyxisGC BTEX |
| **Compounds Detected** | Benzene, Toluene, Ethyl Benzene, Xylenes (BTEX) |
| **Units** | ppbV, ppbV, ppbV, ppbV |
| **Detection Limits (in units)** | 0.05, 0.05, 0.25, 1 |
| **Sampling Resolution** | 597 seconds (9 minutes, 57 seconds) |
| **Notes** | Sampling onto the preconcentrator occurs during the last 6 minutes of each sampling period. |

**Health Guideline Value (HGV) / Level 1 Acute Exposure Guideline Levels (AEGL) Reference Guide**

These concentrations are established by the EPA (AEGL) and CDPHE (HGV) for the compounds measured at this deployment that can cause acute health effects.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Exposure Time** | **Benzene (ppbV)** | **Toluene (ppbV)** | **Ethyl Benzene (ppbV)** | **Xylenes (ppbV)** |
| 10 min | 130000 | 67000 | 33000 | N/A |
| 30 min | 73000 | 67000 | 33000 | N/A |
| 60 min | 52000\*/9\*\* | 67000\*/2000\*\* | 33000\*/5000\*\* | 2000\*\* |
| 4 hr | 18000 | 67000 | 33000 | N/A |
| 8 hr | 9000 | 67000 | 33000 | N/A |

\*1 hour AEGL  
\*\*1 hour HGV