NEWS RELEASE

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2024 Air Quality Trends Show Notable Decline in High Risk Ratings Despite Wildfire Smoke and Other Seasonal Factors

Heartland Air Monitoring Partnership (HAMP), the organization that monitors the air local residents breathe, has released its 2024 Annual Air Quality Health Index (AQHI) monitoring results, detailing air quality data collected at seven of HAMP's continuous monitoring stations throughout the region.

The AQHI, calculated by the Government of Alberta using HAMP data, measures air quality relative to human health risk, ranging from low to very high. The 2024 report indicates that most of the year saw low to moderate AQHI levels, with occasional high or very high-risk periods primarily associated with wildfire smoke events and wintertime inversions.

Across the 57,914 reported hours, the AQHI indicated:

- **Low Risk**: 91.4% of the time (52,917 hours)
- **Moderate Risk**: 6.6% (3,796 hours)
- **High Risk**: 1.1% (650 hours)
- **Very High Risk**: 1.0% (551 hours)

By comparison, in 2023, there were 1,517 hours of high risk (2.65%) and 614 hours of very high risk (1.07%) AQHI ratings.

Key Air Quality Events in 2024
The most notable air quality events were related to wildfire smoke, particularly from May through September. Several days saw AQHI ratings reach high or very high levels, with the most prolonged event occurring between July 16 and 25. This event, driven by a combination of wildfire smoke and summertime smog (formed through ground-level ozone), was measured at multiple stations.

Other causes of high-risk periods included wintertime inversions in January and December and unattributed events in spring and summer, leading to short-term air quality deteriorations.

Exceedances in 2024
HAMP continuously monitors air quality against Alberta Ambient Air Quality Objectives (AAAQO). 2024 saw a notable decrease (996 total) in exceedances compared to 2023 (2,125 total), largely due to fewer wildfire smoke-related events. There was also a significant decline in one-hour $PM_{2.5}$ exceedances compared to 2023 (785 in 2024 vs. 1,745 in 2023). However, the high or very high risk AQHI – especially during the summer months – highlights the ongoing challenge of seasonal air quality impacts.

Summary of Exceedances: 2019-2024
The following table details the number of exceedances for substances measured by HAMP across all stations in 2024 and the five years previous.

Parameter Measured		2024	2023	2022	2021	2020	2019
Ammonia (NH_3)	1-hr	-	-	-	-	-	-

Benzene (C_6H_6)	1-hr	7	24	-	-	-	-
Carbon Monoxide (CO)	1-hr	-	-	-	-	-	-
	8-hr	-	-	-	-	-	-
Ethyl Benzene ($C_6H_5CH_2CH_3$)	1-hr	-	-	-	-	-	-
Ethylene (C_2H_4)	1-hr	-	1	-	-	-	-
	3-day	-	6	-	-	-	-
	Annual	-	-	-	-	-	-
Fine Particulate Matter ($PM_{2.5}$)	1-hr	785	1745	118	392	6	119
	24-hr	143	290	53	60	19	37
Hydrogen Sulphide (H_2S)	1-hr	35	7	19	16	7	8
	24-hr	5	1	1	-	1	1
Nitrogen Dioxide (NO_2)	1-hr	-	-	-	-	-	-
	24-hr	-	-	-	-	-	-
	Annual	-	-	-	-	-	-
Ozone (O_3)	1-hr	20	49	3	3	-	23
Styrene (C_8H_8)	1-hr	-	2	-	-	-	-
Sulphur Dioxide (SO_2)	1-hr	1	-	-	-	-	-
	24-hr	-	-	-	-	-	-
	30-day	-	-	-	-	-	-
	Annual	-	-	-	-	-	-
Toluene ($C_6H_5CH_3$)	1-hr	-	-	-	-	-	-
Xylenes (o-, m- and p-isomers)	1-hr	-	-	-	-	-	-
Total		**996**	**2125**	**194**	**471**	**33**	**188**

For the full 2024 Annual Air Quality Monitoring Results report, including detailed station data and exceedance summaries, visit our 2024 air quality monitoring summary.

HAMP has 10 continuous air monitoring stations in and around Alberta's Industrial Heartland. The AQHI and near real-time data for every substance at every station are available at heartlandairmonitoring.org. HAMP air quality monitoring and reporting is guided by a scientific advisory group and driven by national and provincial standards.

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