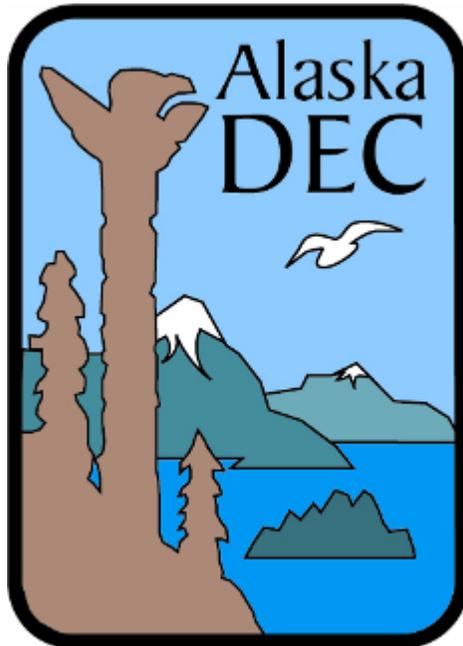


Alaska's Air Monitoring 2009 Network Plan

Chapter 6 – Matanuska Susitna Valley



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6 MATANUSKA-SUSITNA VALLEY MONITORING SITES

6.1 *General Information*

The Mat-Su Borough has a population¹ of 76,006 and covers 24,682 square miles of land and 578 square miles of water. There are three incorporated cities, several unincorporated communities, and twenty-five recognized community councils within the Mat-Su Borough. Average temperatures in the winter range from 6°F to 14°F; in the summer, 47°F to 67°F. Annual precipitation is 16.5 inches, with 58 inches of snowfall.

Currently, there is one particulate monitoring site in the Mat-Su Borough which is operated by Alaska Department of Environmental Conservation staff. The site's AQS ID number is 02-0170-0008, Harrison Court, Butte (PM_{2.5} & PM₁₀).

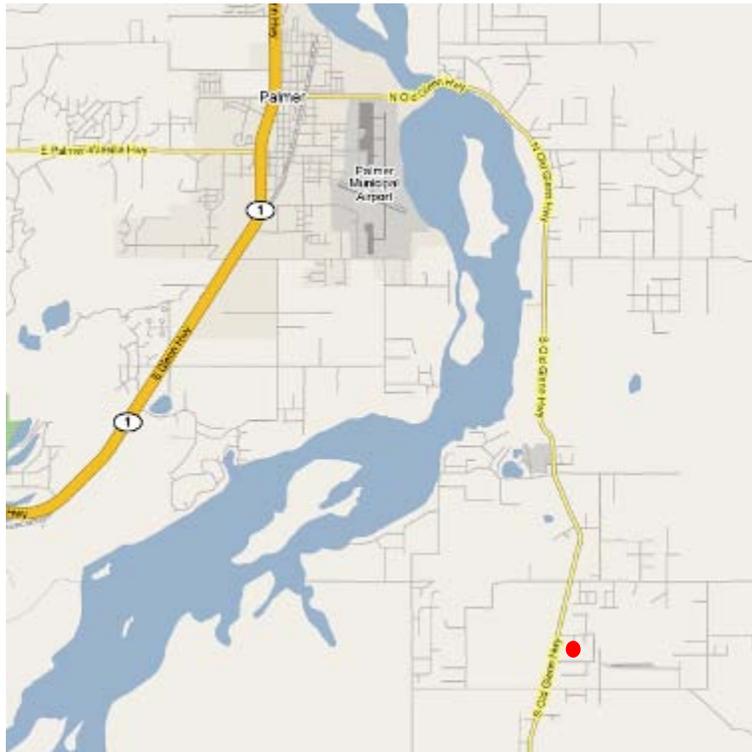


Figure 6.1:1: Map of Palmer and Butte area. The red circle indicates the Harrison Court site.

The State of Alaska has been conducting air quality monitoring investigations into PM₁₀ concentrations in the Matanuska – Susitna (Mat-Su) Valley for over five years. Monitoring was

¹ Population data 2005 U.S. Census.

initiated in response to staff observations and well-documented accounts of wind blown dust off the Matanuska and Knik River drainages.

6.2 HARRISON COURT SITE – MATANUSKA-SUSITNA BOROUGH

Harrison Court
Parameters: PM₁₀, PM_{2.5}

AQS ID 02-170-0008
Established: April 11, 1998

6.2.1 Site Information

The Harrison Court monitoring site is located on a cul-de-sac at the end of Harrison Court, latitude 61° 32' 02.986", longitude -149° 01' 53.958", and 28 meters (90 feet) above sea level. This site has manual samplers for PM_{2.5} and PM₁₀, as well as a continuous monitor for PM₁₀. Figure 6.2:1 is a street map of the monitoring site and surrounding area. Harrison Court is a neighborhood PM site.

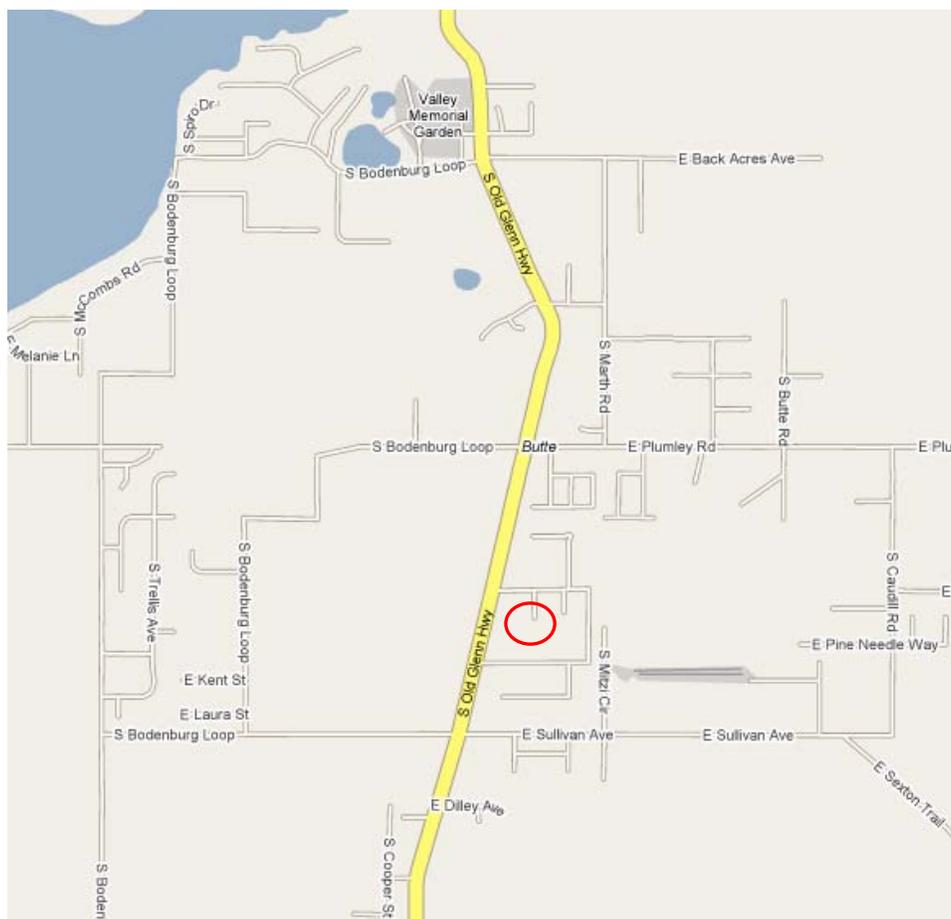


Figure 6.2:1: Map of the Butte area. The Harrison Court site is circled.

6.2.2 Sources

The major sources of coarse particulate matter impacting this site are dust from the Knik and Matanuska Rivers. Both are glacier fed meandering rivers that deposit silt. During times when

the river is low (spring and fall) dry, windy weather suspends large amounts of silt in the air. Several air quality alerts are issued per year during spring and fall months because of wind-blown dust events. Additionally, within five miles are two small gravel airstrips (activity unknown but expected to be light), a dirt-track motor raceway, and many acres of farmland. Most land in the area is undeveloped forest. Sources of fine particulate matter include residential wood smoke, automobile exhaust, and forest fires.

6.2.3 Monitors

The Harrison Court (Butte) Site is currently equipped with:

- PM_{2.5} (SLAMS) – Two Thermo Electron (formerly Rupprecht & Patashnick) Partisol 2000 samplers. Two samplers run on a 1-in-6 day alternating sampling schedule resulting in a 1-in-3 day sampling frequency.
- PM₁₀ (SPM) – One General Metal Works high-volume sampler. Operated on a 1-in-6 sampling schedule.
- PM₁₀ (SPM) – A single Met-One BAM 1020 continuous monitor was installed to provide information in real time for evaluating the Air Quality Index.

6.2.4 Siting

The manual operated equipment is located on the roof of the trailer and the continuous monitor is housed inside the trailer. All inlets are at a height of approximately four meters (13 feet) above the ground. There is uninterrupted airflow around the inlets. The monitoring objective of this site is to measure airborne glacial loess raised by high winds on the Knik and Matanuska river beds, as well as measure exposure to fine particulate matter from automobiles and home heating in this rural location. The trailer is on the southwest corner of the unpaved Harrison Court cul-de-sac.

6.2.5 Traffic

There are only three house lots on Harrison Court, and traffic is very light. There are numerous unpaved roadways throughout the area. All main roads are paved. Average daily traffic for the area streets is not known.

Figure 6.2:2: Pictures of the Harrison Court Site

