TOWN OF
MIDDLETON
Wisconsin

September 21, 2022

Gurdip Brar, Mayor; mayor@cityofmiddleton.us

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Re: Town of Middleton's Trinity Consultants Report, *Measurement of Ambient Lead Concentrations Around the Middleton Wisconsin Municipal Airport-Morey Field (C29)* dated 9/15/22

Dear Mayor Brar and Common Council Members:

We are enclosing the air quality testing report, *Measurement of Ambient Lead Concentrations Around the Middleton Wisconsin Municipal Airport-Morey Field (C29)* dated 9/15/22. The air quality testing was conducted by the environmental testing firm, Trinity Consultants, with attached maps showing the lead testing locations in the areas near the City of Middleton Municipal Airport – Morey Field ("C29" or "Morey Airport" or "Airport"). The lead testing results confirm the presence of airborne lead particles at all locations from the Morey Airport aircraft using leaded aviation gas. These test results confirm and validate the Morey Airport lead modeling report prepared by Trinity Consultants ("Trinity") and previously forwarded to you titled, *Screening Level Assessment of Ambient Lead Concentrations Around the Middleton Wisconsin Municipal Airport* dated 3/18/22.

It is clear from the modeling report and actual air quality test results that the aircraft operations in and out of Morey Airport are spreading breathable airborne lead particles over thousands of children and adults on a daily basis. As you can see from the maps submitted with the reports, most of the Middleton Area Cross Plains Schools are subject to a nearly constant dusting of breathable airborne lead particles from the use of leaded aviation gas by Morey Airport aircraft.

This continuing situation presents a serious potential health problem to every child in the school district, including those who use the parks, playgrounds and athletic fields in close proximity to the Airport.

The Trinity reports also verify an increased health risk to all of the families who occupy the multi-unit housing developments within the City limits just east of the Airport boundary. The modeling report established that due to the prevailing winds, these areas within one to two miles of the Airport boundary are subject to the heaviest airborne lead pollution. Since a portion of this area includes a significant amount of the City's newer affordable housing, it may also raise serious social justice issues.

Dr. Bruce Lanphear, M.D., M.P.H., Professor of Health Sciences, Simon Fraser University, is a medical and public health expert on lead. Dr. Lanphear gave compelling testimony on the harmful health effects of this hazardous air pollutant at the U.S. House of Representatives Oversite Committee, Environment Subcommittee hearing on 7/28/22 titled:
Toxic Air: How Leaded Aviation Fuel is Poisoning America's Children, available at:
https://www.youtube.com/watch?v=WiCCLa98uSg
(from 54:18 to 1:01:09).

A summary of Dr. Lanphear's key points on the adverse health effects from lead exposure are:

- There is No Safe Level of Lead Exposure for humans;
- Lead exposure, *even at very low levels,* harms children's brains, diminishes IQ, and increases the risk of ADHD;
- Lead is a cumulative poison;
- Lead is also a causal risk factor for adult Coronary Heart Disease citing 185,000 deaths caused by lead every year;
- As piston-driven aircraft traffic increased, children's blood lead levels increased for children that lived near the RHV general aviation airport citing the recent Reid-Hillview Airport Lead Study in Santa Clara County, CA, by Sammy Zahran, PhD, a Professor of Demography and Associate Chair in the Department of Economics in the Colorado School of Public Health;
- Lead exposure from airborne aircraft emissions is a major source of lead exposure;
- Lead exposure is an urgent public health problem; and
- Lead exposure is preventable.

The Miranda Study tested blood lead levels of 13,000 plus children who lived within 2,000 meters of 66 general aviation airports in North Carolina. The elevated blood lead levels were present in children located up to 1,500 meters from airport boundaries. (See *A Geospatial Analysis of the Effects of Aviation Gasoline on Childhood Blood Lead Levels (2011),* Marie Lynn Miranda et. al.; Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3230438/). The annual lead emissions from these 66 airports averaged 80 pounds per year. According to the U.S. EPA, the aircraft lead emissions from Morey Airport in a single year are in excess of 217 pounds.

A very small amount of inhaled lead particles can cause significant health problems in a child. Morey Airport is primarily a recreational airport of convenience and does not provide or serve any significant essential public function. The vast majority of the people who regularly keep their aircraft there and use the Airport do not reside in the City of Middleton, the Town of Middleton, or the Town of Springfield, the three communities most adversely affected by Airport operations.

In addition, the two flight training businesses (Morey Airplane Company and Capital Flight) located at the Airport are owned and operated by individuals who also live in communities not affected by Morey Airport aircraft pollution and operations. Likewise, the Chair of the Airport Commission is not a resident of any of the Airport affected communities and appears to have little or no interest in the potential health problems generated by the lead pollution caused by Morey Airport operations.

The continuing regular operations of Middleton's recreational Airport are potentially damaging the health, on both a short-term and long-term basis, of most of the 7,000 plus students in the Middleton Cross Plains Area School District. As the air testing results showed, the Special Fly-In Events the City continues to authorize and approve significantly increases the airborne lead pollution and the attendant health risk to all residents of three communities.

In light of the verification of the constant presence of breathable airborne lead particles in all areas surrounding Morey Airport, we request, on behalf of the children and adults of the Town of Middleton, that the City of Middleton Common Council immediately:

1. Terminate all sales of leaded aviation gas at the City's Morey Airport. Sell only unleaded aviation gas. If some aircraft must burn leaded gas, it is available just 9 nautical miles away at Dane County Regional Airport.
2. Terminate and bar all future Fly-In Special Events at Morey Airport to eliminate the increase in airborne lead pollution these events generate.

The recreational interests of a very few individuals, most of whom do not live in any affected area, should not be allowed to damage the health of thousands of residents of three heavily residentially developed municipalities, especially when many of those residents are children.

We look forward to a response.

Sincerely,

Town Board, Town of Middleton

Cynthia Richson

By: Cynthia Richson, Town Board, Chair

Approved by the Town Board of the Town of Middleton authorizing the Town Chair to sign on behalf of the Town Board on September 20, 2022, by a vote of 5-0.

Attachment: Trinity Consultants Report, *Measurement of Ambient Lead Concentrations Around the Middleton Wisconsin Municipal Airport-Morey Field (C29)* dated 9/15/22

Cc: Governor Tony Evers; EversInfo@wisconsin.gov

Maggie Gau, Governor Evers Chief of Staff; maggie.gau@wisconsin.gov

Brian Weaver, WI DHS, Governor Evers Lead Policy Advisor; brian.weaver@dhs.wisconsin.gov

Marjorie J. Coons, Childhood Lead Poisoning Prevention Program Manager, WI Division of Public Health; Margorie.Coons@dhs.wisconsin.gov

Craig M. Thompson, WI Dept. of Transportation, Secretary; DOTExec@dot.wi.gov

david.greene@dot.wi.gov

Jerry Halverson, M.D, Chair, Board of Health Madison and Dane County; Jhalversonmdphmdc@gmail.com

phbohsupport@cityofmadison.com

Dr. Dana Monogue, Superintendent, Middleton Cross Plains Area School District, c/o Lori Ames, Assistant Superintendent of Operations; lames@mcpasd.k12.2i.us

Robert Hesselbein, School Board President, Area IV, Middleton-Cross Plains Area School District ("MCPASD"); roberth@mcpasd.k12.2i.u2

Gail Sheppler, School Board Vice President, Area IV, MCPASD; gails@mcpasd.k12.wi.us

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Simrnjit Seerha, School Board Clerk, Area V, MCPASD; simrnjits@mcpasd.k12.wi.us

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Annette Ashley, School Board Member, Area IV, MCPASD; annettea@mcpasd.k12.wi.us

Paul Kinne, School Board Member, Area IV, MCPASD; paulk@mcpasd.k12.wi.us

Brett Wilfrid, Principal, Sunset Ridge Elementary School; bwilfrid@mcpasd.k12.wi.us

Gretchen Mancieri, Head of School, Madison Community Montessori School; headofschool@madisoncommunitymontessori.org

Joe Parisi, Dane County Executive; parisi@countyofdane.com

Josh Wescott, Chief of Staff, Office of the Dane County Executive; wescott@countyofdane.com

Jim Pulvermacher, Town Board Chair, Town of Springfield; chairperson@town.springfield.wi.us

U.S. Representative Mark Pocan; mark.pocan@mail.house.gov

U.S. Senator Tammy Baldwin; baldwin.tammy@mail.house.gov

State Senator Jon Erpenbach; Sen.Erpenbach@legis.wisconsin.gov

State Representative Dianne Hesselbein, Assistant Minority Leader; Rep.Hesselbein@legis.wisconsin.gov

Bryan Gadow, City of Middleton Administrator; bgadow@cityofmiddleton.us

MEASUREMENT OF AMBIENT LEAD CONCENTRATIONS AROUND THE MIDDLETON WISCONSIN MUNICIPAL AIRPORT – MOREY FIELD (C29)

Prepared For:
Town of Middleton, Wisconsin

Prepared By:

Casey Lenhart
Jim Lyons

TRINITY CONSULTANTS
1661 E Camelback Road
Unit 290
Phoenix, AZ 85016

September 15, 2022

Project 210302.0010

Trinity Consultants

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1. INTRODUCTION

In a previous study commissioned by the Town of Middleton1, Trinity Consultants and Oak Leaf Environmental conducted a screening-level analysis of ambient lead concentrations in the area surrounding the City of Middleton Municipal Airport – Morey Field (C29) which is located in the City of Middleton, Wisconsin. This analysis involved ambient air quality modeling using U.S. EPA's AERMOD model to evaluate ambient concentrations of lead in the air around the C29 airport based on assumptions regarding the lead content of the fuel being used, flight patterns and airport activity.2 The inputs to the AERMOD model included involved spatially resolved estimates of lead emissions from the operation of piston-powered aircraft (which use lead aviation gasoline) at and around the C29 airport developed by Trinity as well as appropriate meteorological data. Using these inputs AERMOD generated estimates of ambient lead concentrations at a number of selected locations on and around the C29 airport. These included estimates of maximum monthly average lead concentrations which were generally observed to occur in the autumn or winter due to seasonal meteorological conditions as well as annual average lead concentrations. The results of the previous study are presented for selected sites in Table 1-1 as well as Figures 1-1 and 1-2.

As shown, in Table 1-1 and Figures 1-1 and 1-2, estimated lead concentrations (in units of micrograms per cubic meter of air - $\mu g/m^3$) vary over the course of the year due to changes in meteorology and airport operations as the maximum monthly values generally being two or three times higher than the annual average values. In addition, estimated ambient lead concentrations were highest on the airport property itself and in the immediate vicinity of the airport and the concentrations at the sites with the highest modeled values were twenty to thirty times higher than those at the sites with the lowest modeled values, regardless of whether the maximum month or annual average values were considered.

Given the results of the previous study and the lack of any routine air quality monitoring for lead in the area around the C29 airport, Trinity Consultants was asked by the Town of Middleton, Wisconsin to conduct ambient air sampling to measure actual ambient lead concentrations at selected locations around the Middleton Municipal Airport (C29). This report documents that air sampling and summarizes the results.

[1]Screening Level Assessment of Ambient Lead Concentrations Around the Middleton Wisconsin Municipal Airport, Trinity Consultants, March 18, 2022.

[2]Assumptions regarding C29 airport operations were based on the Airport Master Plan Adopted by the City Council on April 19, 2022.

Table 1-1 Previously Modeled Ambient Lead Concentrations

ID	Location	Type	Max Season	Lead Concentration ($\mu g/m^3$)	
				Monthly	Annual
1	Highwood Circle Estates	Homes	Autumn	0.0047	0.0017
2	Madison Montessori	School	Autumn	0.0011	0.0006
3	Sunset Ridge Elementary	School	Autumn	0.0014	0.0009
4	Primrose School of Middleton	School	Winter	0.0035	0.0015
5	Middleton Gymnastics Academy	Recreation	Winter	0.0121	0.0067
6	Tallard Park	Park	Autumn	0.0019	0.0012
7	Northside Elementary School	School	Winter	0.0016	0.0006
8	Kromrey Middle School	School	Winter	0.0021	0.0010
9	Clark Street Community School	School	Winter	0.0028	0.0016
10	Clubhouse For Kids II	School	Autumn	0.0044	0.0018
11	Miramont Behavioral Health	Hospital	Autumn	0.0054	0.0024
12	Penni Klein Park	Park	Autumn	0.0024	0.0012
13	Middleton Firefighters Memorial Park	Park	Autumn	0.0077	0.0040
14	Firemen's Park	Park	Winter	0.0019	0.0009
15	Keva Sports Center	Recreation	Autumn	0.0144	0.0082
16	Hinrich's Family Farm Park	Park	Winter	0.0017	0.0008
17	Murphy Park	Park	Autumn	0.0047	0.0013
18	Hickory Woods Park	Park	Autumn	0.0021	0.0012
19	Summit Ridge Park	Park	Winter	0.0006	0.0003
20	Vosen Memorial Park	Park	Autumn	0.0009	0.0005
21	Settler's Prairie Park	Park	Autumn	0.0009	0.0005
22	Enchanted Valley Park	Park	Autumn	0.0004	0.0003

Figure 1-1 Maximum Modeled Monthly Average Lead Concentrations

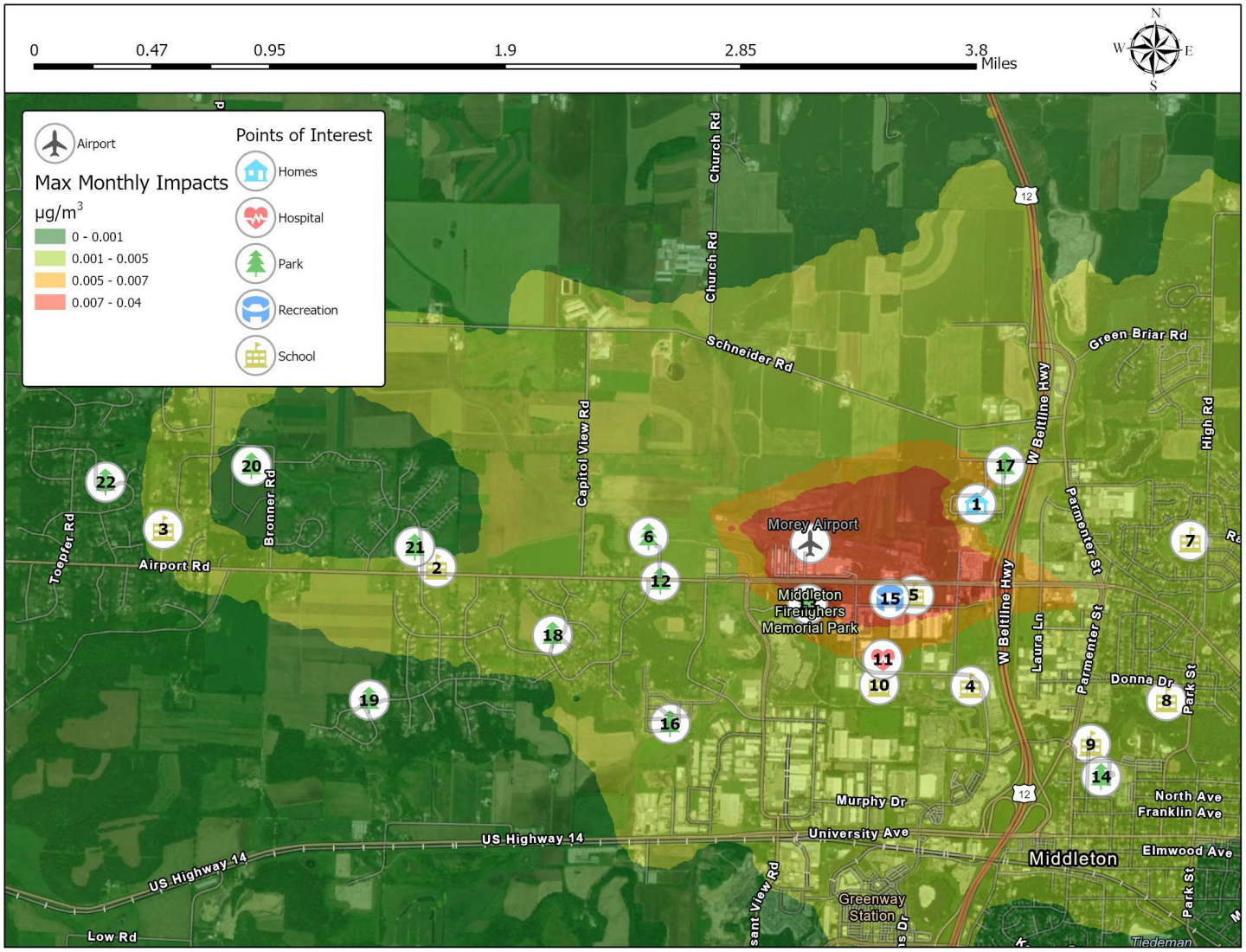
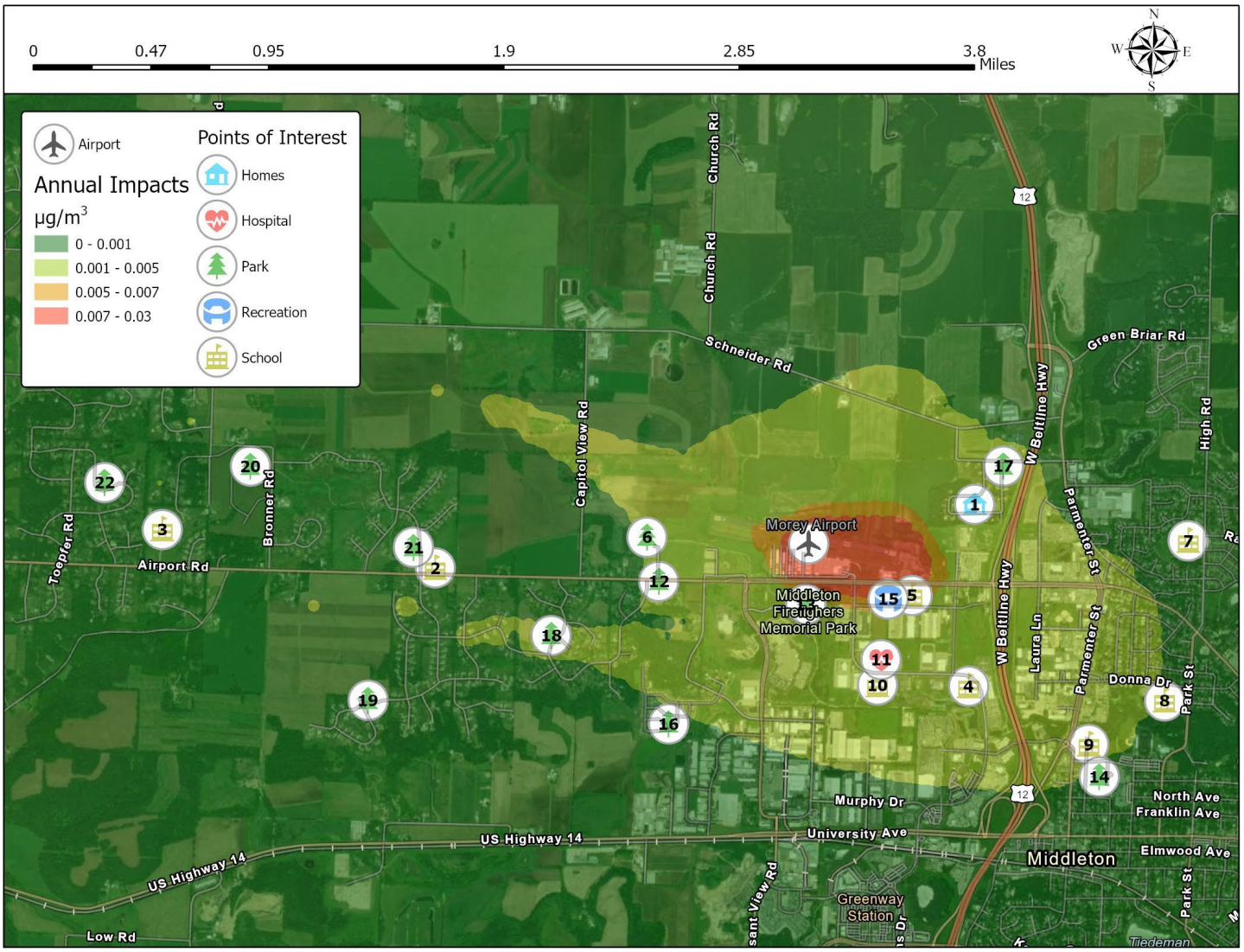


Figure 1-2 Annual Average Modeled Lead Concentrations



2. AMBIENT LEAD AIR SAMPLING

2.1 Site Selection

The first step in the ambient lead sampling project was the selection of sampling sites. Given the available project resources, it was determined that sampling would be limited to three sites and that a second collocated sampler would be used to help ensure data robustness. Other key criteria in site selection were permission to locate the samples on the site, availability of A/C power, and a reasonable degree of security to prevent tampering with the samplers. Using these criteria and the results from the prior modeling study, the following three sites were selected by the Town of Middleton in conjunction with Trinity:

1. Middleton Gymnastics Academy – UTM Coordinates[3] Northing [Y] 498573, Easting [X] 776972;
2. Hickory Woods Park - UTM Coordinates Northing [Y] 495979, Easting [X] 783677; and
3. 4796 Capitol View Road which is located in close proximity to Tallard Park UTM Coordinates Northing [Y] 494792, Easting [X] 775991.

The Middleton Gymnastics Academy site was selected because it was identified as a location expected to experience higher lead concentrations based on the prior modeling given its close proximity to the airport and more importantly the areas of the airport used for taxiing and engine runup.[4]

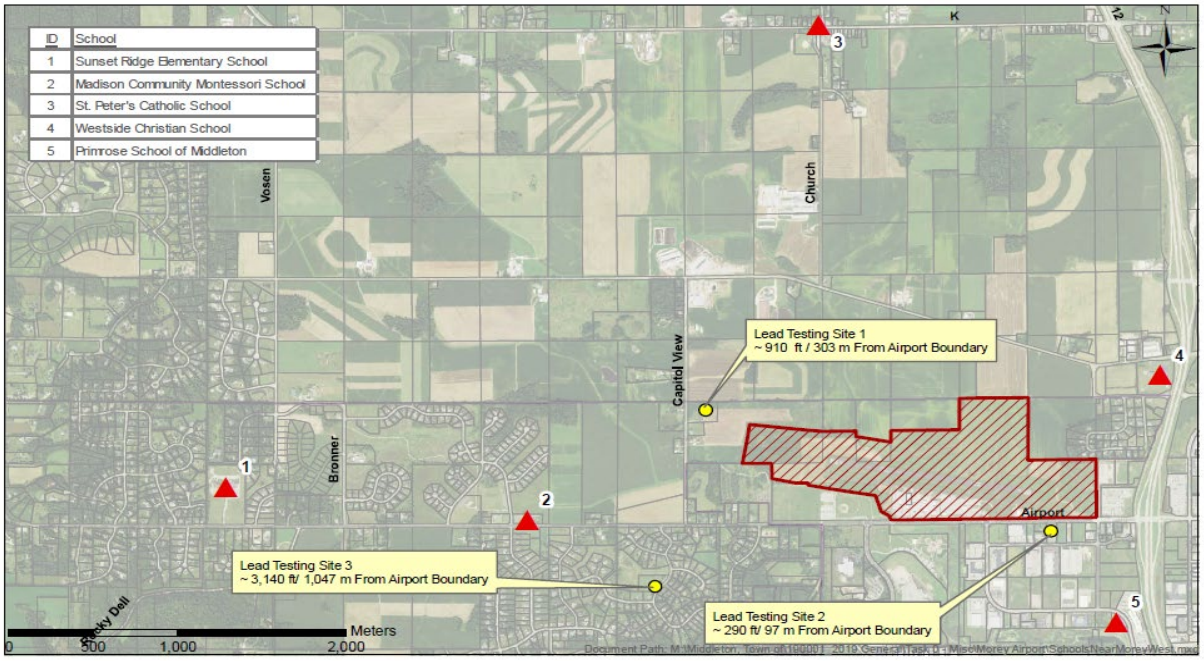
The Hickory Woods Park site was selected as a more remote site where lower lead concentrations were expected based on the previous modeling study, but which could be impacted by air traffic, in particular, the two flight school operations which fly over the general area of the site enroute to the C29 airport during touch-and-go operations.

The Capitol View Road site was selected because it met the site selection criteria and was close to Tallard Park, which is in the general area where most aircraft leaving C29 are climbing out after takeoff.
The locations of each sampling site are shown in Figures 2-1a and 2-1b and at the request of the Town of Middleton also show schools located generally to the west (Figure 2-1a) and to the east (Figure 2-1b) of the C29 airport.

[3] NAD_1983_2011_WISCS_Dane_Feet

[4] Trinity understands that prior to selecting the Middleton Gymnastics Academy site, the Town of Middleton unsuccessfully attempted to secure permission to sample on the grounds of the C29 airport.

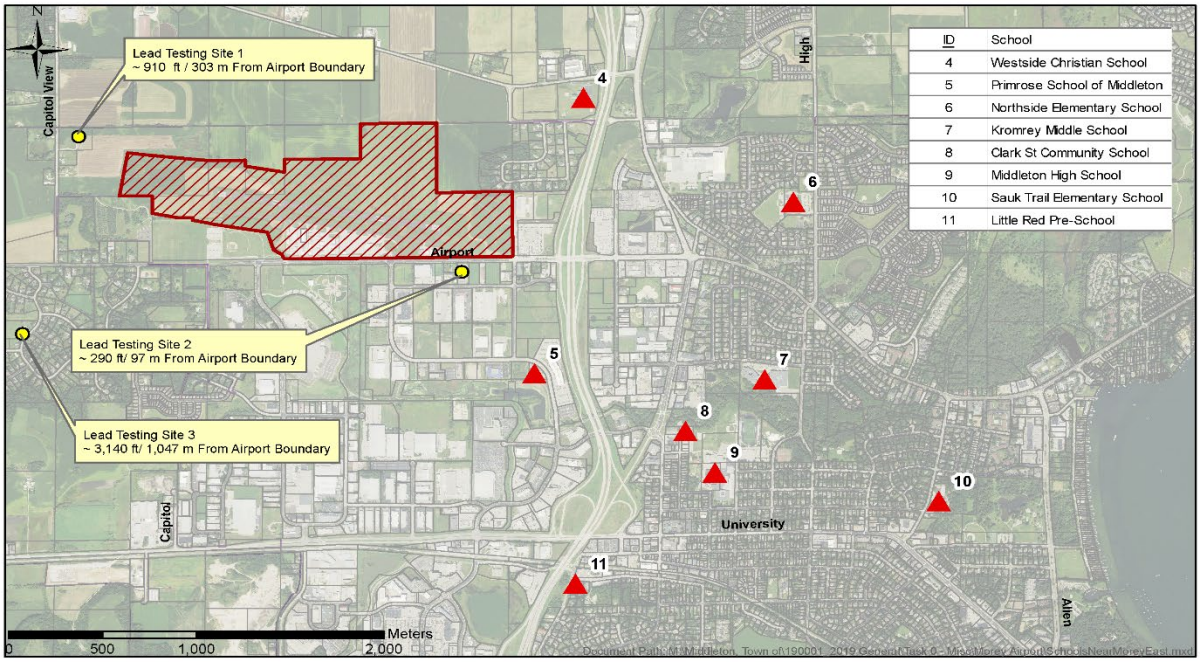
Figure 2-1(a) Sampling Sites and Schools Near C29 Airport - West



Legend

Schools | Morey Airport Boundary | Lead Testing Sites

Figure 2-1(b) Sampling Sites and Schools Near C29 Airport - East



Legend

Schools | Morey Airport Boundary | Lead Testing Sites

2.2 Lead Air Sampling and Results

The sampling conducted by Trinity involved the use of four high volume Total Suspended Particulate (TSP) samplers. As noted above, two samplers were co-located at the Middleton Gymnastics Academy where they were placed on the roof of the building one on the west side (West) and the other on the east side (East). A single sampler was placed on the roof of the shelter at the Hickory Woods Park site and a single sampler was located at ground level at the Capitol View Road site. Each sampler was operated for two seven day periods. The first sampling period was from July 20 to July 26, 2022 and the second period was from July 26 through August 2, 2022. Trinity personnel operated the sampling equipment. Prior to sampling, each sampler was calibrated. Samplers were loaded with the pre-tared filters for purposes of determining ambient TSP concentrations. Filter blanks were collected on August 2 in order to provide an assurance against sample contamination by lead during filter handling and transport. Although no effort was made to characterize flight operations during the sampling periods, it should be noted that a special event "Rock the Ramp" was conducted at the C29 airport on July 22nd during the first sampling period.

Trinity used Tisch Environmental TE-5170V HiVol samplers to perform the TSP collection. A vacuum motor pulled ambient air through the 8" x 10" glass fiber filter set at a flow rate of approximately 40 cubic feet per minute (cfm). Each sampler incorporated a mass flow controller calibrated using National Institute of Standards and Technology (NIST) traceable flow, temperature, and pressure calibration equipment, to let only the predetermined flow rate to pass through the filter. The glass fiber filters, obtained from Pace Analytical, were weighed under stabilized conditions pre- and post-sample and the net weight was used to determine ambient TSP concentrations. Lead analysis was also performed by Pace Analytical in accordance with EPA Compendium Method IO-3.5, Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry where TSP is collected according to 40 CFR Appendix B to part 50, EPA Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method). The TSP and lead laboratory analysis data are presented in Appendix A.

The TSP and lead results obtained from the air sampling for each sampler and sampling period are presented in Table 2-1.

Table 2-1 Observed Ambient Total Suspended Particulate (TSP) and Lead Concentrations

Filter ID	Location	Sample Period	Net Mass (grams)	Run Time (minutes)	Volume[1] (m^3)	TSP Conc.[1] ($\mu g/m^3$)[2]	Lead ($\mu g/m^3$)
A0020418	Capitol View	7/20-7/26	0.2208	8536	11659	19	0.00131
A0020420	Capitol View	7/26-8/2	0.2046	9728	13986	15	0.00111
A0020419	Hickory Woods	7/20-7/26	0.1715	8654	11995	14	0.000778
A0020423	Hickory Woods	7/26-8/2	0.1459	9784	13670	11	0.000812
A0020421	Gym Academy West	7/20-7/26	0.1931	8958	12056	16	0.00383
A0020425	Gym Academy West	7/26-8/2	0.1438	9760	13341	11	0.00302
A0020422	Gym Academy East	7/20-7/26	0.2259	8954	12405	18	0.00444
A0020424	Gym Academy East	7/26-8/2	0.1734	9764	13940	12	0.00348
A0020426	Blank	08/02/2022	0.0016				ND
A0020427	Blank	08/02/2022	0.0008				ND

[1] Corrected to standard temperature and pressure.

[2] Micrograms per cubic meter of air.
ND – Non-detect

2.3 Discussion

As shown in Table 2-1, the highest ambient lead concentrations at the three sites were observed at the Middleton Gymnastics Academy, as expected based on the previous modeling study. Concentrations at the Middleton Gymnastics Academy were roughly three to four times higher than those observed at the other two sampling sites. In addition, concentrations at both samplers at the Middleton Gymnastics Academy were higher during the first sampling period when the special event took place at the C29 airport. Finally, the results from the sampler located on the east side of the site roof were higher during both sampling periods than those from the sampler on the right, perhaps because the east sampler was more impacted by lead emissions from engine runup which generally occurs at the eastern edge of the main runway.

Comparison of the observed lead concentrations at the Middleton Gymnastics Academy to the values from modeling study shown in Table 1-1 show that they are about one-third of the peak winter value and about half of the annual average value. This represents reasonable agreement in the absence of a detailed accounting for potential differences in the actual C29 flight operations in July 2022 versus those modeled and in the actual lead content of the aviation fuel which was assumed to be 2.12 g/gal (the maximum allowable level in 100 Low Lead aviation gasoline) in the modeling study. Similar comparisons for the observed results at the Hickory Woods and Capitol View Road sampling sites with the modeled results from the previous study show relatively close agreement.

Overall, the results of the sampling show that ambient lead levels are elevated near the C29 airport and that the observed concentrations agree reasonably with those resulting from the previous modeling study. Further the sampling data and their reasonable agreement between the observed and modeled values support the conclusion that local aircraft operations at the C29 airport are the dominant source of ambient lead in the area as the modeling study assumed that the C29 airport was the only source of lead in the area.[5]

[5] A review of other potential lead sources within a ten mile radius of the C29 airport performed in the previous modeling study indicated that the Waunakee Airport and Dane County Regional Airport are the only other two major sources of lead in the area.

APPENDIX A.

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 8/15/2022

CLIENT: Trinity Consultants
Project: Middleton Airport
Lab Order: S2208124

CASE NARRATIVE

Report ID: S2208124001

Entire Report Reviewed by: John M. Jacobs
John Jacobs, Project Manager

Samples Gym Academy East #1 A0020422, Gym Academy East #2 A0020424, Gym Academy West #1 A0020421, Gym Academy West #2 A0020425, Hickory Woods #1 A0020419, Hickory Woods #2 A0020423, Middleton Blank #1 A0020426, Middleton Blank #2 A0020427, Ziegler Barn #1 A0020418 and Ziegler Barn #2 A0020420 were received on August 8, 2022.

All samples were received and analyzed within recommended holding times, except those noted below in this case narrative. Samples were analyzed using methods outlined in the following references:

Standard Methods for the Examination of Water and Wastewater, approved method versions
EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, online versions
EPA methods 40 CFR Parts 136 and 141EPA 600/2-78-054 methods
NDEP Mining Methods
40 CFR Part 50, Appendices B, J, L, O and FEM EQL-0310-189
IO Compendium Methods
Clean Water Act Methods Update Rule for the Analysis of Effluent, current version.
ASTM approved and recognized standards
ISO approved and recognized standards
USDA Handbook 60
Soil Survey Laboratory Manual Ver 4.0
ASA/SSSA 9 Methods of Analysis Part 2, 1982
ASA/SSSA Methods of Analysis Book 5 Part 3, 1996
Other industry approved methods

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical except as indicated in this case narrative:

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 8/15/2022

Definitions

RL	Reporting Limit

Qualifiers

*	Value exceeds Maximum Contaminant Level
A	Check MSA specifications
B	Analyte detected in the associated Method Blank
C	Calculated Value
D	Report limit raised due to dilution
E	Value above quantitation range
G	Analyzed at Pace Gillette, WY laboratory
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
L	Analyzed by another laboratory
M	Value exceeds Monthly Ave or MCL or is less than LCL
ND	Not Detected at the Reporting Limit
O	Outside the Range of Dilutions
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte below method detection limit
X	Matrix Effect

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/20/2022 2:05:00 PM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-001
Client Sample ID: Hickory Woods #1 A0020419

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	11943			m^3	07/20/2022 14:05	Field
Run Time	8654			min	07/20/2022 14:05	Field
General Parameters - Filter						
Lead	9.30	2.66		µg/Filter	08/09/2022 20:00 MS	EQL0310189
Filter Metals Concentration						
Lead	0.000778	0.000223		µg/m^3	08/15/2022 06:29 JJ	EQL0310189

These results apply only to the samples tested.

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/26/2022 2:25:00 PM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-002
Client Sample ID: Hickory Woods #2 A0020423

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	13501			m³	07/26/2022 14:25	Field
Run Time	9784			min	07/26/2022 14:25	Field
General Parameters - Filter						
Lead	11.0	2.66		µg/Filter	08/09/2022 20:12 MS	EQL0310189
Filter Metals Concentration						
Lead	0.000812	0.000197		µg/m³	08/15/2022 06:29 JJ	EQL0310189

These results apply only to the samples tested.

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/20/2022 10:05:00 AM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-003
Client Sample ID: Gym Academy West #1 A0020421

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	12004			m^3	07/20/2022 10:05	Field
Run Time	8958			min	07/20/2022 10:05	Field
General Parameters - Filter						
Lead	46.0	2.66		µg/Filter	08/09/2022 20:24 MS	EQL0310189
Filter Metals Concentration						
Lead	0.00383	0.000222		µg/m^3	08/15/2022 06:29 JJ	EQL0310189

These results apply only to the samples tested.

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/26/2022 3:25:00 PM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-004
Client Sample ID: Gym Academy West #2 A0020425

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	13176			m³	07/26/2022 15:25	Field
Run Time	9760			min	07/26/2022 15:25	Field
General Parameters - Filter						
Lead	39.8	2.66		µg/Filter	08/09/2022 20:36 MS	EQL0310189
Filter Metals Concentration						
Lead	0.00302	0.000202		µg/m³	08/15/2022 06:29 JJ	EQL0310189

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/20/2022 10:00:00 AM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-005
Client Sample ID: Gym Academy East #1 A0020422

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	12268			m^3	07/20/2022 10:00	Field
Run Time	8954			min	07/20/2022 10:00	Field
General Parameters - Filter						
Lead	54.5	2.66		µg/Filter	08/09/2022 20:42 MS	EQL0310189
Filter Metals Concentration						
Lead	0.00444	0.000217		µg/m^3	08/15/2022 06:29 JJ	EQL0310189

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/26/2022 3:10:00 PM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-006
Client Sample ID: Gym Academy East #2 A0020424

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	13768			m³	07/26/2022 15:10	Field
Run Time	9764			min	07/26/2022 15:10	Field
General Parameters - Filter						
Lead	47.9	2.66		µg/Filter	08/09/2022 20:48 MS	EQL0310189
Filter Metals Concentration						
Lead	0.00348	0.000193		µg/m³	08/15/2022 06:29 JJ	EQL0310189

These results apply only to the samples tested.

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/20/2022 1:50:00 PM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-007
Client Sample ID: Ziegler Barn #1 A0020418

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	11608			m^3	07/20/2022 13:50	Field
Run Time	8536			min	07/20/2022 13:50	Field
General Parameters - Filter						
Lead	15.2	2.66		µg/Filter	08/09/2022 20:54 MS	EQL0310189
Filter Metals Concentration						
Lead	0.00131	0.000229		µg/m^3	08/15/2022 06:29 JJ	EQL0310189

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 7/26/2022 2:55:00 PM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-008
Client Sample ID: Ziegler Barn #2 A0020420

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	13813			m^3	07/26/2022 14:55	Field
Run Time	9728			min	07/26/2022 14:55	Field
General Parameters - Filter						
Lead	15.4	2.66		µg/Filter	08/09/2022 21:12 MS	EQL0310189
Filter Metals Concentration						
Lead	0.00111	0.000193		µg/m^3	08/15/2022 06:29 JJ	EQL0310189

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 8/2/2022 11:30:00 AM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-009
Client Sample ID: Middleton Blank #1 A0020426

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
General Parameters - Filter						
Lead	ND	2.66		µg/Filter	08/09/2022 21:18 MS	EQL0310189

These results apply only to the samples tested.

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: Trinity Consultants
702 W Idaho St Suite 1100
Boise, ID 83702

Date Reported: 8/15/2022
Report ID: S2208124001

Work Order: S2208124
Collection Date: 8/2/2022 11:30:00 AM
Date Received: 8/8/2022 7:50:00 AM
Sampler: IL
Matrix: Filter
COC: 196590

Project: Middleton Airport
Lab ID: S2208124-010
Client Sample ID: Middleton Blank #2 A0020427

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
General Parameters - Filter						
Lead	ND	2.66		µg/Filter	08/09/2022 21:24 MS	EQL0310189

These results apply only to the samples tested.

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Trinity Consultants
Work Order: S2208124
Project: Middleton Airport

Date: 8/15/2022
Report ID: S2208124001

FEMIML2009 Sample Type **MBLK** Units: µg/Filter

MB-19785 (08/09/22 19:37) RunNo: 202733 PrepDate: 08/09/22 13:42 BatchID: 19785

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead	ND	2.66					

FEMIML2009 Sample Type **LCS** Units: µg/Filter

LCS-19785 (08/09/22 19:43) RunNo: 202733 PrepDate: 08/09/22 13:42 BatchID: 19785

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead	1240	2.66	1200		103	80 - 120	

FEMIML2009 Sample Type **MS** Units: µg/Filter

S2208124-002AS (08/09/22 20:18) RunNo: 202733 PrepDate: 08/09/22 13:42 BatchID: 19785

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Lead	1250	2.66	1200	11.0	103	75 - 125	

FEMIML2009 Sample Type **DUP** Units: µg/Filter

S2208124-001AD (08/09/22 20:06) RunNo: 202733 PrepDate: 08/09/22 13:42 BatchID: 19785

Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Lead	9.30	2.66	9.30	0.0862		20	

Pace Analytical®

Pace Analytical Services, LLC

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

Page of

All shaded fields must be completed.
This is a legal document: any misrepresentation may be construed as fraud.

196590

Client Name	**Project Identification**	**Sampler (Signature/Attestation of Authenticity)**	**Telephone #**
Trinity Consultants	Middleton Airport	ISAAC Legare	801-520-2867
Report Address	**Contact Name**		
4525 Wasatch Blvd. suite 200 SLC, UT 84124	Casey Lenhart Email clenhart@trinityconsultants.com Phone 801-979-7874		
Invoice Address	**Purchase Order #**	**Quote #**	
same	—	—	

ANALYSES / PARAMETERS

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	TSP	Lead	REMARKS
1	2208124-001	7-20-22	14:05	Hickory Woods #1	Air	1	1	1	A0020419
2	-002	7-26-22	14:25	Hickory Woods #2					A0020423
3	-003	7-20-22	10:05	Gym Academy West #1					A0020421
4	-004	7-26-22	15:25	Gym Academy West #2					A0020425
5	-005	7-20-22	10:00	Gym Academy East #1					A0020422
6	-006	7-26-22	15:10	Gym Academy East #2					A0020424
7	-007	7-20-22	13:50	Ziegler Barn #1					A0020418
8	-008	7-26-22	14:55	Ziegler Barn #2					A0020420
9	-009	8-2-22	11:30	Middleton Blank #1			1	1	A0020426
10	-010	8-2-22	11:30	Middleton Blank #2			1	1	A0020427
11									
12									
13									
14									

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
	ISAAC Legare	8-2-22	12:00	[signature] - Pace	8/3/22	7:50
	Mary Hinnegan Pace	8/5/22	10:37	[signature]	8/5/22	10:31

SHIPPING INFO	MATRIX CODES		TURNAROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
☒ UPS	Water	WT	Check desired service	Compliance Monitoring? Y / N	
☐ Fed Express	Soil	SL	☐ Standard turnaround	Program (SDWA, NPDES,...)	
☐ US Mail	Solid	SD	☐ **RUSH - 5 Working Days**	PWSID / Permit #	
☐ Hand Carried	Filter	FT	☐ **URGENT** - < 2 Working Days	Chlorinated? Y / N	
☐ Other _____	Other	OT	***Rush & Urgent Surcharges will be applied***	Sample Disposal: Lab / Client	

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-SHRT-0033 v00_Condition Upon Receipt Form Terra Lab
	Effective Date: 05/13/2022

Survey Meter # Model 2241-2; SN 182115
pH strip lot # HC281827
Thermometer SN# 27130475

Condition Upon Receipt (Attach to COC)

Sample Receipt

1 Number of ice chests/packages received: OTC **ROI?** Yes (No)
*Note as "**OTC**" if samples are received over the counter, unpackaged*

2 Temperature of cooler/samples. *(If more than 8 coolers, please write on back)*

Temps Observed (°C):								
Temps Corrected (°C):								

***Acceptable is: 0.1° to 10°C** for Bacteria; and 0.1° to 6°C for most other water parameters. Samples may not have had adequate time to co following collection. Indicate ROI (Received on Ice) for iced samples received on the same day as sampled, in addition to temperature at r*

Client contact for temperatures outside method criteria must be documented below.

3 Emission rate of samples for radiochemical analyses < 0.5mR/hr?	Yes	No	(N/A)
4 COC Number (If applicable): 196590			
5 Do the number of bottles agree with the COC?	(Yes)	No	N/A
6 Were the samples received intact? *(no broken bottles, leaks, etc.)*	(Yes)	No	N/A
7 Were the sample custody seals intact?	Yes	No	(N/A)
8 Is the COC properly completed, legible, and signed?	(Yes)	No	

Sample Verification, Labeling & Distribution

1 Were all requested analyses understood and appropriate?	(Yes)	No	
2 Did the bottle labels correspond with the COC information?	(Yes)	No	
3 Samples collected in method-prescribed containers?	(Yes)	No	

4 Sample Preservation:

pH at Receipt:	Final pH (if added in lab):	Preservative/Lot#	Date/Time Added:
_____ Total Metals	_____ Total Metals	HNO_3 _____	_____
_____ Diss Metals	_____ Diss Metals	HNO_3 _____	*Filtered and preserved in metal*
_____ Nutrient	_____ Nutrient	H_2SO_4 _____	
_____ Cyanide	_____ Cyanide	NaOH _____	
_____ Sulfide	_____ Sulfide	ZnAcet _____	
_____ Phenol	_____ Phenol	H_2SO_4 _____	
_____ SDWA Rads	_____ SDWA Rads	HNO_3 _____	_____

5 VOA vials have <6mm headspace?	Yes	No	(N/A)
6 Were all analyses within holding time at the time of receipt?	(Yes)	No	
7 Have rush or project due dates been checked and accepted?	Yes	No	(N/A)
8 Do samples require subcontracted analyses?	Yes	(No)	

If "Yes", which type of subcontracting is required? **General** **Customer-Specified** **Certified**

Sample Receipt, Verification, Login, Labeling & Distribution completed by *(initials)*: JS
Set ID: 3208124

Discrepancy Documentation ***(use back of sheet for notes on discrepancies)***

Any items listed above with a response of "No" or do not meet specifications must be resolved.

Person Contacted: _____ Method of Contact: __ Phone: _____
Initiated By: _____ Date/Time: _____ __ Email: _____
Problem:

Resolution:

Pace Analytical Services, LLC

555 Absaraka St
Sheridan, WY 82801

Middleton Airport Sampling
Particulate Network Summary
July, 2022

Filter ID	Sampler Name	Sampler ID	Runday	Tare Mass	Exposed Mass	Net Mass	Run Time	Std. Volume	Act. Volume	**Std. Conc.**	**Act. Conc.**	Comments
				grams	grams	grams	minutes	m^3	m^3	**µg/m^3**	**µg/m^3**	
A0020418	Ziegler Barn	205987	07/20/22	4.6558	4.8766	0.2208	8536	11659	11608	19	19	
A0020420	Ziegler Barn	205987	07/26/22	4.6394	4.8440	0.2046	9728	13986	13813	15	15	
A0020419	Hickory Woods	211859	07/20/22	4.6295	4.8010	0.1715	8654	11995	11943	14	14	
A0020423	Hickory Woods	211859	07/26/22	4.6563	4.8022	0.1459	9784	13670	13501	11	11	
A0020421	Gym Academy West	211862	07/20/22	4.6301	4.8232	0.1931	8958	12056	12004	16	16	
A0020425	Gym Academy West	211862	07/26/22	4.6638	4.8076	0.1438	9760	13341	13176	11	11	
A0020422	Gym Academy East	211865	07/20/22	4.6237	4.8496	0.2259	8954	12405	12268	18	18	
A0020424	Gym Academy East	211865	07/26/22	4.6282	4.8016	0.1734	9764	13940	13768	12	13	
A0020426			08/02/22	4.6735	4.6751	0.0016						Field Blank #1
A0020427			08/02/22	4.6676	4.6684	0.0008						Field Blank #2

Laboratory test Procedure:
40 CFR 50, Appendix B; Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method)