WOOD BUFFALO
ENVIRONMENTAL ASSOCIATION

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Wood Buffalo Environmental Association

JULY 2025

MONTHLY CALIBRATION REPORT

CONTINUOUS MONITORING

August 29, 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS01
BERTHA GANTER - FORT MCKAY
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
Calibration Date:	July 7, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	11:00	End time (MST):	14:11
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	49.21	ppm	Cal Gas Exp Date:	March 10, 2031
Cal Gas Cylinder #:	CC418809			
Removed Cal Gas Conc:	49.21	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	3565
Zero Air Gen Model:	Teledyne API T701		Serial Number:	146

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	JC1501301448	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.997895	0.997010	Backgd or Offset:	21.7	21.5
Calibration intercept:	-0.932900	-0.373313	Coeff or Slope:	0.876	0.879

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4918	81.3	800.3	792.7	1.009
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	792.9	Previous response	797.6	*% change	-0.6%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4918	81.3	800.3	797.9	1.003
Mid point	4959	40.7	400.6	398.3	1.006
Low point	4979	20.3	199.8	198.7	1.006
As left zero	5000	0.0	0.0	0.0	----
As left span	4918	81.3	800.3	799.2	1.001
				Average Correction Factor:	1.005

Notes: Changed the inlet filter after as founds. Adjusted the span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

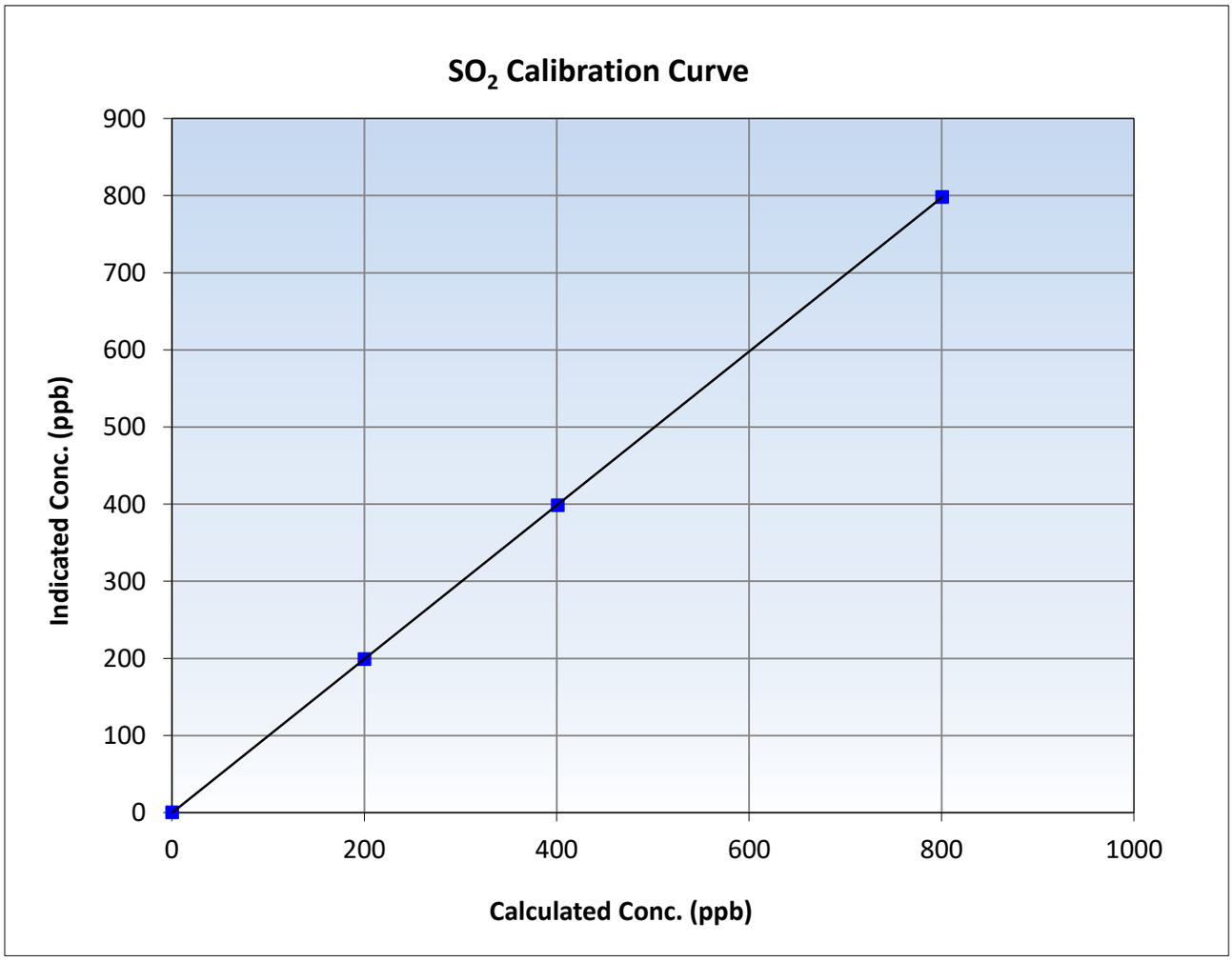
SO_2 Calibration Summary

Station Information

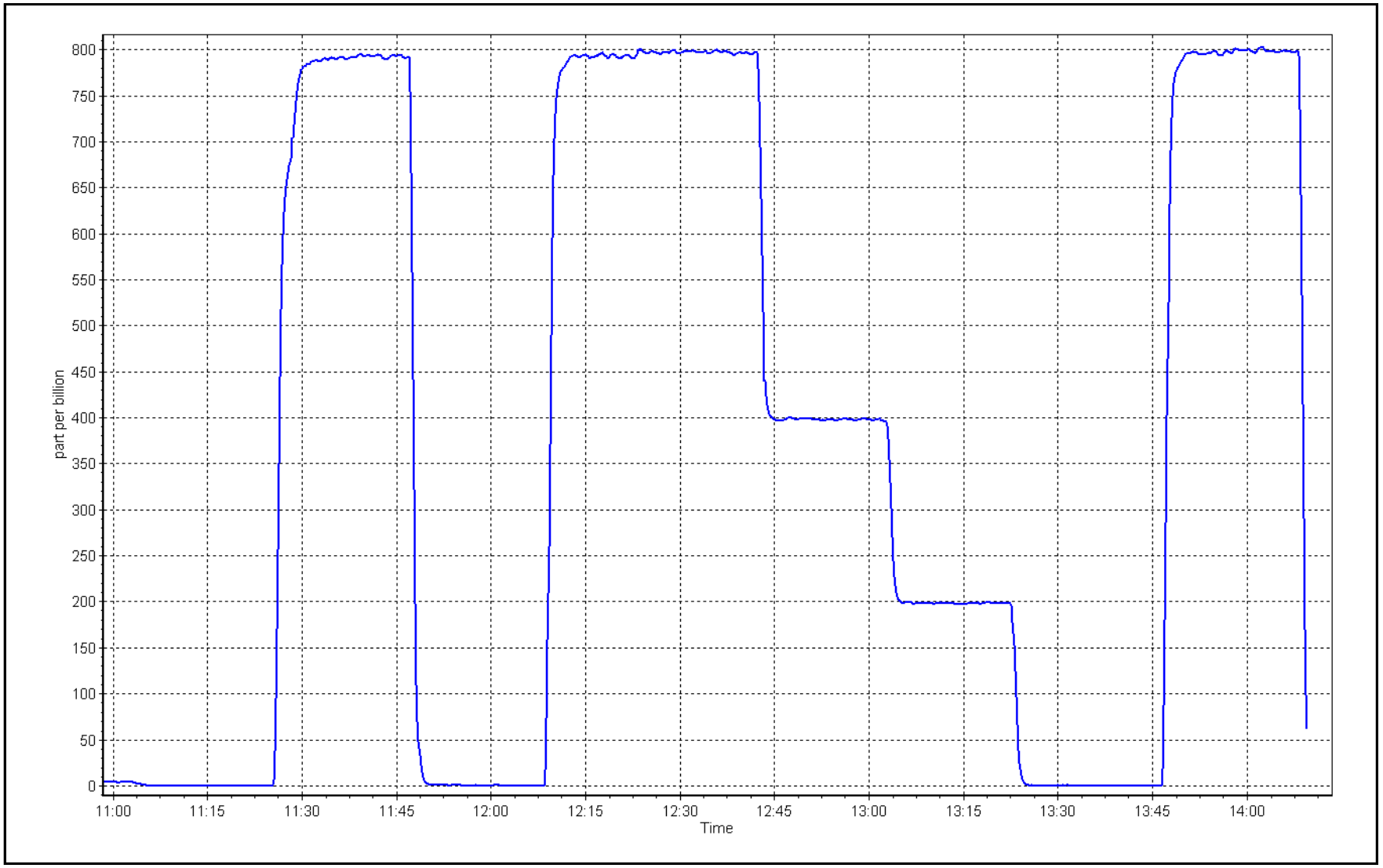
Calibration Date:	July 7, 2025	Previous Calibration:	June 9, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:00	End Time (MST):	14:11
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1501301448

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.1	----	Correlation Coefficient	0.999997	*≥0.995*
800.3	797.9	1.0030	Slope	0.997010	*0.90 - 1.10*
400.6	398.3	1.0058			
199.8	198.7	1.0056	Intercept	-0.373313	*+/-30*



SO2 Calibration Plot Date: July 7, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
Calibration Date:	July 14, 2025	Last Cal Date:	June 5, 2025
Start time (MST):	9:51	End time (MST):	13:35
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.84	ppm	Cal Gas Exp Date:	September 5, 2027
Cal Gas Cylinder #:	CC738239			
Removed Cal Gas Conc:	4.84	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	3565
ZAG Make/Model:	Teledyne API T701		Serial Number:	146

Analyzer Information

Analyzer make:	Thermo 43iQ-TLE		Analyzer serial #:	12113311966
Converter make:	CD Nova		Converter serial #:	470
Analyzer Range	0 - 100 ppb		Converter Temp:	800 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.002391	1.008099	Backgd or Offset:	2.20	2.14
Calibration intercept:	-0.078174	-0.577930	Coeff or Slope:	1.159	1.123

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4917	82.6	80.0	83.5	0.955
As found Mid point	4959	41.3	40.0	41.2	0.966
As found Low point	4979	20.7	20.0	20.0	0.992
New cylinder response					

Baseline Corr As found:	83.7	Prev response:	80.08	*% change:	4.3%
Baseline Corr 2nd AF pt:	41.4	AF Slope:	1.049416	AF Intercept:	-0.598777
Baseline Corr 3rd AF pt:	20.2	AF Correlation:	0.999896	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4917	82.6	80.0	80.2	0.997
Mid point	4959	41.3	40.0	39.7	1.007
Low point	4979	20.7	20.0	19.0	1.055
As left zero					
As left span					
SO2 Scrubber Check	4919	81.3	813.0	0.0	----
Date of last scrubber change:		December 17, 2021		Ave Corr Factor	1.020
Date of last converter efficiency test:					

Notes: Inlet filter change and scrubber check completed after as founds. Adjusted the span. Converter failed during the 3rd point. Will replace tomorrow.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

TRS Calibration Summary

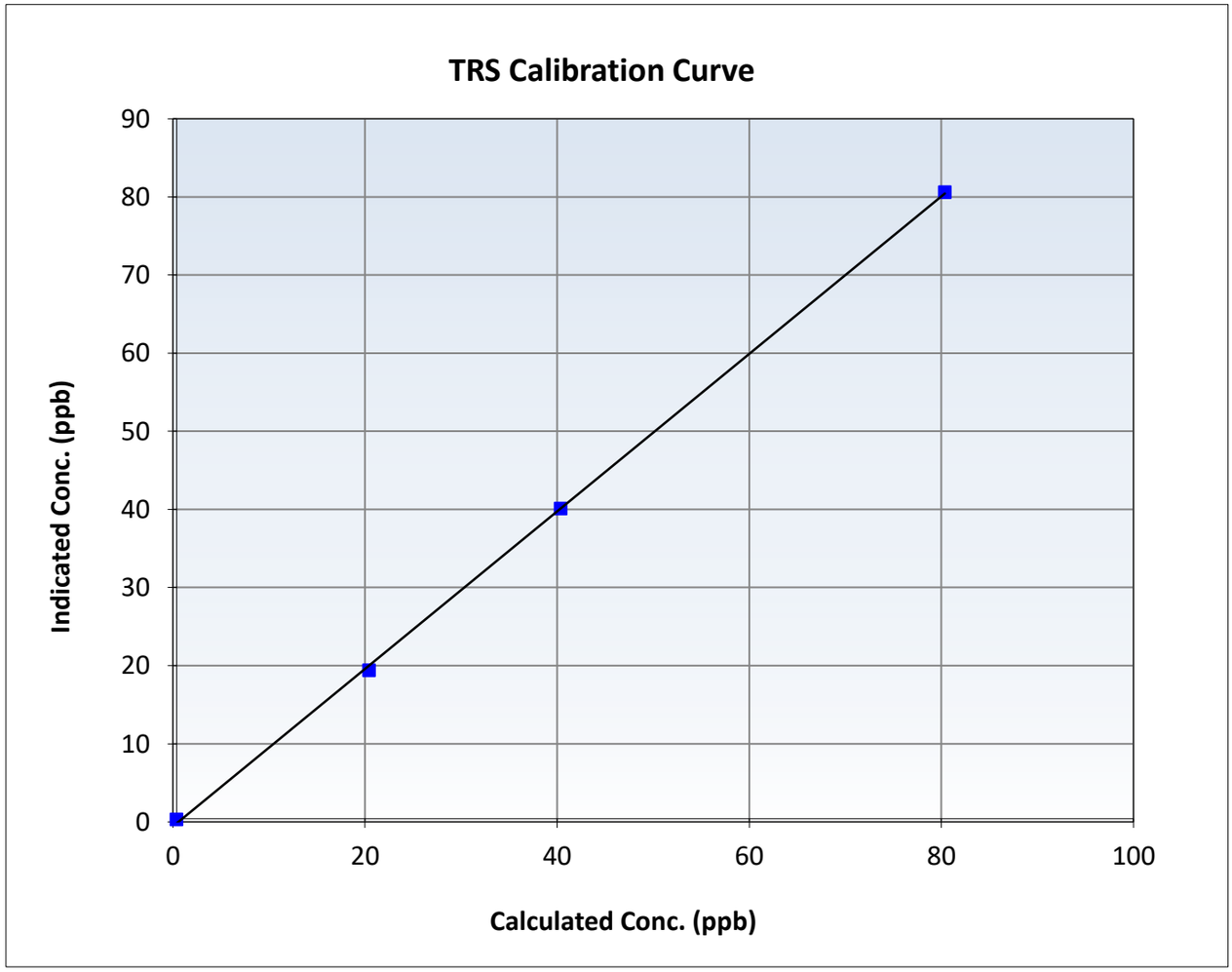
Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 5, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:51	End Time (MST):	13:35
Analyzer make:	Thermo 43iQ-TLE	Analyzer serial #:	12113311966

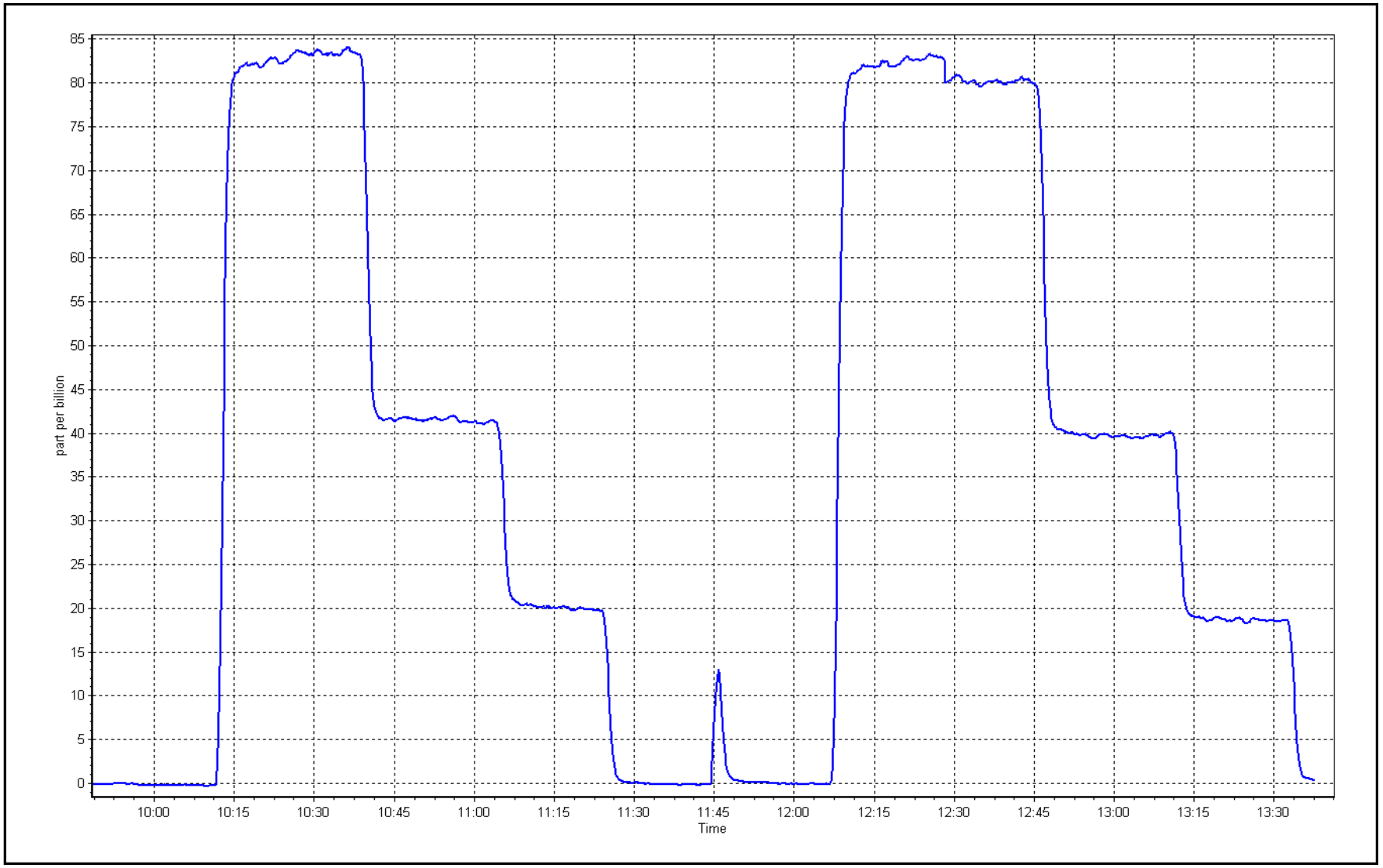
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
80.0	80.2	0.9970
40.0	39.7	1.0070
20.0	19.0	1.0547

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999818	*≥0.995*
Slope	1.008099	*0.90 - 1.10*
Intercept	-0.577930	*+/-3*



TRS Calibration Plot Date: July 14, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
Calibration Date:	July 15, 2025	Last Cal Date:	July 14, 2025
Start time (MST):	9:51	End time (MST):	15:12
Reason:	Maintenance		

Calibration Standards

Cal Gas Concentration:	4.84	ppm	Cal Gas Exp Date:	September 5, 2027
Cal Gas Cylinder #:	CC738239			
Removed Cal Gas Conc:	4.84	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	3565
ZAG Make/Model:	Teledyne API T701		Serial Number:	146

Analyzer Information

Analyzer make:	Thermo 43iQ-TLE		Analyzer serial #:	12113311966
Converter make:	CD Nova		Converter serial #:	580
Analyzer Range	0 - 100 ppb		Converter Temp:	850 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.008099	1.003817	Backgd or Offset:	2.14	2.13
Calibration intercept:	-0.577930	-0.278082	Coeff or Slope:	1.123	1.121

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	NA	Prev response:	NA	*% change:	NA
Baseline Corr 2nd AF pt:	NA	AF Slope:	NA	AF Intercept:	NA
Baseline Corr 3rd AF pt:	NA	AF Correlation:	NA	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4917	82.6	80.0	80.0	1.000
Mid point	4959	41.3	40.0	39.9	1.002
Low point	4979	20.7	20.0	19.7	1.017
As left zero	5000	0.0	0.0	-0.1	----
As left span	4917	82.6	80.0	78.6	1.017

SO2 Scrubber Check

Date of last scrubber change: December 17, 2021 Ave Corr Factor 1.006

Date of last converter efficiency test:

Notes: Installing a new TRS converter. Adjusted the span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

TRS Calibration Summary

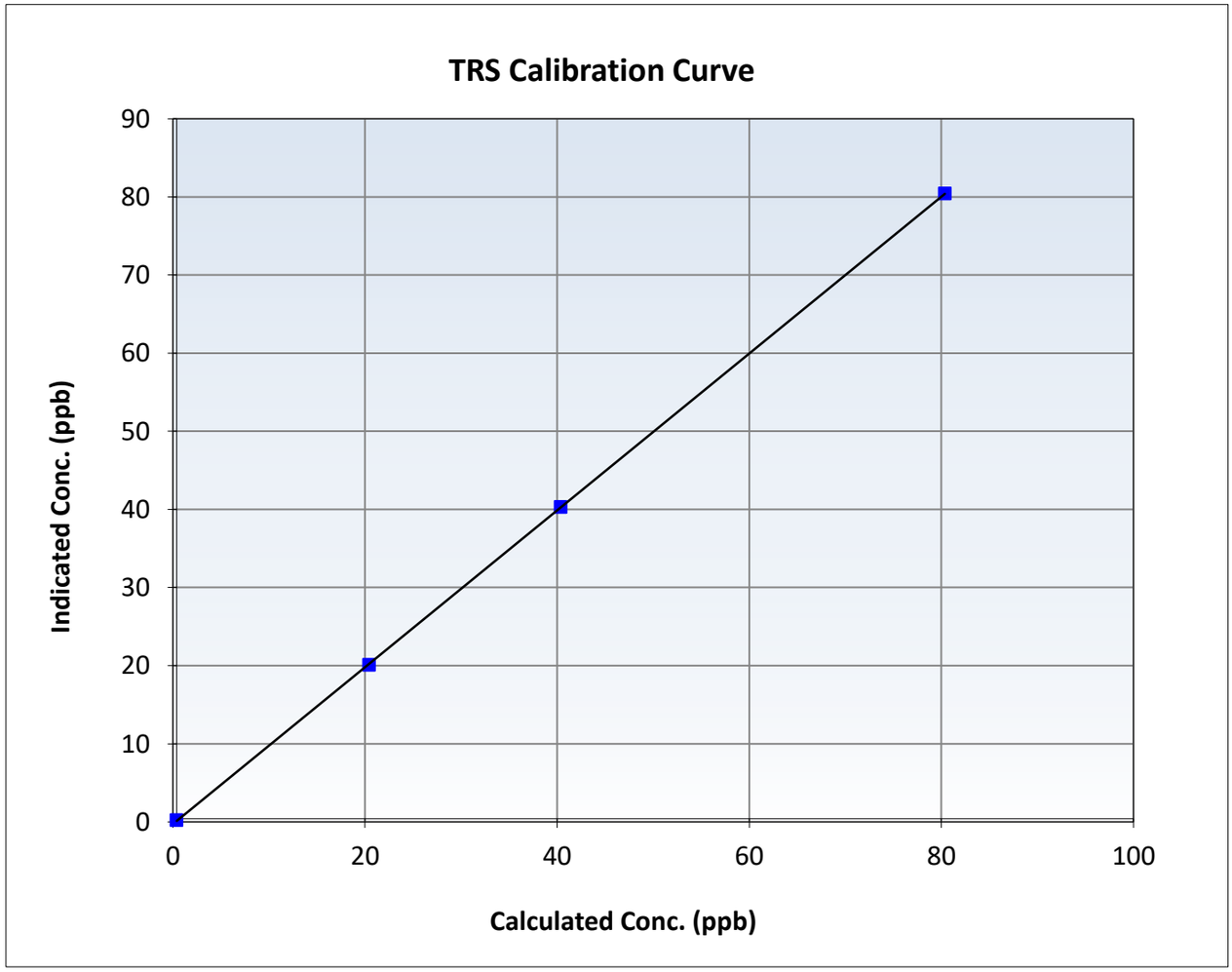
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	July 14, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:51	End Time (MST):	15:12
Analyzer make:	Thermo 43iQ-TLE	Analyzer serial #:	12113311966

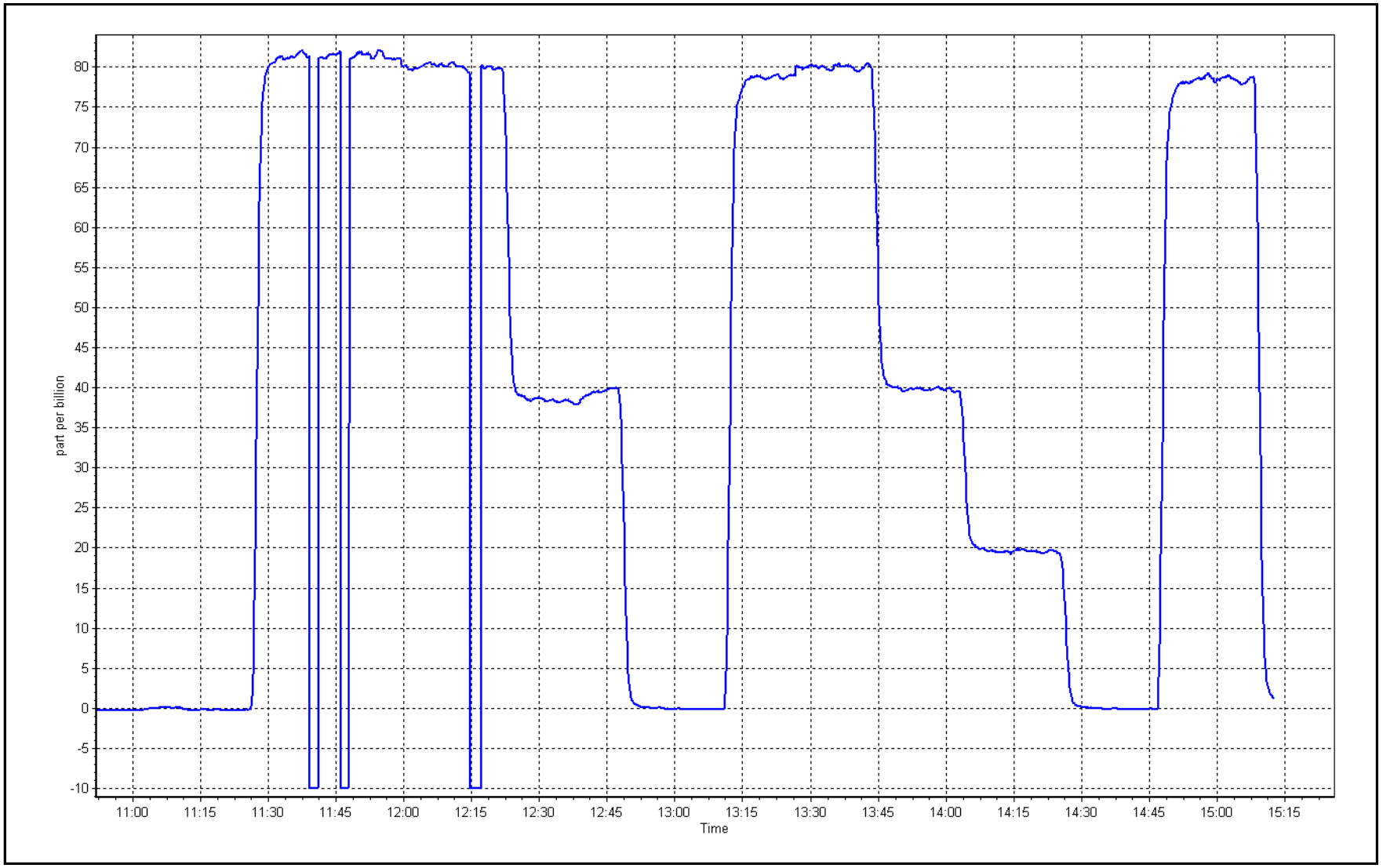
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
80.0	80.0	0.9995
40.0	39.9	1.0019
20.0	19.7	1.0172

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999992	*≥0.995*
Slope	1.003817	*0.90 - 1.10*
Intercept	-0.278082	*+/-3*



TRS Calibration Plot Date: July 15, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
Calibration Date:	July 14, 2025	Last Cal Date:	June 5, 2025
Start time (MST):	9:51	End time (MST):	14:22
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.84	ppm	Cal Gas Exp Date:	September 5, 2027
Cal Gas Cylinder #:	CC738239			
Removed Cal Gas Conc:	4.84	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	3565
ZAG Make/Model:	Teledyne API T701		Serial Number:	146

Analyzer Information

Analyzer make:	Thermo 43iQ-TL		Analyzer serial #:	1200326167
Converter make:	CD Nova		Converter serial #:	2022-221
Analyzer Range	0 - 100 ppb		Converter Temp:	315 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.006678	1.006105	Backgd or Offset:	2.03	2.00
Calibration intercept:	-0.178203	-0.258141	Coeff or Slope:	0.983	9.770

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4917	82.6	80.0	81.3	0.980
As found Mid point	4959	41.3	40.0	40.3	0.985
As found Low point	4979	20.7	20.0	19.8	0.997
New cylinder response					

Baseline Corr As found:	81.6	Prev response:	80.32	*% change:	1.6%
Baseline Corr 2nd AF pt:	40.6	AF Slope:	1.021686	AF Intercept:	-0.478384
Baseline Corr 3rd AF pt:	20.1	AF Correlation:	0.999978	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4917	82.6	80.0	80.2	0.997
Mid point	4959	41.3	40.0	40.0	0.999
Low point	4979	20.7	20.0	19.8	1.012
As left zero	5000	0.0	0.0	-0.1	----
As left span	4917	82.6	80.0	79.5	1.006
SO2 Scrubber Check	4919	81.3	813.0	0.0	----
Date of last scrubber change:		January 25, 2024		Ave Corr Factor	1.003
Date of last converter efficiency test:		November 7, 2024		107.9%	efficiency

Notes: Inlet filter change and scrubber check completed after as founds. Adjusted the span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

H_2S Calibration Summary

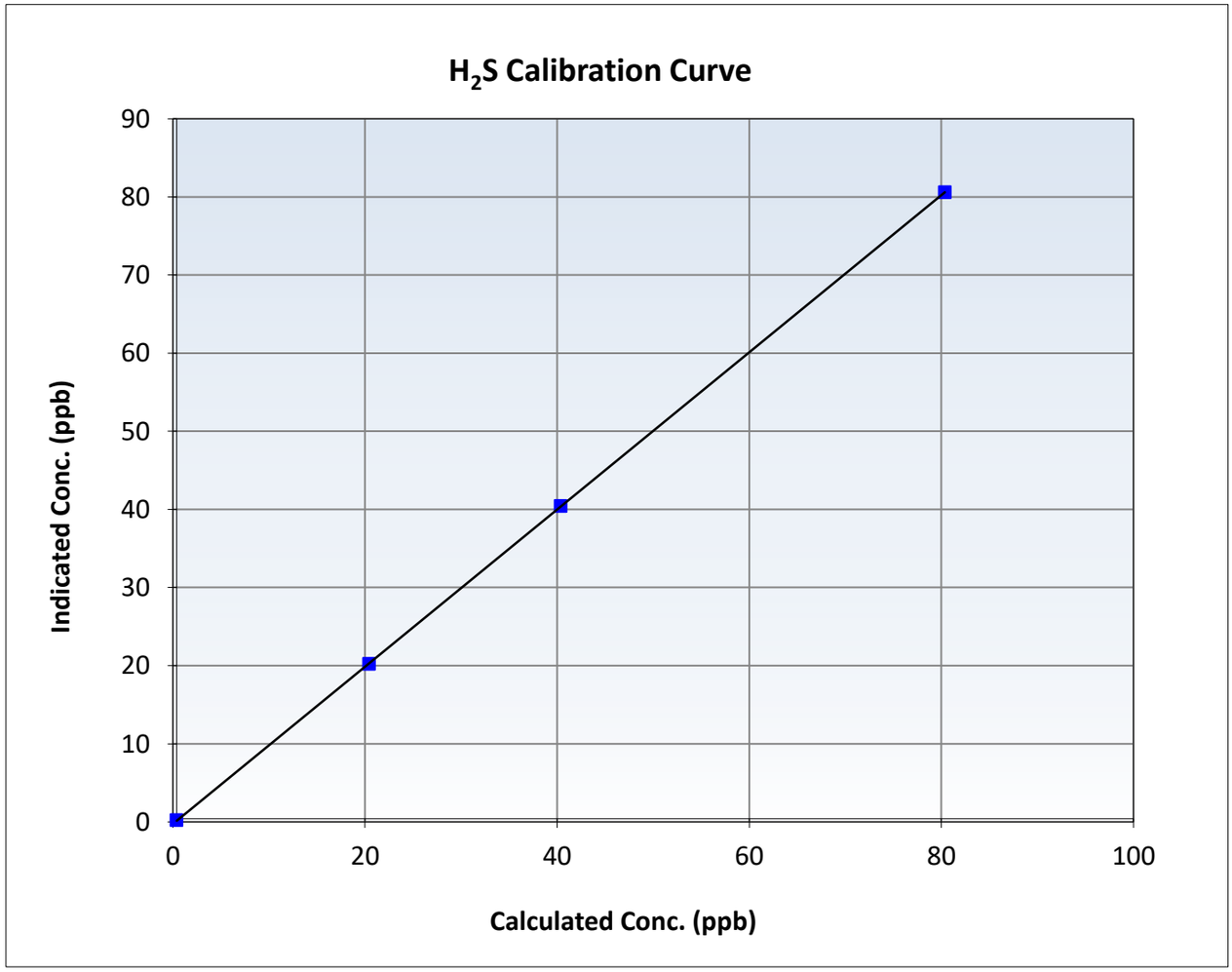
Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 5, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:51	End Time (MST):	14:22
Analyzer make:	Thermo 43iQ-TL	Analyzer serial #:	1200326167

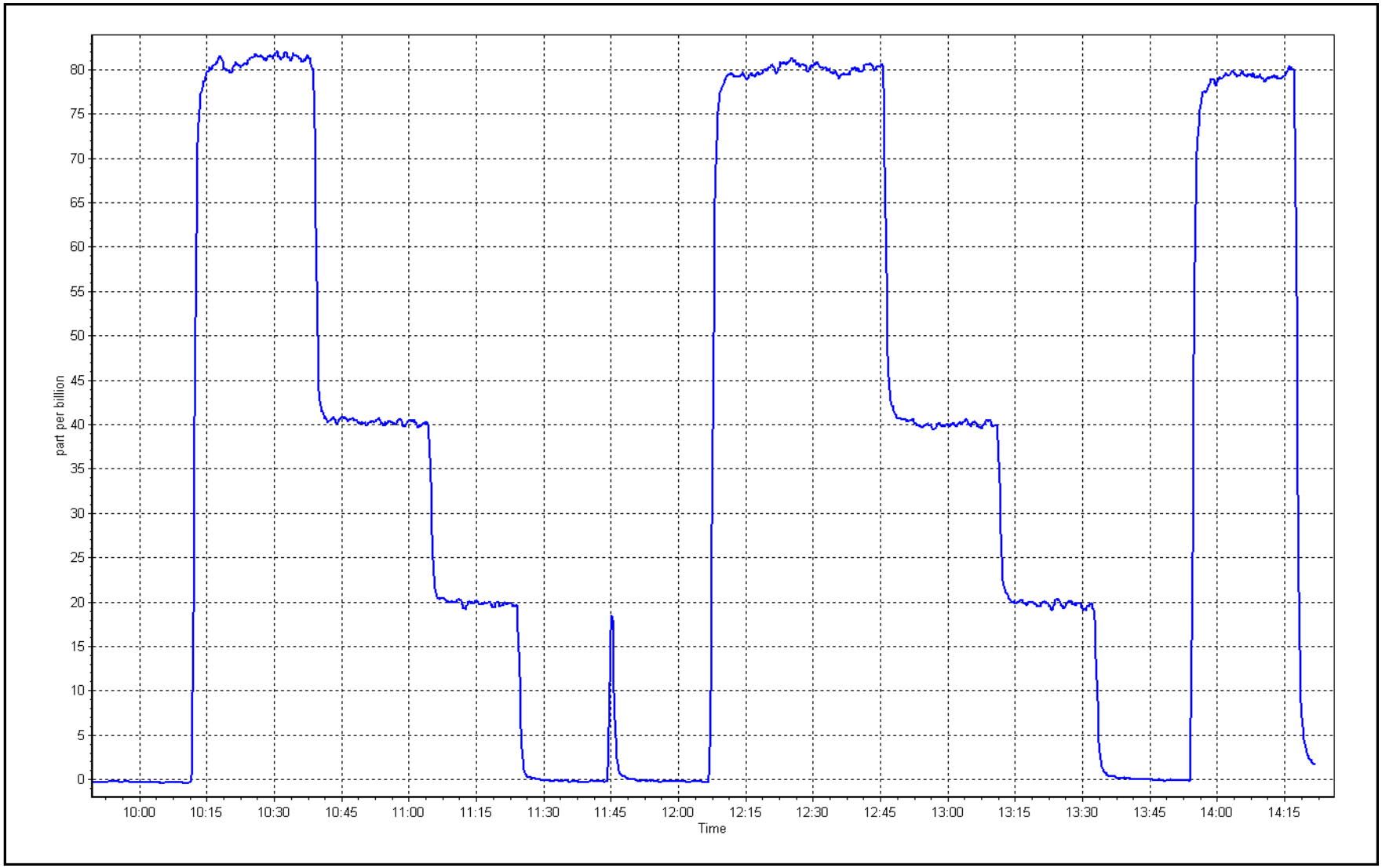
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
80.0	80.2	0.9970
40.0	40.0	0.9994
20.0	19.8	1.0121

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999996	*≥0.995*
Slope	1.006105	*0.90 - 1.10*
Intercept	-0.258141	*+/-3*



H_2S Calibration Plot Date: July 14, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
Calibration Date:	July 7, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	11:00	End time (MST):	14:11
Reason:	Routine		

Calibration Standards

Gas Cert Reference:		CC418809	Cal Gas Expiry Date:	March 10, 2031	
CH4 Cal Gas Conc.	497.2	ppm	CH4 Equiv Conc.	1061.8	ppm
C3H8 Cal Gas Conc.	205.3	ppm			
Removed Gas Cert:		NA	Removed Gas Expiry:	NA	
Removed CH4 Conc.	497.2	ppm	CH4 Equiv Conc.	1061.8	ppm
Removed C3H8 Conc.	205.3	ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):			Diff between cyl (NM):		
Calibrator Model:	Teledyne API T700		Serial Number:	3565	
Zero Air Gen model:	Teledyne API T701		Serial Number:	146	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	1193585648	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	2.52E-04	2.48E-04	NMHC SP Ratio:	4.95E-05	4.96E-05
CH4 Retention time:	15.0	15.0	NMHC Peak Area:	185536	185016
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	17.27	17.37	0.994
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.37	Prev response	17.28	*% change	0.5%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	81.3	17.27	17.27	1.000
Mid point	4959	40.7	8.64	8.65	0.999
Low point	4979	20.3	4.31	4.35	0.991
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	17.27	17.29	0.999
				Average Correction Factor	0.997

Notes: Changed the inlet filter after as founds. Adjusted span only.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	9.18	9.17	1.001
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.17	Prev response	9.14	*% change	0.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	81.3	9.18	9.17	1.001
Mid point	4959	40.7	4.60	4.62	0.995
Low point	4979	20.3	2.29	2.33	0.983
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	9.18	9.15	1.003
				Average Correction Factor	0.993

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	8.09	8.20	0.986
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.20	Prev response	8.13	*% change	0.8%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	81.3	8.09	8.10	0.999
Mid point	4959	40.7	4.05	4.03	1.004
Low point	4979	20.3	2.02	2.02	1.001
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	8.09	8.14	0.993
				Average Correction Factor	1.001

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	0.999481	0.999310
THC Cal Offset:	0.017754	0.016545
CH4 Cal Slope:	1.005593	1.001042
CH4 Cal Offset:	0.002469	-0.005928
NMHC Cal Slope:	0.994224	0.997823
NMHC Cal Offset:	0.015285	0.022073

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

THC Calibration Summary

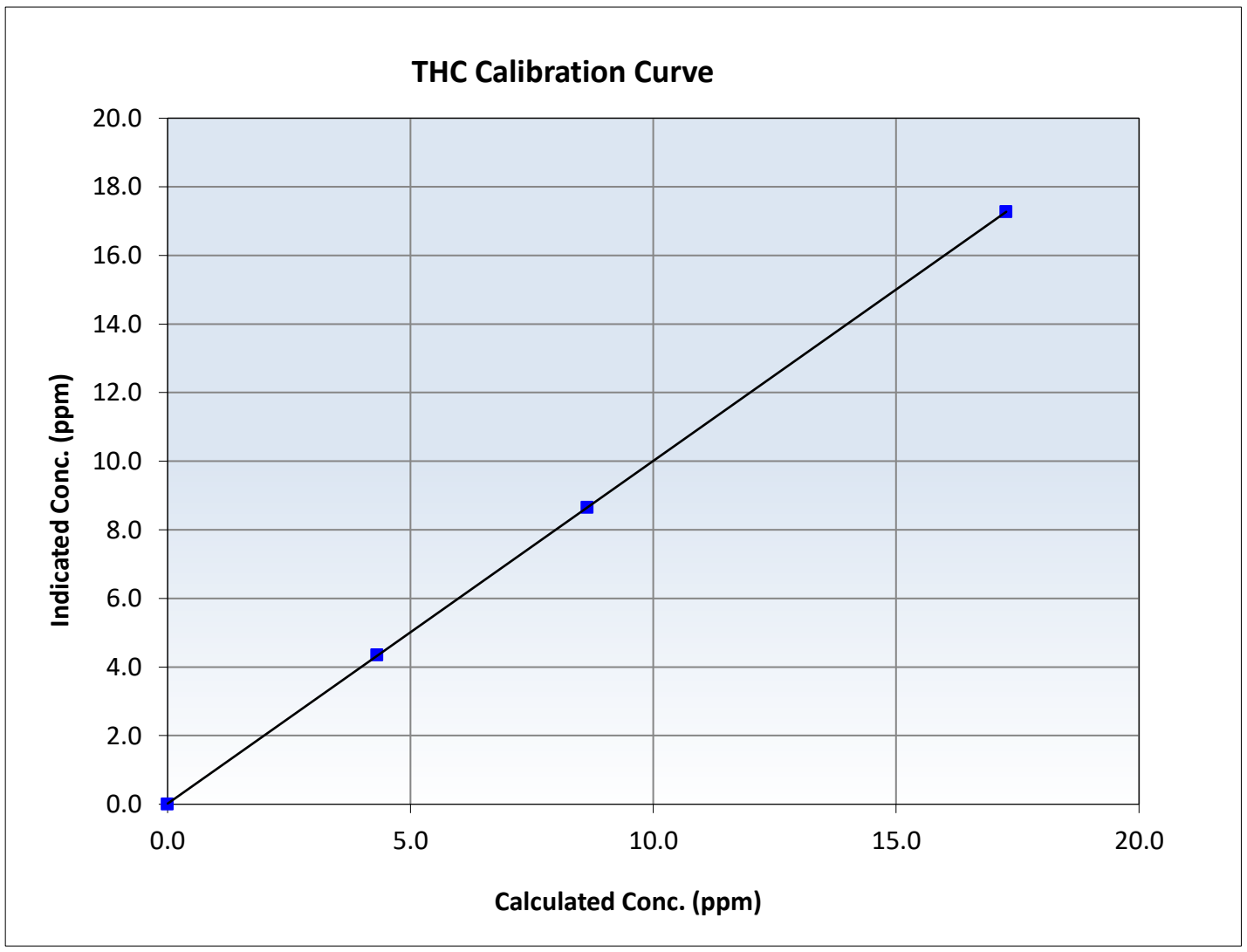
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 9, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:00	End Time (MST):	14:11
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585648

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
17.27	17.27	1.0000
8.64	8.65	0.9991
4.31	4.35	0.9914

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	0.999310	*0.90 - 1.10*
Intercept	0.016545	*+/-0.5*



Wood Buffalo Environmental Association

CH_4 Calibration Summary

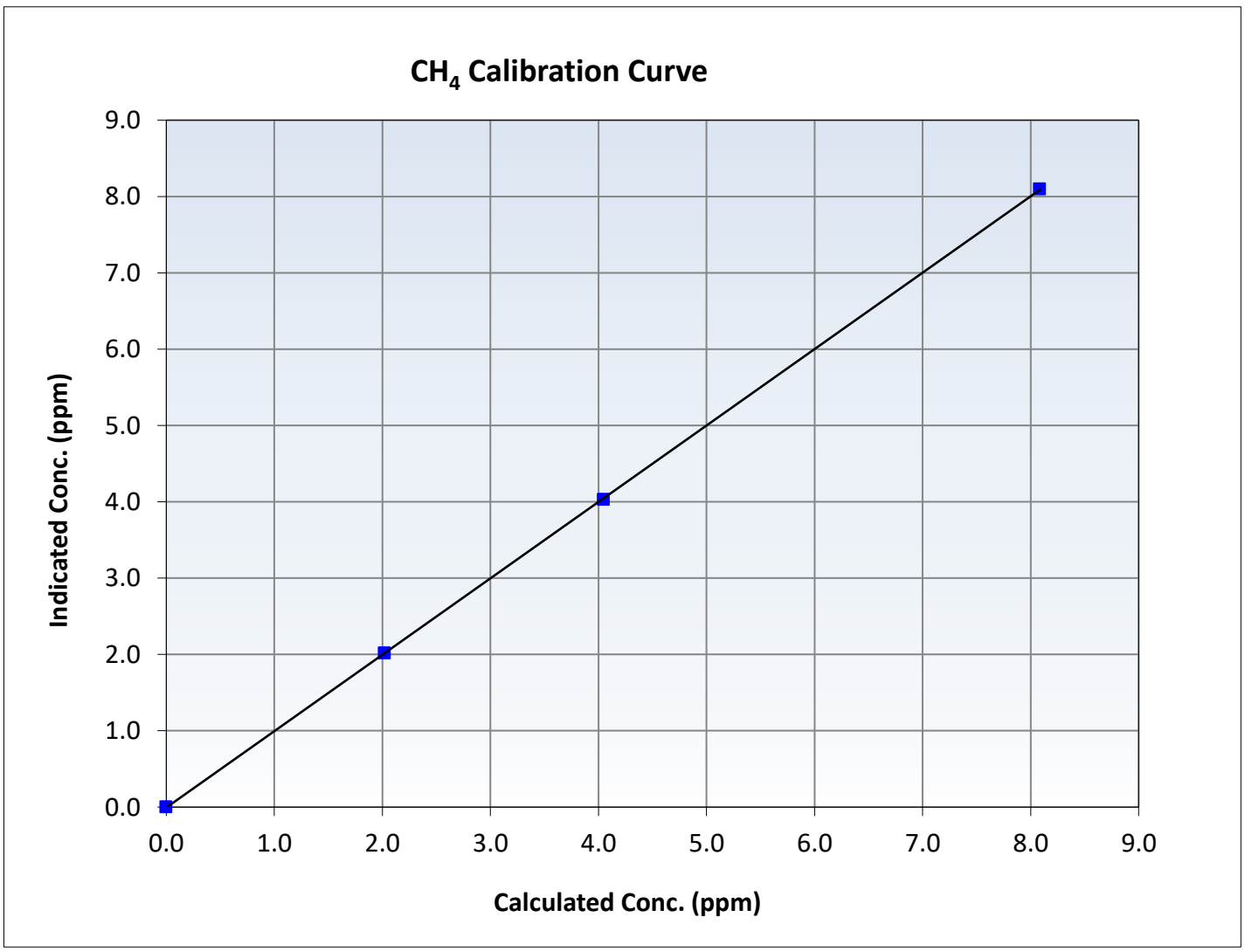
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 9, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:00	End Time (MST):	14:11
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585648

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.09	8.10	0.9988
4.05	4.03	1.0041
2.02	2.02	1.0009

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999992	*≥0.995*
Slope	1.001042	*0.90 - 1.10*
Intercept	-0.005928	*+/-0.5*



Wood Buffalo Environmental Association

NMHC Calibration Summary

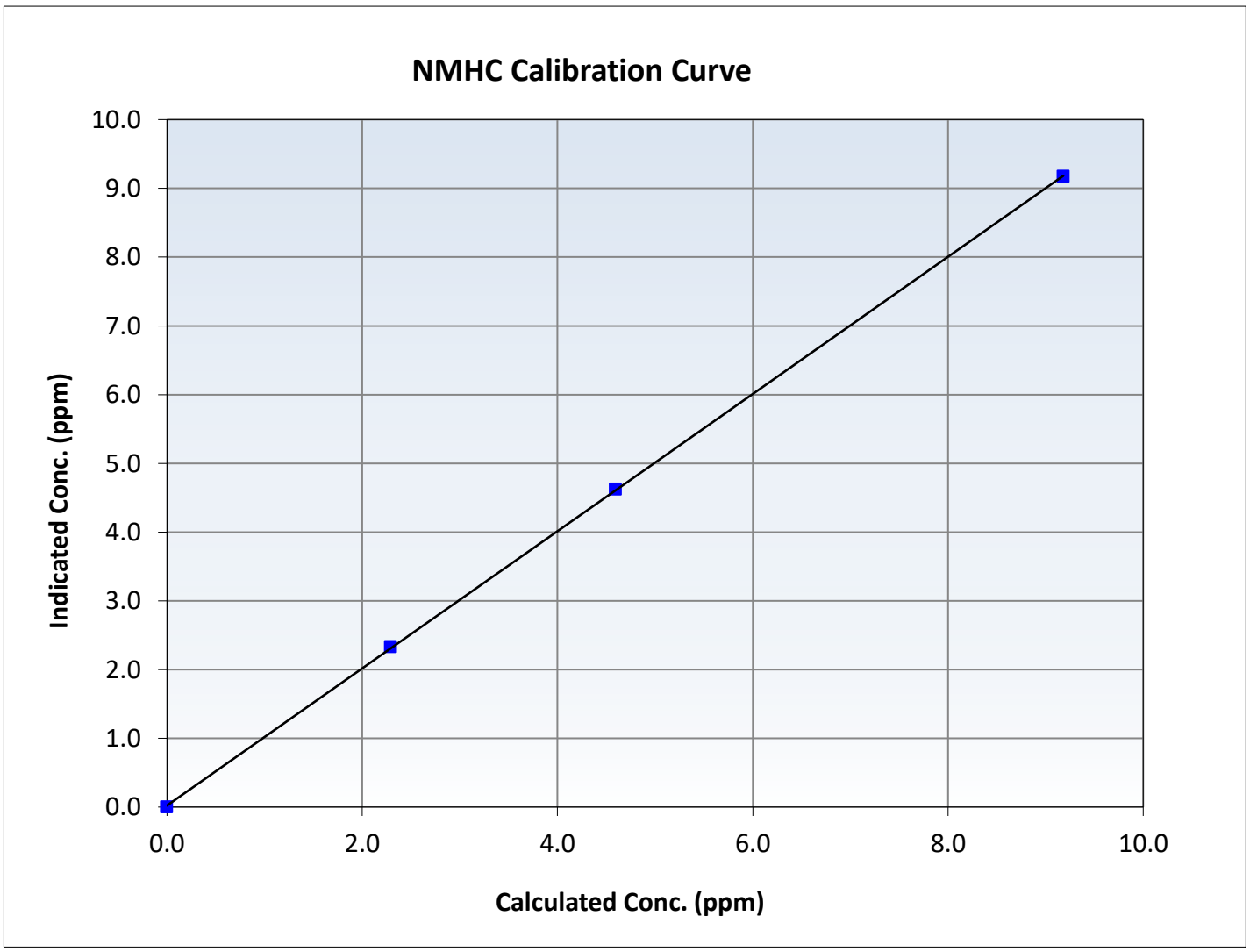
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 9, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:00	End Time (MST):	14:11
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585648

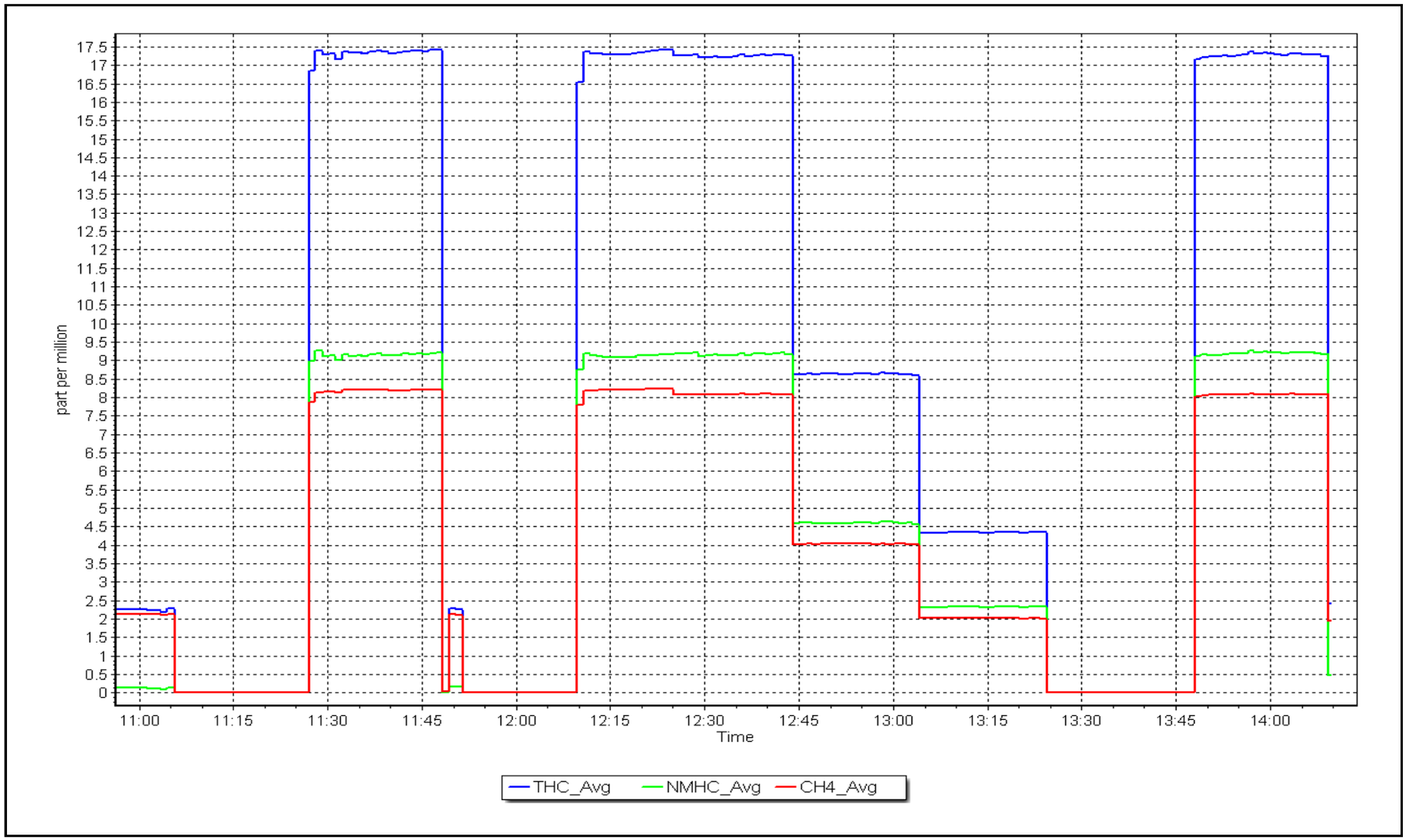
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
9.18	9.17	1.0010
4.60	4.62	0.9948
2.29	2.33	0.9835

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999973	*≥0.995*
Slope	0.997823	*0.90 - 1.10*
Intercept	0.022073	*+/-0.5*



NMHC Calibration Plot Date: July 7, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
Calibration Date:	July 29, 2025	Last Cal Date:	July 7, 2025
Start time (MST):	10:52	End time (MST):	13:40
Reason:	Cylinder Change		

Calibration Standards

Gas Cert Reference:		CC418809	Cal Gas Expiry Date:	March 10, 2031	
CH4 Cal Gas Conc.	497.2	ppm	CH4 Equiv Conc.	1061.8	ppm
C3H8 Cal Gas Conc.	205.3	ppm			
Removed Gas Cert:		NA	Removed Gas Expiry:	NA	
Removed CH4 Conc.	497.2	ppm	CH4 Equiv Conc.	1061.8	ppm
Removed C3H8 Conc.	205.3	ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):			Diff between cyl (NM):		
Calibrator Model:	Teledyne API T700		Serial Number:	3565	
Zero Air Gen model:	Teledyne API T701		Serial Number:	146	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	1193585648	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	2.48E-04	2.48E-04	NMHC SP Ratio:	4.96E-05	4.96E-05
CH4 Retention time:	15.0	15.0	NMHC Peak Area:	185016	185016
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	17.27	17.44	0.990
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.44	Prev response	17.27	*% change	1.0%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	17.27	17.43	0.991
				Average Correction Factor	

Notes: Changed the N2/H2 cylinders after as founds.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	9.18	9.40	0.977
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.40	Prev response	9.18	*% change	2.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	9.18	9.33	0.984
				Average Correction Factor	

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	8.09	8.05	1.005
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.05	Prev response	8.09	*% change	-0.5%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

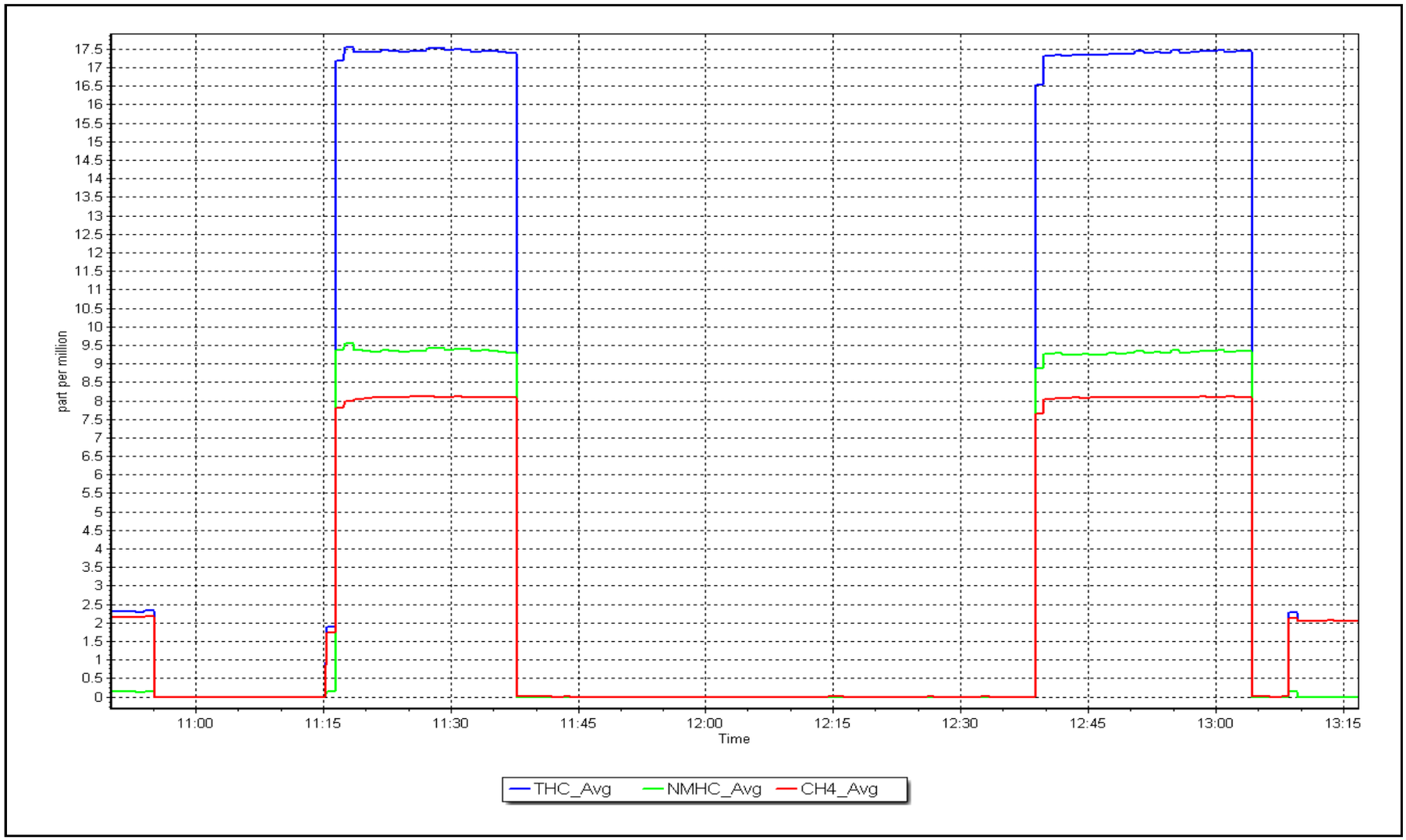
Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	8.09	8.10	0.998
				Average Correction Factor	

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	0.999310	
THC Cal Offset:	0.016545	
CH4 Cal Slope:	1.001042	
CH4 Cal Offset:	-0.005928	
NMHC Cal Slope:	0.997823	
NMHC Cal Offset:	0.022073	

Calibration Performed By: Rene Chamberland

NMHC Calibration Plot Date: July 29, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay
Station number:	AMS 01
Calibration Date:	July 8, 2025
Last Cal Date:	June 6, 2025
Start time (MST):	11:09
End time (MST):	15:58
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	CC335700	Cal Gas Expiry Date:	September 1, 2032
NOX Cal Gas Conc:	59.40 ppm	NO Cal Gas Conc:	59.20 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	59.40 ppm	Removed Gas NO Conc:	59.20 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	3565
ZAG make/model:	Teledyne API T701	Serial Number:	146

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-1.4	-1.8	0.4	----	----
AF High point	4932	67.6	803.1	800.4	2.7	791.8	779.1	12.8	1.0125	1.0250
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 806.8 ppb	NO = 802.3 ppb
Baseline Corr 1st pt	NO_X = 793.2 ppb	NO = 780.9 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	*Percent Change	NO_X = -1.7%
As found	NO r^2:	*Percent Change	NO = -2.7%
As found	NO_2 r^2:	Nx Sl:	Nx Int:
		NO Sl:	NO Int:
		NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Teledyne API T200 Serial Number: 7117

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.190	1.191	NO bkgnd or offset:	-3.1	-3.1
NOX coeff or slope:	1.197	1.193	NOX bkgnd or offset:	-2.9	-2.9
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	8.2	8.2

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.004708	1.003085
NO_X Cal Offset:	-0.080000	-0.060000
NO Cal Slope:	1.004232	1.003161
NO Cal Offset:	-1.500000	-1.300000
NO_2 Cal Slope:	1.002436	1.002345
NO_2 Cal Offset:	1.555533	1.862876

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.4	0.3	----	----
High point	4932	67.6	803.1	800.4	2.7	805.3	802.4	2.9	0.9973	0.9975
Mid point	4966	33.8	401.5	400.2	1.4	403.3	398.7	4.6	0.9956	1.0037
Low point	4983	16.9	200.8	200.1	0.7	201.0	199.2	1.8	0.9989	1.0045
As left zero	5000	0.0	0.0	0.0	0.0	0.7	0.6	0.2	----	----
As left span	4932	67.6	803.1	390.4	412.7	807.5	390.4	417.2	0.9945	1.0000
							Average Correction Factor		0.9973	1.0019

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.3	----	----
High GPT point	799.8	402.9	399.6	401.3	0.9958	100.4%
Mid GPT point	799.8	603.0	199.5	203.6	0.9799	102.1%
Low GPT point	799.8	703.8	98.7	101.7	0.9705	103.0%
				Average Correction Factor	0.9821	101.8%

Notes: Changed the inlet filter after as founds. Adjusted the span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

NO_X Calibration Summary

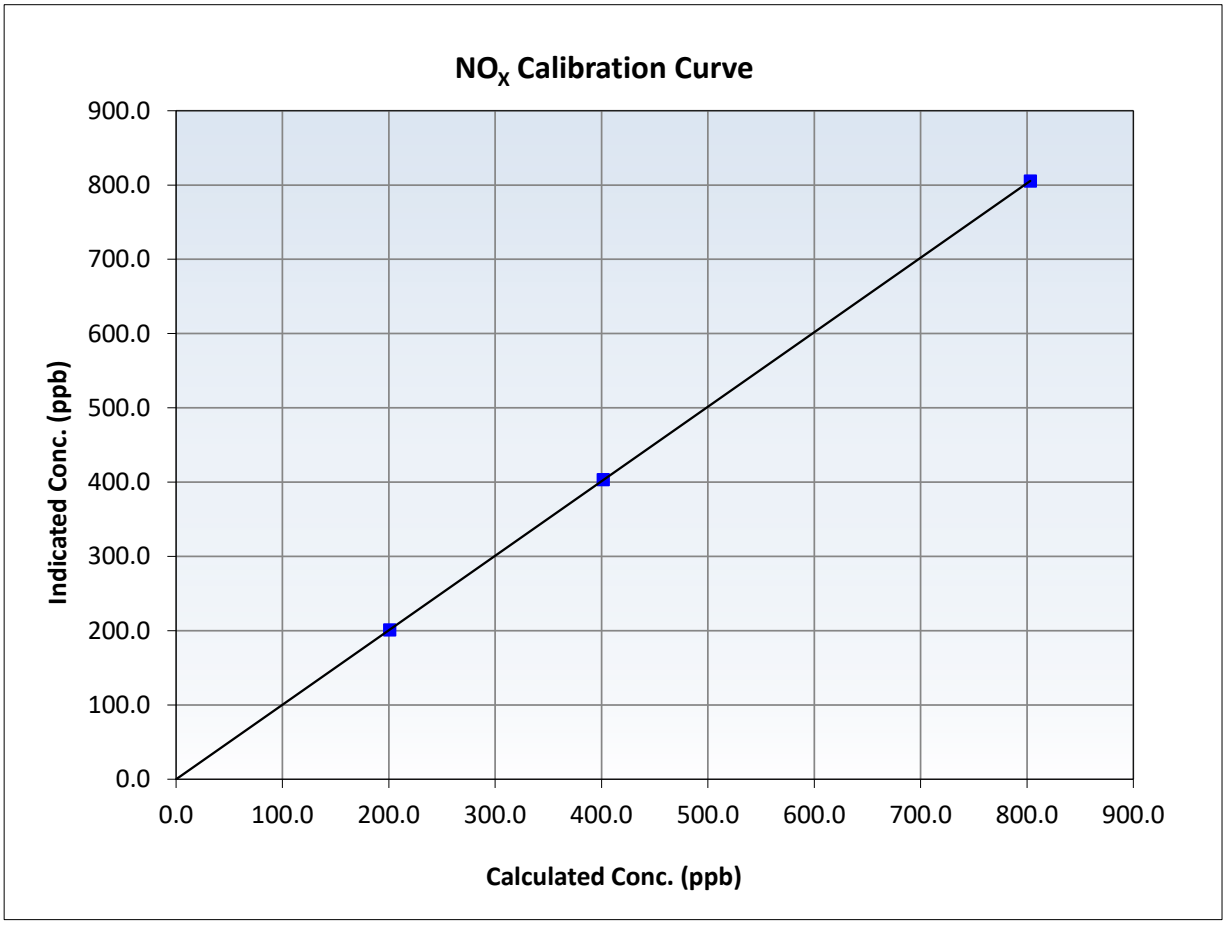
Station Information

Calibration Date:	July 8, 2025	Previous Calibration:	June 6, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:09	End Time (MST):	15:58
Analyzer make:	Teledyne API T200	Analyzer serial #:	7117

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
803.1	805.3	0.9973
401.5	403.3	0.9956
200.8	201.0	0.9989

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	1.003085	*0.90 - 1.10*
Intercept	-0.060000	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

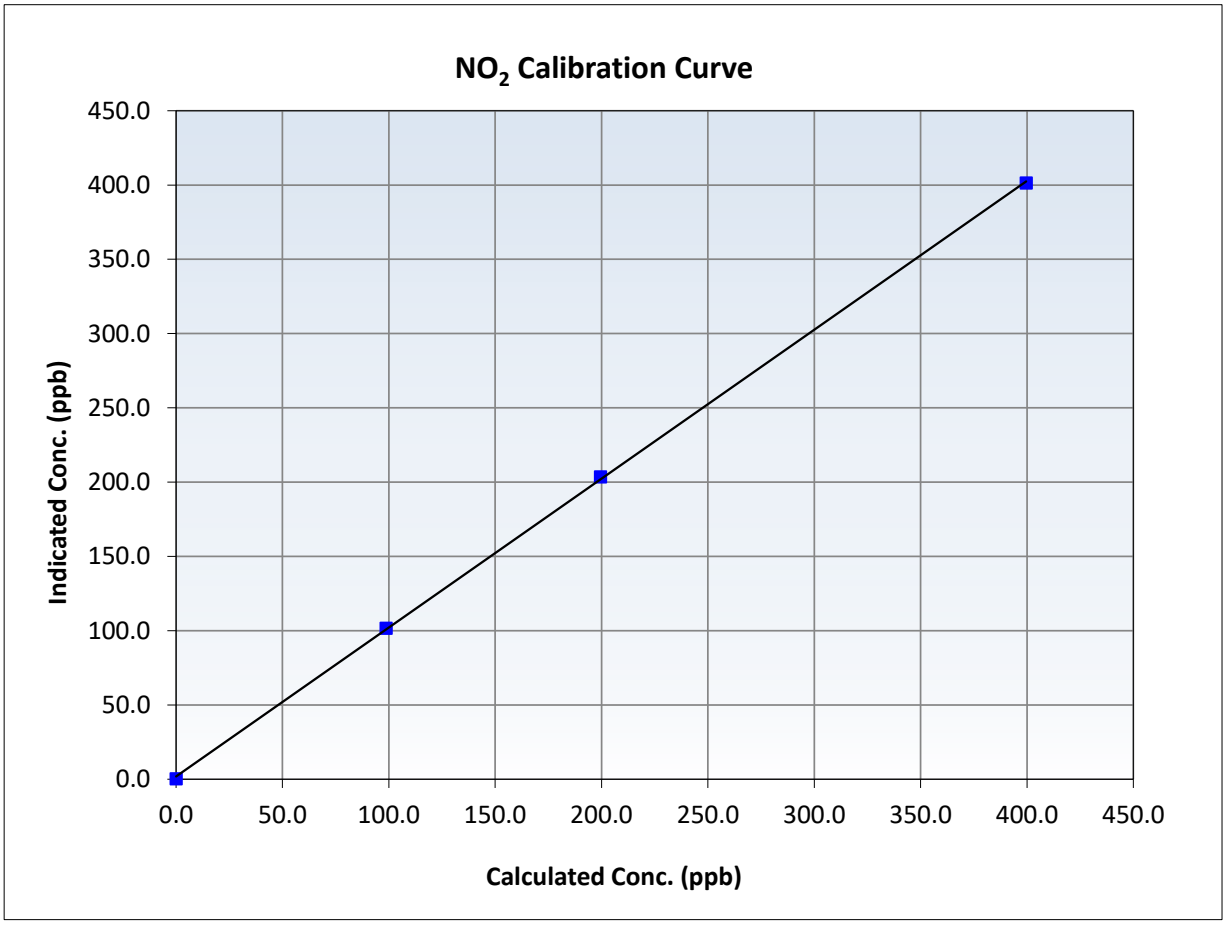
Station Information

Calibration Date:	July 8, 2025	Previous Calibration:	June 6, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:09	End Time (MST):	15:58
Analyzer make:	Teledyne API T200	Analyzer serial #:	7117

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.3	----
399.6	401.3	0.9958
199.5	203.6	0.9799
98.7	101.7	0.9705

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999914	*≥0.995*
Slope	1.002345	*0.90 - 1.10*
Intercept	1.862876	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

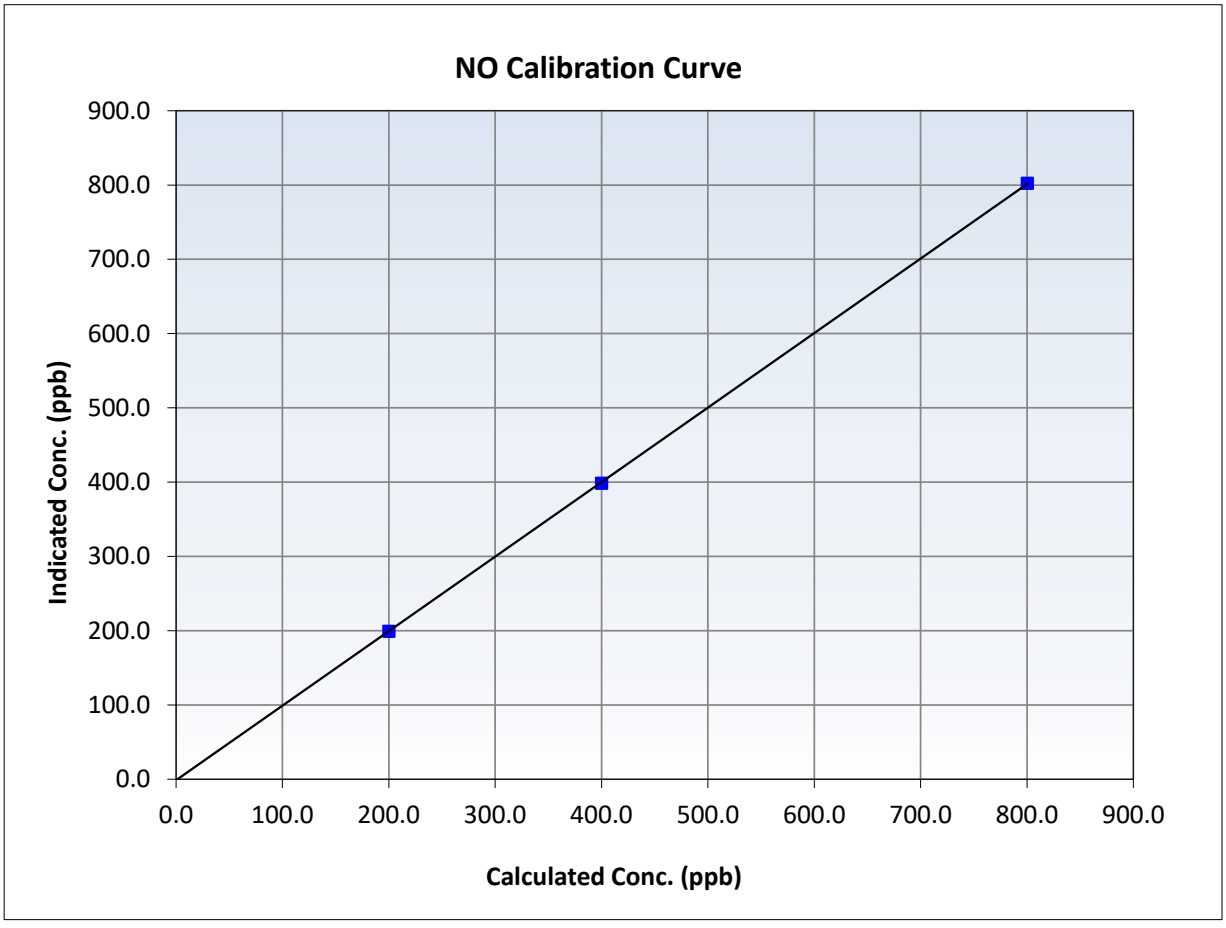
Station Information

Calibration Date:	July 8, 2025	Previous Calibration:	June 6, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:09	End Time (MST):	15:58
Analyzer make:	Teledyne API T200	Analyzer serial #:	7117

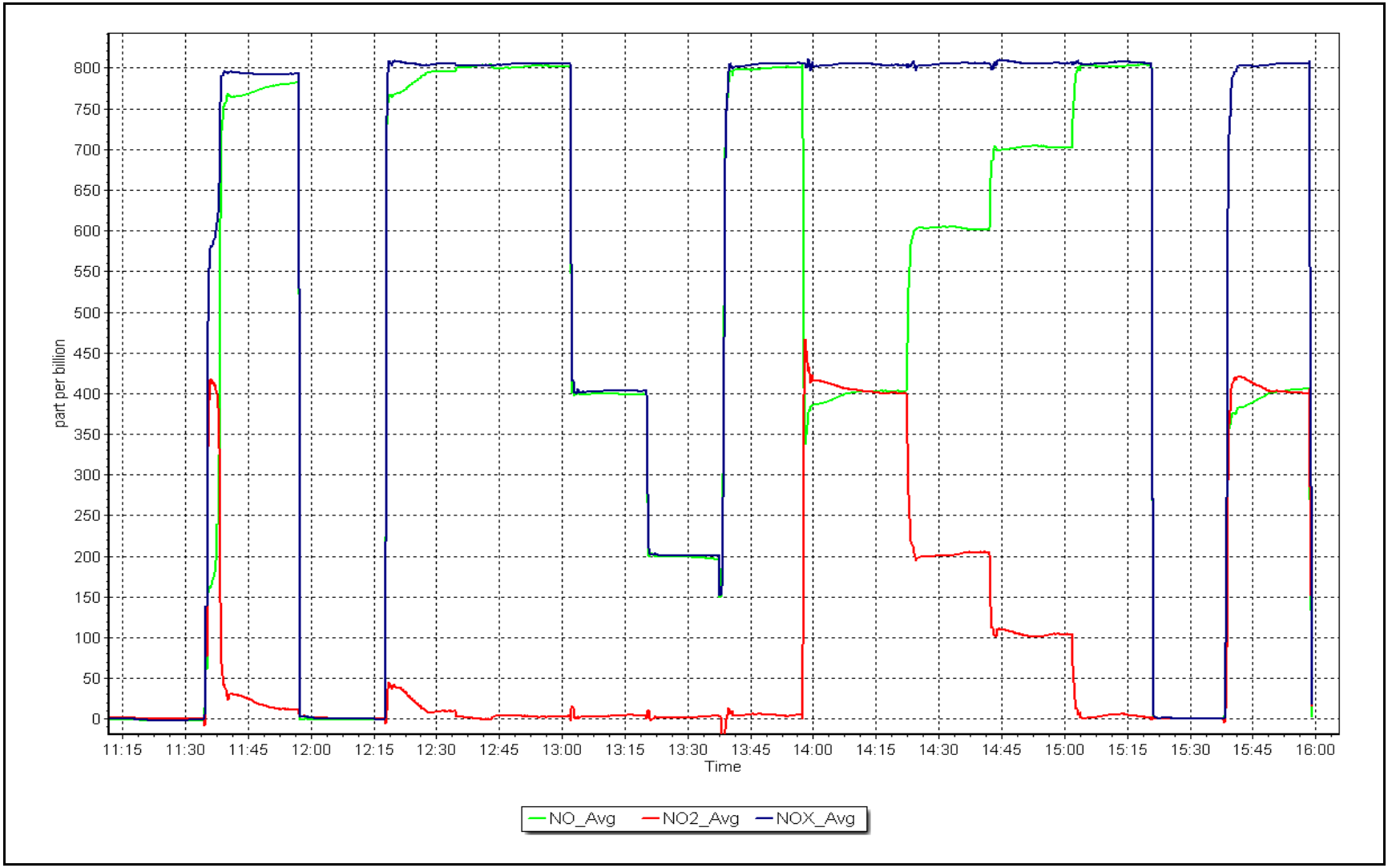
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.4	----
800.4	802.4	0.9975
400.2	398.7	1.0037
200.1	199.2	1.0045

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999990	*≥0.995*
Slope	1.003161	*0.90 - 1.10*
Intercept	-1.300000	*+/-20*



NO_X Calibration Plot Date: July 8, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
Calibration Date:	July 4, 2025	Last Cal Date:	June 3, 2025
Start time (MST):	11:16	End time (MST):	14:02
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	Teledyne API T700	Serial Number:	3565
ZAG Make/Model:	Teledyne API T701	Serial Number:	146

Analyzer Information

Analyzer make:	Teledyne API T400	Analyzer serial #:	1107
Analyzer Range	0 - 500 ppb		

	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.007286	1.004457	Backgd or Offset:	6.4	6.4
Calibration intercept:	0.300000	0.020000	Coeff or Slope:	1.013	1.013

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	5000	863.1	400.0	402.6	0.993
As found Mid point					
As found Low point					
Baseline Corr As found:	402.8	Previous response	403.2	*% change	-0.1%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	5000	863.1	400.0	401.5	0.996
Mid point	5000	744.0	200.0	201.6	0.992
Low point	5000	651.7	100.0	100.3	0.997
As left zero	5000	0.0	0.0	0.0	----
As left span	5000	863.1	400.0	405.9	0.985
				Average Correction Factor	0.995

Notes: Changed the inlet filter after as founds. No adjustments made.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

O_3 Calibration Summary

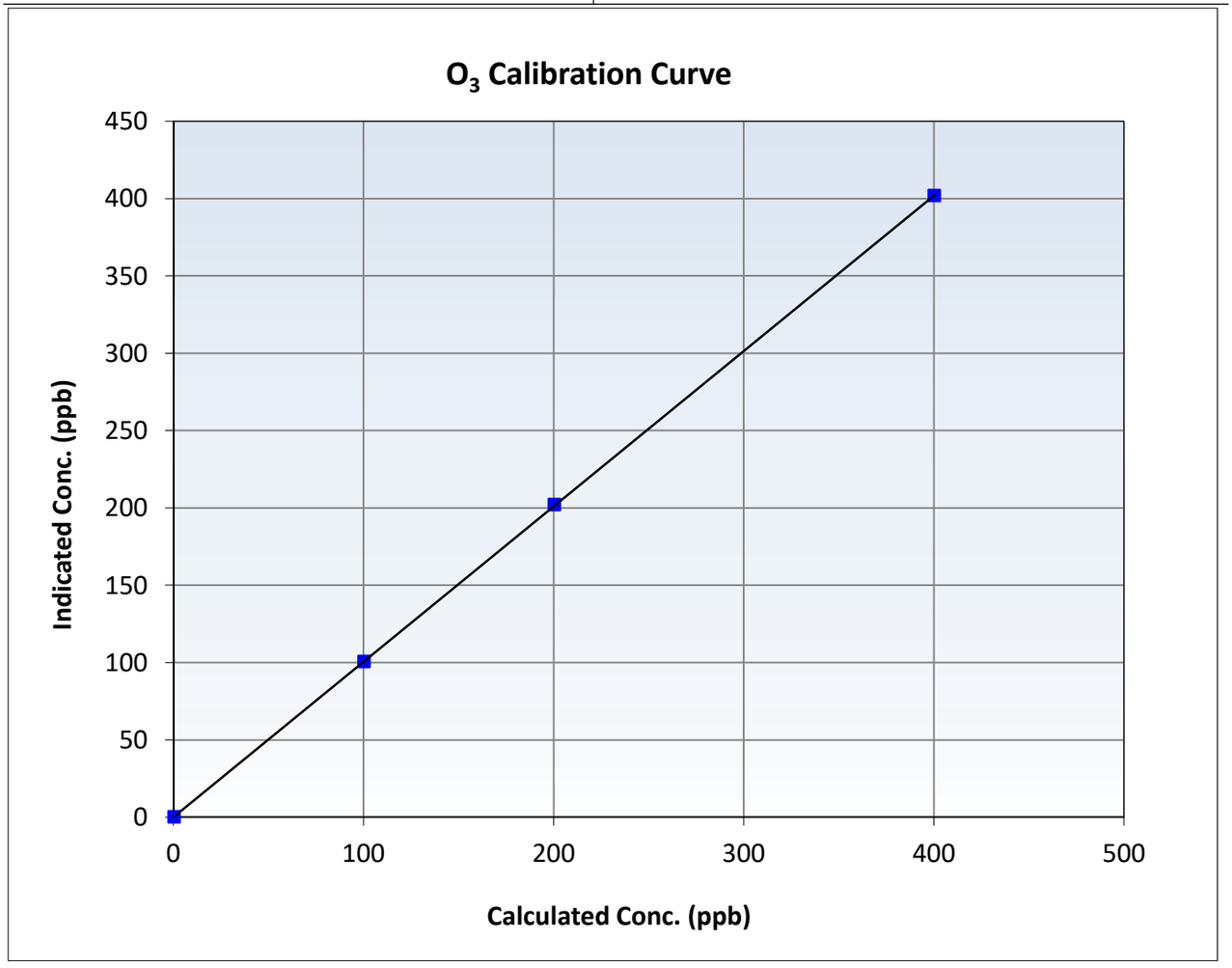
Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 3, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:16	End Time (MST):	14:02
Analyzer make:	Teledyne API T400	Analyzer serial #:	1107

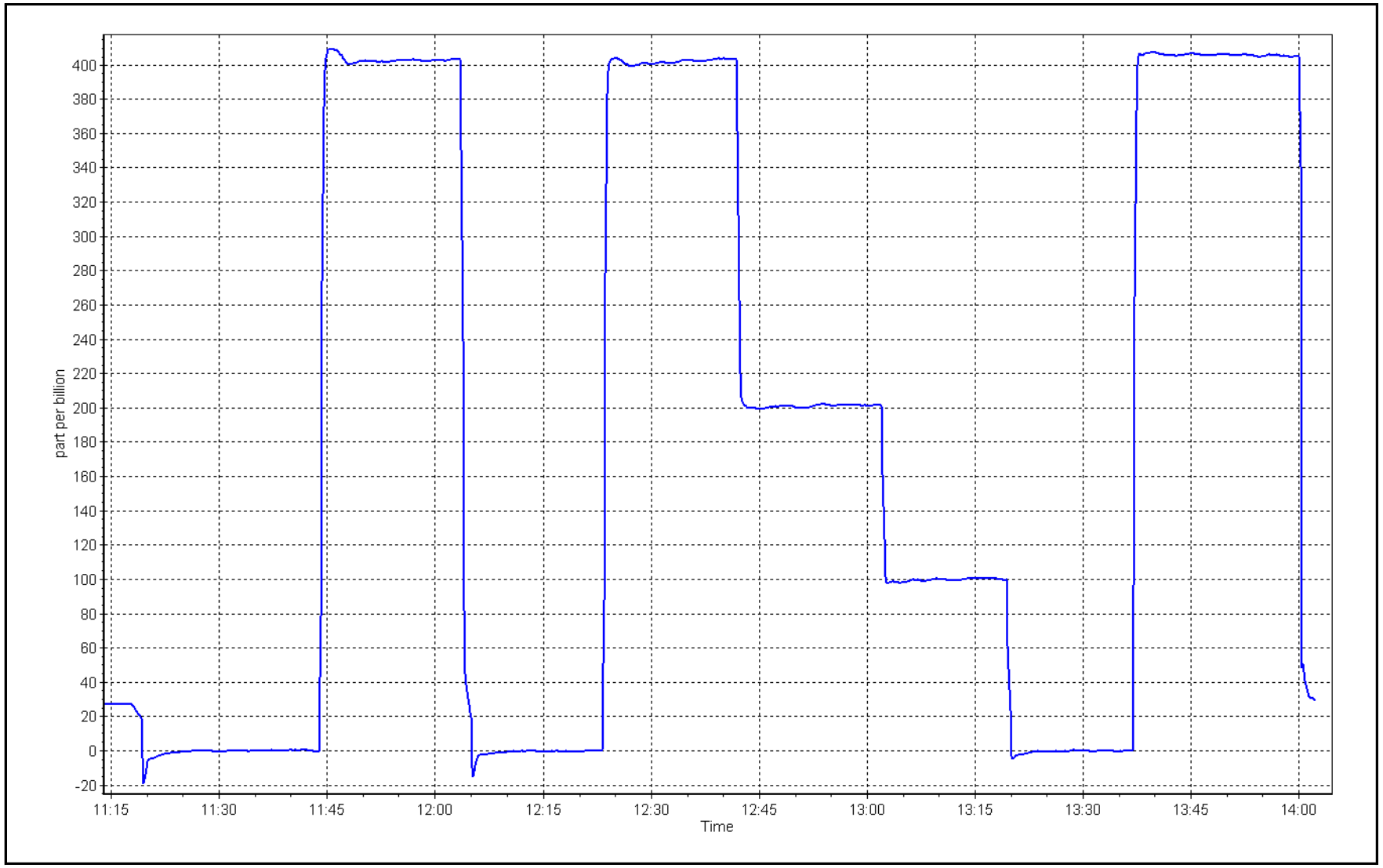
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
400.0	401.5	0.9963
200.0	201.6	0.9921
100.0	100.3	0.9970

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999993	*≥0.995*
Slope	1.004457	*0.90 - 1.10*
Intercept	0.020000	*+/- 5*



O_3 Calibration Plot Date: July 4, 2025 Location: Bertha Ganter-Fort McKay



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Fort McKay - Bertha Ganter	Station number:	AMS 01
Calibration Date:	July 14, 2025	Last Cal Date:	June 25, 2025
Start time (MST):	11:30	End time (MST):	12:12
Analyzer Make:	Teledyne API T640	S/N:	322
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388752
Temp/RH standard:	Alicat FP-25BT	S/N:	388752

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (^{o}C)	17.6	16.6	17.6	☐	+/- 2 ^{o}C
P (mmHg)	740.6	743.14	740.6	☐	+/- 10 mmHg
Flow (LPM)	5.07	5.127	5.07	☐	+/- 0.25 LPM
PW% (pump)	46		46	☐	>80%
Zero Verification	PM w/o HEPA:	4.1	PM w/ HEPA:	4.1	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: June 10, 2024 — Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	10.9 +/- 0.5

Date Optical Chamber Cleaned: May 14, 2025

Date Disposable Filter Changed: May 14, 2025

Post- maintenance Zero Verification: PM w/ HEPA: _____ <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: October 24, 2024

Date RH/T Sensor Cleaned: May 14, 2025

Notes: Flow, temperature, and pressure were verified. Leak check passed.

Calibration by: Rene Chamberland

Wood Buffalo Environmental Association

Nt - NOX - NH3 Calibration Report

Station Information

Station Name:	Bertha Ganter-Fort McKay	Station number:	AMS 01
NOX Cal Date:	July 10, 2025	Last Cal Date:	June 26, 2025
Start time (MST):	11:18	End time (MST):	15:43
NH3 Cal Date:	July 11, 2025	Last Cal Date:	June 26, 2025
Start time (MST):	11:10	End time (MST):	14:15
Reason:	Routine		

Calibration Standards

NOX Cal Gas Conc:	59.40	ppm	NO Gas Cylinder #:	CC335700
NO Cal Gas Conc:	59.20	ppm	NO Cal Gas Expiry:	September 1, 2032
Removed NOX Conc:	59.40	ppm	Removed Cylinder #:	NA
Removed NO Conc:	59.20	ppm	Removed cyl Expiry:	NA
NOX gas Diff:			NO gas Diff:	
NH3 Cal Gas Conc:	77.80	ppm	NH3 Gas Cylinder #:	CC711249
			NH3 Cal Gas Expiry:	December 31, 2025
Removed NH3 Conc:	77.80	ppm	Removed Cylinder #:	NA
NH3 gas Diff:			Removed cyl Expiry:	NA
Calibrator Model:		API T700	Serial Number:	3565
ZAG make/model:		API T701	Serial Number:	146

Analyzer Information

Analyzer model:	API T201		Analyzer serial #:	475
Converter model:	API T501		Converter serial #:	824
NH3 Range (ppb):	0 - 2000 ppb		Reaction cell Press:	4.90
NOX Range (ppb):	0 - 1000 ppb		Sample Flow:	530

	Start	*Finish*		*Start*	*Finish*
NO coefficient:	1.073	1.048	Nt coefficient:	1.080	1.063
NOX coefficient:	1.073	1.053	NO bkgrnd:	-3.0	-3.0
NO2 coefficient:	1.000	1.000	NOX bkgrnd:	-2.8	-2.8
NH3 coefficient:	0.978	0.978	Nt bkgrnd:	-1.9	-1.9

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.999229	1.001221
NO_X Cal Offset:	-3.680000	-3.580000
NO Cal Slope:	1.001491	1.001262
NO Cal Offset:	-3.840000	-4.360000
NO_2 Cal Slope:	0.990395	0.994509
NO_2 Cal Offset:	-1.403149	-1.233420
NH3 Cal Slope:	0.998778	1.000525
NH3 Cal Offset:	0.855341	5.113005
Nt Cal Slope:	1.002337	1.003858
Nt Cal Offset:	1.317737	6.087688

Wood Buffalo Environmental Association

NO_X - NO - NO_2 Calibration Report

NOx / NO / Nt As Found Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	Baseline corr NOx Correction factor (Cc/Ic) *Limit = 0.9 - 1.0*	Baseline corr NO Correction factor (Cc/Ic) *Limit = 0.9 - 1.0*
As found zero	5000	0.0	0.0	0.0	0.0	1.1	0.9	1.6	----	----
As found span	4932	67.6	803.2	800.4	803.2	821.7	818.0	820.3	0.9774	0.9785
AF GPT span	4932	67.6	803.2	-----	803.2	808.0	-----	809.9	0.9940	-----
new NO cyl rp										

Baseline Corr As Fd	Nt =	818.7	ppb	NO_X =	820.6	ppb	NO =	817.1	ppb
Previous Response	Nt =	806.35	ppb	NO_X =	798.9	ppb	NO =	797.8	ppb

**NO_X Δ (NO to GPT response) = -1.7%

* *= > +/-2% difference initiates investigation

*Percent Change	$Nt_{(NO)}$ =	1.5%	
*Percent Change	NO_X =	2.7%	
*Percent Change	NO =	2.4%	

* = > +/-5% change initiates investigation

NOx / NO / Nt Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibration zero	5000	0.0	0.0	0.0	0.0	0.1	0.2	0.1	----	----
High point	4932	67.6	803.1	800.4	803.1	803.0	799.9	802.8	1.0001	1.0006
Mid point	4966	33.8	401.5	400.2	401.5	394.6	392.3	395.7	1.0176	1.0201
Low point	4983	16.9	200.8	200.1	200.8	195.1	192.6	195.0	1.0291	1.0389
								Average Correction Factor	1.0156	1.0199

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Calibration zero	----	----	0.0	-0.1	----	----
High GPT point (400 ppb O3)	797.0	390.1	409.6	406.5	1.0076	99.2%
Mid GPT point (200 ppb O3)	797.0	592.0	207.7	205.4	1.0112	98.9%
Low GPT point (100 ppb O3)	797.0	692.5	107.2	103.8	1.0328	96.8%

Average Correction Factor	1.0172	98.3%

Wood Buffalo Environmental Association
NH_3 - N_T Calibration Report

NH3 As Found Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated Nt concentration (ppb) (Cc)	Calculated NOX concentration (ppb) (Cc)	Calculated NH3 concentration (ppb) (Cc)	Indicated Nt concentration (ppb) (Ic)	Indicated NOX concentration (ppb) (Ic)	Indicated NH3 concentration (ppb) (Ic)	Baseline corr Nt Correction factor (Cc/(Ic-zero)) *Limit = 0.9 - 1.1*	Baseline corr NH3 Correction factor (Cc/(Ic-zero)) *Limit = 0.9 - 1.1*
As found zero	5000	0.0	0.0	0.0	0.0	0.1	0.3	-0.2	----	----
AF High point	2931	69.4	1799.5	----	1799.5	1808.1	----	1802.0	0.995	0.999
AF Mid point							----			
AF Low point							----			
new NH3 cyl rp										

Baseline Corr As Fd	Nt = 1808.0 ppb	NH3 = 1802.2 ppb		*Percent Change	$Nt_{(NH3)}$ = 0.2%
Previous Response	Nt = 1805.1 ppb	NH3 = 1798.2 ppb	* = > +/-5% change initiates investigation	*Percent Change	NH3 = 0.2%

NH3 Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated Nt concentration (ppb) (Cc)	Calculated NOX concentration (ppb) (Cc)	Calculated NH3 concentration (ppb) (Cc)	Indicated Nt concentration (ppb) (Ic)	Indicated NOX concentration (ppb) (Ic)	Indicated NH3 concentration (ppb) (Ic)	Nt Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NH3 Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibration zero	5000	0.0	0.0	0.0	0.0	0.1	0.1	0.0	----	----
High point	2931	69.4	1799.8	----	1799.8	1808.1	----	1802.0	0.995	0.999
Mid point	2961	38.6	1001.0	----	1001.0	1017.2	----	1011.5	0.984	0.990
Low point	2981	19.3	500.5	----	500.5	513.0	----	510.0	0.976	0.981
								Average Correction Factor	0.9851	0.9899

NH3 Previous Converter Efficiency = 97.8 %
NH3 Current Converter Efficiency = 97.8 %

Notes: Changed the inlet filter after as founds. Adjusted the NOx, NO, and NT span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

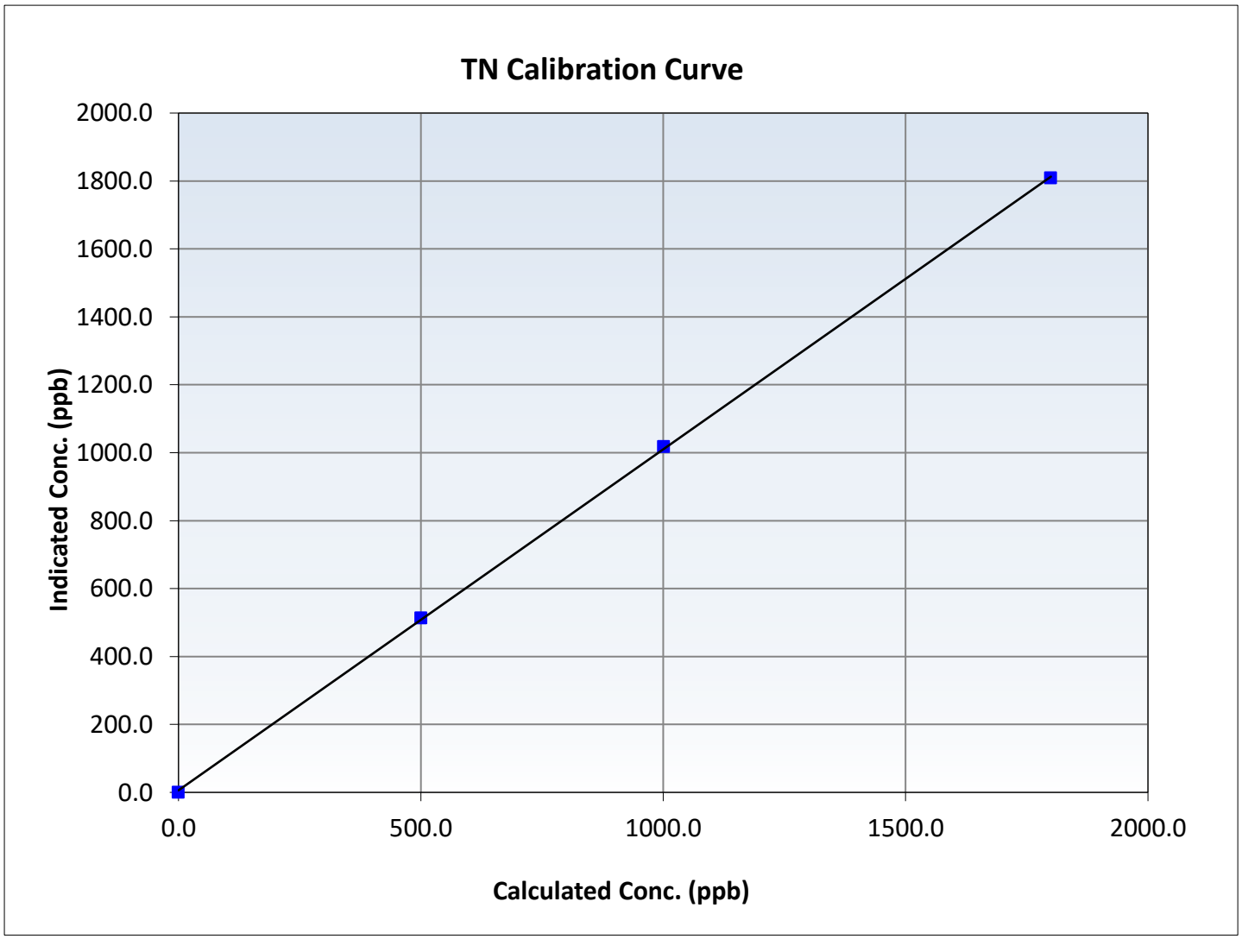
Nt Calibration Summary

Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 26, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:18	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	824

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.1	----	Correlation Coefficient	0.999934	*≥0.995*
1799.8	1808.1	0.9954	Slope	1.003858	*0.90 - 1.10*
1001.0	1017.2	0.9841			
500.5	513.0	0.9757	Intercept	6.087688	*+/-20*



Wood Buffalo Environmental Association

NH_3 Calibration Summary

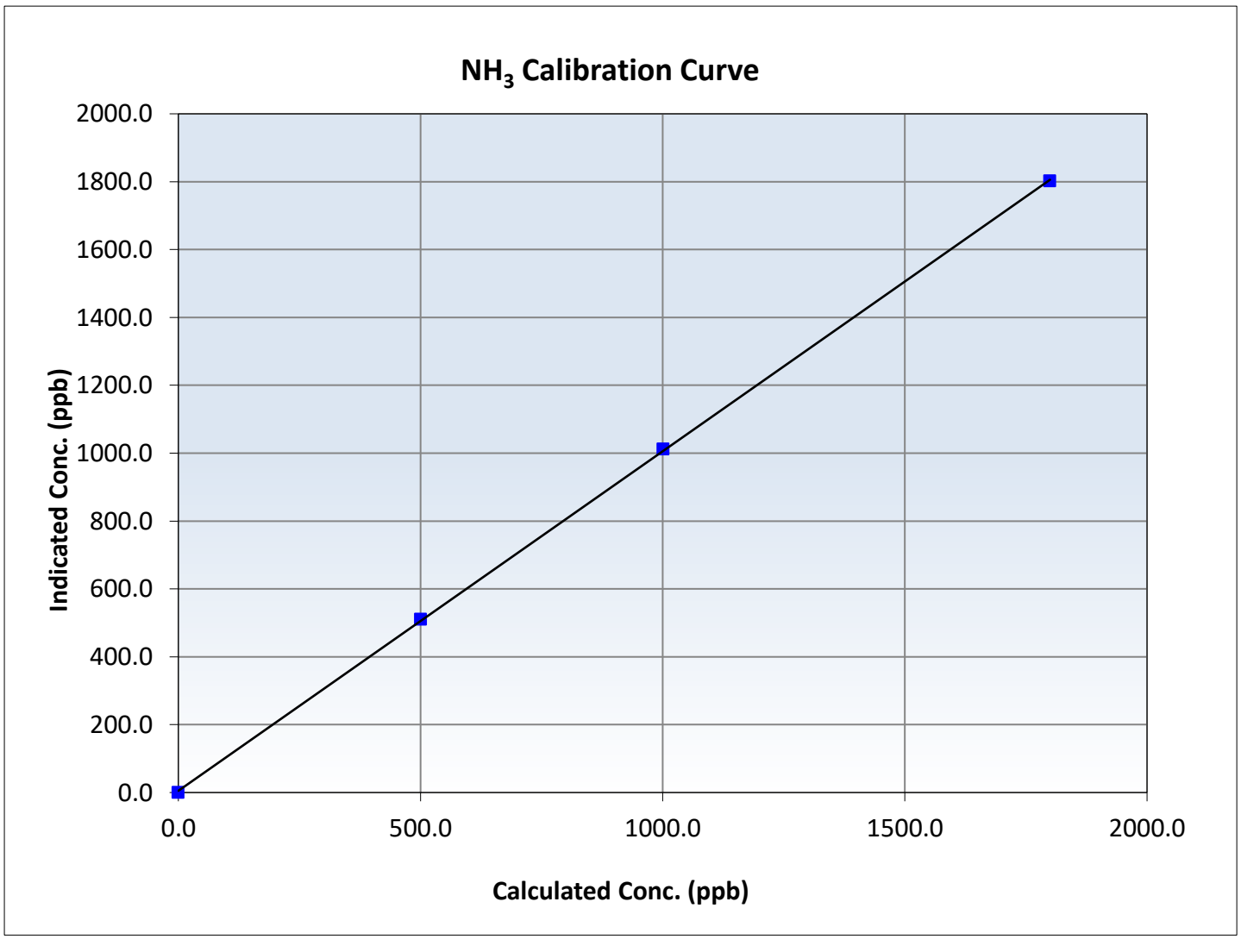
Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 26, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:18	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	824

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
1799.8	1802.0	0.9988
1001.0	1011.5	0.9896
500.5	510.0	0.9814

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999954	*≥0.995*
Slope	1.000525	*0.90 - 1.10*
Intercept	5.113005	*+/-20*



Wood Buffalo Environmental Association

NO_X Calibration Summary

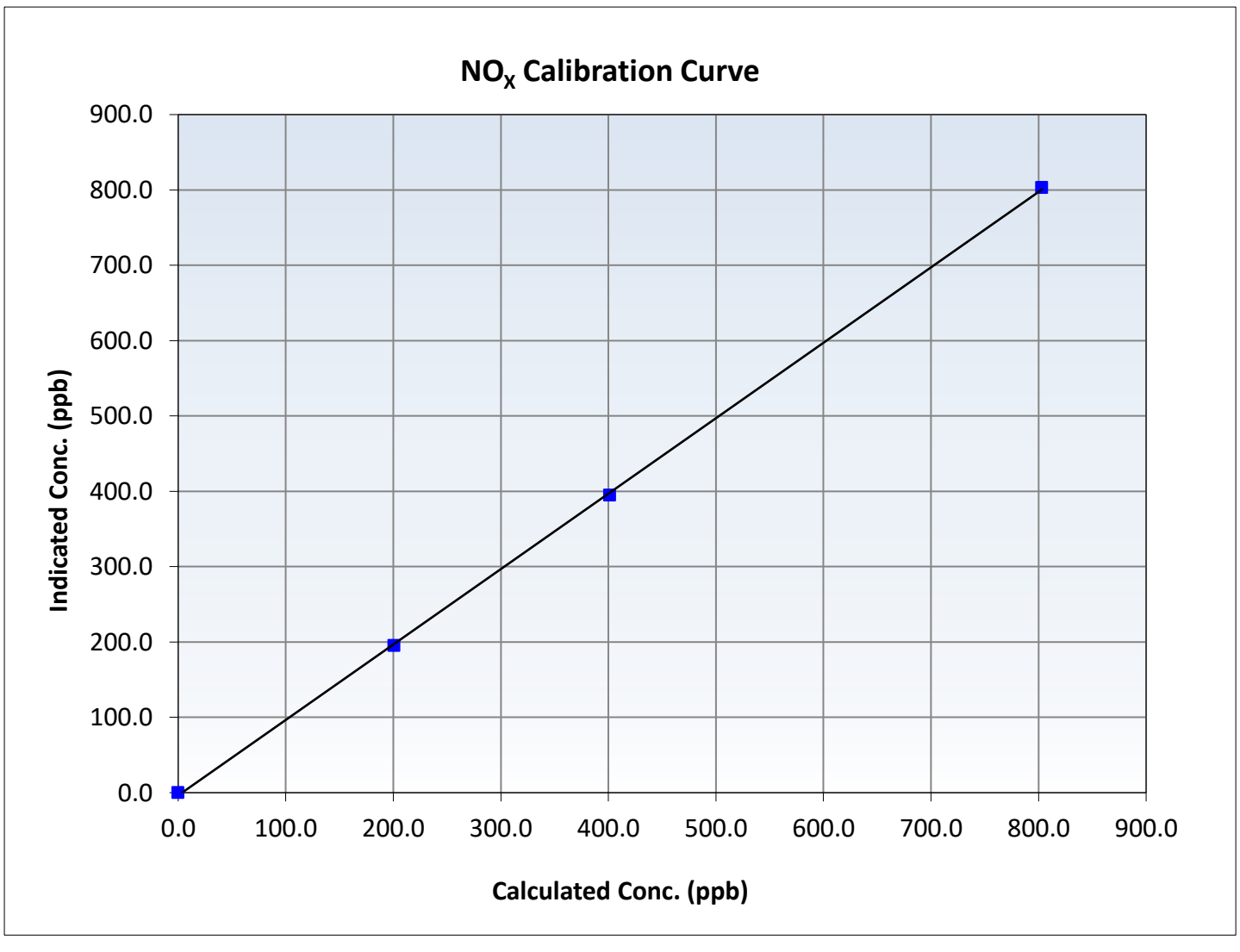
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 26, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:18	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	824

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
803.1	803.0	1.0001
401.5	394.6	1.0176
200.8	195.1	1.0291

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999886	*≥0.995*
Slope	1.001221	*0.90 - 1.10*
Intercept	-3.580000	*+/-20*



Wood Buffalo Environmental Association

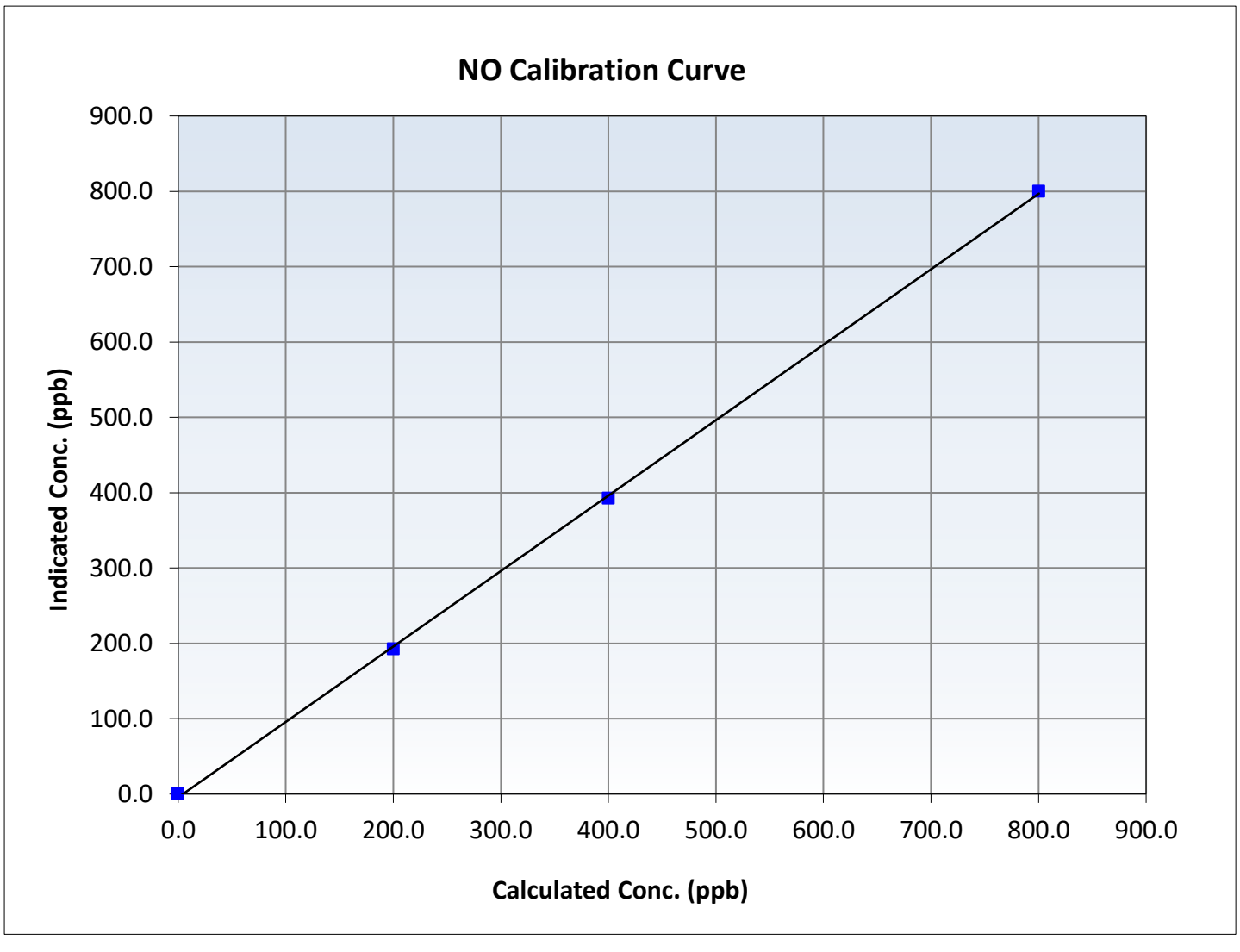
NO Calibration Summary

Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 26, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:18	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	824

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.2	----	Correlation Coefficient	0.999838	*≥0.995*
800.4	799.9	1.0006	Slope	1.001262	*0.90 - 1.10*
400.2	392.3	1.0201			
200.1	192.6	1.0389	Intercept	-4.360000	*+/-20*



Wood Buffalo Environmental Association

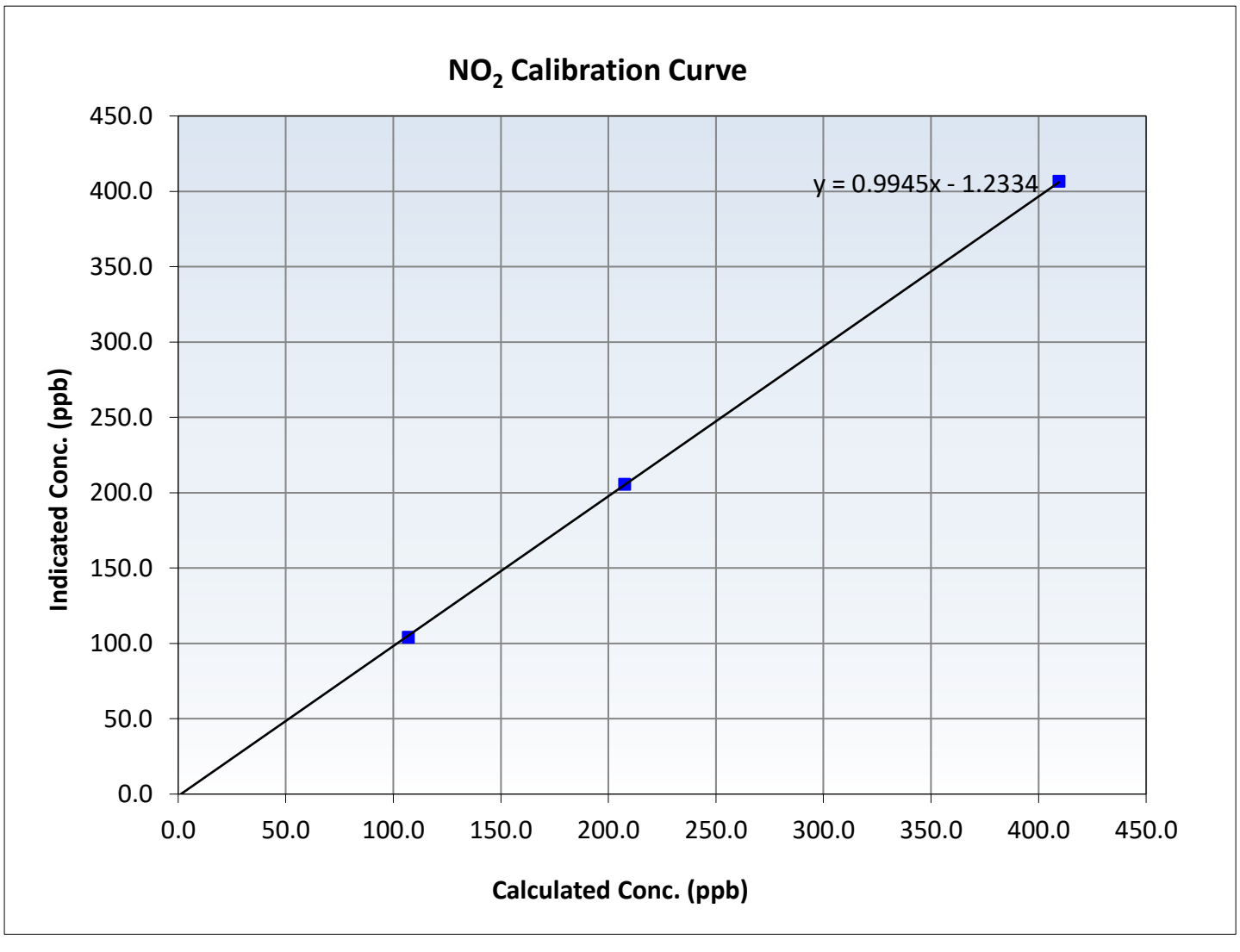
NO_2 Calibration Summary

Station Information

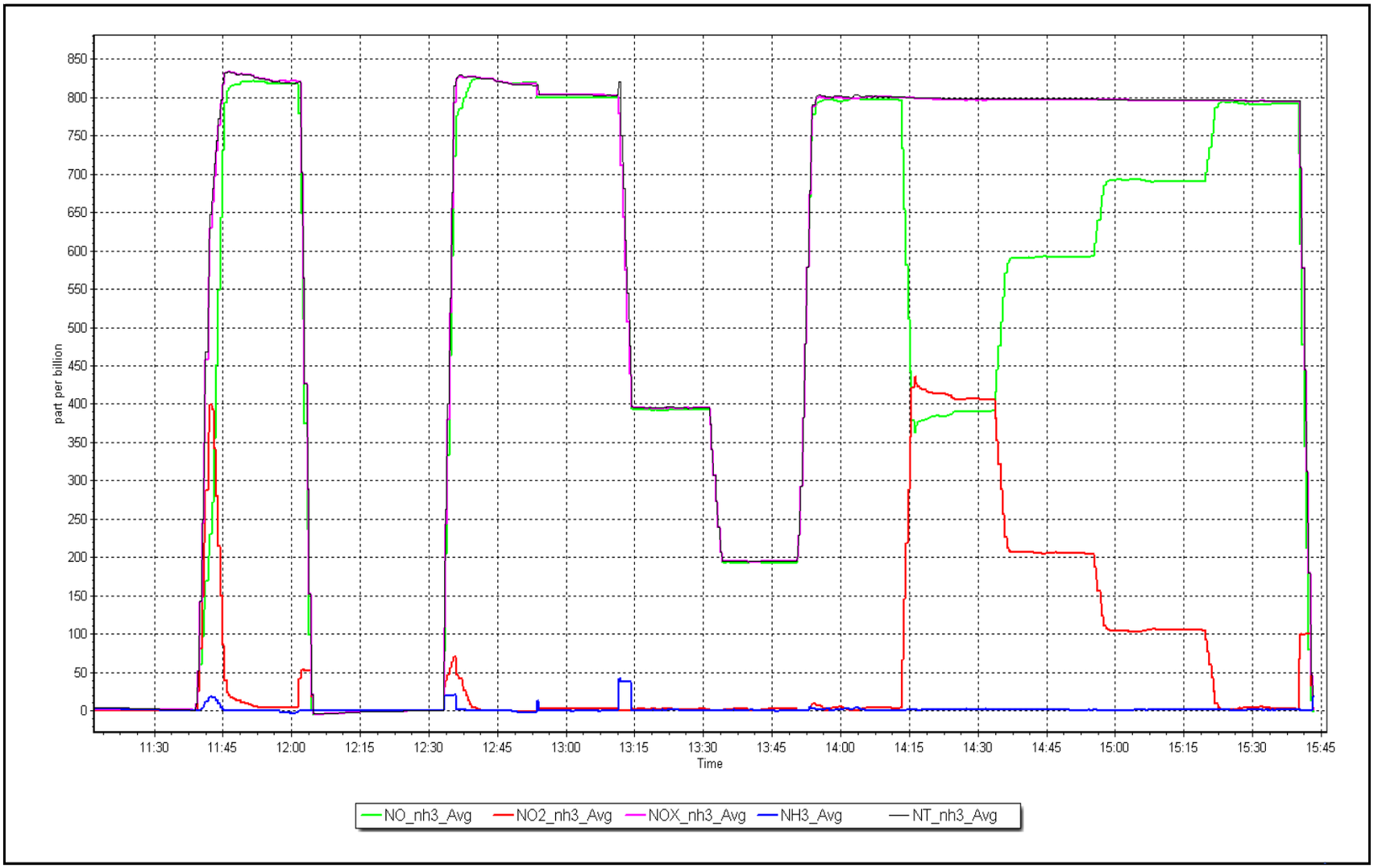
Calibration Date:	July 10, 2025	Previous Calibration:	June 26, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:18	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	824

Calibration Data

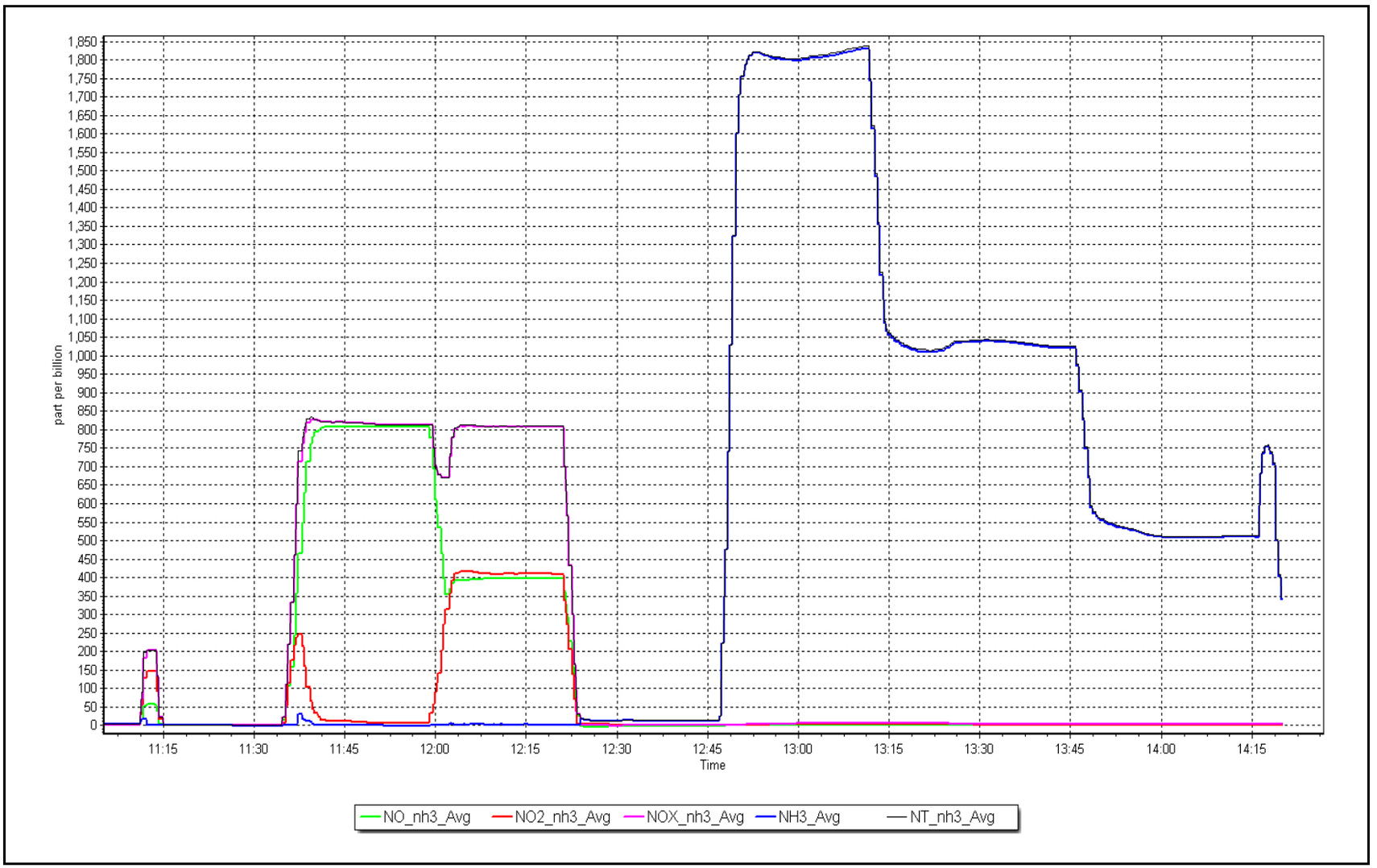
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	-0.1	----	Correlation Coefficient	0.999956	*≥0.995*
409.6	406.5	1.0076	Slope	0.994509	*0.90 - 1.10*
207.7	205.4	1.0112			
107.2	103.8	1.0328	Intercept	-1.233420	*+/-20*



NO_X Calibration Plot Date: July 10, 2025 Location: Bertha Ganter-Fort McKay



NH_3 Calibration Plot Date: July 11, 2025 Location: Bertha Ganter-Fort McKay



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS02
MILDRED LAKE
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Mildred Lake	Station number:	AMS 02
Calibration Date:	July 21, 2025	Last Cal Date:	June 4, 2025
Start time (MST):	9:38	End time (MST):	13:28
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.99	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	EB0112903			
Removed Cal Gas Conc:	50.99	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	1185
Zero Air Gen Model:	Teledyne API T701		Serial Number:	4891

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	JC1404901075	
Analyzer Range:	0-1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.003722	1.001940	Backgd or Offset:	24.0	23.7
Calibration intercept:	-0.730267	-0.631255	Coeff or Slope:	0.769	0.739

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.9	----
As found High point	4913	78.6	803.0	825.0	0.974
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	824.1	Previous response	805.2	*% change	2.3%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4913	78.4	801.0	802.0	0.999
Mid point	4961	39.2	399.8	400.3	0.999
Low point	4980	19.6	199.9	198.4	1.007
As left zero	5000	0.0	0.0	-0.3	----
As left span	4913	78.4	801.0	802.0	0.999
				Average Correction Factor:	1.002

Notes: Changed sample inlet filter after as founds. Adjusted zero and span.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

SO_2 Calibration Summary

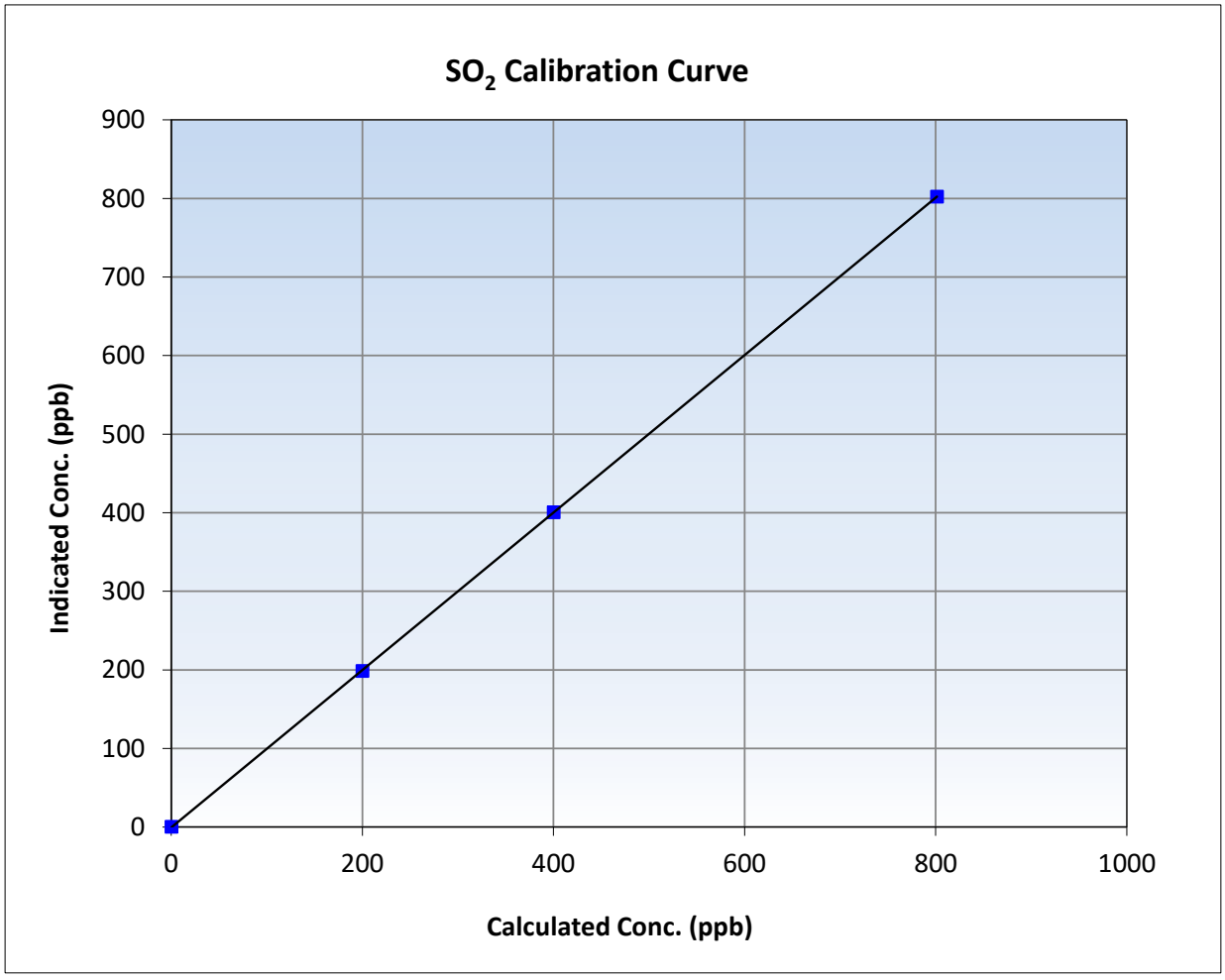
Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 4, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:38	End Time (MST):	13:28
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1404901075

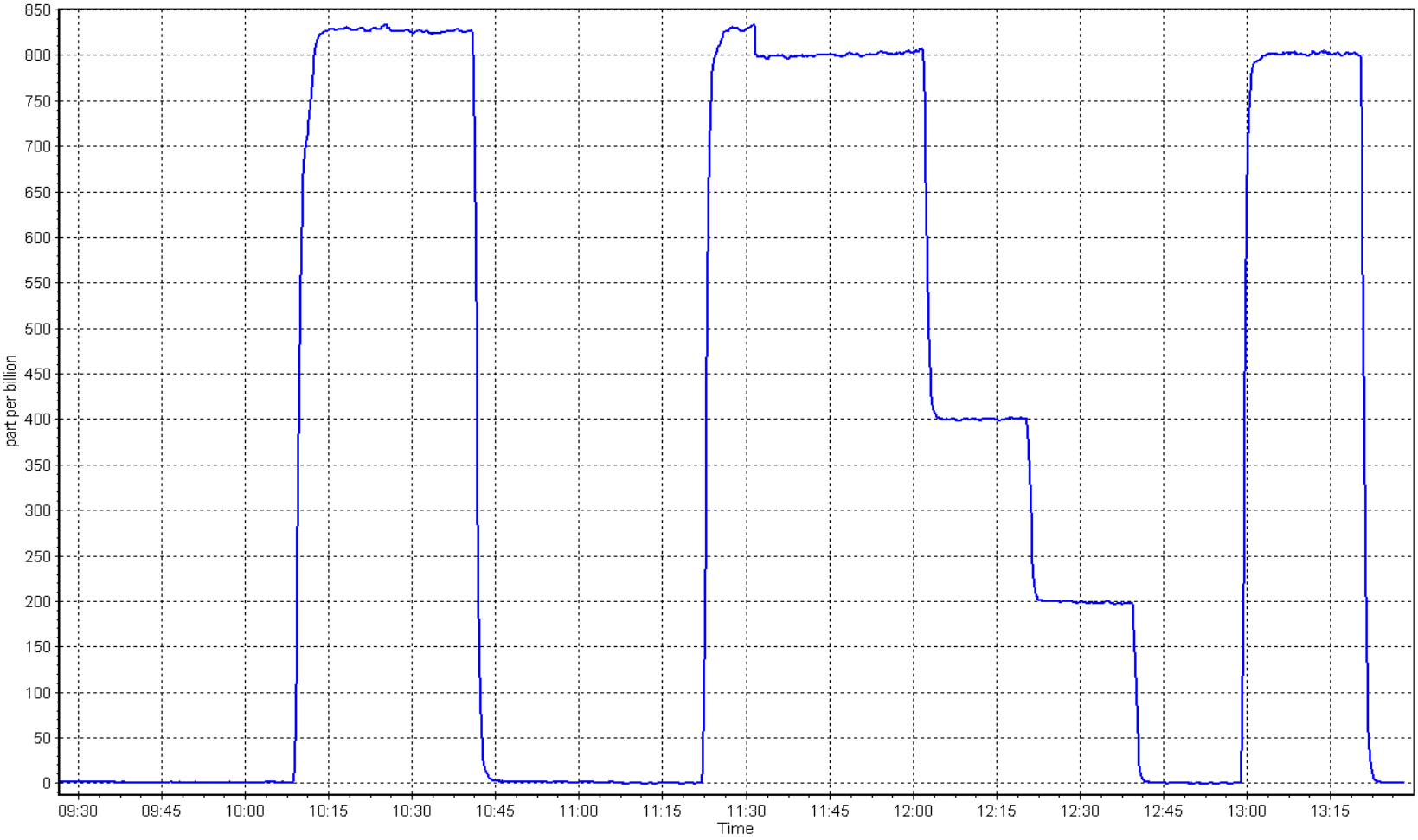
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
801.0	802.0	0.9987
399.8	400.3	0.9987
199.9	198.4	1.0075

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999994	*≥0.995*
Slope	1.001940	*0.90 - 1.10*
Intercept	-0.631255	*+/-30*



SO2 Calibration Plot Date: July 21, 2025 Location: Mildred Lake



Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name:	Mildred Lake	Station number:	AMS 02
Calibration Date:	July 29, 2025	Last Cal Date:	June 25, 2025
Start time (MST):	9:00	End time (MST):	13:40
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.75	ppm	Cal Gas Exp Date:	August 28, 2027
Cal Gas Cylinder #:	CC700774			
Removed Cal Gas Conc:	4.75	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	1185
ZAG Make/Model:	Teledyne API T701		Serial Number:	4891

Analyzer Information

Analyzer make:	Thermo 43iQTL		Analyzer serial #:	12333331546
Converter make:	Global G150		Converter serial #:	2023-267
Analyzer Range	0 - 100 ppb		Converter Temp:	325 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.002125	1.005269	Backgd or Offset:	1.40	1.38
Calibration intercept:	-0.020000	-0.080000	Coeff or Slope:	0.964	0.953

H2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.3	----
As found High point	4916	84.2	80.0	80.6	0.996
As found Mid point	4958	42.1	40.0	40.6	0.992
As found Low point	4979	21.1	20.0	20.3	1.000
New cylinder response					

Baseline Corr As found:	80.3	Prev response:	80.14	*% change:	0.2%
Baseline Corr 2nd AF pt:	40.3	AF Slope:	1.004411	AF Intercept:	0.300000
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999993	* = > +/-5% change initiates investigation	

H2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4916	84.2	80.0	80.3	0.996
Mid point	4958	42.1	40.0	40.2	0.995
Low point	4979	21.1	20.0	20.0	1.000
As left zero	5000	0.0	0.0	-0.1	----
As left span	4916	84.2	80.0	80.4	0.995
SO2 Scrubber Check	4920	80.2	802.0	0.1	----

Date of last scrubber change:	July 16, 2024	Ave Corr Factor	0.997
Date of last converter efficiency test:	NA		

Notes: Changed sample inlet filter after as founds. Adjusted span. Scrubber check completed after calibrator zero point.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

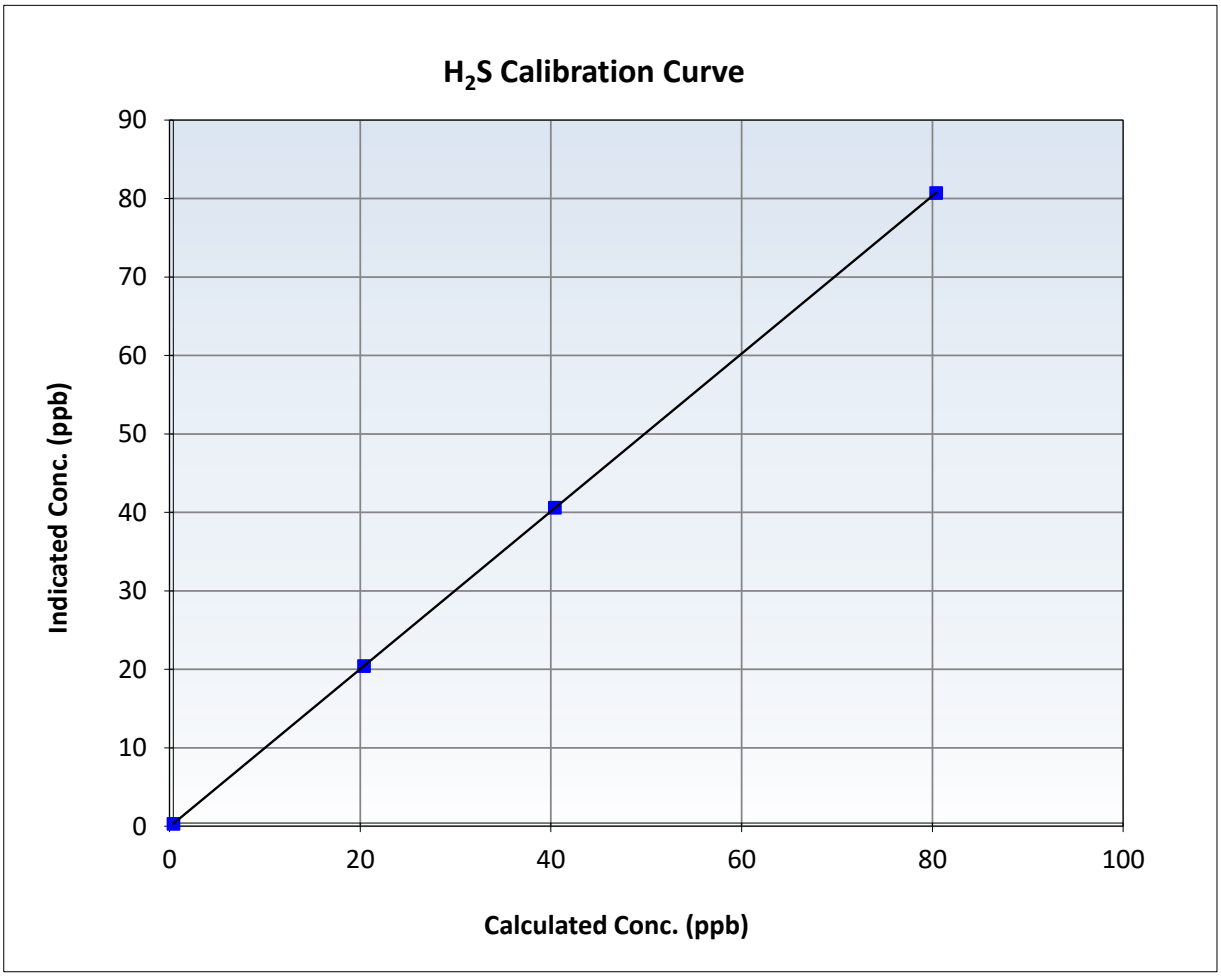
H2S Calibration Summary

Station Information

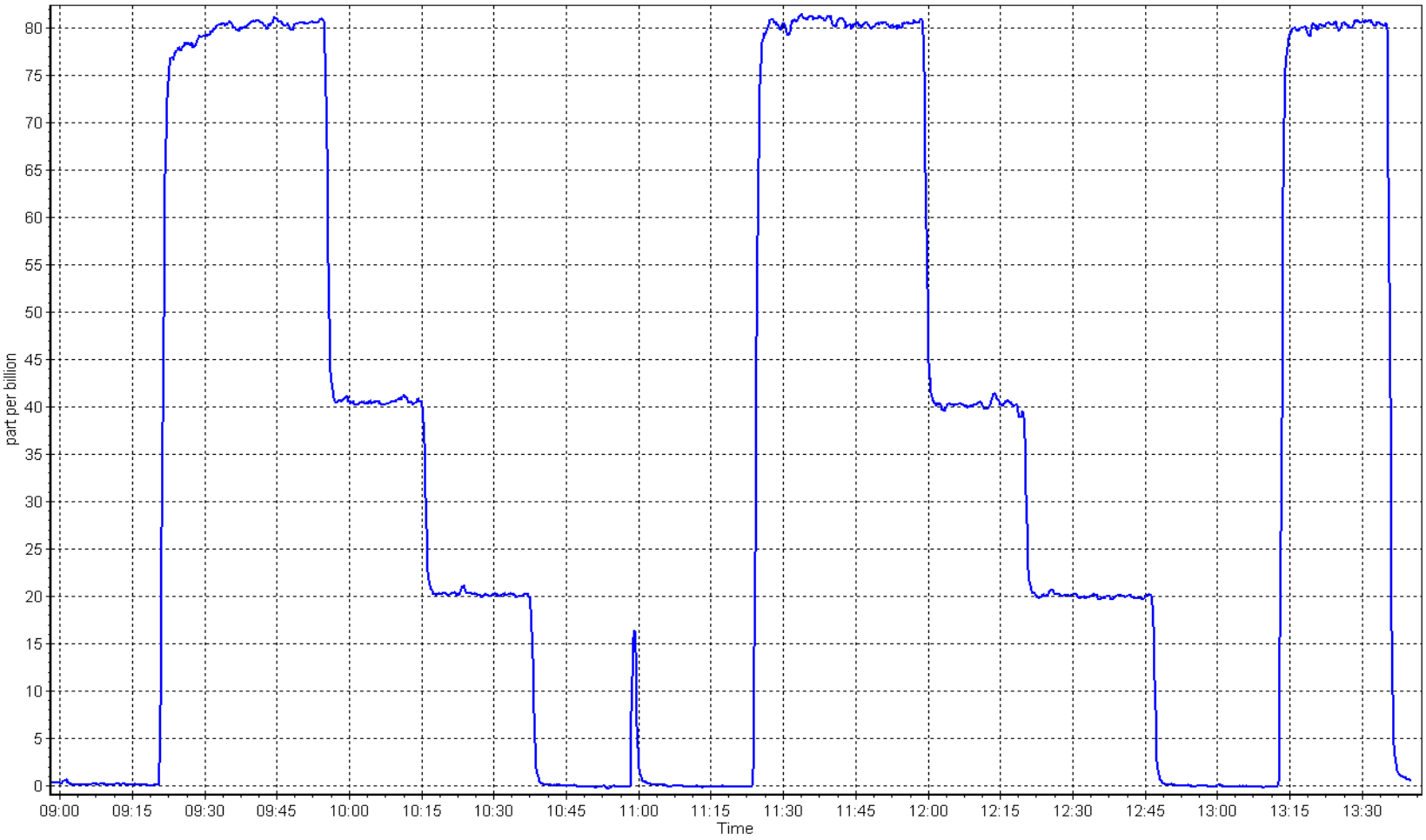
Calibration Date:	July 29, 2025	Previous Calibration:	June 25, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:00	End Time (MST):	13:40
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12333331546

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	-0.1	----	Correlation Coefficient	0.999998	*≥0.995*
80.0	80.3	0.9961	Slope	1.005269	*0.90 - 1.10*
40.0	40.2	0.9949			
20.0	20.0	0.9999	Intercept	-0.080000	*+/-3*



H2S Calibration Plot Date: July 29, 2025 Location: Mildred Lake



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Mildred Lake	Station number:	AMS 02
Calibration Date:	July 21, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	9:38	End time (MST):	13:28
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	EB0112903	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	503.1 ppm	CH4 Equiv Conc.	1067.1 ppm
C3H8 Cal Gas Conc.	205.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	503.1 ppm	CH4 Equiv Conc.	1067.1 ppm
Removed C3H8 Conc.	205.1 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700	Serial Number:	1185
Zero Air Gen model:	Teledyne API T701	Serial Number:	4891

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1180320037
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	3.38E-04	3.82E-04	NMHC SP Ratio:	5.26E-05	6.24E-05
CH4 Retention time:	16.4	16.8	NMHC Peak Area:	168464	141917
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4913	78.4	16.76	15.59	1.075
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	15.59	Prev response	16.71	*% change	-7.2%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	
High point	4913	78.4	16.76	16.76	1.000
Mid point	4961	39.2	8.37	8.28	1.010
Low point	4980	19.6	4.18	4.09	1.023
As left zero	5000	0.0	0.00	0.00	----
As left span	4913	78.4	16.76	16.73	1.002
				Average Correction Factor	1.011

Notes: Changed sample inlet filter after as founds. Adjusted span.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4913	78.4	8.86	8.11	1.092
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.11	Prev response	8.81	*% change	-8.7%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4913	78.4	8.86	8.86	1.000
Mid point	4961	39.2	4.42	4.39	1.008
Low point	4980	19.6	2.21	2.16	1.022
As left zero	5000	0.0	0.00	0.00	----
As left span	4913	78.4	8.86	8.81	1.006
				Average Correction Factor	1.010

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4913	78.4	7.90	7.48	1.057
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.48	Prev response	7.90	*% change	-5.6%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4913	78.4	7.90	7.90	1.000
Mid point	4961	39.2	3.94	3.90	1.012
Low point	4980	19.6	1.97	1.93	1.023
As left zero	5000	0.0	0.00	0.00	----
As left span	4913	78.4	7.90	7.92	0.998
				Average Correction Factor	1.012

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	0.998843	1.001137
THC Cal Offset:	-0.028795	-0.053605
CH4 Cal Slope:	1.001748	1.000855
CH4 Cal Offset:	-0.014363	-0.026777
NMHC Cal Slope:	0.996394	1.001440
NMHC Cal Offset:	-0.014231	-0.026025

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

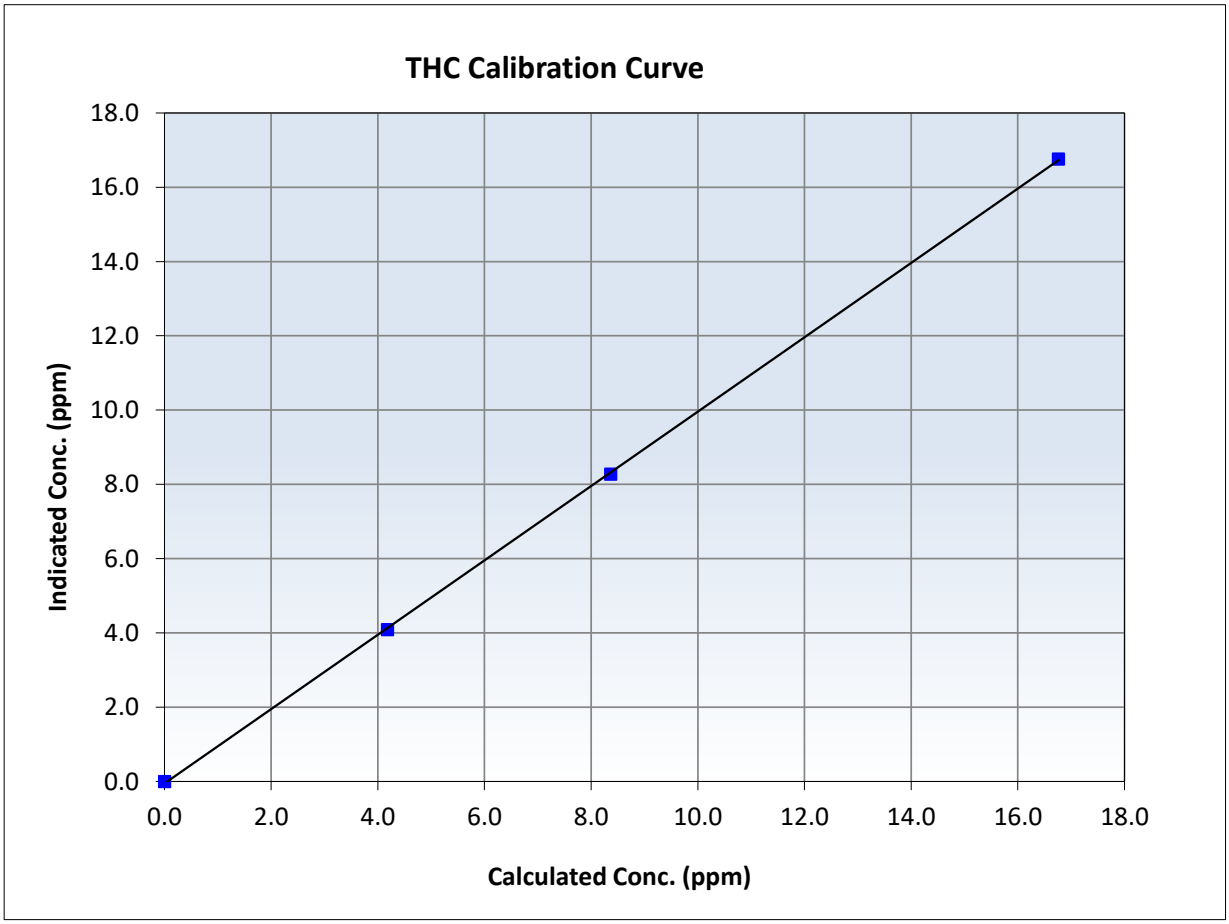
THC Calibration Summary

Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 9, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:38	End Time (MST):	13:28
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320037

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999951	≥0.995
16.76	16.76	1.0002	Slope	1.001137	0.90 - 1.10
8.37	8.28	1.0104			
4.18	4.09	1.0225	Intercept	-0.053605	+/-0.5



Wood Buffalo Environmental Association

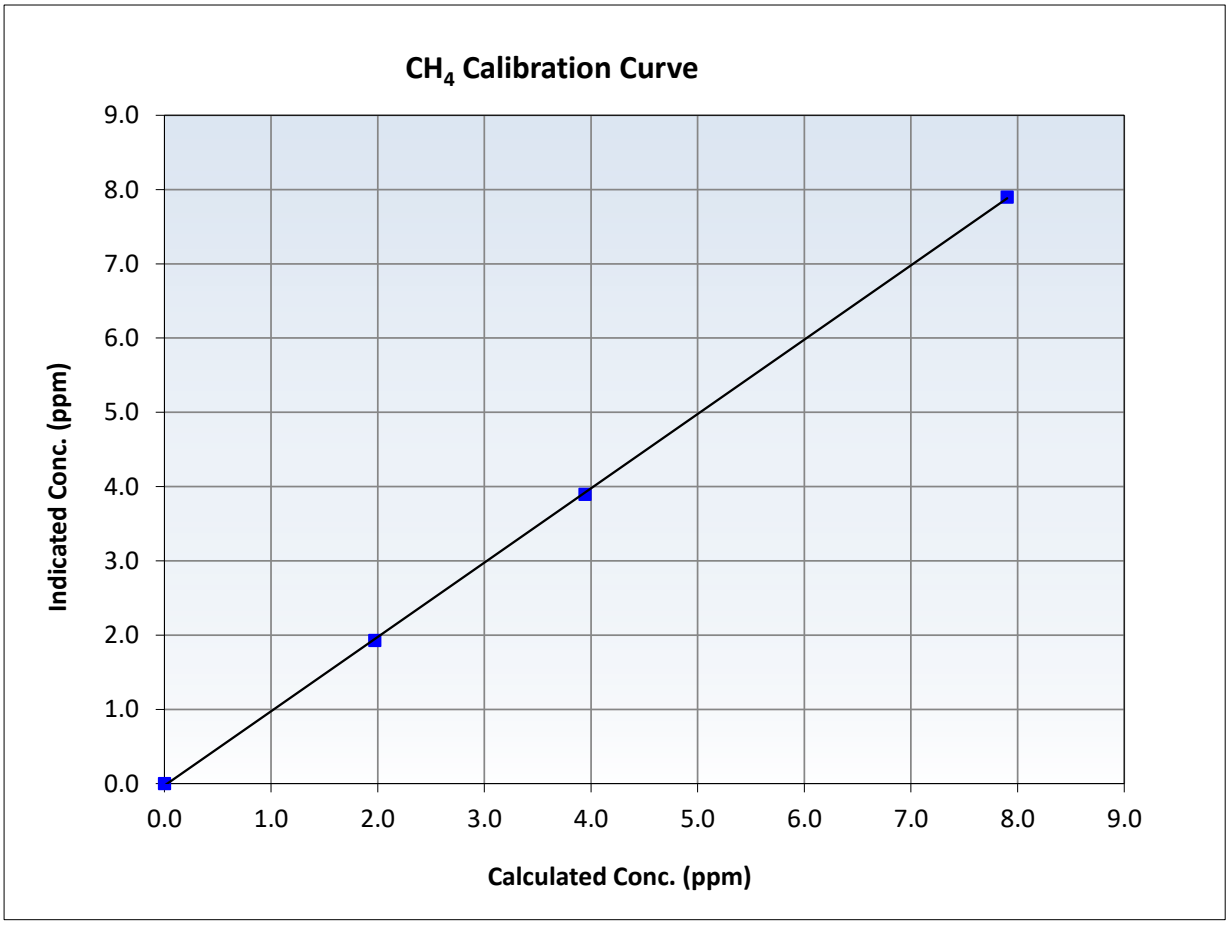
CH_4 Calibration Summary

Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 9, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:38	End Time (MST):	13:28
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320037

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.00	0.00	----	Correlation Coefficient	0.999942	*≥0.995*
7.90	7.90	1.0004	Slope	1.000855	*0.90 - 1.10*
3.94	3.90	1.0124			
1.97	1.93	1.0229	Intercept	-0.026777	*+/-0.5*



Wood Buffalo Environmental Association

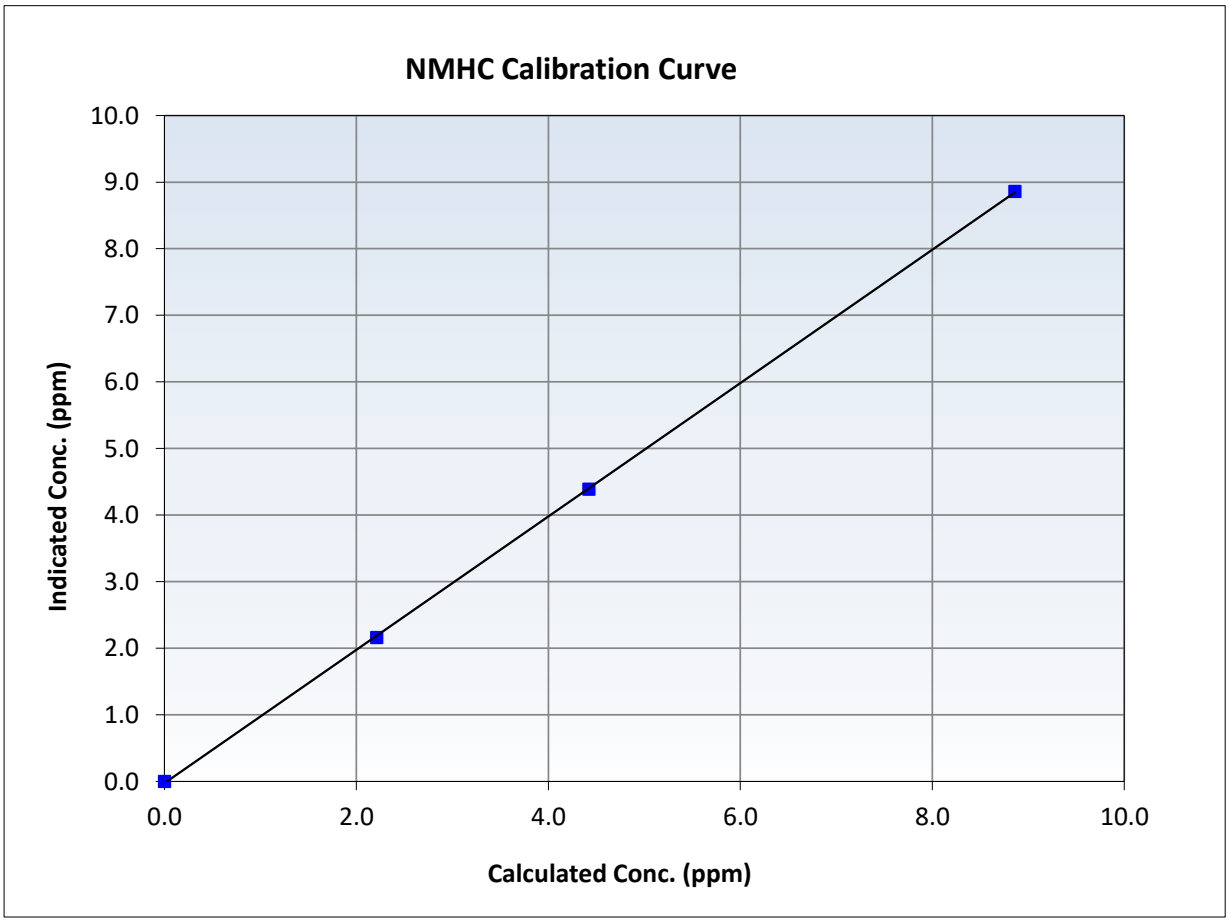
NMHC Calibration Summary

Station Information

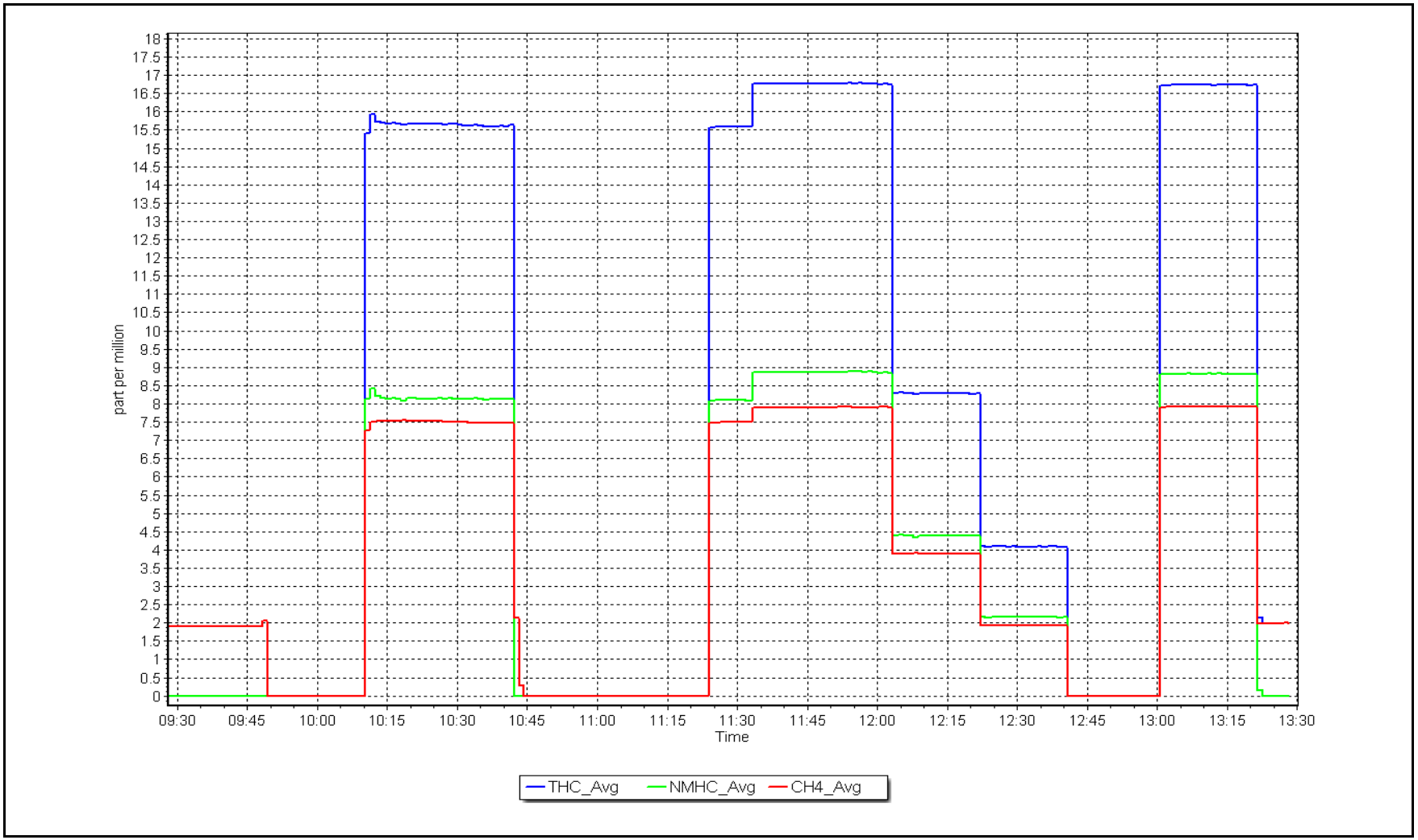
Calibration Date:	July 21, 2025	Previous Calibration:	June 9, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:38	End Time (MST):	13:28
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320037

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999961	≥0.995
8.86	8.86	1.0000	Slope	1.001440	0.90 - 1.10
4.42	4.39	1.0077			
2.21	2.16	1.0222	Intercept	-0.026025	+/-0.5



NMHC Calibration Plot Date: July 21, 2025 Location: Mildred Lake



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Mildred Lake	Station number:	AMS 02
Calibration Date:	July 22, 2025	Last Cal Date:	July 21, 2025
Start time (MST):	9:53	End time (MST):	11:42
Reason:	Removal		

Calibration Standards

Gas Cert Reference:	EB0112903	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	503.1 ppm	CH4 Equiv Conc.	1067.1 ppm
C3H8 Cal Gas Conc.	205.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	503.1 ppm	CH4 Equiv Conc.	1067.1 ppm
Removed C3H8 Conc.	205.1 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700	Serial Number:	1185
Zero Air Gen model:	Teledyne API T701	Serial Number:	4891

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1180320037
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	3.82E-04	NA	NMHC SP Ratio:	6.24E-05	NA
CH4 Retention time:	16.8	NA	NMHC Peak Area:	141917	NA
Zero Chromatogram:	ON		Flat Baseline:	OFF	

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4913	78.4	16.76	16.82	0.997
As found Mid point	4961	39.2	8.37	8.31	1.007
As found Low point	4980	19.6	4.18	4.11	1.019
New cylinder response					
Baseline Corr AF:	16.82	Prev response	16.73	*% change	0.5%
Baseline Corr 2nd AF:	8.31	AF Slope:	1.004737	AF Intercept:	-0.053983
Baseline Corr 3rd AF:	4.11	AF Correlation:	0.999951	* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

Notes: Swapped 55i due to CH4 dips seen during sampling.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4913	78.4	8.86	8.91	0.994
As found Mid point	4961	39.2	4.42	4.41	1.003
As found Low point	4980	19.6	2.21	2.18	1.016
New cylinder response					
Baseline Corr AF:	8.91	Prev response	8.85	*% change	0.7%
Baseline Corr 2nd AF:	4.41	AF Slope:	1.006987	AF Intercept:	-0.026009
Baseline Corr 3rd AF:	2.18	AF Correlation:	0.999961	* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4913	78.4	7.90	7.91	0.999
As found Mid point	4961	39.2	3.94	3.90	1.011
As found Low point	4980	19.6	1.97	1.93	1.023
New cylinder response					
Baseline Corr AF:	7.91	Prev response	7.88	*% change	0.4%
Baseline Corr 2nd AF:	3.90	AF Slope:	1.002764	AF Intercept:	-0.028373
Baseline Corr 3rd AF:	1.93	AF Correlation:	0.999936	* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

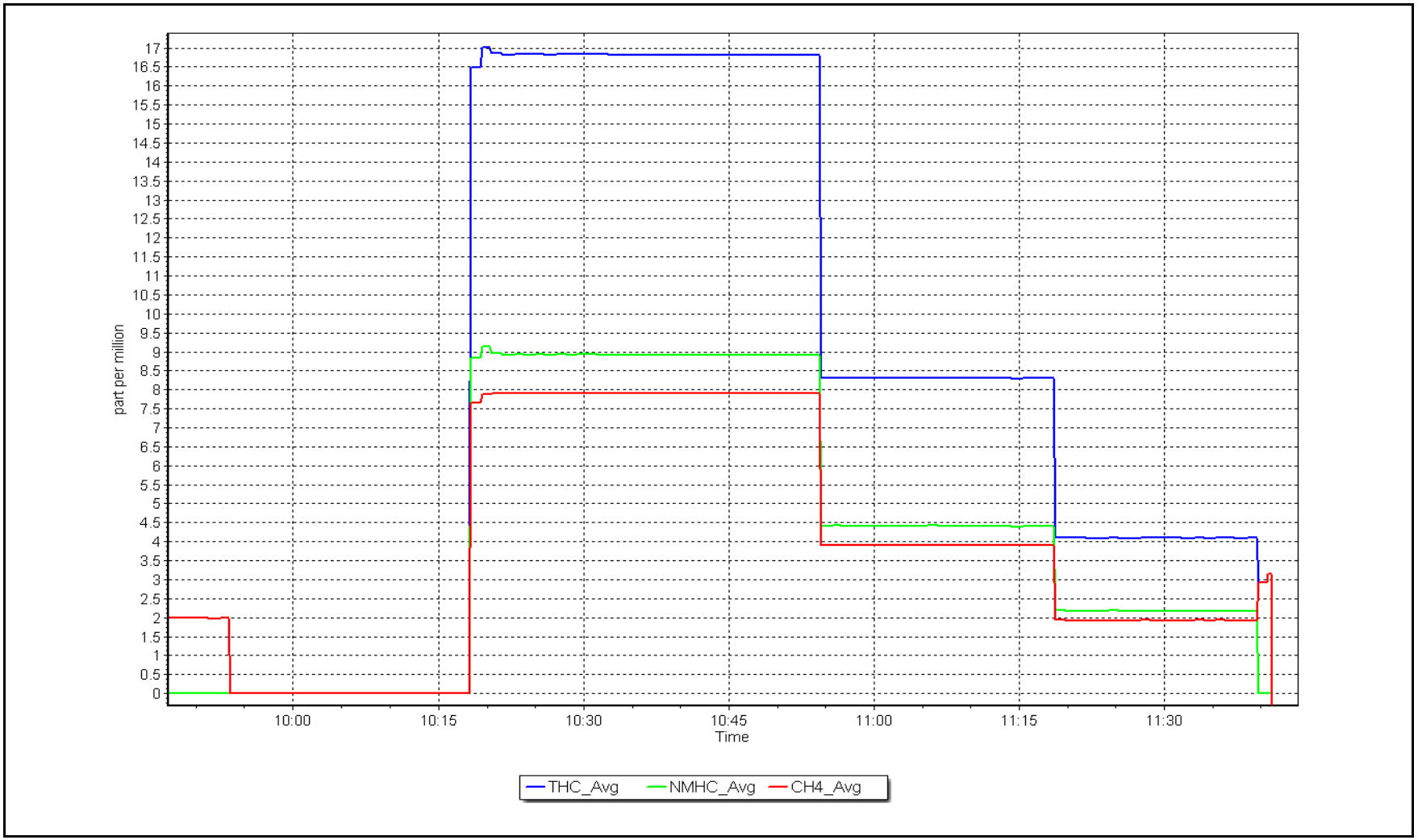
Average Correction Factor

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	1.001137	
THC Cal Offset:	-0.053605	
CH4 Cal Slope:	1.000855	
CH4 Cal Offset:	-0.026777	
NMHC Cal Slope:	1.001440	
NMHC Cal Offset:	-0.026025	

Calibration Performed By: Braiden Boutilier

NMHC Calibration Plot Date: July 22, 2025 Location: Mildred Lake



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Mildred Lake	Station number:	AMS 02
Calibration Date:	July 23, 2025	Last Cal Date:	
Start time (MST):	10:05	End time (MST):	12:30
Reason:	Install		

Calibration Standards

Gas Cert Reference:	EB0112903	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	503.1 ppm	CH4 Equiv Conc.	1067.1 ppm
C3H8 Cal Gas Conc.	205.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	503.1 ppm	CH4 Equiv Conc.	1067.1 ppm
Removed C3H8 Conc.	205.1 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700	Serial Number:	1185
Zero Air Gen model:	Teledyne API T701	Serial Number:	4891

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	NA	4.23E-04	NMHC SP Ratio:	NA	7.62E-05
CH4 Retention time:	NA	15.6	NMHC Peak Area:	NA	116215
Zero Chromatogram:		OFF	Flat Baseline:		OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	
High point	4913	78.4	16.76	16.73	1.002
Mid point	4961	39.2	8.37	8.37	1.000
Low point	4980	19.6	4.18	4.17	1.004
As left zero	5000	0.0	0.00	0.00	----
As left span	4913	78.4	16.76	16.81	0.997
				Average Correction Factor	1.002

Notes: Install calibration was unsuccessful yesterday due to some contamination from N2 cylinder change. Column bake out seems to have cleared out the contamination. Adjusted the span only.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4913	78.4	8.86	8.85	1.001
Mid point	4961	39.2	4.42	4.46	0.991
Low point	4980	19.6	2.21	2.24	0.986
As left zero	5000	0.0	0.00	0.00	----
As left span	4913	78.4	8.86	8.89	0.997
				Average Correction Factor	0.993

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4913	78.4	7.90	7.88	1.003
Mid point	4961	39.2	3.94	3.90	1.011
Low point	4980	19.6	1.97	1.93	1.023
As left zero	5000	0.0	0.00	0.00	----
As left span	4913	78.4	7.90	7.93	0.997
				Average Correction Factor	1.013

Calibration Statistics

	Start	*Finish*
THC Cal Slope:		0.998417
THC Cal Offset:		-0.000169
CH4 Cal Slope:		0.997845
CH4 Cal Offset:		-0.021378
NMHC Cal Slope:		0.998630
NMHC Cal Offset:		0.021607

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

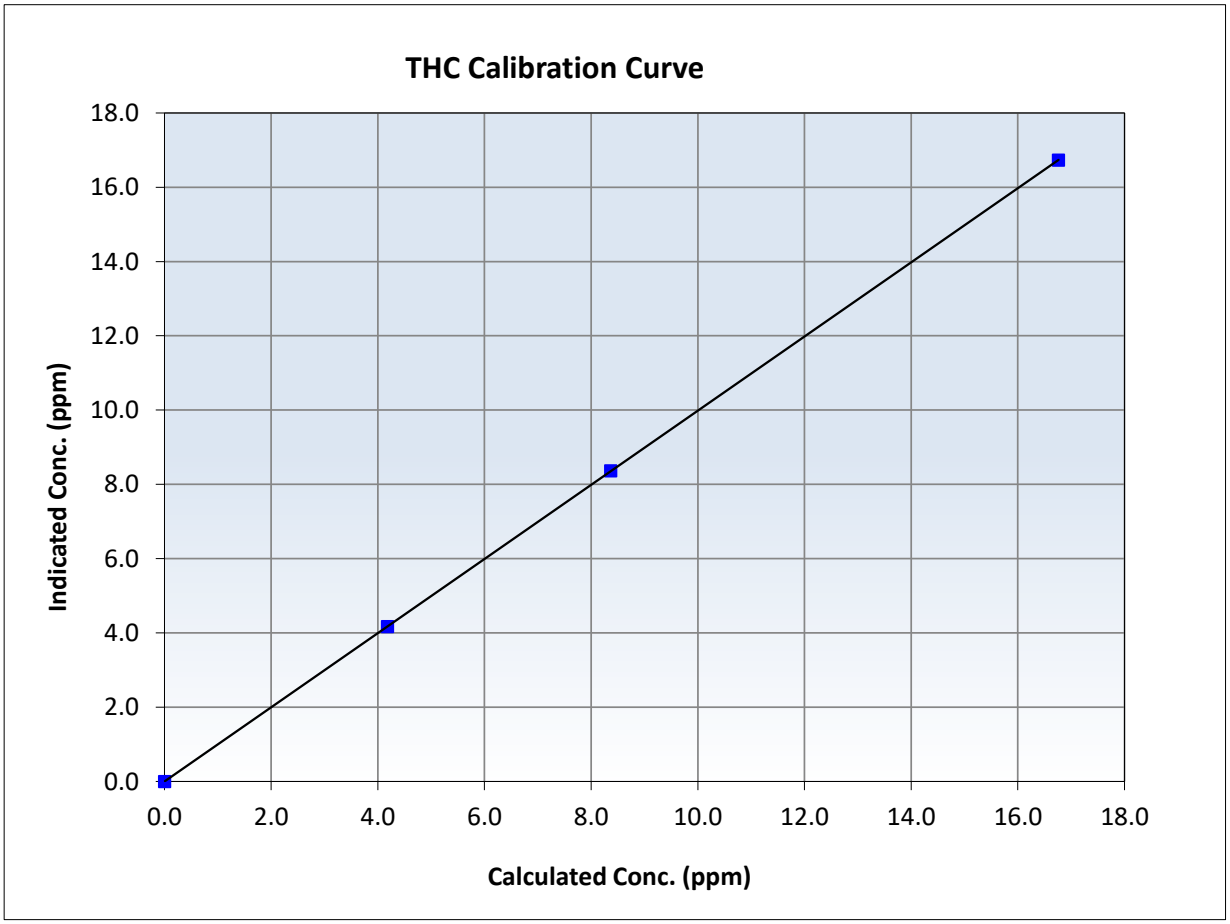
THC Calibration Summary

Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	10:05	End Time (MST):	12:30
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999998	≥0.995
16.76	16.73	1.0018	Slope	0.998417	0.90 - 1.10
8.37	8.37	1.0002	Intercept	-0.000169	+/-0.5
4.18	4.17	1.0036			



Wood Buffalo Environmental Association

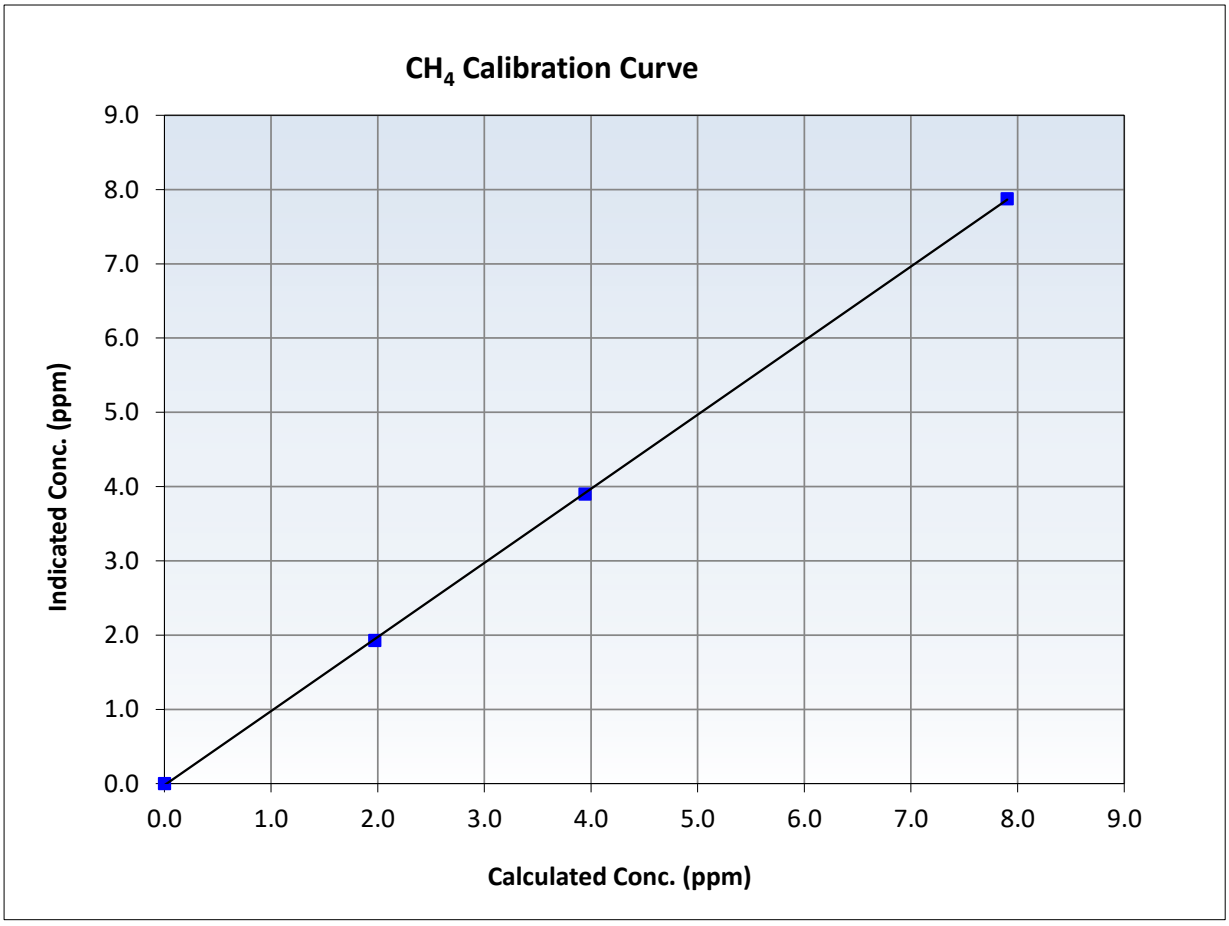
CH_4 Calibration Summary

Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	10:05	End Time (MST):	12:30
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999966	≥0.995
7.90	7.88	1.0034	Slope	0.997845	0.90 - 1.10
3.94	3.90	1.0111			
1.97	1.93	1.0234	Intercept	-0.021378	+/-0.5



Wood Buffalo Environmental Association

NMHC Calibration Summary

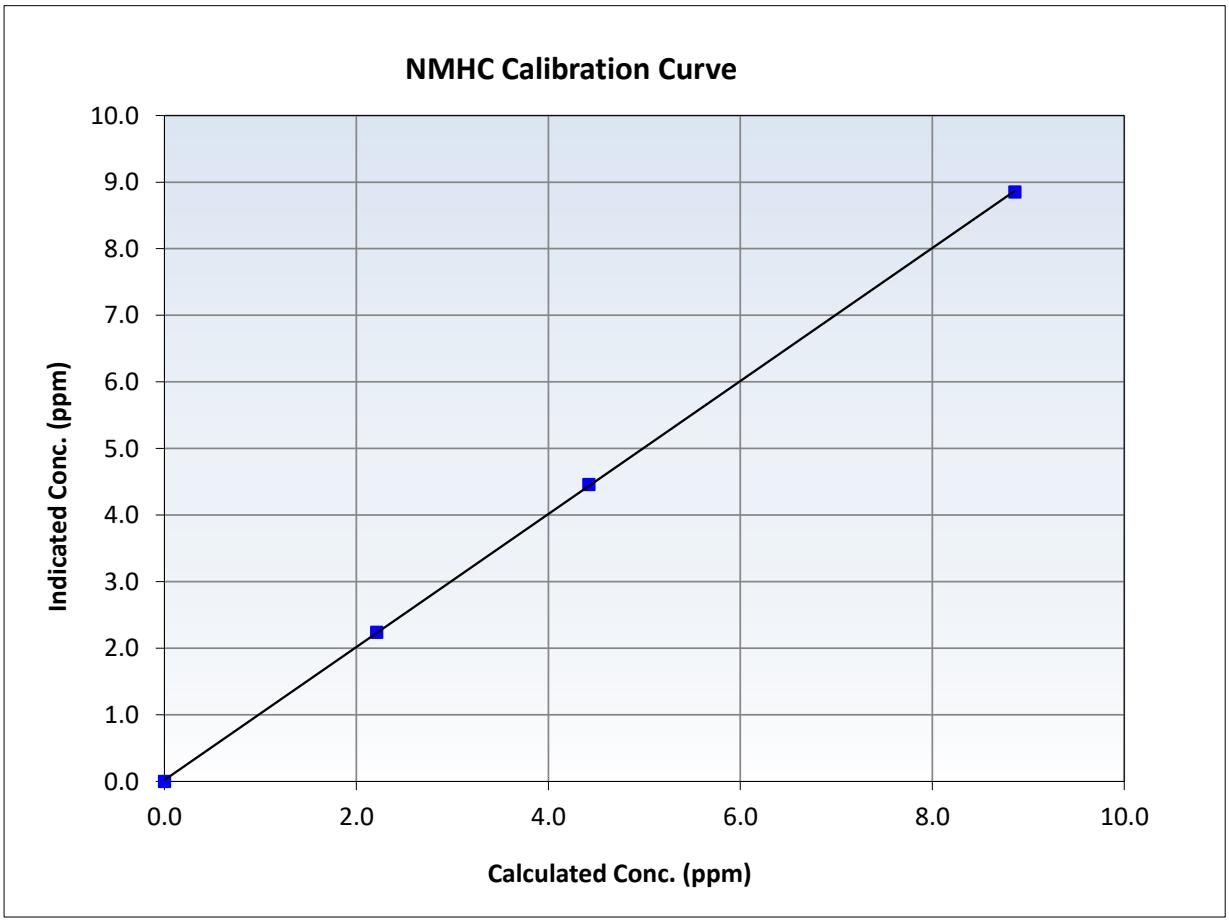
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	10:05	End Time (MST):	12:30
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040

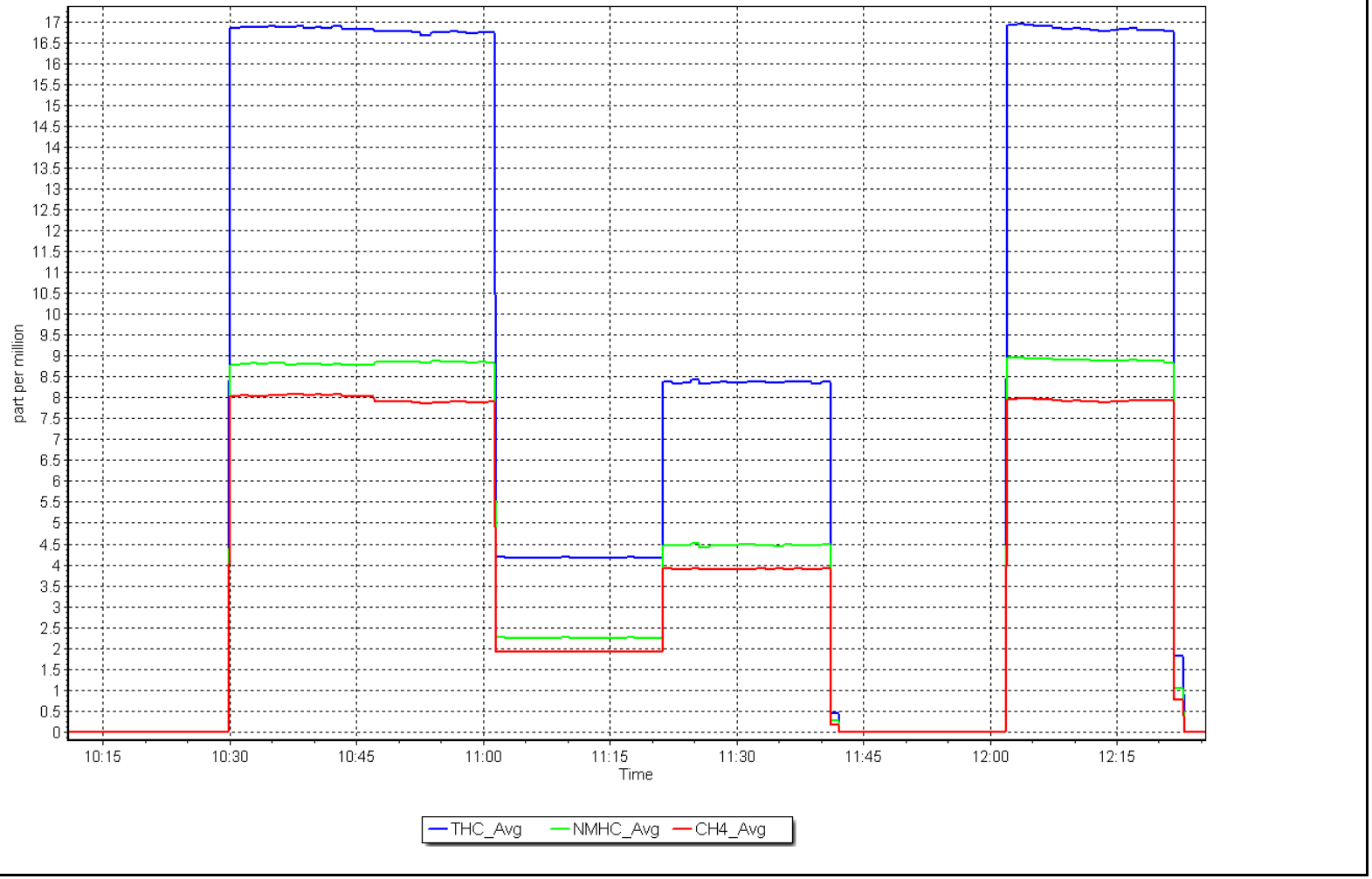
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.86	8.85	1.0007
4.42	4.46	0.9910
2.21	2.24	0.9862

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999966	*≥0.995*
Slope	0.998630	*0.90 - 1.10*
Intercept	0.021607	*+/-0.5*



NMHC Calibration Plot Date: July 23, 2025 Location: Mildred Lake



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS04
BUFFALO VIEWPOINT
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Buffalo Viewpoint	Station number:	AMS 04
Calibration Date:	July 4, 2025	Last Cal Date:	June 12, 2025
Start time (MST):	5:36	End time (MST):	8:17
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.87	ppm	Cal Gas Exp Date:	March 10, 2031
Cal Gas Cylinder #:	CC446753			
Removed Cal Gas Conc:	50.87	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	3808
Zero Air Gen Model:	Teledyne API T701		Serial Number:	362

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	JC1327300932	
Analyzer Range:	0-1000ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.997429	0.997828	Backgd or Offset:	27.6	27.2
Calibration intercept:	0.154012	0.814546	Coeff or Slope:	0.867	0.867

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.5	----
As found High point	4921	78.6	799.7	794.8	1.006
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	795.3	Previous response	797.8	*% change	-0.3%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4921	78.6	799.7	798.5	1.002
Mid point	4961	39.3	399.8	400.1	0.999
Low point	4980	19.6	199.4	200.4	0.995
As left zero	5000	0.0	0.0	0.1	----
As left span	4921	78.6	799.7	797.8	1.002
				Average Correction Factor:	0.999

Notes: Zero adjusted.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

SO_2 Calibration Summary

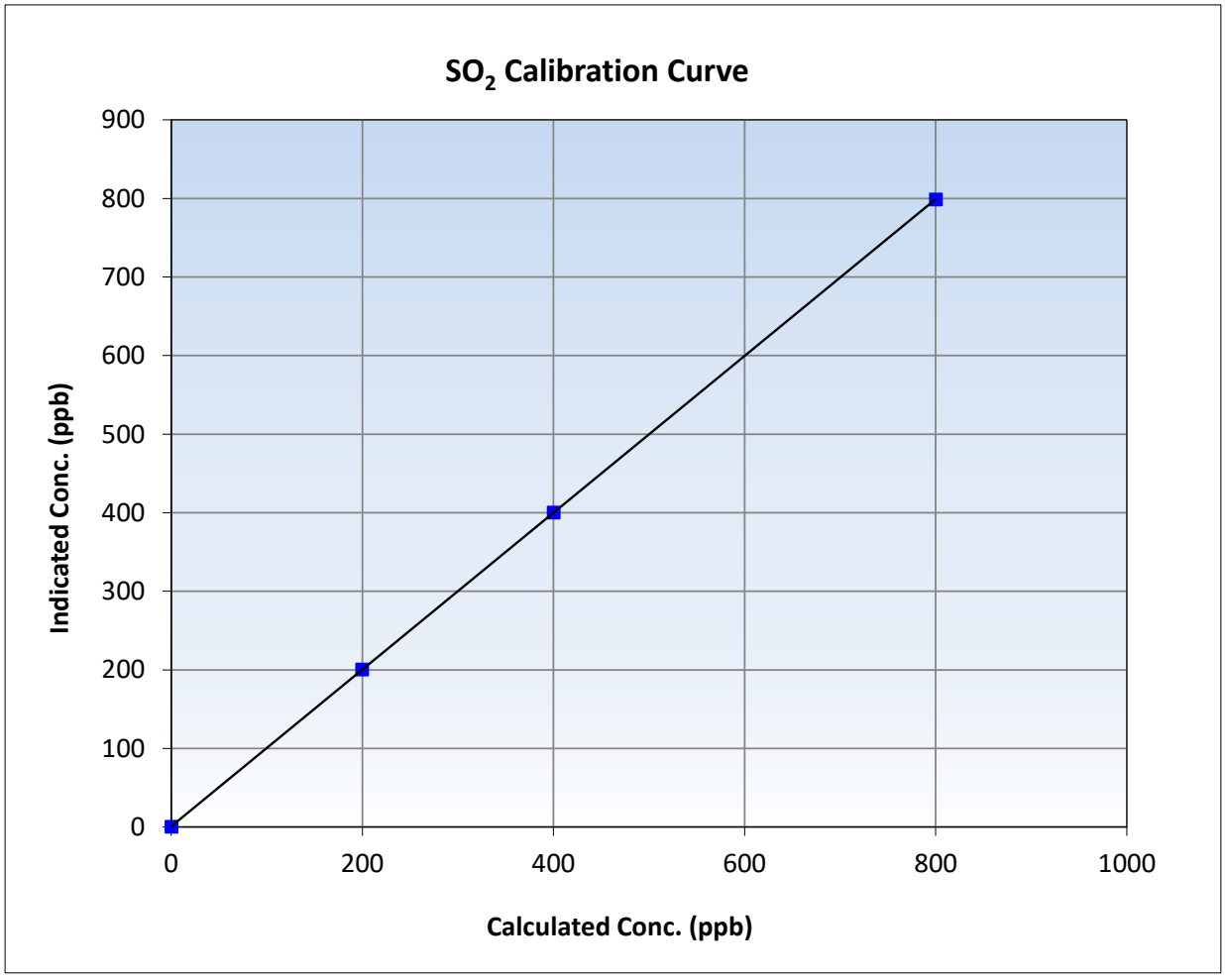
Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 12, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	5:36	End Time (MST):	8:17
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1327300932

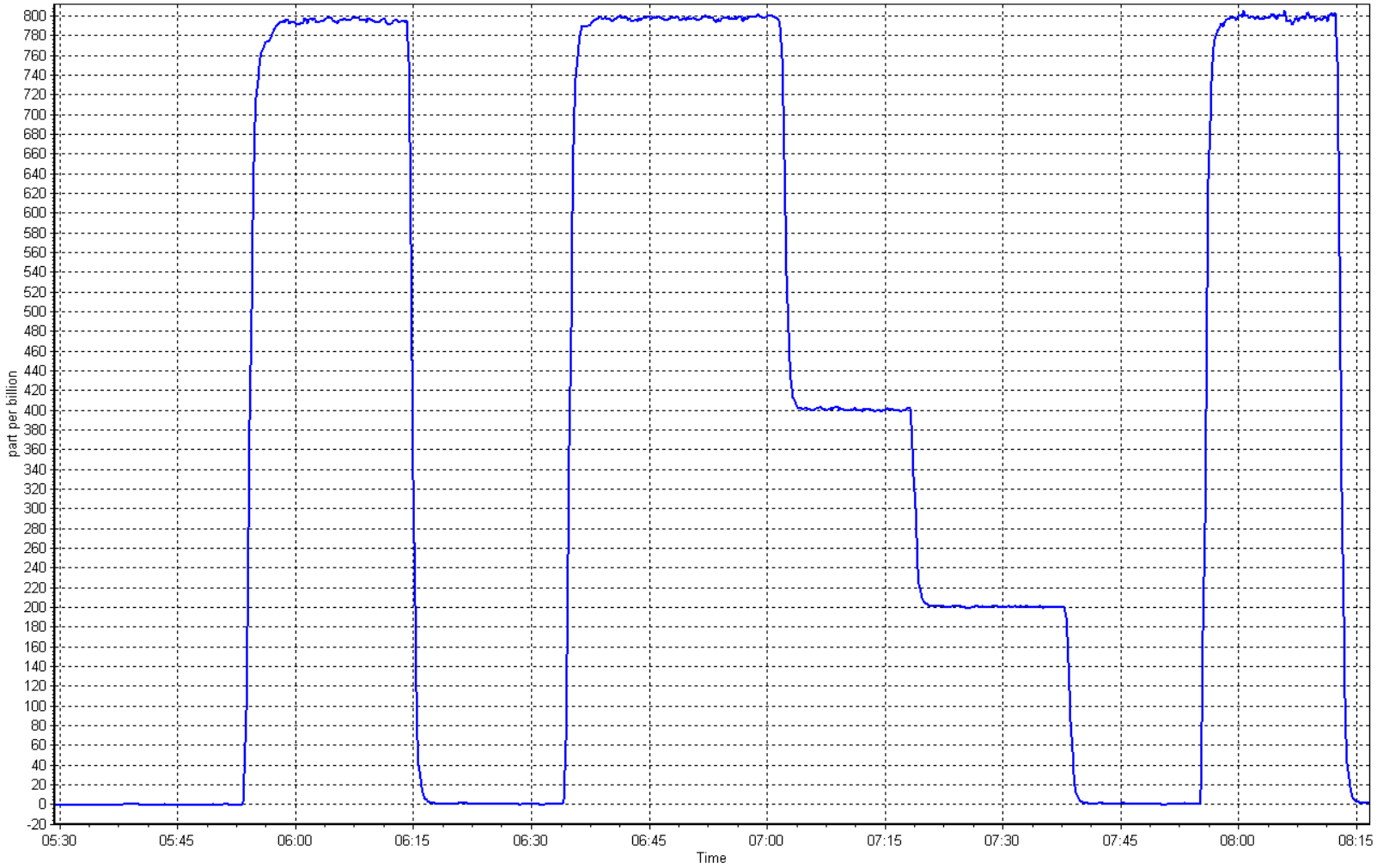
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
799.7	798.5	1.0016
399.8	400.1	0.9993
199.4	200.4	0.9951

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999997	*≥0.995*
Slope	0.997828	*0.90 - 1.10*
Intercept	0.814546	*+/-30*



SO2 Calibration Plot Date: July 4, 2025 Location: Buffalo Viewpoint



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Buffalo Viewpoint	Station number:	AMS 04
Calibration Date:	July 24, 2025	Last Cal Date:	June 10, 2025
Start time (MST):	7:00	End time (MST):	10:40
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.80	ppm	Cal Gas Exp Date:	August 28, 2027
Cal Gas Cylinder #:	DT0037528			
Removed Cal Gas Conc:	4.80	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	3808
ZAG Make/Model:	Teledyne API T701H		Serial Number:	362

Analyzer Information

Analyzer make:	Thermo 43i-LTE		Analyzer serial #:	1008841400	
Converter make:	Global		Converter serial #:	2022-200	
Analyzer Range	0 - 100 ppb		Converter Temp:	325	degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.004149	1.010581	Backgd or Offset:	1.89	1.89
Calibration intercept:	0.138203	0.038163	Coeff or Slope:	1.100	1.100

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4917	83.3	80.0	82.0	0.974
As found Mid point	4958	41.7	40.0	41.0	0.974
As found Low point	4979	20.8	20.0	20.5	0.969
New cylinder response					

Baseline Corr As found:	82.1	Prev response:	80.43	*% change:	2.0%
Baseline Corr 2nd AF pt:	41.1	AF Slope:	1.026297	AF Intercept:	-0.061777
Baseline Corr 3rd AF pt:	20.6	AF Correlation:	0.999998	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4917	83.3	80.0	80.8	0.990
Mid point	4958	41.7	40.0	40.6	0.986
Low point	4979	20.8	20.0	20.2	0.989
As left zero	5000	0.0	0.0	0.1	----
As left span	4917	83.3	80.0	79.8	1.002
SO2 Scrubber Check	4920	80.0	800.0	0.0	----
Date of last scrubber change:		16-May-23		Ave Corr Factor	0.988
Date of last converter efficiency test:					

Notes: Sox scrubber checked after calibrator zero. No adjustment made.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

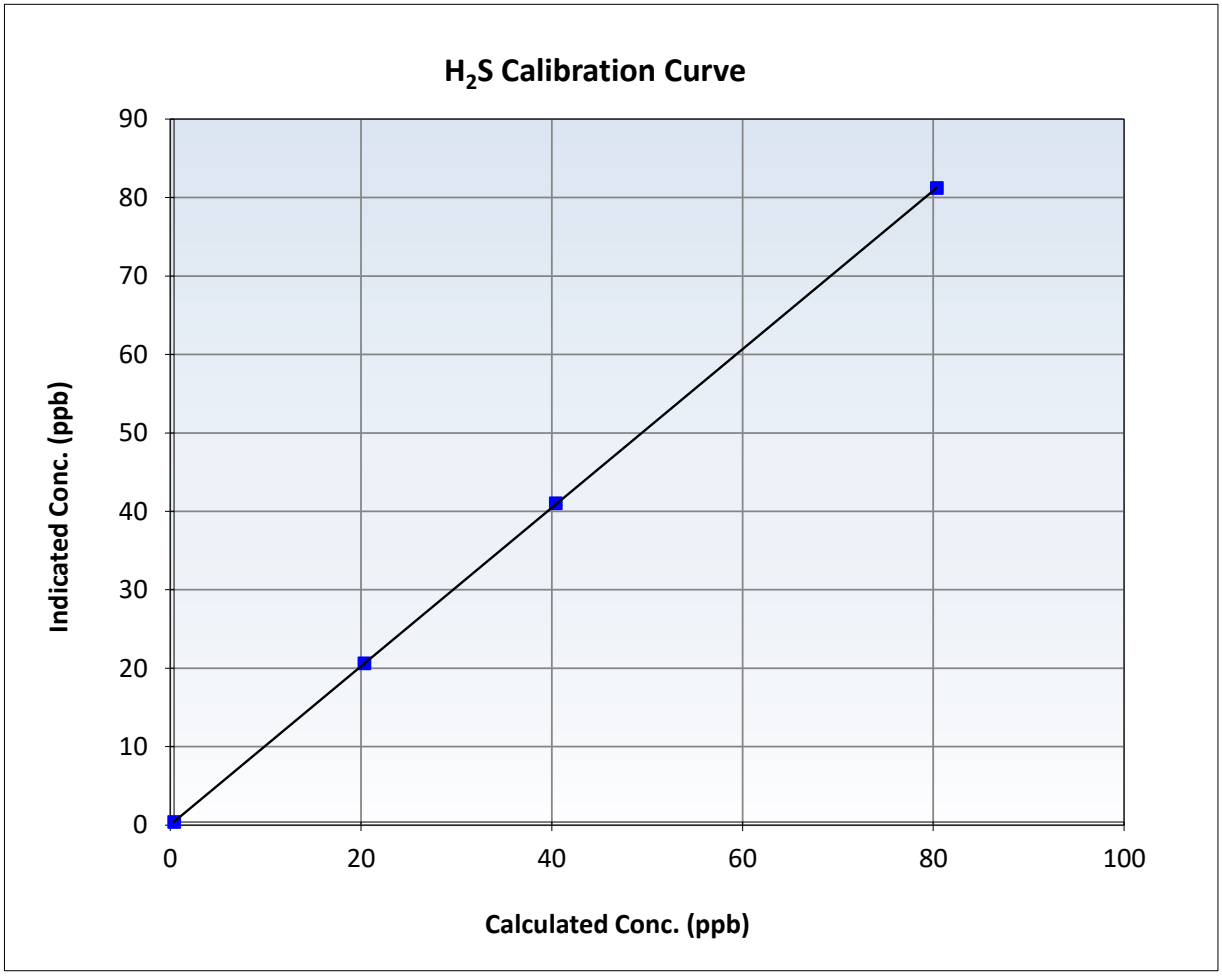
H_2S Calibration Summary

Station Information

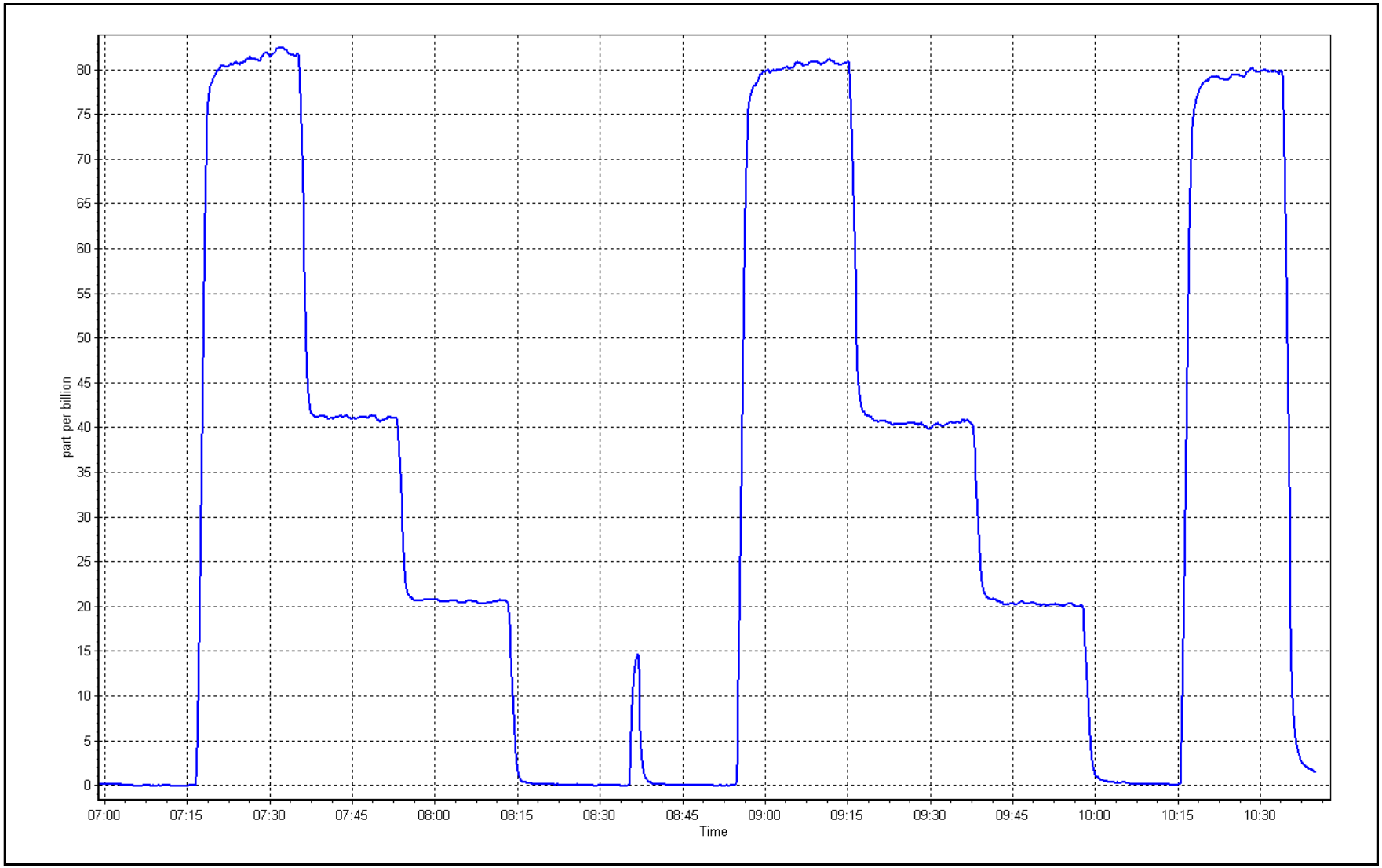
Calibration Date:	July 24, 2025	Previous Calibration:	June 10, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	7:00	End Time (MST):	10:40
Analyzer make:	Thermo 43i-LTE	Analyzer serial #:	1008841400

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.0	----	Correlation Coefficient	0.999996	*≥0.995*
80.0	80.8	0.9896	Slope	1.010581	*0.90 - 1.10*
40.0	40.6	0.9861			
20.0	20.2	0.9886	Intercept	0.038163	*+/-3*



H_2S Calibration Plot Date: July 24, 2025 Location: Buffalo Viewpoint



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Buffalo Viewpoint	Station number:	AMS 04
Calibration Date:	July 4, 2025	Last Cal Date:	June 12, 2025
Start time (MST):	5:36	End time (MST):	8:14
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC446753	Cal Gas Expiry Date:	March 10, 2031
CH4 Cal Gas Conc.	497.2 ppm	CH4 Equiv Conc.	1058.2 ppm
C3H8 Cal Gas Conc.	204.0 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	497.2 ppm	CH4 Equiv Conc.	1058.2 ppm
Removed C3H8 Conc.	204.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700	Serial Number:	3808
Zero Air Gen model:	Teledyne API T701	Serial Number:	362

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1426262594
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	4.78E-04	4.73E-04	NMHC SP Ratio:	9.87E-04	1.04E-04
CH4 Retention time:	14.1	14.1	NMHC Peak Area:	89385	85156
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	16.64	16.42	1.013
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.42	Prev response	16.64	*% change	-1.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	16.64	16.63	1.000
Mid point	4961	39.3	8.32	8.27	1.006
Low point	4980	19.6	4.15	4.08	1.018
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	16.64	16.58	1.004
				Average Correction Factor	1.008

Notes: Span adjusted. Hydrogen Cylinder changed.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	8.82	8.48	1.041
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.48	Prev response	8.84	*% change	-4.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	8.82	8.83	0.999
Mid point	4961	39.3	4.41	4.41	0.999
Low point	4980	19.6	2.20	2.16	1.018
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	8.82	8.77	1.006
				Average Correction Factor	1.005

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	7.82	7.95	0.983
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.95	Prev response	7.80	*% change	1.9%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	7.82	7.80	1.002
Mid point	4961	39.3	3.91	3.85	1.014
Low point	4980	19.6	1.95	1.92	1.017
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	7.82	7.81	1.001
				Average Correction Factor	1.011

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	1.003818	1.000630
THC Cal Offset:	-0.059943	-0.037751
CH4 Cal Slope:	1.001879	0.998457
CH4 Cal Offset:	-0.031309	-0.021111
NMHC Cal Slope:	1.005550	1.002220
NMHC Cal Offset:	-0.028434	-0.015841

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

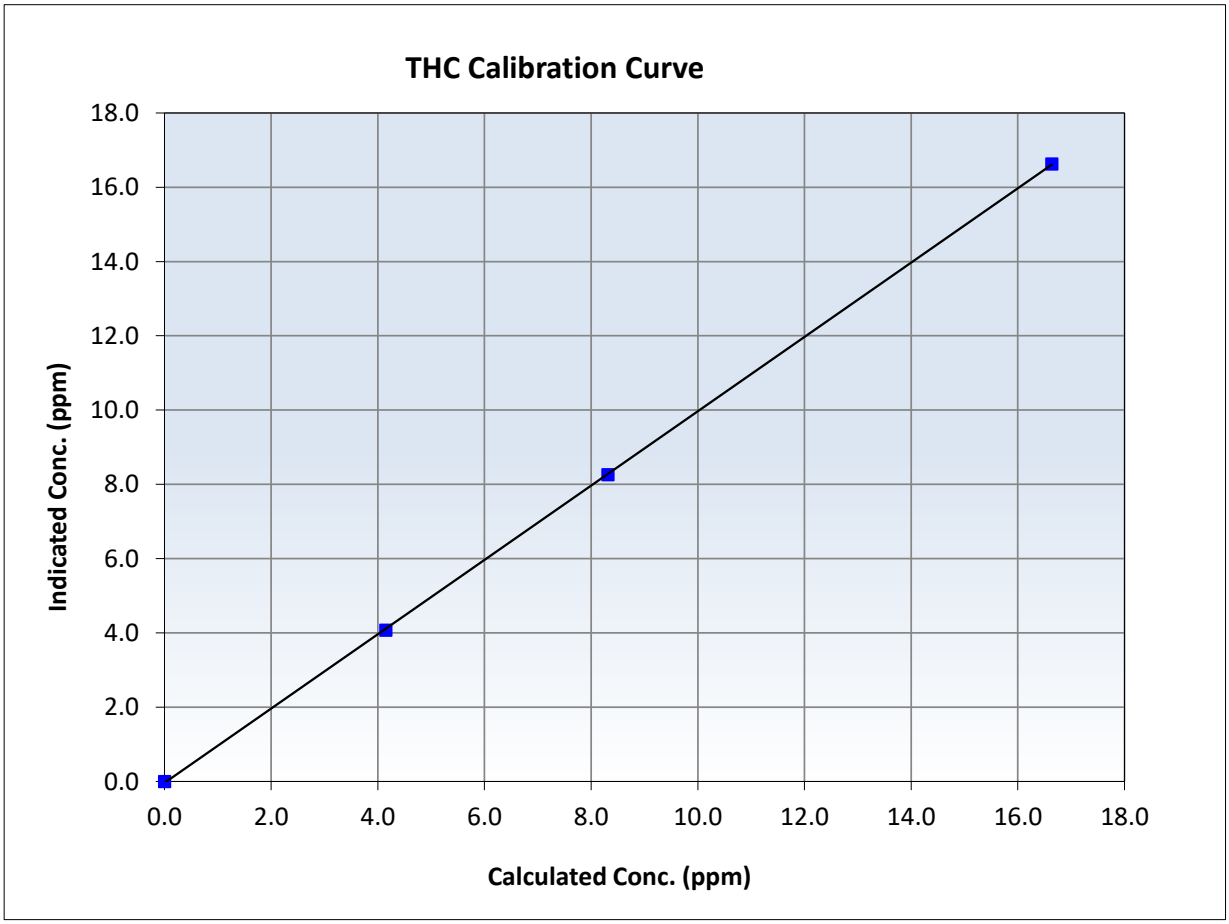
THC Calibration Summary

Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 12, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	5:36	End Time (MST):	8:14
Analyzer make:	Thermo 55i	Analyzer serial #:	1426262594

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.00	0.00	----	Correlation Coefficient	0.999977	*≥0.995*
16.64	16.63	1.0005	Slope	1.000630	*0.90 - 1.10*
8.32	8.27	1.0063			
4.15	4.08	1.0178	Intercept	-0.037751	*+/-0.5*



Wood Buffalo Environmental Association

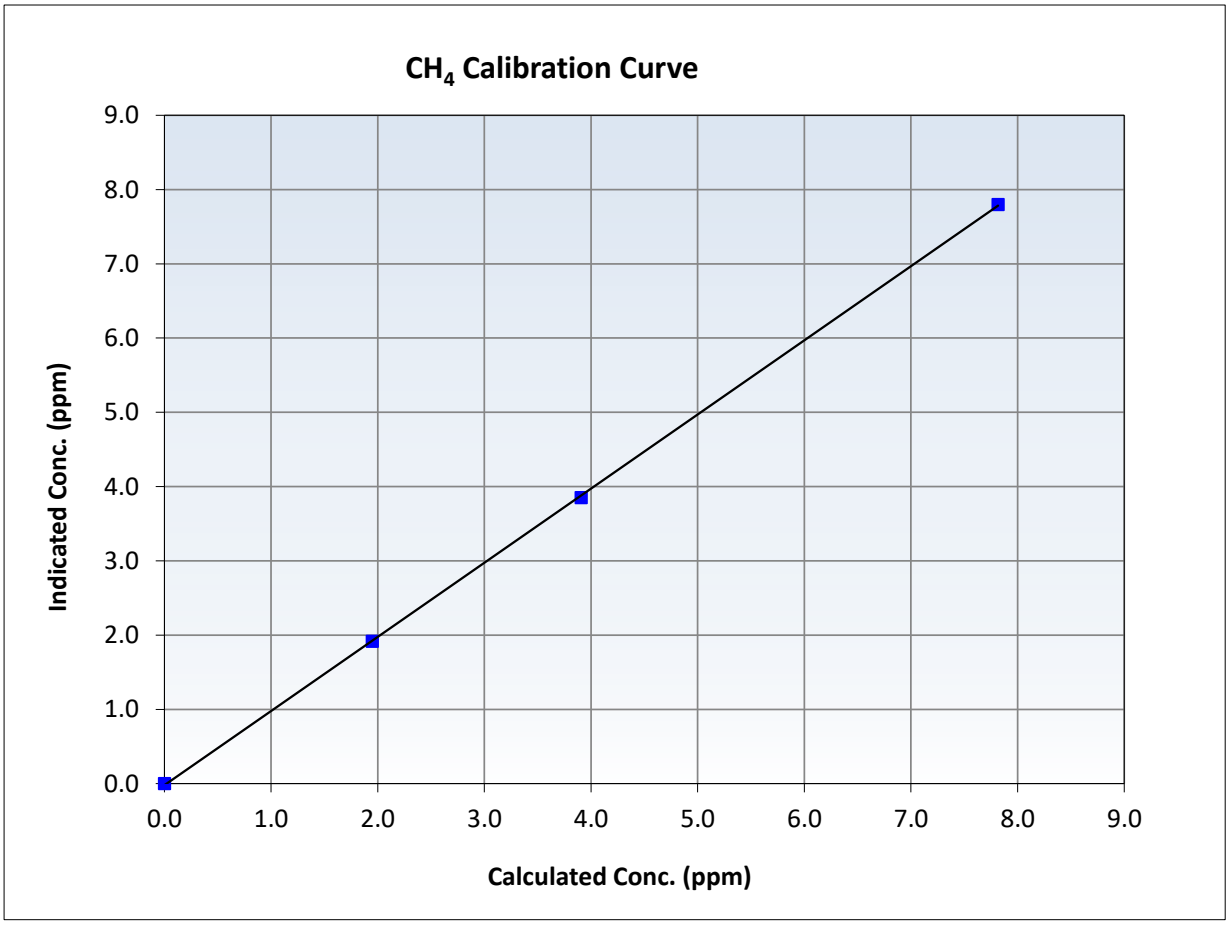
CH_4 Calibration Summary

Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 12, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	5:36	End Time (MST):	8:14
Analyzer make:	Thermo 55i	Analyzer serial #:	1426262594

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999951	≥0.995
7.82	7.80	1.0021	Slope	0.998457	0.90 - 1.10
3.91	3.85	1.0145			
1.95	1.92	1.0173	Intercept	-0.021111	+/-0.5



Wood Buffalo Environmental Association

NMHC Calibration Summary

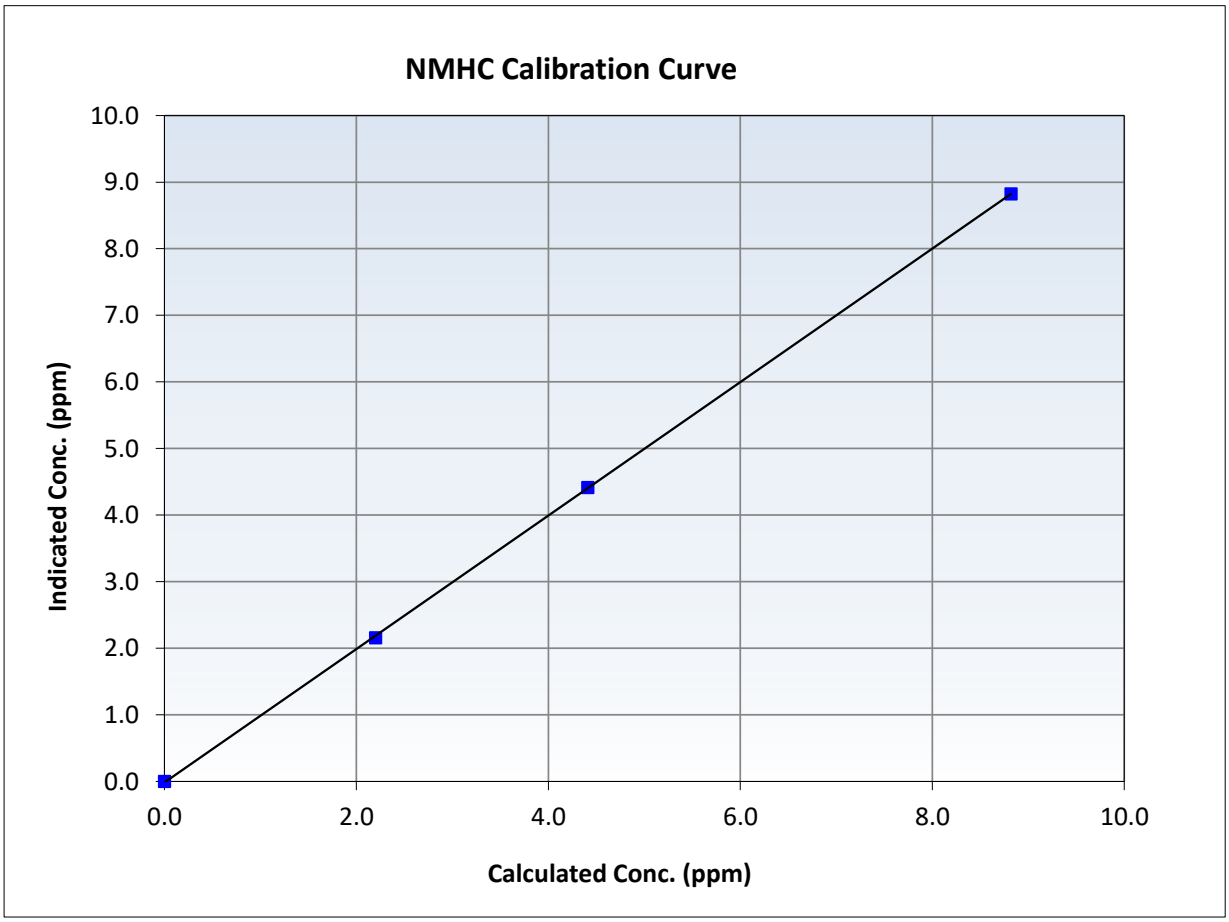
Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 12, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	5:36	End Time (MST):	8:14
Analyzer make:	Thermo 55i	Analyzer serial #:	1426262594

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.82	8.83	0.9994
4.41	4.41	0.9989
2.20	2.16	1.0182

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999973	*≥0.995*
Slope	1.002220	*0.90 - 1.10*
Intercept	-0.015841	*+/-0.5*



NMHC Calibration Plot Date: July 4, 2025 Location: Buffalo Viewpoint

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Buffalo Viewpoint	Station number:	AMS 04
Calibration Date:	July 28, 2025	Last Cal Date:	July 4, 2025
Start time (MST):	5:50	End time (MST):	7:12
Reason:	Removal		

Calibration Standards

Gas Cert Reference:	CC446753	Cal Gas Expiry Date:	March 10, 2031
CH4 Cal Gas Conc.	497.2 ppm	CH4 Equiv Conc.	1058.2 ppm
C3H8 Cal Gas Conc.	204.0 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	497.2 ppm	CH4 Equiv Conc.	1058.2 ppm
Removed C3H8 Conc.	204.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700	Serial Number:	3808
Zero Air Gen model:	Teledyne API T701	Serial Number:	362

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1426262594
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	4.73E-04	4.73E-04	NMHC SP Ratio:	1.04E-04	1.04E-04
CH4 Retention time:	14.1	14.1	NMHC Peak Area:	85156	85156
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	16.64	15.91	1.045
As found Mid point	4961	39.3	8.32	7.92	1.050
As found Low point	4980	19.8	4.19	3.85	1.089
New cylinder response					
Baseline Corr AF:	15.91	Prev response	16.61	*% change	-4.4%
Baseline Corr 2nd AF:	7.92	AF Slope:	0.959640	AF Intercept:	-0.072143
Baseline Corr 3rd AF:	3.85	AF Correlation:	0.999884	* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

Notes: Removal Due to Noisy NM Channel

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	8.82	8.25	1.069
As found Mid point	4961	39.3	4.41	4.13	1.067
As found Low point	4980	19.8	2.22	1.97	1.126
New cylinder response					
Baseline Corr AF:	8.25	Prev response	8.82	*% change	-6.9%
Baseline Corr 2nd AF:	4.13	AF Slope:	0.939703	AF Intercept:	-0.040463
Baseline Corr 3rd AF:	1.97	AF Correlation:	0.999785	* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	7.82	7.66	1.020
As found Mid point	4961	39.3	3.91	3.79	1.032
As found Low point	4980	19.8	1.97	1.87	1.051
New cylinder response					
Baseline Corr AF:	7.66	Prev response	7.78	*% change	-1.6%
Baseline Corr 2nd AF:	3.79	AF Slope:	0.982266	AF Intercept:	-0.031881
Baseline Corr 3rd AF:	1.87	AF Correlation:	0.999919	* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	1.000630	
THC Cal Offset:	-0.037751	
CH4 Cal Slope:	0.998457	
CH4 Cal Offset:	-0.021111	
NMHC Cal Slope:	1.002220	
NMHC Cal Offset:	-0.015841	

Calibration Performed By: Melissa Lemay

NMHC Calibration Plot Date: July 28, 2025 Location: Buffalo Viewpoint

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Buffalo Viewpoint	Station number:	AMS 04
Calibration Date:	July 28, 2025	Last Cal Date:	
Start time (MST):	9:05	End time (MST):	11:11
Reason:	Install		

Calibration Standards

Gas Cert Reference:	CC446753	Cal Gas Expiry Date:	March 10, 2031
CH4 Cal Gas Conc.	497.2 ppm	CH4 Equiv Conc.	1058.2 ppm
C3H8 Cal Gas Conc.	204.0 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	497.2 ppm	CH4 Equiv Conc.	1058.2 ppm
Removed C3H8 Conc.	204.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700	Serial Number:	3808
Zero Air Gen model:	Teledyne API T701	Serial Number:	362

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1180320038
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:		2.97E-04	NMHC SP Ratio:		5.04E-04
CH4 Retention time:		15.6	NMHC Peak Area:		174857
Zero Chromatogram:	OFF	OFF	Flat Baseline:	ON	ON

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	16.64	16.62	1.001
Mid point	4961	39.3	8.32	8.34	0.998
Low point	4980	19.6	4.15	4.16	0.997
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	16.64	16.63	1.001
				Average Correction Factor	0.998

Notes: Installed due to removed NMHC having unstable NM channel.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	8.82	8.81	1.001
Mid point	4961	39.3	4.41	4.44	0.994
Low point	4980	19.6	2.20	2.22	0.992
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	8.82	8.84	0.998
				Average Correction Factor	0.996

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	7.82	7.81	1.001
Mid point	4961	39.3	3.91	3.90	1.002
Low point	4980	19.6	1.95	1.95	1.002
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	7.82	7.79	1.004
				Average Correction Factor	1.002

Calibration Statistics

	Start	*Finish*
THC Cal Slope:		0.998848
THC Cal Offset:		0.012465
CH4 Cal Slope:		0.999464
CH4 Cal Offset:		-0.002303
NMHC Cal Slope:		0.998562
NMHC Cal Offset:		0.013768

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

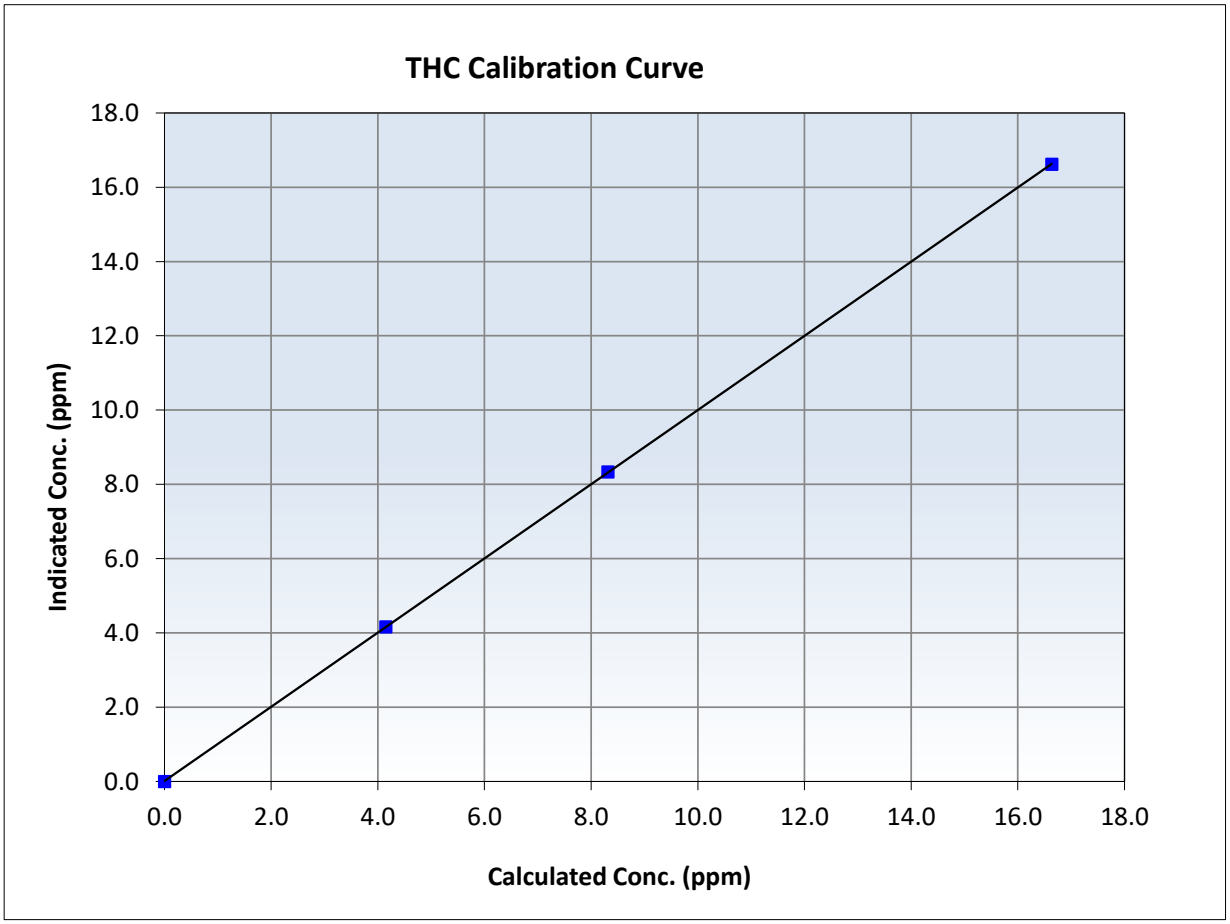
THC Calibration Summary

Station Information

Calibration Date:	July 28, 2025	Previous Calibration:	
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	9:05	End Time (MST):	11:11
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320038

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999996	≥0.995
16.64	16.62	1.0010	Slope	0.998848	0.90 - 1.10
8.32	8.34	0.9977	Intercept	0.012465	+/-0.5
4.15	4.16	0.9968			



Wood Buffalo Environmental Association

CH_4 Calibration Summary

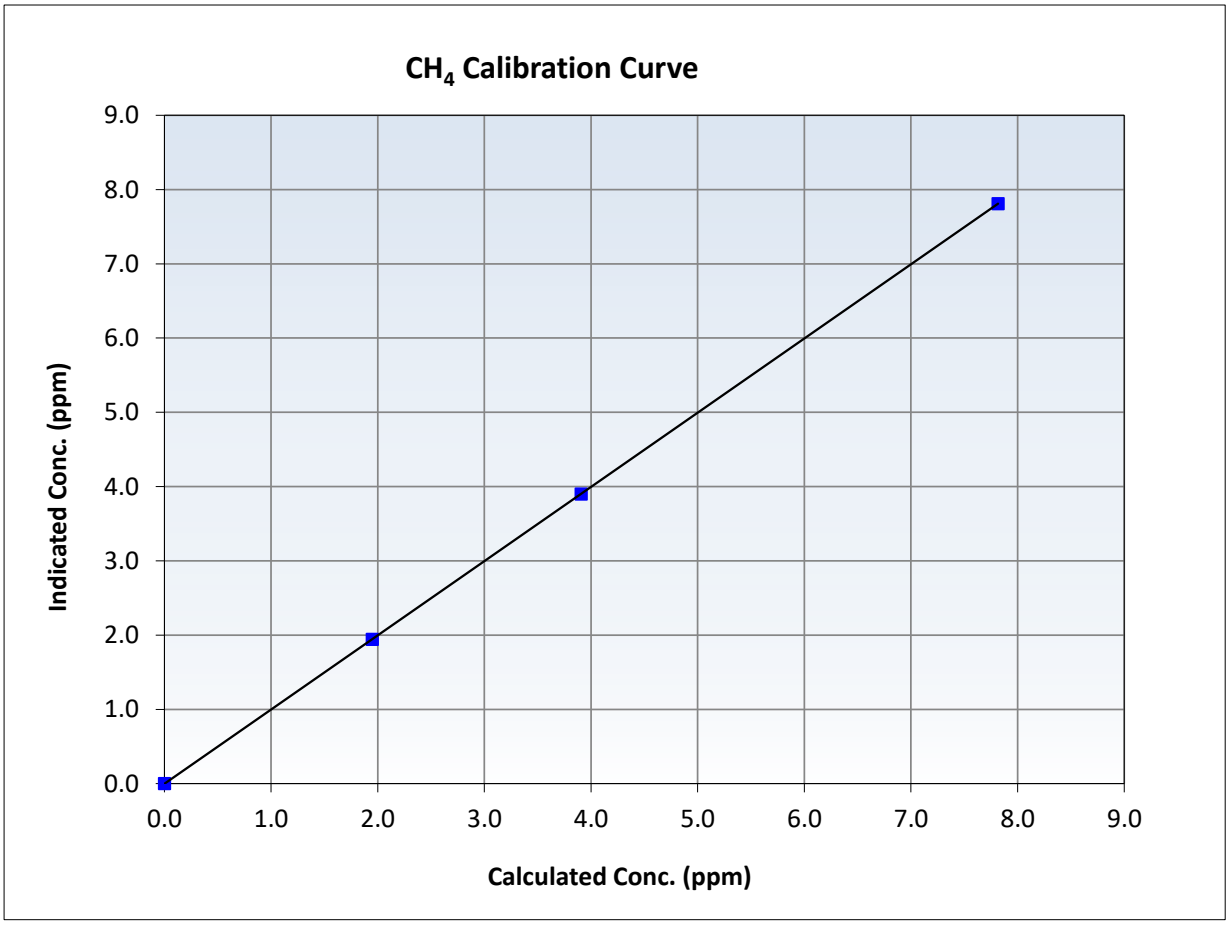
Station Information

Calibration Date:	July 28, 2025	Previous Calibration:	
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	9:05	End Time (MST):	11:11
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320038

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
7.82	7.81	1.0006
3.91	3.90	1.0020
1.95	1.95	1.0021

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	0.999464	*0.90 - 1.10*
Intercept	-0.002303	*+/-0.5*



Wood Buffalo Environmental Association

NMHC Calibration Summary

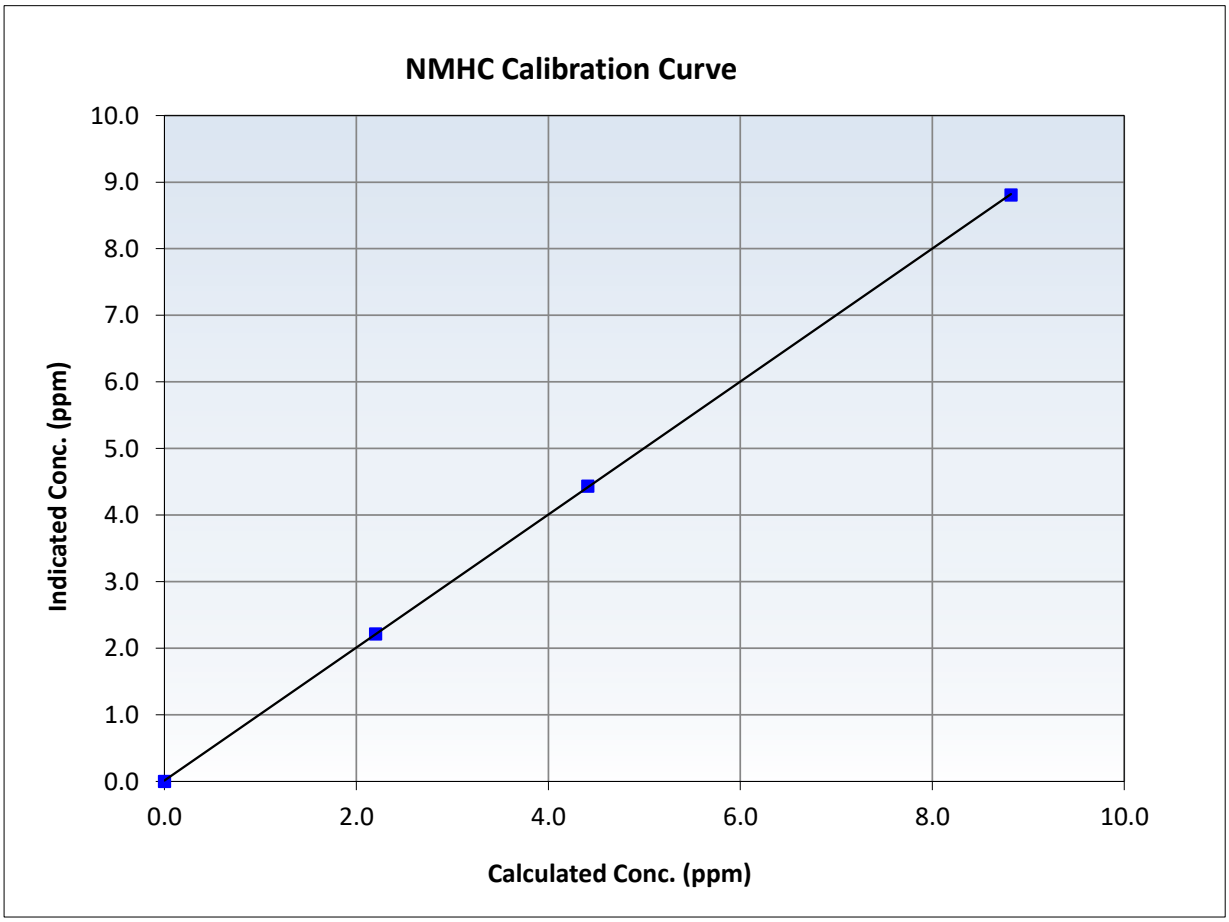
Station Information

Calibration Date:	July 28, 2025	Previous Calibration:	
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	9:05	End Time (MST):	11:11
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320038

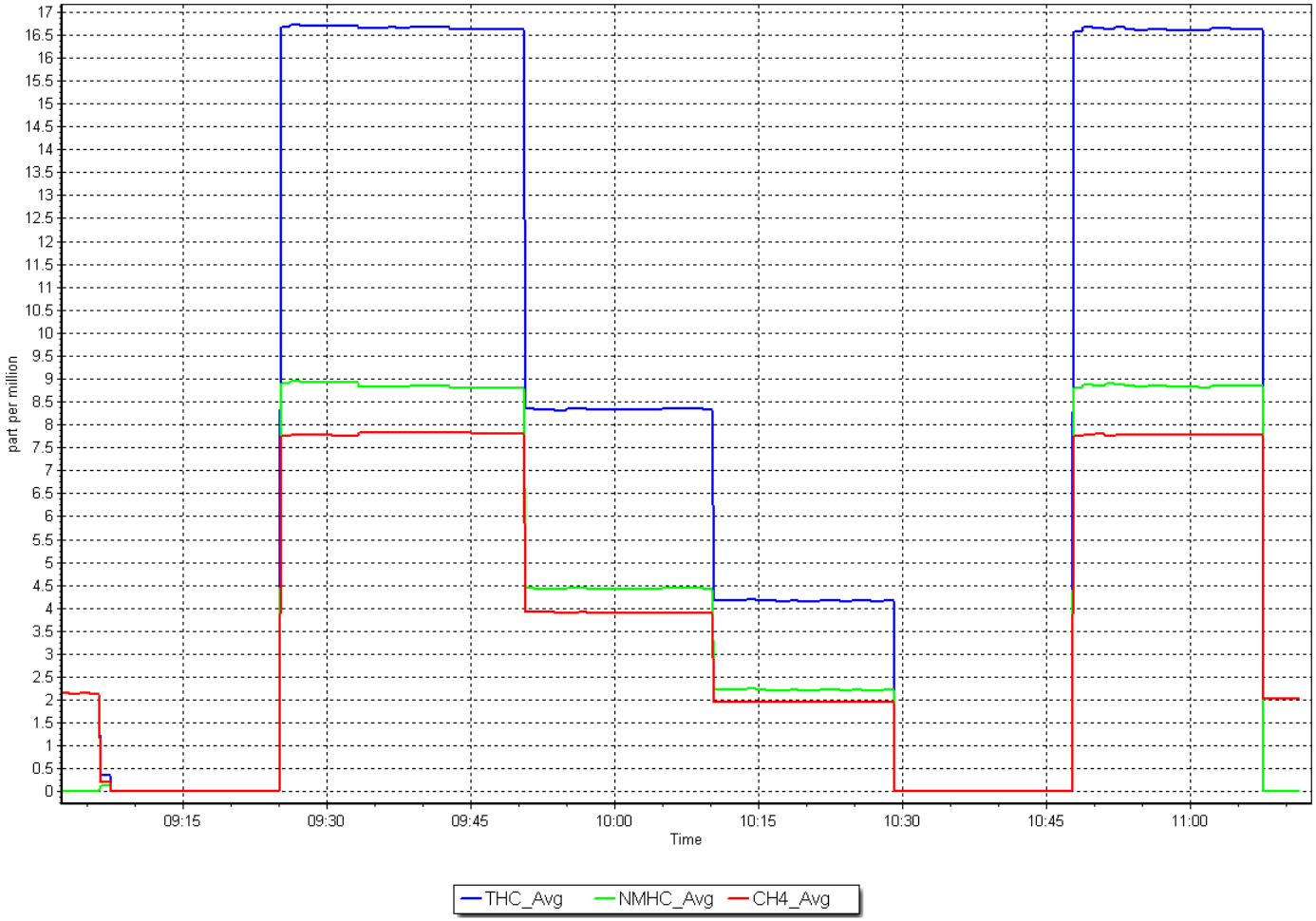
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.82	8.81	1.0011
4.41	4.44	0.9942
2.20	2.22	0.9925

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999984	*≥0.995*
Slope	0.998562	*0.90 - 1.10*
Intercept	0.013768	*+/-0.5*



NMHC Calibration Plot Date: July 28, 2025 Location: Buffalo Viewpoint



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Buffalo Viewpoint
Station number:	AMS 04
Calibration Date:	July 23, 2025
Last Cal Date:	June 18, 2025
Start time (MST):	6:06
End time (MST):	10:54
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	CC324979	Cal Gas Expiry Date:	November 3, 2032
NOX Cal Gas Conc:	48.90 ppm	NO Cal Gas Conc:	48.80 ppm
Removed Cylinder #:		Removed Gas Exp Date:	
Removed Gas NOX Conc:	48.90 ppm	Removed Gas NO Conc:	48.80 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	3808
ZAG make/model:	Teledyne API T701	Serial Number:	362

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.1	-0.3	0.5	----	----
AF High point	4918	81.8	800.0	798.4	1.6	769.4	760.8	8.6	1.0400	1.0490
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X =	804.1 ppb	NO =	798.7 ppb	* = > +/-5% change initiates investigation	*Percent Change	NO_X = -4.5%
Baseline Corr 1st pt	NO_X =	769.3 ppb	NO =	761.1 ppb	As Found Statistics	*Percent Change	NO = -4.9%
Baseline Corr 2nd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO_X r^2:	Nx Sl:	Nx Int:
Baseline Corr 3rd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO r^2:	NO Sl:	NO Int:
					As found NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Teledyne API T200 Serial Number: 721

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.380	1.440	NO bkgnd or offset:	0.2	0.2
NOX coeff or slope:	1.375	1.434	NOX bkgnd or offset:	-0.2	-0.2
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	4.6	4.6

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.002948	0.997835
NO_X Cal Offset:	1.708117	1.947157
NO Cal Slope:	0.999666	0.998465
NO Cal Offset:	0.546668	-0.034131
NO_2 Cal Slope:	1.006266	0.996541
NO_2 Cal Offset:	1.380378	1.708938

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.4	0.0	0.4	----	----
High point	4918	81.8	800.0	798.4	1.6	799.5	797.0	2.5	1.0007	1.0018
Mid point	4959	40.9	400.0	399.2	0.8	401.8	399.0	2.8	0.9955	1.0005
Low point	4980	20.4	199.5	199.1	0.4	202.6	198.4	4.2	0.9847	1.0035
As left zero	5000	0.0	0.0	1.1	-1.1	0.9	1.1	-0.2	----	----
As left span	4918	81.8	800.0	408.1	800.0	796.6	408.1	388.5	1.0043	1.0000
							Average Correction Factor		0.9936	1.0019

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.4	----	----
High GPT point	794.5	406.9	389.2	388.8	1.0011	99.9%
Mid GPT point	794.5	602.7	193.4	195.6	0.9889	101.1%
Low GPT point	794.5	701.1	95.0	97.4	0.9757	102.5%
				Average Correction Factor	0.9886	101.2%

Notes: No maintenance done. Span adjusted.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

NO_X Calibration Summary

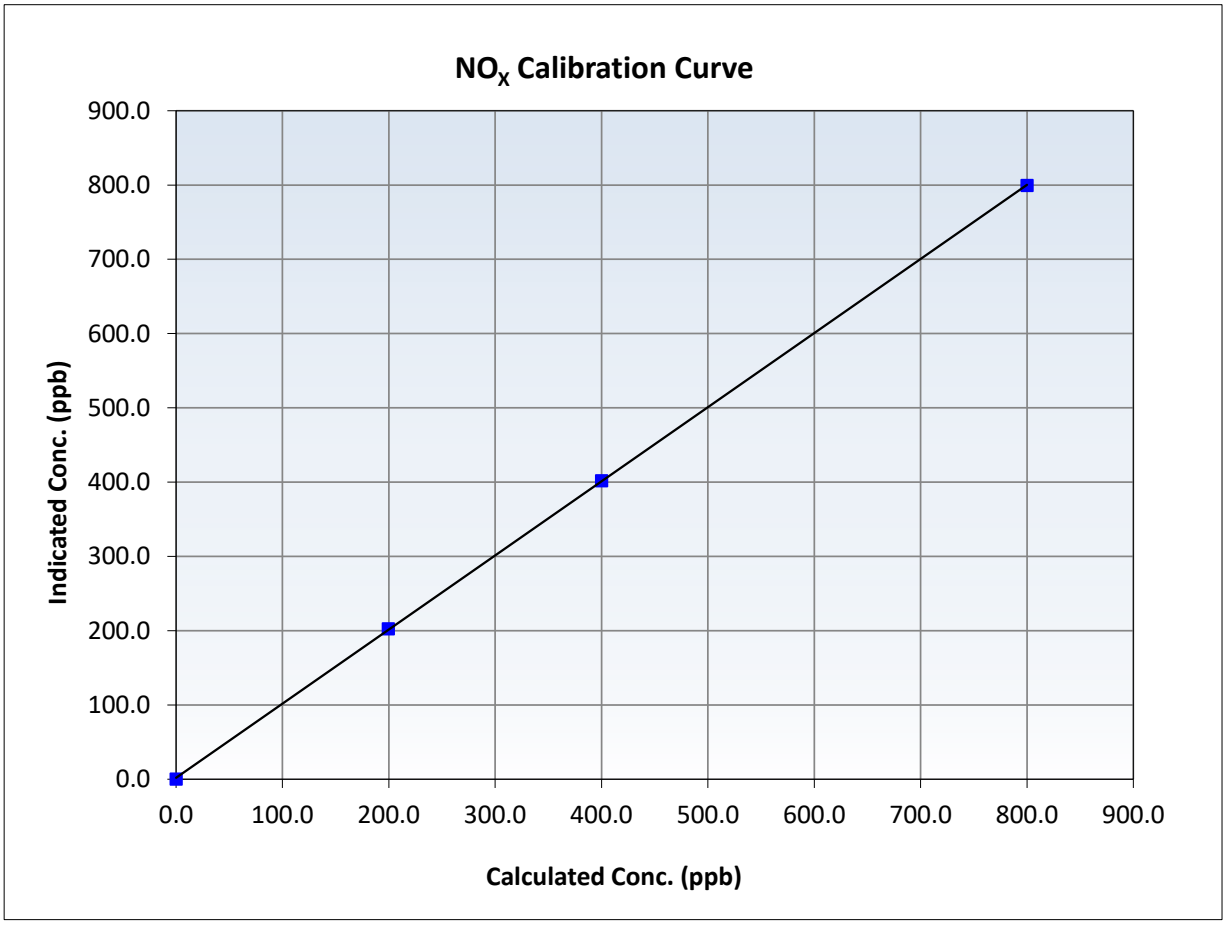
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 18, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:06	End Time (MST):	10:54
Analyzer make:	Teledyne API T200	Analyzer serial #:	721

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.4	----
800.0	799.5	1.0007
400.0	401.8	0.9955
199.5	202.6	0.9847

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999983	*≥0.995*
Slope	0.997835	*0.90 - 1.10*
Intercept	1.947157	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

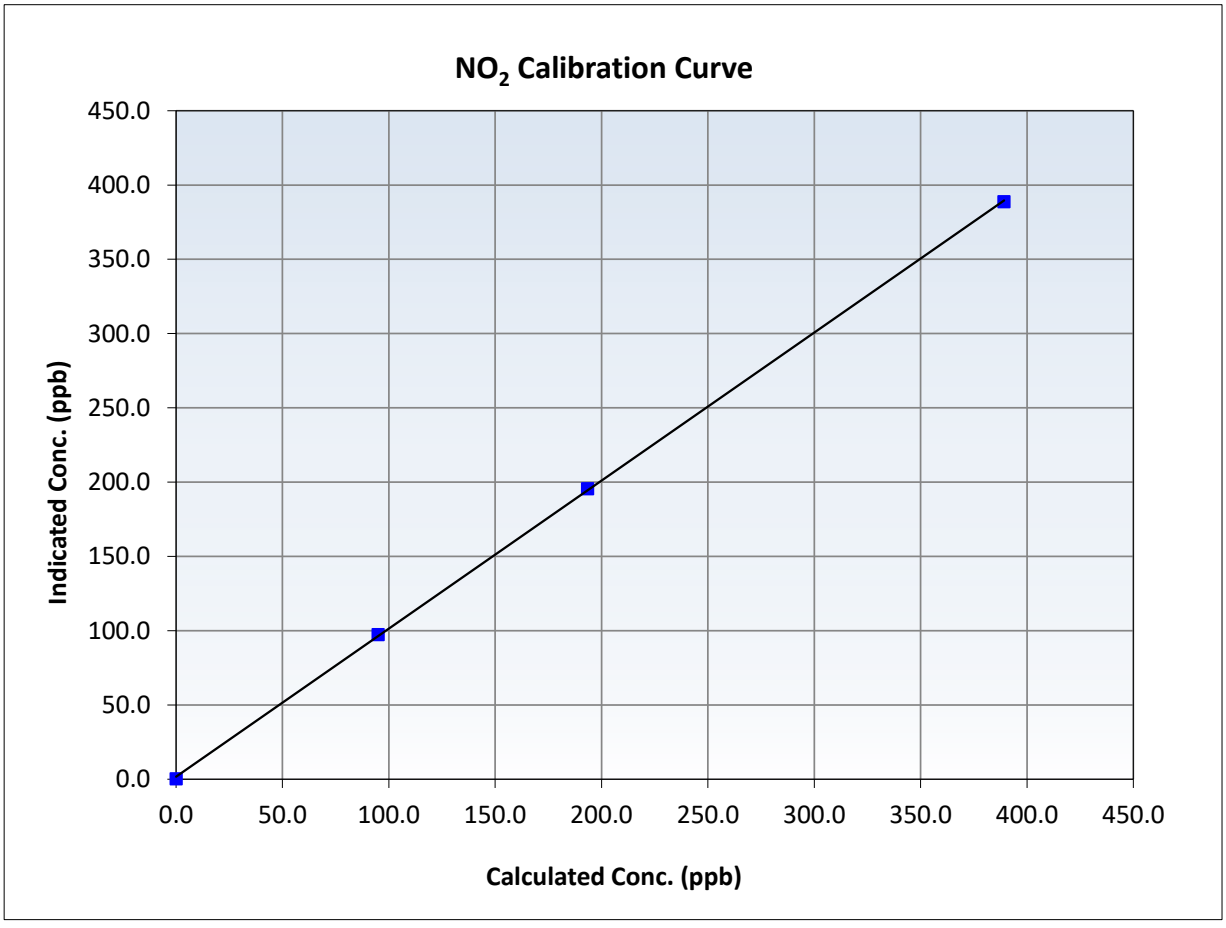
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 18, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:06	End Time (MST):	10:54
Analyzer make:	Teledyne API T200	Analyzer serial #:	721

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.4	----
389.2	388.8	1.0011
193.4	195.6	0.9889
95.0	97.4	0.9757

Statistical Evaluation		Limits
Correlation Coefficient	0.999944	≥0.995
Slope	0.996541	0.90 - 1.10
Intercept	1.708938	+/-20



Wood Buffalo Environmental Association

NO Calibration Summary

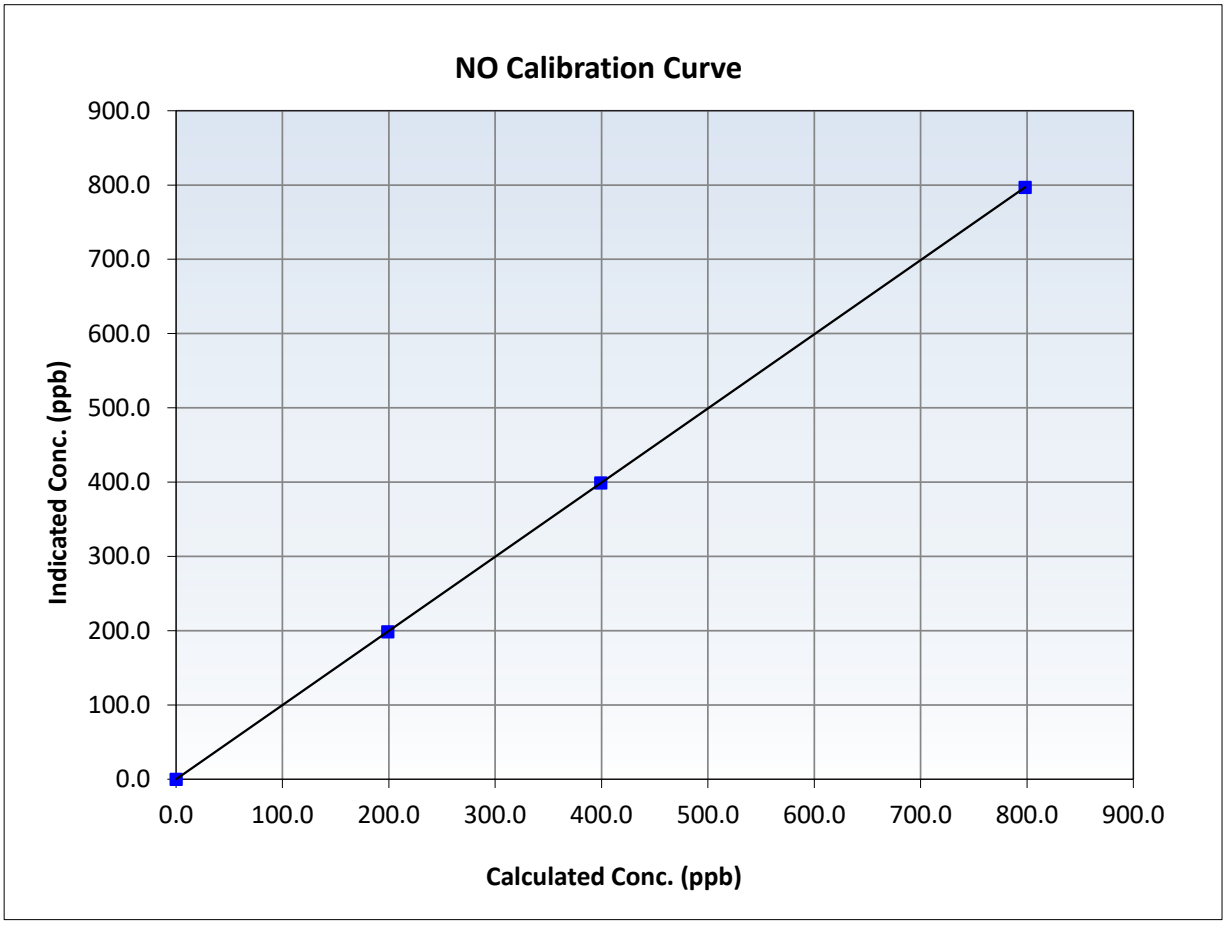
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 18, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:06	End Time (MST):	10:54
Analyzer make:	Teledyne API T200	Analyzer serial #:	721

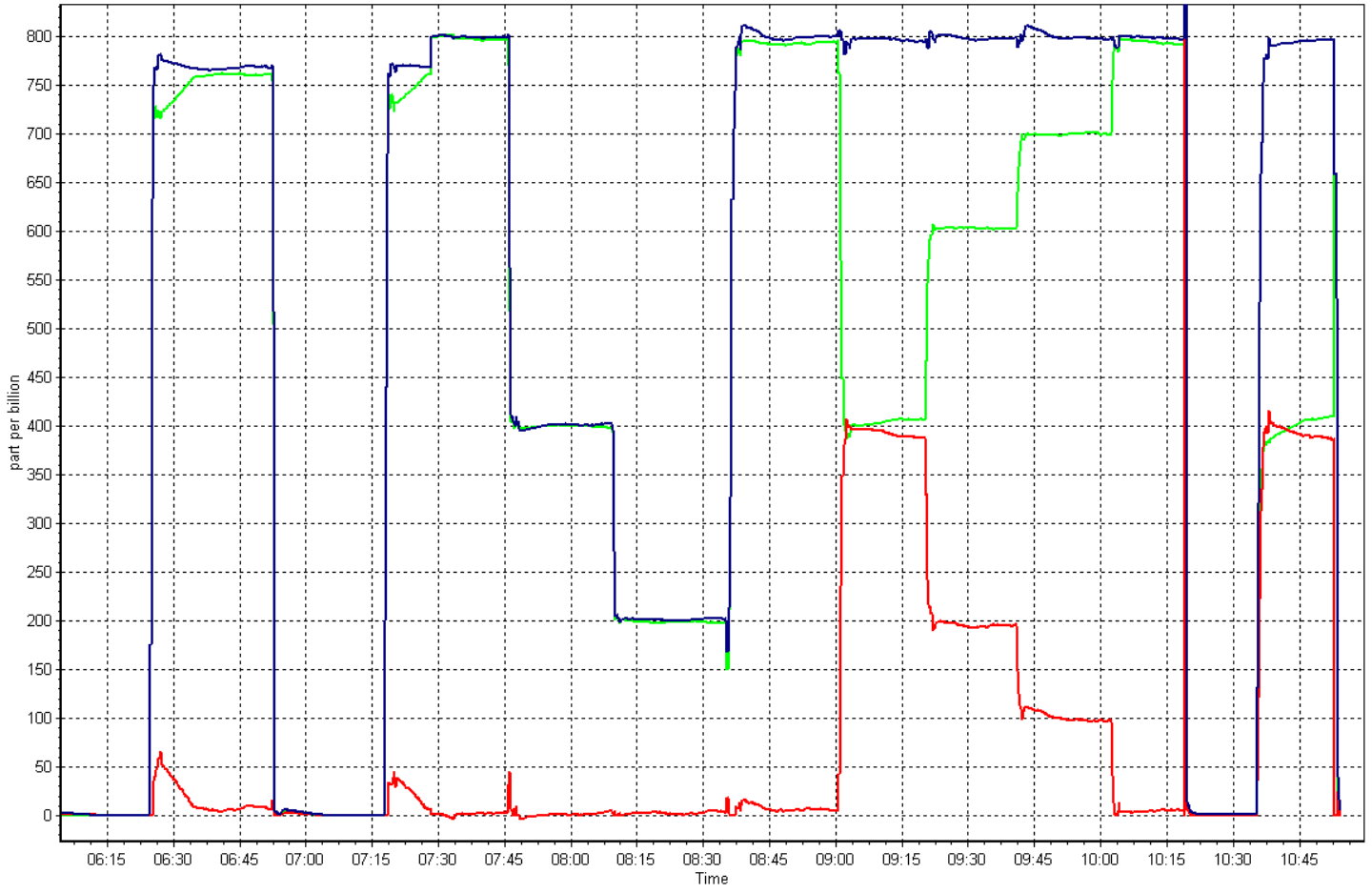
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
798.4	797.0	1.0018
399.2	399.0	1.0005
199.1	198.4	1.0035

Statistical Evaluation		Limits
Correlation Coefficient	0.999999	≥0.995
Slope	0.998465	0.90 - 1.10
Intercept	-0.034131	+/-20



NO_X Calibration Plot Date: July 23, 2025 Location: Buffalo Viewpoint



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Buffalo Viewpoint	Station number:	AMS 04
Calibration Date:	July 4, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	8:12	End time (MST):	10:15
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	Teledyne API T700	Serial Number:	3808
ZAG Make/Model:	Teledyne API T701	Serial Number:	362

Analyzer Information

Analyzer make:	Teledyne API T400	Analyzer serial #:	2961
Analyzer Range	0 - 500 ppb		

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	0.996400	1.003886	Backgd or Offset:	-2.2	-2.2
Calibration intercept:	1.680000	1.620000	Coeff or Slope:	1.019	1.019

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	1.3	----
As found High point	5000	1011.6	400.0	401.5	1.000
As found Mid point					
As found Low point					
Baseline Corr As found:	400.2	Previous response	400.2	*% change	0.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	1.5	----
High point	5000	1014.0	400.0	403.1	0.992
Mid point	5000	831.4	200.0	202.5	0.988
Low point	5000	720.0	100.0	102.1	0.979
As left zero	5000	0.0	0.0	1.8	----
As left span	5000	1014.0	400.0	403.8	0.991
				Average Correction Factor	0.986

Notes: No adjustments done.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

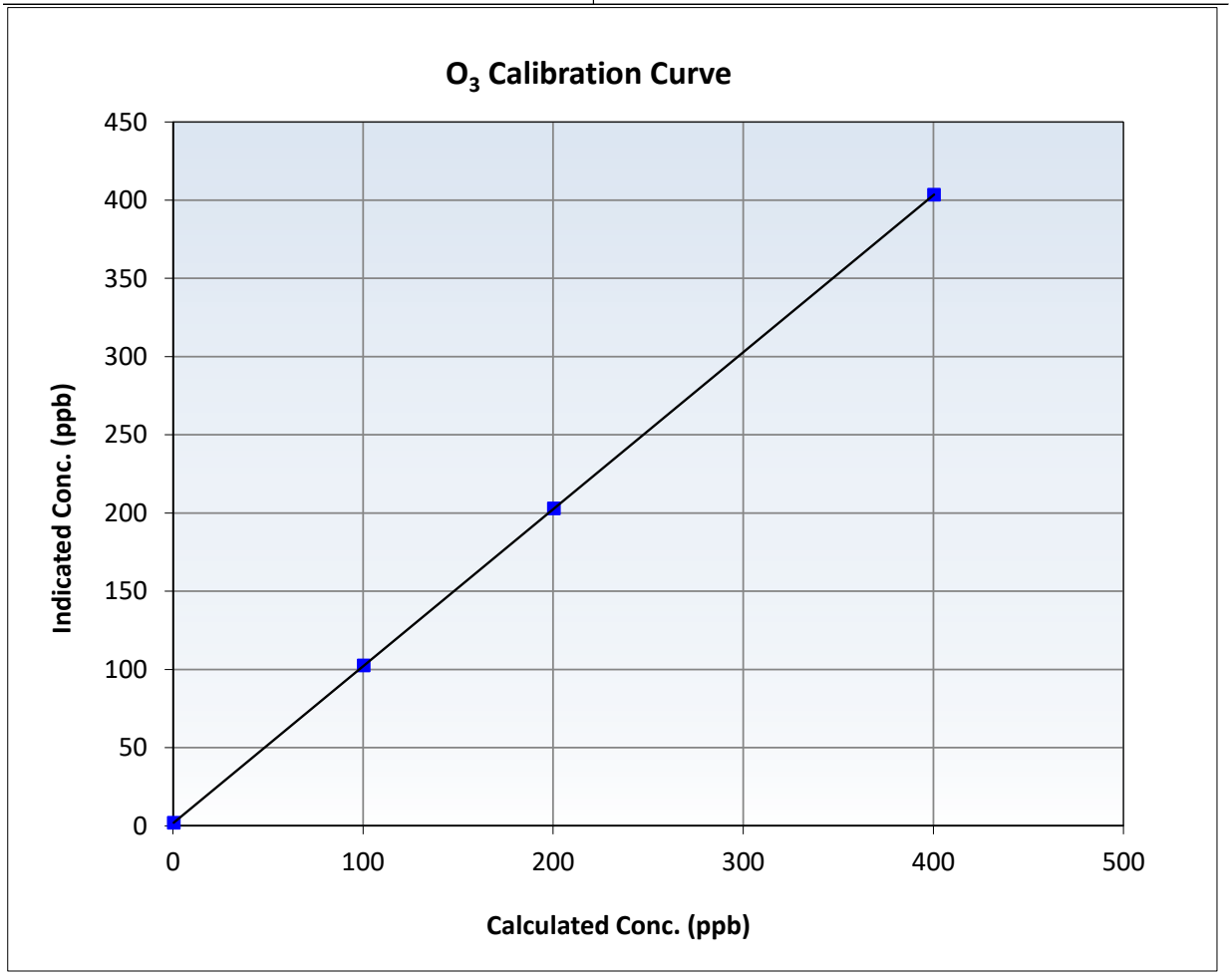
O_3 Calibration Summary

Station Information

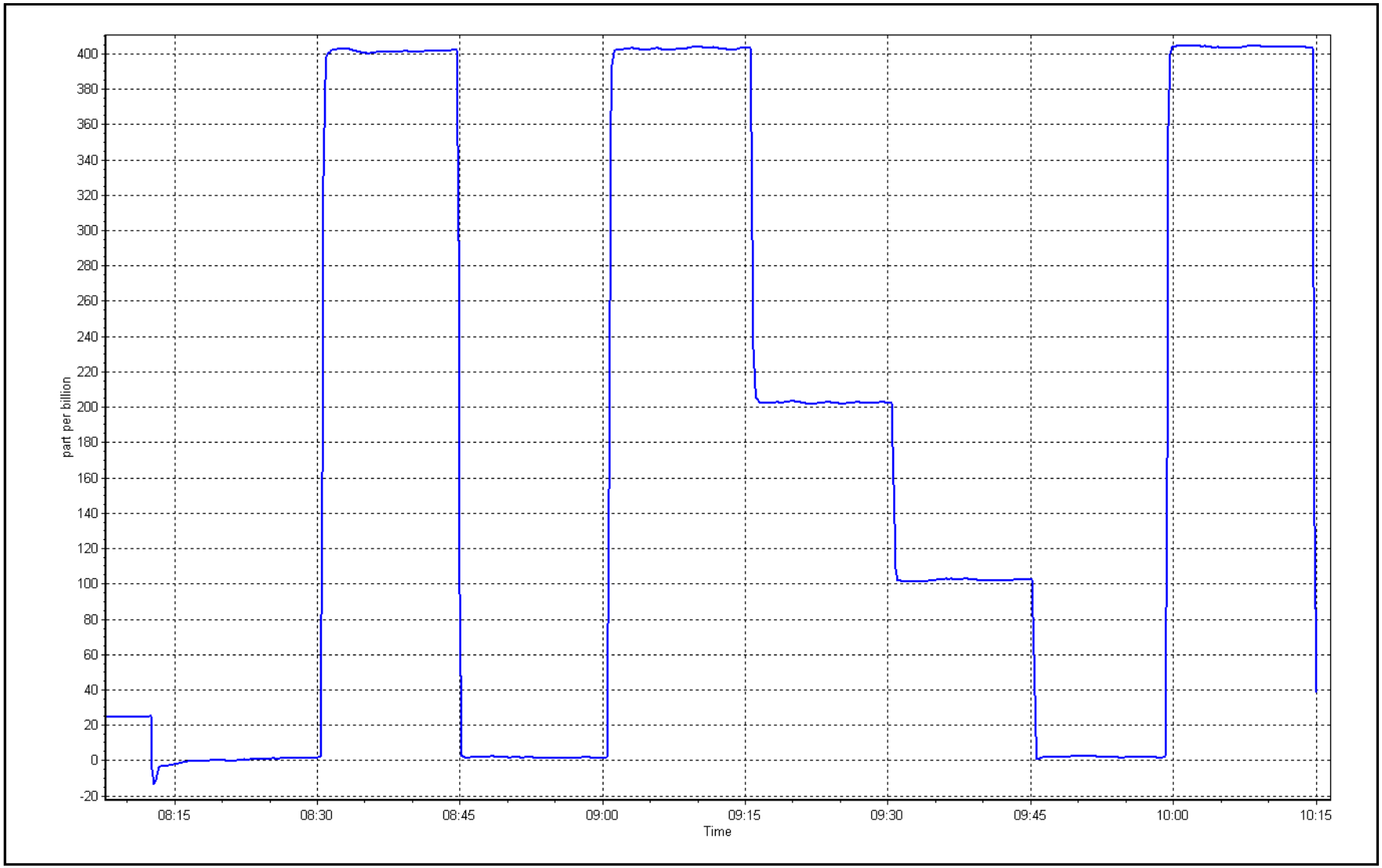
Calibration Date:	July 4, 2025	Previous Calibration:	June 24, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	8:12	End Time (MST):	10:15
Analyzer make:	Teledyne API T400	Analyzer serial #:	2961

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	1.5	----	Correlation Coefficient	1.000000	*≥0.995*
400.0	403.1	0.9923	Slope	1.003886	*0.90 - 1.10*
200.0	202.5	0.9877			
100.0	102.1	0.9794	Intercept	1.620000	*+/- 5*



O_3 Calibration Plot Date: July 4, 2025 Location: Buffalo Viewpoint



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Buffalo Viewpoint	Station number:	AMS 04
Calibration Date:	July 24, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	6:32	End time (MST):	6:59
Analyzer Make:	Teledyne API T640	S/N:	321
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388753
Temp/RH standard:	Alicat FP-25BT	S/N:	388753

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	14.0	13.6	14.0	☐	+/- 2 °C
P (mmHg)	724.8	727.1	724.8	☐	+/- 10 mmHg
Flow (LPM)	5.03	5.09	5.03	☐	+/- 0.25 LPM
PW% (pump)	36	-----	36	☐	>80%
Zero Verification	PM w/o HEPA:	0.9	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: 30-Jan-27 — Lot No.: 100128-050-051

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: June 24, 2025

Date Disposable Filter Changed: June 24, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: June 24, 2025

Date RH/T Sensor Cleaned: June 24, 2025

No adjustments done.

Notes:

Calibration by: Melissa Lemay

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS05
MANNIX
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Mannix	Station number:	AMS 05
Calibration Date:	July 10, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	9:29	End time (MST):	14:15
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.06	ppm	Cal Gas Exp Date:	October 22, 2032	
Cal Gas Cylinder #:	CC308040				
Removed Cal Gas Conc:	50.06	ppm	Rem Gas Exp Date:	October 22, 2032	
Removed Gas Cyl #:			Diff between cyl:		
Calibrator Model:	API T700		Serial Number:	5470	
Zero Air Gen Model:	API T701		Serial Number:	361	

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1008841399	
Analyzer Range:	1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.002165	1.002152	Backgd or Offset:	10.1	10.1
Calibration intercept:	-0.156926	-0.377188	Coeff or Slope:	0.939	0.939

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.7	----
As found High point	4920	79.9	800.0	799.4	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	798.7	Previous response	801.6	*% change	-0.4%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4920	79.9	800.0	801.6	0.998
Mid point	4960	40.0	400.5	400.4	1.000
Low point	4980	20.0	200.2	200.3	1.000
As left zero	5000	0.0	0.0	0.2	----
As left span	4920	79.9	800.0	802.7	0.997
				Average Correction Factor:	0.999

Notes: Changed the inlet filter after as founds. No adjustments made.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

SO_2 Calibration Summary

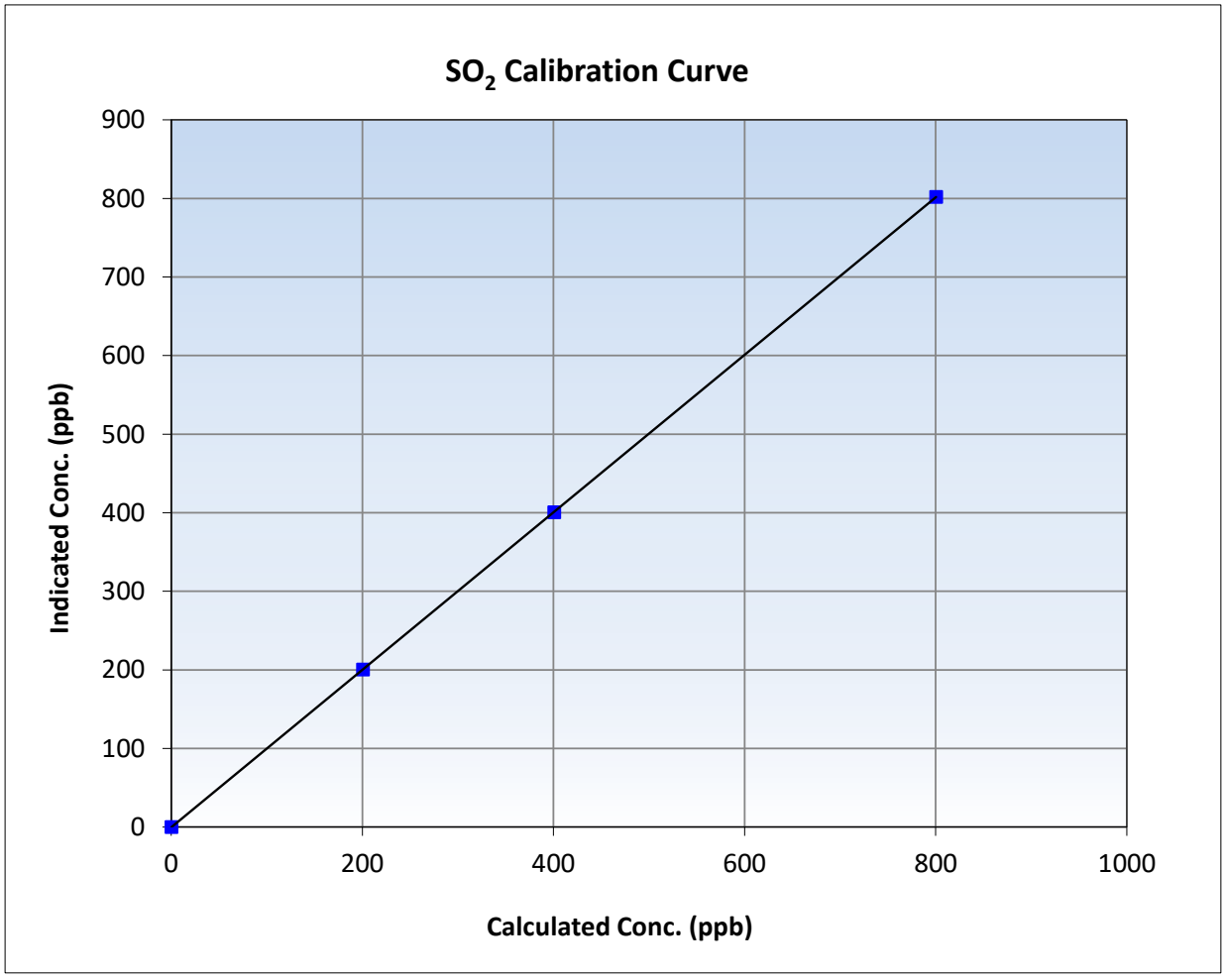
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:29	End Time (MST):	14:15
Analyzer make:	Thermo 43i	Analyzer serial #:	1008841399

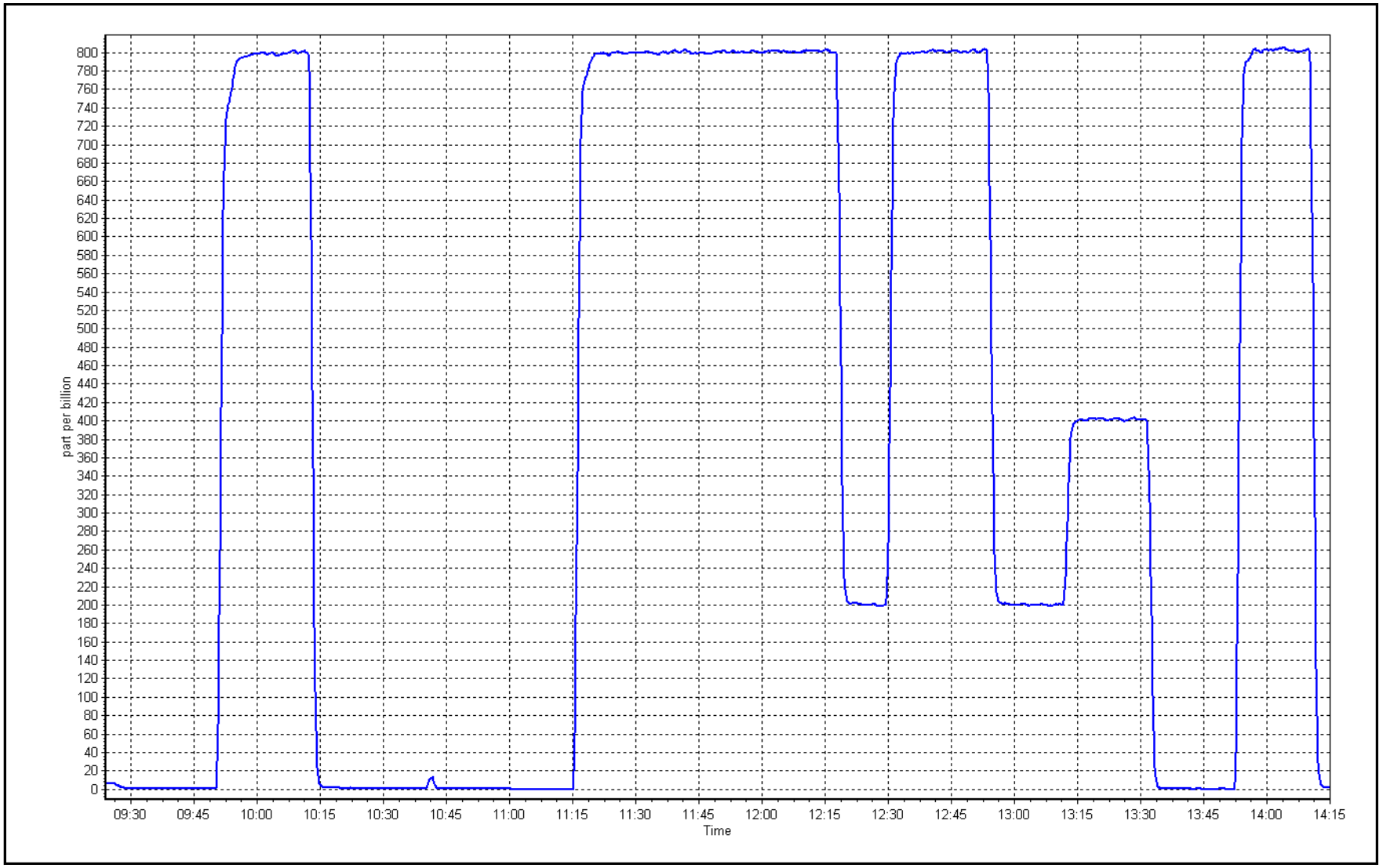
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
800.0	801.6	0.9980
400.5	400.4	1.0002
200.2	200.3	0.9997

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	1.002152	*0.90 - 1.10*
Intercept	-0.377188	*+/-30*



SO2 Calibration Plot Date: July 10, 2025 Location: Mannix



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Mannix	Station number:	AMS 05
Calibration Date:	July 8, 2025	Last Cal Date:	June 20, 2025
Start time (MST):	9:51	End time (MST):	14:10
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.96	ppm	Cal Gas Exp Date:	November 15, 2026
Cal Gas Cylinder #:	DT0037363			
Removed Cal Gas Conc:	4.96	ppm	Rem Gas Exp Date:	N/A
Removed Gas Cyl #:	N/A		Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	5470
ZAG Make/Model:	API T701		Serial Number:	361

Analyzer Information

Analyzer make:	Thermo 43iQ		Analyzer serial #:	1200326169	
Converter make:	Global		Converter serial #:	2022-225	
Analyzer Range	0 - 100 ppb		Converter Temp:	325	degC
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.998973	0.997832	Backgd or Offset:	1.25	1.25
Calibration intercept:	0.142351	0.182274	Coeff or Slope:	1.029	1.029

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.2	----
As found High point	4919	80.6	80.0	81.1	0.988
As found Mid point	4960	40.3	40.0	40.8	0.985
As found Low point	4980	20.2	20.0	20.1	1.007
New cylinder response					
Baseline Corr As found:	80.9	Prev response:	80.02	*% change:	1.1%
Baseline Corr 2nd AF pt:	40.6	AF Slope:	1.013553	AF Intercept:	0.082148
Baseline Corr 3rd AF pt:	19.9	AF Correlation:	0.999961	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4919	80.6	80.0	79.9	1.001
Mid point	4960	40.3	40.0	40.2	0.994
Low point	4980	20.2	20.0	20.2	0.992
As left zero	5000	0.0	0.0	0.2	----
As left span	4919	80.6	80.0	79.4	1.007
SO2 Scrubber Check	4920	80.3	803.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	0.996
Date of last converter efficiency test:					

Notes: Changed the inlet filter after as founds. Ran a SO2 scrubber check after calibrator zero. No adjustments made.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

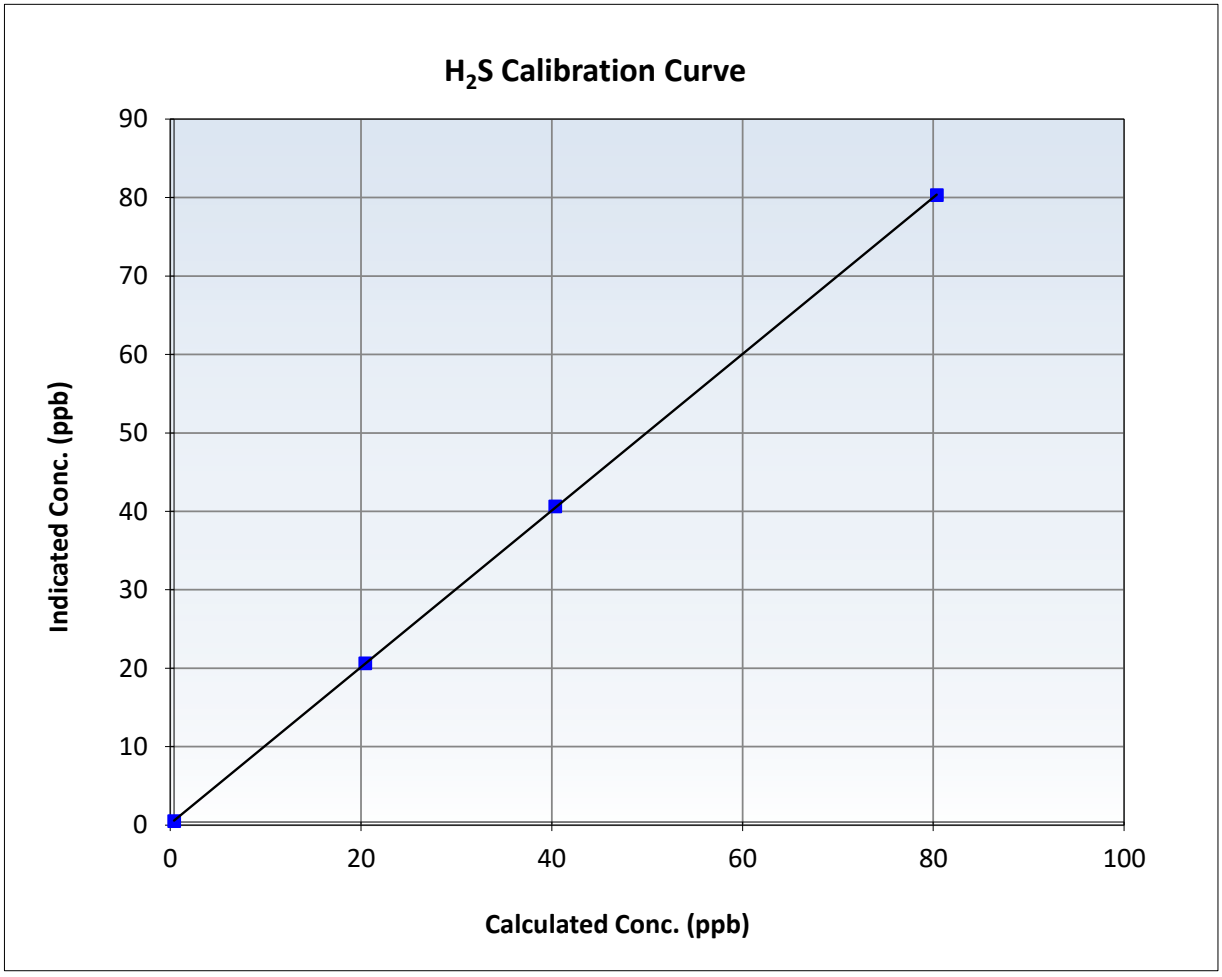
H_2S Calibration Summary

Station Information

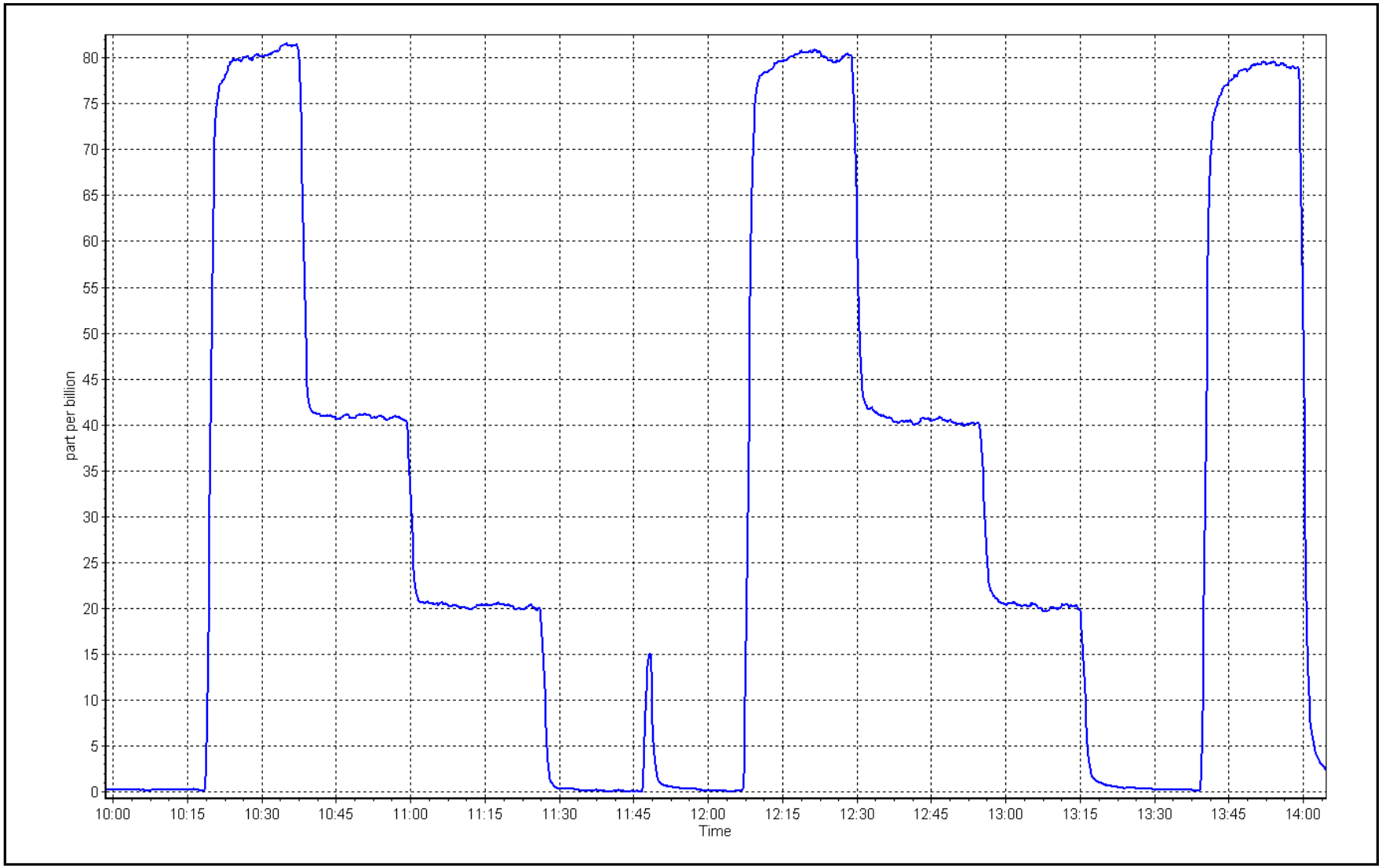
Calibration Date:	July 8, 2025	Previous Calibration:	June 20, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:51	End Time (MST):	14:10
Analyzer make:	Thermo 43iQ	Analyzer serial #:	1200326169

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.1	----	Correlation Coefficient	0.999992	*≥0.995*
80.0	79.9	1.0008	Slope	0.997832	*0.90 - 1.10*
40.0	40.2	0.9944			
20.0	20.2	0.9920	Intercept	0.182274	*+/-3*



H_2S Calibration Plot Date: July 8, 2025 Location: Mannix



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Mannix	Station number:	AMS 05
Calibration Date:	July 10, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	9:29	End time (MST):	14:15
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC308040	Cal Gas Expiry Date:	October 22, 2032
CH4 Cal Gas Conc.	500.3 ppm	CH4 Equiv Conc.	1047.6 ppm
C3H8 Cal Gas Conc.	199.0 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	500.3 ppm	CH4 Equiv Conc.	1047.6 ppm
Removed C3H8 Conc.	199.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	API T700	Serial Number:	5470
Zero Air Gen model:	API T701	Serial Number:	361

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1193585649
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	3.96E-04	3.96E-04	NMHC SP Ratio:	8.01E-05	8.05E-05
CH4 Retention time:	15.6	15.6	NMHC Peak Area:	109245	109395
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	16.74	16.99	0.985
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	16.99	Prev response	16.62	*% change	2.2%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.9	16.74	16.80	0.997
Mid point	4960	40.0	8.38	8.32	1.008
Low point	4980	20.0	4.19	4.10	1.022
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	16.74	16.88	0.992
				Average Correction Factor	1.009

Notes: Changed the H2, N2 cylinders and the inlet filter after as founds. Adjusted the span.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	8.75	8.97	0.975
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.97	Prev response	8.71	*% change	3.0%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.9	8.75	8.81	0.993
Mid point	4960	40.0	4.38	4.41	0.993
Low point	4980	20.0	2.19	2.19	1.000
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	8.75	8.86	0.987
				Average Correction Factor	0.995

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	7.99	8.02	0.997
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.02	Prev response	7.92	*% change	1.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.9	7.99	7.99	1.001
Mid point	4960	40.0	4.00	3.90	1.026
Low point	4980	20.0	2.00	1.91	1.046
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	7.99	8.01	0.998
				Average Correction Factor	1.024

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	0.996741	1.004805
THC Cal Offset:	-0.064064	-0.059908
CH4 Cal Slope:	0.996882	1.001185
CH4 Cal Offset:	-0.054726	-0.053537
NMHC Cal Slope:	0.996599	1.008206
NMHC Cal Offset:	-0.009538	-0.006971

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

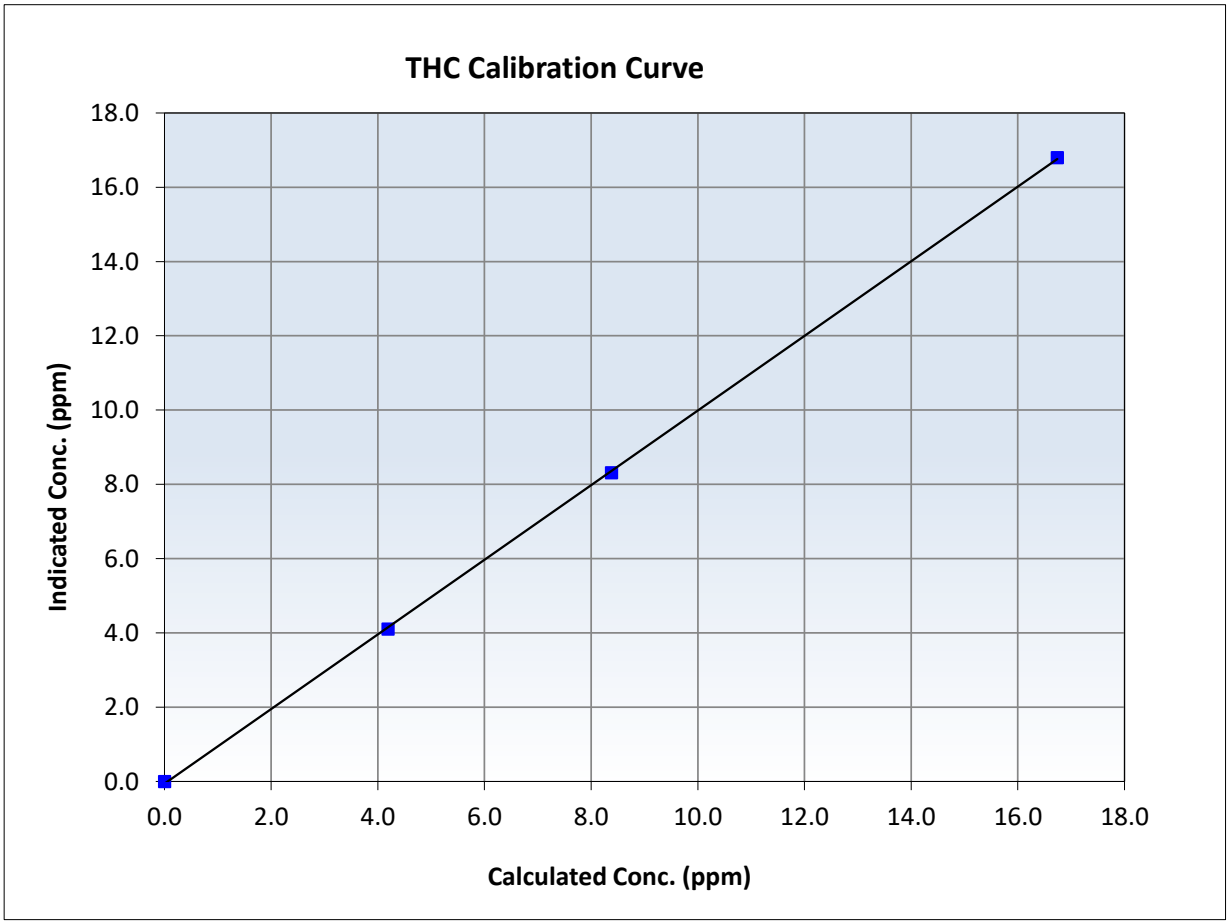
THC Calibration Summary

Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:29	End Time (MST):	14:15
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585649

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999939	≥0.995
16.74	16.80	0.9967	Slope	1.004805	0.90 - 1.10
8.38	8.32	1.0079			
4.19	4.10	1.0218	Intercept	-0.059908	+/-0.5



Wood Buffalo Environmental Association

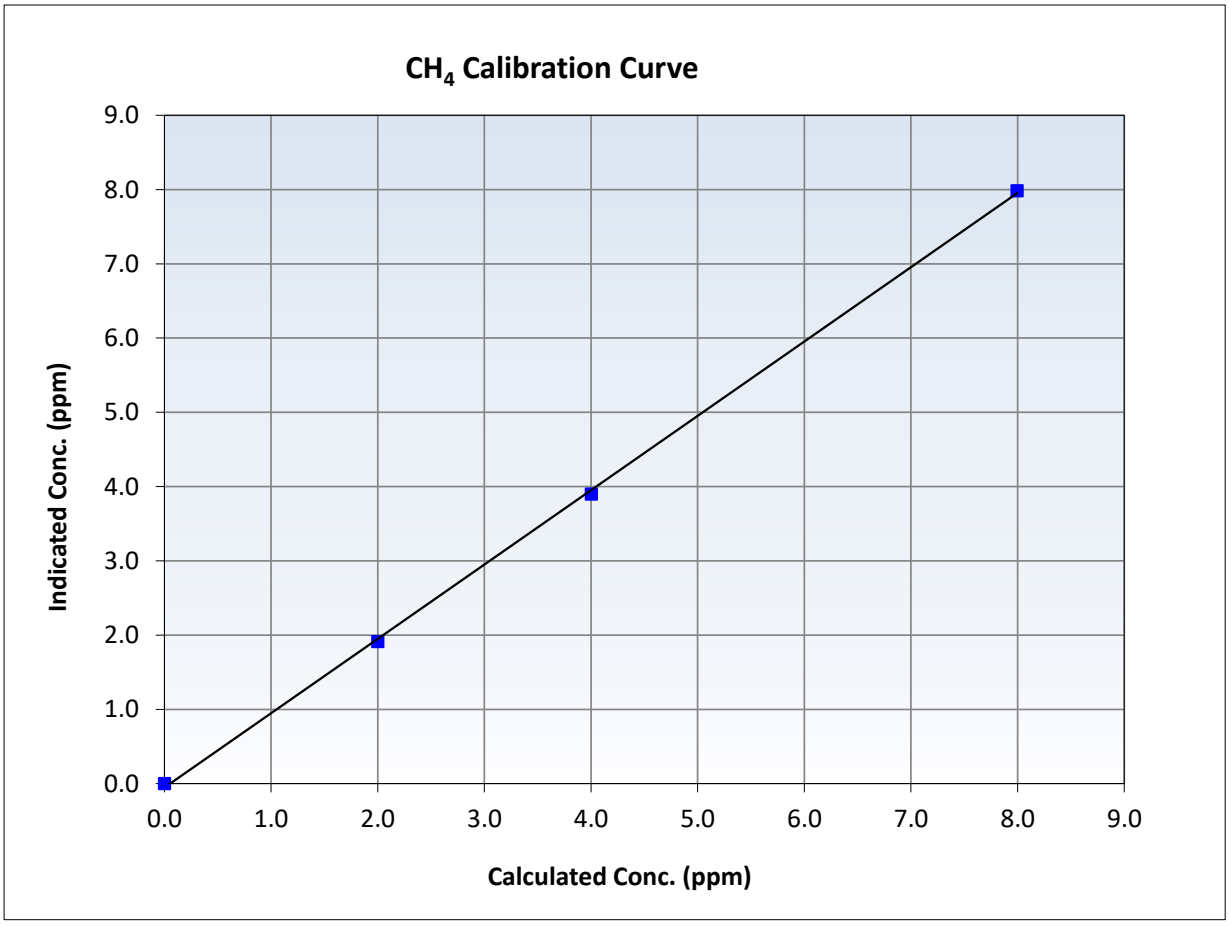
CH_4 Calibration Summary

Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:29	End Time (MST):	14:15
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585649

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999768	≥0.995
7.99	7.99	1.0011	Slope	1.001185	0.90 - 1.10
4.00	3.90	1.0257	Intercept	-0.053537	+/-0.5
2.00	1.91	1.0461			



Wood Buffalo Environmental Association

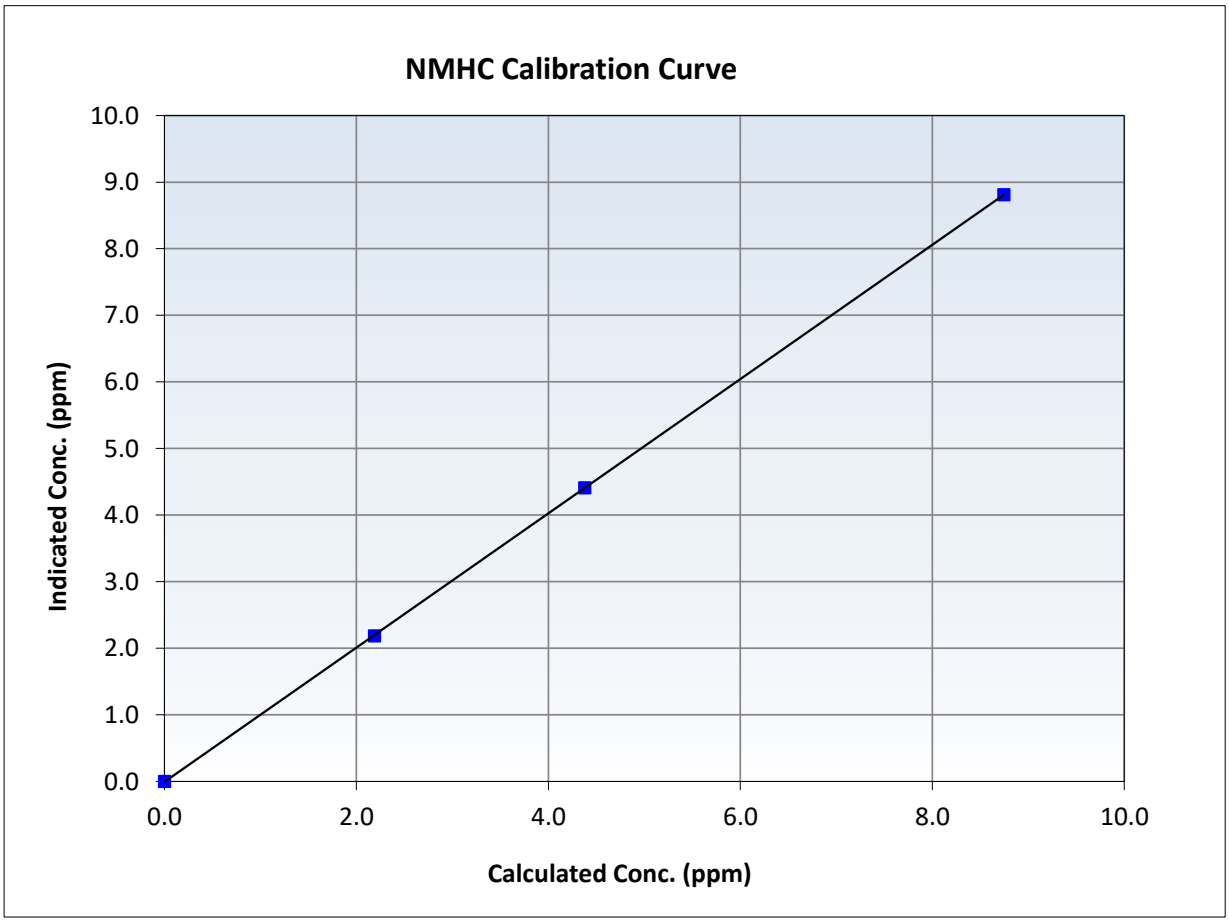
NMHC Calibration Summary

Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:29	End Time (MST):	14:15
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585649

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999995	≥0.995
8.75	8.81	0.9925	Slope	1.008206	0.90 - 1.10
4.38	4.41	0.9925			
2.19	2.19	1.0005	Intercept	-0.006971	+/-0.5



NMHC Calibration Plot Date: July 10, 2025 Location: Mannix

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS06
PATRICIA MCINNES
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
Calibration Date:	July 4, 2025	Last Cal Date:	June 27, 2025
Start time (MST):	8:40	End time (MST):	17:00
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.08	ppm	Cal Gas Exp Date:	October 22, 2032
Cal Gas Cylinder #:	CC255448			
Removed Cal Gas Conc:	50.08	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	3566
Zero Air Gen Model:	API T701		Serial Number:	4602

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1160290013	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.004025	1.000606	Backgd or Offset:	18.2	18.2
Calibration intercept:	1.158164	1.079118	Coeff or Slope:	0.907	0.907

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4920.2	79.8	799.3	797.0	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	797.3	Previous response	803.7	*% change	-0.8%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4920.2	79.8	799.3	800.1	0.999
Mid point	4960.1	39.9	399.6	402.0	0.994
Low point	4980	20.0	200.3	202.4	0.990
As left zero	5000	0.0	0.0	-0.1	----
As left span	4919.7	80.3	804.3	802.7	1.002
				Average Correction Factor:	0.994

Notes: Changed the inlet filter after as founds. No adjustments made. Calibration took longer due to issues with NHMC which was being calibrated at the same time.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

SO_2 Calibration Summary

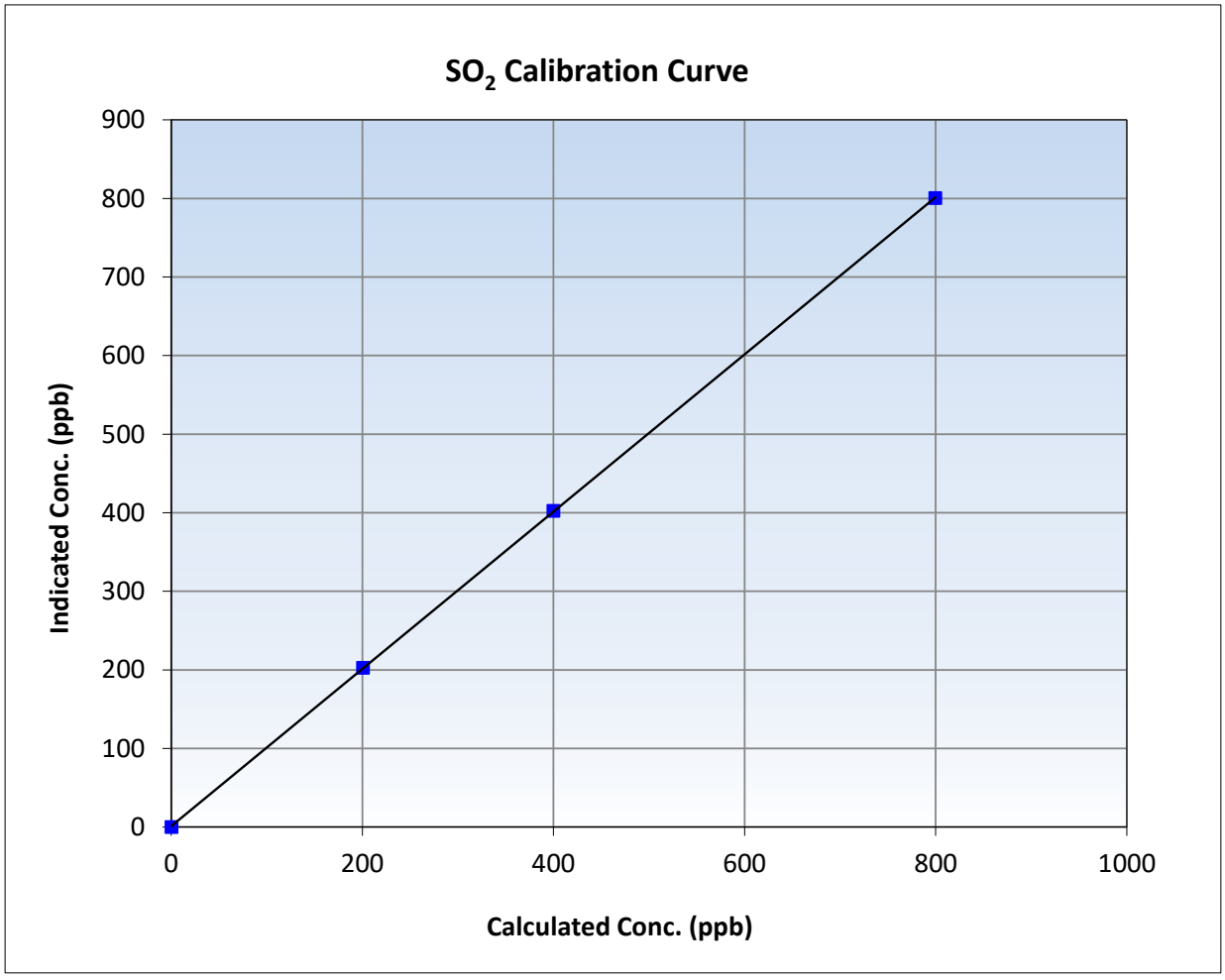
Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 27, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:40	End Time (MST):	17:00
Analyzer make:	Thermo 43i	Analyzer serial #:	1160290013

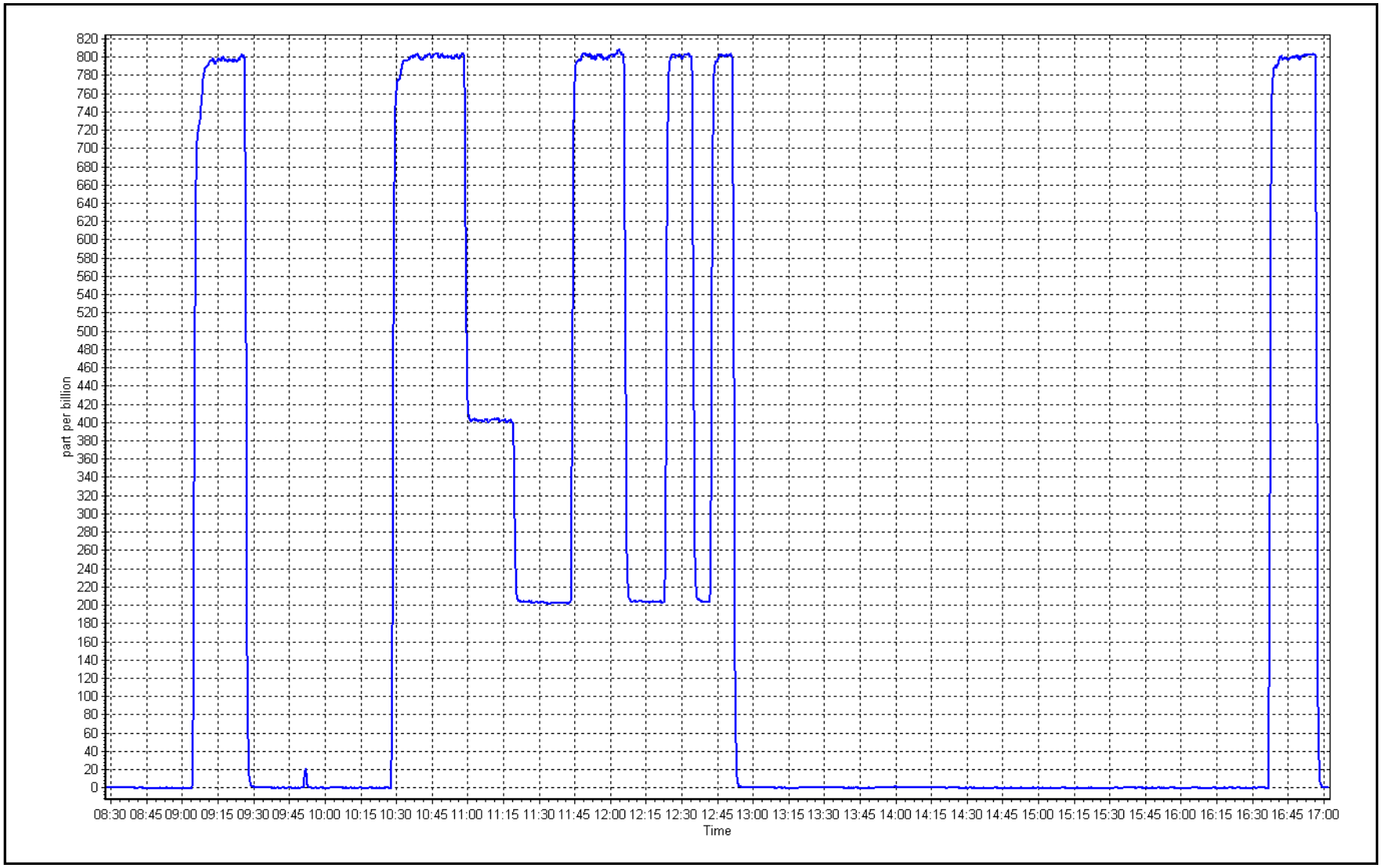
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
799.3	800.1	0.9990
399.6	402.0	0.9941
200.3	202.4	0.9897

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999989	*≥0.995*
Slope	1.000606	*0.90 - 1.10*
Intercept	1.079118	*+/-30*



SO2 Calibration Plot Date: July 4, 2025 Location: Patricia McInnes



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
Calibration Date:	July 17, 2025	Last Cal Date:	June 5, 2025
Start time (MST):	9:12	End time (MST):	14:15
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.760	ppm	Cal Gas Exp Date:	August 28, 2027
Cal Gas Cylinder #:	DT0014585			
Removed Cal Gas Conc:	4.760	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	3566
ZAG Make/Model:	API T701		Serial Number:	4602

Analyzer Information

Analyzer make:	Thermo 43i TLE		Analyzer serial #:	1218153358	
Converter make:	CDN-101		Converter serial #:	517	
Analyzer Range	0 - 100 ppb		Converter Temp:	800	degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	0.987252	1.025839	Backgd or Offset:	1.99	1.99
Calibration intercept:	0.160000	-0.140000	Coeff or Slope:	1.146	1.146

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.1	----
As found High point	4916	84.0	80.0	79.6	1.006
As found Mid point	4958	42.0	40.0	40.1	1.000
As found Low point	4979	21.0	20.0	20.2	0.995
New cylinder response					

Baseline Corr As found:	79.5	Prev response:	79.11	*% change:	0.5%
Baseline Corr 2nd AF pt:	40.0	AF Slope:	0.993540	AF Intercept:	0.240000
Baseline Corr 3rd AF pt:	20.1	AF Correlation:	0.999984	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4916	84.0	80.0	82.0	0.975
Mid point	4958	42.0	40.0	41.0	0.975
Low point	4979	21.0	20.0	19.7	1.015
As left zero	5000	0.0	0.0	0.3	----
As left span	4916	84.0	80.0	83.0	0.963
SO2 Scrubber Check				-0.1	

Date of last scrubber change: December 20, 2021 Ave Corr Factor: 0.988

Date of last converter efficiency test:

Notes: Changed the inlet filter after as founds. Ran a SO2 scrubber check after calibrator zero. No adjustments made. Points are drifting a bit, suspecting its due to scrubber moisture instability. Instrument diagnostics are normal.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

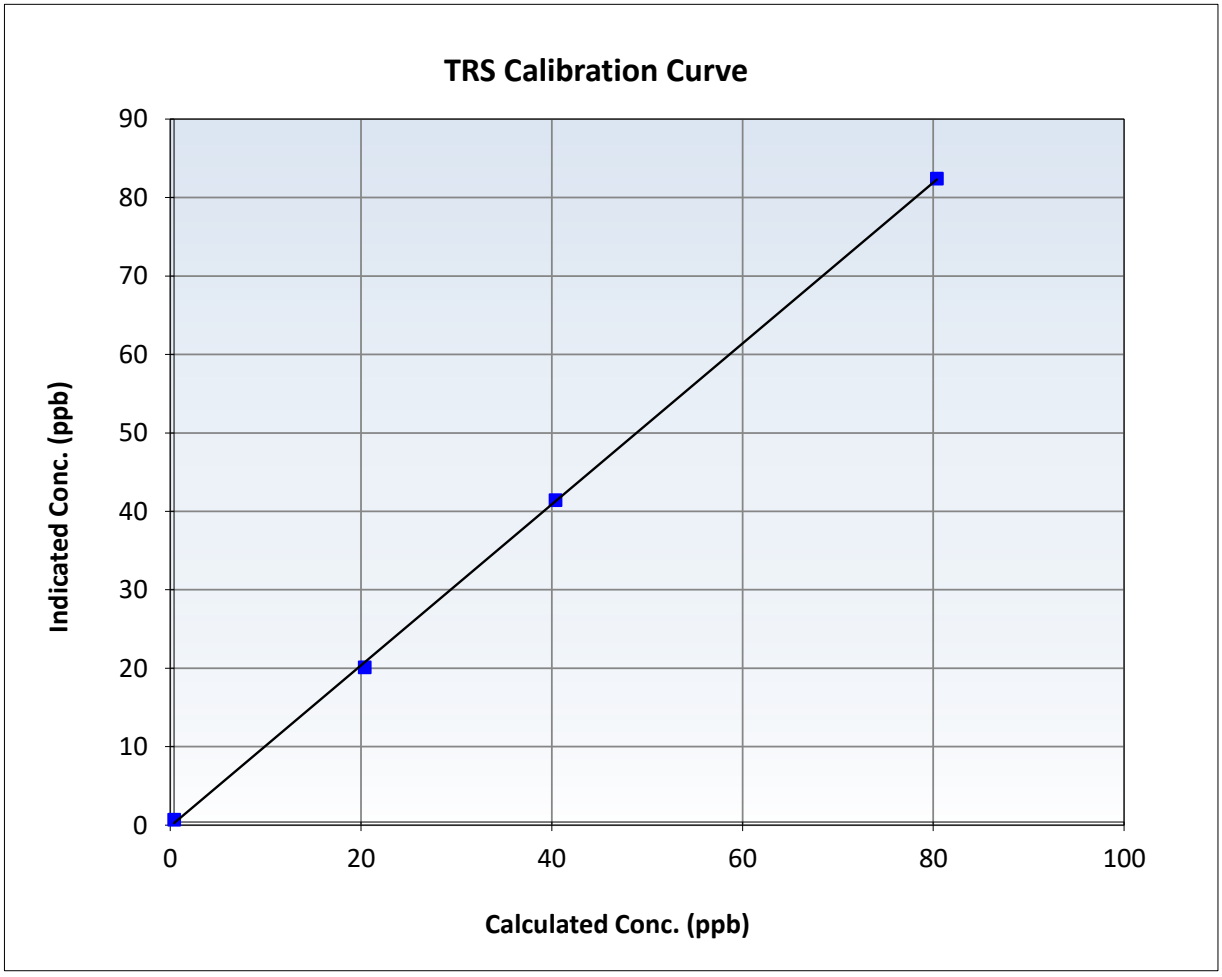
TRS Calibration Summary

Station Information

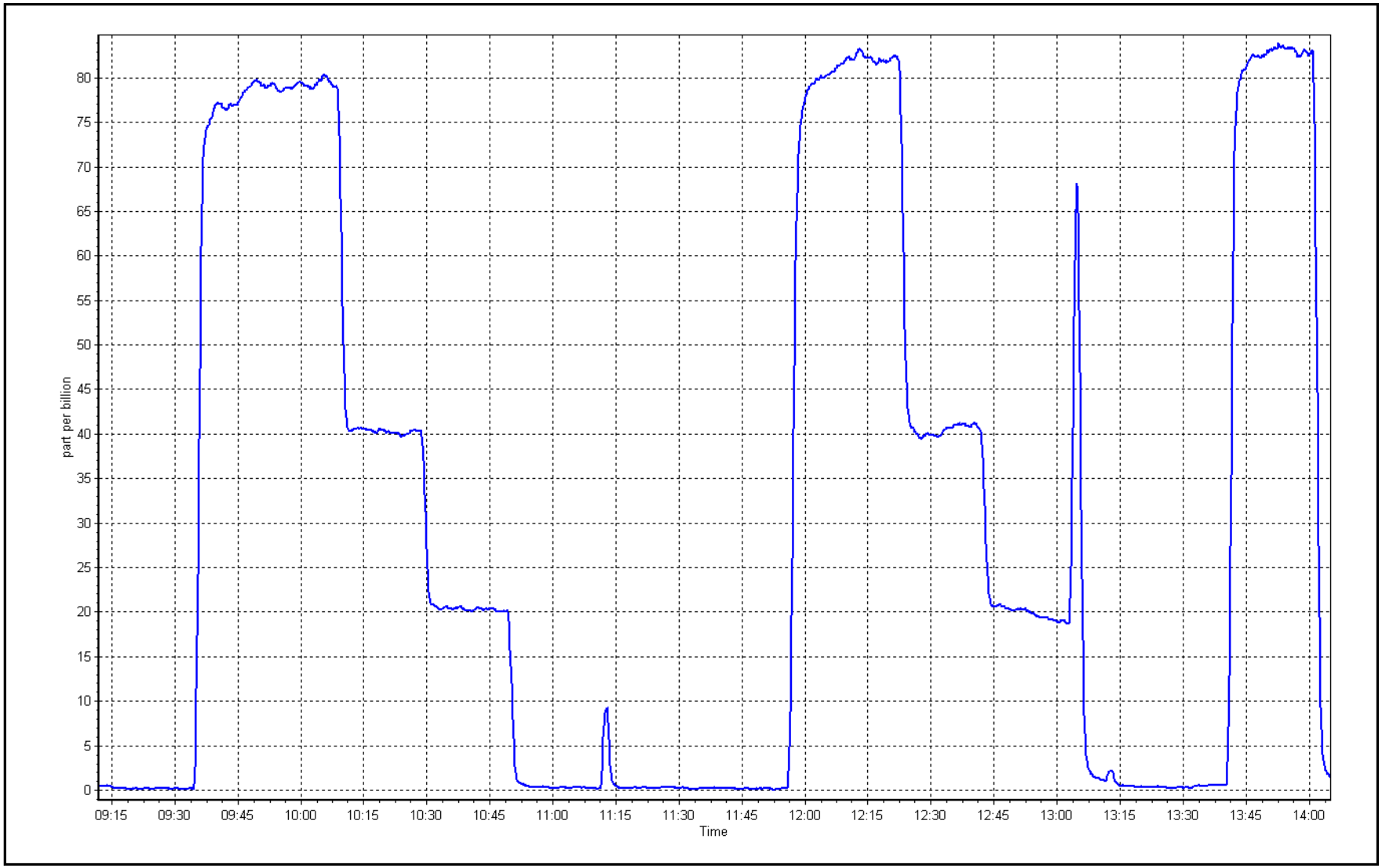
Calibration Date:	July 17, 2025	Previous Calibration:	June 5, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:12	End Time (MST):	14:15
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1218153358

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.3	----	Correlation Coefficient	0.999819	*≥0.995*
80.0	82.0	0.9752	Slope	1.025839	*0.90 - 1.10*
40.0	41.0	0.9752			
20.0	19.7	1.0148	Intercept	-0.140000	*+/-3*



TRS Calibration Plot Date: July 17, 2025 Location: Patricia McInnes



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
Calibration Date:	July 4, 2025	Last Cal Date:	June 3, 2025
Start time (MST):	8:41	End time (MST):	12:00
Reason:	As Found		

Calibration Standards

Gas Cert Reference:		CC255448	Cal Gas Expiry Date:	October 22, 2032	
CH4 Cal Gas Conc.	501.4	ppm	CH4 Equiv Conc.	1049.5	ppm
C3H8 Cal Gas Conc.	199.3	ppm			
Removed Gas Cert:			Removed Gas Expiry:		
Removed CH4 Conc.	501.4	ppm	CH4 Equiv Conc.	1049.5	ppm
Removed C3H8 Conc.	199.3	ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):			Diff between cyl (NM):		
Calibrator Model:	API T700		Serial Number:	3566	
Zero Air Gen model:	API T701		Serial Number:	4602	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	1118148494	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	4.86E-04		NMHC SP Ratio:	4.38E-05	
CH4 Retention time:	14.4		NMHC Peak Area:	199812	
Zero Chromatogram:	OFF		Flat Baseline:	OFF	

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.04	----
As found High point	4920	79.8	16.75	16.68	1.006
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.64	Prev response	16.82	*% change	-1.1%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	16.75	16.77	0.999
Mid point	4960	39.9	8.37	8.43	0.993
Low point	4980	20.0	4.20	4.50	0.933
As left zero					
As left span					
				Average Correction Factor	0.975

Notes: Changed the inlet filter, N2 and H2 cylinders after as founds. Adjusted the zero and span. Third point is failing due to a contaminated cylinder, see docit note for further info.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	8.75	8.63	1.013
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.63	Prev response	8.76	*% change	-1.4%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.75	8.83	0.990
Mid point	4960.1	39.9	4.37	4.44	0.985
Low point	4980	20.0	2.19	2.24	0.978
As left zero					
As left span					
				Average Correction Factor	0.985

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.04	----
As found High point	4920	79.8	8.00	8.04	1.000
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.01	Prev response	8.07	*% change	-0.8%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.00	7.94	1.008
Mid point	4960.1	39.9	4.00	3.99	1.002
Low point	4980	20.0	2.01	2.26	0.889
As left zero					
As left span					
				Average Correction Factor	0.966

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	1.002107	0.995518
THC Cal Offset:	0.039972	0.127524
CH4 Cal Slope:	1.006781	0.981106
CH4 Cal Offset:	0.012973	0.111143
NMHC Cal Slope:	0.998066	1.008977
NMHC Cal Offset:	0.026598	0.015581

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

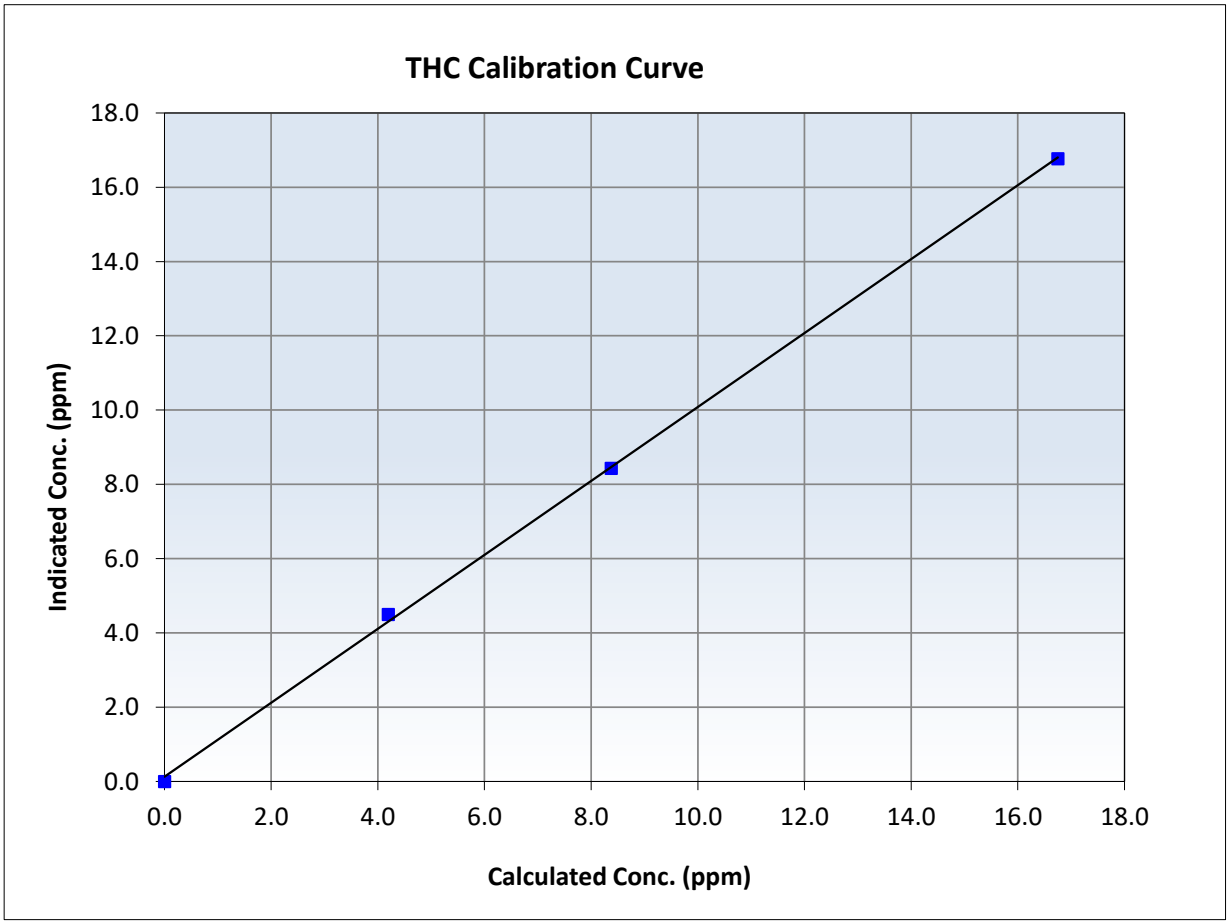
THC Calibration Summary

Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 3, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:41	End Time (MST):	12:00
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999633	≥0.995
16.75	16.77	0.9987	Slope	0.995518	0.90 - 1.10
8.37	8.43	0.9935	Intercept	0.127524	+/-0.5
4.20	4.50	0.9329			



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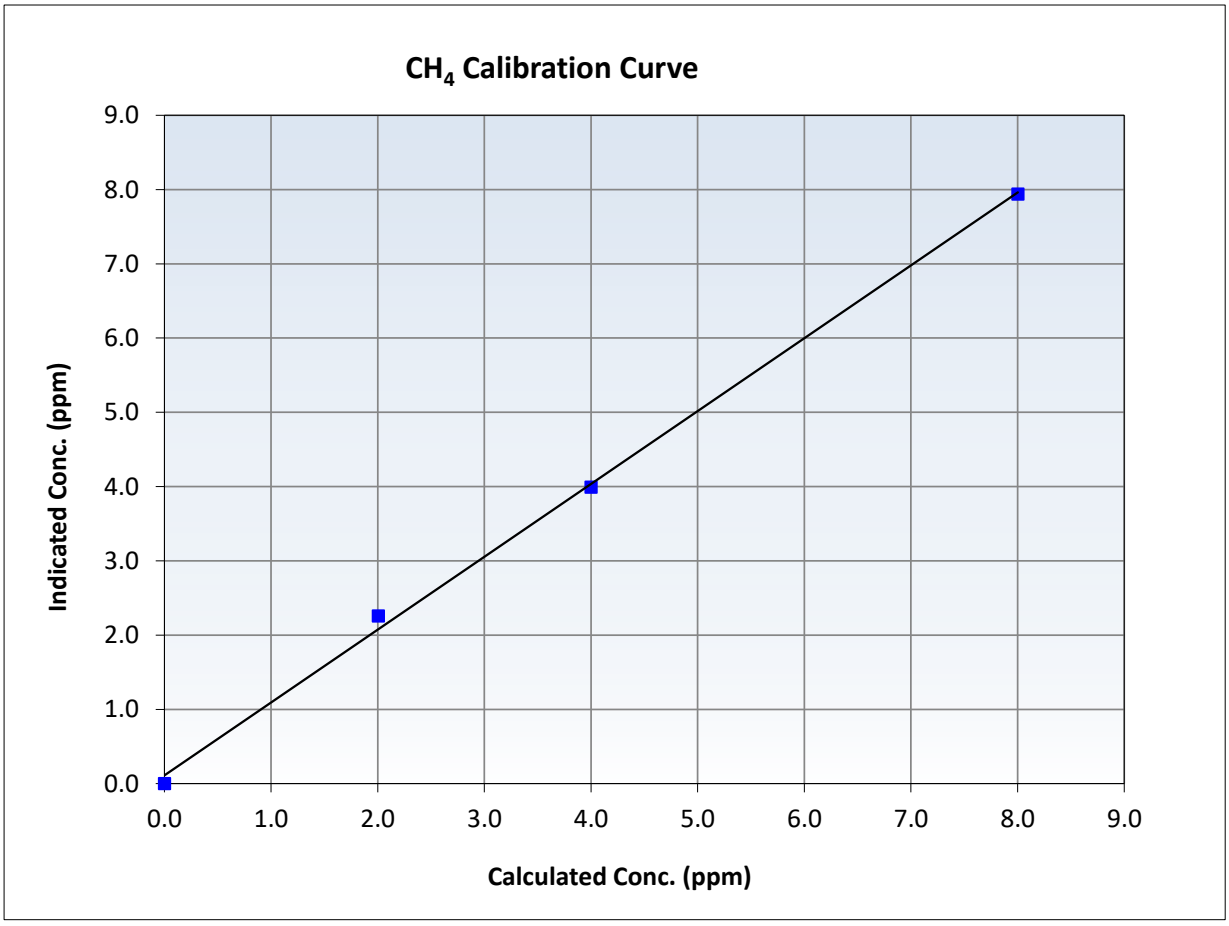
CH_4 Calibration Summary

Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 3, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:41	End Time (MST):	12:00
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.998619	≥0.995
8.00	7.94	1.0079	Slope	0.981106	0.90 - 1.10
4.00	3.99	1.0023			
2.01	2.26	0.8886	Intercept	0.111143	+/-0.5



Wood Buffalo Environmental Association

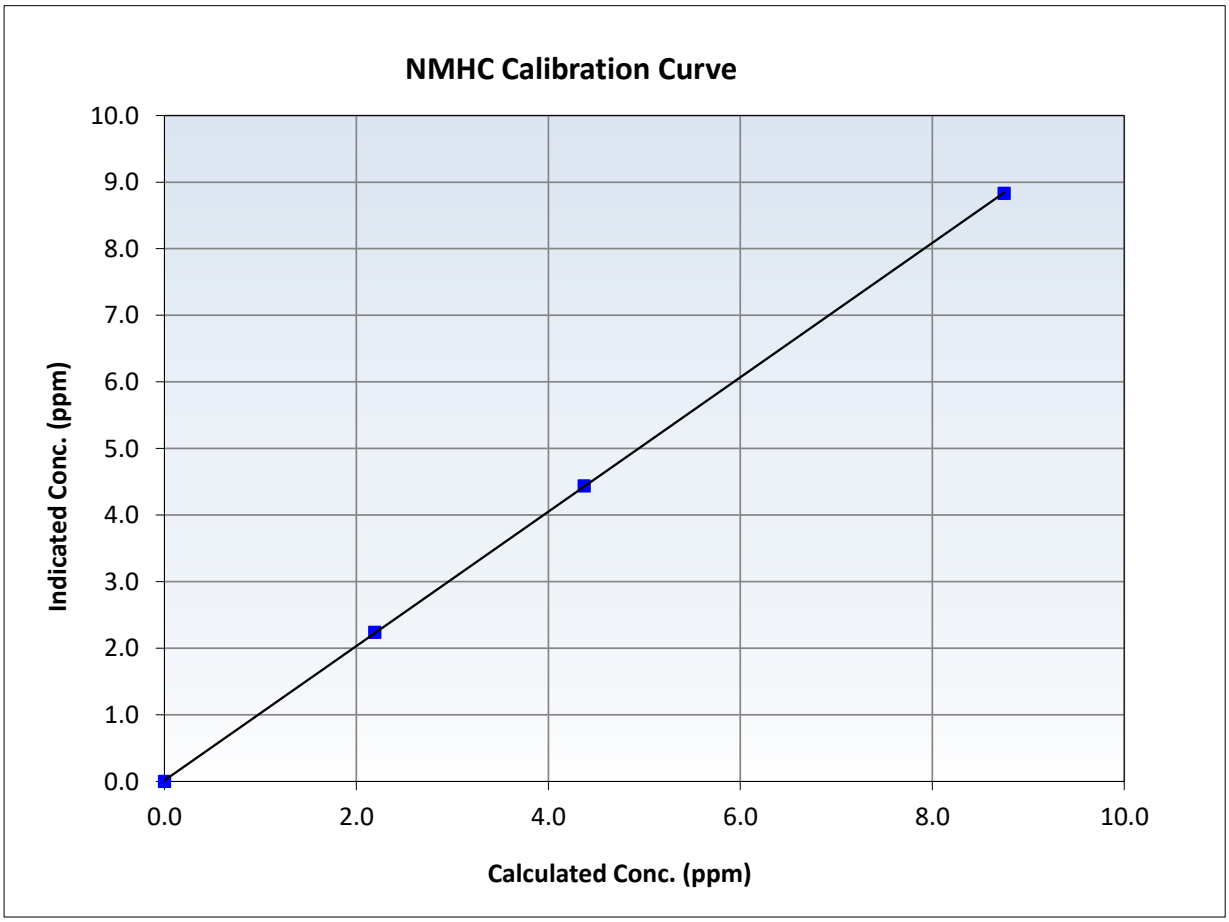
NMHC Calibration Summary

Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 3, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:41	End Time (MST):	12:00
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999986	≥0.995
8.75	8.83	0.9903	Slope	1.008977	0.90 - 1.10
4.37	4.44	0.9855	Intercept	0.015581	+/-0.5
2.19	2.24	0.9778			



NMHC Calibration Plot Date: July 4, 2025 Location: Patricia McInnes

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
Calibration Date:	July 5, 2025	Last Cal Date:	July 4, 2025
Start time (MST):	8:45	End time (MST):	11:36
Reason:	Maintenance		

Calibration Standards

Gas Cert Reference:		CC255448	Cal Gas Expiry Date:	October 22, 2032	
CH4 Cal Gas Conc.	501.4	ppm	CH4 Equiv Conc.	1049.5	ppm
C3H8 Cal Gas Conc.	199.3	ppm			
Removed Gas Cert:			Removed Gas Expiry:		
Removed CH4 Conc.	501.4	ppm	CH4 Equiv Conc.	1049.5	ppm
Removed C3H8 Conc.	199.3	ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):			Diff between cyl (NM):		
Calibrator Model:	API T700		Serial Number:	3566	
Zero Air Gen model:	API T701		Serial Number:	4602	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	1118148494	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	4.86E-04	2.60E-04	NMHC SP Ratio:	4.38E-05	5.18E-05
CH4 Retention time:	14.4	14.2	NMHC Peak Area:	199812	169566
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	16.75	16.76	0.999
Mid point	4960	39.9	8.37	8.35	1.003
Low point	4980	20.0	4.20	4.20	1.001
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	16.75	16.86	0.993
				Average Correction Factor	1.001

Notes: Calibration failed yesterday due to a contaminated N2 cylinder. Installed new cylinder, adjusted the zero and span. Ran quick points to make sure it passed and full points after.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.75	8.78	0.996
Mid point	4960.1	39.9	4.37	4.40	0.993
Low point	4980	20.0	2.19	2.24	0.979
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	8.75	8.76	0.999
				Average Correction Factor	0.990

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	NA	Prev response	NA	*% change	NA
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.00	7.98	1.003
Mid point	4960.1	39.9	4.00	3.95	1.013
Low point	4980	20.0	2.01	1.96	1.025
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	8.00	8.11	0.987
				Average Correction Factor	1.014

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	1.002107	1.000535
THC Cal Offset:	0.039972	-0.008002
CH4 Cal Slope:	1.006781	0.998248
CH4 Cal Offset:	0.012973	-0.025392
NMHC Cal Slope:	0.998066	1.002405
NMHC Cal Offset:	0.026598	0.017991

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

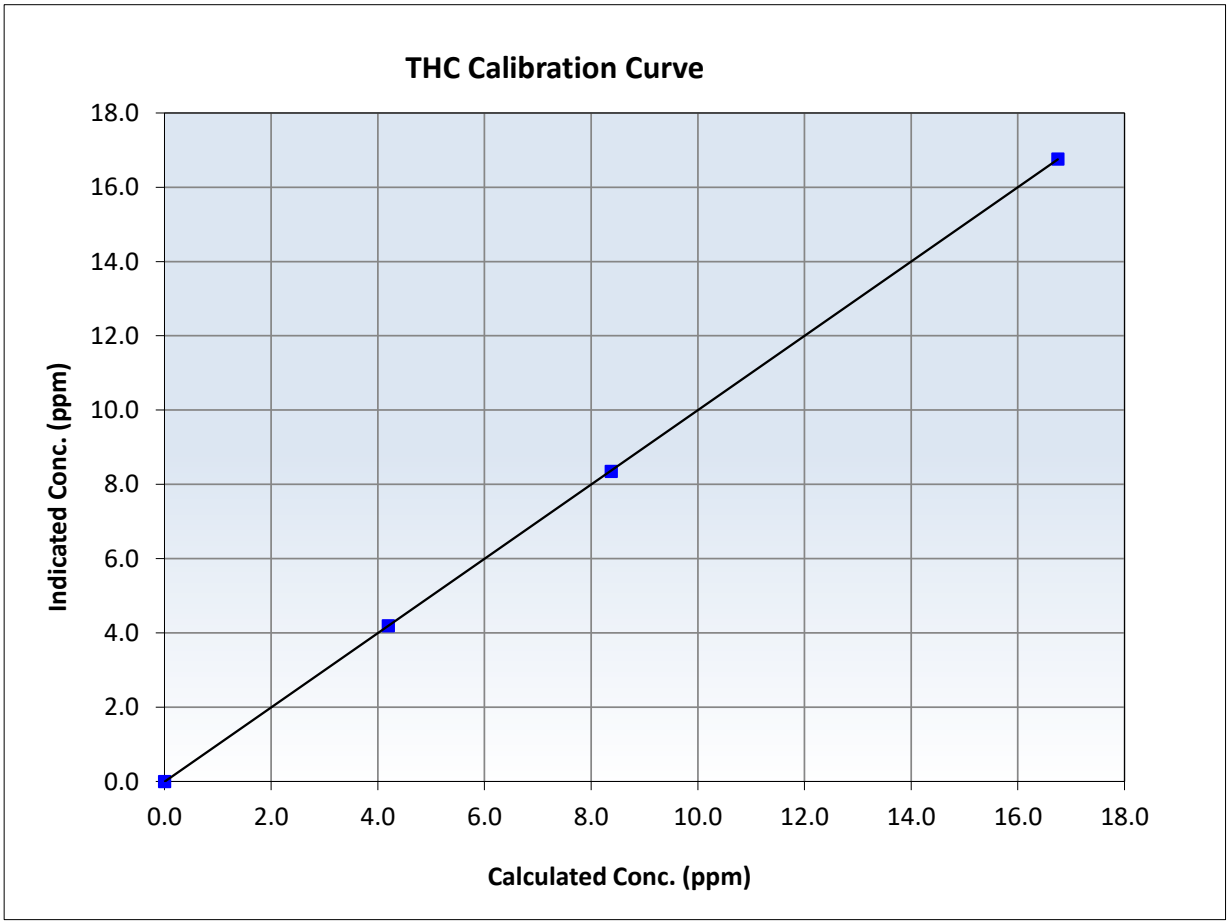
THC Calibration Summary

Station Information

Calibration Date:	July 5, 2025	Previous Calibration:	July 4, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:45	End Time (MST):	11:36
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999996	≥0.995
16.75	16.76	0.9994	Slope	1.000535	0.90 - 1.10
8.37	8.35	1.0029	Intercept	-0.008002	+/-0.5
4.20	4.20	1.0007			



Wood Buffalo Environmental Association

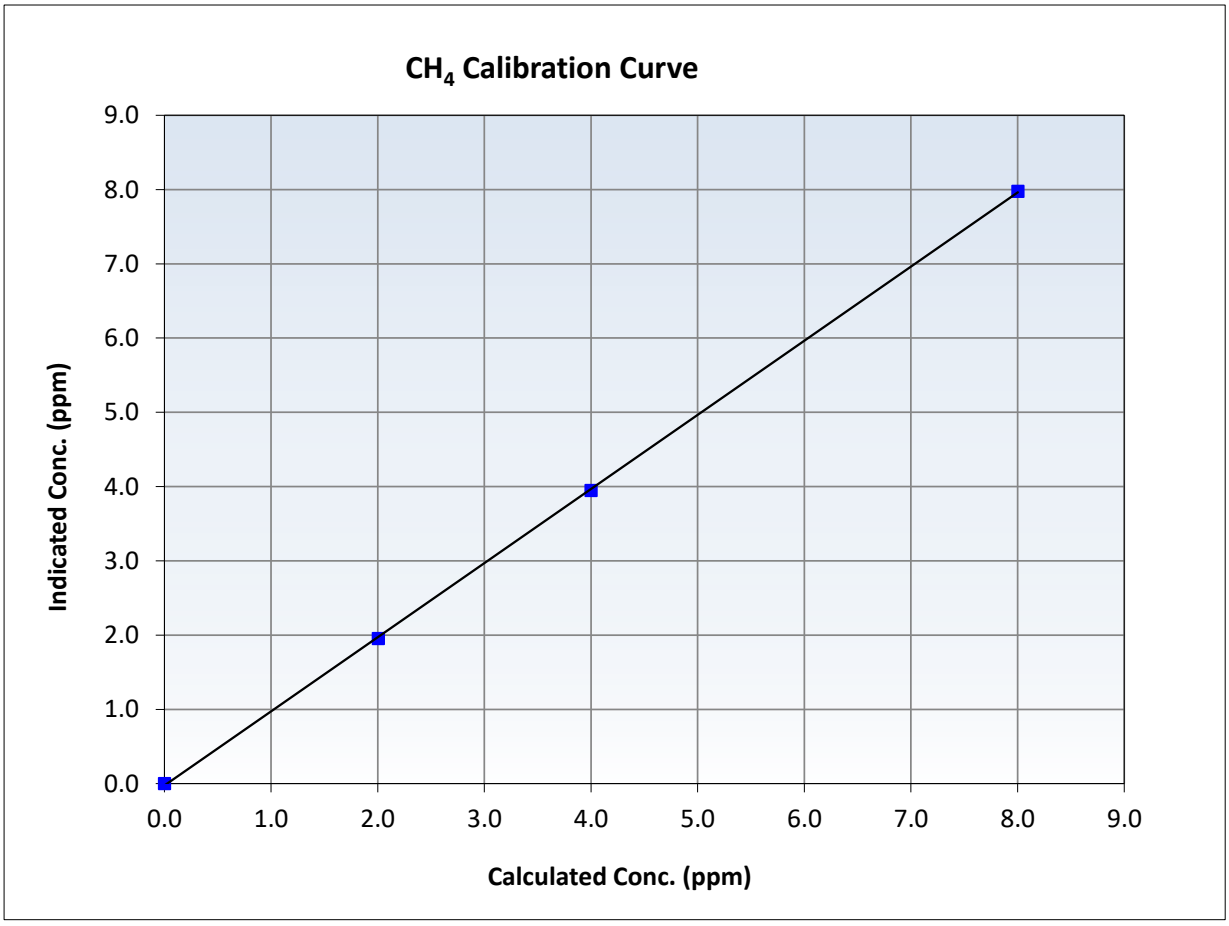
CH_4 Calibration Summary

Station Information

Calibration Date:	July 5, 2025	Previous Calibration:	July 4, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:45	End Time (MST):	11:36
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999952	≥0.995
8.00	7.98	1.0031	Slope	0.998248	0.90 - 1.10
4.00	3.95	1.0132			
2.01	1.96	1.0254	Intercept	-0.025392	+/-0.5



Wood Buffalo Environmental Association

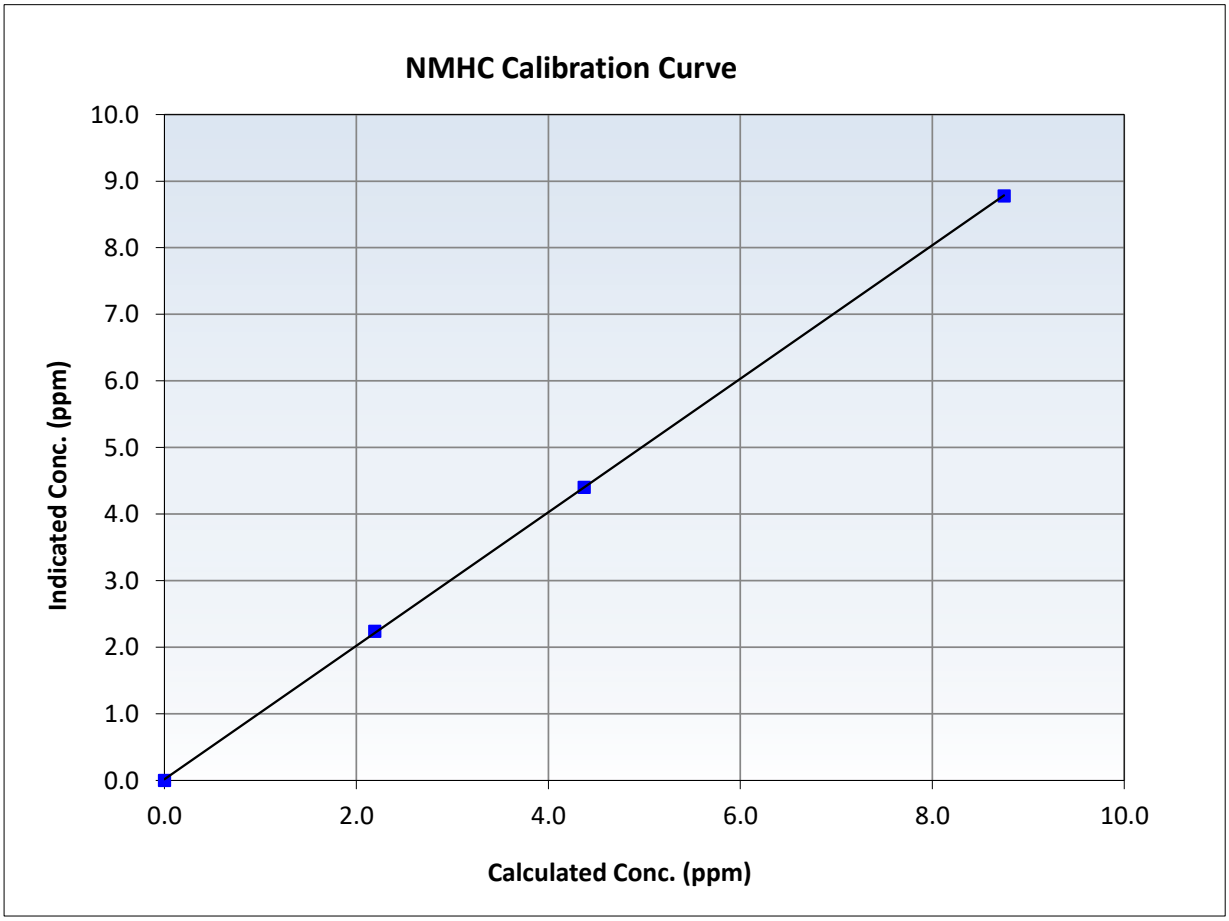
NMHC Calibration Summary

Station Information

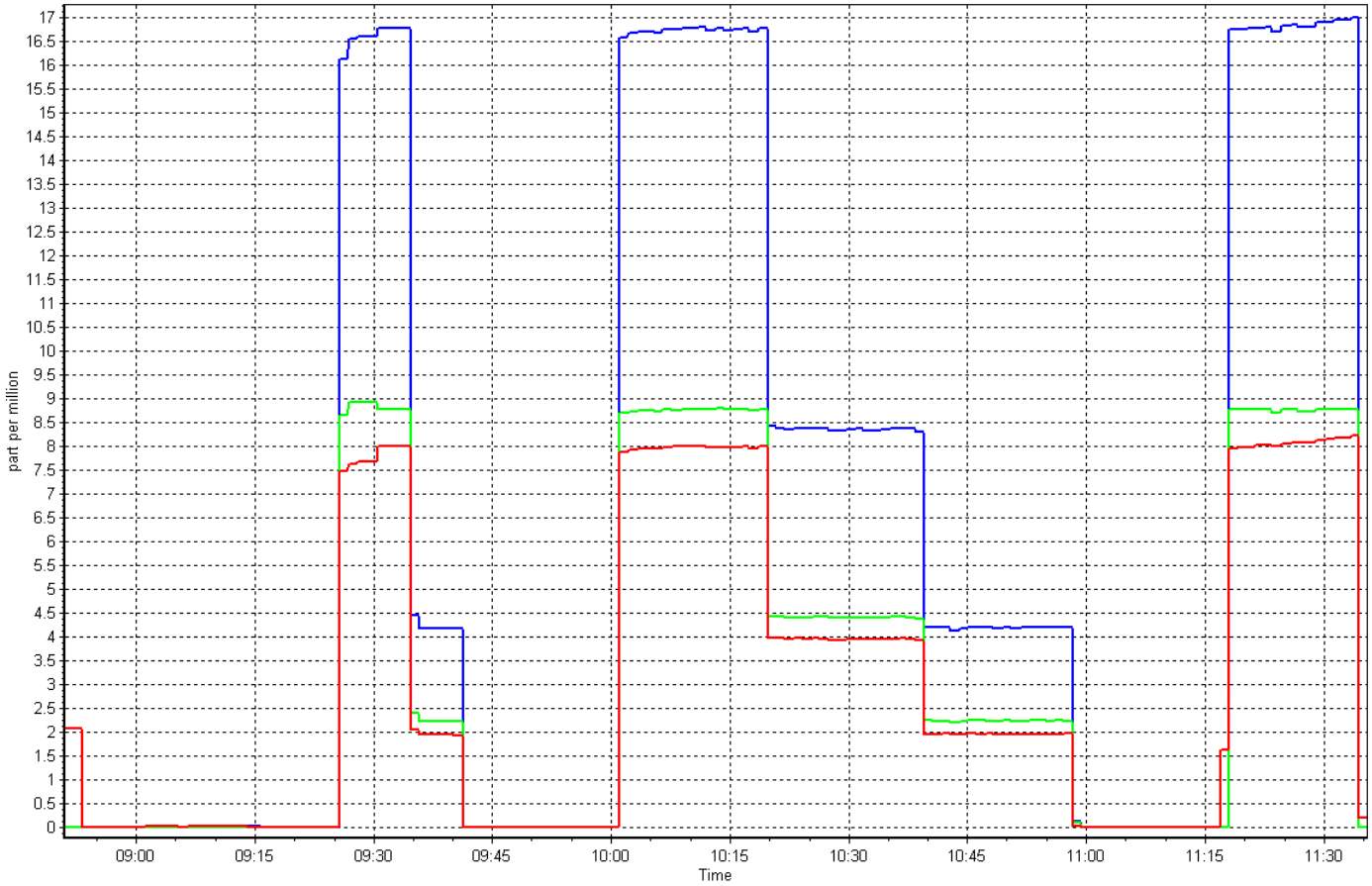
Calibration Date:	July 5, 2025	Previous Calibration:	July 4, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:45	End Time (MST):	11:36
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999978	≥0.995
8.75	8.78	0.9963	Slope	1.002405	0.90 - 1.10
4.37	4.40	0.9933			
2.19	2.24	0.9791	Intercept	0.017991	+/-0.5



NMHC Calibration Plot Date: July 5, 2025 Location: Patricia McInnes



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Patricia McInnes
Station number:	AMS 06
Calibration Date:	July 7, 2025
Last Cal Date:	June 4, 2025
Start time (MST):	9:45
End time (MST):	14:35
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0036234	Cal Gas Expiry Date:	July 22, 2032
NOX Cal Gas Conc:	62.2 ppm	NO Cal Gas Conc:	61.90 ppm
Removed Cylinder #:		Removed Gas Exp Date:	
Removed Gas NOX Conc:	62.20 ppm	Removed Gas NO Conc:	61.90 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	3566
ZAG make/model:	Teledyne API T701	Serial Number:	4602

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.6	0.1	0.5	----	----
AF High point	4935	64.6	803.7	799.8	3.9	807.3	799.7	7.5	0.9963	1.0003
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 803.0 ppb	NO = 800.8 ppb
Baseline Corr 1st pt	NO_X = 806.7 ppb	NO = 799.6 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	*Percent Change	NO_X = 0.5%
As found	NO r^2:	*Percent Change	NO = -0.1%
As found	NO_2 r^2:	Nx Sl:	Nx Int:
		NO Sl:	NO Int:
		NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1172750022

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	Finish		Start	Finish
NO coeff or slope:	0.887	0.887	NO bkgnd or offset:	3.5	3.5
NOX coeff or slope:	0.993	0.993	NOX bkgnd or offset:	3.9	3.9
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	162.4	162.4

Calibration Statistics

	Start	Finish
NO_X Cal Slope:	0.996272	0.997467
NO_X Cal Offset:	2.312443	2.791865
NO Cal Slope:	1.000640	0.999884
NO Cal Offset:	0.473372	0.713155
NO_2 Cal Slope:	0.998421	0.996589
NO_2 Cal Offset:	-0.376238	-0.344283

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	1.0	0.4	0.6	----	----
High point	4935	64.6	803.7	799.8	3.9	803.4	800.2	3.2	1.0004	0.9995
Mid point	4968	32.3	401.8	399.9	1.9	404.9	400.9	4.1	0.9923	0.9974
Low point	4984	16.2	201.5	200.5	1.0	205.3	201.4	4.0	0.9816	0.9958
As left zero	5000	0.0	0.0	0.0	0.0	0.8	0.3	0.4	----	----
As left span	4935	64.6	803.7	397.7	406.0	797.8	397.7	400.1	1.0074	1.0000
							Average Correction Factor		0.9914	0.9976

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.6	----	----
High GPT point	797.9	387.7	414.1	412.9	1.0028	99.7%
Mid GPT point	797.9	599.6	202.2	200.3	1.0094	99.1%
Low GPT point	797.9	699.2	102.6	101.2	1.0136	98.7%
				Average Correction Factor	1.0086	99.1%

Notes: Changed the inlet filter after as founds. No adjustments made.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

NO_X Calibration Summary

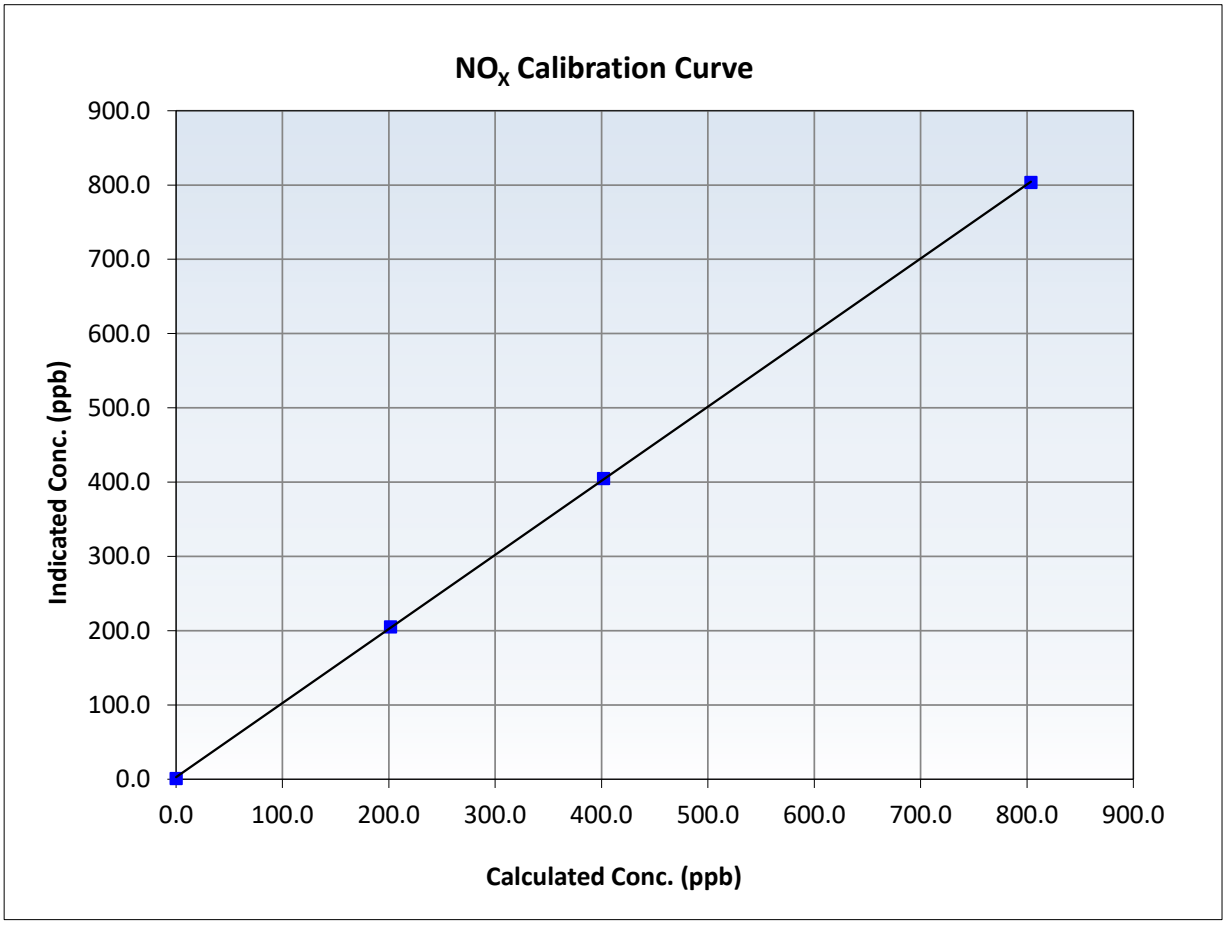
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 4, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:45	End Time (MST):	14:35
Analyzer make:	Thermo 42i	Analyzer serial #:	1172750022

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	1.0	----
803.7	803.4	1.0004
401.8	404.9	0.9923
201.5	205.3	0.9816

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999976	*≥0.995*
Slope	0.997467	*0.90 - 1.10*
Intercept	2.791865	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

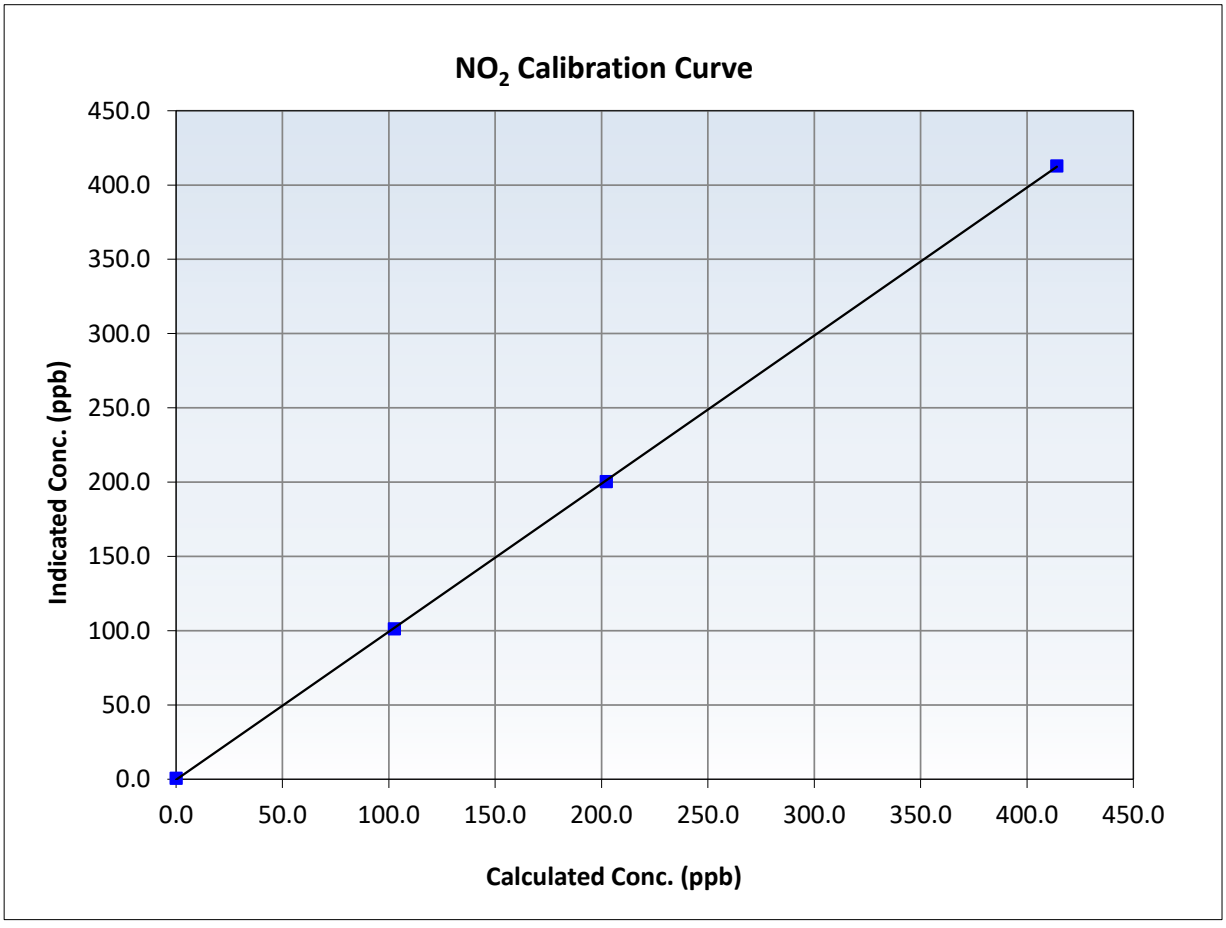
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 4, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:45	End Time (MST):	14:35
Analyzer make:	Thermo 42i	Analyzer serial #:	1172750022

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.6	----
414.1	412.9	1.0028
202.2	200.3	1.0094
102.6	101.2	1.0136

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999974	*≥0.995*
Slope	0.996589	*0.90 - 1.10*
Intercept	-0.344283	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

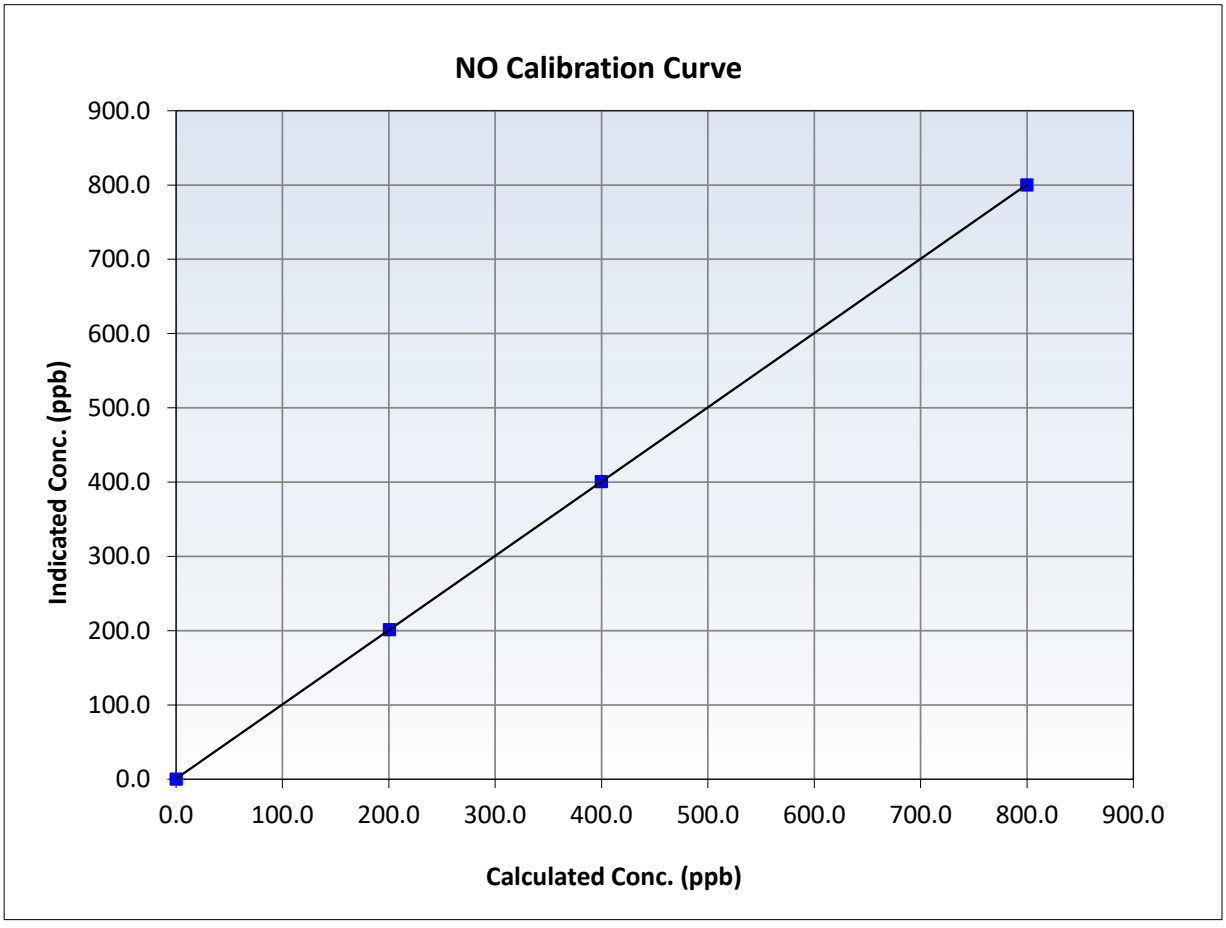
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 4, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:45	End Time (MST):	14:35
Analyzer make:	Thermo 42i	Analyzer serial #:	1172750022

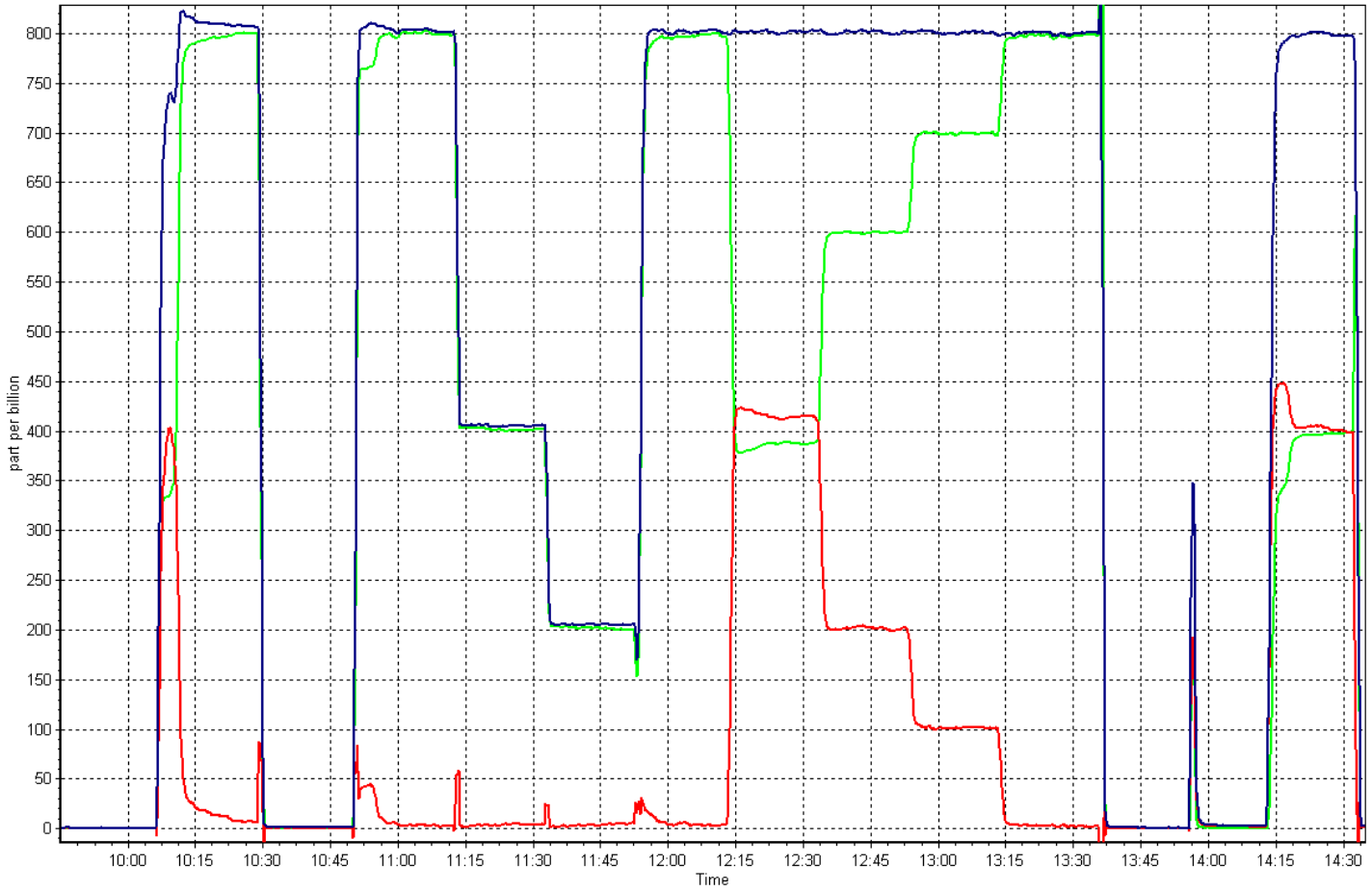
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.4	----
799.8	800.2	0.9995
399.9	400.9	0.9974
200.5	201.4	0.9958

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	0.999884	*0.90 - 1.10*
Intercept	0.713155	*+/-20*



NO_X Calibration Plot Date: July 7, 2025 Location: Patricia McInnes



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O_3 Calibration Report

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
Calibration Date:	July 9, 2025	Last Cal Date:	June 13, 2025
Start time (MST):	9:26	End time (MST):	12:20
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	API T700	Serial Number:	3566
ZAG Make/Model:	API T701	Serial Number:	4602

Analyzer Information

Analyzer make:	Thermo 49i	Analyzer serial #:	1300156234
Analyzer Range	0 - 500 ppb		

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.002686	1.003086	Backgd or Offset:	-0.5	-0.5
Calibration intercept:	-0.120000	0.560000	Coeff or Slope:	1.020	1.020

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	800.0	0.0	0.4	----
As found High point	5000	1031.0	400.0	401.2	0.998
As found Mid point					
As found Low point					

Baseline Corr As found:	400.8	Previous response	401.0	*% change	0.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	800.0	0.0	0.5	----
High point	5000	1031.0	400.0	401.8	0.996
Mid point	5000	821.4	200.0	201.1	0.995
Low point	5000	699.5	100.0	101.0	0.990
As left zero	5000	800.0	0.0	0.2	----
As left span	5000	1031.0	400.0	403.0	0.993
				Average Correction Factor	0.993

Notes: Changed the inlet filter after as founds. No adjustments made.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

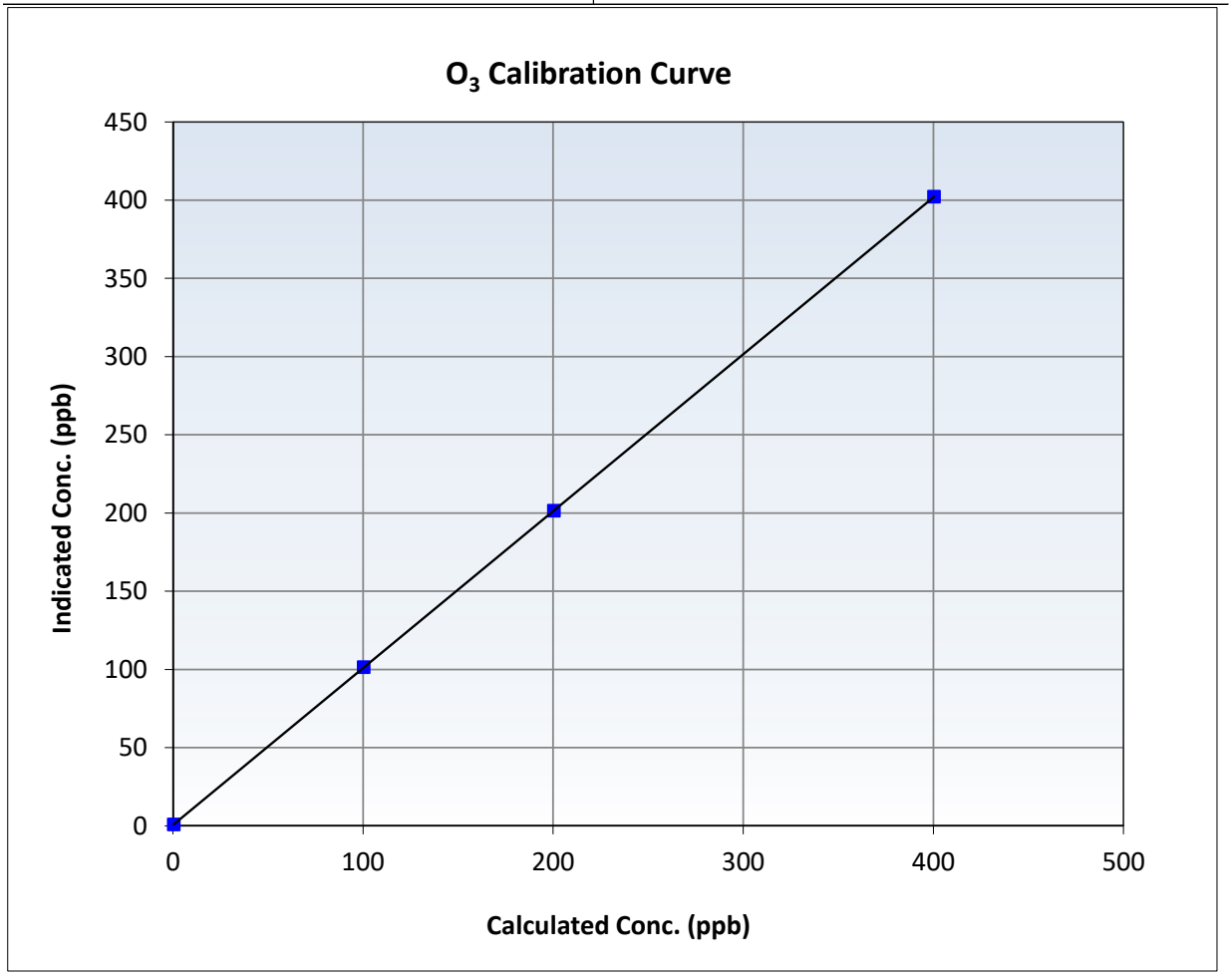
O_3 Calibration Summary

Station Information

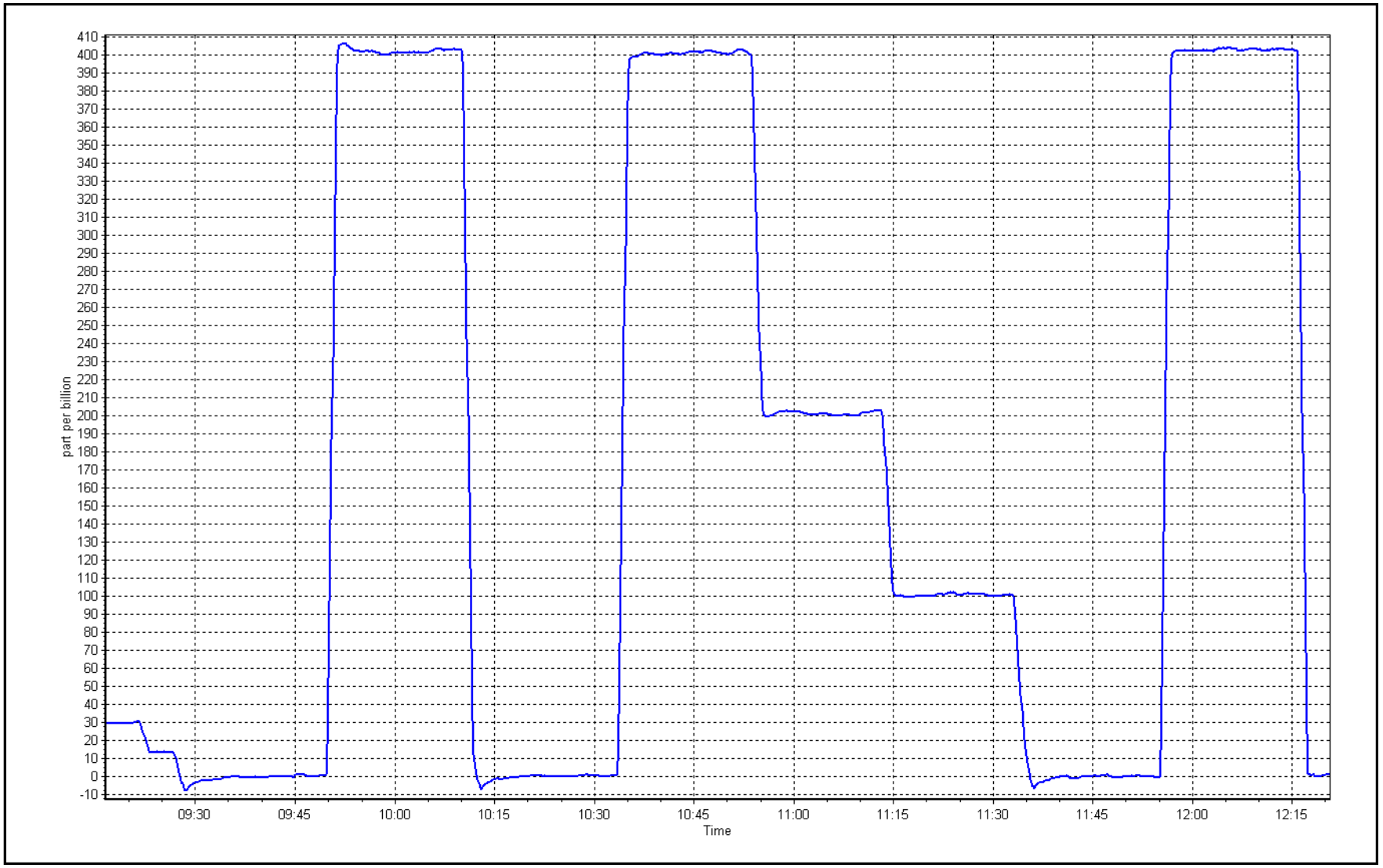
Calibration Date:	July 9, 2025	Previous Calibration:	June 13, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:26	End Time (MST):	12:20
Analyzer make:	Thermo 49i	Analyzer serial #:	1300156234

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	0.5	----	Correlation Coefficient	1.000000	≥0.995
400.0	401.8	0.9955	Slope	1.003086	0.90 - 1.10
200.0	201.1	0.9945	Intercept	0.560000	+/- 5
100.0	101.0	0.9901			



O_3 Calibration Plot Date: July 9, 2025 Location: Patricia McInnes



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
Calibration Date:	July 17, 2025	Last Cal Date:	June 3, 2025
Start time (MST):	14:36	End time (MST):	15:09
Analyzer Make:	API T640	S/N:	1547
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388755
Temp/RH standard:	Alicat FP-25BT	S/N:	388755

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (^{o}C)	26.0	25.2	26.0	☐	+/- 2 ^{o}C
P (mmHg)	728.50	727.44	728.50	☐	+/- 10 mmHg
Flow (LPM)	5.00	4.91	5.00	☐	+/- 0.25 LPM
PW% (pump)	29	-----	29	☐	>80%
Zero Verification	PM w/o HEPA:	53.2	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: 07-16-2026 — Lot No.: 100128-050-050

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: June 3, 2025

Date Disposable Filter Changed: June 3, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.00 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: April 4, 2025

Date RH/T Sensor Cleaned: April 4, 2025

Notes: No adjustments made. PMT peak test was done last month. Readings are within limits.

Calibration by: Max Farrell

Wood Buffalo Environmental Association

Nt - NOX - NH3 Calibration Report

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
NOX Cal Date:	July 2, 2025	Last Cal Date:	June 30, 2025
Start time (MST):	8:49	End time (MST):	13:00
NH3 Cal Date:	July 2, 2025	Last Cal Date:	June 30, 2025
Start time (MST):	13:00	End time (MST):	15:45
Reason:	Routine		

Calibration Standards

NOX Cal Gas Conc:	62.20	ppm	NO Gas Cylinder #:	DT0036234
NO Cal Gas Conc:	61.90	ppm	NO Cal Gas Expiry:	July 22, 2032
Removed NOX Conc:	62.20	ppm	Removed Cylinder #:	N/A
Removed NO Conc:	61.90	ppm	Removed cyl Expiry:	N/A
NOX gas Diff:			NO gas Diff:	
NH3 Cal Gas Conc:	75.0	ppm	NH3 Gas Cylinder #:	CC709372
			NH3 Cal Gas Expiry:	December 31, 2025
Removed NH3 Conc:	75.0	ppm	Removed Cylinder #:	
NH3 gas Diff:			Removed cyl Expiry:	
Calibrator Model:	API T700		Serial Number:	3566
ZAG make/model:	API T701		Serial Number:	4602

Analyzer Information

Analyzer model:	API T201	Analyzer serial #:	215
Converter model:	API T501	Converter serial #:	147
NH3 Range (ppb):	0 - 2000 ppb	Reaction cell Press:	6.20
NOX Range (ppb):	0 - 1000 ppb	Sample Flow:	25.4

	Start	*Finish*		*Start*	*Finish*
NO coefficient:	1.040	1.040	Nt coefficient:	1.039	1.039
NOX coefficient:	1.032	1.032	NO bkgrnd:	0.2	0.2
NO2 coefficient:	1.000	1.000	NOX bkgrnd:	-0.1	-0.1
NH3 coefficient:	0.956	0.956	Nt bkgrnd:	1.7	1.7

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.001134	0.993485
NO_X Cal Offset:	0.400000	2.392545
NO Cal Slope:	0.996109	1.002645
NO Cal Offset:	0.100000	0.771491
NO_2 Cal Slope:	0.989970	0.999754
NO_2 Cal Offset:	0.300000	0.861728
NH3 Cal Slope:	0.990623	1.001531
NH3 Cal Offset:	9.861309	7.366969
Nt Cal Slope:	0.994848	1.005961
Nt Cal Offset:	10.327730	7.739116

Wood Buffalo Environmental Association

NO_X - NO - NO_2 Calibration Report

NOx / NO / Nt As Found Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	Baseline corr NOx Correction factor (Cc/Ic) *Limit = 0.9 - 1.0*	Baseline corr NO Correction factor (Cc/Ic) *Limit = 0.9 - 1.0*
As found zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.4	-0.1	----	----
As found span	4935	64.6	803.7	799.8	803.7	804.3	799.2	809.3	0.9992	1.0008
AF GPT span										
new NO cyl rp										

Baseline Corr As Fd	Nt =	809.4	ppb	NO_X =	804.4	ppb	NO =	799.6 ppb
Previous Response	Nt =	809.88	ppb	NO_X =	805.0	ppb	NO =	796.8 ppb

**NO_X Δ (NO to GPT response) =

* *= > +/-2% difference initiates investigation

*Percent Change $Nt_{(NO)}$ = -0.1%

*Percent Change NO_X = -0.1%

*Percent Change NO = 0.4%

* = > +/-5% change initiates investigation

NOx / NO / Nt Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibration zero	5000	0.0	0.0	0.0	0.0	0.2	0.1	0.4	----	----
High point	4935	64.6	803.7	799.8	803.7	799.6	802.9	807.2	1.0051	0.9962
Mid point	4968	32.3	401.8	399.9	401.8	403.1	400.4	407.6	0.9967	0.9986
Low point	4984	16.2	201.5	200.5	201.5	204.5	203.6	204.8	0.9854	0.9850
								Average Correction Factor	0.9958	0.9933

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
As Found zero	----	----	0.0	0.3	----	----
Calibration zero	----	----	0.0	0.1	----	----
High GPT point (400 ppb O3)	794.5	385.6	412.8	412.5	1.0007	99.9%
Mid GPT point (200 ppb O3)	794.5	595.7	202.7	205.9	0.9843	101.6%
Low GPT point (100 ppb O3)	794.5	699.0	99.4	99.6	0.9978	100.2%
				Average Correction Factor	0.9943	100.6%

Wood Buffalo Environmental Association
NH_3 - N_T Calibration Report

NH3 As Found Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated Nt concentration (ppb) (Cc)	Calculated NOX concentration (ppb) (Cc)	Calculated NH3 concentration (ppb) (Cc)	Indicated Nt concentration (ppb) (Ic)	Indicated NOX concentration (ppb) (Ic)	Indicated NH3 concentration (ppb) (Ic)	Baseline corr Nt Correction factor (Cc/(Ic-zero)) *Limit = 0.9 - 1.1*	Baseline corr NH3 Correction factor (Cc/(Ic-zero)) *Limit = 0.9 - 1.1*
As found zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	----	----
AF High point	3416	84.0	1799.0	0.0	1799.0	1812.9	8.3	1804.7	0.992	0.997
AF Mid point										
AF Low point										
new NH3 cyl rp										

Baseline Corr As Fd Nt = 1813.0 ppb NH3 = 1804.7 ppb *Percent Change $Nt_{(NH3)}$ = 0.7%

Previous Response Nt = 1800.1 ppb NH3 = 1792.0 ppb * = > +/-5% change initiates investigation *Percent Change NH3 = 0.7%

NH3 Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated Nt concentration (ppb) (Cc)	Calculated NOX concentration (ppb) (Cc)	Calculated NH3 concentration (ppb) (Cc)	Indicated Nt concentration (ppb) (Ic)	Indicated NOX concentration (ppb) (Ic)	Indicated NH3 concentration (ppb) (Ic)	Nt Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NH3 Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibration zero	5000	0.0	0.0	0.0	0.0	0.4	0.2	0.2	----	----
High point	3416	84.0	1799.0	0.0	1799.0	1812.9	8.3	1804.7	0.992	0.997
Mid point	3453	46.7	1000.3	0.0	1000.3	1018.6	4.9	1013.6	0.982	0.987
Low point	3477	23.3	499.0	0.0	499.0	517.0	2.7	514.3	0.965	0.970
								Average Correction Factor	0.9798	0.9846

NH3 Previous Converter Efficiency = 95.6 %
NH3 Current Converter Efficiency = 95.6 %

Notes: Changed the inlet filter after as founds. No adjustments made. Had the wrong flow during NH3 span which caused the jump on readings.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

Nt Calibration Summary

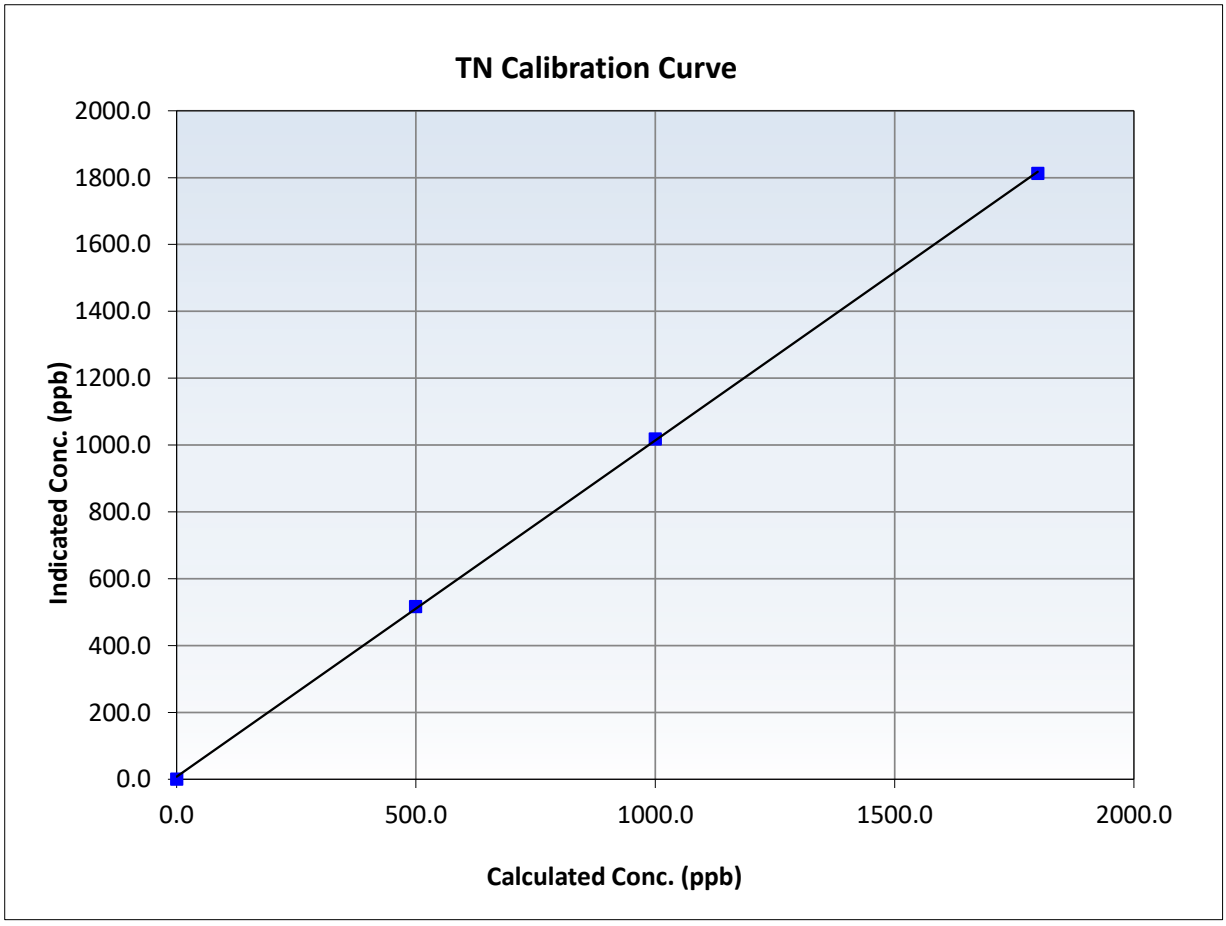
Station Information

Calibration Date:	July 2, 2025	Previous Calibration:	June 30, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:49	End Time (MST):	13:00
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.4	----
1799.0	1812.9	0.9924
1000.3	1018.6	0.9820
499.0	517.0	0.9651

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999916	*≥0.995*
Slope	1.005961	*0.90 - 1.10*
Intercept	7.739116	*+/-20*



Wood Buffalo Environmental Association

NH_3 Calibration Summary

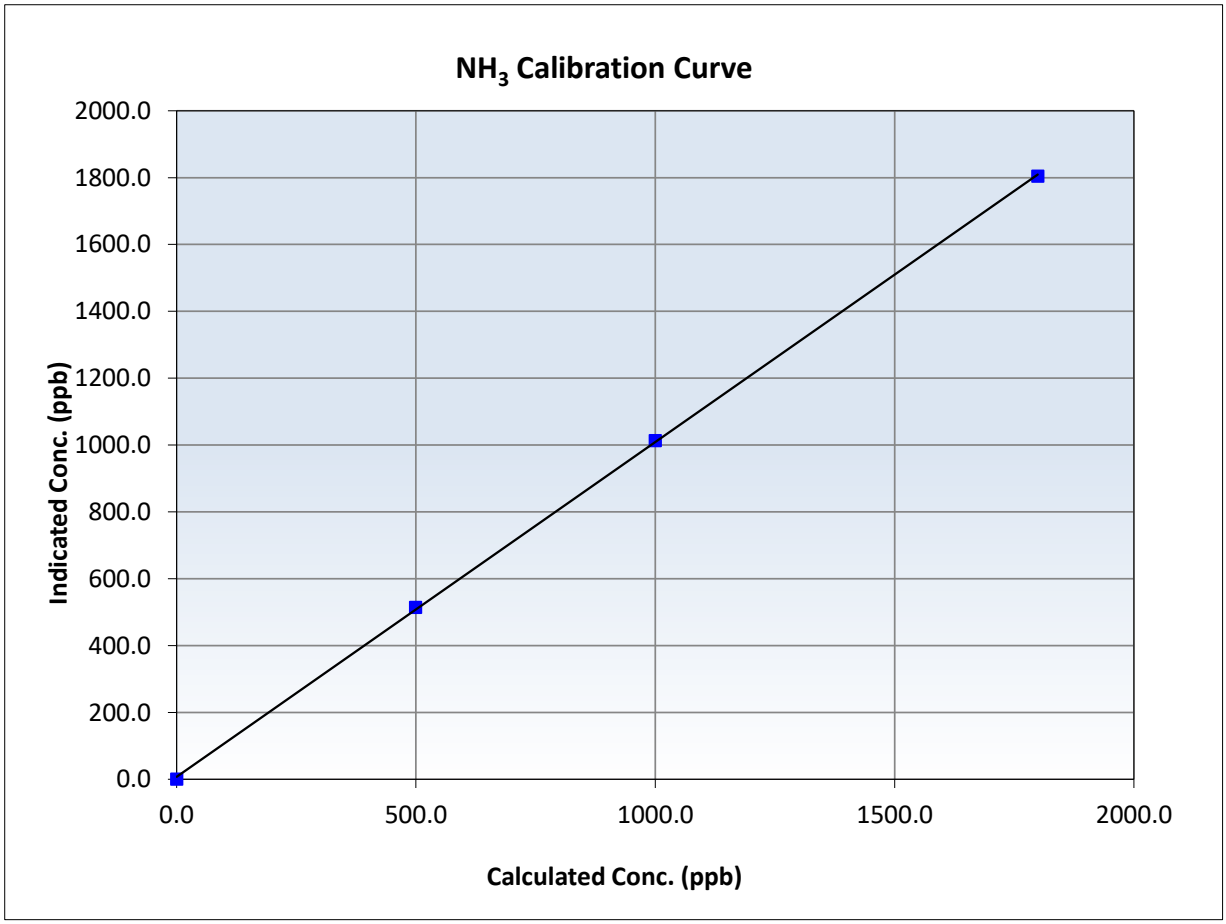
Station Information

Calibration Date:	July 2, 2025	Previous Calibration:	June 30, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:49	End Time (MST):	13:00
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
1799.0	1804.7	0.9969
1000.3	1013.6	0.9868
499.0	514.3	0.9702

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999919	*≥0.995*
Slope	1.001531	*0.90 - 1.10*
Intercept	7.366969	*+/-20*



Wood Buffalo Environmental Association

NO_X Calibration Summary

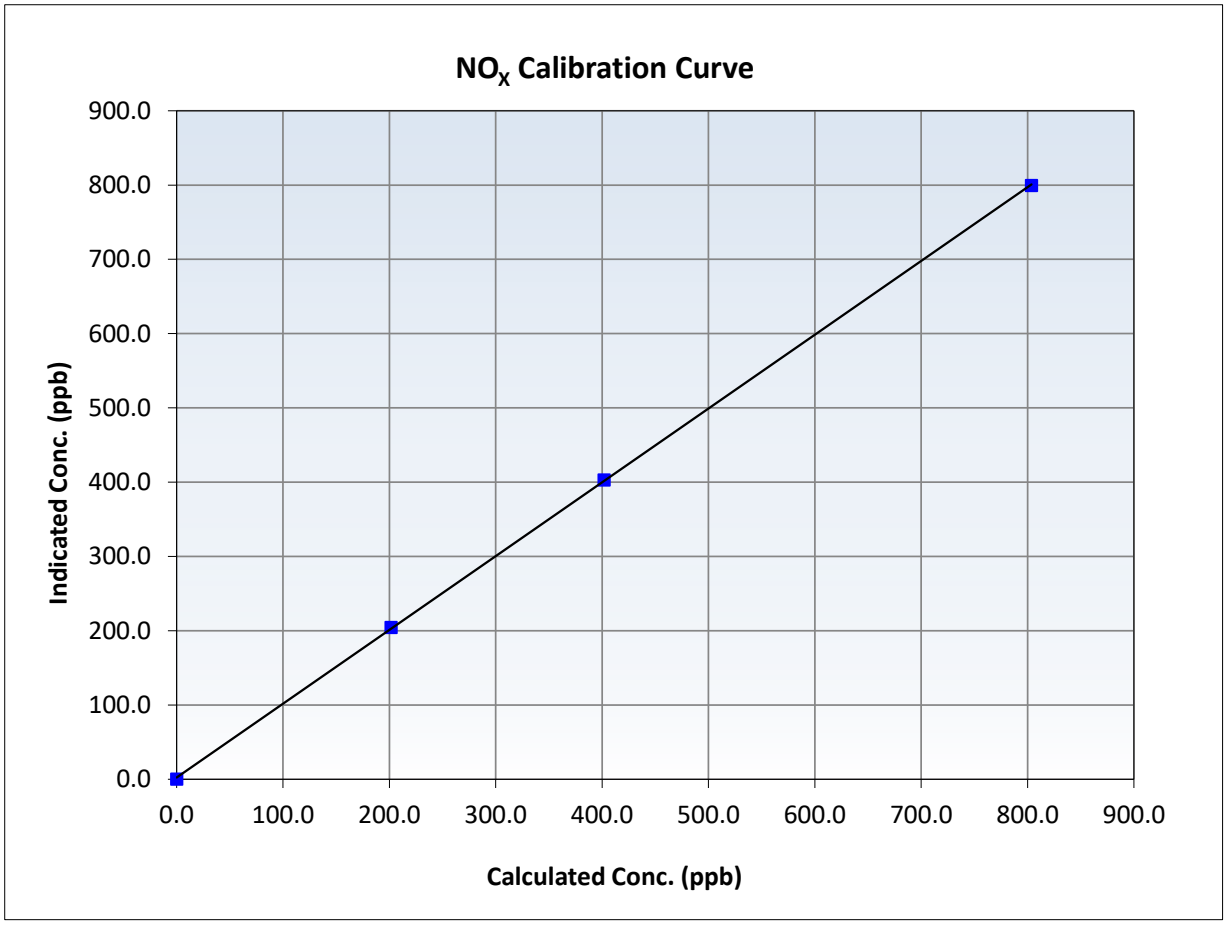
Station Information

Calibration Date:	July 2, 2025	Previous Calibration:	June 30, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:49	End Time (MST):	13:00
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
803.7	799.6	1.0051
401.8	403.1	0.9967
201.5	204.5	0.9854

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999965	*≥0.995*
Slope	0.993485	*0.90 - 1.10*
Intercept	2.392545	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

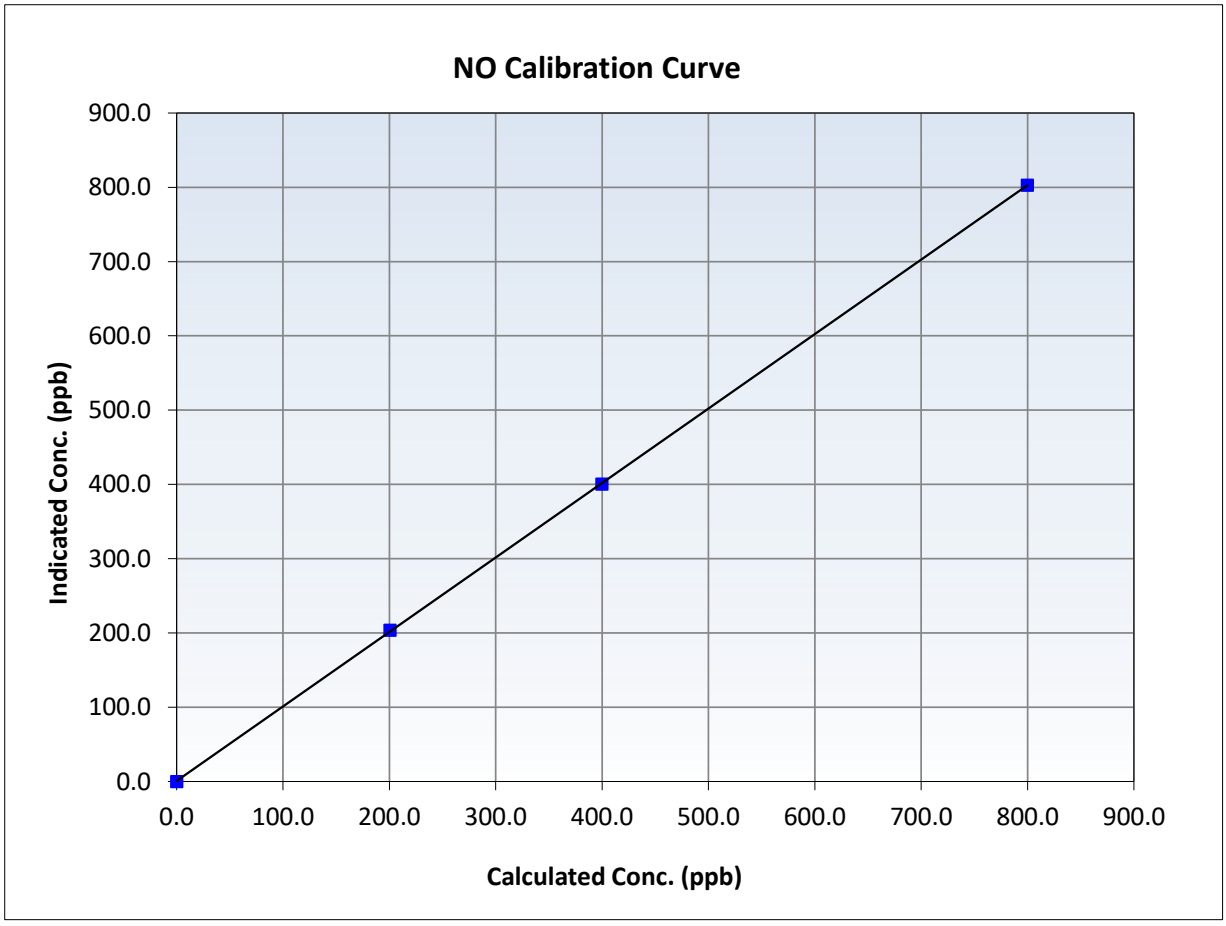
Station Information

Calibration Date:	July 2, 2025	Previous Calibration:	June 30, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:49	End Time (MST):	13:00
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
799.8	802.9	0.9962
399.9	400.4	0.9986
200.5	203.6	0.9850

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999985	*≥0.995*
Slope	1.002645	*0.90 - 1.10*
Intercept	0.771491	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

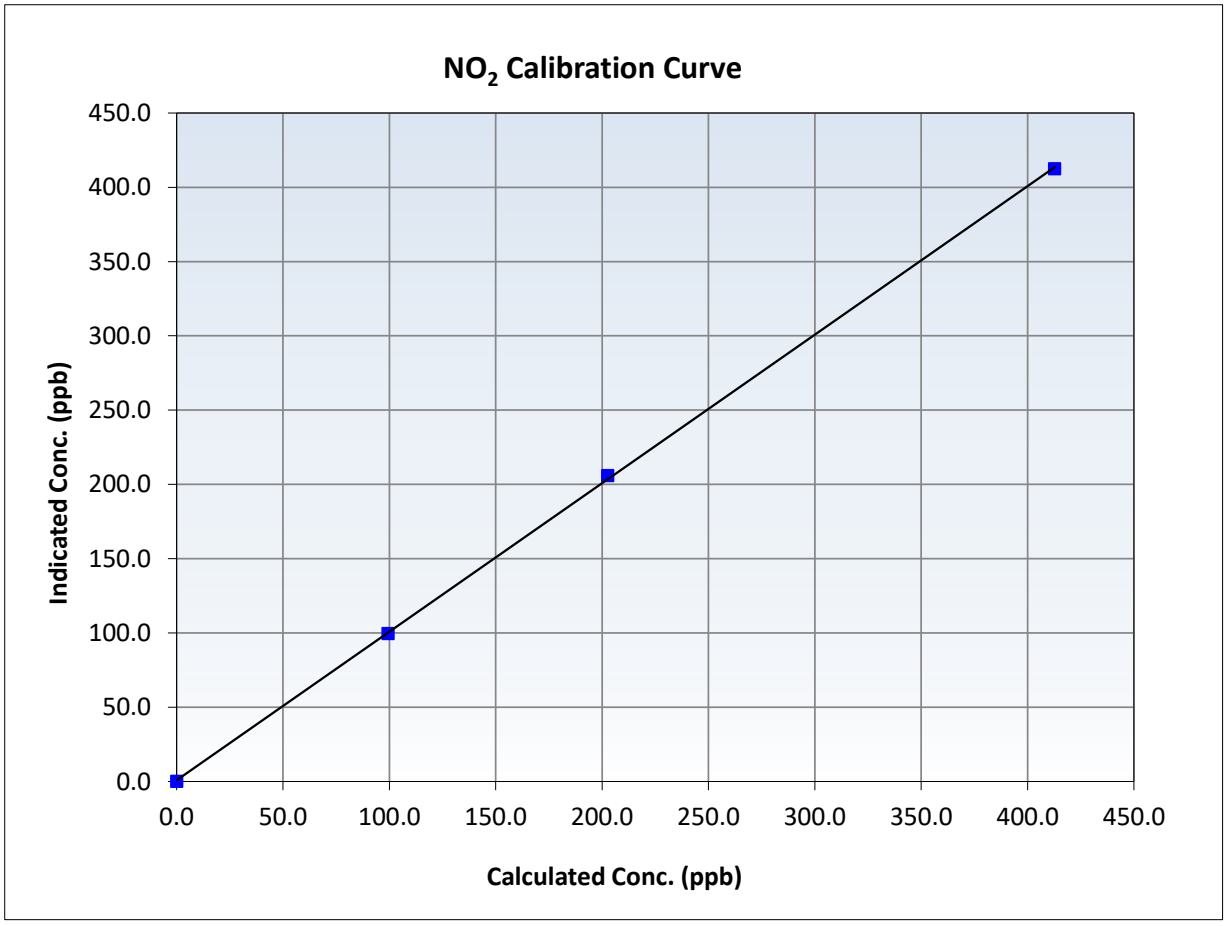
Station Information

Calibration Date:	July 2, 2025	Previous Calibration:	June 30, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:49	End Time (MST):	13:00
Analyzer make:	API T201	Analyzer serial #:	215

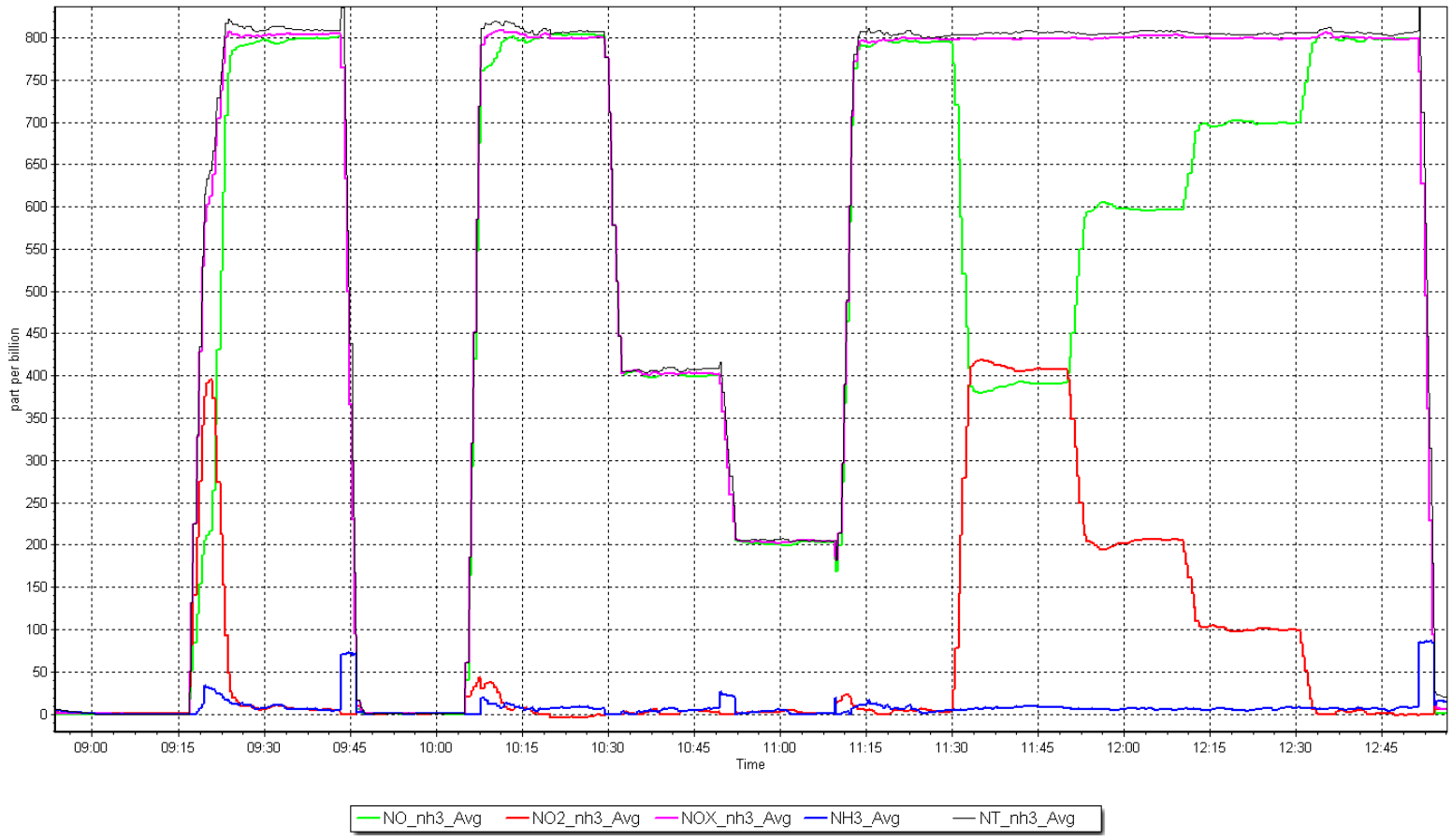
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
412.8	412.5	1.0007
202.7	205.9	0.9843
99.4	99.6	0.9978

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999916	*≥0.995*
Slope	0.999754	*0.90 - 1.10*
Intercept	0.861728	*+/-20*



NO_X Calibration Plot Date: July 2, 2025 Location: Patricia McInnes



NH_3 Calibration Plot Date: July 2, 2025 Location: Patricia McInnes

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS07
ATHABASCA VALLEY
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Athabasca Valley	Station number:	AMS07
Calibration Date:	July 18, 2025	Last Cal Date:	June 6, 2025
Start time (MST):	11:00	End time (MST):	14:34
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.06	ppm	Cal Gas Exp Date:	March 10, 2031
Cal Gas Cylinder #:	CC320556			
Removed Cal Gas Conc:	50.06	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	3805
Zero Air Gen Model:	API 701H		Serial Number:	198

Analyzer Information

Analyzer make:	Thermo 43i-LTE		Serial Number:	1507864683	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.999447	0.999719	Backgd or Offset:	2.73	2.73
Calibration intercept:	1.964232	2.444307	Coeff or Slope:	0.845	0.845

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.0	----
As found High point	4920	79.8	799.0	798.8	1.000
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	798.8	Previous response	800.5	*% change	-0.2%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4920	79.8	799.0	799.2	1.000
Mid point	4960	39.9	399.5	405.5	0.985
Low point	4980	20.0	200.2	203.3	0.985
As left zero	5000	0.0	0.0	0.2	----
As left span	4920	79.8	799.0	800.6	0.998
				Average Correction Factor:	0.990

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

SO_2 Calibration Summary

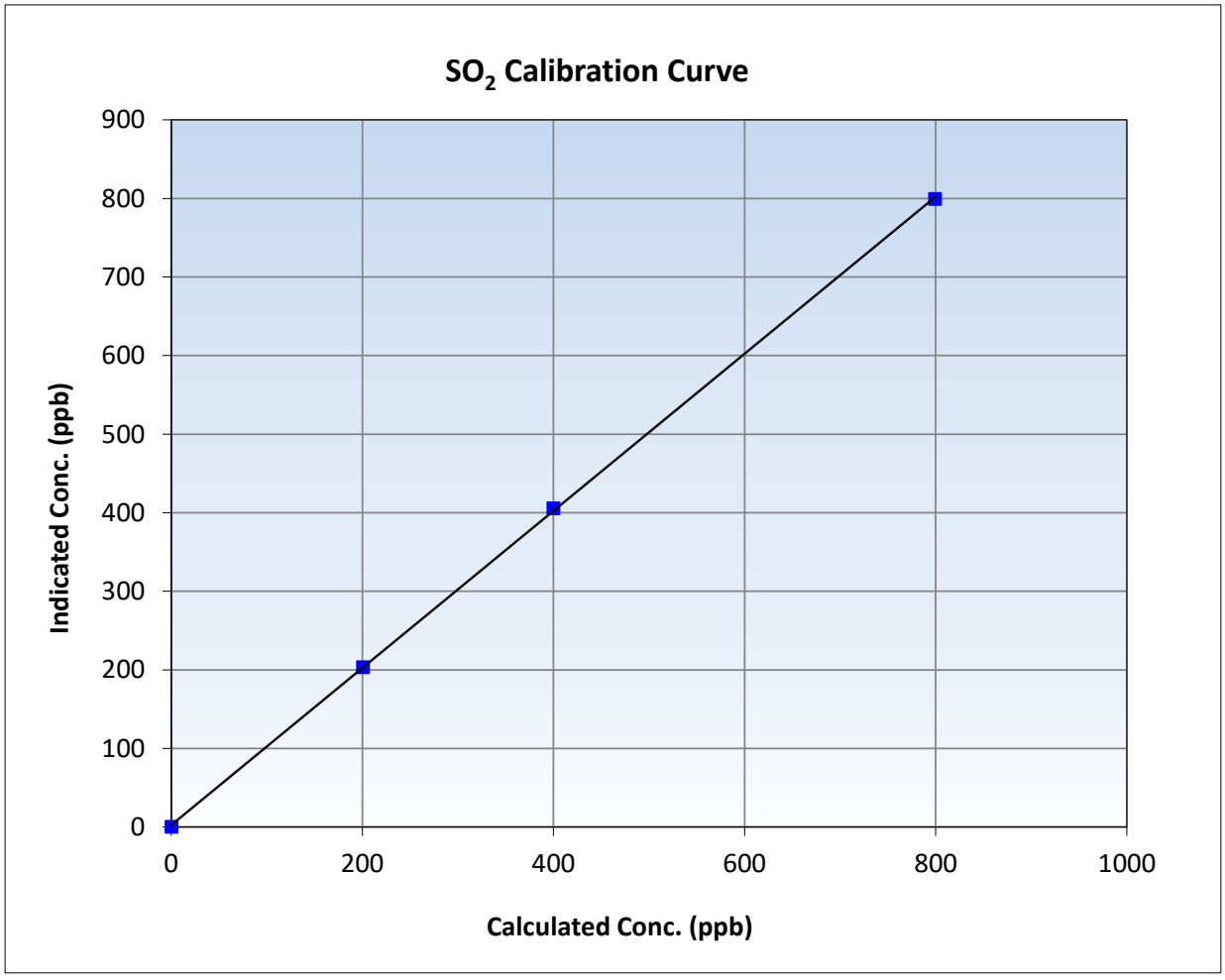
Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 6, 2025
Station Name:	Athabasca Valley	Station Number:	AMS07
Start Time (MST):	11:00	End Time (MST):	14:34
Analyzer make:	Thermo 43i-LTE	Analyzer serial #:	1507864683

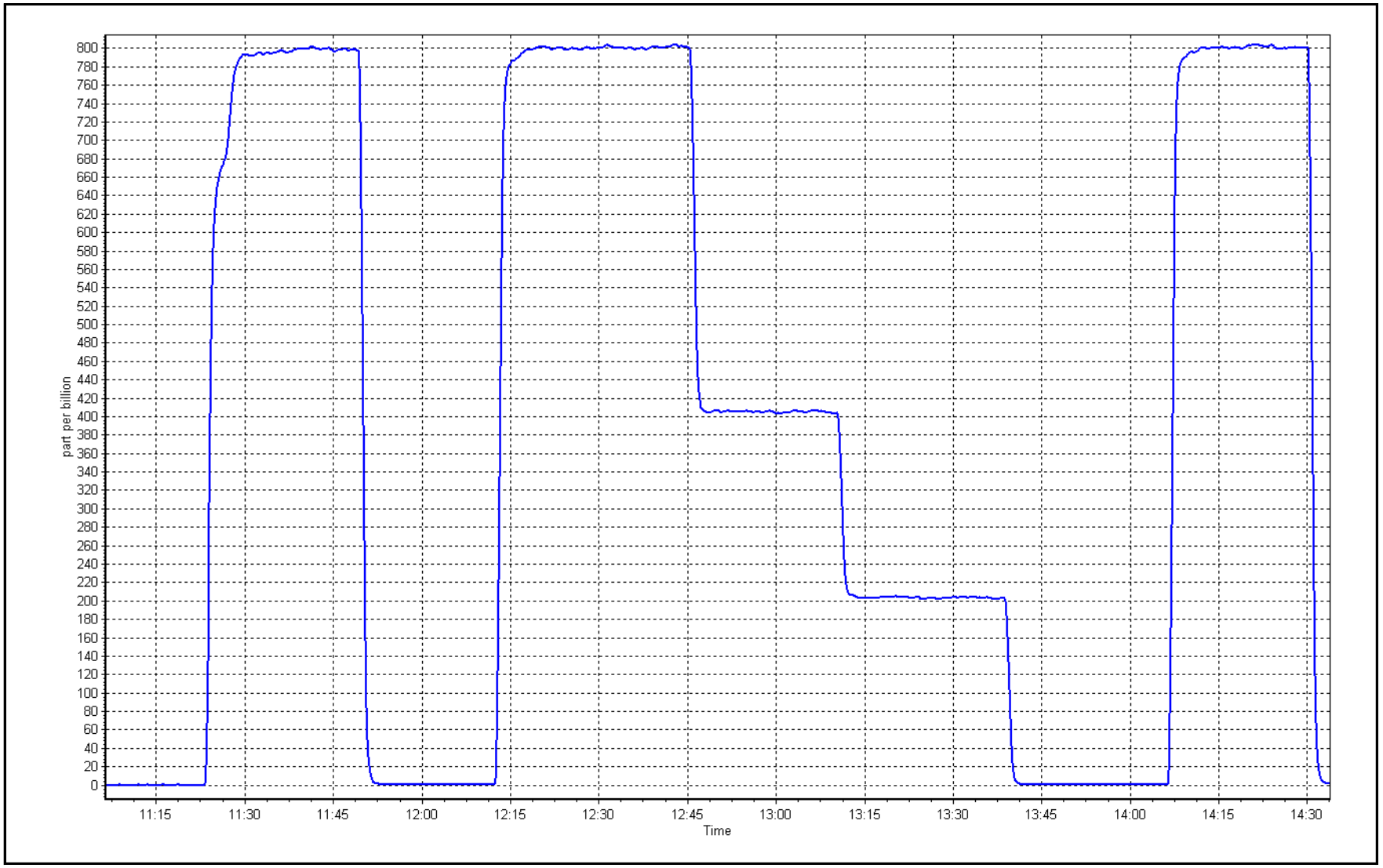
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
799.0	799.2	0.9997
399.5	405.5	0.9852
200.2	203.3	0.9849

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999933	*≥0.995*
Slope	0.999719	*0.90 - 1.10*
Intercept	2.444307	*+/-30*



SO2 Calibration Plot Date: July 18, 2025 Location: Athabasca Valley



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Athabasca Valley	Station number:	AMS07
Calibration Date:	July 8, 2025	Last Cal Date:	June 3, 2025
Start time (MST):	9:40	End time (MST):	14:42
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.25	ppm	Cal Gas Exp Date:	January 3, 2026
Cal Gas Cylinder #:	CC504080			
Removed Cal Gas Conc:	5.25	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	3805
ZAG Make/Model:	API T701H		Serial Number:	198

Analyzer Information

Analyzer make:	Thermo 43i LTE		Analyzer serial #:	1180540018
Converter make:	CDN-101		Converter serial #:	551
Analyzer Range	0 - 100 ppb		Converter Temp:	840 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.012897	1.003528	Backgd or Offset:	2.7	2.7
Calibration intercept:	-0.242219	-0.242178	Coeff or Slope:	0.908	0.940

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4925	75.5	79.3	76.4	1.033
As found Mid point	4962	37.7	39.6	38.1	1.031
As found Low point	4981	18.9	19.8	18.7	1.044
New cylinder response					

Baseline Corr As found:	76.7	Prev response:	80.05	*% change:	-4.4%
Baseline Corr 2nd AF pt:	38.4	AF Slope:	0.968625	AF Intercept:	-0.362049
Baseline Corr 3rd AF pt:	19.0	AF Correlation:	0.999986	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4925	75.5	79.3	79.4	0.999
Mid point	4962	37.7	39.6	39.5	1.003
Low point	4981	18.9	19.9	19.5	1.018
As left zero	5000	0.0	0.0	0.0	----
As left span	4925	75.5	79.3	79.2	1.001
SO2 Scrubber Check	4920	79.2	792.1	-0.1	----

Date of last scrubber change:	21-Feb-25	Ave Corr Factor	1.007
Date of last converter efficiency test:	Friday, April 22, 2022		

Notes: Span adjusted

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

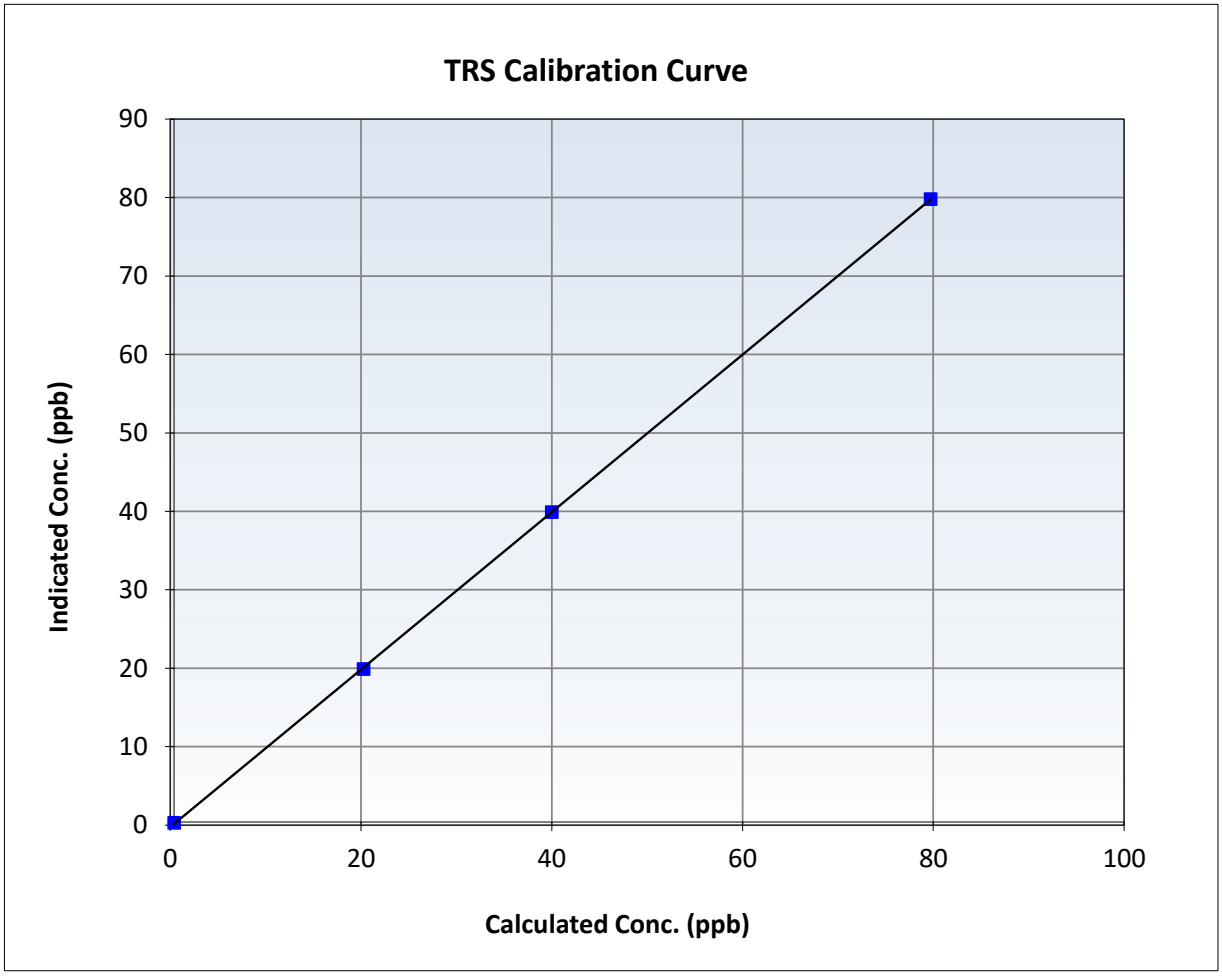
TRS Calibration Summary

Station Information

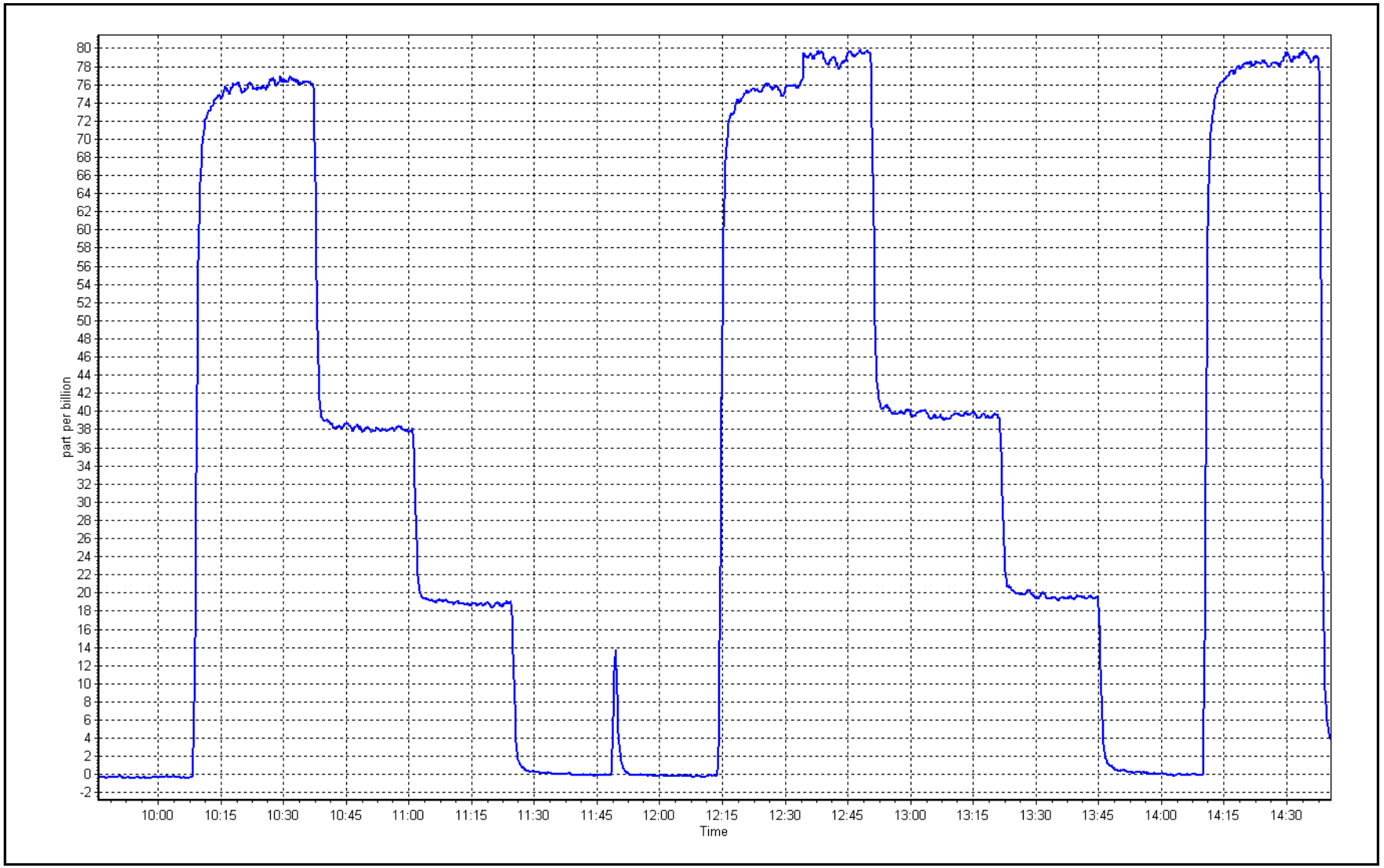
Calibration Date:	July 8, 2025	Previous Calibration:	June 3, 2025
Station Name:	Athabasca Valley	Station Number:	AMS07
Start Time (MST):	9:40	End Time (MST):	14:42
Analyzer make:	Thermo 43i LTE	Analyzer serial #:	1180540018

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	-0.1	----	Correlation Coefficient	0.999984	*≥0.995*
79.3	79.4	0.9989	Slope	1.003528	*0.90 - 1.10*
39.6	39.5	1.0028			
19.9	19.5	1.0183	Intercept	-0.242178	*+/-3*



TRS Calibration Plot Date: July 8, 2025 Location: Athabasca Valley



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Athabasca Valley	Station number:	AMS 07
Calibration Date:	July 18, 2025	Last Cal Date:	June 6, 2025
Start time (MST):	11:00	End time (MST):	14:34
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC320556	Cal Gas Expiry Date:	Monday, March 10, 2031
CH4 Cal Gas Conc.	496.0 ppm	CH4 Equiv Conc.	1059.8 ppm
C3H8 Cal Gas Conc.	205.0 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH4 Conc.	496.0 ppm	CH4 Equiv Conc.	1059.8 ppm
Removed C3H8 Conc.	205.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700	Serial Number:	3805
Zero Air Gen model:	Teledyne API T701H	Serial Number:	198

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1331259520
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.99E-04	2.99E-04	NMHC SP Ratio:	5.66E-05	5.66E-05
CH4 Retention time:	14.4	14.4	NMHC Peak Area:	158944	158944
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	16.91	16.94	0.999
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	16.94	Prev response	16.93	*% change	0.0%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	16.91	16.88	1.002
Mid point	4960	39.9	8.46	8.50	0.995
Low point	4980	20.0	4.24	4.32	0.982
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	16.91	16.97	0.997
				Average Correction Factor	0.993

Notes: No adjustments needed.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	9.00	8.96	1.004
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.96	Prev response	9.01	*% change	-0.6%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	9.00	8.92	1.008
Mid point	4960	39.9	4.50	4.51	0.999
Low point	4980	20.0	2.26	2.29	0.983
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	9.00	8.98	1.002
				Average Correction Factor	0.997

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	7.92	7.97	0.993
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.97	Prev response	7.92	*% change	0.7%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	7.92	7.95	0.995
Mid point	4960	39.9	3.96	4.00	0.991
Low point	4980	20.0	1.98	2.02	0.982
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	7.92	8.00	0.990
				Average Correction Factor	0.989

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	0.999531	0.996492
THC Cal Offset:	0.021654	0.046655
CH4 Cal Slope:	0.999850	1.003851
CH4 Cal Offset:	-0.000138	0.014249
NMHC Cal Slope:	0.999150	0.990157
NMHC Cal Offset:	0.021192	0.031606

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

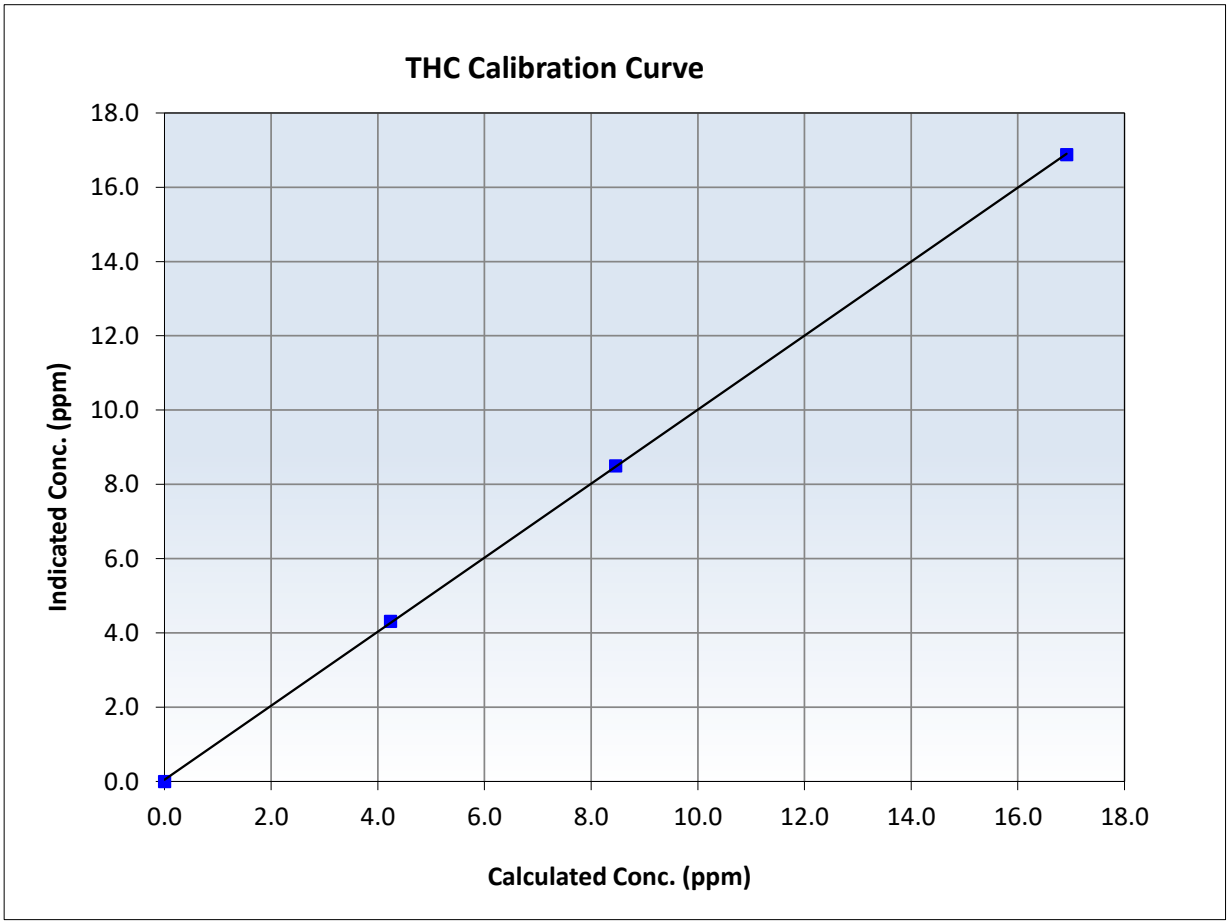
THC Calibration Summary

Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 6, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	11:00	End Time (MST):	14:34
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259520

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.00	0.00	----	Correlation Coefficient	0.999965	*≥0.995*
16.91	16.88	1.0022	Slope	0.996492	*0.90 - 1.10*
8.46	8.50	0.9948	Intercept	0.046655	*+/-0.5*
4.24	4.32	0.9824			



Wood Buffalo Environmental Association

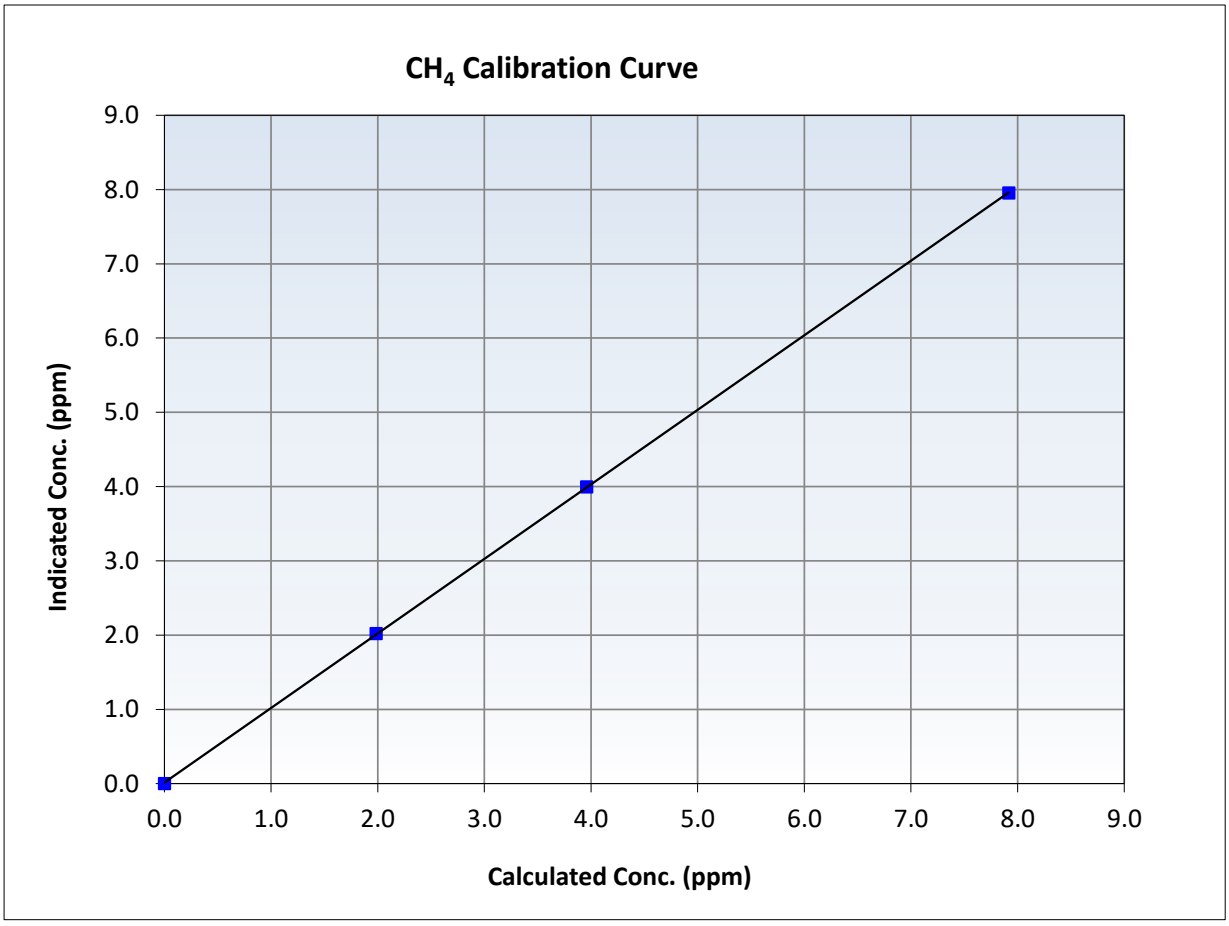
CH_4 Calibration Summary

Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 6, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	11:00	End Time (MST):	14:34
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259520

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999985	≥0.995
7.92	7.95	0.9953	Slope	1.003851	0.90 - 1.10
3.96	4.00	0.9908	Intercept	0.014249	+/-0.5
1.98	2.02	0.9822			



Wood Buffalo Environmental Association

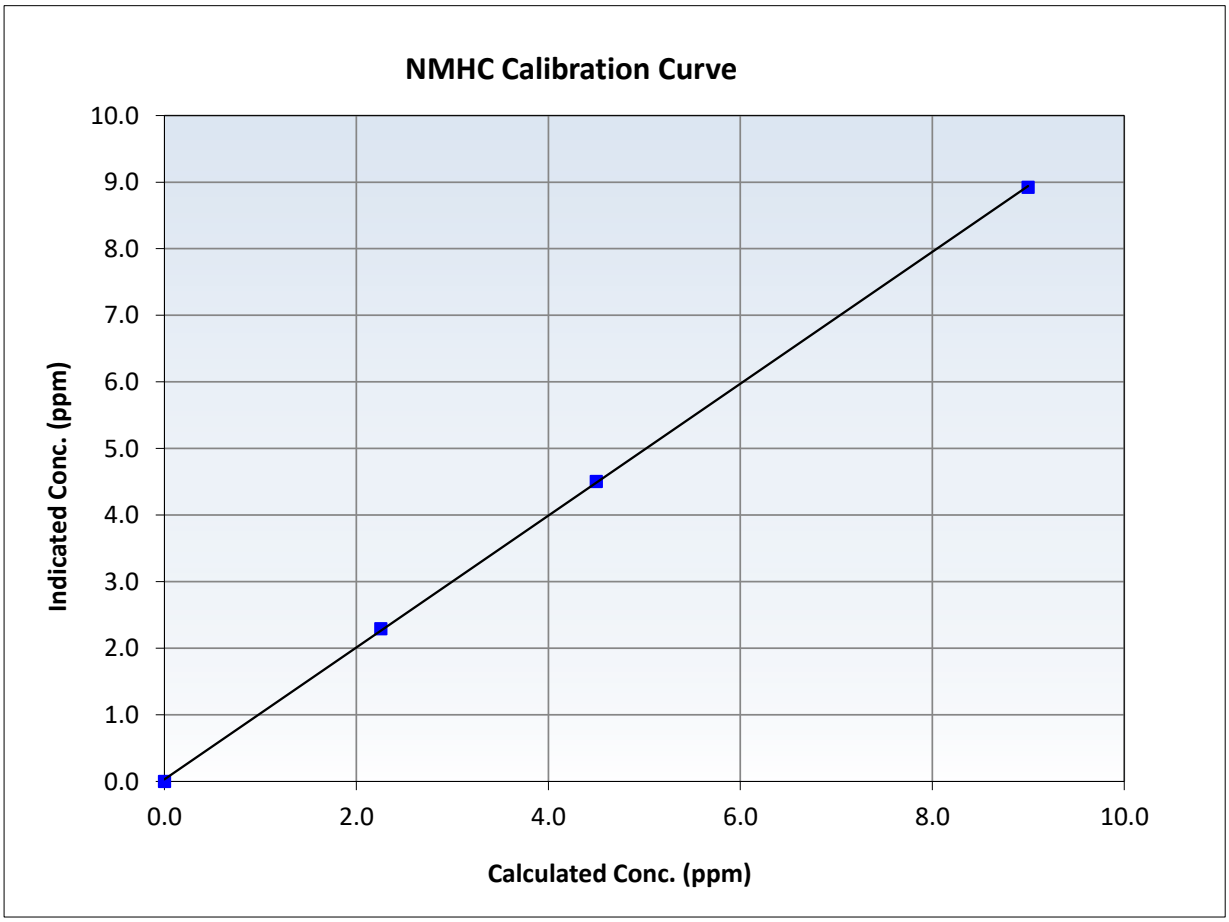
NMHC Calibration Summary

Station Information

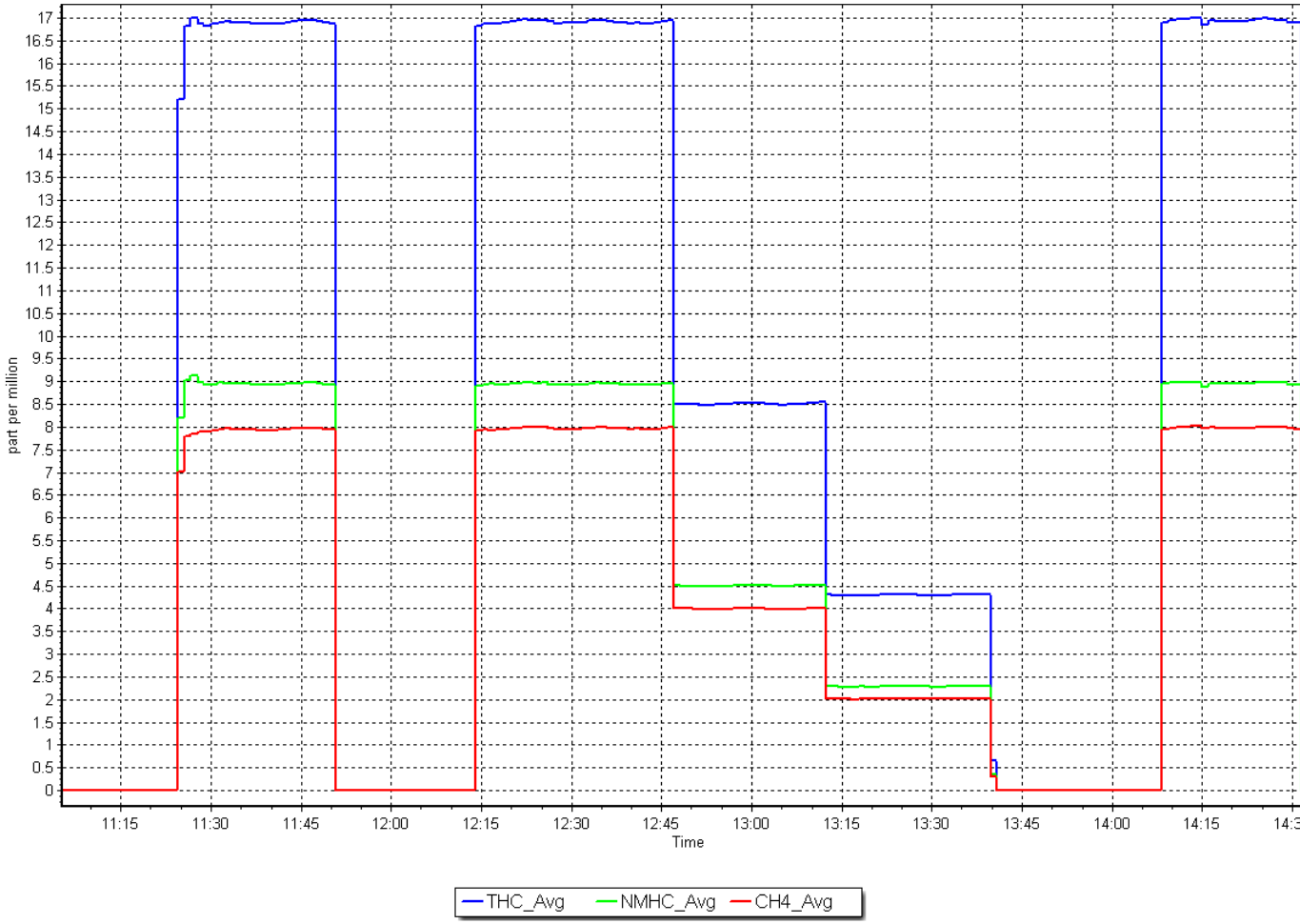
Calibration Date:	July 18, 2025	Previous Calibration:	June 6, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	11:00	End Time (MST):	14:34
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259520

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999942	≥0.995
9.00	8.92	1.0083	Slope	0.990157	0.90 - 1.10
4.50	4.51	0.9986			
2.26	2.29	0.9830	Intercept	0.031606	+/-0.5



NMHC Calibration Plot Date: July 18, 2025 Location: Athabasca Valley



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Athabasca Valley
Station number:	AMS 07
Calibration Date:	July 10, 2025
Last Cal Date:	June 5, 2025
Start time (MST):	9:42
End time (MST):	15:20
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0033919	Cal Gas Expiry Date:	January 9, 2032
NOX Cal Gas Conc:	60.10 ppm	NO Cal Gas Conc:	59.90 ppm
Removed Cylinder #:	N/A	Removed Gas Exp Date:	N/A
Removed Gas NOX Conc:	60.10 ppm	Removed Gas NO Conc:	59.90 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	API T700	Serial Number:	3805
ZAG make/model:	API T701H	Serial Number:	198

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.1	0.1	0.0	----	----
AF High point	4933	66.8	803.0	800.3	2.7	832.6	828.5	4.2	0.9645	0.9661
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 804.0 ppb	NO = 802.1 ppb
Baseline Corr 1st pt	NO_X = 832.5 ppb	NO = 828.4 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	*Percent Change	NO_X = 3.4%
As found	NO r^2:	*Percent Change	NO = 3.2%
As found	NO_2 r^2:	Nx Sl:	Nx Int:
		NO Sl:	NO Int:
		NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1160120024

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	0.945	0.912	NO bkgnd or offset:	6.6	6.4
NOX coeff or slope:	1.004	1.003	NOX bkgnd or offset:	6.8	6.6
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	182.6	183.5

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.998550	0.996372
NO_X Cal Offset:	2.151910	2.391913
NO Cal Slope:	1.000199	0.998057
NO Cal Offset:	1.691929	1.991935
NO_2 Cal Slope:	1.003031	1.003627
NO_2 Cal Offset:	1.715926	0.404617

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.3	0.3	0.0	----	----
High point	4933	66.8	803.0	800.3	2.7	800.9	799.4	1.6	1.0026	1.0011
Mid point	4966	33.4	401.5	400.2	1.3	405.0	403.7	1.3	0.9914	0.9913
Low point	4983	16.7	200.7	200.1	0.7	203.5	202.4	1.1	0.9865	0.9885
As left zero	5000	0.0	0.0	0.0	0.0	0.2	0.2	0.0	----	----
As left span	4933	66.8	803.0	399.1	403.9	803.9	399.1	404.7	0.9988	1.0000
							Average Correction Factor		0.9935	0.9936

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.0	----	----
High GPT point	797.8	398.4	402.1	403.7	0.9960	100.4%
Mid GPT point	797.8	597.8	202.7	204.1	0.9930	100.7%
Low GPT point	797.8	697.9	102.6	103.7	0.9891	101.1%
				Average Correction Factor	0.9927	100.7%

Notes: Span adjusted.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

NO_X Calibration Summary

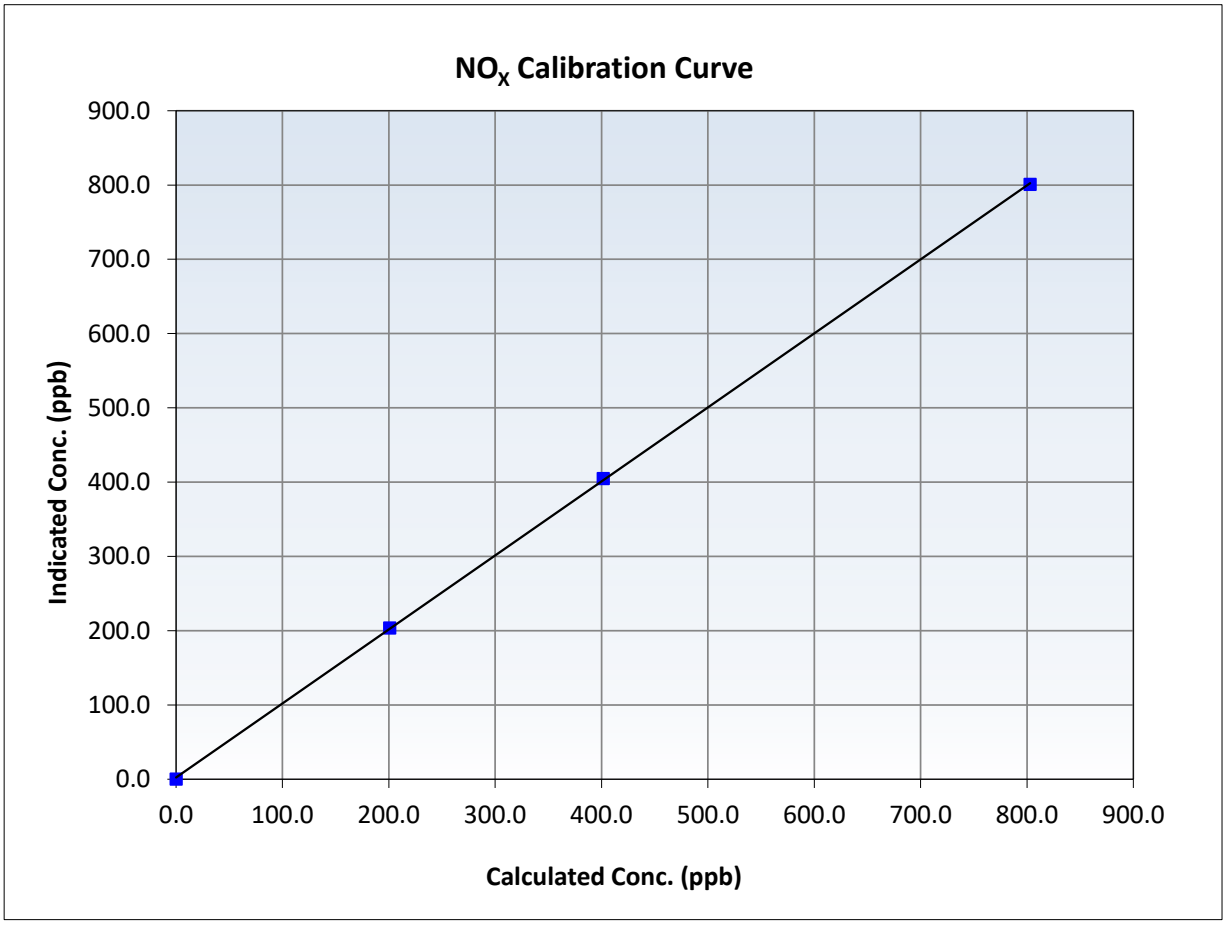
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 5, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:42	End Time (MST):	15:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1160120024

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.3	----
803.0	800.9	1.0026
401.5	405.0	0.9914
200.7	203.5	0.9865

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999959	*≥0.995*
Slope	0.996372	*0.90 - 1.10*
Intercept	2.391913	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

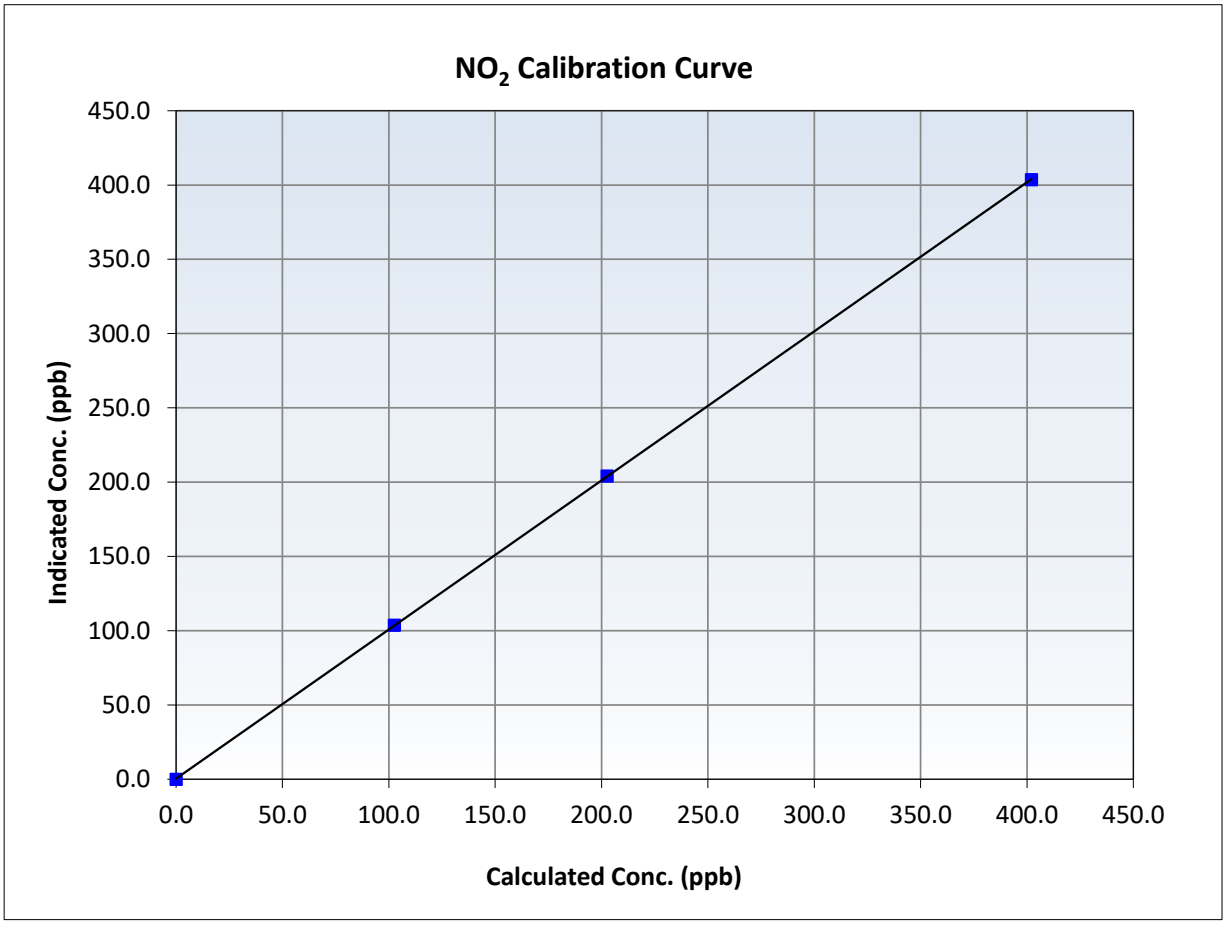
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 5, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:42	End Time (MST):	15:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1160120024

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
402.1	403.7	0.9960
202.7	204.1	0.9930
102.6	103.7	0.9891

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	1.003627	*0.90 - 1.10*
Intercept	0.404617	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

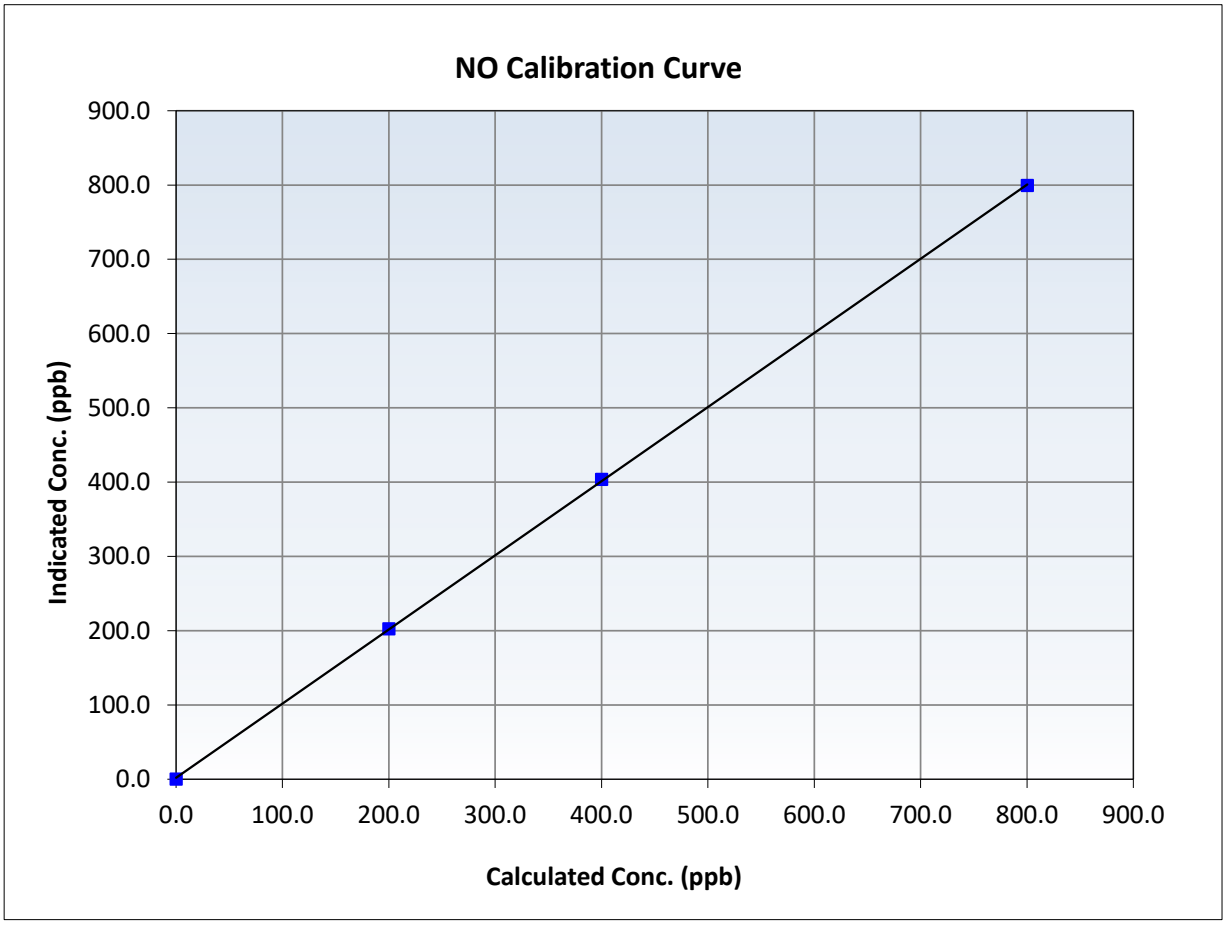
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 5, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:42	End Time (MST):	15:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1160120024

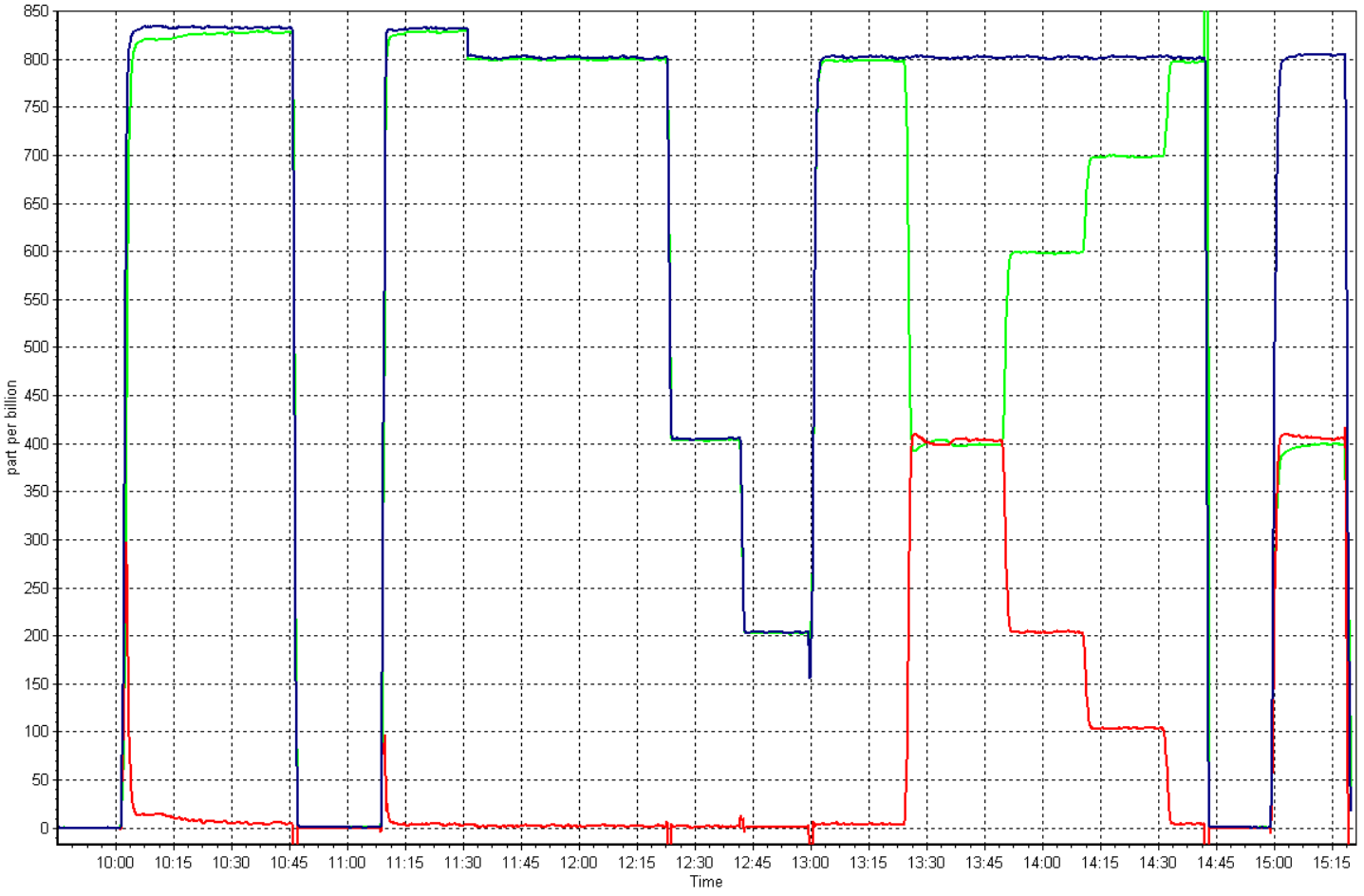
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.3	----
800.3	799.4	1.0011
400.2	403.7	0.9913
200.1	202.4	0.9885

Statistical Evaluation		Limits
Correlation Coefficient	0.999970	≥0.995
Slope	0.998057	0.90 - 1.10
Intercept	1.991935	+/-20



NO_X Calibration Plot Date: July 10, 2025 Location: Athabasca Valley



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Athabasca Valley	Station number:	AMS07
Calibration Date:	July 3, 2025	Last Cal Date:	June 12, 2025
Start time (MST):	10:23	End time (MST):	14:01
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	T700	Serial Number:	3805
ZAG Make/Model:	T701H	Serial Number:	198

Analyzer Information

Analyzer make:	Thermo 49i	Analyzer serial #:	1152220023
Analyzer Range	0 - 500 ppb		

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	0.998086	1.002886	Backgd or Offset:	-1.1	-1.1
Calibration intercept:	0.560000	0.920000	Coeff or Slope:	1.556	1.556

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	NA	0.0	-0.2	----
As found High point	5000	1725.3	400.0	401.8	0.995
As found Mid point					
As found Low point					
Baseline Corr As found:	402.0	Previous response	399.8	*% change	0.5%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	NA	0.0	0.5	----
High point	5000	1705.1	400.0	401.9	0.995
Mid point	5000	1172.8	200.0	201.6	0.992
Low point	5000	921.2	100.0	101.7	0.983
As left zero	5000	NA	0.0	-0.7	----
As left span	5000	1582.6	400.0	401.6	0.996
				Average Correction Factor	0.990

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

O_3 Calibration Summary

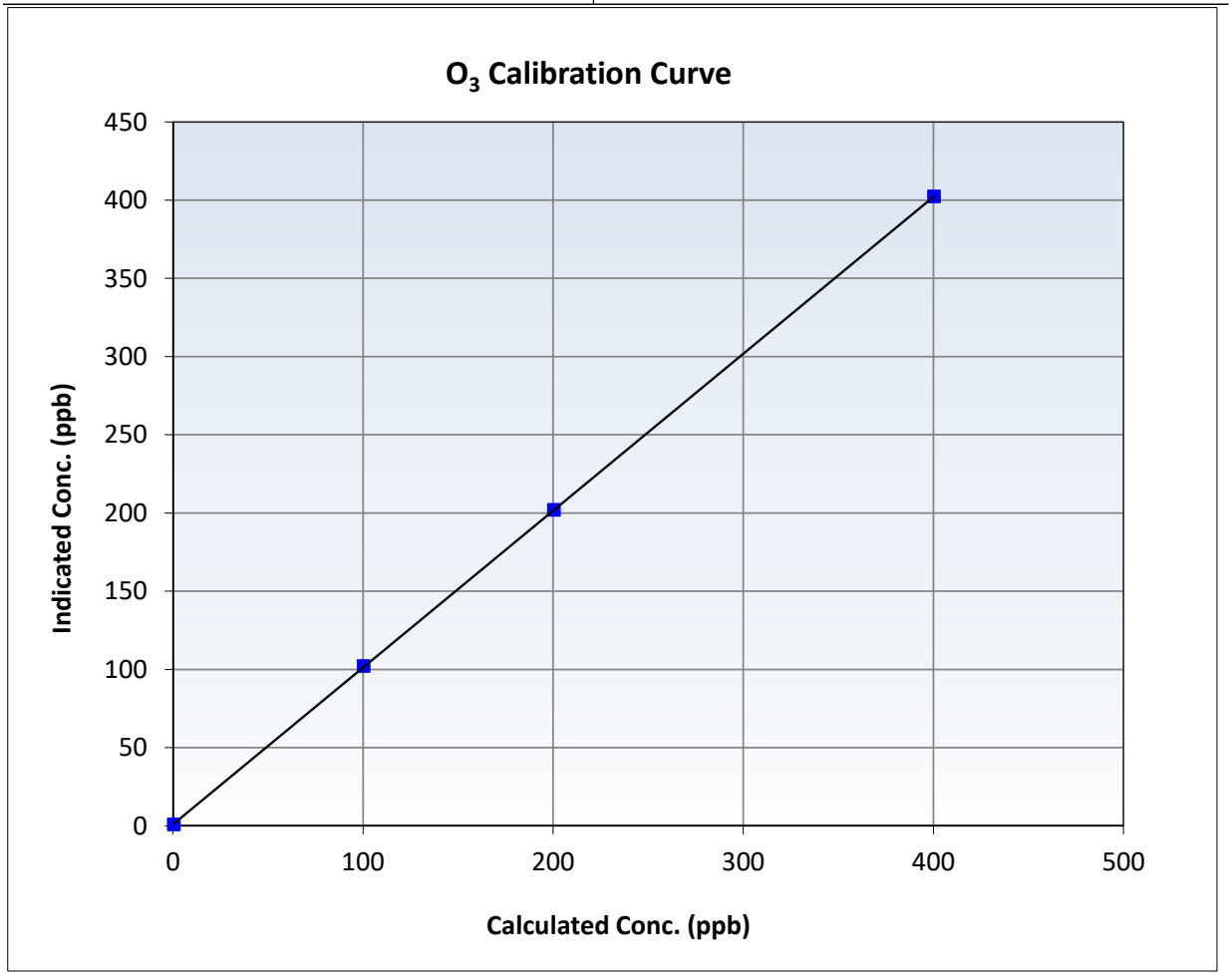
Station Information

Calibration Date:	July 3, 2025	Previous Calibration:	June 12, 2025
Station Name:	Athabasca Valley	Station Number:	AMS07
Start Time (MST):	10:23	End Time (MST):	14:01
Analyzer make:	Thermo 49i	Analyzer serial #:	1152220023

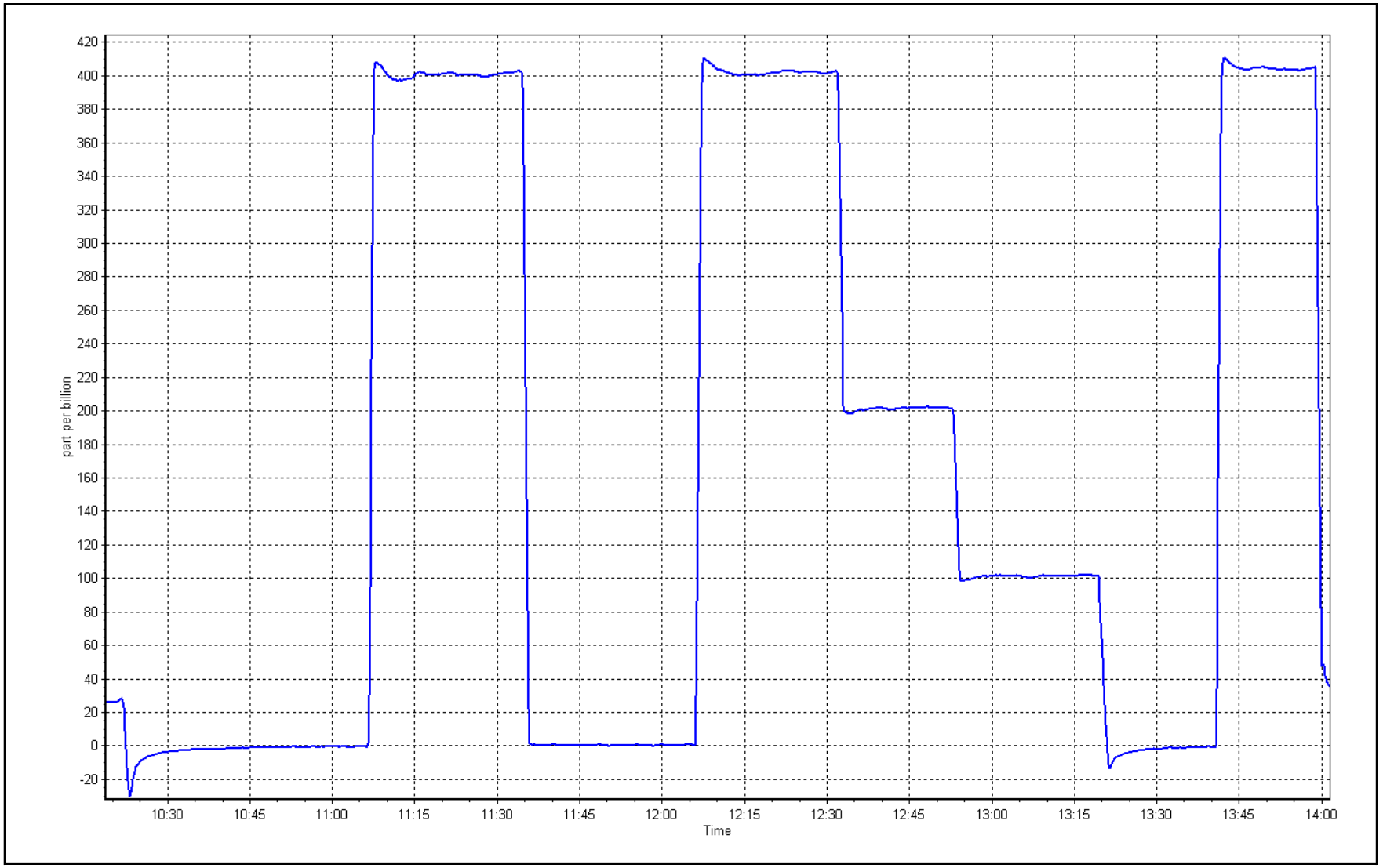
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.5	----
400.0	401.9	0.9953
200.0	201.6	0.9921
100.0	101.7	0.9833

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	1.002886	*0.90 - 1.10*
Intercept	0.920000	*+/- 5*



O_3 Calibration Plot Date: July 3, 2025 Location: Athabasca Valley



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Athabasca Valley	Station number:	AMS 07
Calibration Date:	July 31, 2025	Last Cal Date:	June 20, 2025
Start time (MST):	12:09	End time (MST):	12:47
Analyzer Make:	API T640	S/N:	2235
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388748
Temp/RH standard:	Alicat FP-25BT	S/N:	388748

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	(Limits)
T (^{o}C)	33.9	32.7	33.9	☐	+/- 2 ^{o}C
P (mmHg)	740.3	738.6	740.3	☐	+/- 10 mmHg
Flow (LPM)	4.99	4.95	4.99	☐	+/- 0.25 LPM
PW% (pump)	31	-----	31	☐	>80%
Zero Verification	PM w/o HEPA:	9.2	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: October 6, 2024

Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	(Limits)
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: April 1, 2025

Date Disposable Filter Changed: July 31, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.0 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: July 8, 2024

Date RH/T Sensor Cleaned: July 8, 2024

Notes: Temp, pressure and flow checked. Leak check passed. DFU filter changed out.

Calibration by: Aswin Sasi Kumar

Wood Buffalo Environmental Association

CO Calibration Report

Station Information

Station Name:	Athabasca Valley	Station number:	AMS 07
Calibration Date:	July 15, 2025	Last Cal Date:	June 20, 2025
Start time (MST):	10:55	End time (MST):	14:22
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	2,953	ppm	Cal Gas Exp Date:	September 30, 2029
Cal Gas Cylinder #:	T1TWKRN			
Removed Cal Gas Conc:	2,953	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T750		Serial Number:	282
ZAG Make/Model:	Teledyne API 751H		Serial Number:	321

Analyzer Information

Analyzer make:	Thermo 48i-TLE		Analyzer serial #:	1408761381	
Analyzer Range:	0 - 50 ppm				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.002547	0.999123	Backgd or Offset:	5.620	5.731
Calibration intercept:	0.176056	0.126011	Coeff or Slope:	1.079	1.081

CO As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.1	----
As found High point	4932	67.8	40.0	40.2	0.998
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	40.11	Prev response:	40.32	*% change:	-0.5%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CO Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4932	67.8	40.0	40.0	1.000
Mid point	4966	33.9	20.0	20.3	0.987
Low point	4983	16.9	10.0	10.2	0.980
As left zero	5000	0.0	0.0	0.0	----
As left span	4932	67.8	40.0	40.0	1.001
				Average Correction Factor	0.989

Notes: Zero and span adjusted.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

CO Calibration Summary

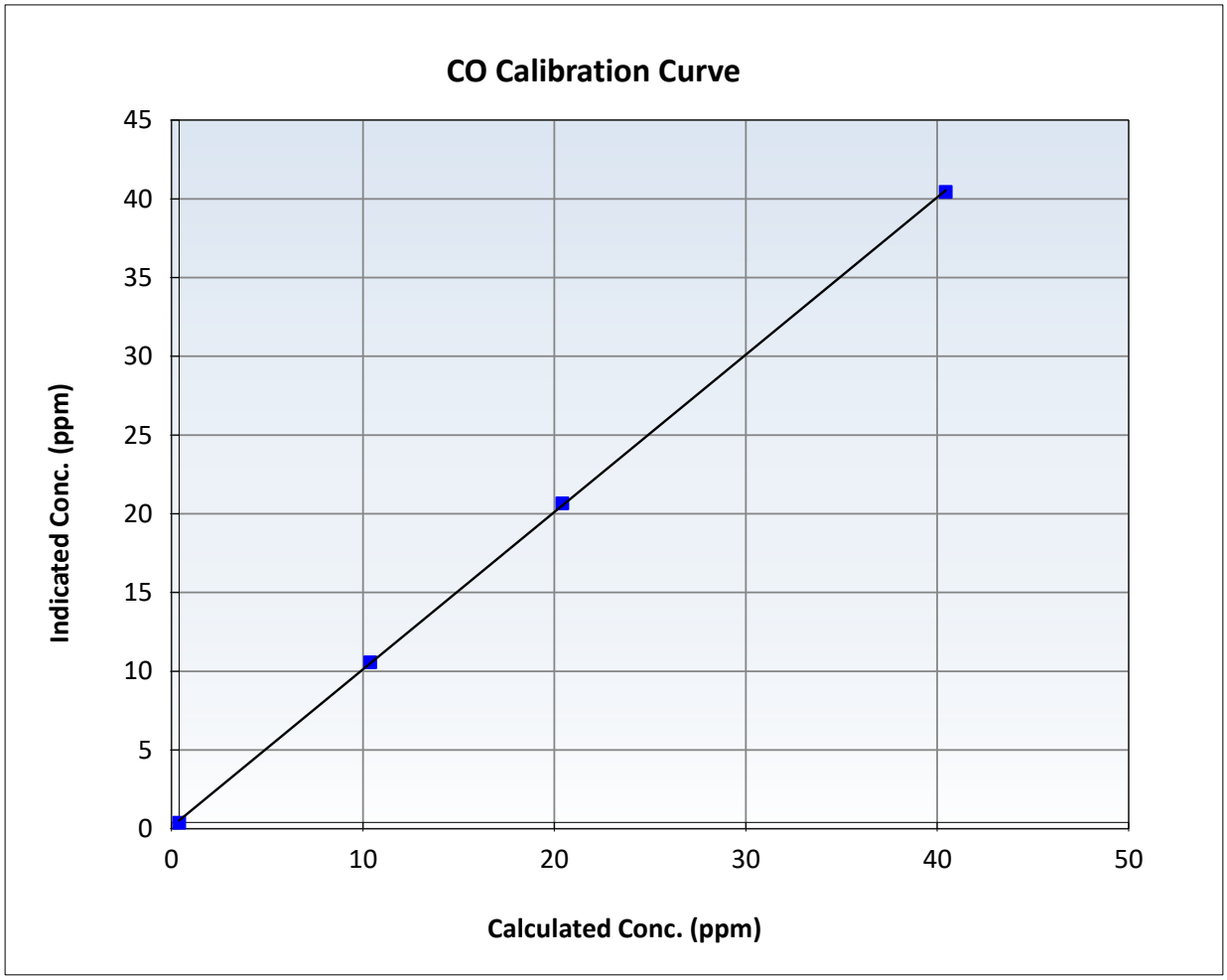
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 20, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	10:55	End Time (MST):	14:22
Analyzer make:	Thermo 48i-TLE	Analyzer serial #:	1408761381

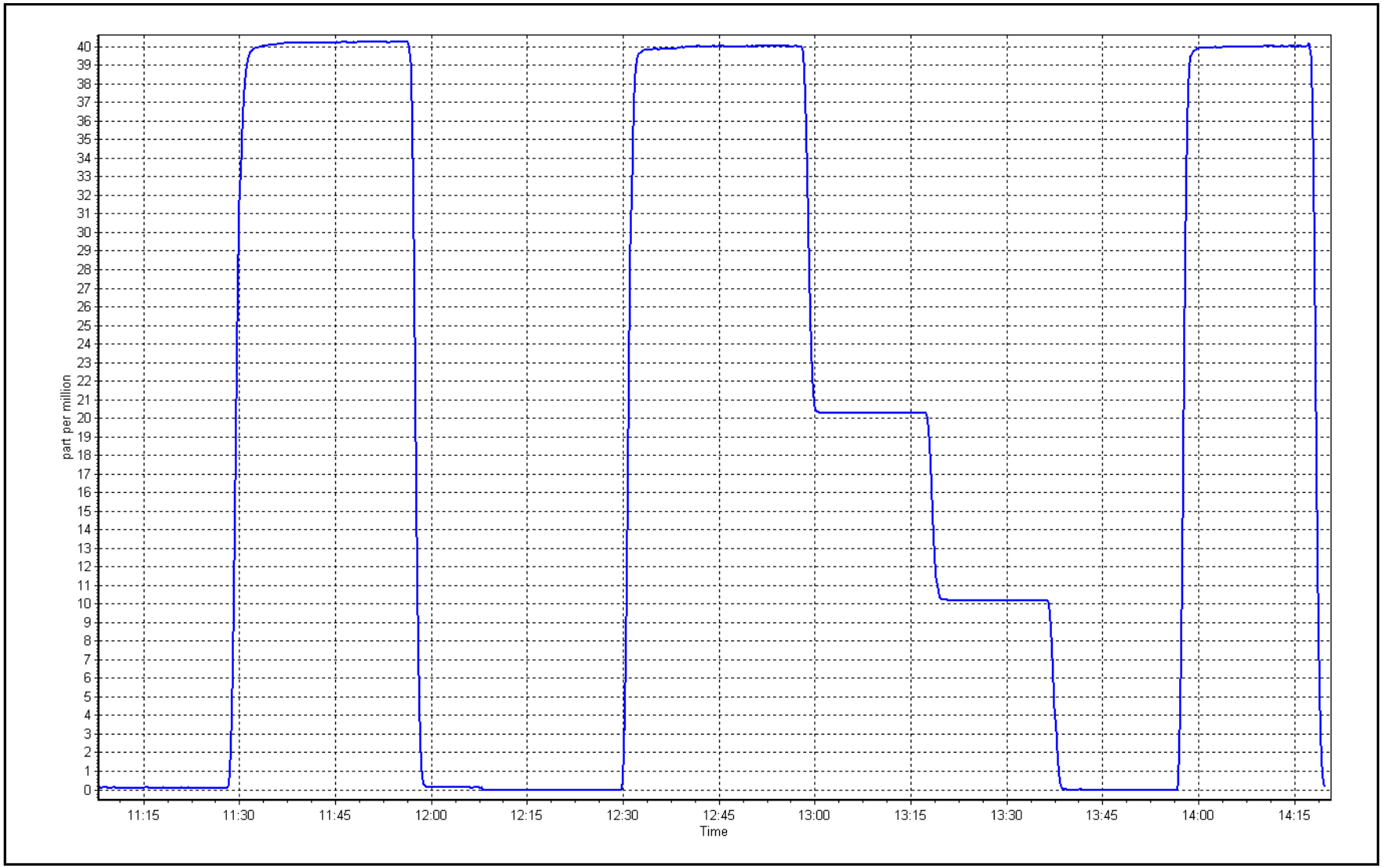
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
40.0	40.0	1.0001
20.0	20.3	0.9873
10.0	10.2	0.9805

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999935	*≥0.995*
Slope	0.999123	*0.90 - 1.10*
Intercept	0.126011	*+/-1.5*



CO Calibration Plot Date: July 15, 2025 Location: Athabasca Valley



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS08
FORT CHIPEWYAN
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Fort Chipewyan	Station number:	AMS 08
Calibration Date:	July 9, 2025	Last Cal Date:	June 26 2025
Start time (MST):	9:11	End time (MST):	11:51
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	49.84	ppm	Cal Gas Exp Date:	January 6, 2030
Cal Gas Cylinder #:	CC196697			
Removed Cal Gas Conc:	49.84	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	3810
Zero Air Gen Model:	Teledyne API T701		Serial Number:	135

Analyzer Information

Analyzer make:	Thermo 43i-TLE		Serial Number:	1236656116	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.000545	1.003814	Backgd or Offset:	1.9	1.9
Calibration intercept:	-0.023960	-0.244419	Coeff or Slope:	1.029	1.029

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.0	----
As found High point	4920	80.3	800.4	802.7	0.997
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	802.7	Previous response	800.8	*% change	0.2%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4920	80.3	800.4	803.7	0.996
Mid point	4960	40.2	400.7	401.0	0.999
Low point	4980	20.1	200.4	200.8	0.998
As left zero	5000	0.0	0.0	0.1	----
As left span	4920	80.3	800.4	801.2	0.999
				Average Correction Factor:	0.998

Notes: Changed out inlet filter after as founds. No adjustments made.

Calibration Performed By: Sabian V Jeremey C

Wood Buffalo Environmental Association

SO_2 Calibration Summary

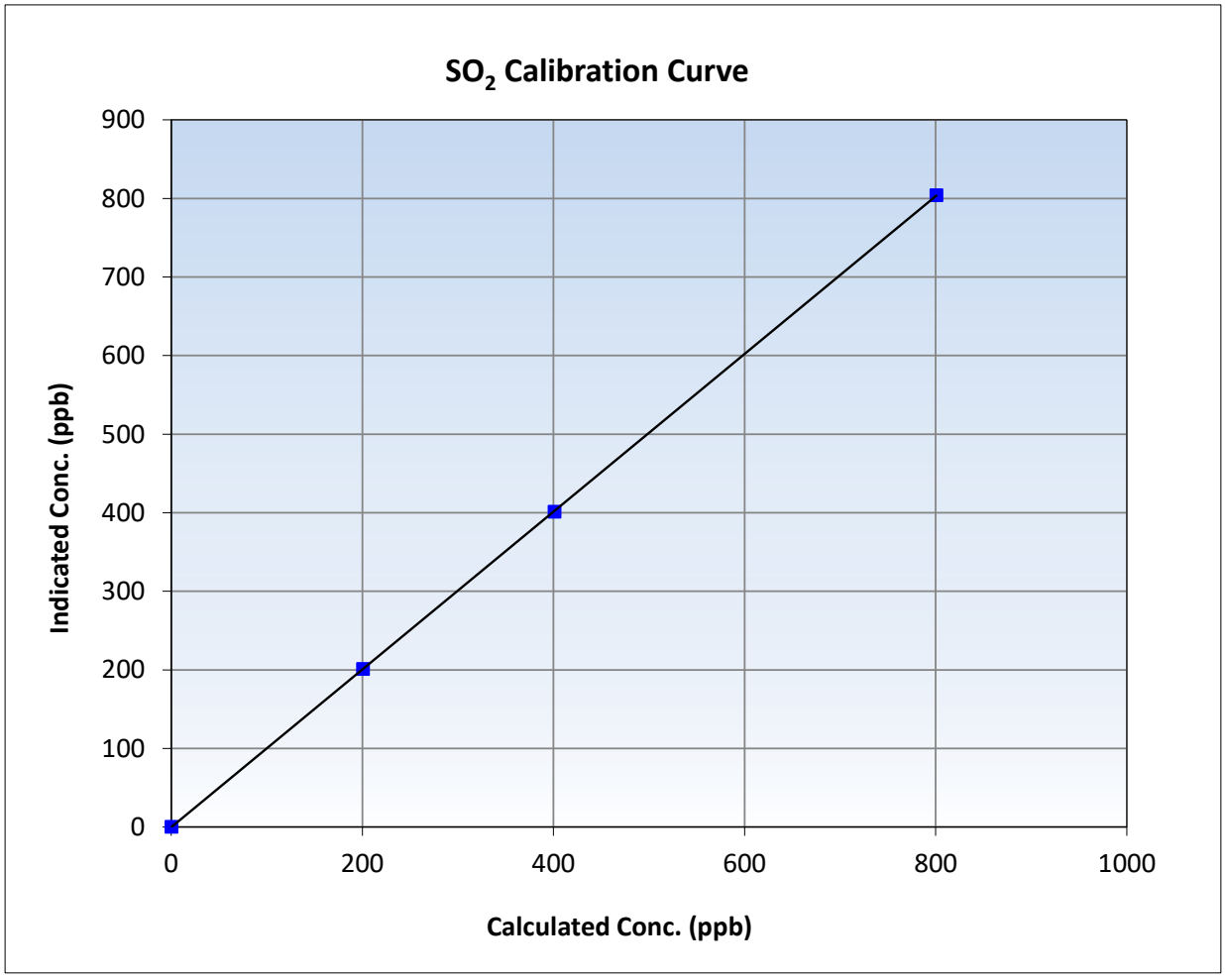
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	June 26 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	9:11	End Time (MST):	11:51
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1236656116

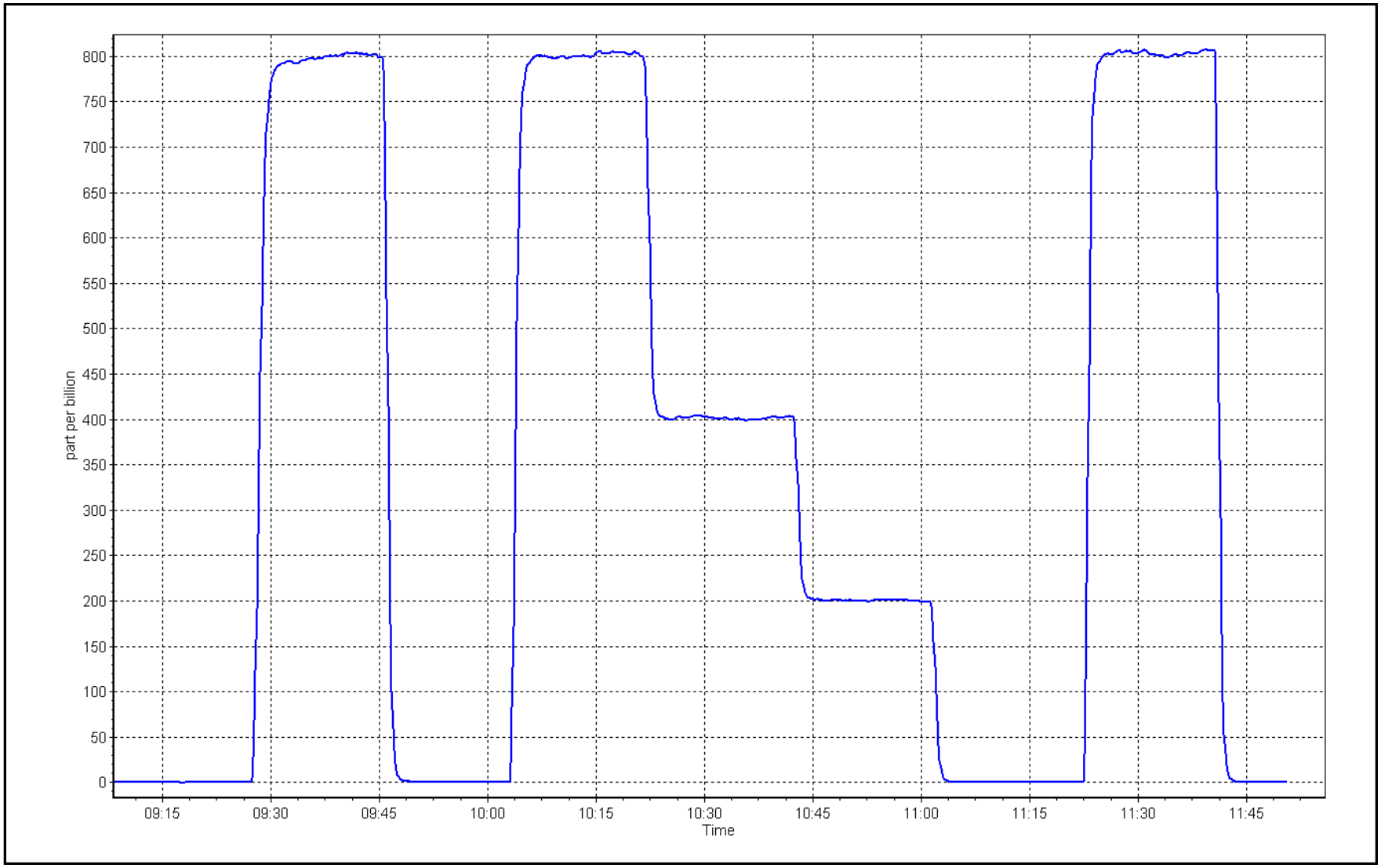
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.3	----
800.4	803.7	0.9959
400.7	401.0	0.9992
200.4	200.8	0.9978

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999996	*≥0.995*
Slope	1.003814	*0.90 - 1.10*
Intercept	-0.244419	*+/-30*



SO2 Calibration Plot Date: July 9, 2025 Location: Fort Chipewyan



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Fort Chipewyan	Station number:	AMS 08
Calibration Date:	July 9, 2025	Last Cal Date:	June 18, 2025
Start time (MST):	11:58	End time (MST):	15:34
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.84	ppm	Cal Gas Exp Date:	August 28, 2027
Cal Gas Cylinder #:	SA7549			
Removed Cal Gas Conc:	4.84	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	3810
ZAG Make/Model:	Teledyne API T701		Serial Number:	135

Analyzer Information

Analyzer make:	Thermo 43i-TLE		Analyzer serial #:	1218153461
Converter make:	CDN-101		Converter serial #:	630
Analyzer Range	0 - 100 ppb		Converter Temp:	800 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.014823	1.034837	Backgd or Offset:	2.8	2.8
Calibration intercept:	-0.338230	-0.438593	Coeff or Slope:	1.144	1.144

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4917	82.6	80.0	81.7	0.978
As found Mid point	4959	41.3	40.0	40.5	0.985
As found Low point	4979	20.7	20.0	19.9	1.002
New cylinder response					

Baseline Corr As found:	81.8	Prev response:	80.81	*% change:	1.2%
Baseline Corr 2nd AF pt:	40.6	AF Slope:	1.024687	AF Intercept:	-0.358402
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999954	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4917	82.6	80.0	82.6	0.968
Mid point	4959	41.3	40.0	40.5	0.987
Low point	4979	20.7	20.0	20.0	1.002
As left zero	5000	0.0	0.0	0.0	----
As left span	4917	82.6	80.0	82.2	0.973
SO2 Scrubber Check	4920	80.3	803.0	-0.1	----
Date of last scrubber change:		May 15, 2025		Ave Corr Factor	0.986
Date of last converter efficiency test:					

Notes: No adjustments performed. SO2 scrubber check was done passed.

Calibration Performed By: Sabian Voyageur Jeremy Cardinal

Wood Buffalo Environmental Association

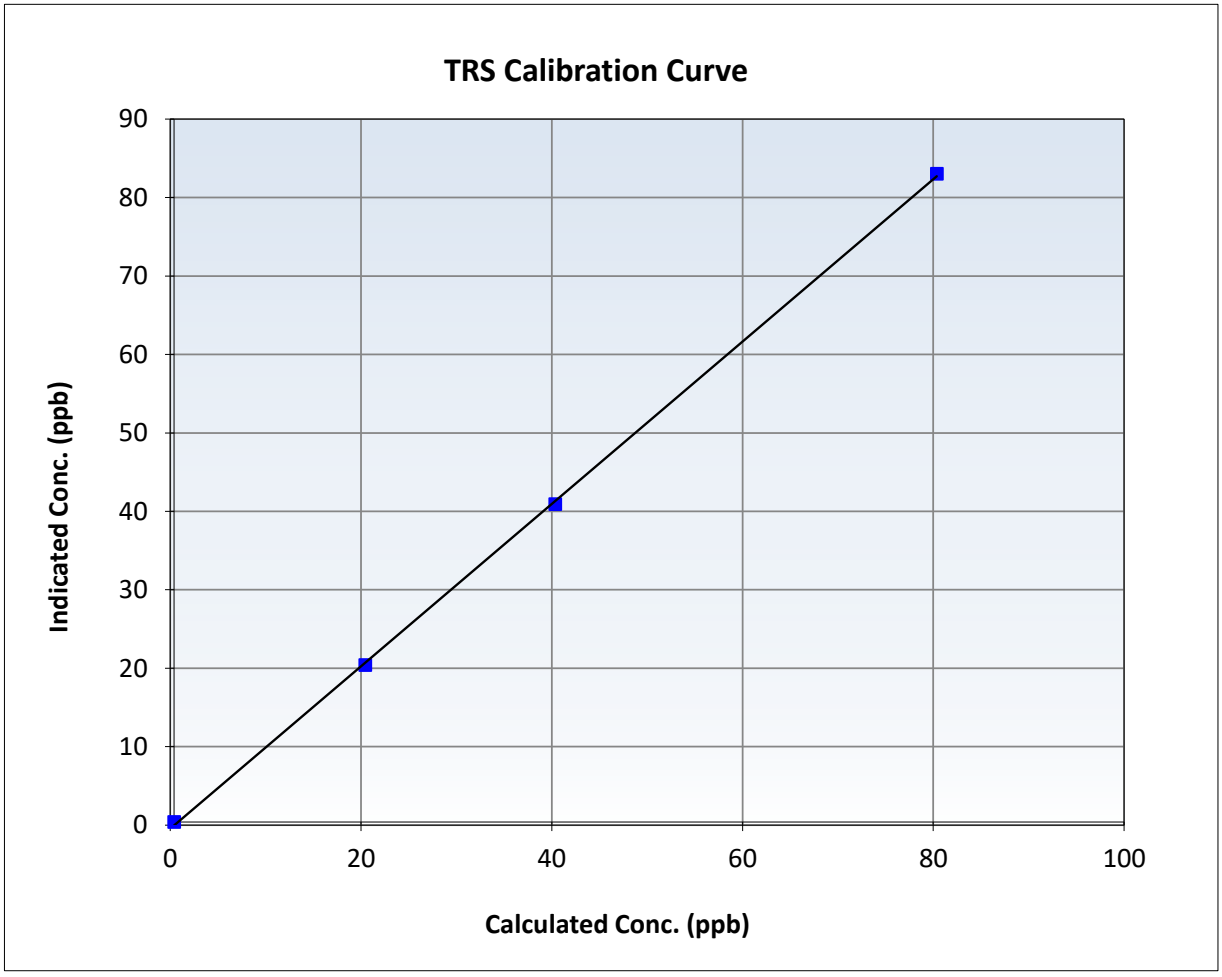
TRS Calibration Summary

Station Information

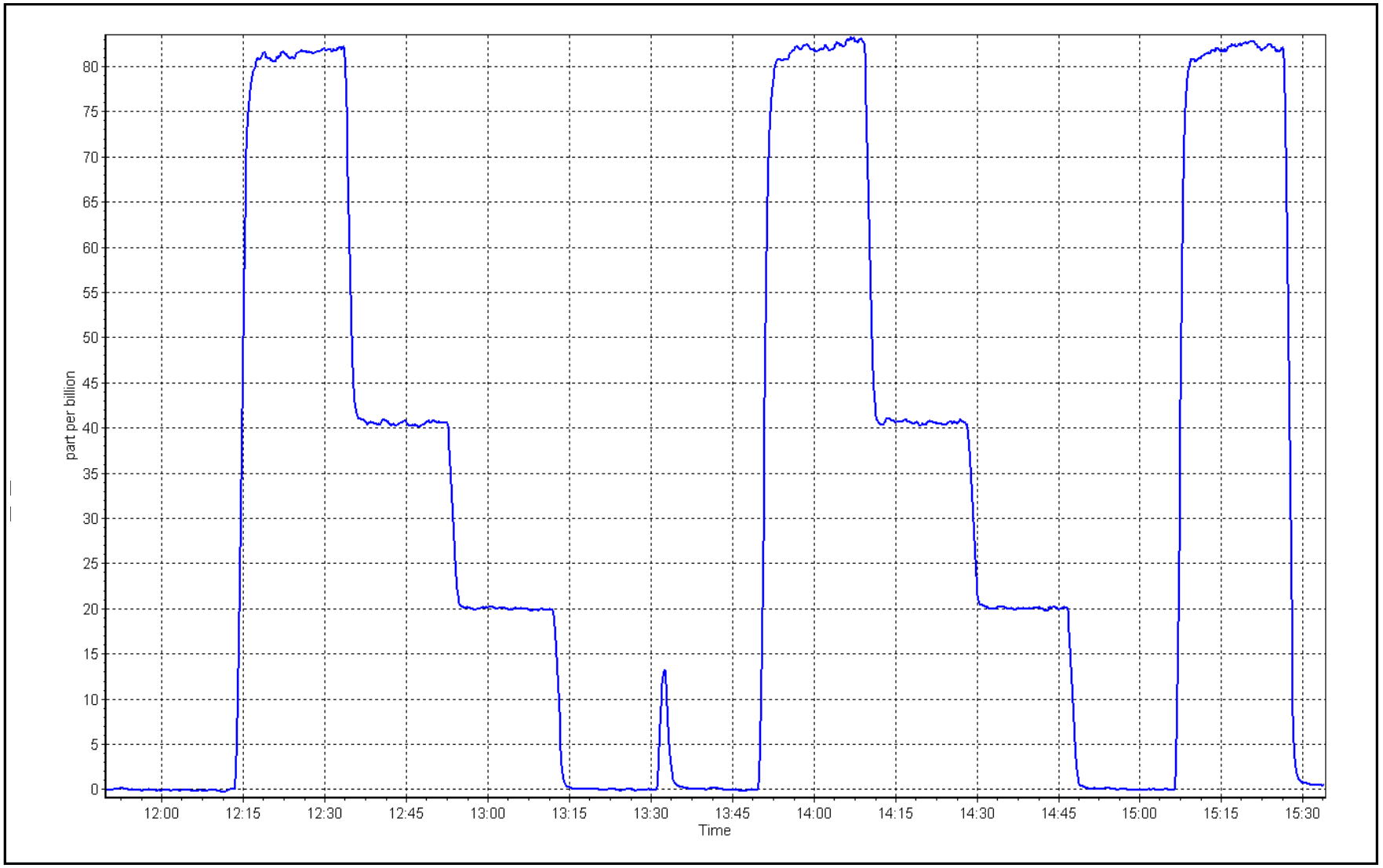
Calibration Date:	July 9, 2025	Previous Calibration:	June 18, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	11:58	End Time (MST):	15:34
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1218153461

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.0	----	Correlation Coefficient	0.999853	*≥0.995*
80.0	82.6	0.9681	Slope	1.034837	*0.90 - 1.10*
40.0	40.5	0.9871			
20.0	20.0	1.0019	Intercept	-0.438593	*+/-3*



TRS Calibration Plot Date: July 9, 2025 Location: Fort Chipewyan



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Fort Chipewyan
Station number:	AMS 08
Calibration Date:	July 10, 2025
Last Cal Date:	June 13, 2025
Start time (MST):	8:46
End time (MST):	13:25
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0046831	Cal Gas Expiry Date:	January 9,2032
NOX Cal Gas Conc:	60.20 ppm	NO Cal Gas Conc:	60.00 ppm
Removed Cylinder #:	DT0046831	Removed Gas Exp Date:	January 9,2032
Removed Gas NOX Conc:	60.20 ppm	Removed Gas NO Conc:	60.00 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	3810
ZAG make/model:	Teledyne API T701H	Serial Number:	135

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-1.0	-0.3	-0.7	----	----
AF High point	4933	66.7	803.1	800.4	2.7	832.6	829.5	3.1	0.9634	0.9646
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 802.9 ppb	NO = 800.2 ppb
Baseline Corr 1st pt	NO_X = 833.6 ppb	NO = 829.8 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	*Percent Change	NO_X = 3.7%
As found	NO r^2:	*Percent Change	NO = 3.6%
As found	NO_2 r^2:	Nx Sl:	Nx Int:
		NO Sl:	NO Int:
		NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ Serial Number: 12124313137

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	0.875	0.823	NO bkgnd or offset:	0.9	0.8
NOX coeff or slope:	0.996	0.995	NOX bkgnd or offset:	1.0	1.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	1.0	149.3

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.999950	1.000349
NO_X Cal Offset:	-0.205598	-0.145464
NO Cal Slope:	1.000699	0.998300
NO Cal Offset:	-0.825756	-0.785790
NO_2 Cal Slope:	1.006044	1.007238
NO_2 Cal Offset:	0.044271	1.315166

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.8	-0.1	-0.8	----	----
High point	4933	66.7	803.1	800.4	2.7	802.9	798.7	4.3	1.0003	1.0022
Mid point	4967	33.3	400.9	399.6	1.3	401.3	397.6	3.6	0.9990	1.0050
Low point	4983	16.7	201.1	200.4	0.7	201.6	198.7	2.9	0.9974	1.0086
As left zero	5000	0.0	0.0	0.0	0.0	-0.7	-0.1	-0.7	----	----
As left span	4933	66.7	803.1	384.1	419.0	799.8	384.1	415.9	1.0041	1.0000
							Average Correction Factor		0.9989	1.0052

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.8	----	----
High GPT point	796.1	385.1	413.7	416.8	0.9925	100.8%
Mid GPT point	796.1	592.9	205.9	210.1	0.9799	102.1%
Low GPT point	796.1	695.1	103.7	107.6	0.9635	103.8%
				Average Correction Factor	0.9786	102.2%

Notes: Adjustments made to span. Changed filter after as found

Calibration Performed By: Sabian Voyageur Jeremy Cardinal

Wood Buffalo Environmental Association

NO_X Calibration Summary

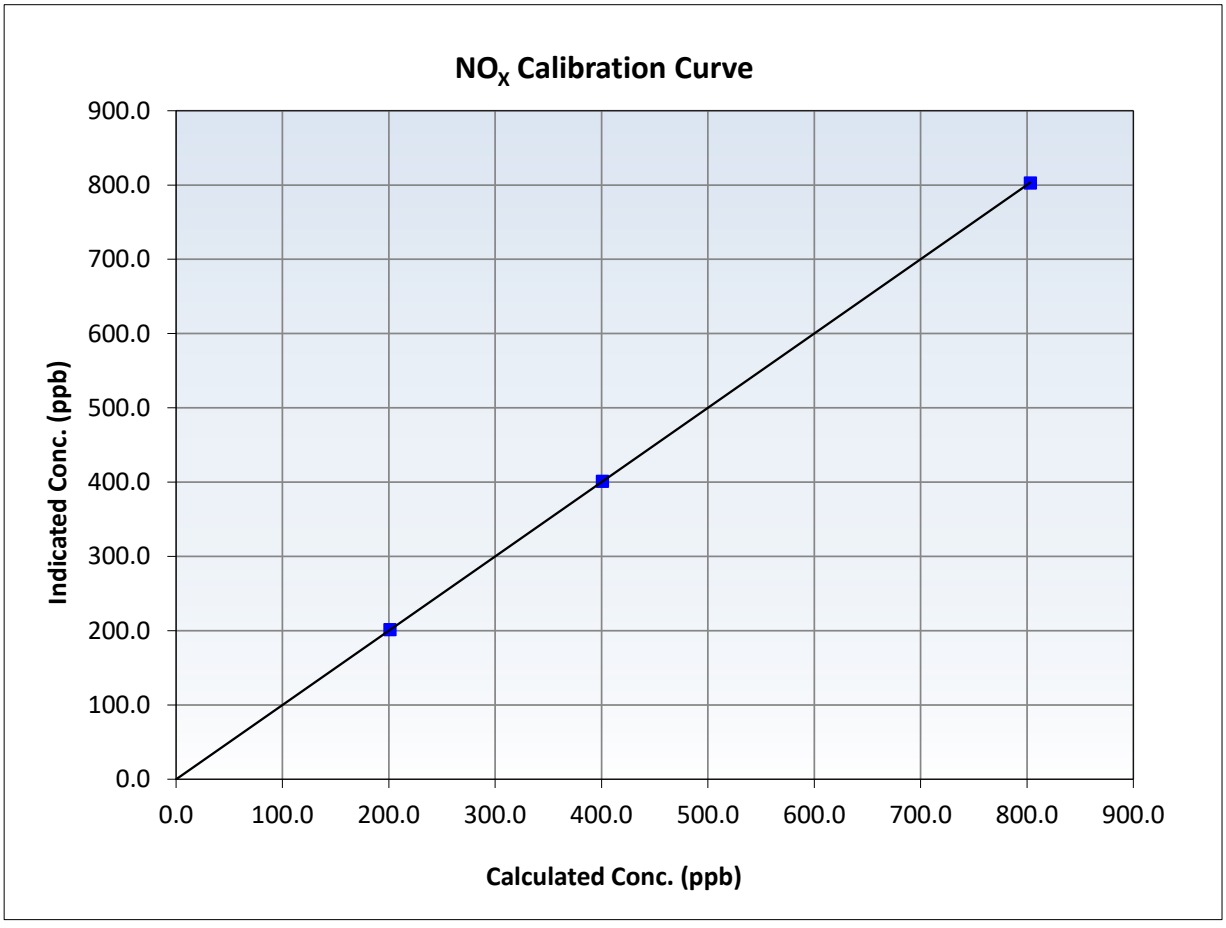
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 13, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	8:46	End Time (MST):	13:25
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12124313137

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.8	----
803.1	802.9	1.0003
400.9	401.3	0.9990
201.1	201.6	0.9974

Statistical Evaluation		Limits
Correlation Coefficient	0.999997	≥0.995
Slope	1.000349	0.90 - 1.10
Intercept	-0.145464	+/-20



Wood Buffalo Environmental Association

NO_2 Calibration Summary

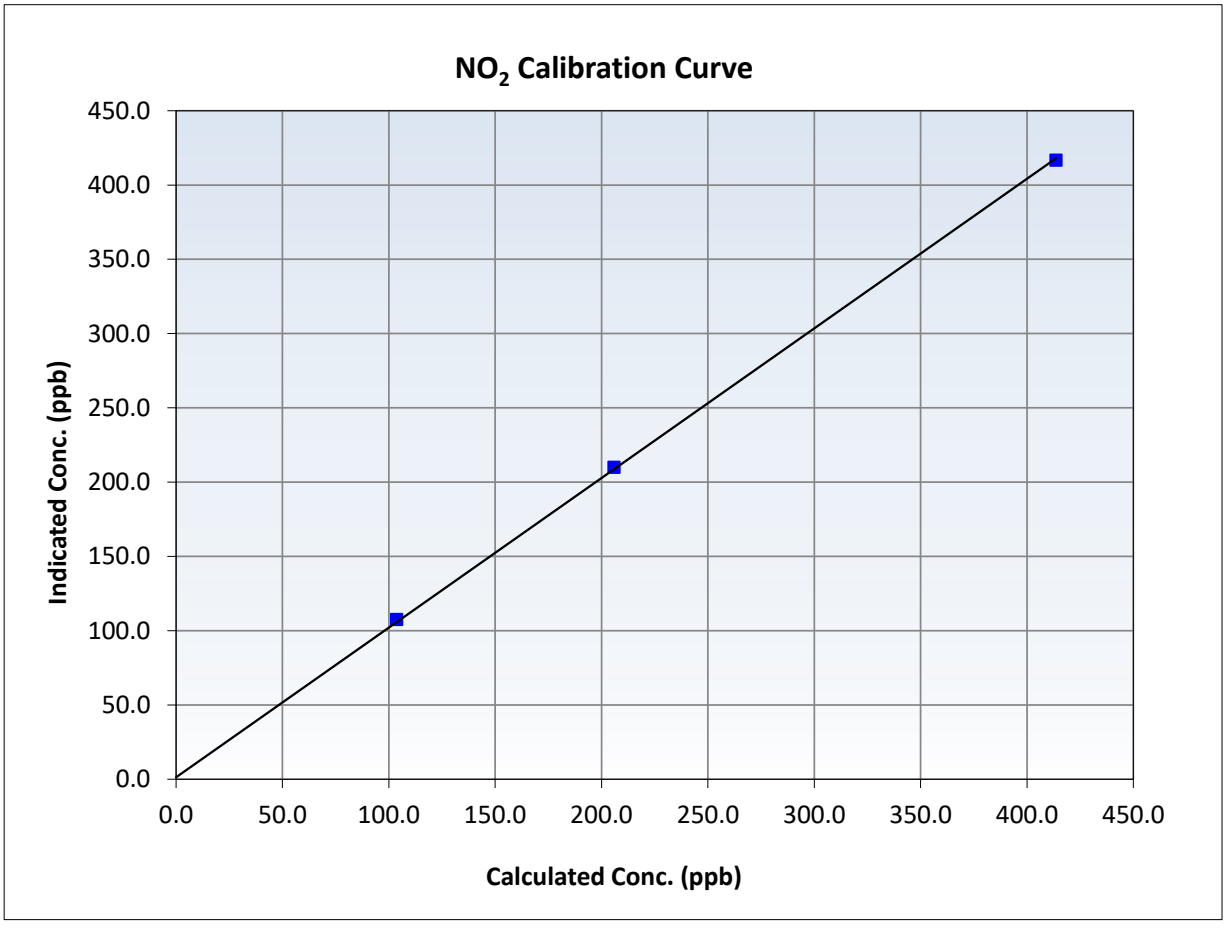
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 13, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	8:46	End Time (MST):	13:25
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12124313137

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.8	----
413.7	416.8	0.9925
205.9	210.1	0.9799
103.7	107.6	0.9635

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999880	*≥0.995*
Slope	1.007238	*0.90 - 1.10*
Intercept	1.315166	*+/-20*



Wood Buffalo Environmental Association

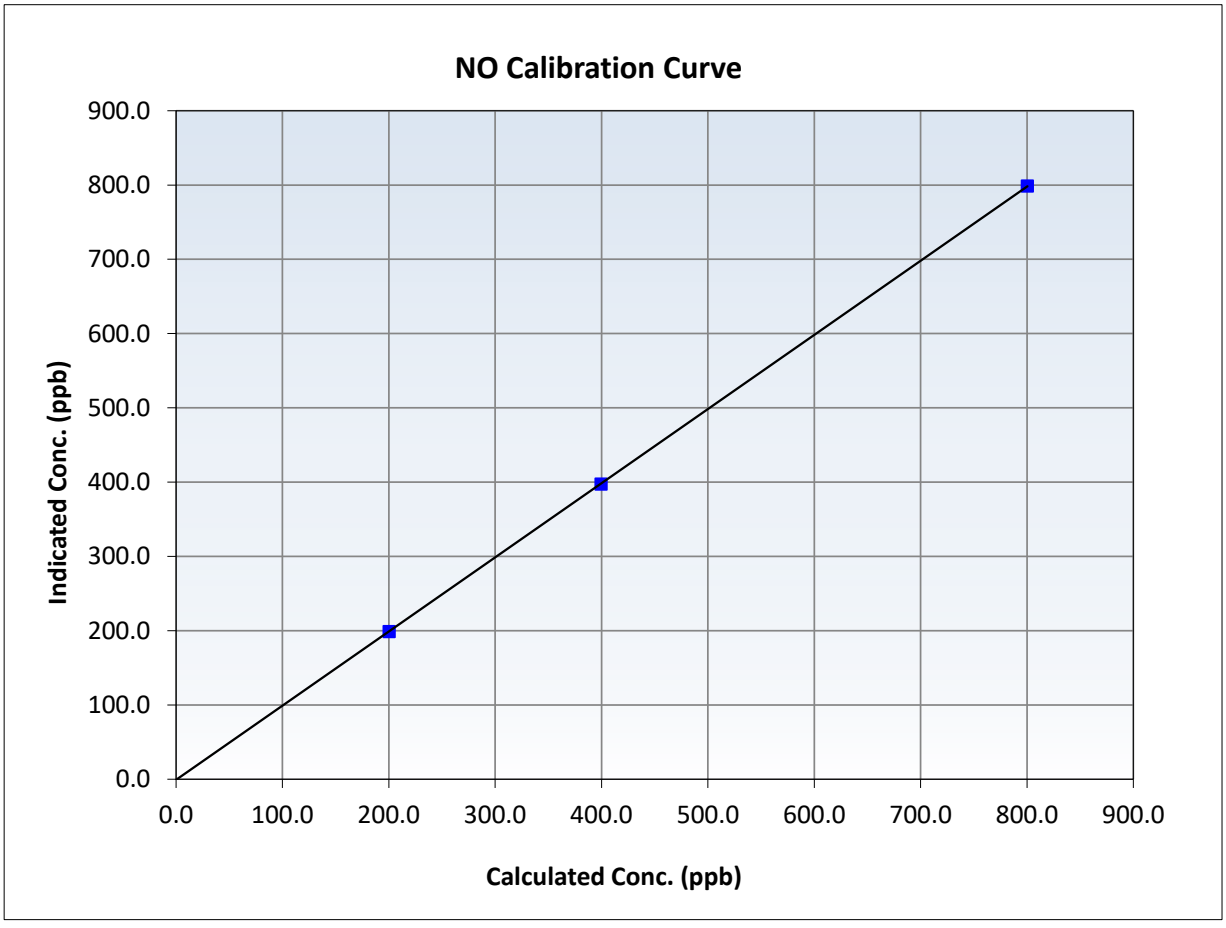
NO Calibration Summary

Station Information

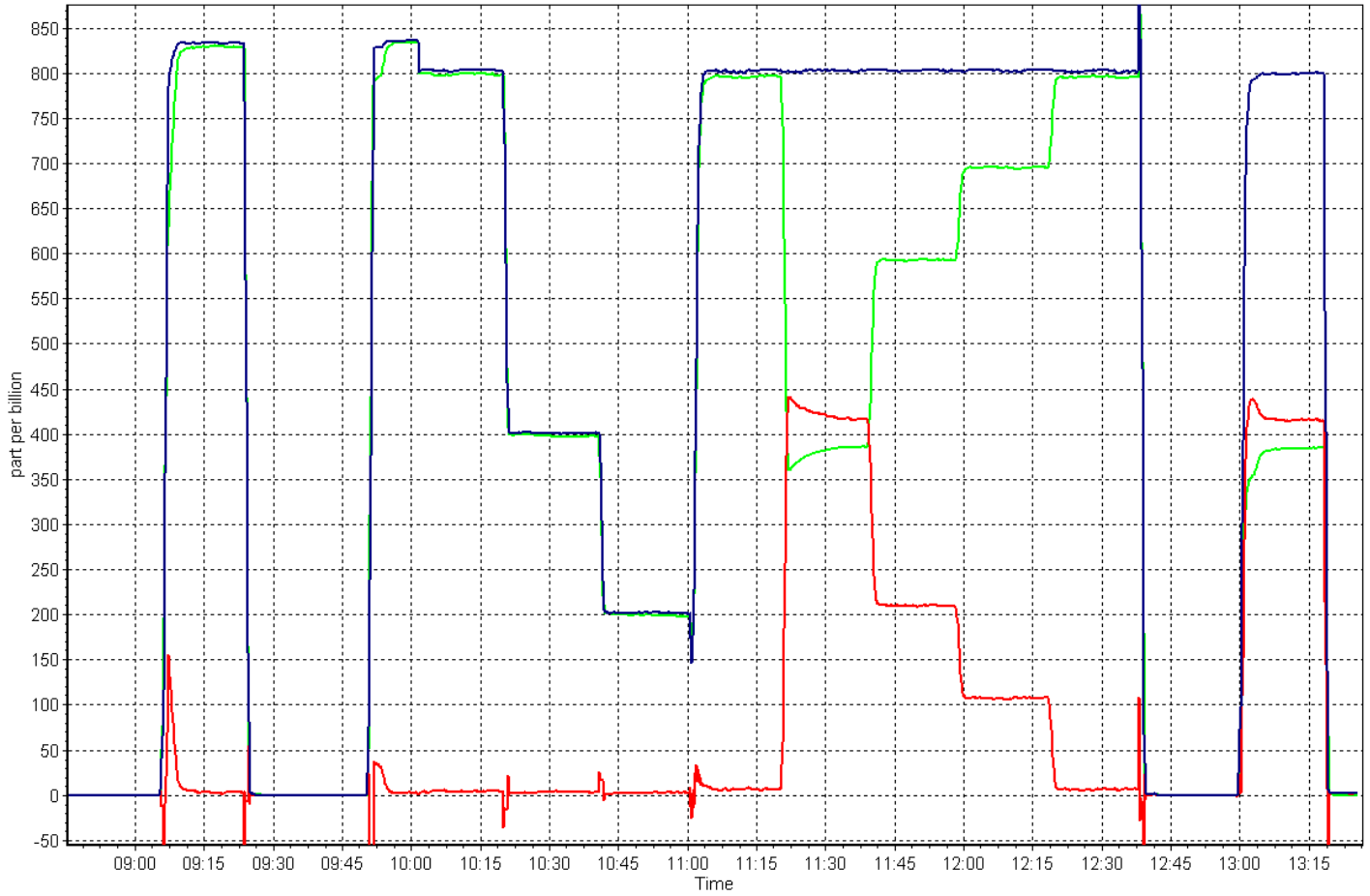
Calibration Date:	July 10, 2025	Previous Calibration:	June 13, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	8:46	End Time (MST):	13:25
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12124313137

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	-0.1	----	Correlation Coefficient	0.999997	≥0.995
800.4	798.7	1.0022	Slope	0.998300	0.90 - 1.10
399.6	397.6	1.0050			
200.4	198.7	1.0086	Intercept	-0.785790	+/-20



NO_X Calibration Plot Date: July 10, 2025 Location: Fort Chipewyan



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Fort Chipewyan	Station number:	AMS 08
Calibration Date:	July 7, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	13:14	End time (MST):	16:27
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	Teledyne API T700	Serial Number:	3810
ZAG Make/Model:	Teledyne API T701	Serial Number:	135

Analyzer Information

Analyzer make:	Thermo 49i	Analyzer serial #:	1152220026
Analyzer Range	0 - 500 ppb		

	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.996400	1.015086	Backgd or Offset:	-0.3	-0.3
Calibration intercept:	0.420000	0.060000	Coeff or Slope:	1.022	0.983

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.1	----
As found High point	5000	968.7	400.0	388.1	1.031
As found Mid point					
As found Low point					
Baseline Corr As found:	388.0	Previous response	399.0	*% change	-2.8%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.4	----
High point	5000	968.7	400.0	406.3	0.984
Mid point	5000	820.5	200.0	202.8	0.986
Low point	5000	720.0	100.0	101.3	0.987
As left zero	5000	0.0	0.0	-1.3	----
As left span	5000	968.7	400.0	404.4	0.989
				Average Correction Factor	0.986

Notes: Changed Filter after as founds. Adjustments made to span and O3 REF on calibrator.

Calibration Performed By: Sabian Voyageur

Wood Buffalo Environmental Association

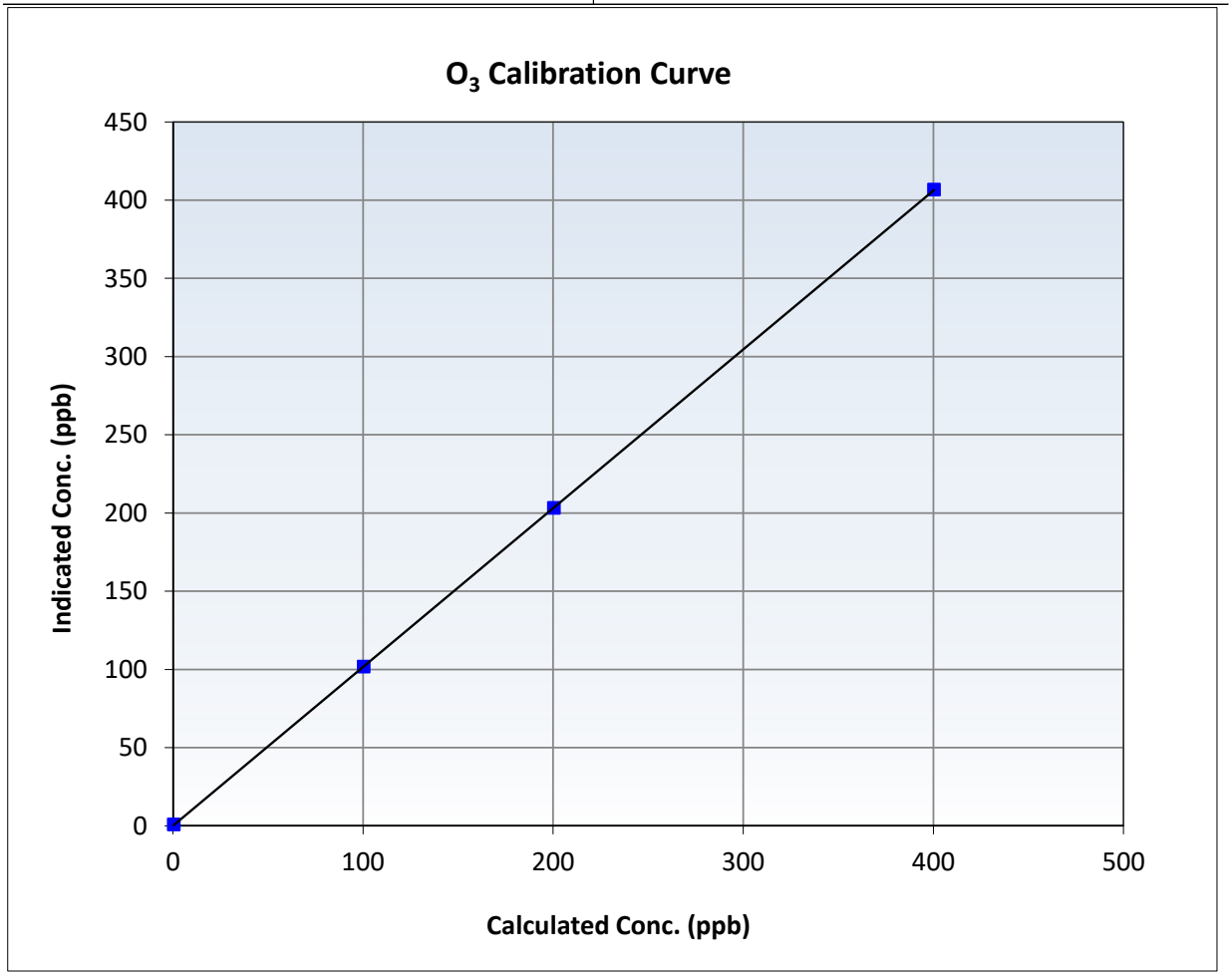
O_3 Calibration Summary

Station Information

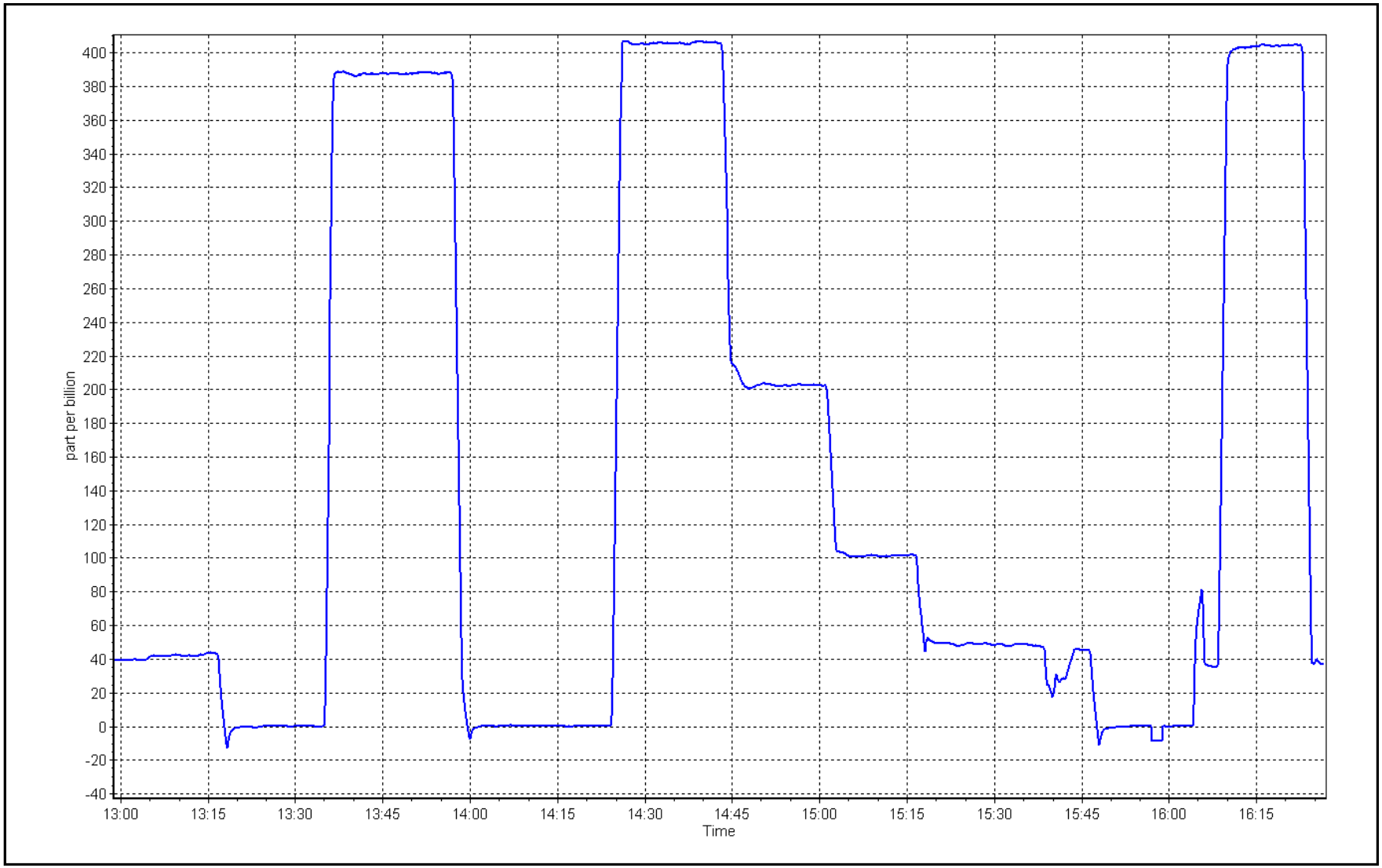
Calibration Date:	July 7, 2025	Previous Calibration:	June 11, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	13:14	End Time (MST):	16:27
Analyzer make:	Thermo 49i	Analyzer serial #:	1152220026

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.4	----	Correlation Coefficient	0.999997	*≥0.995*
400.0	406.3	0.9845	Slope	1.015086	*0.90 - 1.10*
200.0	202.8	0.9862			
100.0	101.3	0.9872	Intercept	0.060000	*+/- 5*



O_3 Calibration Plot Date: July 7, 2025 Location: Fort Chipewyan



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Fort Chipewyan	Station number:	AMS 08
Calibration Date:	July 29, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	10:24	End time (MST):	11:26
Analyzer Make:	Teledyne API T640	S/N:	319
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388744
Temp/RH standard:	Alicat FP-25BT	S/N:	388744

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (^{o}C)	18.4	19.10	18.4	☐	+/- 2 ^{o}C
P (mmHg)	744.6	746.00	744.6	☐	+/- 10 mmHg
Flow (LPM)	4.99	5.00	4.99	☐	+/- 0.25 LPM
PW% (pump)	42%		42%	☐	>80%
Zero Verification	PM w/o HEPA:	5.70	PM w/ HEPA:	0.20	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☐ Alignment Factor On : ☐

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.90 — Expiry Date: 10-Jun-24 — Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: June 11, 2025

Date Disposable Filter Changed: June 11, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.00 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: August 29, 2024

Date RH/T Sensor Cleaned: August 29, 2024

Notes: No Adjustment made

Calibration by: Morgan Voyageur

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS09
BARGE LANDING
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Barge Landing	Station number:	AMS 09
Calibration Date:	July 9, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	9:22	End time (MST):	12:27
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.56	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC705748			
Removed Cal Gas Conc:	50.56	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	3812
Zero Air Gen Model:	APIT701		Serial Number:	4888

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1118148498	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.008116	1.006247	Backgd or Offset:	11.3	11.3
Calibration intercept:	-0.277874	-0.398966	Coeff or Slope:	0.988	0.984

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4921	79.1	799.8	806.1	0.992
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	806.2	Previous response	806.1	*% change	0.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4921	79.1	799.8	805.0	0.994
Mid point	4961	39.5	399.4	400.4	0.997
Low point	4980	19.8	200.2	201.0	0.996
As left zero	5000	0.0	0.0	-0.1	----
As left span	4921	79.1	799.8	805.1	0.993
				Average Correction Factor:	0.996

Notes: Inlet filter changed after as founds. Adjusted span only.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

SO_2 Calibration Summary

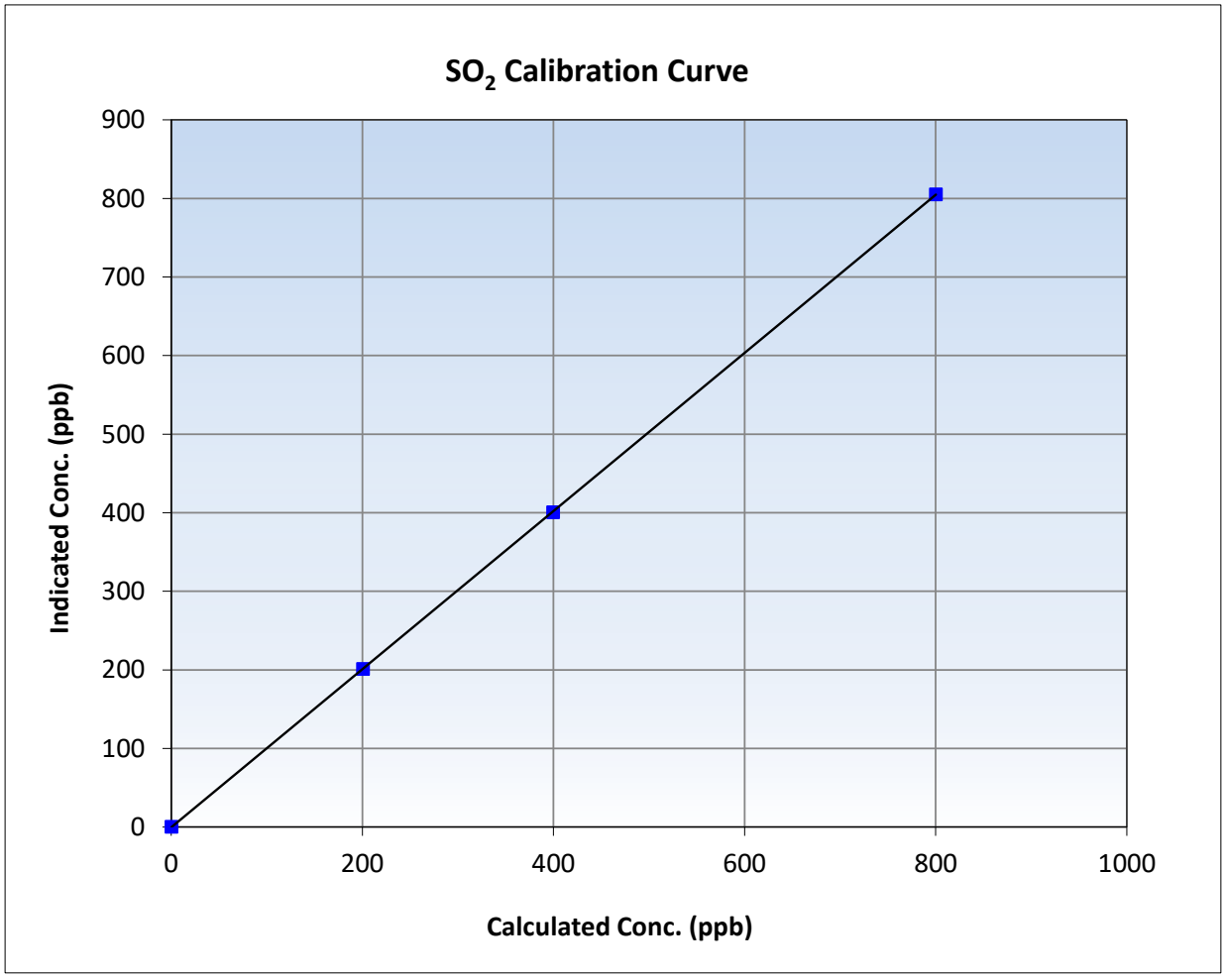
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	June 9, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:22	End Time (MST):	12:27
Analyzer make:	Thermo 43i	Analyzer serial #:	1118148498

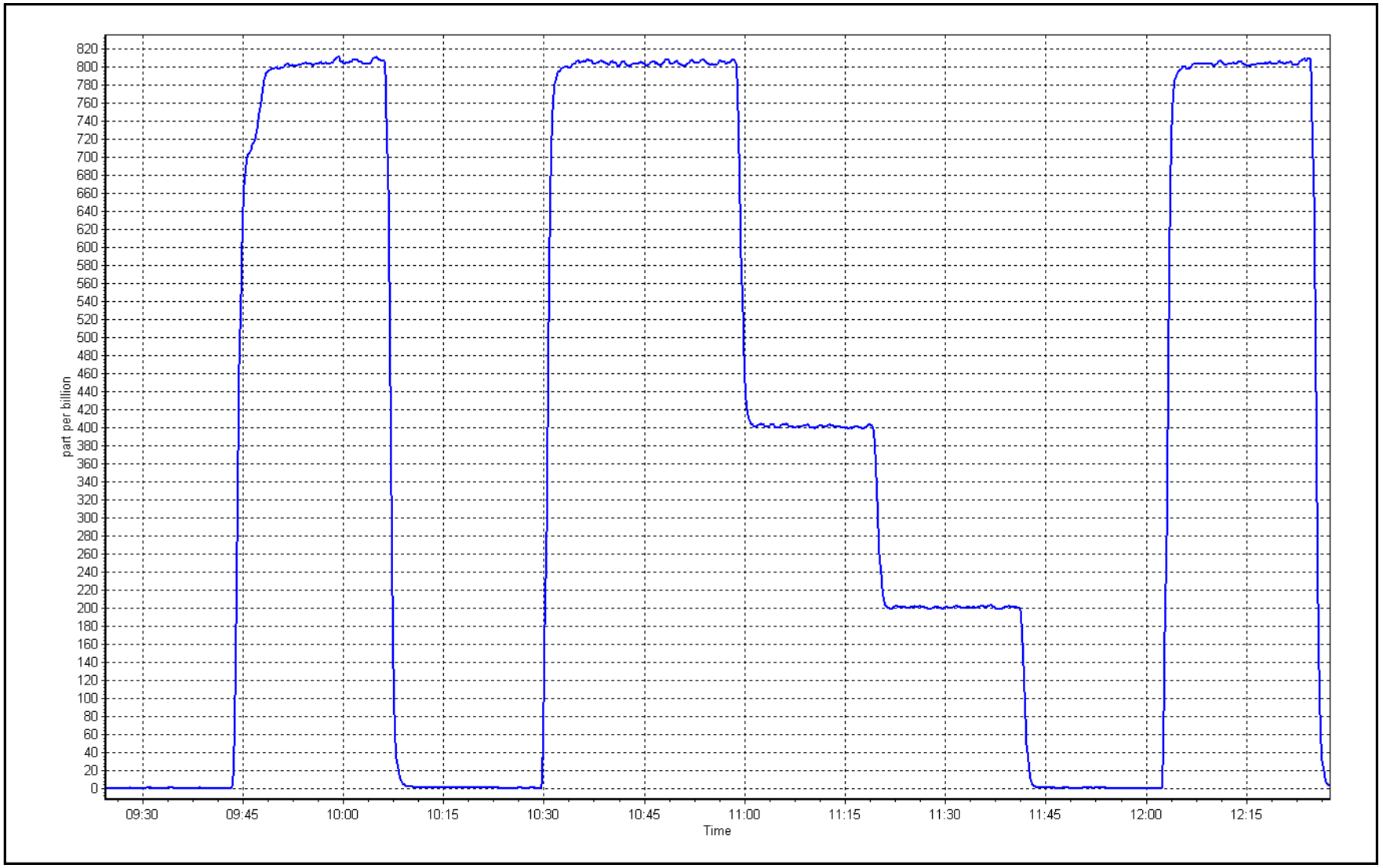
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
799.8	805.0	0.9936
399.4	400.4	0.9975
200.2	201.0	0.9961

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	1.006247	*0.90 - 1.10*
Intercept	-0.398966	*+/-30*



SO2 Calibration Plot Date: July 9, 2025 Location: Barge Landing



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Barge Landing	Station number:	AMS 09
Calibration Date:	July 8, 2025	Last Cal Date:	June 17, 2025
Start time (MST):	8:33	End time (MST):	12:55
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.17	ppm	Cal Gas Exp Date:	August 22, 2026
Cal Gas Cylinder #:	CC511415			
Removed Cal Gas Conc:	5.17	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	3812
ZAG Make/Model:	API T701		Serial Number:	5613

Analyzer Information

Analyzer make:	Thermo 43iQ-TLE		Analyzer serial #:	1203169744
Converter make:	CDN-101		Converter serial #:	519
Analyzer Range	0 - 100 ppb		Converter Temp:	830 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.003547	1.018393	Backgd or Offset:	1.820	1.880
Calibration intercept:	-0.180549	-0.300256	Coeff or Slope:	0.701	0.724

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.2	----
As found High point	4923	77.4	80.0	73.4	1.093
As found Mid point	4961	38.7	40.0	38.5	1.045
As found Low point	4981	19.3	20.0	19.6	1.029
New cylinder response					

Baseline Corr As found:	73.2	Prev response:	80.14	*% change:	-9.5%
Baseline Corr 2nd AF pt:	38.3	AF Slope:	0.912038	AF Intercept:	0.997844
Baseline Corr 3rd AF pt:	19.4	AF Correlation:	0.999264	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.3	----
High point	4923	77.4	80.0	81.2	0.986
Mid point	4961	38.7	40.0	40.5	0.988
Low point	4981	19.3	20.0	20.0	0.998
As left zero	5000	0.0	0.0	-0.1	----
As left span	4923	77.4	80.0	81.6	0.981
SO2 Scrubber Check	4920	80.2	802.0	0.0	----

Date of last scrubber change:	30-May-25	Ave Corr Factor	0.991
Date of last converter efficiency test:			

Notes: Scrubber beads were changed to remedy low span response. Scrubber check passed and done after calibrator zero. Adjusted span only.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

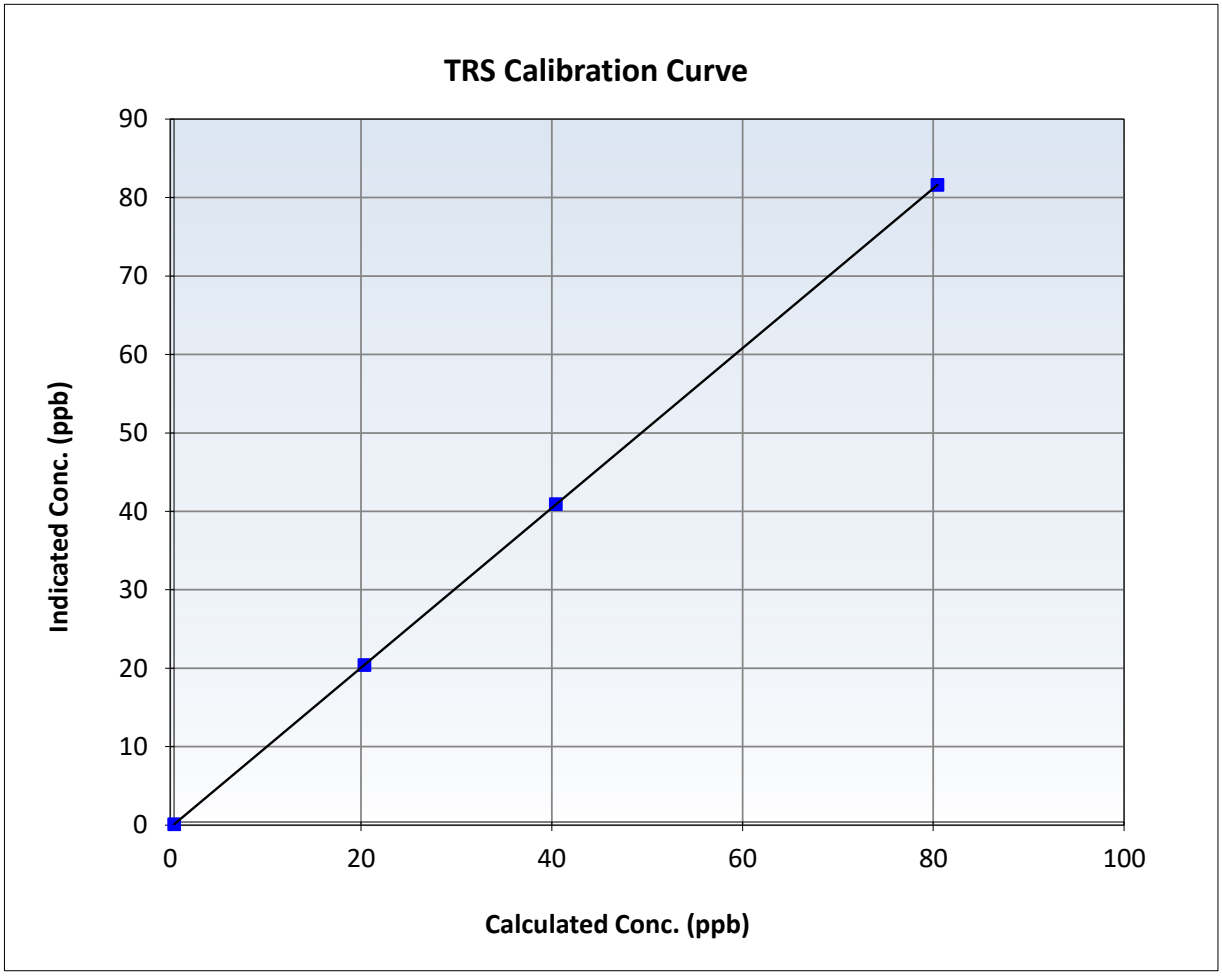
TRS Calibration Summary

Station Information

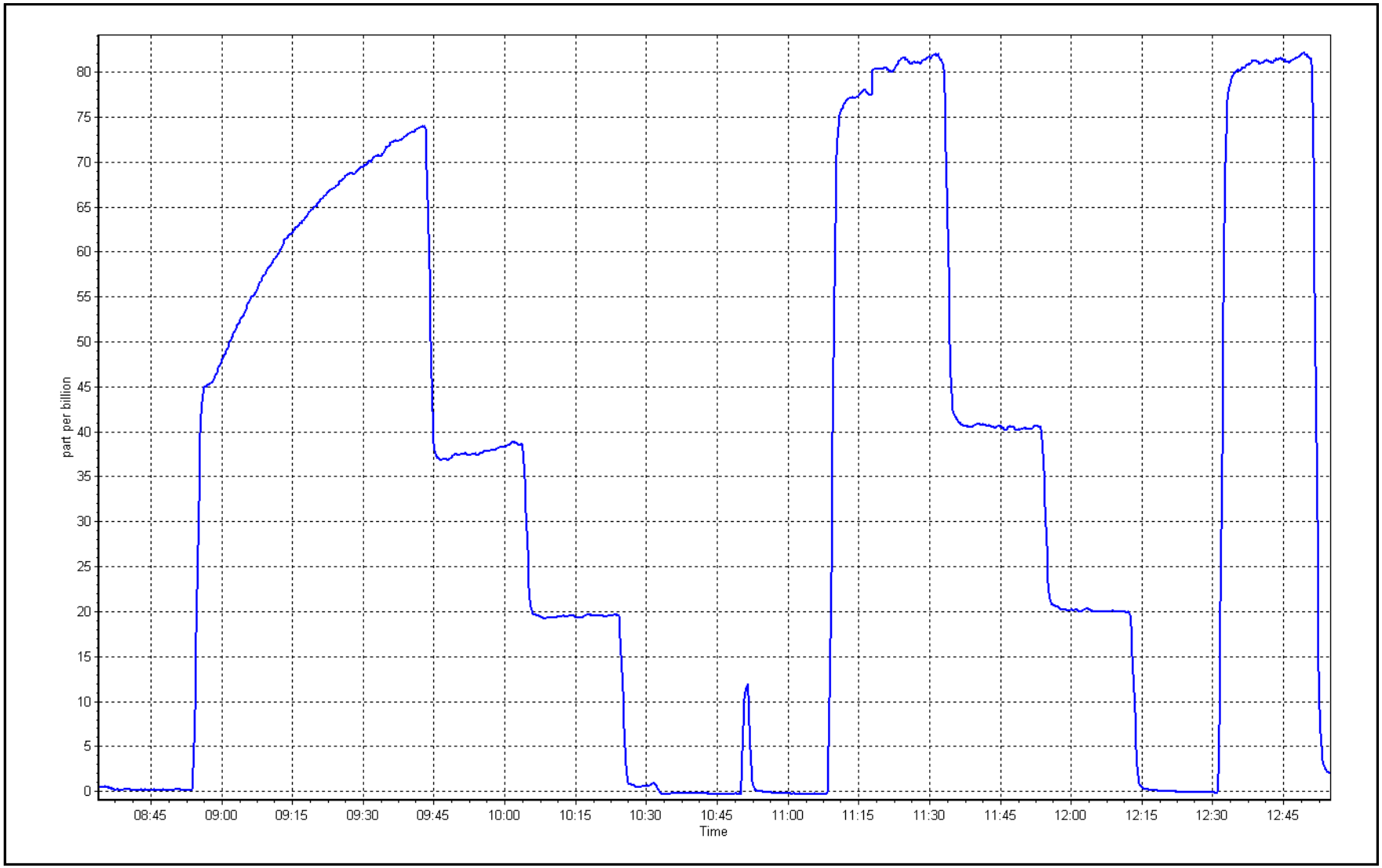
Calibration Date:	July 8, 2025	Previous Calibration:	June 17, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	8:33	End Time (MST):	12:55
Analyzer make:	Thermo 43iQ-TLE	Analyzer serial #:	1203169744

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	-0.3	----	Correlation Coefficient	0.999999	*≥0.995*
80.0	81.2	0.9857	Slope	1.018393	*0.90 - 1.10*
40.0	40.5	0.9883			
20.0	20.0	0.9979	Intercept	-0.300256	*+/-3*



TRS Calibration Plot Date: July 8, 2025 Location: Barge Landing



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Barge Landing	Station number:	AMS 09
Calibration Date:	July 9, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	9:22	End time (MST):	12:27
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC705748	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	505.6 ppm	CH4 Equiv Conc.	1068.8 ppm
C3H8 Cal Gas Conc.	204.8 ppm		
Removed Gas Cert:	CC151285	Removed Gas Expiry:	January 5, 2025
Removed CH4 Conc.	505.6 ppm	CH4 Equiv Conc.	1068.8 ppm
Removed C3H8 Conc.	204.8 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	API T700	Serial Number:	3812
Zero Air Gen model:	APIT701	Serial Number:	5613

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1193585650
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.25E-04	2.22E-04	NMHC SP Ratio:	4.89E+05	4.87E+05
CH4 Retention time:	14.4	14.4	NMHC Peak Area:	182254	182802
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	16.91	16.97	0.996
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	16.97	Prev response	16.94	*% change	0.2%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	16.91	16.90	1.000
Mid point	4961	39.5	8.44	8.42	1.003
Low point	4980	19.8	4.23	4.18	1.013
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	16.91	16.99	0.995
				Average Correction Factor	1.006

Notes: Adjusted span only.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	8.91	8.89	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.89	Prev response	8.93	*% change	-0.4%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	8.91	8.91	1.000
Mid point	4961	39.5	4.45	4.45	1.000
Low point	4980	19.8	2.23	2.21	1.008
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	8.91	8.98	0.993
				Average Correction Factor	1.003

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	8.00	8.08	0.990
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.08	Prev response	8.01	*% change	0.9%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	8.00	7.99	1.001
Mid point	4961	39.5	3.99	3.97	1.007
Low point	4980	19.8	2.00	1.97	1.018
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	8.00	8.02	0.998
				Average Correction Factor	1.009

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	1.003382	1.000408
THC Cal Offset:	-0.026353	-0.025362
CH4 Cal Slope:	1.003172	1.000287
CH4 Cal Offset:	-0.015980	-0.018385
NMHC Cal Slope:	1.003544	1.000645
NMHC Cal Offset:	-0.009773	-0.006976

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

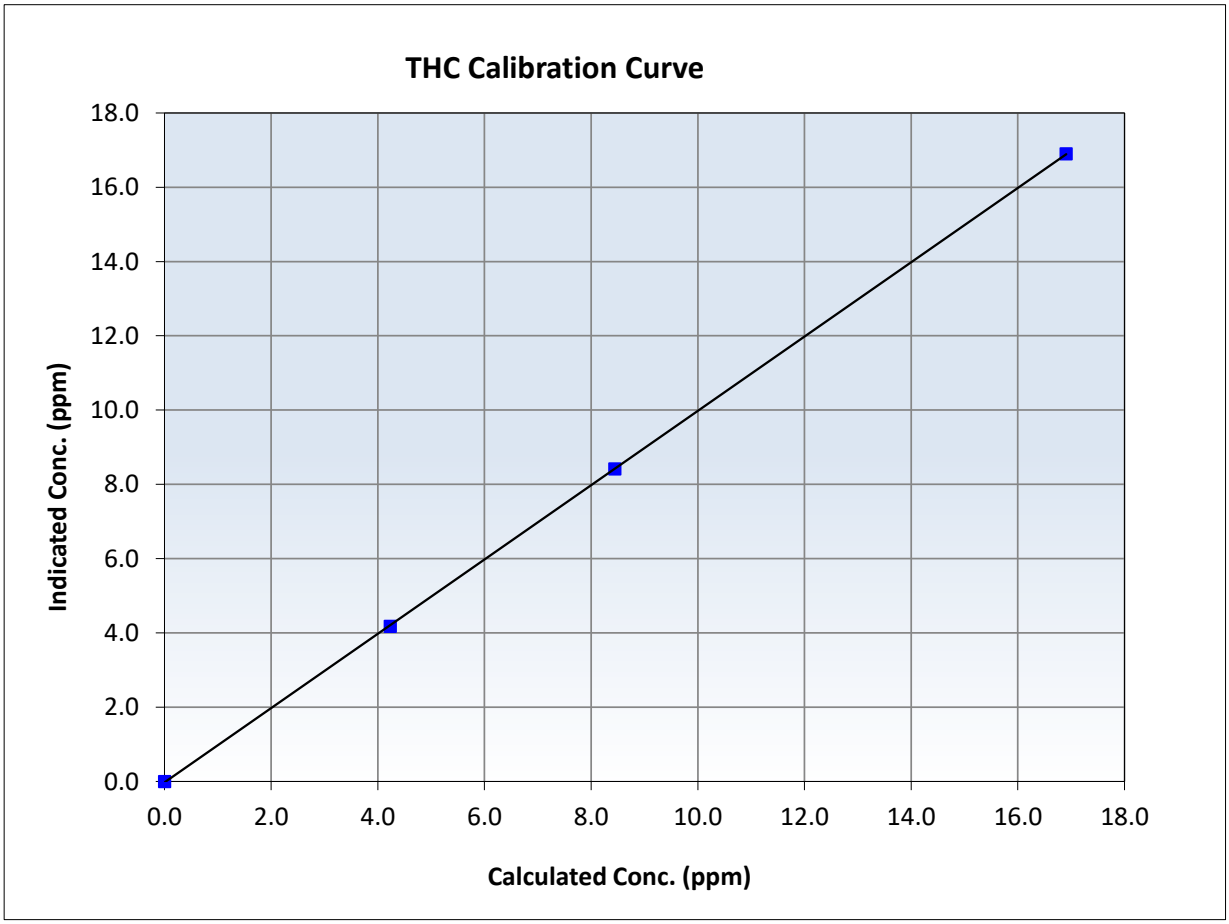
THC Calibration Summary

Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	June 9, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:22	End Time (MST):	12:27
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585650

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999989	≥0.995
16.91	16.90	1.0005	Slope	1.000408	0.90 - 1.10
8.44	8.42	1.0033	Intercept	-0.025362	+/-0.5
4.23	4.18	1.0128			



Wood Buffalo Environmental Association

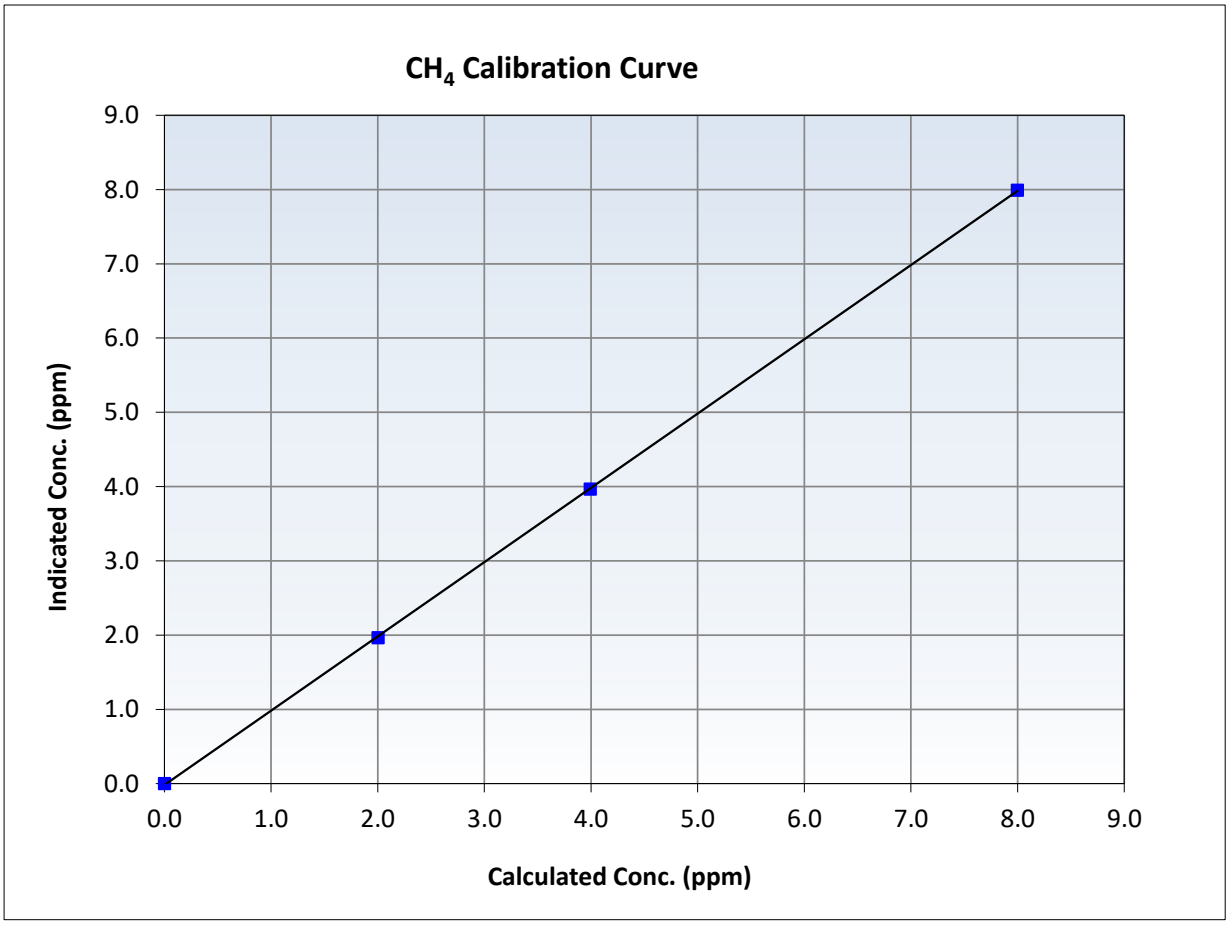
CH_4 Calibration Summary

Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	June 9, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:22	End Time (MST):	12:27
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585650

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999976	≥0.995
8.00	7.99	1.0008	Slope	1.000287	0.90 - 1.10
3.99	3.97	1.0070			
2.00	1.97	1.0179	Intercept	-0.018385	+/-0.5



Wood Buffalo Environmental Association

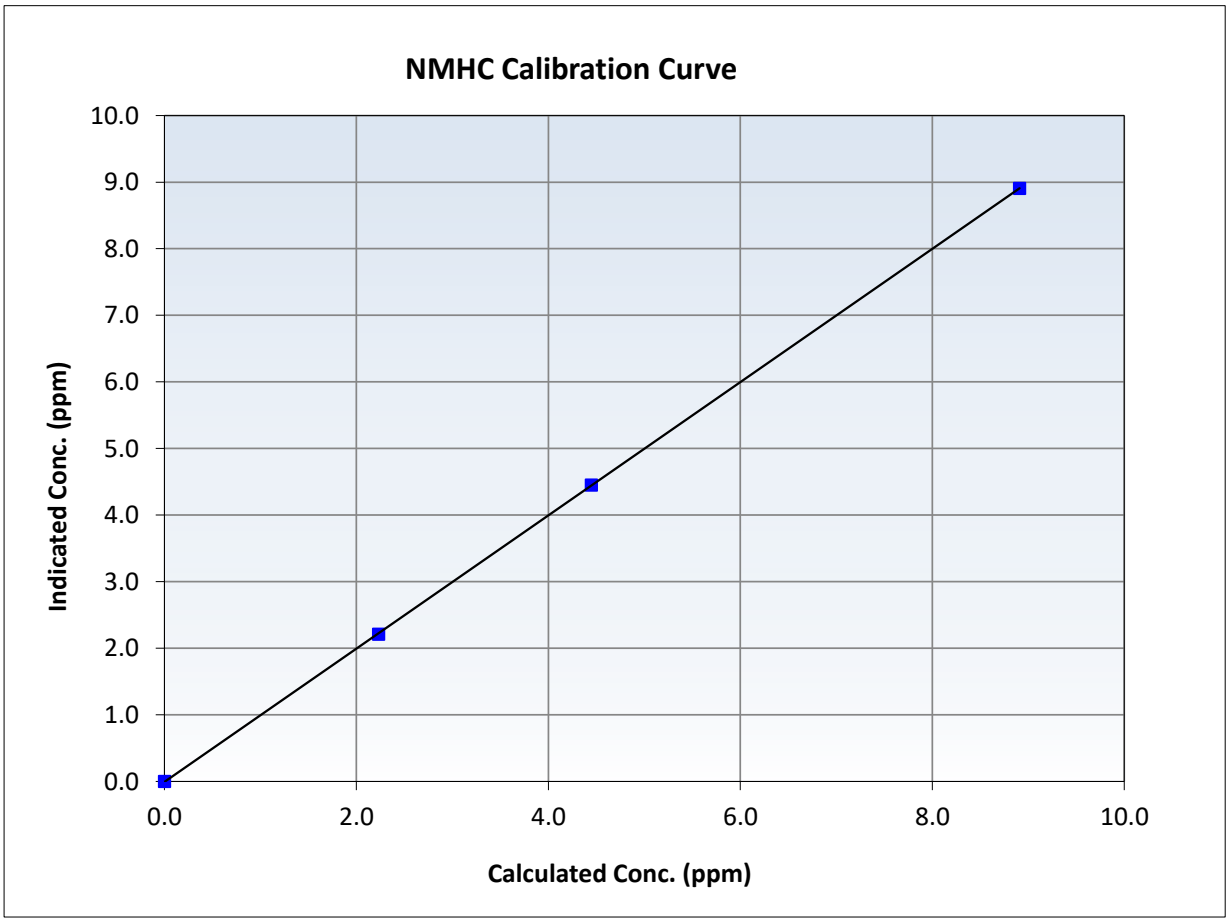
NMHC Calibration Summary

Station Information

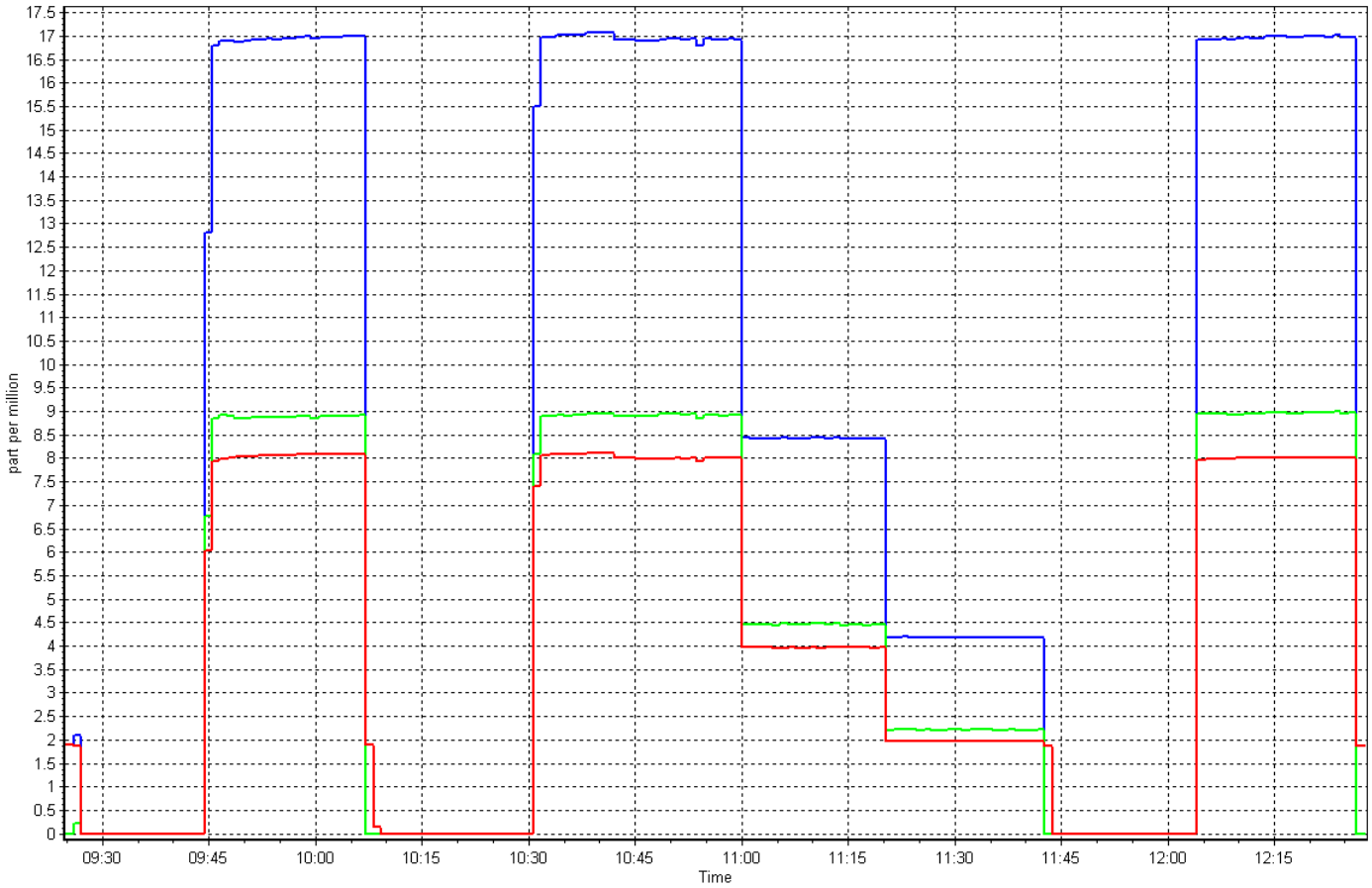
Calibration Date:	July 9, 2025	Previous Calibration:	June 9, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:22	End Time (MST):	12:27
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585650

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999994	≥0.995
8.91	8.91	1.0001	Slope	1.000645	0.90 - 1.10
4.45	4.45	0.9997	Intercept	-0.006976	+/-0.5
2.23	2.21	1.0083			



NMHC Calibration Plot Date: July 9, 2025 Location: Barge Landing



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Barge Landing
Station number:	AMS 09
Calibration Date:	July 15, 2025
Last Cal Date:	June 13, 2025
Start time (MST):	9:15
End time (MST):	13:22
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	T2Y1KDH	Cal Gas Expiry Date:	November 17, 2026
NOX Cal Gas Conc:	47.38 ppm	NO Cal Gas Conc:	46.94 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	47.38 ppm	Removed Gas NO Conc:	46.94 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	API T700	Serial Number:	3812
ZAG make/model:	Api T701	Serial Number:	4888

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.2	0.0	-0.2	----	----
AF High point	4915	85.3	808.3	800.7	7.5	810.9	799.8	11.1	0.9965	1.0012
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 808.1 ppb	NO = 799.0 ppb
Baseline Corr 1st pt	NO_X = 811.1 ppb	NO = 799.8 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

*Percent Change NO_X = 0.4%

*Percent Change NO = 0.1%

As Found Statistics

As found	NO_X r^2:	Nx Sl:	Nx Int:
As found	NO r^2:	NO Sl:	NO Int:
As found	NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i

Serial Number: 1426262593

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	Finish		Start	Finish
NO coeff or slope:	1.103	1.103	NO bkgnd or offset:	10.1	10.1
NOX coeff or slope:	0.999	0.999	NOX bkgnd or offset:	10.4	10.4
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	178.3	178.3

Calibration Statistics

	Start	Finish
NO_X Cal Slope:	0.999134	0.996914
NO_X Cal Offset:	0.558241	0.517899
NO Cal Slope:	0.998797	0.996456
NO Cal Offset:	-0.743986	-0.624358
NO_2 Cal Slope:	1.003458	1.003372
NO_2 Cal Offset:	-0.007940	-0.246299

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	----	----
High point	4915	85.3	808.3	800.7	7.5	806.0	797.6	8.3	1.0028	1.0039
Mid point	4957	42.6	403.7	400.0	3.7	403.3	397.7	5.5	1.0010	1.0057
Low point	4979	21.3	201.8	200.0	1.9	202.2	197.8	4.4	0.9982	1.0109
As left zero	5000	0.0	0.0	0.0	0.0	-0.1	0.1	-0.2	----	----
As left span	4915	85.3	808.3	404.7	403.6	803.9	404.7	399.3	1.0054	1.0000
								Average Correction Factor	1.0007	1.0068

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	793.8	403.2	398.1	399.2	0.9973	100.3%
Mid GPT point	793.8	602.0	199.3	199.9	0.9970	100.3%
Low GPT point	793.8	696.7	104.6	104.4	1.0020	99.8%
				Average Correction Factor	0.9988	100.1%

Notes: Inlet filter changed after as founds. No adjustment.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

NO_X Calibration Summary

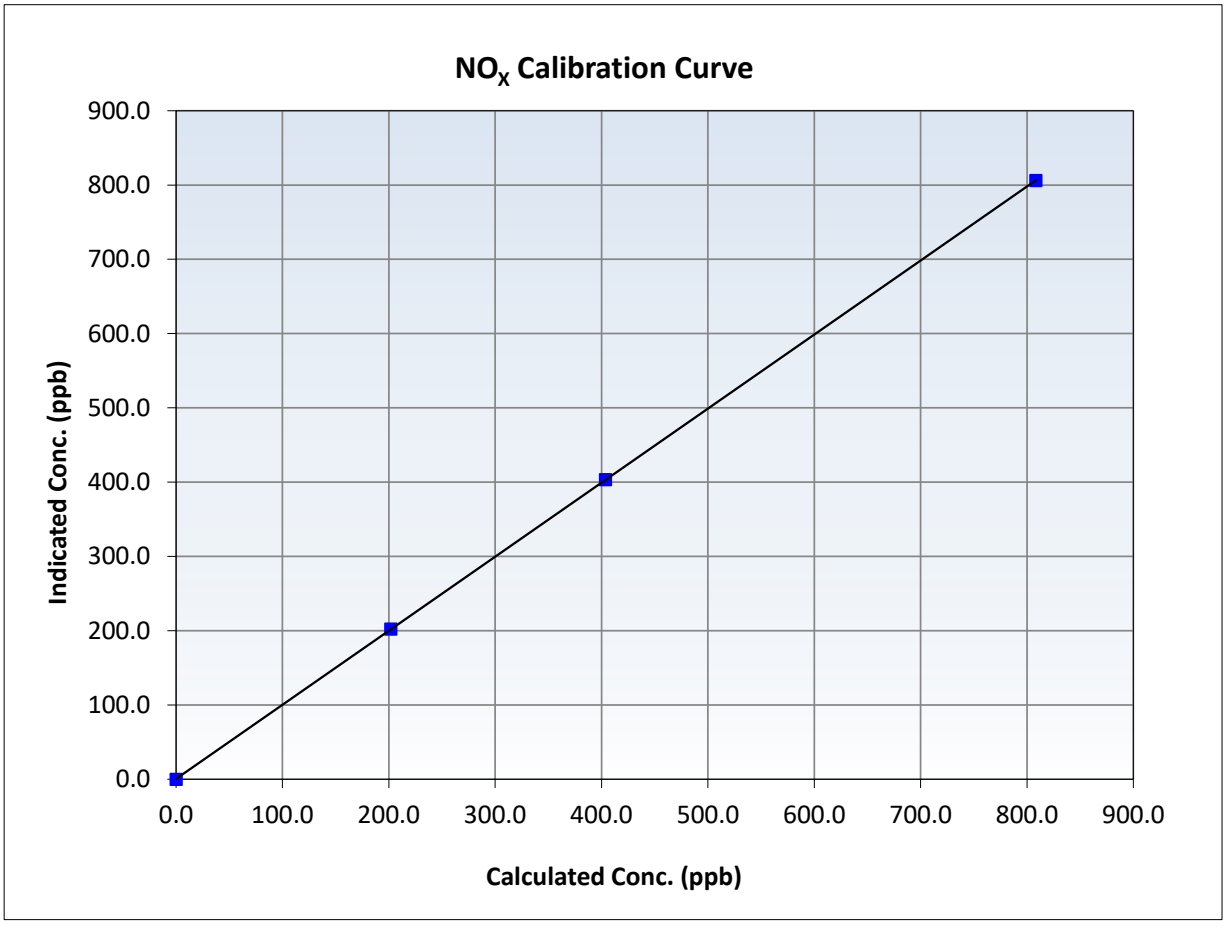
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 13, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:15	End Time (MST):	13:22
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262593

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
808.3	806.0	1.0028
403.7	403.3	1.0010
201.8	202.2	0.9982

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999998	*≥0.995*
Slope	0.996914	*0.90 - 1.10*
Intercept	0.517899	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

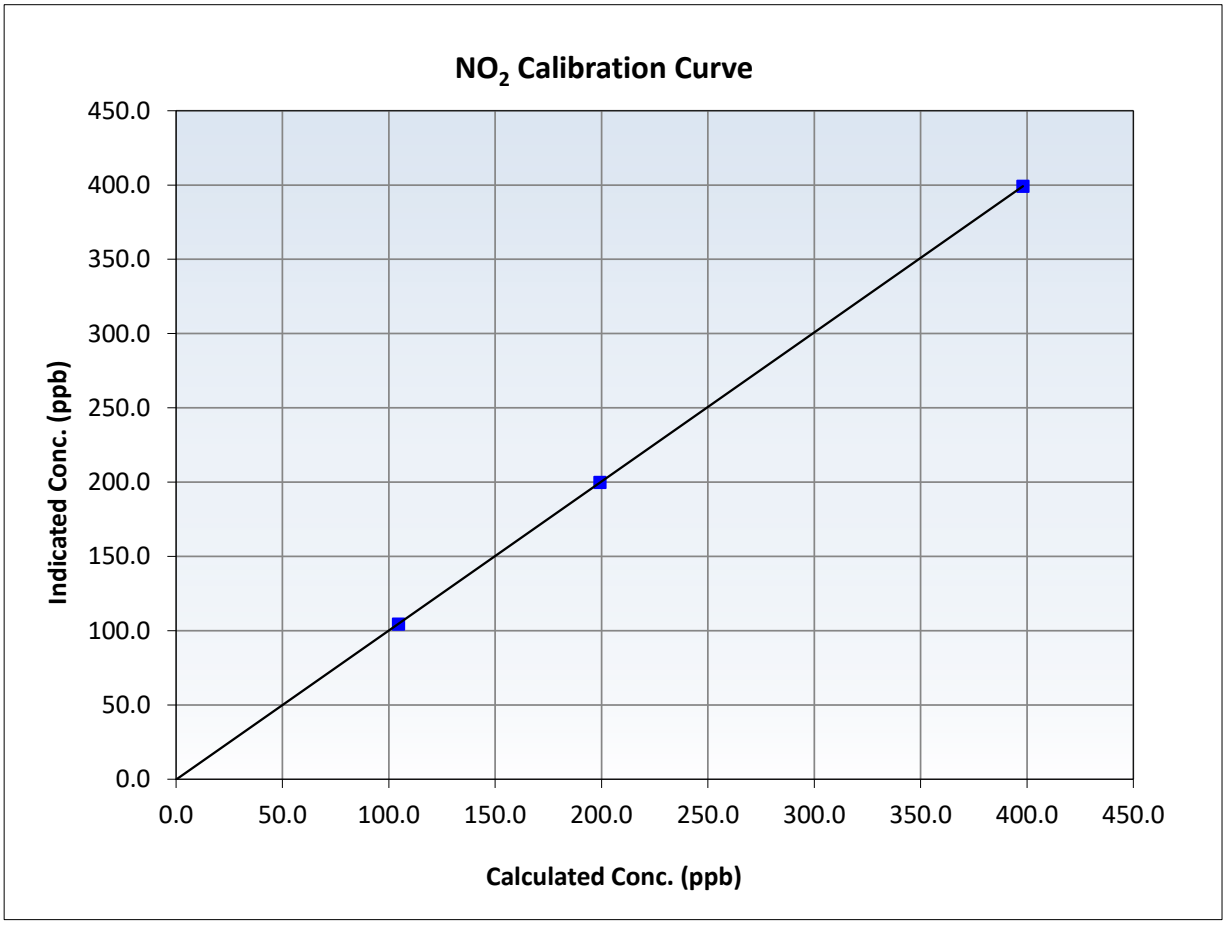
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 13, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:15	End Time (MST):	13:22
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262593

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
398.1	399.2	0.9973
199.3	199.9	0.9970
104.6	104.4	1.0020

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999998	*≥0.995*
Slope	1.003372	*0.90 - 1.10*
Intercept	-0.246299	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

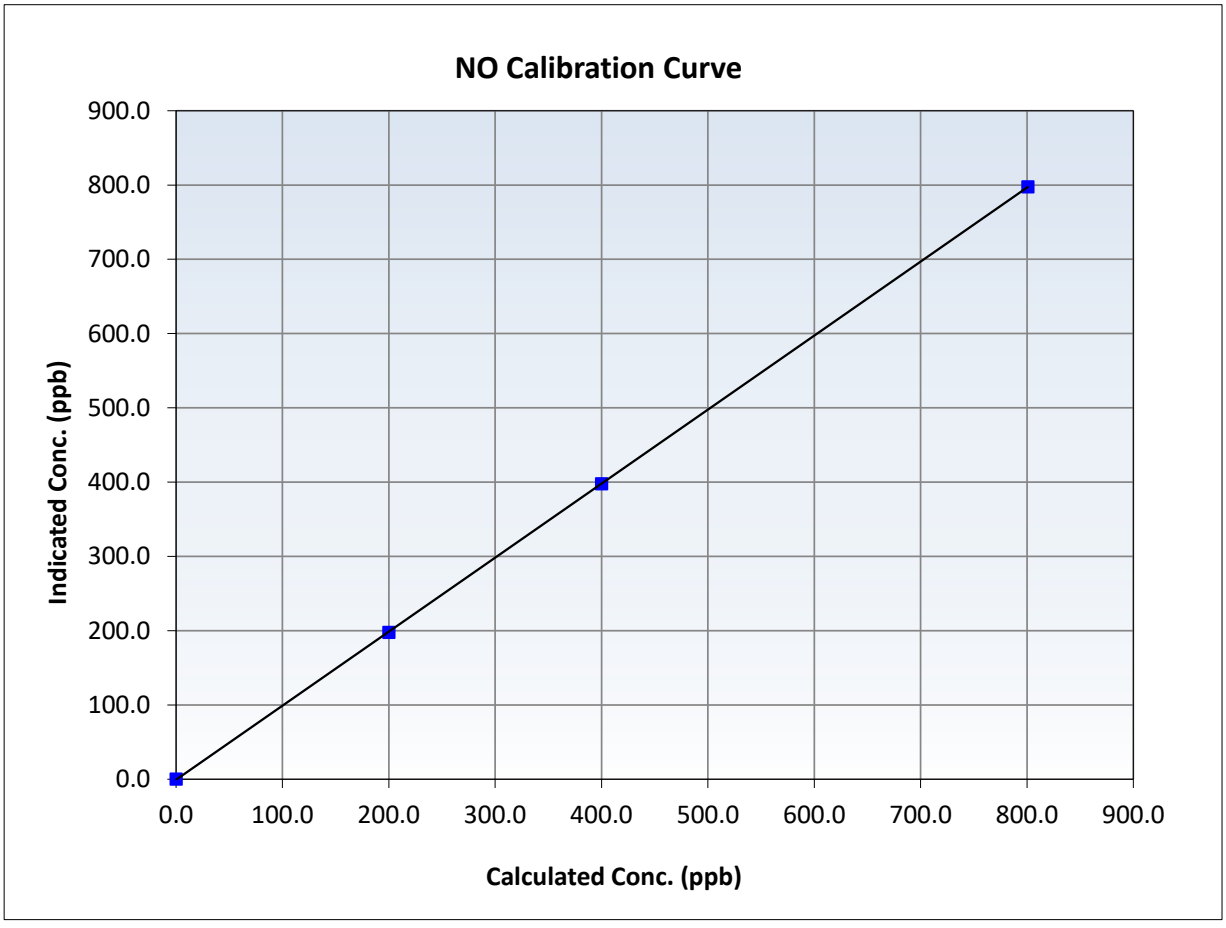
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 13, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:15	End Time (MST):	13:22
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262593

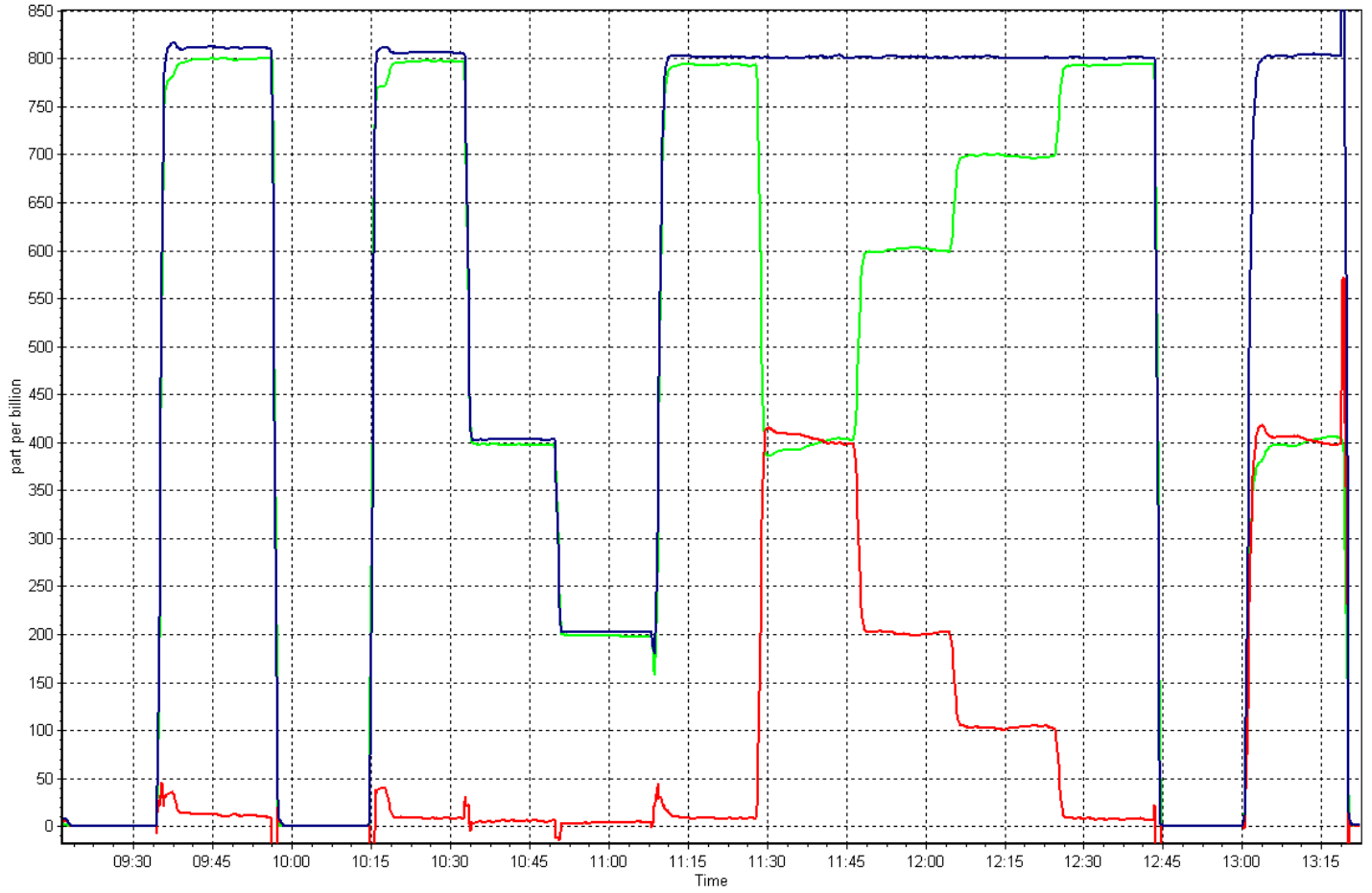
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
800.7	797.6	1.0039
400.0	397.7	1.0057
200.0	197.8	1.0109

Statistical Evaluation		Limits
Correlation Coefficient	0.999996	≥0.995
Slope	0.996456	0.90 - 1.10
Intercept	-0.624358	+/-20



NO_X Calibration Plot Date: July 15, 2025 Location: Barge Landing



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Barge Landing	Station number:	AMS 09
Calibration Date:	July 22, 2025	Last Cal Date:	June 20, 2025
Start time (MST):	10:06	End time (MST):	11:21
Analyzer Make:	API T640	S/N:	2237
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	DeltaCal	S/N:	1451
Temp/RH standard:	DeltaCal	S/N:	1451

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	18.60	17.70	18.60	☐	+/- 2 °C
P (mmHg)	736.70	734.50	736.70	☐	+/- 10 mmHg
Flow (LPM)	5.03	4.96	5.03	☐	+/- 0.25 LPM
PW% (pump)	29	-----	29	☐	>80%
Zero Verification	PM w/o HEPA:	3.00	PM w/ HEPA:	0.00	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: January 30, 2027 — Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test	10.8	11.9	10.9	☑	+/- 0.5

Date Optical Chamber Cleaned: July 22, 2025

Date Disposable Filter Changed: July 22, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.0 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: July 22, 2025

Date RH/T Sensor Cleaned: July 22, 2025

Notes: Verified flow, pressure, temperature and pump power. No issues. Leak check passed.

Calibration by: Sean Bala

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS11
LOWER CAMP
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Lower Camp	Station number:	AMS 11
Calibration Date:	July 22, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	10:47	End time (MST):	15:05
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	48.75	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC741503			
Removed Cal Gas Conc:	48.75	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:	CC741503		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	3811
Zero Air Gen Model:	Teledyne API T701		Serial Number:	196

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	100841398	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.003791	1.009463	Backgd or Offset:	17.1	17.3
Calibration intercept:	1.575920	0.715764	Coeff or Slope:	1.068	1.068

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	1.4	----
As found High point	4932	82.2	799.2	807.9	0.991
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	806.5	Previous response	803.8	*% change	0.3%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	1.5	----
High point	4932	82.2	799.2	808.3	0.989
Mid point	4971	41.2	400.7	403.5	0.993
Low point	4996	20.6	200.2	202.9	0.987
As left zero	5000	0.0	0.0	1.8	----
As left span	4932	82.2	799.2	808.8	0.988
				Average Correction Factor:	0.989

Notes: Changed sample inlet filter after as founds. No adjustments made.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

SO_2 Calibration Summary

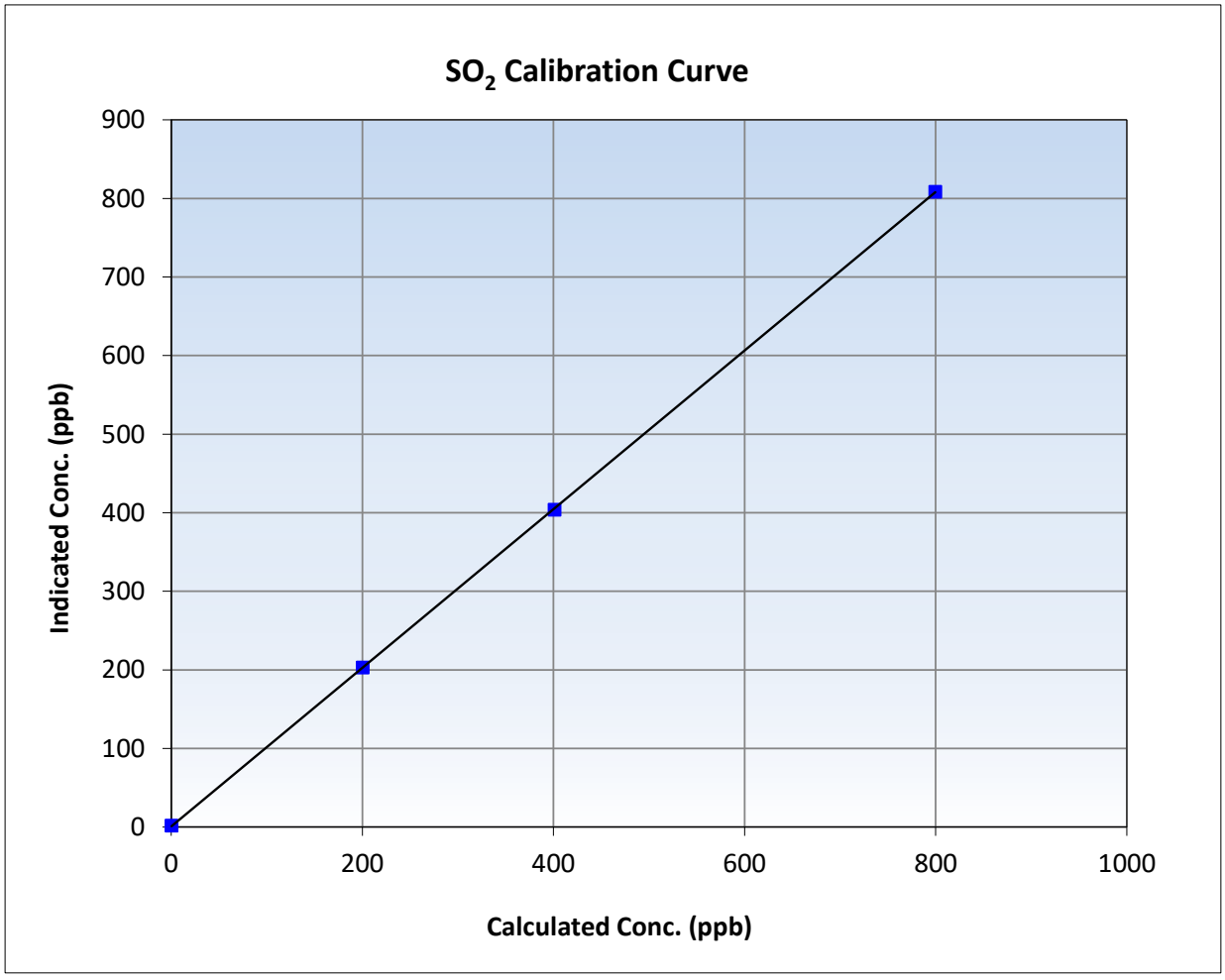
Station Information

Calibration Date:	July 22, 2025	Previous Calibration:	June 11, 2025
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	10:47	End Time (MST):	15:05
Analyzer make:	Thermo 43i	Analyzer serial #:	100841398

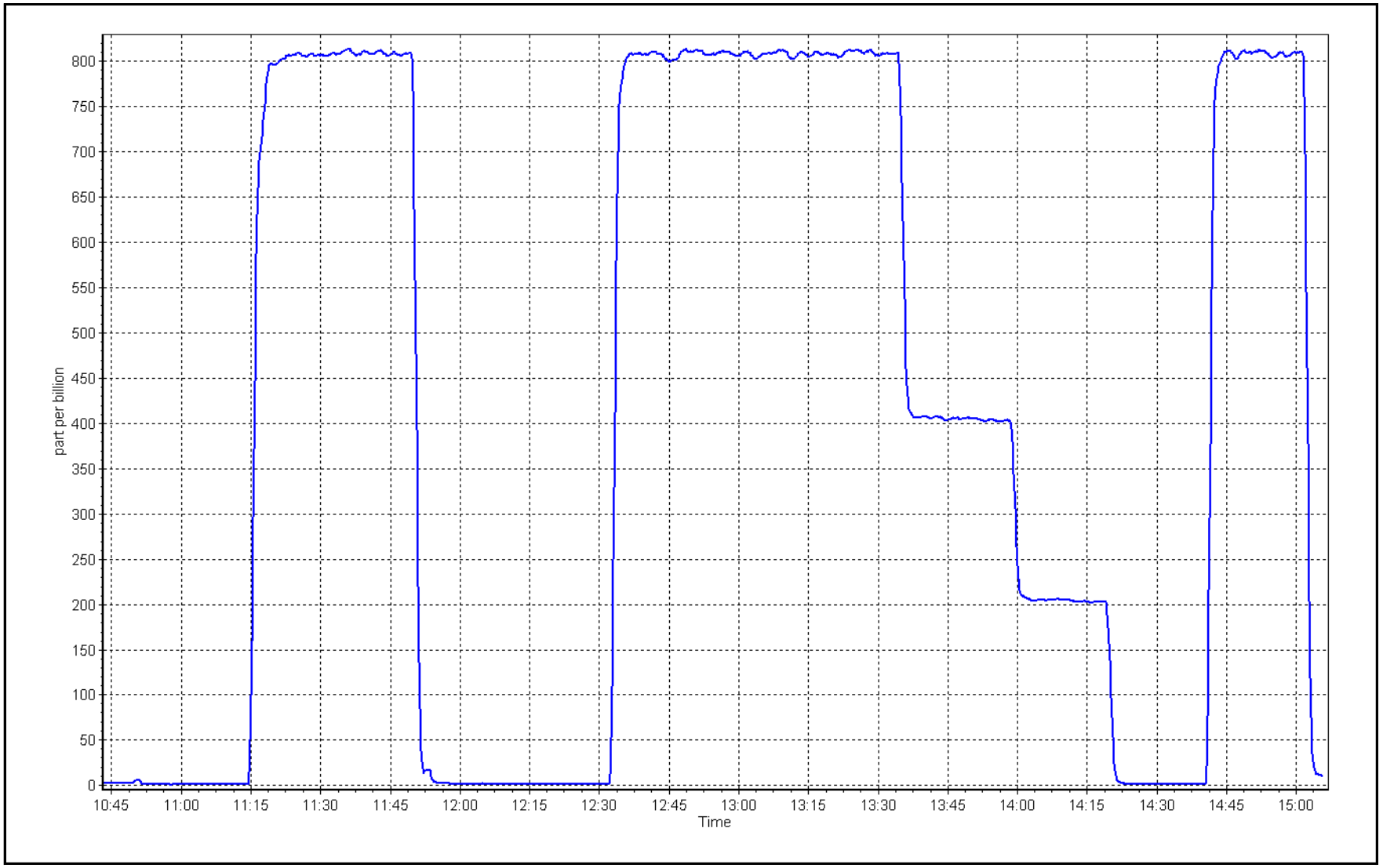
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	1.5	----
799.2	808.3	0.9887
400.7	403.5	0.9931
200.2	202.9	0.9866

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999988	*≥0.995*
Slope	1.009463	*0.90 - 1.10*
Intercept	0.715764	*+/-30*



SO2 Calibration Plot Date: July 22, 2025 Location: Lower Camp



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Lower Camp	Station number:	AMS 11
Calibration Date:	July 25, 2025	Last Cal Date:	June 10, 2025
Start time (MST):	10:53	End time (MST):	15:33
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.83	ppm	Cal Gas Exp Date:	August 28, 2028
Cal Gas Cylinder #:	CC737863			
Removed Cal Gas Conc:	4.83	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	3811
ZAG Make/Model:	API T701H		Serial Number:	196

Analyzer Information

Analyzer make:	Thermo 43iQ		Analyzer serial #:	1203169745
Converter make:	Global G150		Converter serial #:	2022-223
Analyzer Range	0 - 100 ppb		Converter Temp:	325 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.002707	1.009574	Backgd or Offset:	2.8	2.5
Calibration intercept:	-0.151356	0.008414	Coeff or Slope:	0.808	0.808

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.4	----
As found High point	4923	82.8	79.9	80.6	0.986
As found Mid point	4967	41.5	40.0	40.1	0.988
As found Low point	4999	20.8	20.0	20.1	0.976
New cylinder response					

Baseline Corr As found:	81.0	Prev response:	79.96	*% change:	1.3%
Baseline Corr 2nd AF pt:	40.5	AF Slope:	1.012861	AF Intercept:	-0.331575
Baseline Corr 3rd AF pt:	20.5	AF Correlation:	0.999988	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4923	82.8	79.9	80.6	0.991
Mid point	4967	41.5	40.0	40.5	0.988
Low point	4999	20.8	20.0	20.3	0.986
As left zero	5000	0.0	0.0	0.1	----
As left span	4923	82.8	79.9	80.7	0.990
SO2 Scrubber Check	4932	82.2	819.7		----
Date of last scrubber change:				Ave Corr Factor	0.988
Date of last converter efficiency test:					

Notes: Changed sample inlet filter after as founds. Ran scrubber check after calibrator zero and it passed. Adjusted zero only.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

H_2S Calibration Summary

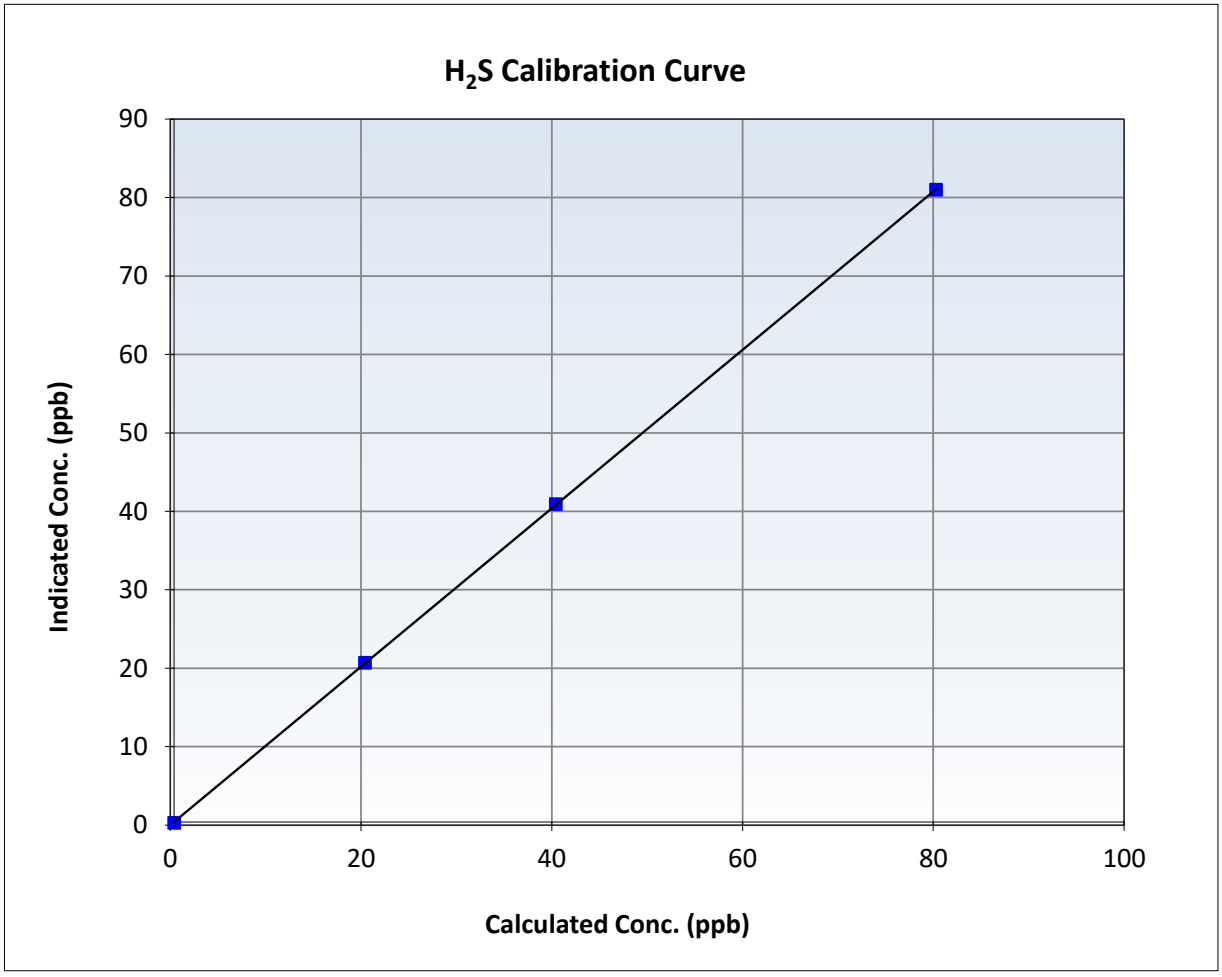
Station Information

Calibration Date:	July 25, 2025	Previous Calibration:	June 10, 2025
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	10:53	End Time (MST):	15:33
Analyzer make:	Thermo 43iQ	Analyzer serial #:	1203169745

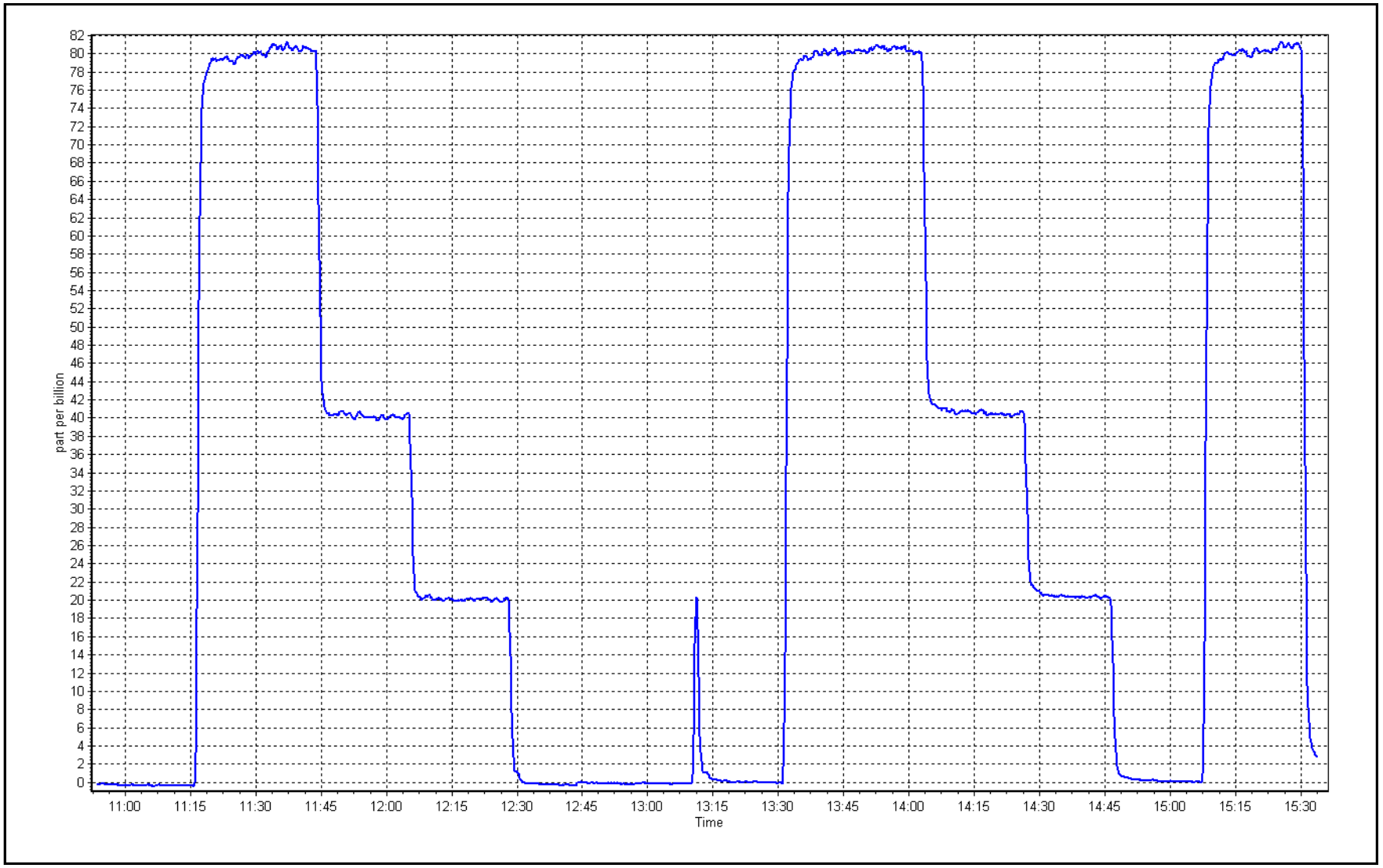
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
79.9	80.6	0.9912
40.0	40.5	0.9882
20.0	20.3	0.9859

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999991	*≥0.995*
Slope	1.009574	*0.90 - 1.10*
Intercept	0.008414	*+/-3*



H_2S Calibration Plot Date: July 25, 2025 Location: Lower Camp



Wood Buffalo Environmental Association

THC / CH4 / NMHC Calibration Report

Station Information

Station Name:	Lower Camp	Station number:	AMS 11
Calibration Date:	July 22, 2025	Last Cal Date:	June 28, 2025
Start time (MST):	10:47	End time (MST):	15:05
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC741503	Cal Gas Expiry Date:	October 9, 2032	
CH4 Cal Gas Conc.	504.8 ppm	CH4 Equiv Conc.	1071.9	ppm
C3H8 Cal Gas Conc.	206.2 ppm			
Removed Gas Cert:		Removed Gas Expiry:		
Removed CH4 Conc.	504.8 ppm	CH4 Equiv Conc.	1071.9	ppm
Removed C3H8 Conc.	206.2 ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):		Diff between cyl (NM):		
Calibrator Model:	API T700	Serial Number:	3811	
Zero Air Gen model:	API T701	Serial Number:	196	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	12227620776	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	3.64E-04	3.85E-04	NMHC SP Ratio:	7.70E-05	8.31E-05
CH4 Retention time:	15.6	15.8	NMHC Peak Area:	120823	111905
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4932	82.2	17.57	16.36	1.074
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	16.36	Prev response	17.54	*% change	-7.2%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4932	82.2	17.57	17.48	1.005
Mid point	4971	41.2	8.81	8.65	1.018
Low point	4996	20.6	4.40	4.30	1.023
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	17.57	17.40	1.010
				Average Correction Factor	1.015

Notes: No alarms were detected during the investigation. Diagnostics were consistent, and the chromatograms showed no significant discrepancies, aside from a slight alignment drift. The system will be monitored for now, with maintenance planned if necessary in the near future. Changed sample inlet filter after as founds. Adjusted span only.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4932	82.2	9.30	8.52	1.091
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.52	Prev response	9.28	*% change	-9.0%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4932	82.2	9.30	9.21	1.009
Mid point	4971	41.2	4.66	4.56	1.023
Low point	4996	20.6	2.33	2.25	1.034
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	9.30	9.16	1.015
				Average Correction Factor	1.022

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4932	82.2	8.28	7.84	1.056
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.84	Prev response	8.26	*% change	-5.4%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4932	82.2	8.28	8.27	1.001
Mid point	4971	41.2	4.15	4.10	1.013
Low point	4996	20.6	2.07	2.05	1.010
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	8.28	8.23	1.005
				Average Correction Factor	1.008

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	1.000691	0.995715
THC Cal Offset:	-0.039137	-0.053089
CH4 Cal Slope:	1.000464	0.999555
CH4 Cal Offset:	-0.020116	-0.018320
NMHC Cal Slope:	1.000881	0.992296
NMHC Cal Offset:	-0.019221	-0.034769

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

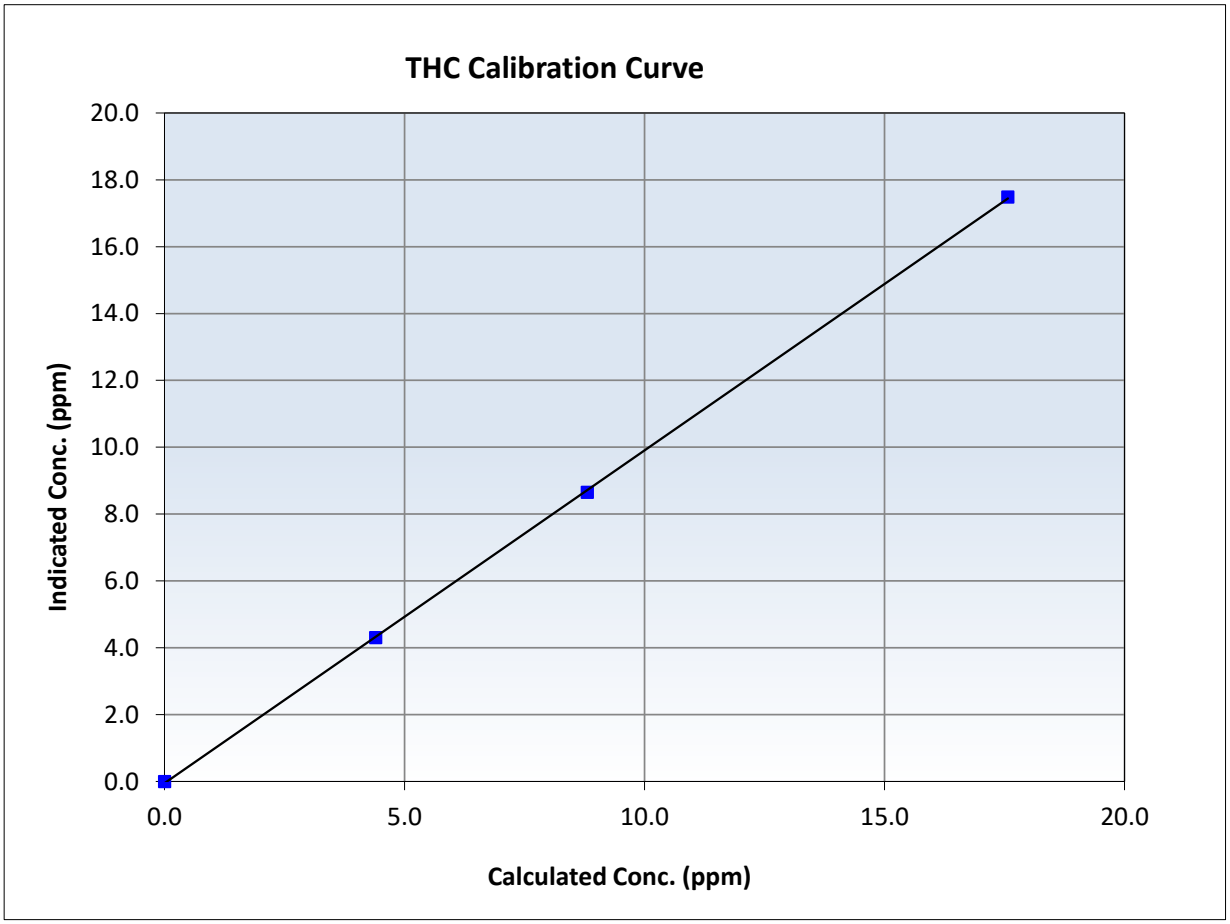
THC Calibration Summary

Station Information

Calibration Date:	July 22, 2025	Previous Calibration:	June 28, 2025
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	10:47	End Time (MST):	15:05
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620776

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999943	≥0.995
17.57	17.48	1.0051	Slope	0.995715	0.90 - 1.10
8.81	8.65	1.0182	Intercept	-0.053089	+/-0.5
4.40	4.30	1.0229			



Wood Buffalo Environmental Association

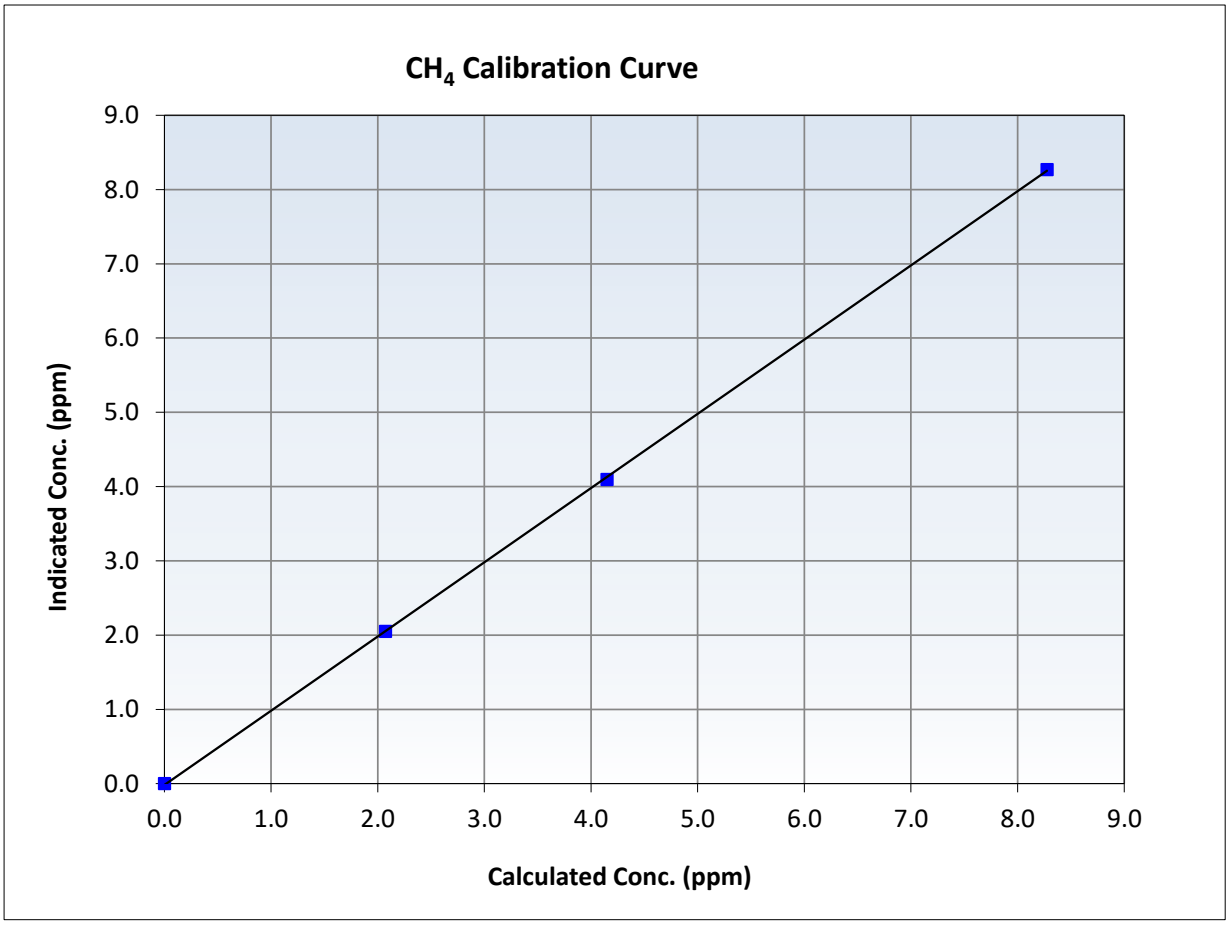
CH_4 Calibration Summary

Station Information

Calibration Date:	July 22, 2025	Previous Calibration:	June 28, 2025
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	10:47	End Time (MST):	15:05
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620776

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.00	0.00	----	Correlation Coefficient	0.999951	*≥0.995*
8.28	8.27	1.0005	Slope	0.999555	*0.90 - 1.10*
4.15	4.10	1.0133	Intercept	-0.018320	*+/-0.5*
2.07	2.05	1.0102			



Wood Buffalo Environmental Association

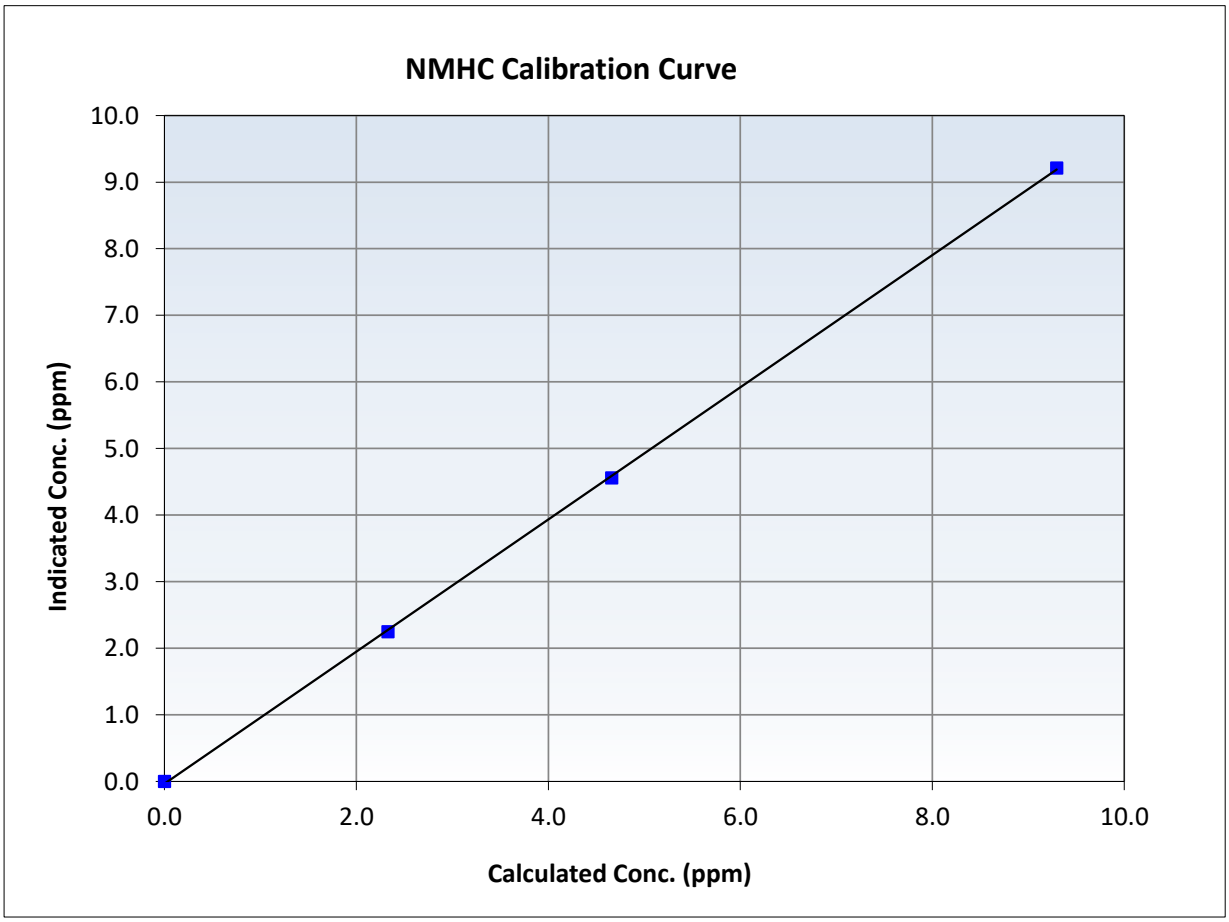
NMHC Calibration Summary

Station Information

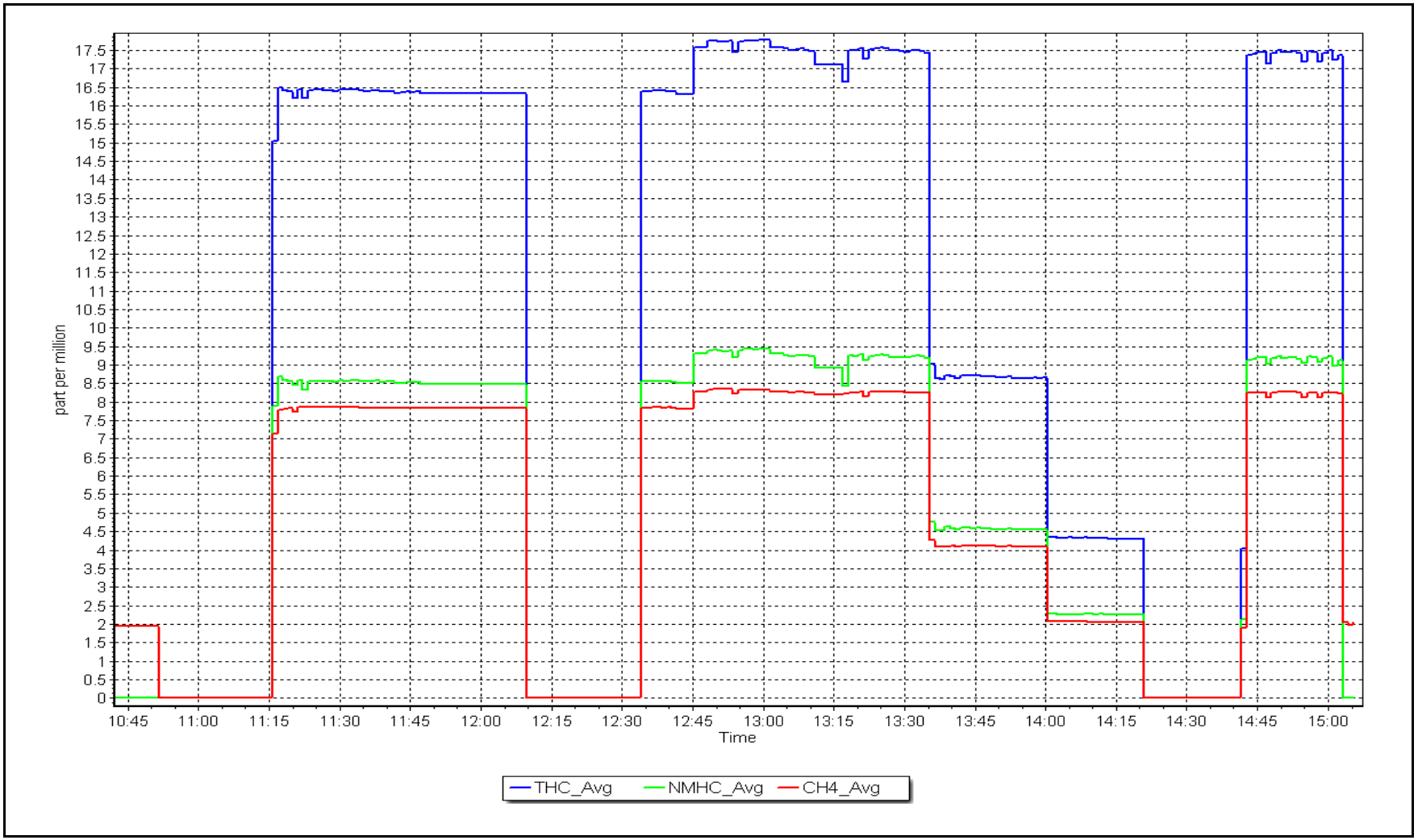
Calibration Date:	July 22, 2025	Previous Calibration:	June 28, 2025
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	10:47	End Time (MST):	15:05
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620776

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.00	0.00	----	Correlation Coefficient	0.999927	*≥0.995*
9.30	9.21	1.0091	Slope	0.992296	*0.90 - 1.10*
4.66	4.56	1.0226			
2.33	2.25	1.0344	Intercept	-0.034769	*+/-0.5*



NMHC Calibration Plot Date: July 22, 2025 Location: Lower Camp



Wood Buffalo Environmental Association

THC / CH4 / NMHC Calibration Report

Station Information

Station Name:	Lower Camp	Station number:	AMS 11
Calibration Date:	July 29, 2025	Last Cal Date:	July 22, 2025
Start time (MST):	11:46	End time (MST):	13:41
Reason:	Cylinder Change		

Calibration Standards

Gas Cert Reference:	CC741503	Cal Gas Expiry Date:	October 9, 2032	
CH4 Cal Gas Conc.	504.8 ppm	CH4 Equiv Conc.	1071.9	ppm
C3H8 Cal Gas Conc.	206.2 ppm			
Removed Gas Cert:		Removed Gas Expiry:		
Removed CH4 Conc.	504.8 ppm	CH4 Equiv Conc.	1071.9	ppm
Removed C3H8 Conc.	206.2 ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):		Diff between cyl (NM):		
Calibrator Model:	API T700	Serial Number:	3811	
Zero Air Gen model:	API T701	Serial Number:	196	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	12227620776	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	3.85E-04	3.85E-04	NMHC SP Ratio:	8.31E-05	8.31E-05
CH4 Retention time:	15.8	15.8	NMHC Peak Area:	111905	111905
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4932	82.2	17.57	17.20	1.022
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.20	Prev response	17.44	*% change	-1.4%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	17.57	17.38	1.011
				Average Correction Factor	

Notes: Changed N2 cylinder

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4932	82.2	9.30	9.09	1.023
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.09	Prev response	9.19	*% change	-1.1%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	9.30	9.22	1.008
				Average Correction Factor	

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4932	82.2	8.28	8.11	1.020
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.11	Prev response	8.25	*% change	-1.8%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

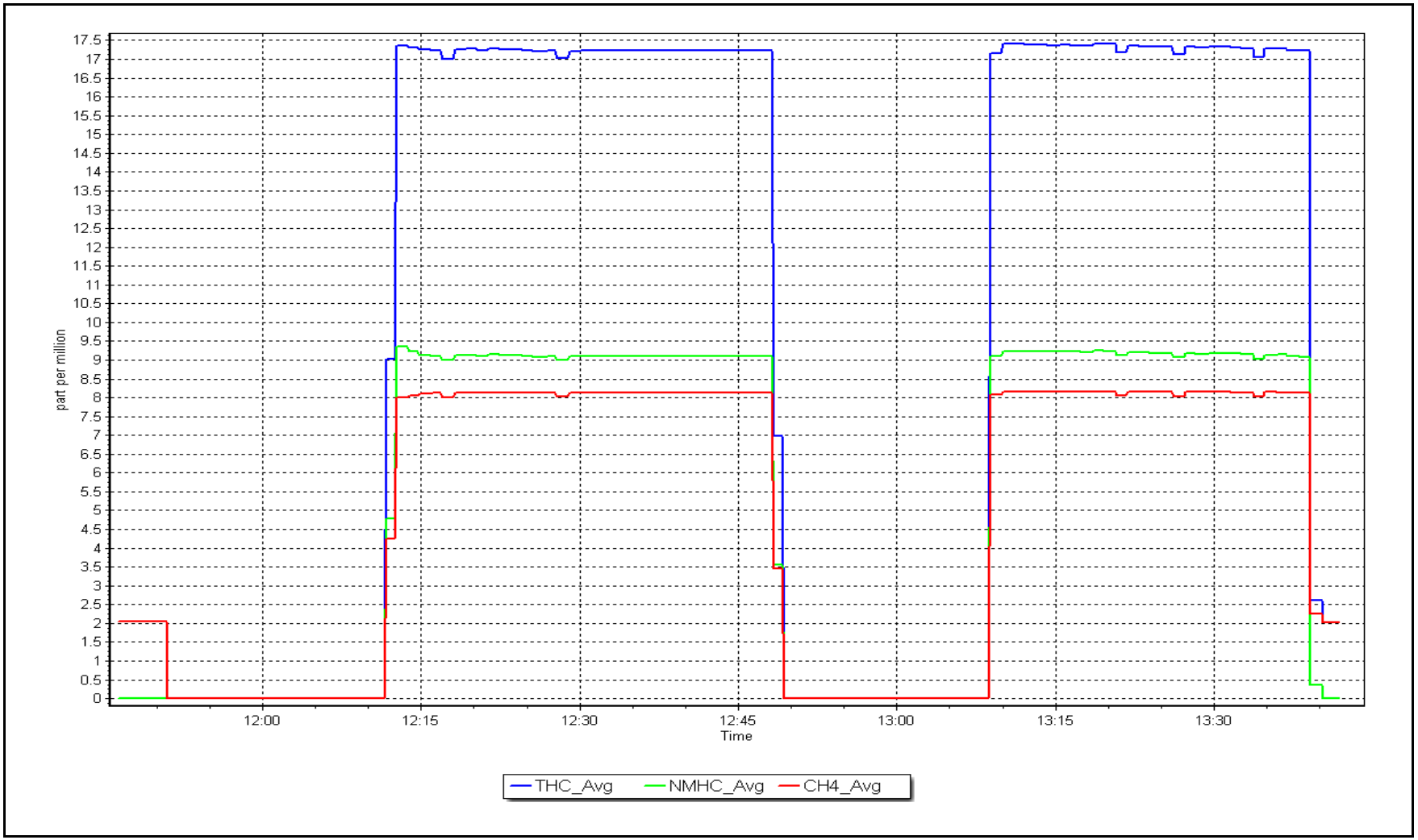
Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	8.28	8.15	1.015
				Average Correction Factor	

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	0.995715	
THC Cal Offset:	-0.053089	
CH4 Cal Slope:	0.999555	
CH4 Cal Offset:	-0.018320	
NMHC Cal Slope:	0.992296	
NMHC Cal Offset:	-0.034769	

Calibration Performed By: Mohammed Kashif

NMHC Calibration Plot Date: July 29, 2025 Location: Lower Camp



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS13
FORT MCKAY SOUTH
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Fort McKay South	Station number:	AMS 13
Calibration Date:	July 7, 2025	Last Cal Date:	June 3, 2025
Start time (MST):	9:33	End time (MST):	12:20
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.55	ppm	Cal Gas Exp Date:	December 29, 2028
Cal Gas Cylinder #:	CC260812			
Removed Cal Gas Conc:	50.55	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	Teledyne API T750		Serial Number:	281
Zero Air Gen Model:	Teledyne API 751H		Serial Number:	321

Analyzer Information

Analyzer make:	Teledyne API T100		Serial Number:	599	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.000559	1.006762	Backgd or Offset:	103.5	108.0
Calibration intercept:	1.265306	-2.854267	Coeff or Slope:	0.669	0.666

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.3	----
As found High point	4921	79.1	799.7	806.3	0.992
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	806.0	Previous response	801.4	*% change	0.6%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4921	79.1	799.7	803.5	0.995
Mid point	4960	39.5	399.4	398.1	1.003
Low point	4980	19.8	200.2	195.9	1.022
As left zero	5000	0.0	0.0	-0.4	----
As left span	4921	79.1	799.7	804.0	0.995
				Average Correction Factor:	1.007

Notes: Adjusted span only.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

SO_2 Calibration Summary

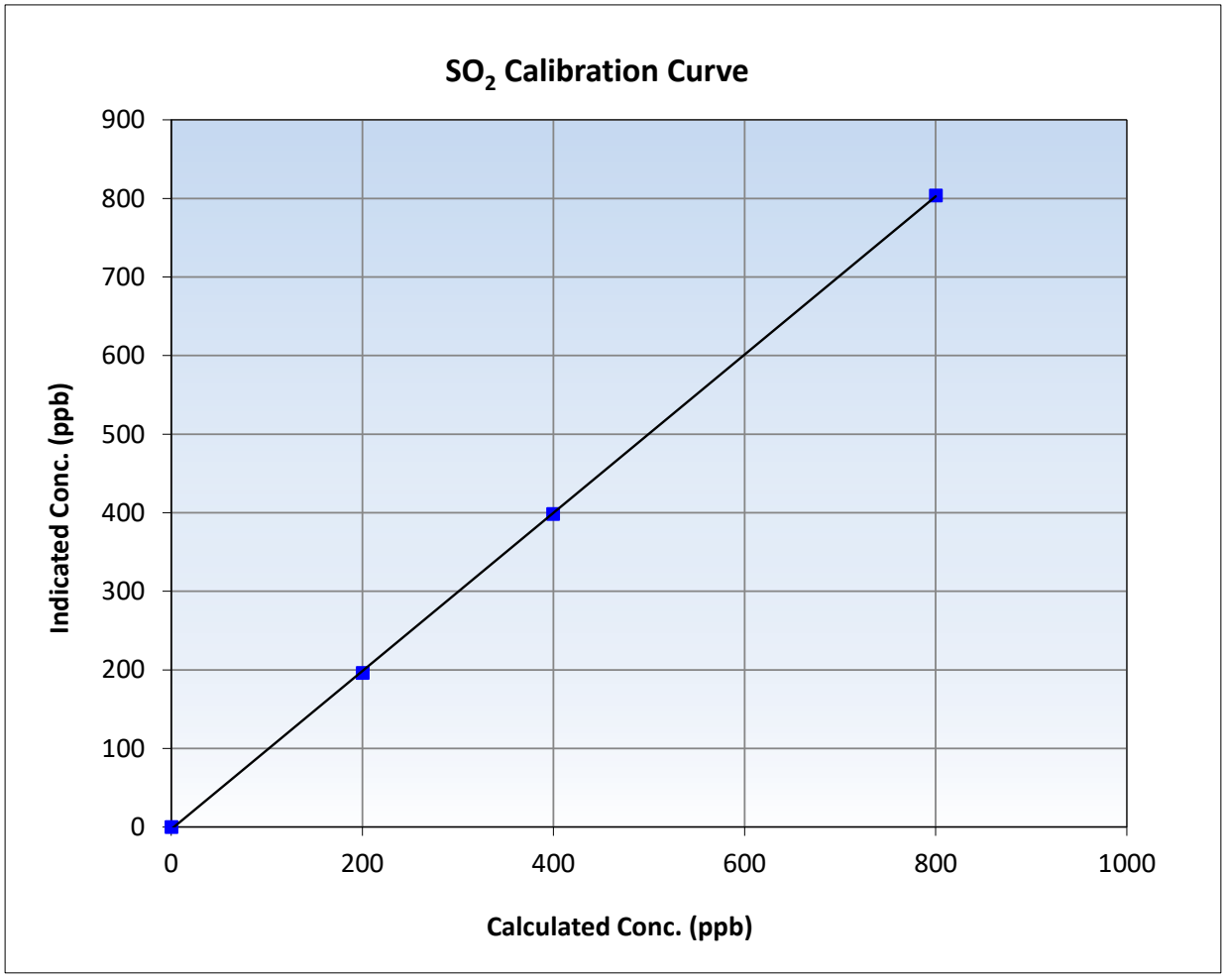
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 3, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:33	End Time (MST):	12:20
Analyzer make:	Teledyne API T100	Analyzer serial #:	599

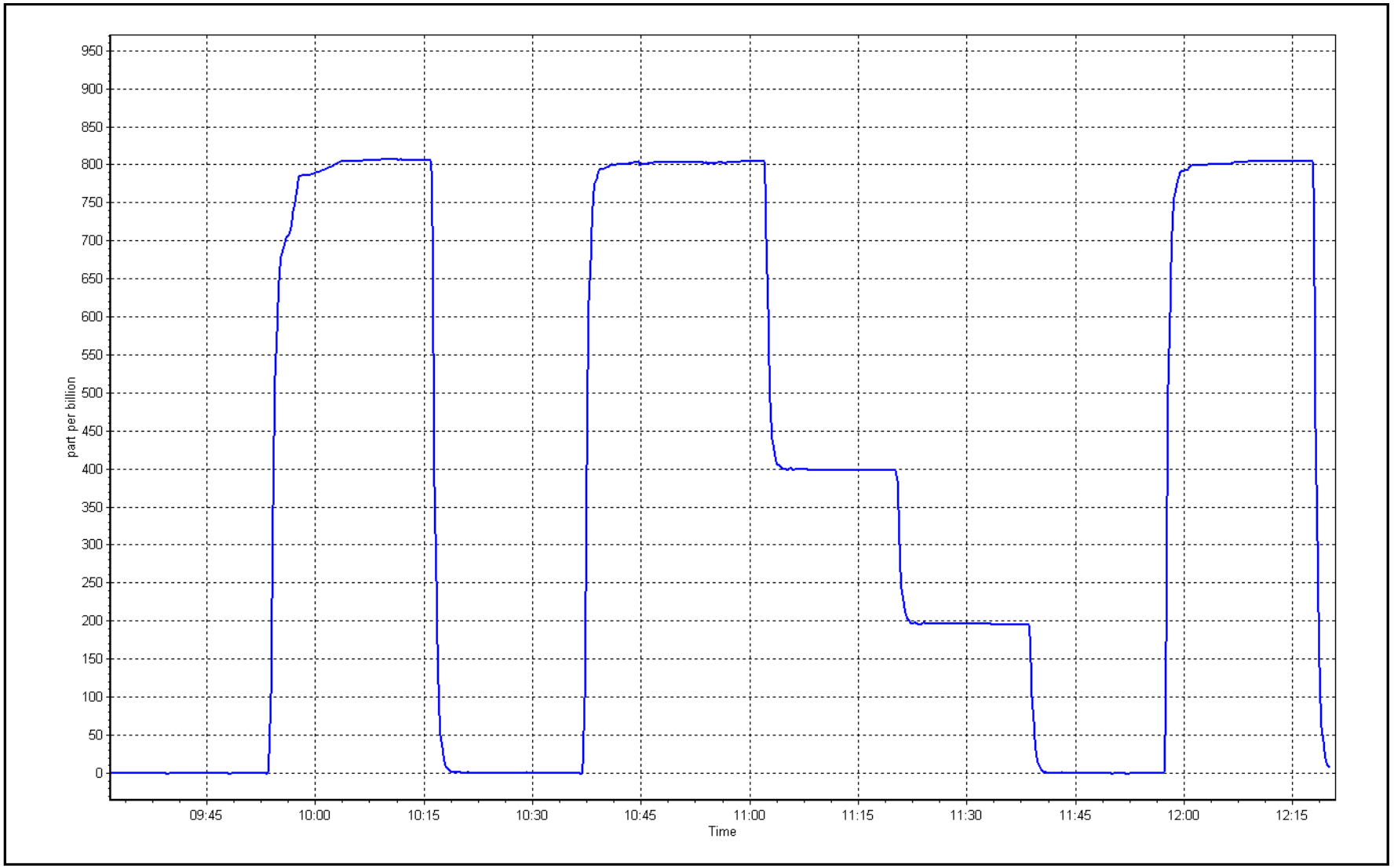
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
799.7	803.5	0.9953
399.4	398.1	1.0032
200.2	195.9	1.0219

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999950	*≥0.995*
Slope	1.006762	*0.90 - 1.10*
Intercept	-2.854267	*+/-30*



SO2 Calibration Plot Date: July 7, 2025 Location: Fort McKay South



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Fort McKay South	Station number:	AMS 13
Calibration Date:	July 10, 2025	Last Cal Date:	June 3, 2025
Start time (MST):	9:09	End time (MST):	12:56
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.88	ppm	Cal Gas Exp Date:	September 5, 2027
Cal Gas Cylinder #:	CC500241			
Removed Cal Gas Conc:	4.88	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:	CC500241		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	2657
ZAG Make/Model:	Teledyne API T701		Serial Number:	1118

Analyzer Information

Analyzer make:	Thermo 43i TLE		Analyzer serial #:	1180540017
Converter make:	CDN-101		Converter serial #:	521
Analyzer Range	0 - 100 ppb		Converter Temp:	800 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.007709	1.009574	Backgd or Offset:	3.97	3.97
Calibration intercept:	-0.138405	-0.678399	Coeff or Slope:	1.09	1.09

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.5	----
As found High point	4918	81.6	79.6	76.5	1.034
As found Mid point	4959	40.8	39.8	38.2	1.029
As found Low point	4980	20.4	19.9	18.9	1.026
New cylinder response					

Baseline Corr As found:	77.0	Prev response:	80.12	*% change:	-4.1%
Baseline Corr 2nd AF pt:	38.7	AF Slope:	0.966384	AF Intercept:	-0.398457
Baseline Corr 3rd AF pt:	19.4	AF Correlation:	0.999990	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.5	----
High point	4918	81.6	79.6	79.8	0.998
Mid point	4959	40.8	39.8	39.5	1.008
Low point	4980	20.4	19.9	19.2	1.037
As left zero	5000	0.0	0.0	-0.5	----
As left span	4918	81.6	79.6	80.3	0.992
SO2 Scrubber Check	4921	79.1	791.0	0.1	----

Date of last scrubber change:	3-Jun-25	Ave Corr Factor	1.014
Date of last converter efficiency test:			

Notes: Changed inlet filter after as found. SO2 scrubber check after calibrator zero and passed. No adjustment.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

TRS Calibration Summary

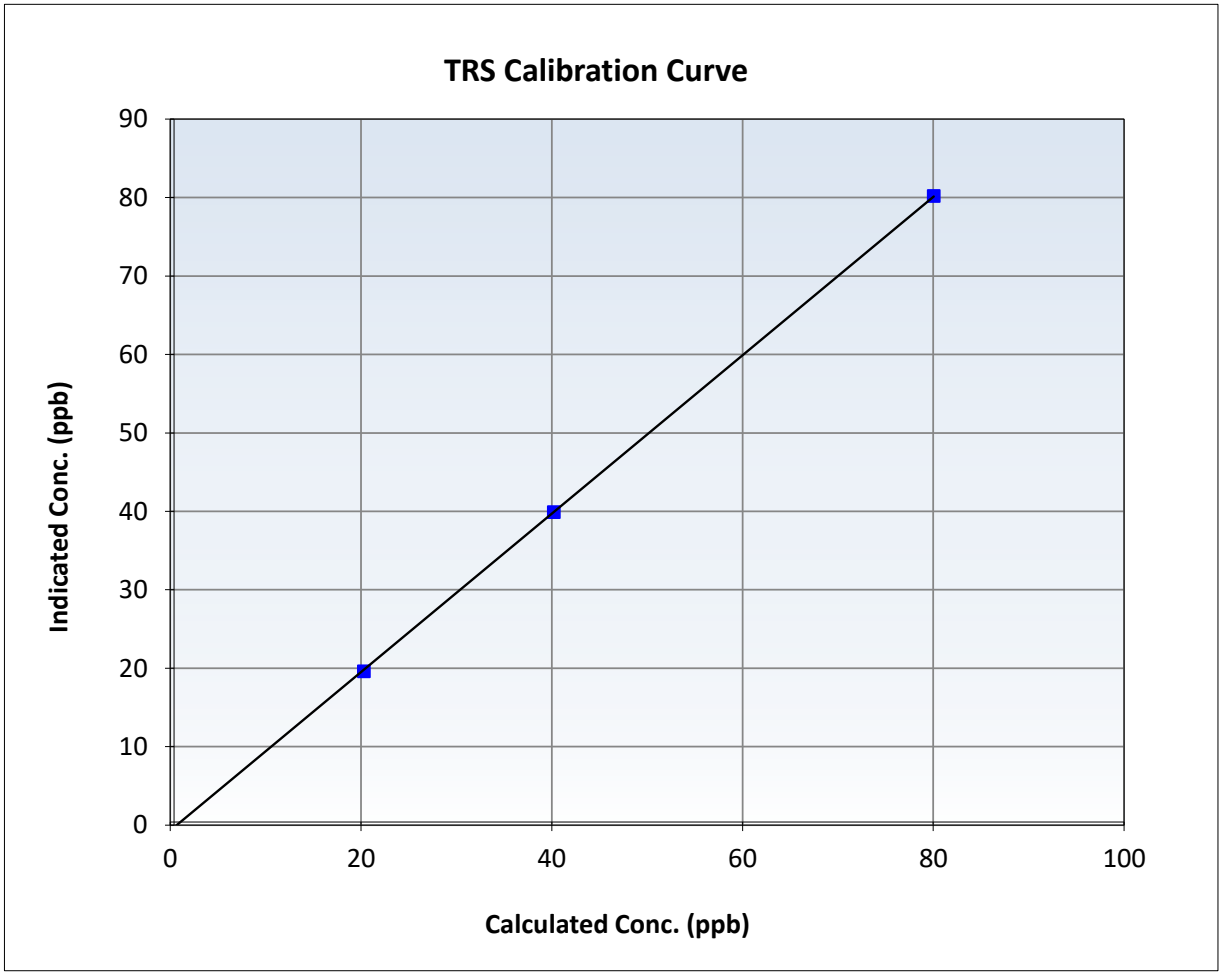
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 3, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:09	End Time (MST):	12:56
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1180540017

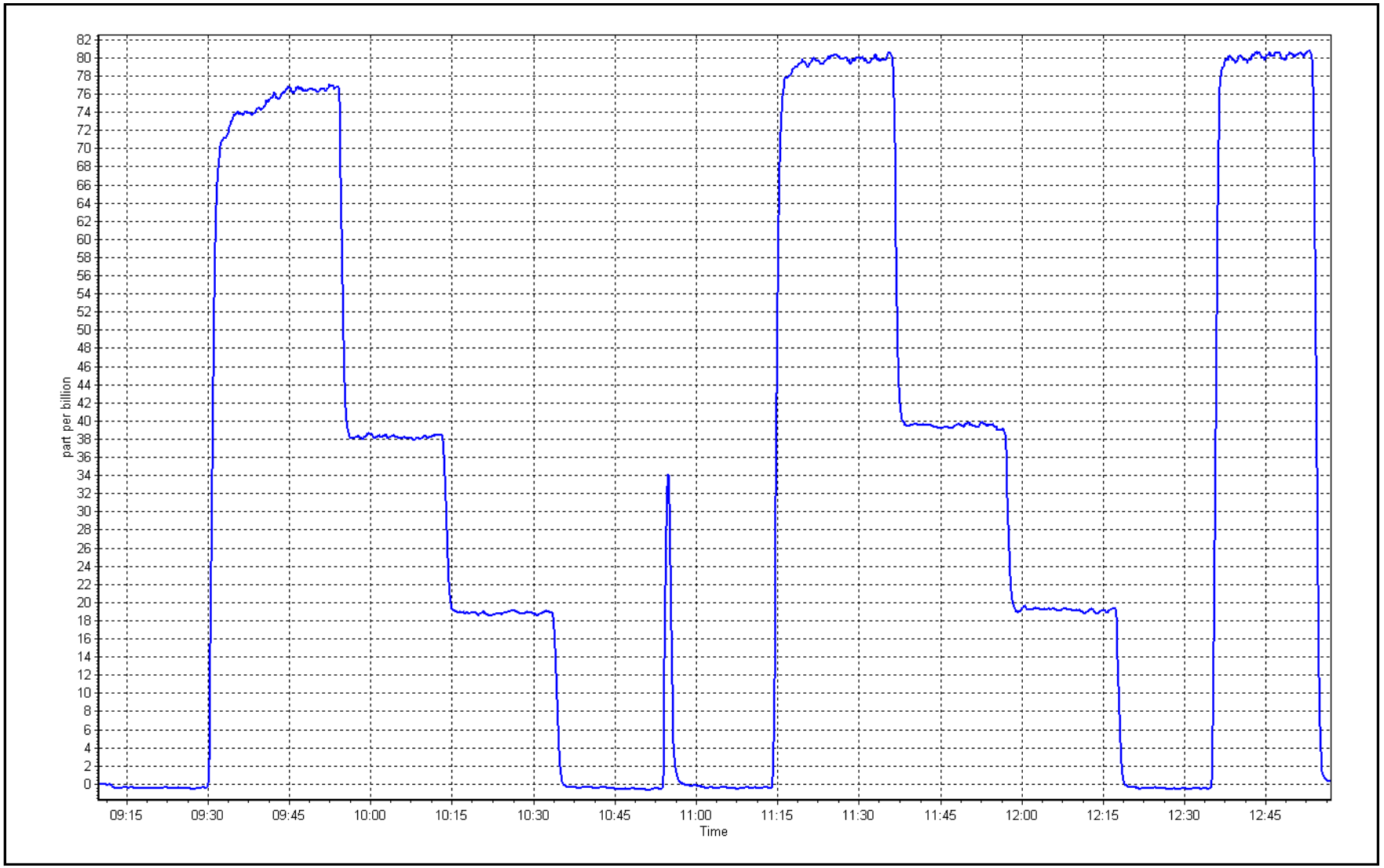
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.5	----
79.6	79.8	0.9981
39.8	39.5	1.0082
19.9	19.2	1.0369

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999976	*≥0.995*
Slope	1.009574	*0.90 - 1.10*
Intercept	-0.678399	*+/-3*



TRS Calibration Plot Date: July 10, 2025 Location: Fort McKay South



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Fort McKay South	Station number:	AMS 13
Calibration Date:	July 7, 2025	Last Cal Date:	June 5, 2025
Start time (MST):	9:33	End time (MST):	12:20
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC260812	Cal Gas Expiry Date:	December 29, 2028
CH4 Cal Gas Conc.	503.6 ppm	CH4 Equiv Conc.	1077.5 ppm
C3H8 Cal Gas Conc.	208.7 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	
Removed CH4 Conc.	503.6 ppm	CH4 Equiv Conc.	1077.5 ppm
Removed C3H8 Conc.	208.7 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T750	Serial Number:	281
Zero Air Gen model:	Teledyne API 751H	Serial Number:	321

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1181490018
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.94E-04	2.97E-04	NMHC SP Ratio:	4.70E-05	4.67E-05
CH4 Retention time:	15.40	16.20	NMHC Peak Area:	193215	194460
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	17.05	17.24	0.989
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	17.24	Prev response	17.06	*% change	1.0%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	17.05	17.05	1.000
Mid point	4960	39.5	8.51	8.47	1.005
Low point	4980	19.8	4.27	4.21	1.015
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	17.05	17.04	1.001
				Average Correction Factor	1.007

Notes: Changed inlet filter after as founds. Adjusted span only.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	9.08	9.15	0.992
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.15	Prev response	9.09	*% change	0.6%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	9.08	9.08	1.000
Mid point	4960	39.5	4.53	4.52	1.004
Low point	4980	19.8	2.27	2.25	1.012
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	9.08	9.07	1.001
				Average Correction Factor	1.005

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	7.97	8.09	0.985
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.09	Prev response	7.97	*% change	1.5%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	7.97	7.97	0.999
Mid point	4960	39.5	3.98	3.95	1.007
Low point	4980	19.8	1.99	1.96	1.017
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	7.97	7.96	1.000
				Average Correction Factor	1.008

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	1.003416	1.001276
THC Cal Offset:	-0.043114	-0.034909
CH4 Cal Slope:	1.004623	1.001953
CH4 Cal Offset:	-0.036351	-0.020547
NMHC Cal Slope:	1.002394	1.000682
NMHC Cal Offset:	-0.006162	-0.014362

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

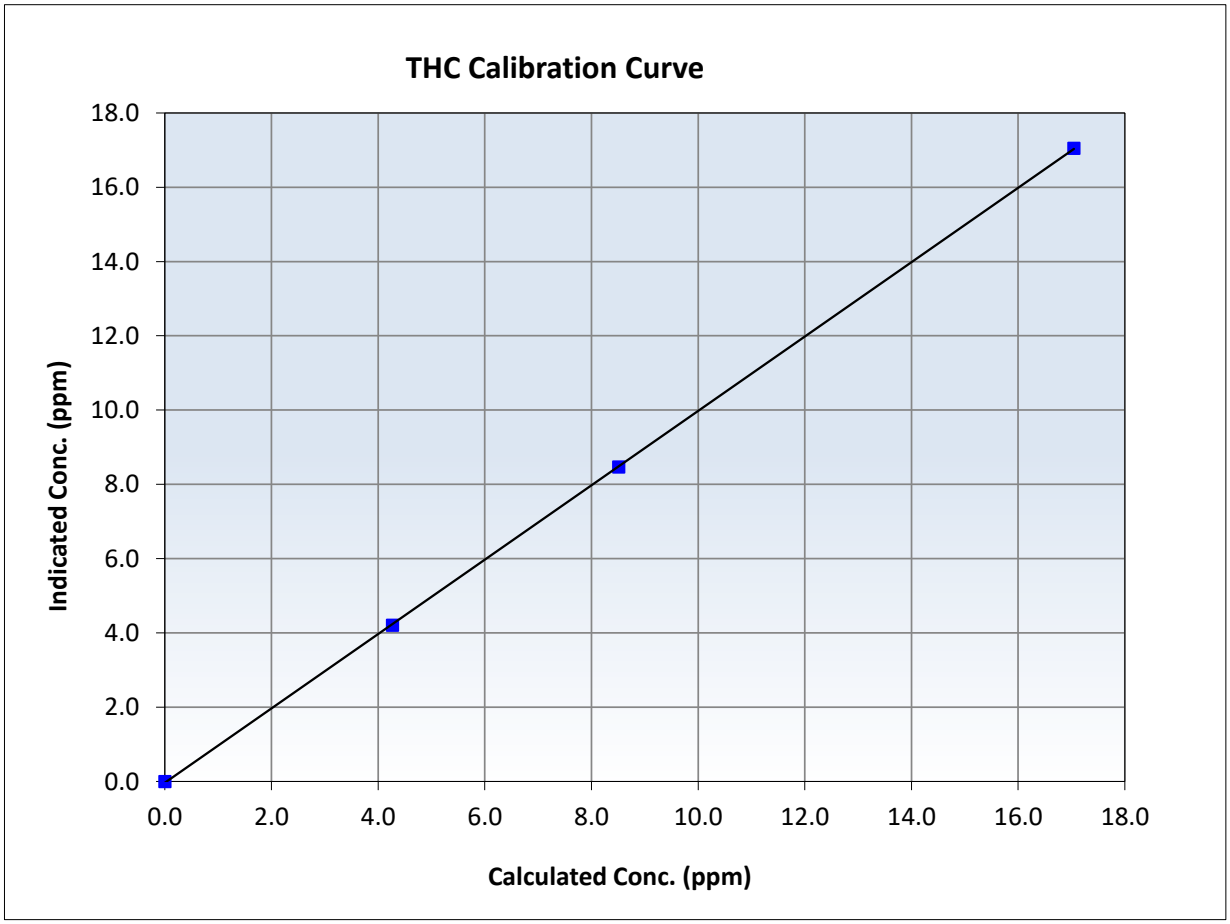
THC Calibration Summary

Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 5, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:33	End Time (MST):	12:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1181490018

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999981	≥0.995
17.05	17.05	0.9997	Slope	1.001276	0.90 - 1.10
8.51	8.47	1.0055	Intercept	-0.034909	+/-0.5
4.27	4.21	1.0145			



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CH_4 Calibration Summary

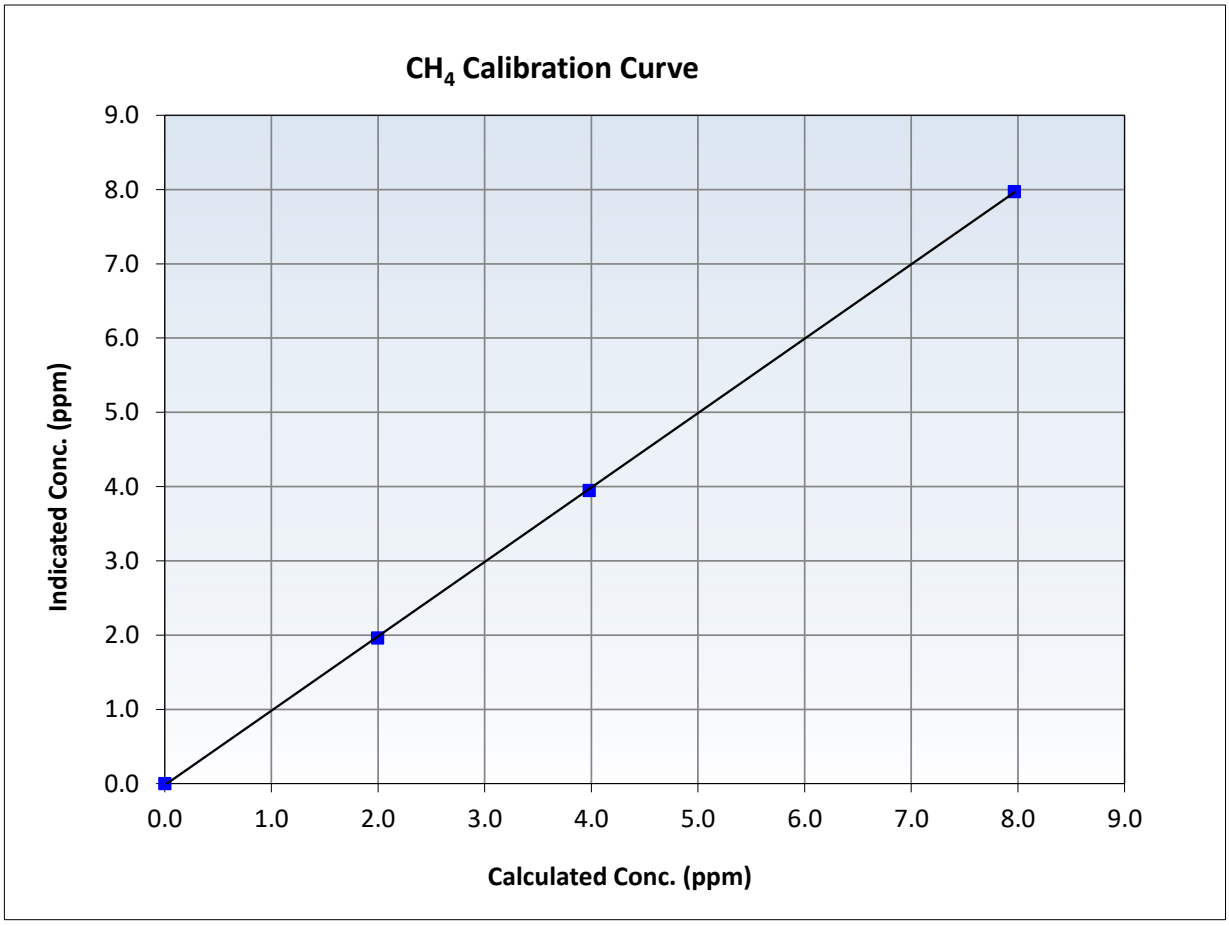
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 5, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:33	End Time (MST):	12:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1181490018

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
7.97	7.97	0.9991
3.98	3.95	1.0073
1.99	1.96	1.0170

Statistical Evaluation		Limits
Correlation Coefficient	0.999968	≥0.995
Slope	1.001953	0.90 - 1.10
Intercept	-0.020547	+/-0.5



Wood Buffalo Environmental Association

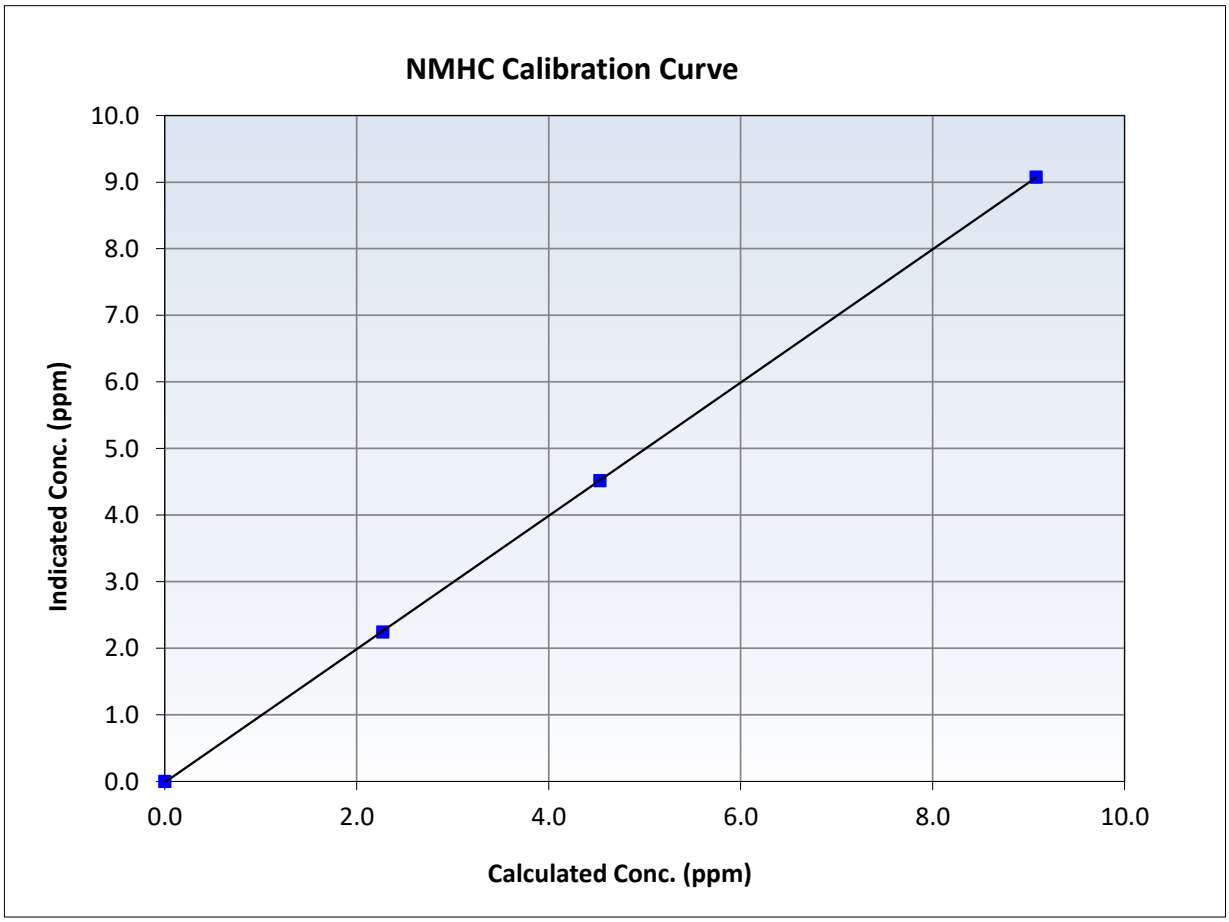
NMHC Calibration Summary

Station Information

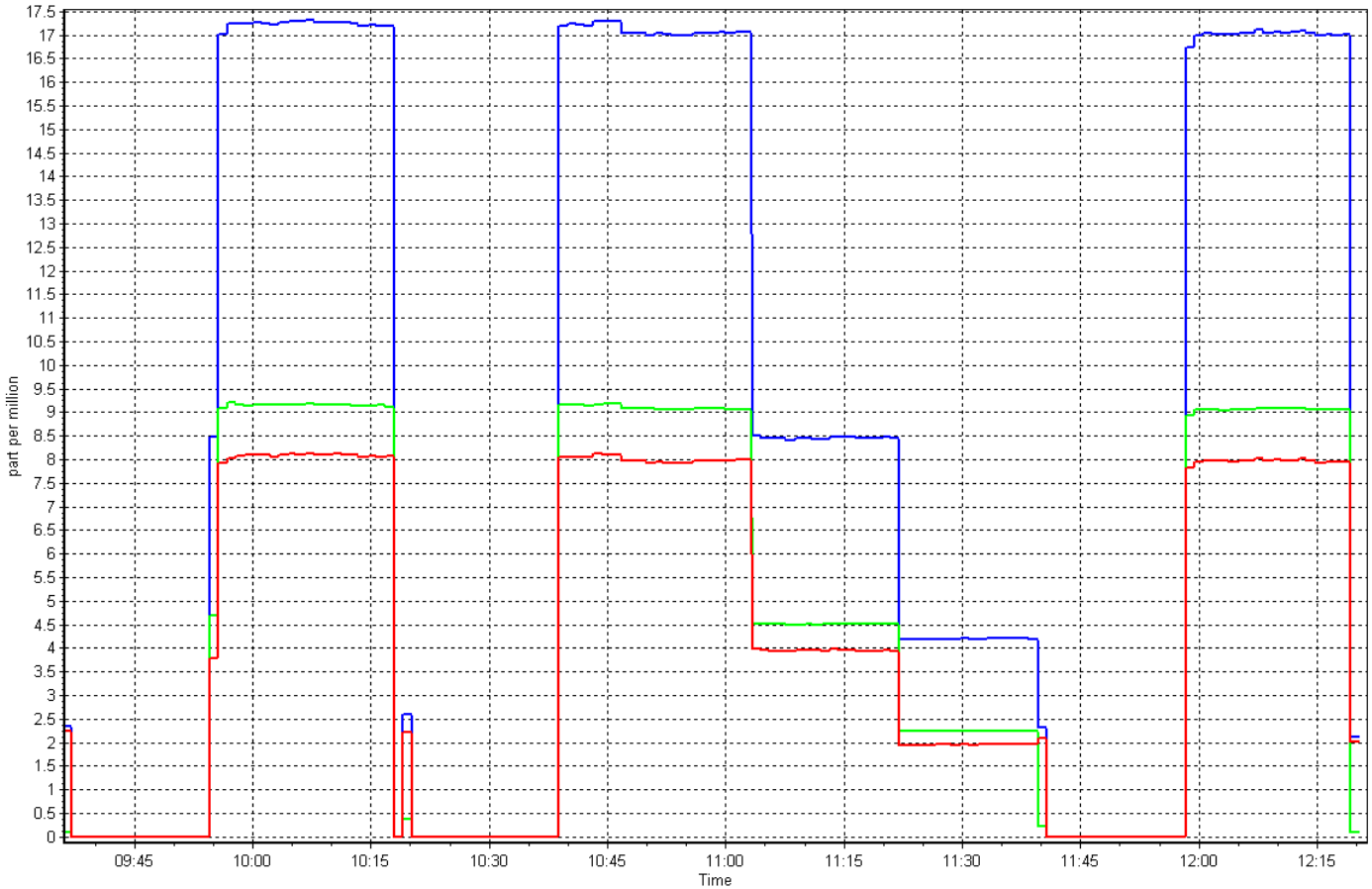
Calibration Date:	July 7, 2025	Previous Calibration:	June 5, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:33	End Time (MST):	12:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1181490018

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999989	≥0.995
9.08	9.08	1.0001	Slope	1.000682	0.90 - 1.10
4.53	4.52	1.0039			
2.27	2.25	1.0124	Intercept	-0.014362	+/-0.5



NMHC Calibration Plot Date: July 7, 2025 Location: Fort McKay South



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Fort McKay South
Station number:	AMS 13
Calibration Date:	July 16, 2025
Last Cal Date:	June 3, 2025
Start time (MST):	8:53
End time (MST):	11:29
Reason:	As Found

Calibration Standards

NO Gas Cylinder #:	T2UP1RP	Cal Gas Expiry Date:	November 17, 2026
NOX Cal Gas Conc:	48.25 ppm	NO Cal Gas Conc:	47.88 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	48.25 ppm	Removed Gas NO Conc:	47.88 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	2657
ZAG make/model:	Teledyne APIT701	Serial Number:	1118

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.5	0.3	0.2	----	----
AF High point	4917	83.5	805.7	799.5	6.2	856.5	847.7	8.8	0.9412	0.9435
AF Mid point	4958	41.8	403.4	400.3	3.1	424.4	418.2	6.2	0.9516	0.9579
AF Low point	4979	20.9	201.7	200.1	1.5	209.9	204.1	5.7	0.9632	0.9821
New cyl resp										

Previous Response	NO_X = 804.7 ppb	NO = 800.3 ppb
Baseline Corr 1st pt	NO_X = 856.0 ppb	NO = 847.4 ppb
Baseline Corr 2nd pt	NO_X = 423.9 ppb	NO = 417.9 ppb
Baseline Corr 3rd pt	NO_X = 209.4 ppb	NO = 203.8 ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2: 0.999945	*Percent Change	NO_X = 6.0%	
As found	NO r^2: 0.999865	*Percent Change	NO = 5.6%	
As found	NO_2 r^2: 0.999948	Nx Sl: 1.063847	Nx Int: -2.386	
		NO Sl: 1.062545	NO Int: -4.303	
		NO2 Sl: 0.997739	NO_2 Int: 1.464	

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero	----	----	0.0	0.2	----	----
As found high GPT point	845.2	427.9	423.5	423.6	0.9997	100.0%
As found mid GPT point	845.2	635.4	216.0	216.8	0.9962	100.4%
As found low GPT point	845.2	742.5	108.9	111.9	0.9730	102.8%

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ
Serial Number: 12300522720
NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.244		NO bkgnd or offset:	3.3	
NOX coeff or slope:	1.001		NOX bkgnd or offset:	3.3	
NO2 coeff or slope:	1.000		Reaction cell Press:	147.2	

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.004251	
NO_X Cal Offset:	-4.391596	
NO Cal Slope:	1.007936	
NO Cal Offset:	-5.590352	
NO_2 Cal Slope:	0.988380	
NO_2 Cal Offset:	1.407333	

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero										
High point										
Mid point										
Low point										
As left zero										
As left span										
								Average Correction Factor		

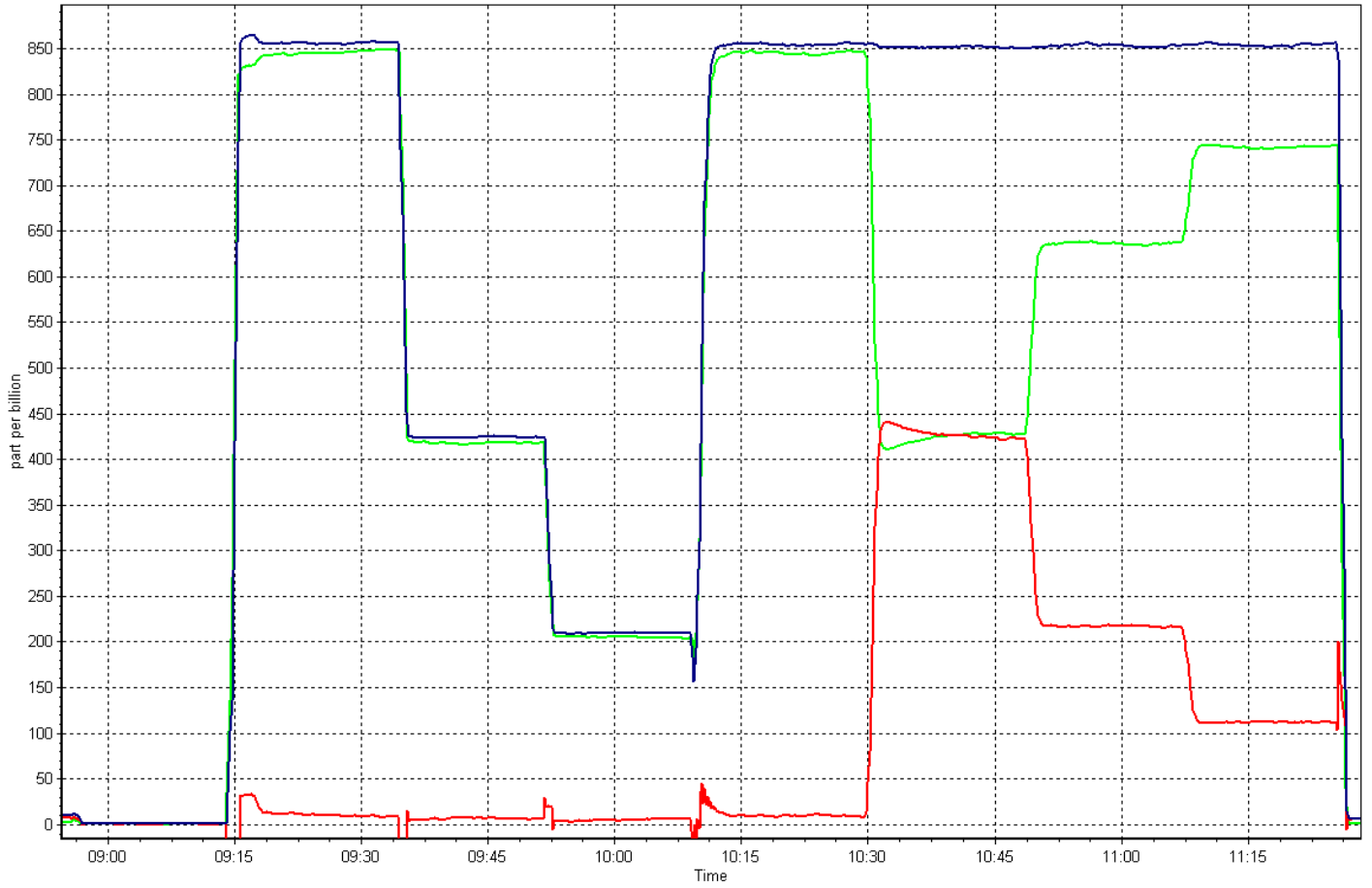
GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero						
High GPT point						
Mid GPT point						
Low GPT point						
				Average Correction Factor		

Notes: Changed inlet filter, o-ring and capillaries after as founds. O-rings and capillaries were changed to see if it improve linearity.

Calibration Performed By: Sean Bala

NO_X Calibration Plot Date: July 16, 2025 Location: Fort McKay South



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Fort McKay South
Station number:	AMS 13
Calibration Date:	July 17, 2025
Last Cal Date:	July 16, 2025
Start time (MST):	9:07
End time (MST):	12:53
Reason:	Maintenance

Calibration Standards

NO Gas Cylinder #:	T2UP1RP	Cal Gas Expiry Date:	November 17, 2026
NOX Cal Gas Conc:	48.25 ppm	NO Cal Gas Conc:	47.88 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	48.25 ppm	Removed Gas NO Conc:	47.88 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	2657
ZAG make/model:	Teledyne APIT701	Serial Number:	1118

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero										
AF High point										
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = NA	ppb	NO = NA	ppb	* = > +/-5% change initiates investigation	*Percent Change	NO_X =	NA
Baseline Corr 1st pt	NO_X = NA	ppb	NO = NA	ppb	As Found Statistics	*Percent Change	NO =	NA
Baseline Corr 2nd pt	NO_X = NA	ppb	NO = NA	ppb	As found NO_X r^2:	Nx Sl:	Nx Int:	
Baseline Corr 3rd pt	NO_X = NA	ppb	NO = NA	ppb	As found NO r^2:	NO Sl:	NO Int:	
					As found NO_2 r^2:	NO2 Sl:	NO_2 Int:	

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ

Serial Number: 12300522720

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.244	1.115	NO bkgnd or offset:	3.3	3.1
NOX coeff or slope:	1.001	1.002	NOX bkgnd or offset:	3.3	3.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	147.2	152.8

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.004251	1.002824
NO_X Cal Offset:	-4.391596	-1.613555
NO Cal Slope:	1.007936	1.003967
NO Cal Offset:	-5.590352	-3.151390
NO_2 Cal Slope:	0.988380	0.991296
NO_2 Cal Offset:	1.407333	0.082751

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	----	----
High point	4917	83.5	805.7	799.5	6.2	807.3	801.2	6.2	0.9980	0.9979
Mid point	4958	41.8	403.4	400.3	3.1	401.6	396.8	4.8	1.0044	1.0088
Low point	4979	20.9	201.7	200.1	1.5	199.5	195.0	4.5	1.0110	1.0264
As left zero	5000	0.0	0.0	0.0	0.0	-0.1	0.1	-0.2	----	----
As left span	4917	83.5	805.7	407.0	398.7	801.0	407.0	394.0	1.0059	1.0000
								Average Correction Factor	1.0045	1.0110

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	800.5	405.1	401.6	398.1	1.0087	99.1%
Mid GPT point	800.5	603.6	203.1	201.4	1.0083	99.2%
Low GPT point	800.5	702.9	103.8	103.2	1.0056	99.4%
				Average Correction Factor	1.0076	99.3%

Notes: Adjusted zero and span.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

NO_X Calibration Summary

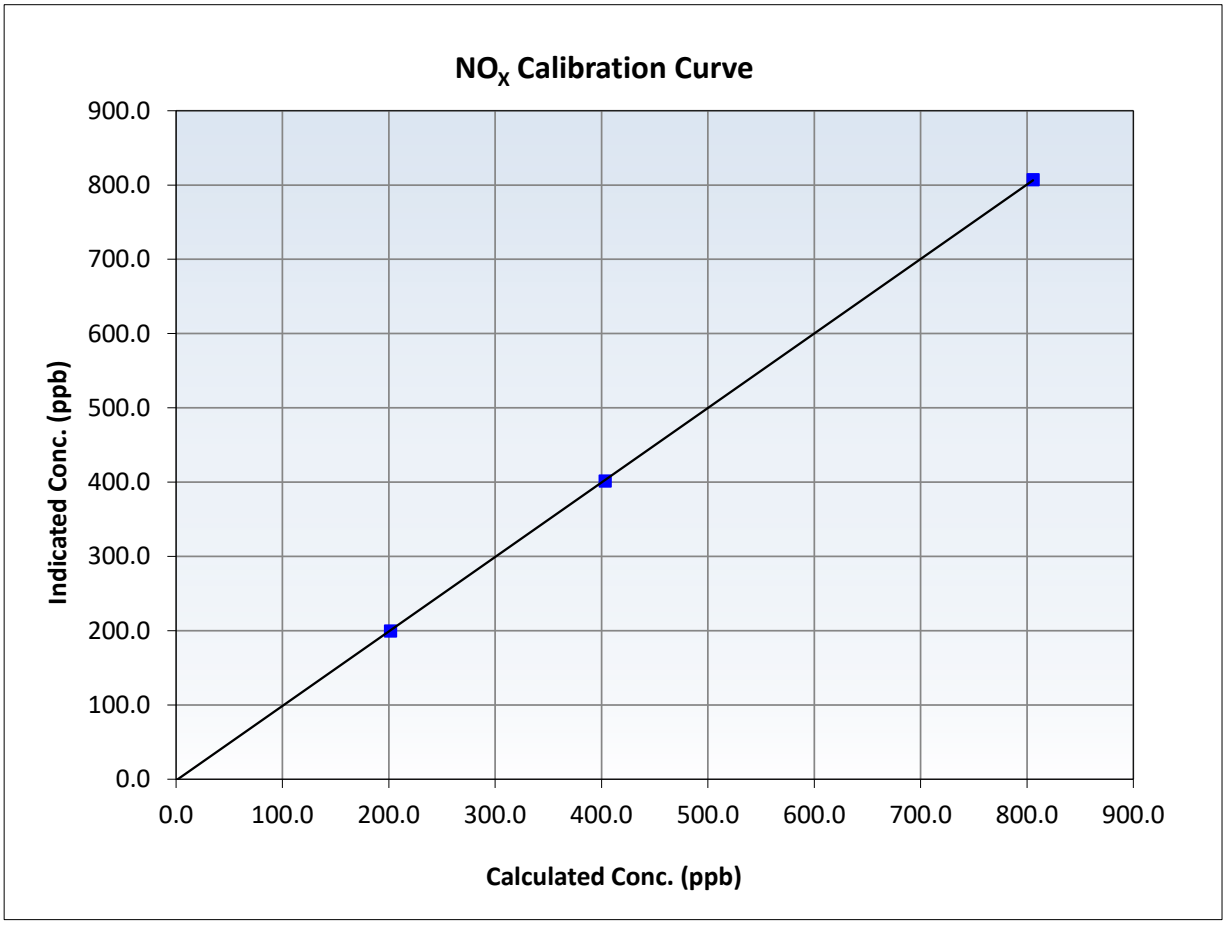
Station Information

Calibration Date:	July 17, 2025	Previous Calibration:	July 16, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:07	End Time (MST):	12:53
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
805.7	807.3	0.9980
403.4	401.6	1.0044
201.7	199.5	1.0110

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999983	*≥0.995*
Slope	1.002824	*0.90 - 1.10*
Intercept	-1.613555	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

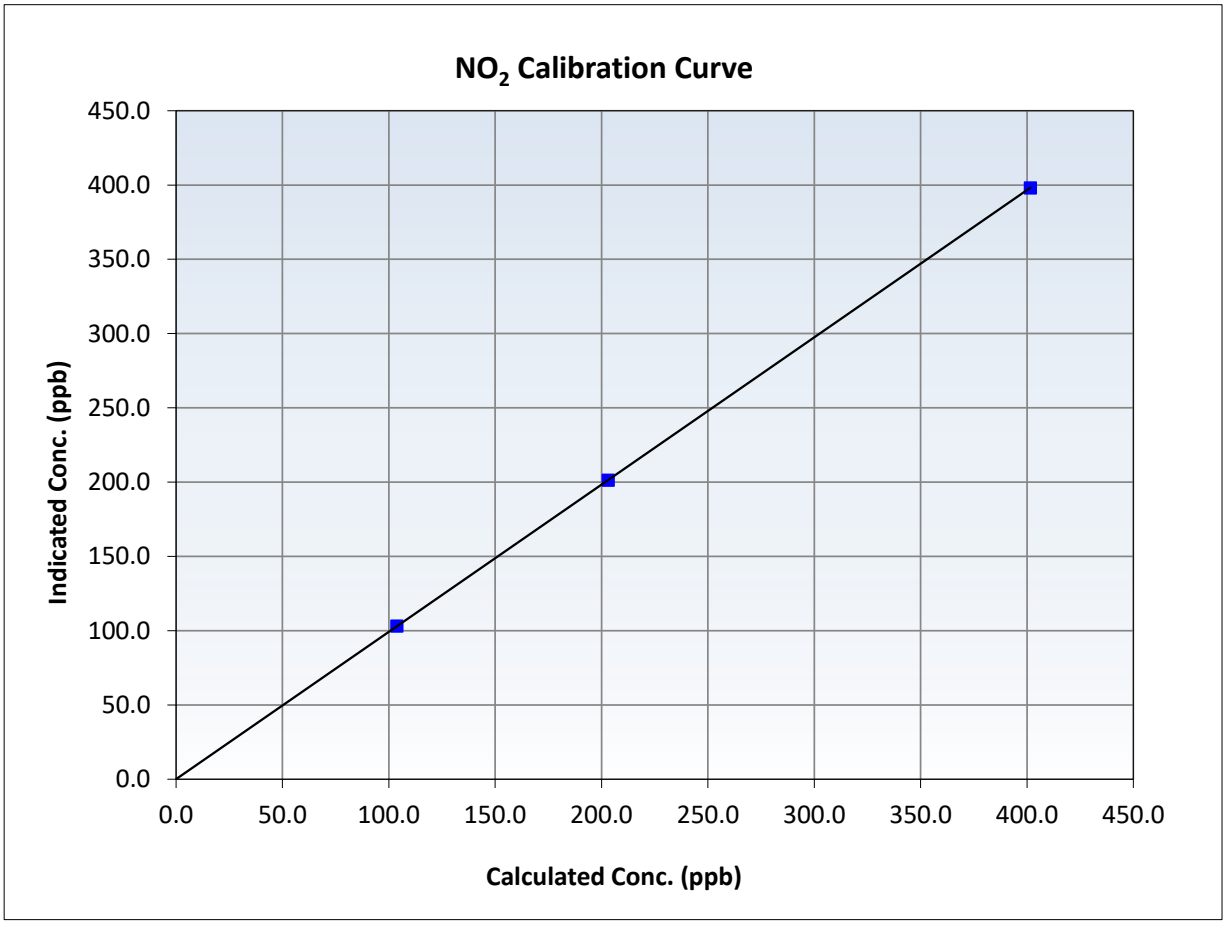
Station Information

Calibration Date:	July 17, 2025	Previous Calibration:	July 16, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:07	End Time (MST):	12:53
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
401.6	398.1	1.0087
203.1	201.4	1.0083
103.8	103.2	1.0056

Statistical Evaluation		Limits
Correlation Coefficient	0.999999	≥0.995
Slope	0.991296	0.90 - 1.10
Intercept	0.082751	+/-20



Wood Buffalo Environmental Association

NO Calibration Summary

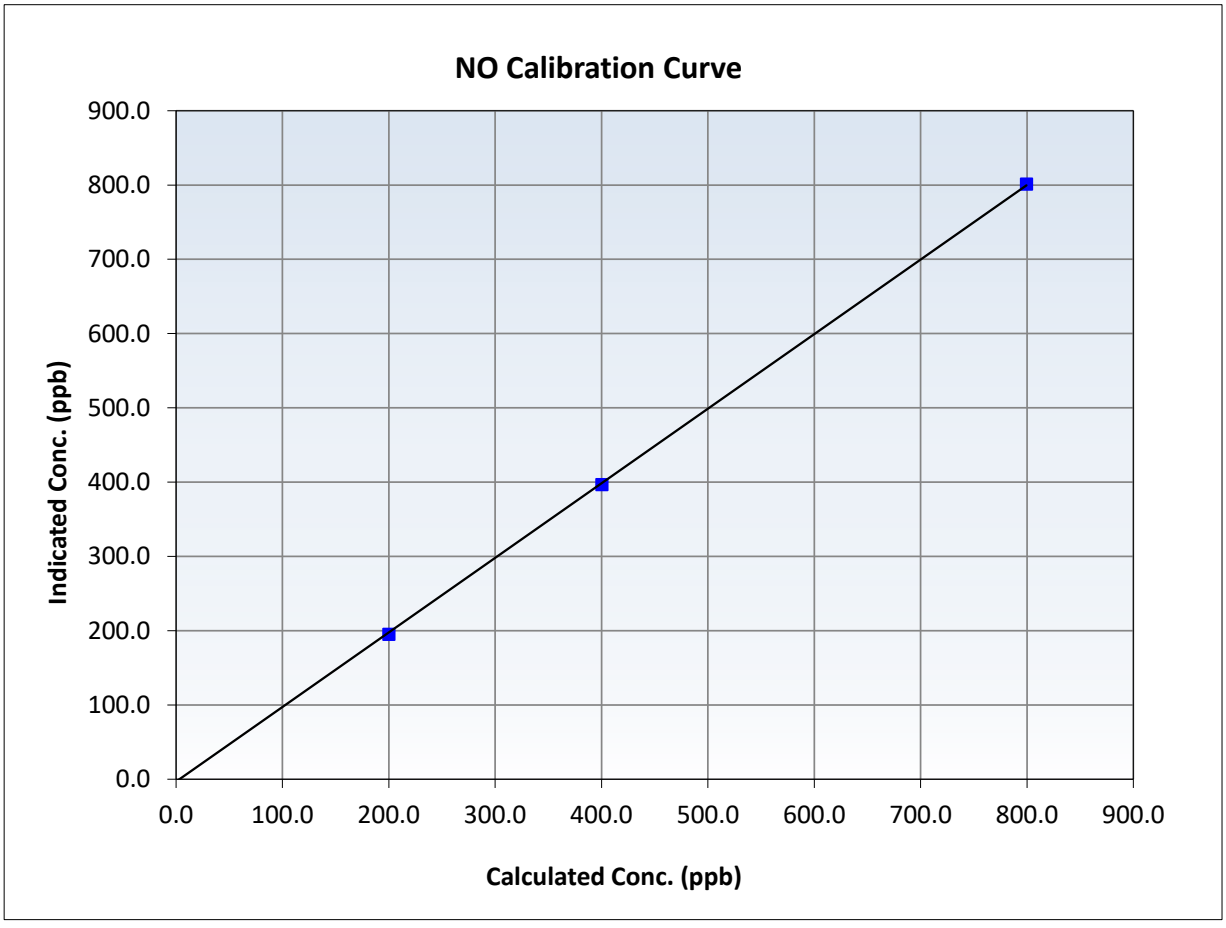
Station Information

Calibration Date:	July 17, 2025	Previous Calibration:	July 16, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:07	End Time (MST):	12:53
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

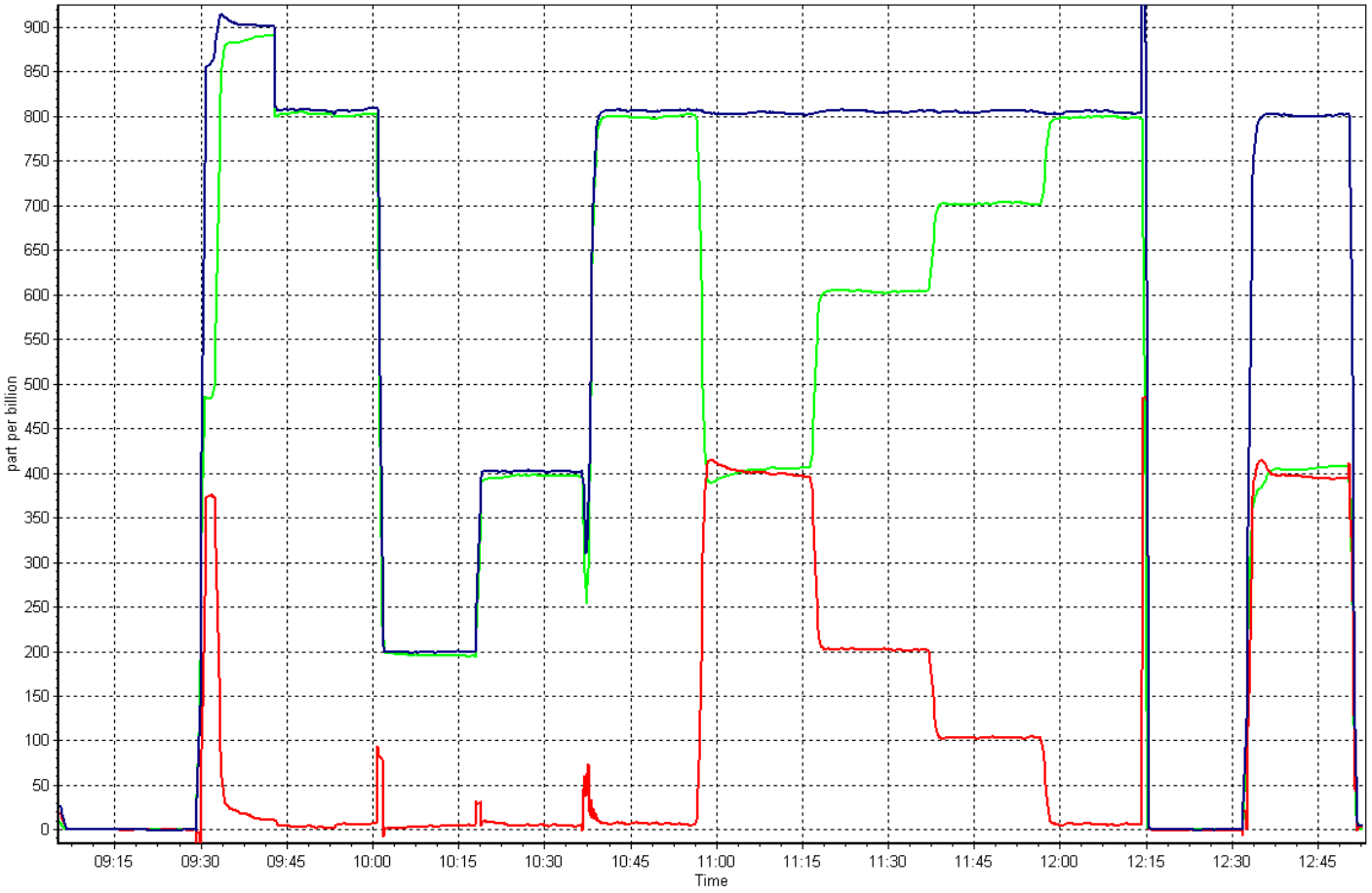
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
799.5	801.2	0.9979
400.3	396.8	1.0088
200.1	195.0	1.0264

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999933	*≥0.995*
Slope	1.003967	*0.90 - 1.10*
Intercept	-3.151390	*+/-20*



NO_X Calibration Plot Date: July 17, 2025 Location: Fort McKay South



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Fort McKay South
Station number:	AMS 13
Calibration Date:	July 29, 2025
Last Cal Date:	July 17, 2025
Start time (MST):	10:34
End time (MST):	16:05
Reason:	Maintenance

Calibration Standards

NO Gas Cylinder #:	T2UP1RP	Cal Gas Expiry Date:	November 17, 2026
NOX Cal Gas Conc:	48.25 ppm	NO Cal Gas Conc:	47.88 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	48.25 ppm	Removed Gas NO Conc:	47.88 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	2657
ZAG make/model:	Teledyne APIT701	Serial Number:	1118

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.1	0.5	-0.6	----	----
AF High point	4917	83.5	805.7	799.5	6.2	728.9	716.5	12.4	1.1052	1.1166
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 806.4 ppb	NO = 799.5 ppb
Baseline Corr 1st pt	NO_X = 729.0 ppb	NO = 716.0 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

*Percent Change NO_X = -10.6%

*Percent Change NO = -11.7%

As Found Statistics

As found	NO_X r^2:	Nx Sl:	Nx Int:
As found	NO r^2:	NO Sl:	NO Int:
As found	NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ Serial Number: 12300522720

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.115	1.115	NO bkgnd or offset:	3.1	3.1
NOX coeff or slope:	1.002	1.002	NOX bkgnd or offset:	3.5	3.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	152.8	152.8

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.002824	1.004055
NO_X Cal Offset:	-1.613555	-3.172683
NO Cal Slope:	1.003967	1.005508
NO Cal Offset:	-3.151390	-4.490645
NO_2 Cal Slope:	0.991296	0.996864
NO_2 Cal Offset:	0.082751	1.668208

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.2	-0.2	----	----
High point	4917	83.5	805.7	799.5	6.2	807.8	802.1	5.6	0.9974	0.9968
Mid point	4958	41.8	403.4	400.3	3.1	399.1	394.7	4.4	1.0107	1.0142
Low point	4979	20.9	201.7	200.1	1.5	196.8	192.7	4.1	1.0248	1.0386
As left zero	5000	0.0	0.0	0.0	0.0	0.2	0.4	-0.2	----	----
As left span	4917	83.5	805.7	410.1	395.6	810.5	410.1	400.4	0.9941	1.0000
								Average Correction Factor	1.0110	1.0165

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.2	----	----
High GPT point	802.8	406.8	402.2	401.8	1.0009	99.9%
Mid GPT point	802.8	607.8	201.2	202.7	0.9925	100.8%
Low GPT point	802.8	708.3	100.7	104.2	0.9662	103.5%
				Average Correction Factor	0.9865	101.4%

Notes: As found span is 11% low. No multipoint as founds since instrument is out of limits. Swapped out pump and charcoal pack. Adjusted the span.

Calibration Performed By: Max Farrell

Wood Buffalo Environmental Association

NO_X Calibration Summary

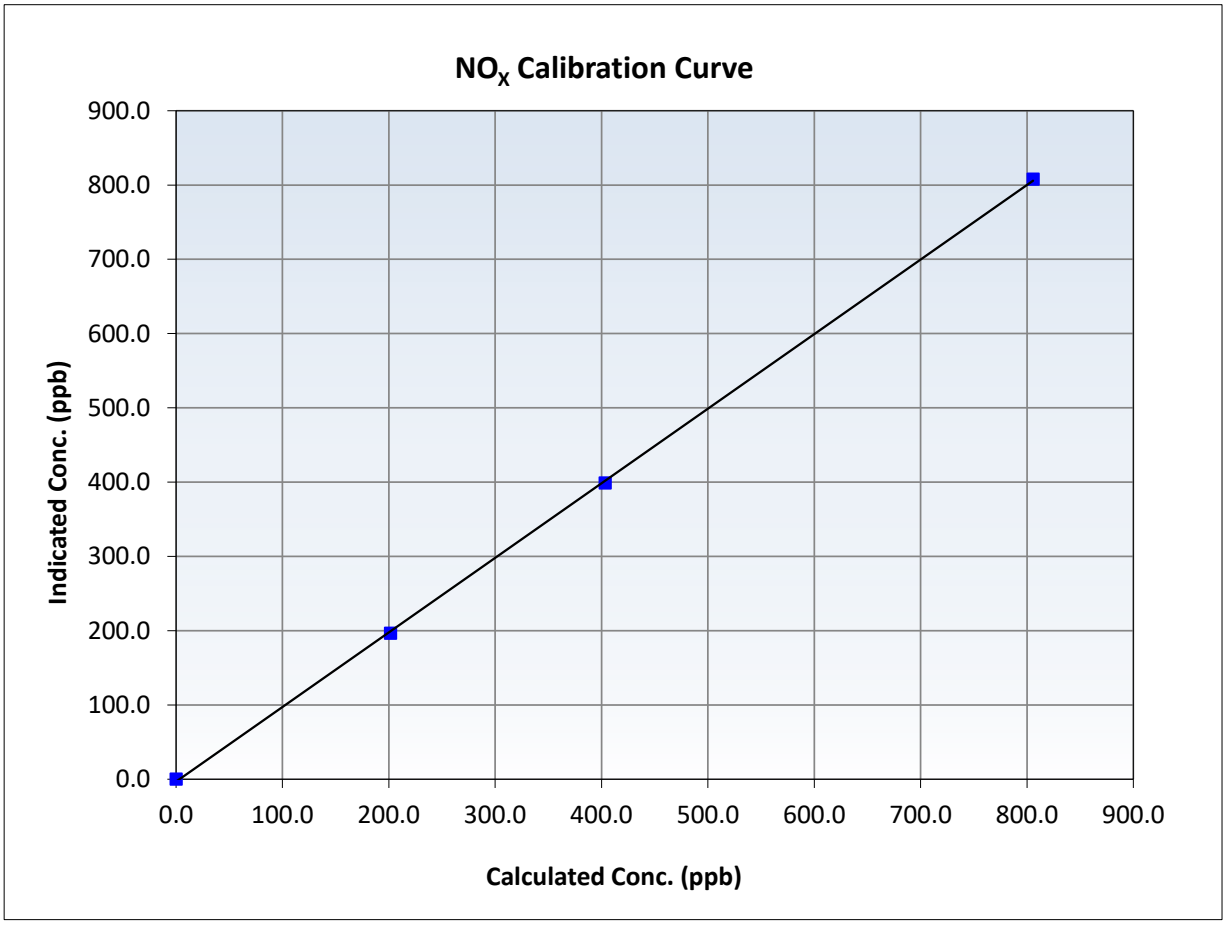
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	July 17, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	10:34	End Time (MST):	16:05
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
805.7	807.8	0.9974
403.4	399.1	1.0107
201.7	196.8	1.0248

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999920	*≥0.995*
Slope	1.004055	*0.90 - 1.10*
Intercept	-3.172683	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

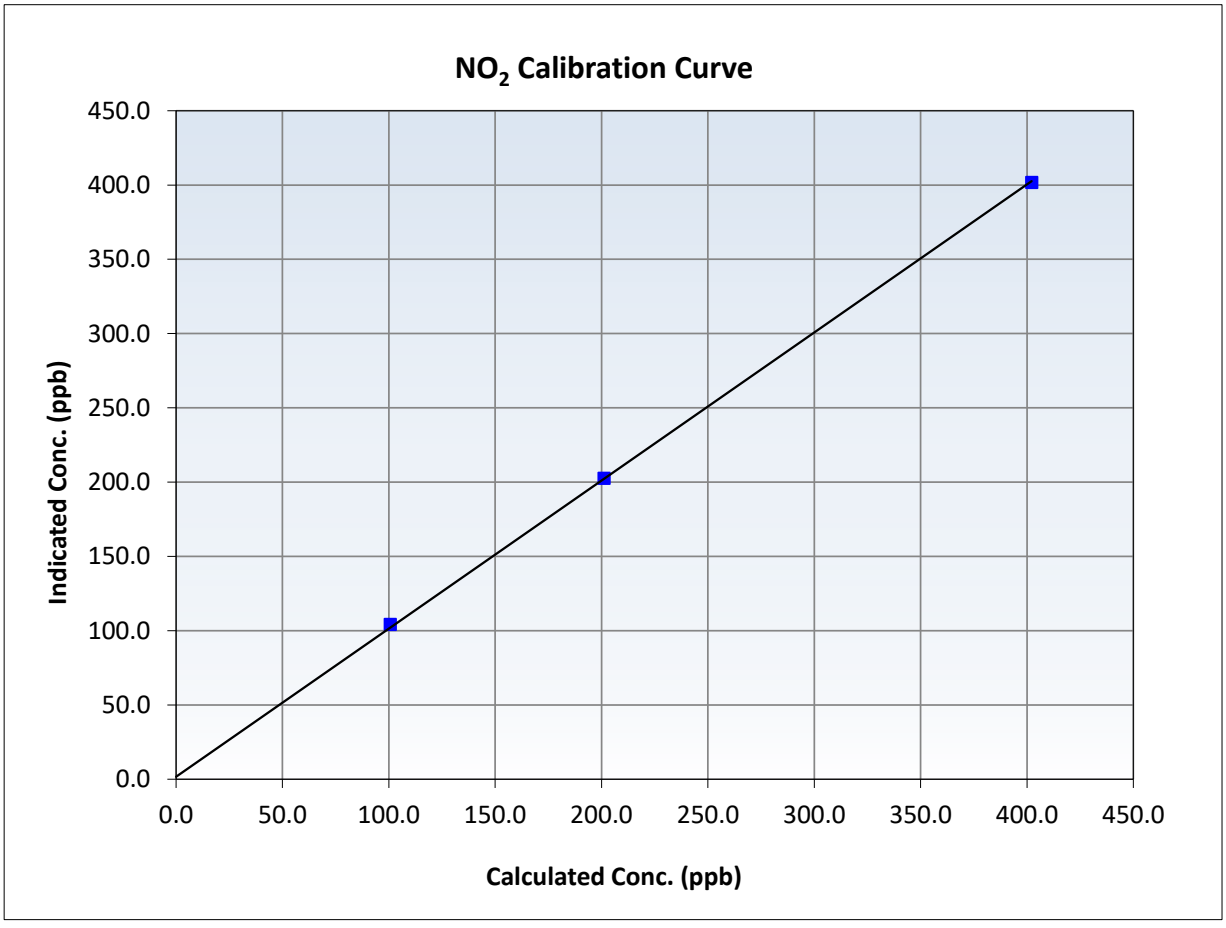
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	July 17, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	10:34	End Time (MST):	16:05
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
402.2	401.8	1.0009
201.2	202.7	0.9925
100.7	104.2	0.9662

Statistical Evaluation		Limits
Correlation Coefficient	0.999897	≥0.995
Slope	0.996864	0.90 - 1.10
Intercept	1.668208	+/-20



Wood Buffalo Environmental Association

NO Calibration Summary

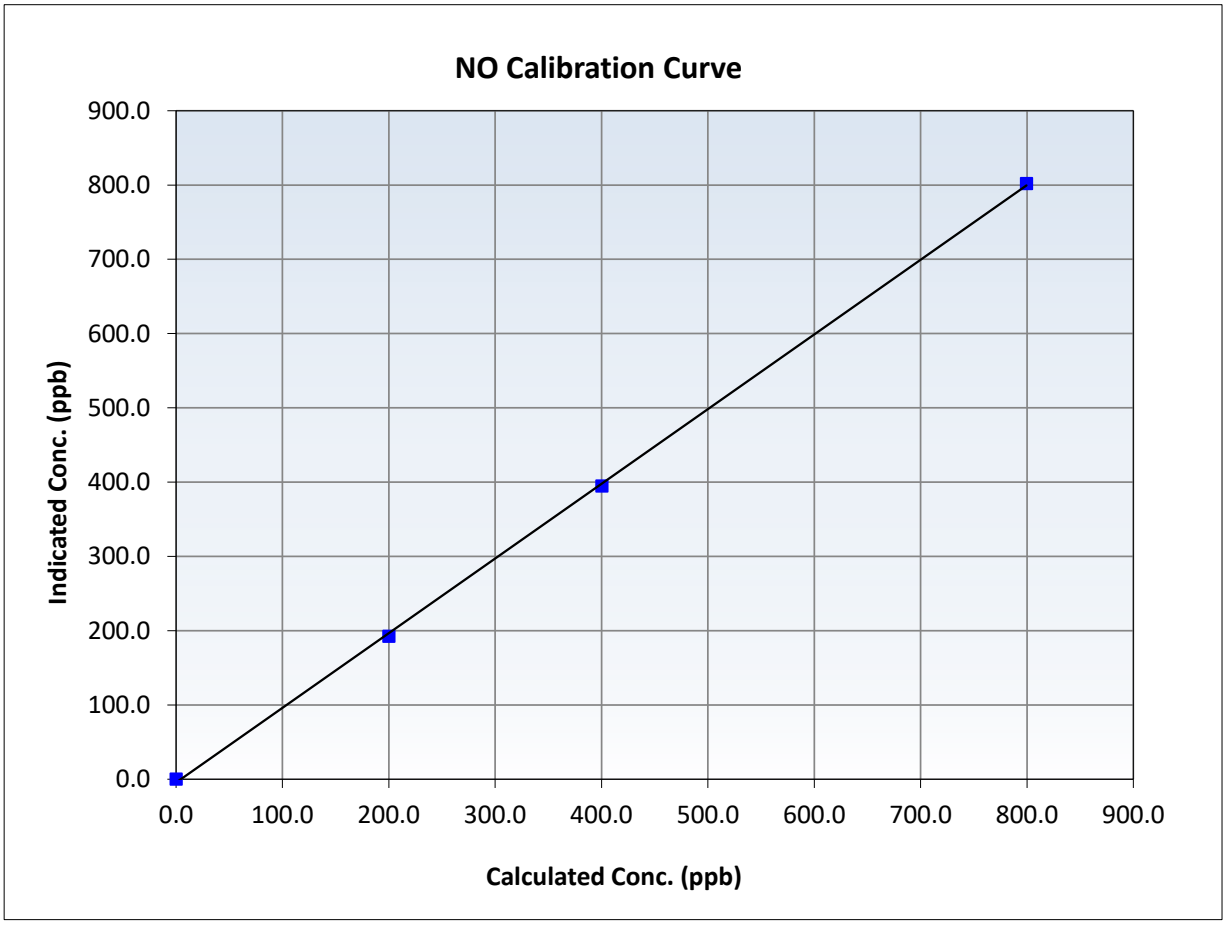
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	July 17, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	10:34	End Time (MST):	16:05
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

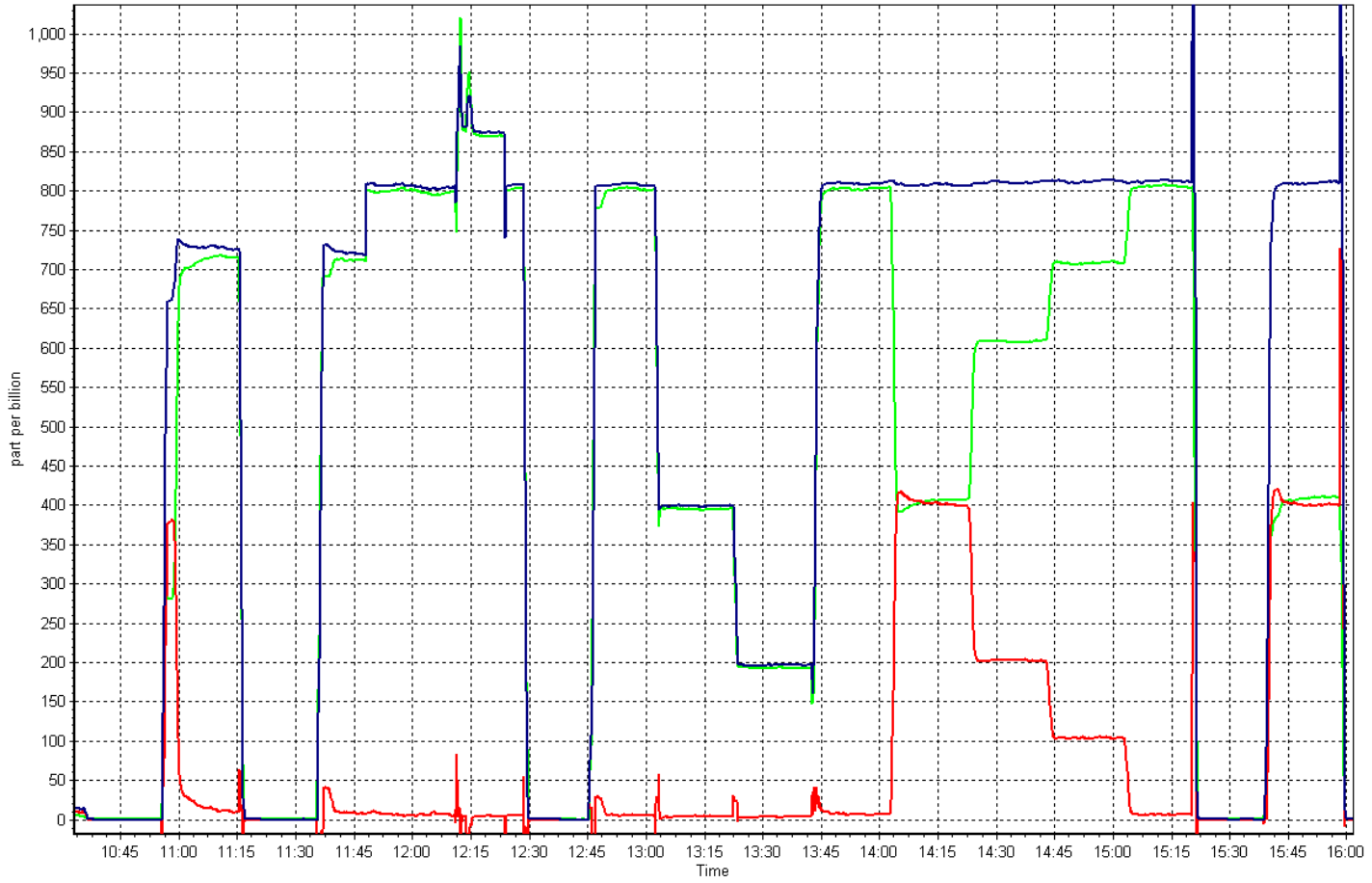
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
799.5	802.1	0.9968
400.3	394.7	1.0142
200.1	192.7	1.0386

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999840	*≥0.995*
Slope	1.005508	*0.90 - 1.10*
Intercept	-4.490645	*+/-20*



NO_X Calibration Plot Date: July 29, 2025 Location: Fort McKay South



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Fort McKay South	Station number:	AMS 13
Calibration Date:	July 4, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	9:45	End time (MST):	12:52
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	Teledyne API T750	Serial Number:	281
ZAG Make/Model:	Teledyne API 751H	Serial Number:	321

Analyzer Information

Analyzer make:	Teledyne API T400	Analyzer serial #:	7413
Analyzer Range	0 - 500 ppb		

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.003314	1.007771	Backgd or Offset:	-2.6	-2.5
Calibration intercept:	0.720000	1.040000	Coeff or Slope:	1.063	1.041

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	800.0	0.0	-0.7	----
As found High point	5000	950.2	400.0	411.8	0.970
As found Mid point					
As found Low point					
Baseline Corr As found:	412.5	Previous response	402.0	*% change	2.5%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	800.0	0.0	0.3	----
High point	5000	955.4	400.0	403.7	0.991
Mid point	5000	781.1	200.0	203.2	0.984
Low point	5000	668.6	100.0	102.4	0.977
As left zero	5000	800.0	0.0	-0.4	----
As left span	5000	963.0	400.0	406.9	0.983
				Average Correction Factor	0.984

Notes: Sample inlet filter was changed after as founds. Adjusted span only.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

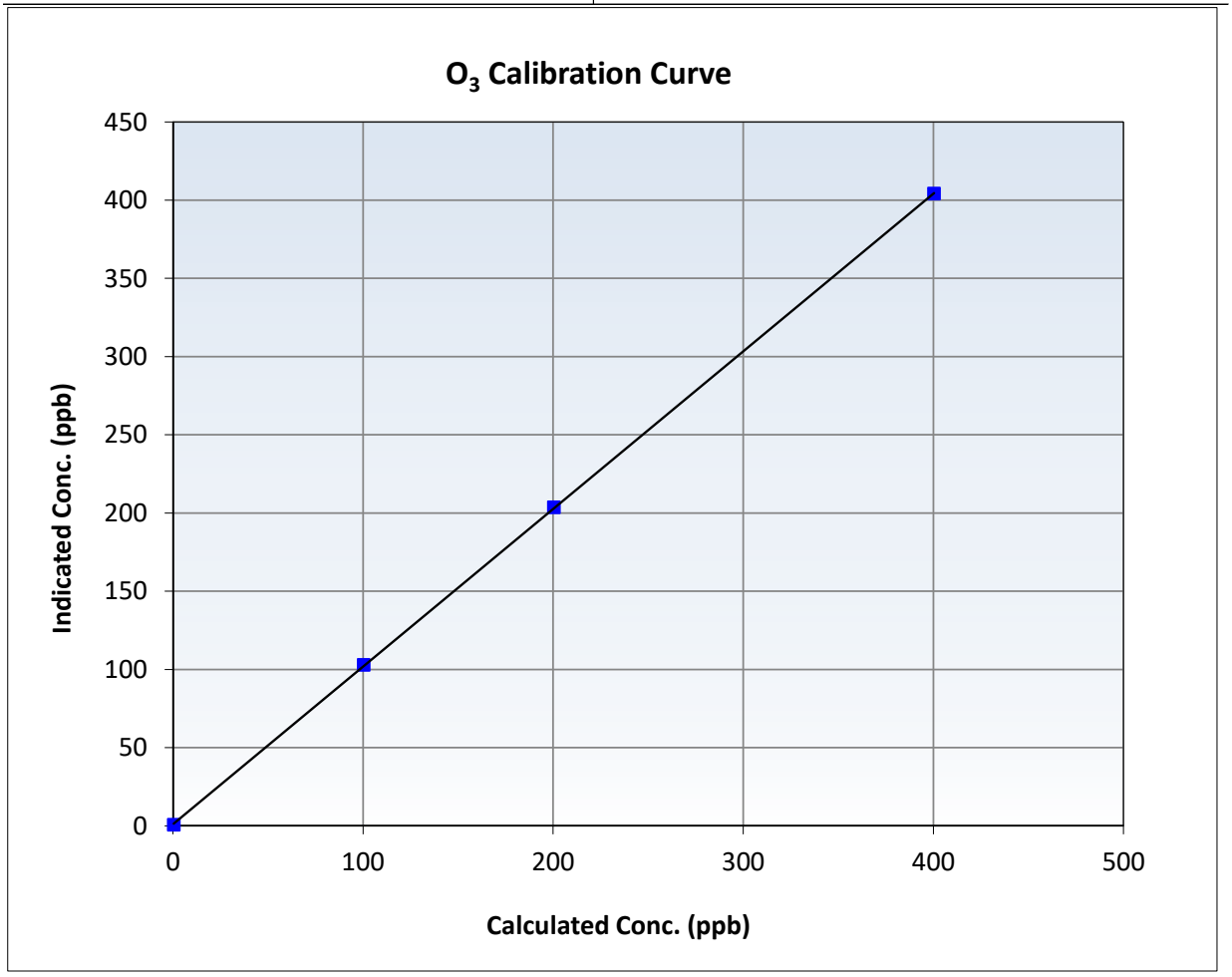
O_3 Calibration Summary

Station Information

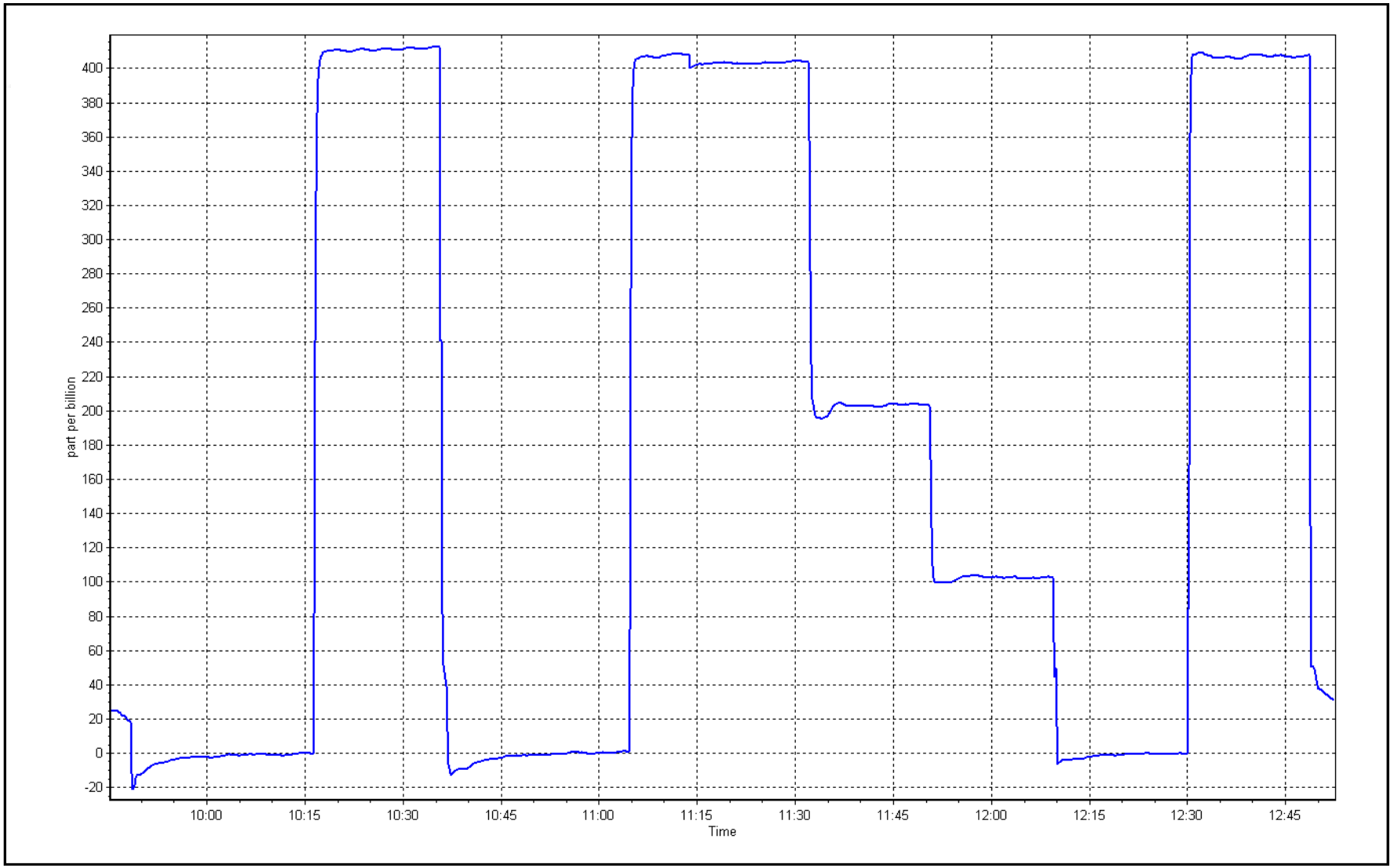
Calibration Date:	July 4, 2025	Previous Calibration:	June 24, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:45	End Time (MST):	12:52
Analyzer make:	Teledyne API T400	Analyzer serial #:	7413

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.3	----	Correlation Coefficient	0.999984	*≥0.995*
400.0	403.7	0.9908	Slope	1.007771	*0.90 - 1.10*
200.0	203.2	0.9843			
100.0	102.4	0.9766	Intercept	1.040000	*+/- 5*



O_3 Calibration Plot Date: July 4, 2025 Location: Fort McKay South



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Fort McKay South	Station number:	AMS 13
Calibration Date:	July 21, 2025	Last Cal Date:	June 2, 2025
Start time (MST):	10:34	End time (MST):	10:48
Analyzer Make:	Teledyne API T640	S/N:	1335
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388755
Temp/RH standard:	Alicat FP-25BT	S/N:	388755

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	15.5	15.01	15.5	☐	+/- 2 °C
P (mmHg)	736.3	737.87	736.3	☐	+/- 10 mmHg
Flow (LPM)	5.03	5.06	5.03	☐	+/- 0.25 LPM
PW% (pump)	41	-----	41	☐	>80%

Zero Verification — PM w/o HEPA: 2.2 — PM w/ HEPA: 0.0 — <0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: June 10, 2024 — Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: June 2, 2025

Date Disposable Filter Changed: June 2, 2025

Post- maintenance Zero Verification: PM w/ HEPA: _____ <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: June 2, 2025

Date RH/T Sensor Cleaned: June 2, 2025

Notes: No adjustments made.

Calibration by: Sean Bala

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS14
ANZAC
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Anzac	Station number:	AMS 14
Calibration Date:	July 10, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	10:04	End time (MST):	13:32
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.32	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC462030			
Removed Cal Gas Conc:	50.32	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	3060
Zero Air Gen Model:	API T701H		Serial Number:	357

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	0710321322	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.004081	1.009216	Backgd or Offset:	25.6	25.5
Calibration intercept:	-1.920292	-1.025803	Coeff or Slope:	1.111	1.111

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4937	79.6	798.4	804.0	0.993
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	804.1	Previous response	799.8	*% change	0.5%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4937	79.6	798.4	805.5	0.991
Mid point	4977	39.7	398.2	399.5	0.997
Low point	4992	19.7	197.8	198.4	0.997
As left zero	5000	0.0	0.0	-0.1	----
As left span	4937	79.6	798.4	806.2	0.990
				Average Correction Factor:	0.995

Notes: Changed sample inlet filter after as founds. No adjustments made.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

SO_2 Calibration Summary

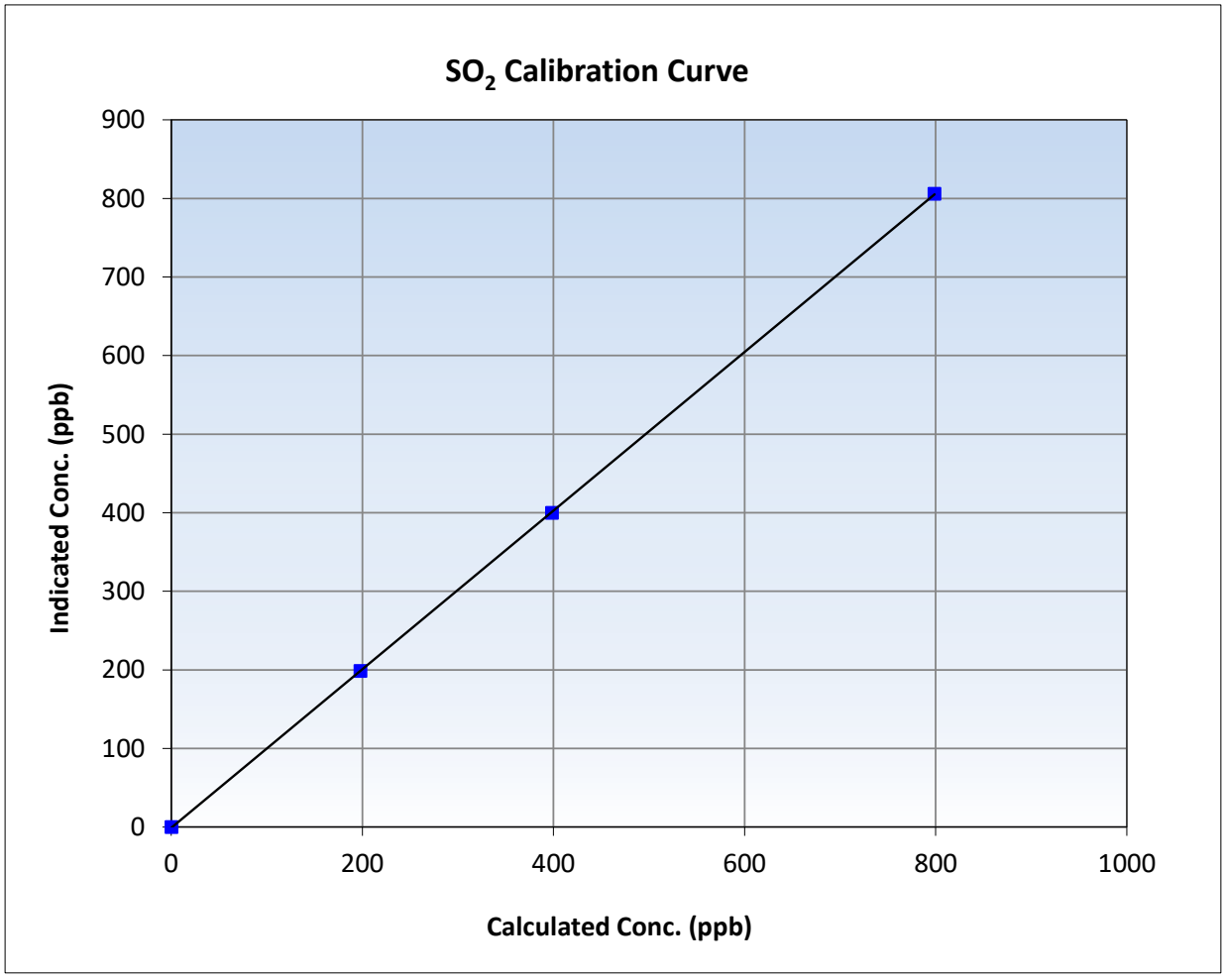
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 9, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:04	End Time (MST):	13:32
Analyzer make:	Thermo 43i	Analyzer serial #:	0710321322

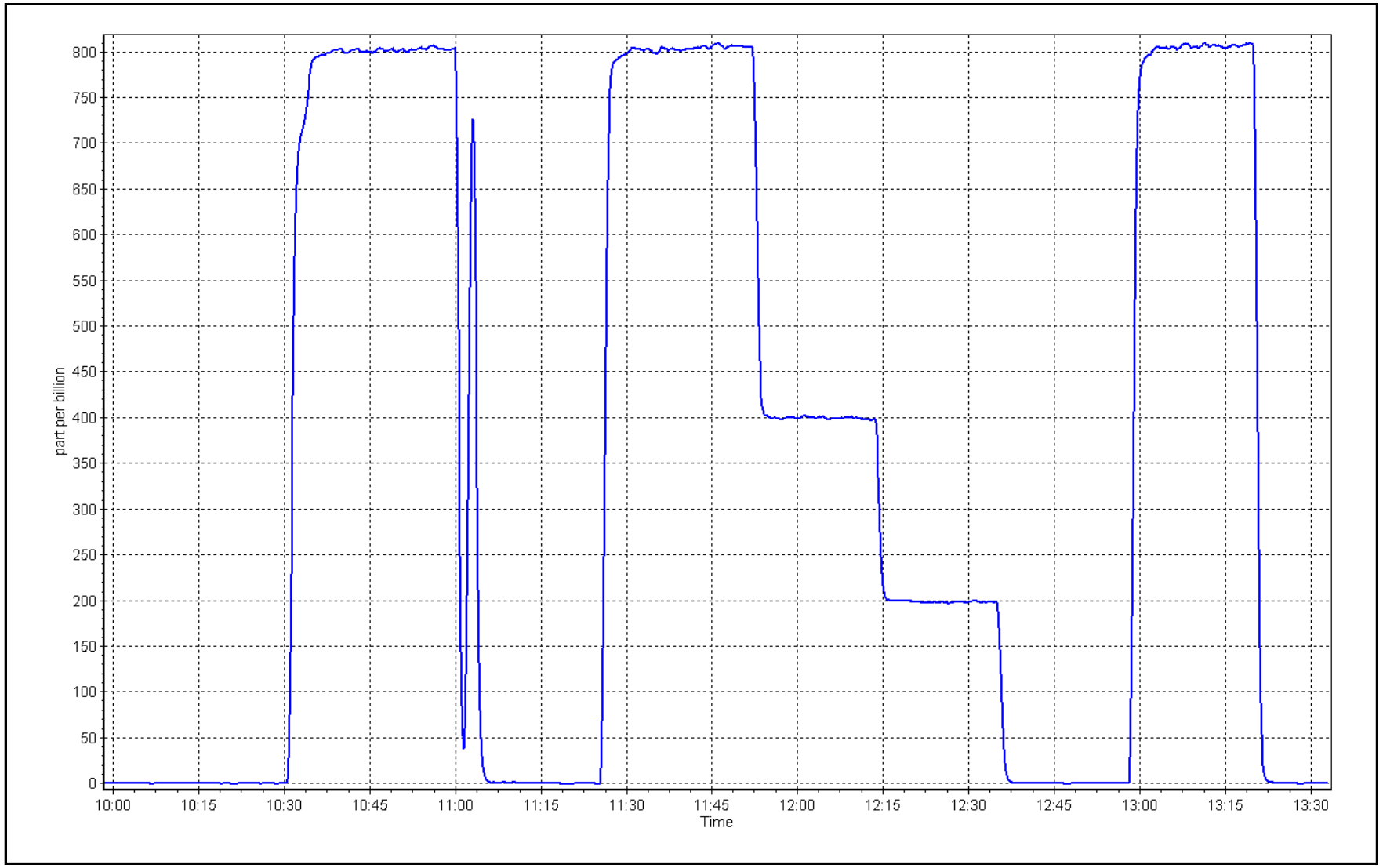
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
798.4	805.5	0.9912
398.2	399.5	0.9968
197.8	198.4	0.9970

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999991	*≥0.995*
Slope	1.009216	*0.90 - 1.10*
Intercept	-1.025803	*+/-30*



SO2 Calibration Plot Date: July 10, 2025 Location: Anzac



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Anzac	Station number:	AMS 14
Calibration Date:	July 7, 2025	Last Cal Date:	June 5, 2025
Start time (MST):	10:06	End time (MST):	16:48
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.15	ppm	Cal Gas Exp Date:	January 3, 2026	
Cal Gas Cylinder #:	CC510379				
Removed Cal Gas Conc:	5.15	ppm	Rem Gas Exp Date:	NA	
Removed Gas Cyl #:	NA		Diff between cyl:		
Calibrator Make/Model:	API T700		Serial Number:	3060	
ZAG Make/Model:	API 701H		Serial Number:	357	

Analyzer Information

Analyzer make:	Thermo 43i-TLE		Analyzer serial #:	1218153582	
Converter make:	CD Nova CDN-101		Converter serial #:	629	
Analyzer Range	0 - 100 ppb		Converter Temp:	800	degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.011025	1.020456	Backgd or Offset:	2.2	2.4
Calibration intercept:	-0.464585	-0.444257	Coeff or Slope:	0.944	1.015

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4938	77.9	80.0	80.5	0.992
As found Mid point	4973	38.9	40.0	39.2	1.017
As found Low point	4997	19.4	19.9	19.0	1.043
New cylinder response					

Baseline Corr As found:	80.6	Prev response:	80.40	*% change:	0.2%
Baseline Corr 2nd AF pt:	39.3	AF Slope:	1.010489	AF Intercept:	-0.684586
Baseline Corr 3rd AF pt:	19.1	AF Correlation:	0.999741	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4938	77.9	80.0	81.3	0.983
Mid point	4973	38.9	40.0	40.3	0.991
Low point	4997	19.4	19.9	19.3	1.032
As left zero	5000	0.0	0.0	0.1	----
As left span	4938	77.9	80.0	78.2	1.022
SO2 Scrubber Check	4941	79.7	793.7	0.0	----
Date of last scrubber change:		28-May-25		Ave Corr Factor	1.002
Date of last converter efficiency test:					

Notes: Sample inlet filter changed after asfounds. Adjusted span only.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

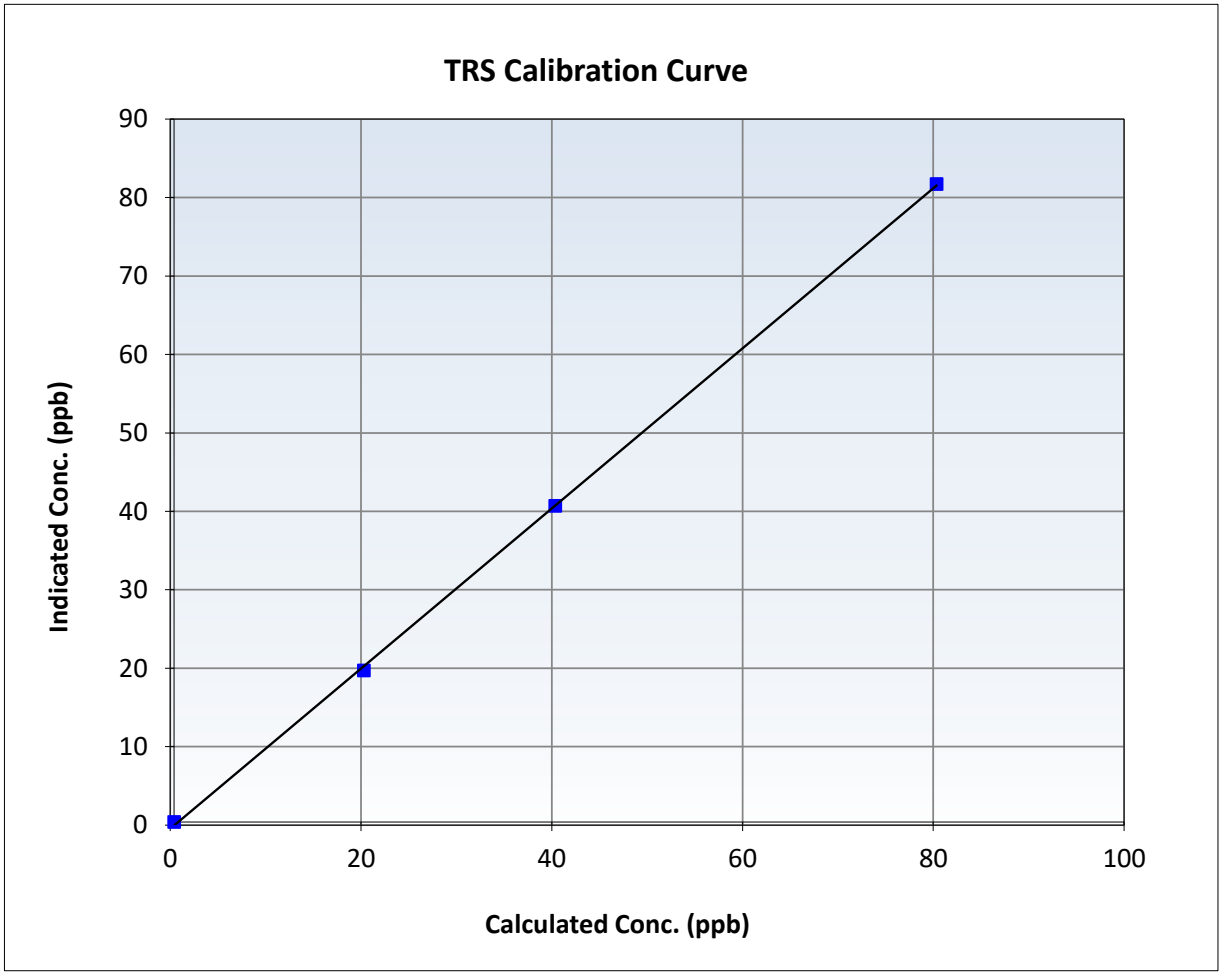
TRS Calibration Summary

Station Information

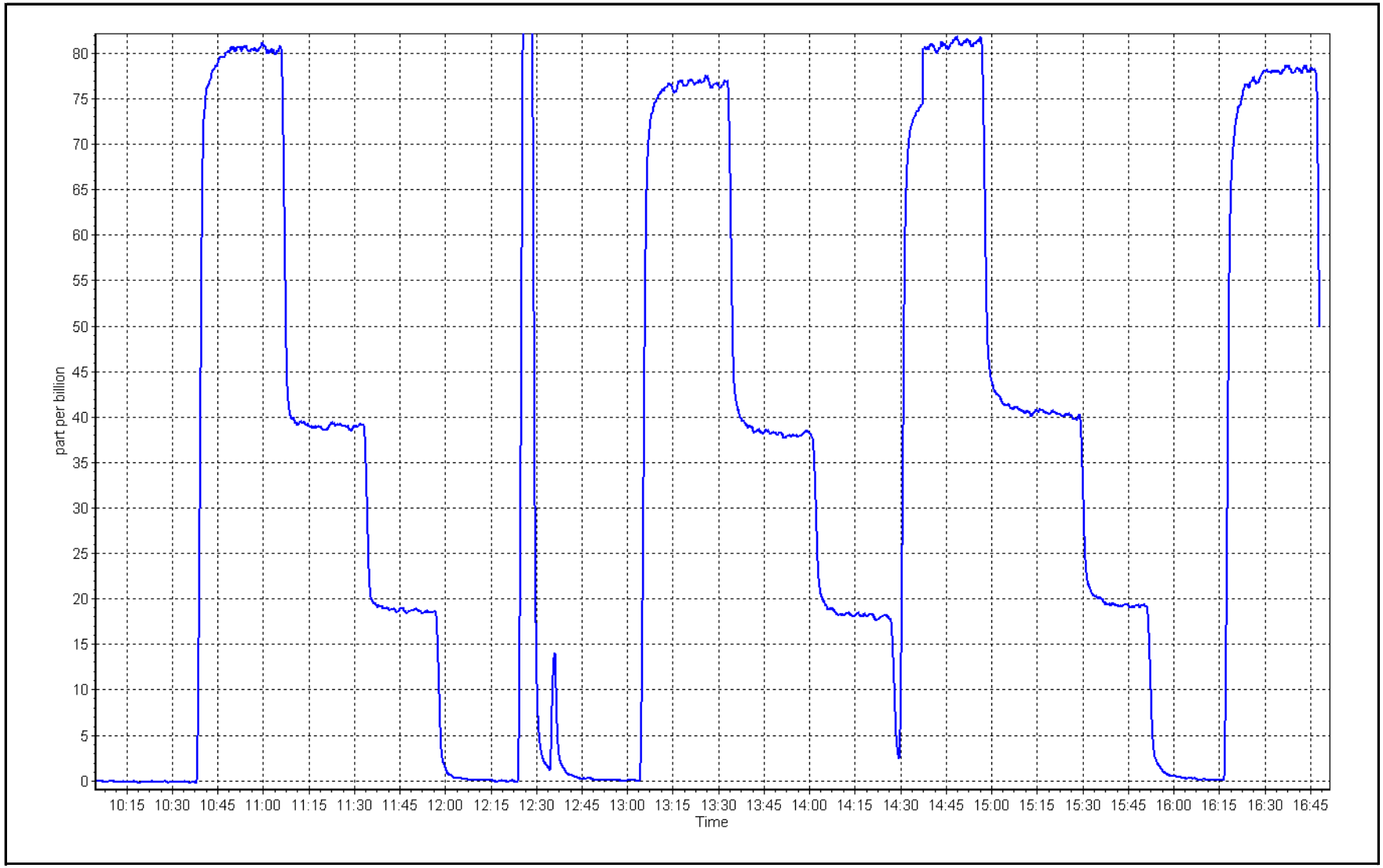
Calibration Date:	July 7, 2025	Previous Calibration:	June 5, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:06	End Time (MST):	16:48
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1218153582

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.0	----	Correlation Coefficient	0.999849	*≥0.995*
80.0	81.3	0.9834	Slope	1.020456	*0.90 - 1.10*
40.0	40.3	0.9915			
19.9	19.3	1.0316	Intercept	-0.444257	*+/-3*



TRS Calibration Plot Date: July 7, 2025 Location: Anzac



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Anzac	Station number:	AMS 14
Calibration Date:	July 10, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	10:04	End time (MST):	13:32
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC462030	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	505.3 ppm	CH4 Equiv Conc.	1068.8 ppm
C3H8 Cal Gas Conc.	204.9 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH4 Conc.	505.3 ppm	CH4 Equiv Conc.	1068.8 ppm
Removed C3H8 Conc.	204.9 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	API T700	Serial Number:	3060
Zero Air Gen model:	API 701H	Serial Number:	357

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1331259521
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.95E-04	2.95E-04	NMHC SP Ratio:	5.82E-05	5.82E-05
CH4 Retention time:	14.9	14.9	NMHC Peak Area:	153524	153524
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4937	79.6	16.96	16.85	1.007
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.85	Prev response	16.87	*% change	-0.1%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4937	79.6	16.96	16.80	1.010
Mid point	4977	39.7	8.46	8.20	1.031
Low point	4992	19.7	4.20	4.03	1.042
As left zero	5000	0.0	0.00	0.00	----
As left span	4937	79.6	16.96	16.69	1.016
				Average Correction Factor	1.028

Notes: Changed sample inlet filter after as founds. No adjustments made.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4937	79.6	8.94	8.87	1.008
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.87	Prev response	8.89	*% change	-0.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4937	79.6	8.94	8.82	1.014
Mid point	4977	39.7	4.46	4.34	1.027
Low point	4992	19.7	2.21	2.14	1.035
As left zero	5000	0.0	0.00	0.00	----
As left span	4937	79.6	8.94	8.76	1.021
				Average Correction Factor	1.025

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4937	79.6	8.02	7.98	1.005
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.98	Prev response	7.97	*% change	0.1%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4937	79.6	8.02	7.98	1.005
Mid point	4977	39.7	4.00	3.86	1.037
Low point	4992	19.7	1.99	1.89	1.050
As left zero	5000	0.0	0.00	0.00	----
As left span	4937	79.6	8.02	7.93	1.012
				Average Correction Factor	1.031

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	1.000547	0.992013
THC Cal Offset:	-0.101304	-0.088253
CH4 Cal Slope:	1.001638	0.996805
CH4 Cal Offset:	-0.060777	-0.058244
NMHC Cal Slope:	0.999287	0.987422
NMHC Cal Offset:	-0.039927	-0.029611

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

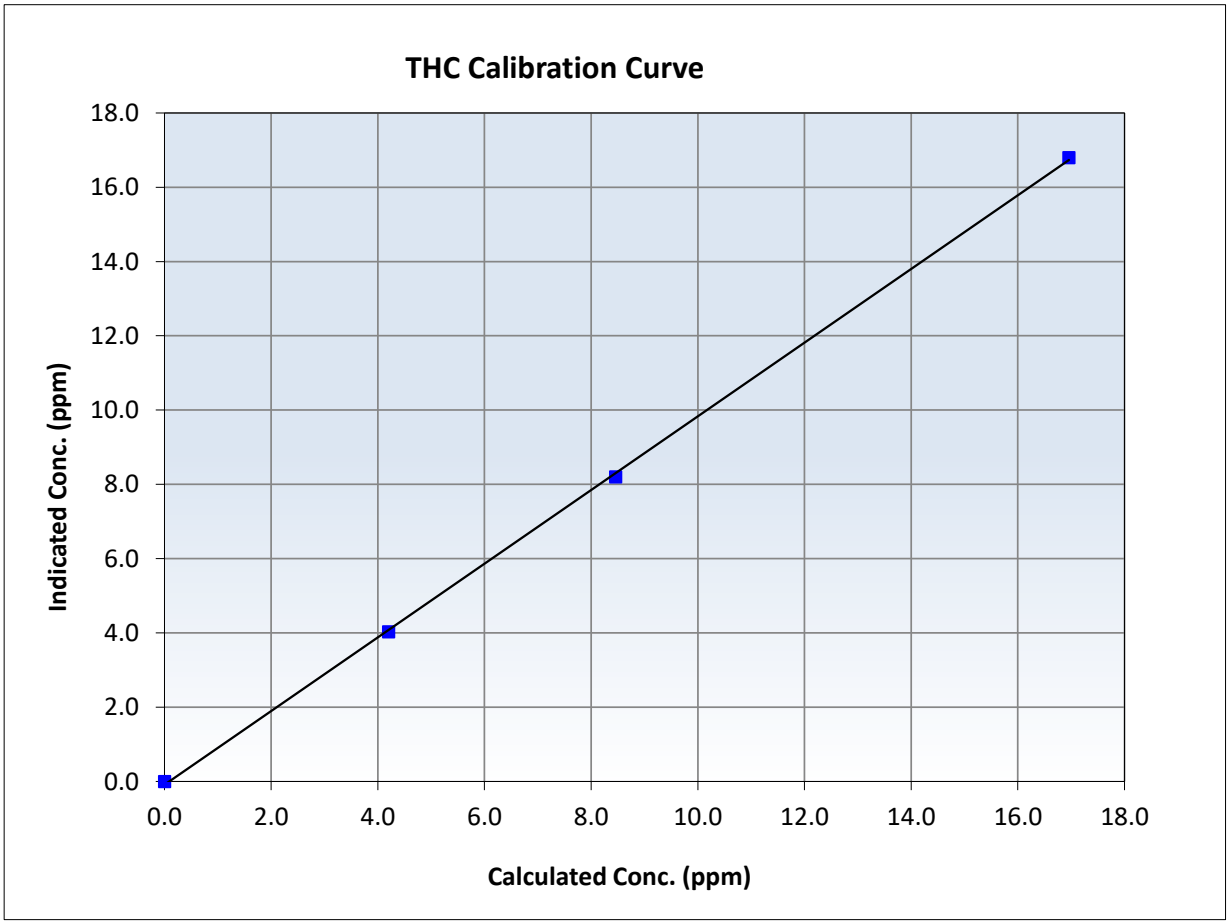
THC Calibration Summary

Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 9, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:04	End Time (MST):	13:32
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259521

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999841	≥0.995
16.96	16.80	1.0096	Slope	0.992013	0.90 - 1.10
8.46	8.20	1.0314			
4.20	4.03	1.0425	Intercept	-0.088253	+/-0.5



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CH_4 Calibration Summary

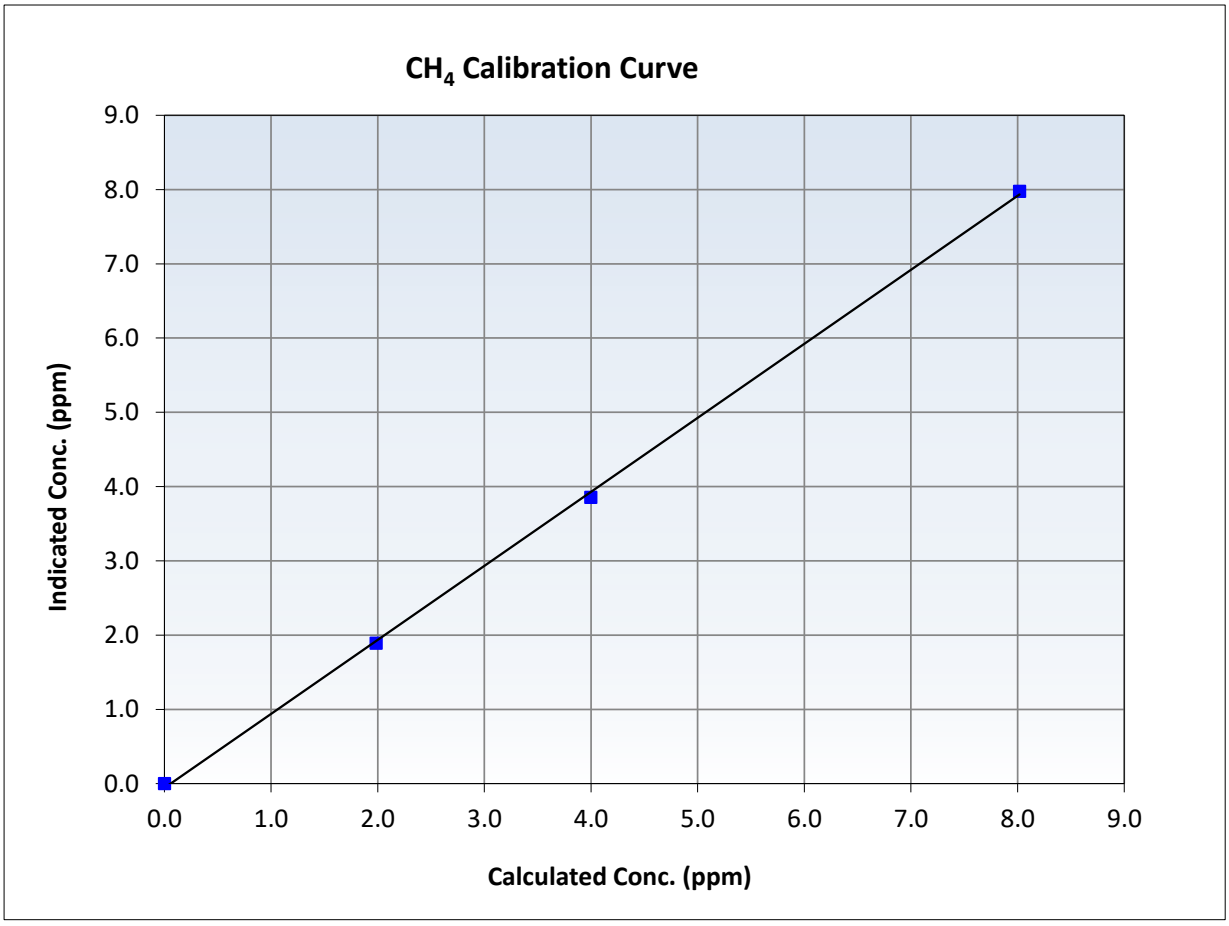
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 9, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:04	End Time (MST):	13:32
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259521

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.02	7.98	1.0051
4.00	3.86	1.0370
1.99	1.89	1.0498

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999678	*≥0.995*
Slope	0.996805	*0.90 - 1.10*
Intercept	-0.058244	*+/-0.5*



Wood Buffalo Environmental Association

NMHC Calibration Summary

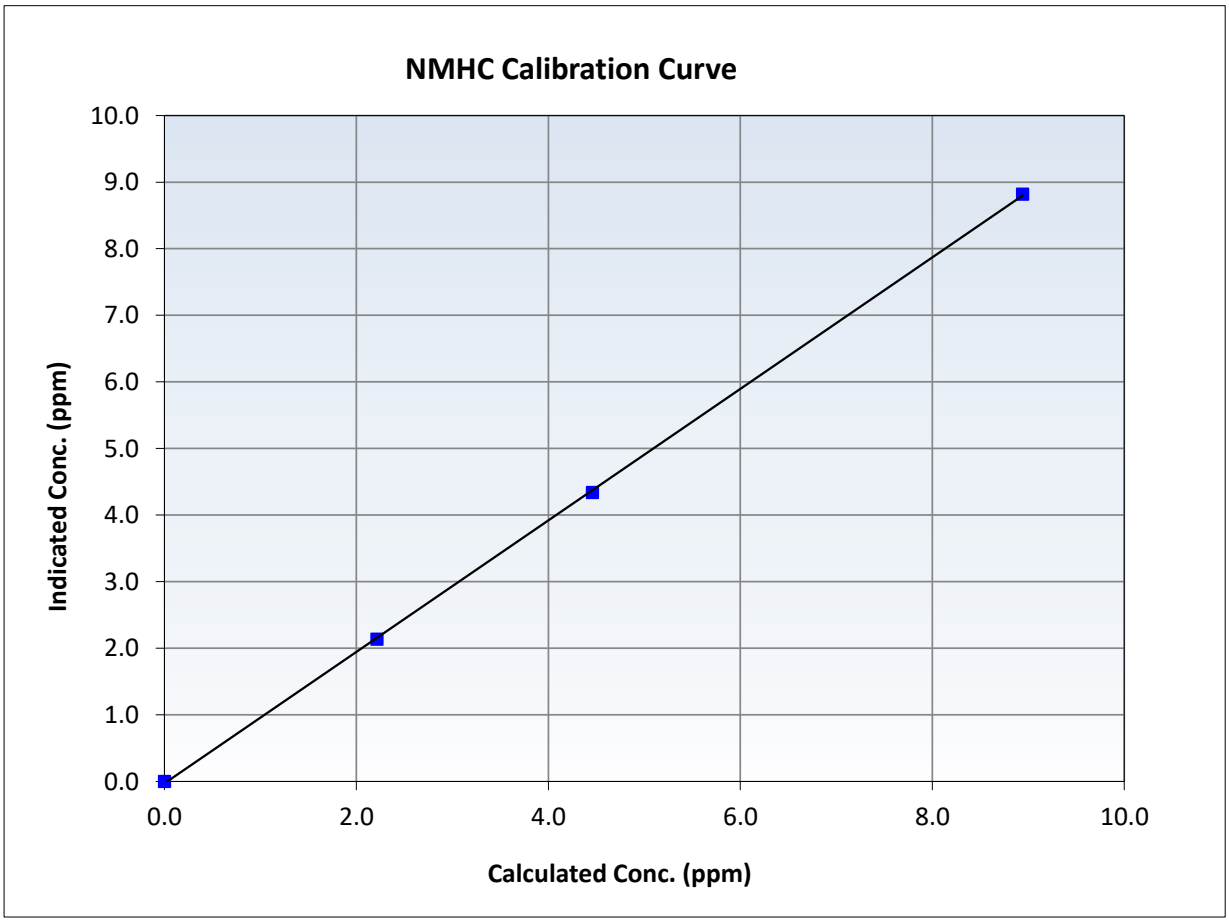
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 9, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:04	End Time (MST):	13:32
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259521

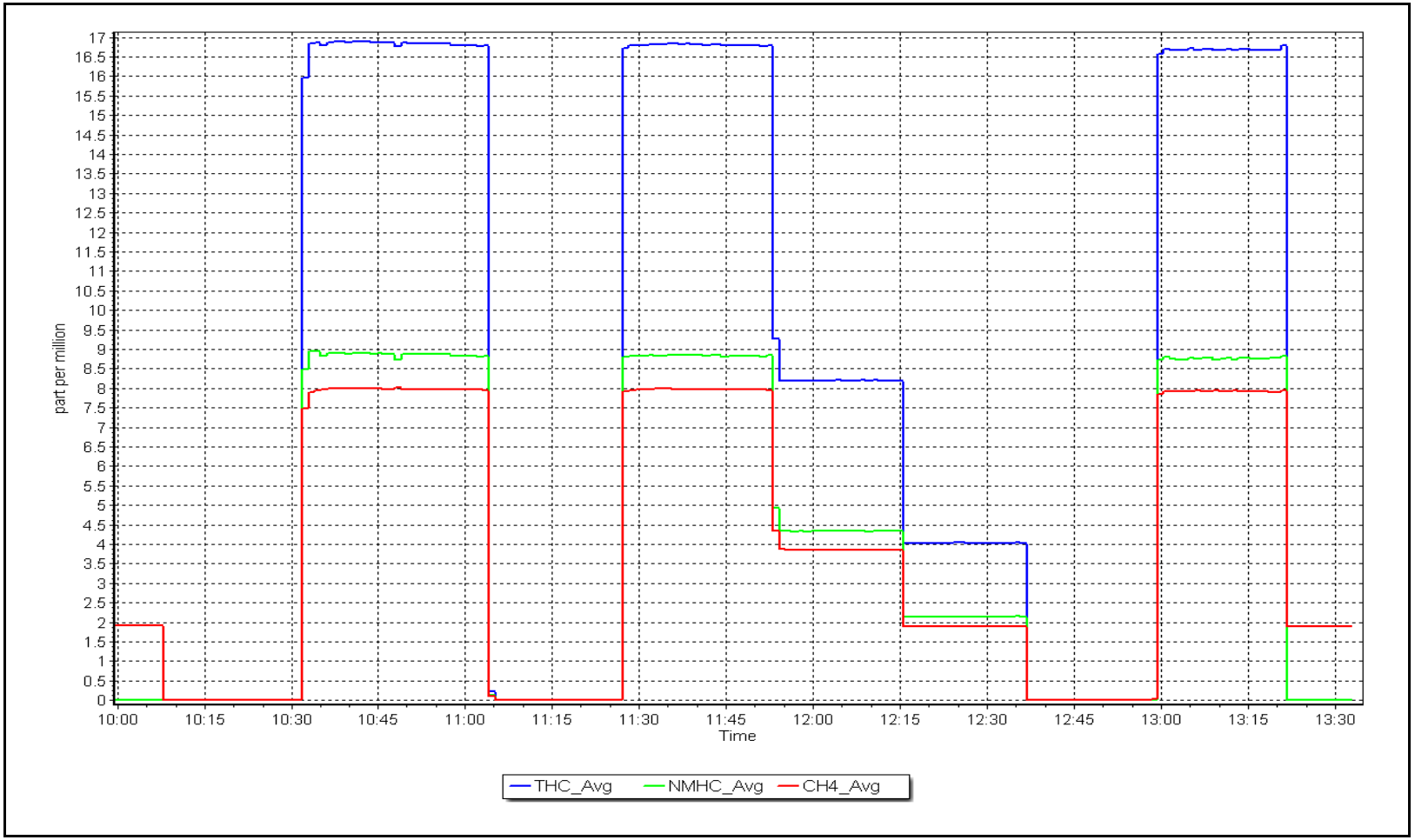
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.94	8.82	1.0138
4.46	4.34	1.0270
2.21	2.14	1.0355

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999939	*≥0.995*
Slope	0.987422	*0.90 - 1.10*
Intercept	-0.029611	*+/-0.5*



NMHC Calibration Plot Date: July 10, 2025 Location: Anzac



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Anzac
Station number:	AMS 14
Calibration Date:	July 15, 2025
Last Cal Date:	June 4, 2025
Start time (MST):	9:32
End time (MST):	14:16
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0037092		Cal Gas Expiry Date:	May 16, 2031	
NOX Cal Gas Conc:	60.7	ppm	NO Cal Gas Conc:	60.40	ppm
Removed Cylinder #:	NA		Removed Gas Exp Date:	NA	
Removed Gas NOX Conc:	60.70	ppm	Removed Gas NO Conc:	60.40	ppm
NOX gas Diff:			NO gas Diff:		
Calibrator Model:	Teledyne API T700		Serial Number:	3060	
ZAG make/model:	Teledyne API T700H		Serial Number:	357	

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.1	-0.1	0.2	----	----
AF High point	4934	66.3	804.8	800.9	4.0	813.7	808.1	5.5	0.9892	0.9909
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X =	813.3	ppb	NO =	810.7	ppb	
Baseline Corr 1st pt	NO_X =	813.6	ppb	NO =	808.2	ppb	
Baseline Corr 2nd pt	NO_X =	NA	ppb	NO =	NA	ppb	
Baseline Corr 3rd pt	NO_X =	NA	ppb	NO =	NA	ppb	

* = > +/-5% change initiates investigation

*Percent Change	NO_X =	0.0%	
*Percent Change	NO =	-0.3%	

As Found Statistics

As found	NO_X r^2:	Nx Sl:	Nx Int:
As found	NO r^2:	NO Sl:	NO Int:
As found	NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1152430008

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.435	1.435	NO bkgnd or offset:	3.9	3.9
NOX coeff or slope:	0.996	0.996	NOX bkgnd or offset:	3.9	3.9
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	157.5	158.5

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.010781	1.008381
NO_X Cal Offset:	-0.251265	-0.531254
NO Cal Slope:	1.015030	1.011974
NO Cal Offset:	-2.231101	-2.410523
NO_2 Cal Slope:	0.995053	0.996563
NO_2 Cal Offset:	-1.224921	-1.047395

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.2	0.0	0.2	----	----
High point	4934	66.3	804.8	800.9	4.0	811.2	809.0	2.2	0.9922	0.9899
Mid point	4985	33.2	401.6	399.6	2.0	404.7	401.5	3.3	0.9923	0.9953
Low point	5004	16.7	201.9	200.9	1.0	201.9	198.0	4.0	1.0000	1.0147
As left zero	5000	0.0	0.0	0.0	0.0	0.3	0.1	0.2	----	----
As left span	4934	66.3	804.8	425.4	379.4	809.9	425.4	384.4	0.9937	1.0000
								Average Correction Factor	0.9948	1.0000

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.2	----	----
High GPT point	806.3	420.8	389.5	387.8	1.0043	99.6%
Mid GPT point	806.3	598.4	211.9	209.5	1.0113	98.9%
Low GPT point	806.3	700.7	109.6	106.8	1.0260	97.5%
				Average Correction Factor	1.0139	98.6%

Notes: Sample inlet filter changed after as founds. No adjustments made.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

NO_X Calibration Summary

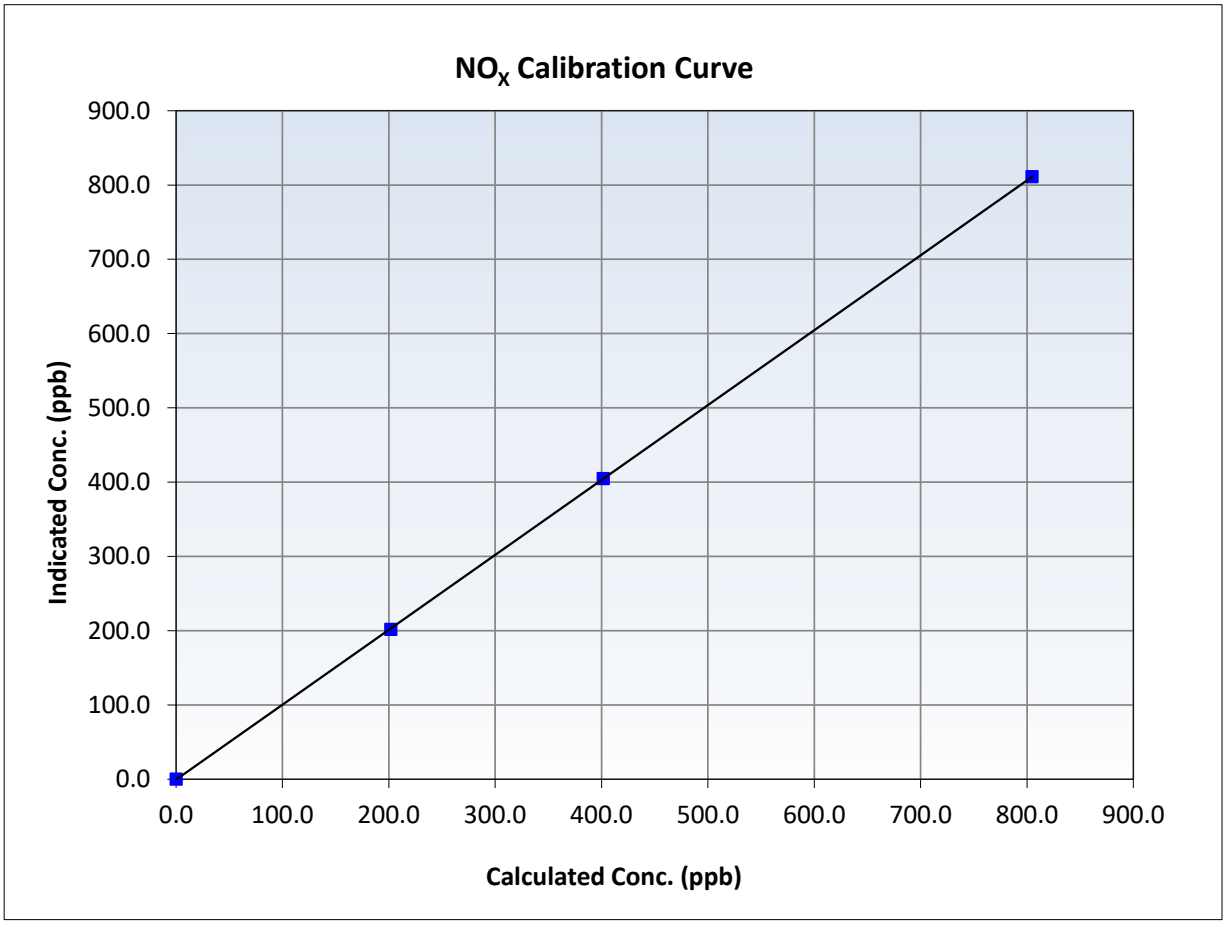
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 4, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	9:32	End Time (MST):	14:16
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430008

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
804.8	811.2	0.9922
401.6	404.7	0.9923
201.9	201.9	1.0000

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999994	*≥0.995*
Slope	1.008381	*0.90 - 1.10*
Intercept	-0.531254	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

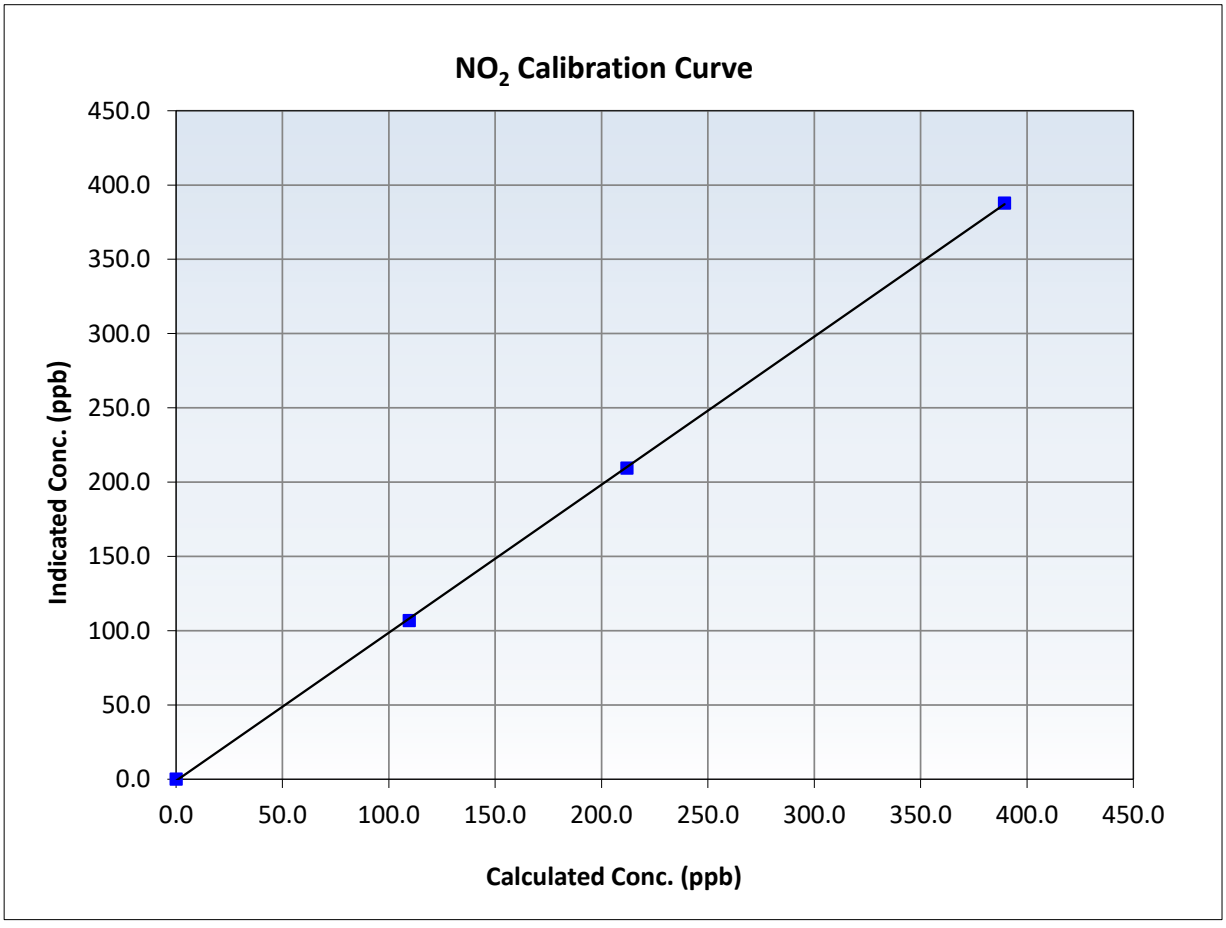
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 4, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	9:32	End Time (MST):	14:16
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430008

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
389.5	387.8	1.0043
211.9	209.5	1.0113
109.6	106.8	1.0260

Statistical Evaluation		Limits
Correlation Coefficient	0.999948	≥0.995
Slope	0.996563	0.90 - 1.10
Intercept	-1.047395	+/-20



Wood Buffalo Environmental Association

NO Calibration Summary

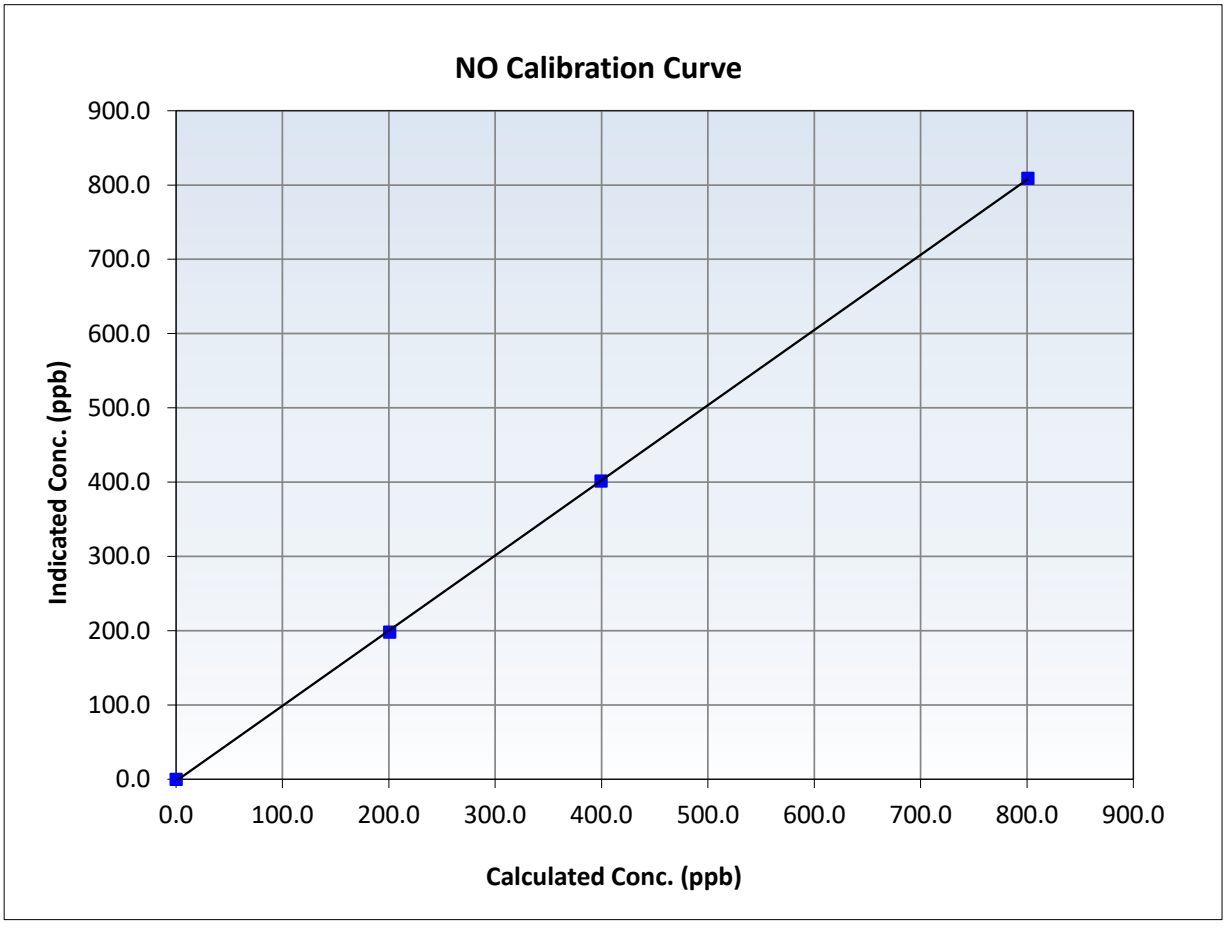
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 4, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	9:32	End Time (MST):	14:16
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430008

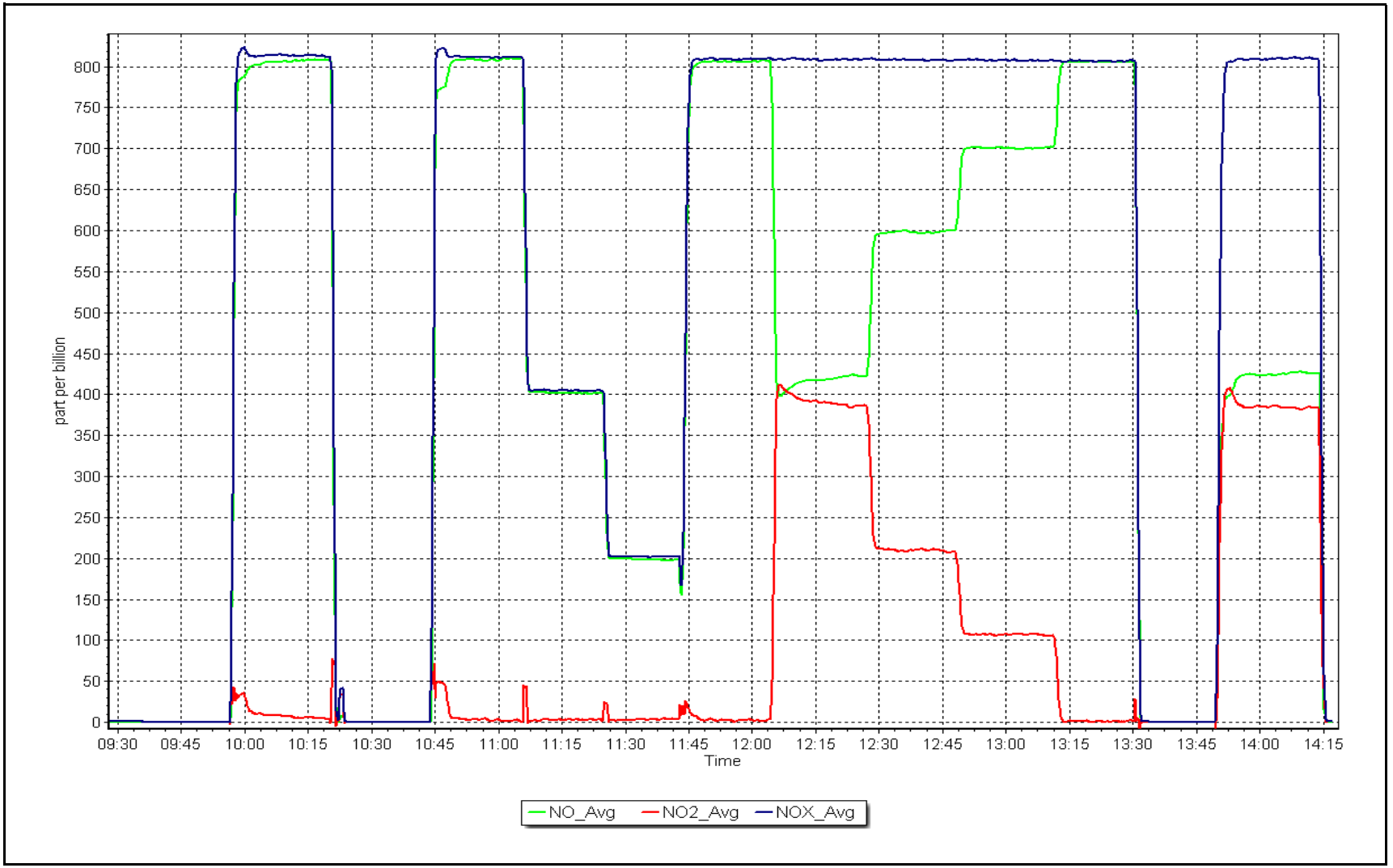
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
800.9	809.0	0.9899
399.6	401.5	0.9953
200.9	198.0	1.0147

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999957	*≥0.995*
Slope	1.011974	*0.90 - 1.10*
Intercept	-2.410523	*+/-20*



NO_X Calibration Plot Date: July 15, 2025 Location: Anzac



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Anzac	Station number:	AMS 14
Calibration Date:	July 4, 2025	Last Cal Date:	June 2, 2025
Start time (MST):	10:54	End time (MST):	14:03
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	API T700	Serial Number:	3060
ZAG Make/Model:	API 701H	Serial Number:	357

Analyzer Information

Analyzer make:	Thermo 49i	Analyzer serial #:	1426262595
Analyzer Range	0 - 500 ppb		

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	0.982886	0.994486	Backgd or Offset:	1.6	1.6
Calibration intercept:	1.220000	0.540000	Coeff or Slope:	1.691	1.691

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.6	----
As found High point	5000	935.9	400.0	399.2	1.004
As found Mid point					
As found Low point					
Baseline Corr As found:	398.6	Previous response	394.4	*% change	1.1%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.4	----
High point	5000	935.9	400.0	398.1	1.005
Mid point	5000	817.5	200.0	200.0	1.000
Low point	5000	722.8	100.0	99.8	1.002
As left zero	5000	0.0	0.0	0.4	----
As left span	5000	935.9	400.0	401.9	0.995
				Average Correction Factor	1.002

Notes: Sample inlet filter changed after asfounds. No adjustments made.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

O_3 Calibration Summary

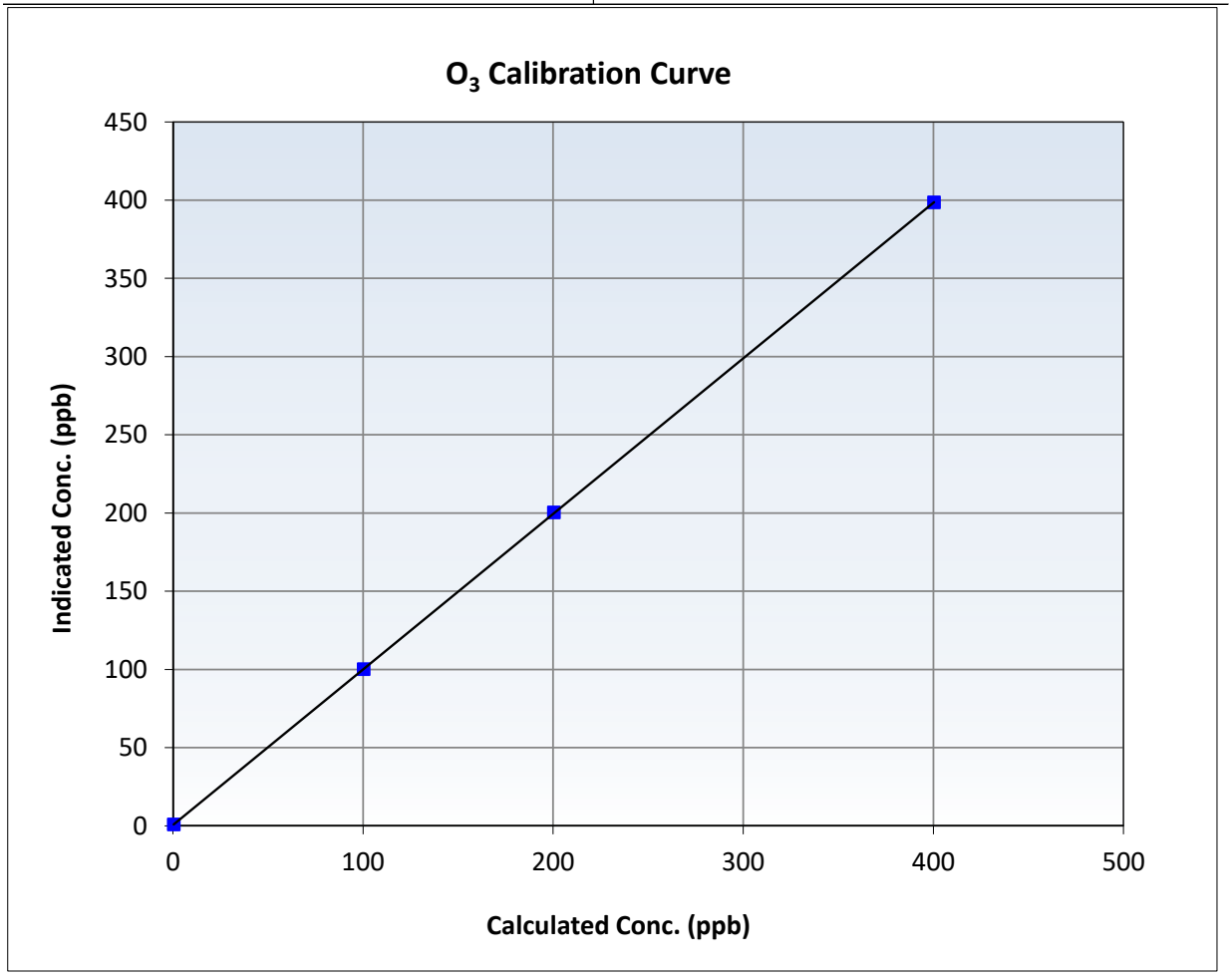
Station Information

Calibration Date:	July 4, 2025	Previous Calibration:	June 2, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:54	End Time (MST):	14:03
Analyzer make:	Thermo 49i	Analyzer serial #:	1426262595

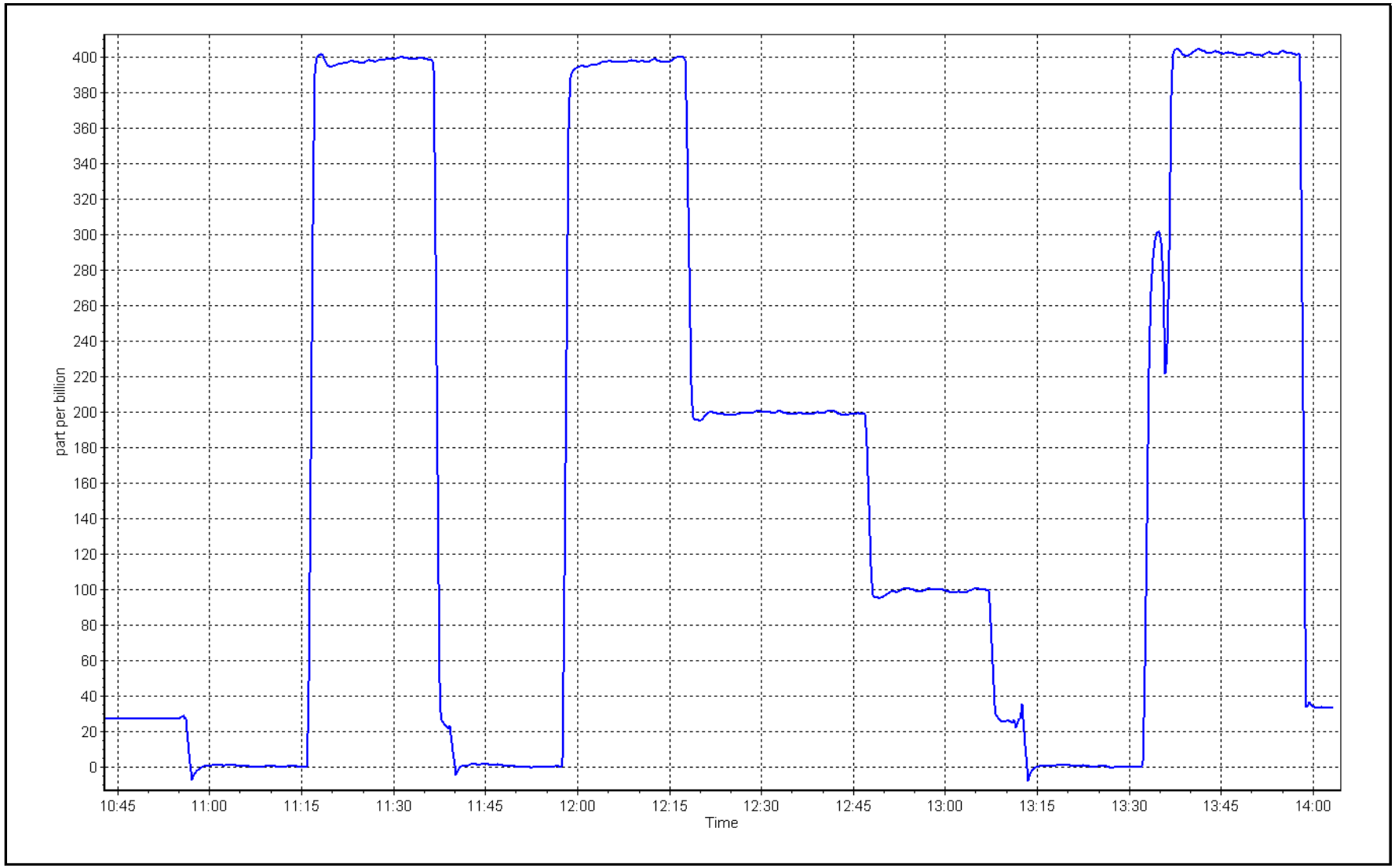
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.4	----
400.0	398.1	1.0048
200.0	200.0	1.0000
100.0	99.8	1.0020

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	0.994486	*0.90 - 1.10*
Intercept	0.540000	*+/- 5*



O_3 Calibration Plot Date: July 4, 2025 Location: Anzac



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Anzac	Station number:	AMS 14
Calibration Date:	July 21, 2025	Last Cal Date:	June 23, 2025
Start time (MST):	10:10	End time (MST):	10:28
Analyzer Make:	AP T640	S/N:	825
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388749
Temp/RH standard:	Alicat FP-25BT	S/N:	388749

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (^{o}C)	13.9	12.88	13.9	☐	+/- 2 ^{o}C
P (mmHg)	716.7	718.03	716.7	☐	+/- 10 mmHg
Flow (LPM)	5.010	4.946	5.010	☐	+/- 0.25 LPM
PW% (pump)	37	-----	37	☐	>80%
Zero Verification	PM w/o HEPA:	11.3	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: — Lot No.: — Expiry Date:

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: May 22, 2025

Date Disposable Filter Changed: June 23, 2025

Post- maintenance Zero Verification: PM w/ HEPA: _____ <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: August 29, 2024

Date RH/T Sensor Cleaned: August 29, 2024

Notes: No adjustments made. Leak check passed. Head cleaned.

Calibration by: Mohammed Kashif

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS17
WAPASU
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Wapasu	Station number:	AMS17
Calibration Date:	July 11, 2025	Last Cal Date:	June 10, 2025
Start time (MST):	10:31	End time (MST):	13:42
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.38	ppm	Cal Gas Exp Date:	January 12, 2029
Cal Gas Cylinder #:	ALM066507			
Removed Cal Gas Conc:	50.38	ppm	Rem Gas Exp Date:	N/A
Removed Gas Cyl #:	N/A		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	2449
Zero Air Gen Model:	Teledyne API 701H		Serial Number:	1238

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1218153459	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.998497	0.997853	Backgd or Offset:	14.0	14.0
Calibration intercept:	-1.680288	-1.279869	Coeff or Slope:	1.109	1.109

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.3	----
As found High point	4921	79.4	800.0	797.8	1.003
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	797.5	Previous response	797.1	*% change	0.1%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.4	----
High point	4921	79.4	800.0	798.3	1.002
Mid point	4960	39.7	400.0	395.6	1.011
Low point	4980	19.8	199.5	197.1	1.012
As left zero	5000	0.0	0.0	0.2	----
As left span	4920	79.4	800.1	801.7	0.998
				Average Correction Factor:	1.009

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

SO_2 Calibration Summary

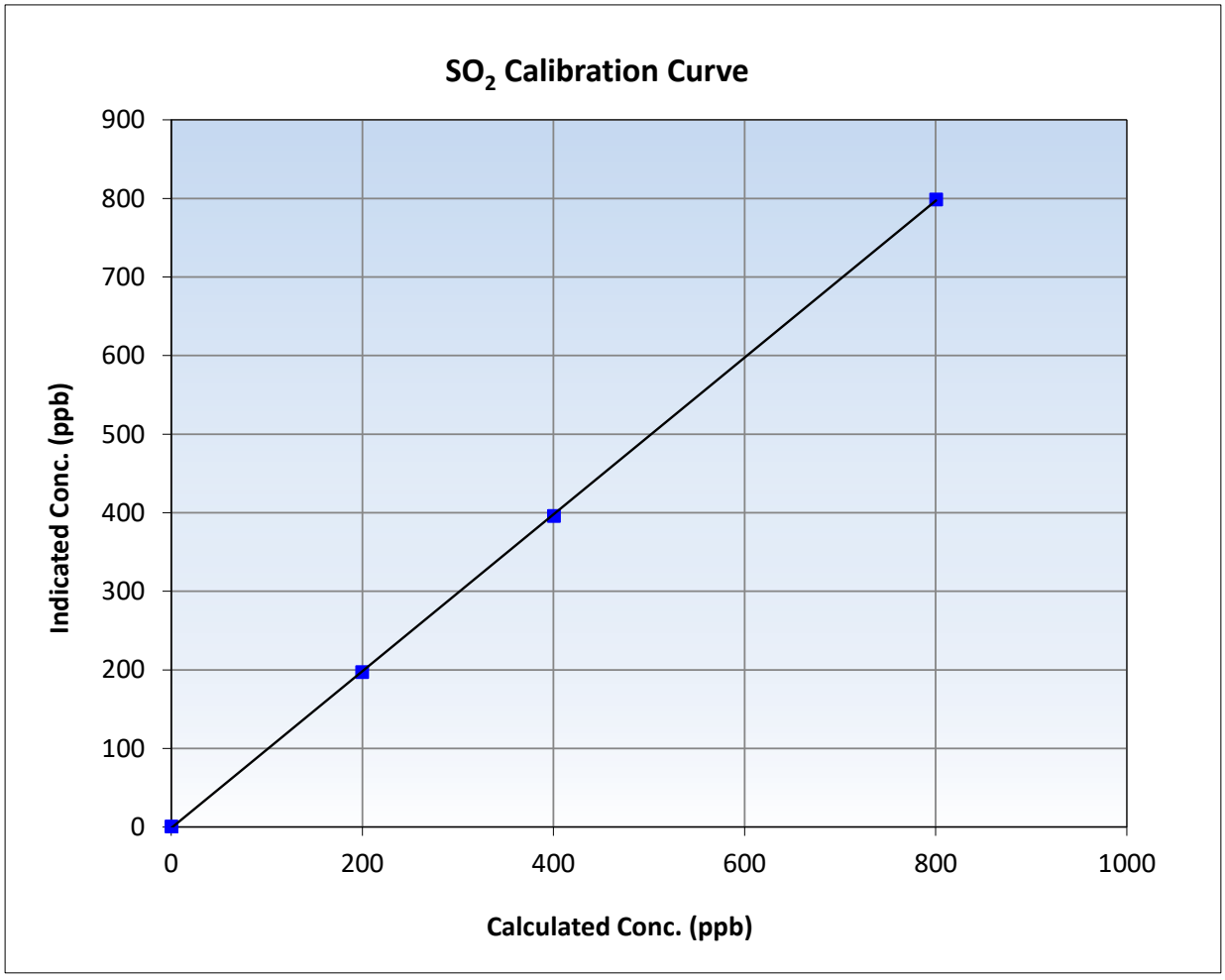
Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 10, 2025
Station Name:	Wapasu	Station Number:	AMS17
Start Time (MST):	10:31	End Time (MST):	13:42
Analyzer make:	Thermo 43i	Analyzer serial #:	1218153459

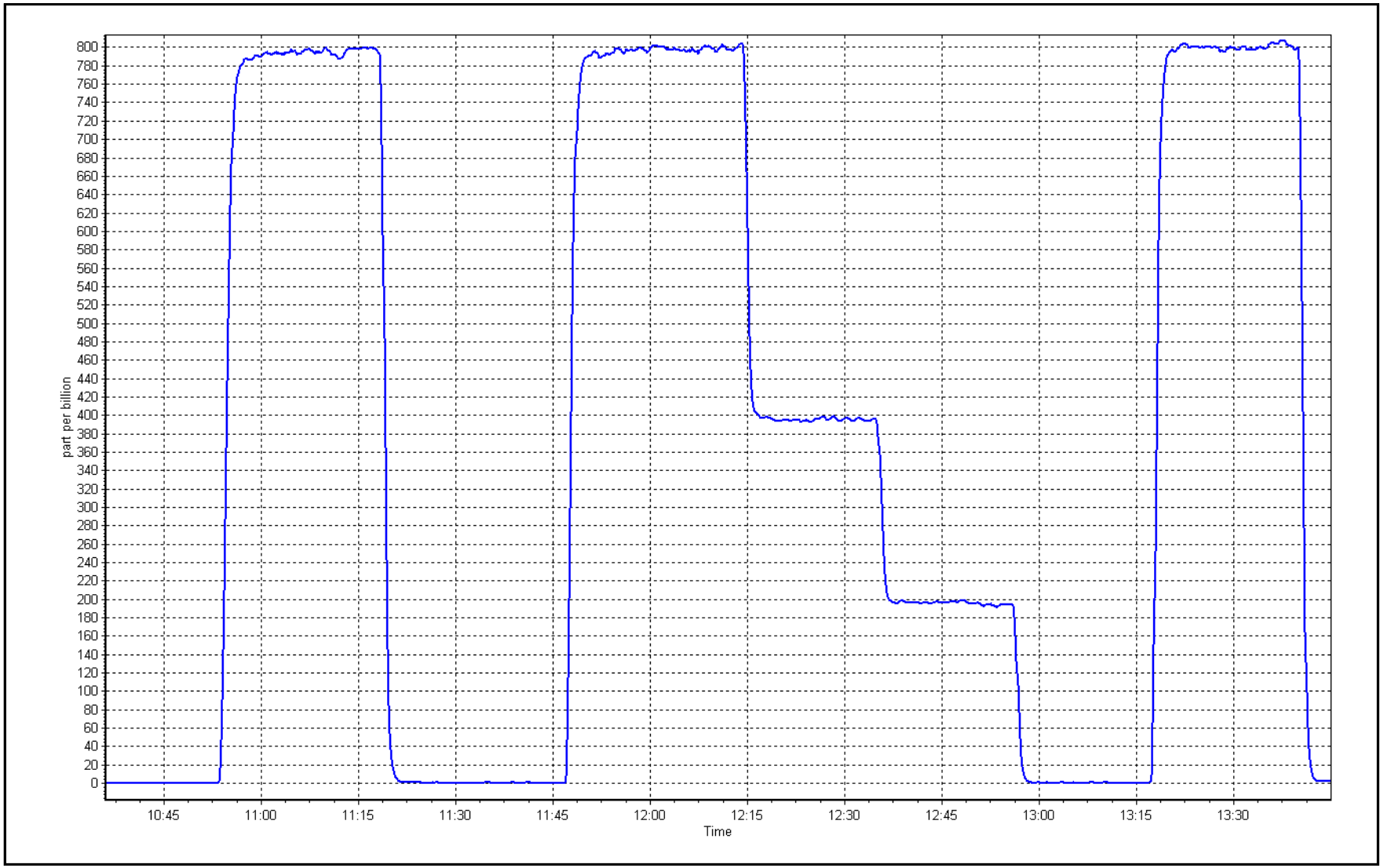
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.4	----
800.0	798.3	1.0021
400.0	395.6	1.0112
199.5	197.1	1.0122

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999970	*≥0.995*
Slope	0.997853	*0.90 - 1.10*
Intercept	-1.279869	*+/-30*



SO2 Calibration Plot Date: July 11, 2025 Location: Wapasu



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Wapasu	Station number:	AMS 17
Calibration Date:	July 17, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	10:11	End time (MST):	15:21
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.77	ppm	Cal Gas Exp Date:	August 28, 2027
Cal Gas Cylinder #:	DT20029267			
Removed Cal Gas Conc:	4.77	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	2449
ZAG Make/Model:	API T701H		Serial Number:	359

Analyzer Information

Analyzer make:	Thermo 450i		Analyzer serial #:	1218153583	
Converter make:	CD Nova		Converter serial #:	N/A	
Analyzer Range	0 - 100 ppb		Converter Temp:	340	degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	0.988078	0.990930	Backgd or Offset:	13.1	13.1
Calibration intercept:	0.080021	-0.219831	Coeff or Slope:	1.099	1.099

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.2	----
As found High point	4921	83.9	80.0	82.0	0.978
As found Mid point	4961	41.9	39.9	40.6	0.989
As found Low point	4980	21.0	20.0	20.3	0.997
New cylinder response					

Baseline Corr As found:	81.8	Prev response:	79.09	*% change:	3.3%
Baseline Corr 2nd AF pt:	40.4	AF Slope:	1.023989	AF Intercept:	-0.049681
Baseline Corr 3rd AF pt:	20.1	AF Correlation:	0.999950	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4916	83.9	80.0	79.3	1.009
Mid point	4958	41.9	40.0	39.2	1.020
Low point	4979	21.0	20.0	19.2	1.043
As left zero	5000	0.0	0.0	0.4	----
As left span	4916	83.9	80.0	76.3	1.049
SO2 Scrubber Check	4921	79.4	793.9	-0.2	----
Date of last scrubber change:		N/A		Ave Corr Factor	1.024
Date of last converter efficiency test:		N/A			

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

H_2S Calibration Summary

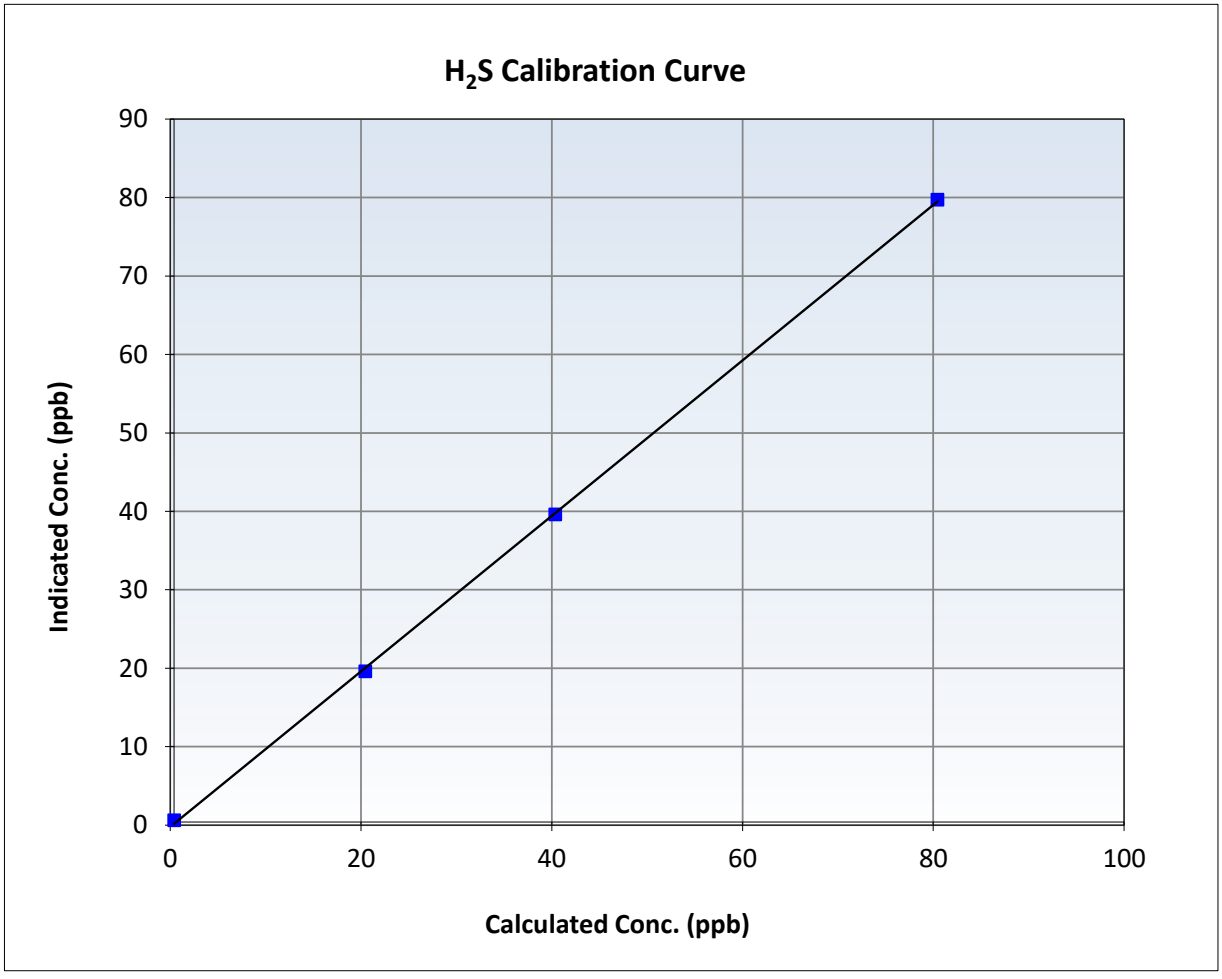
Station Information

Calibration Date:	July 17, 2025	Previous Calibration:	June 24, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	10:11	End Time (MST):	15:21
Analyzer make:	Thermo 450i	Analyzer serial #:	1218153583

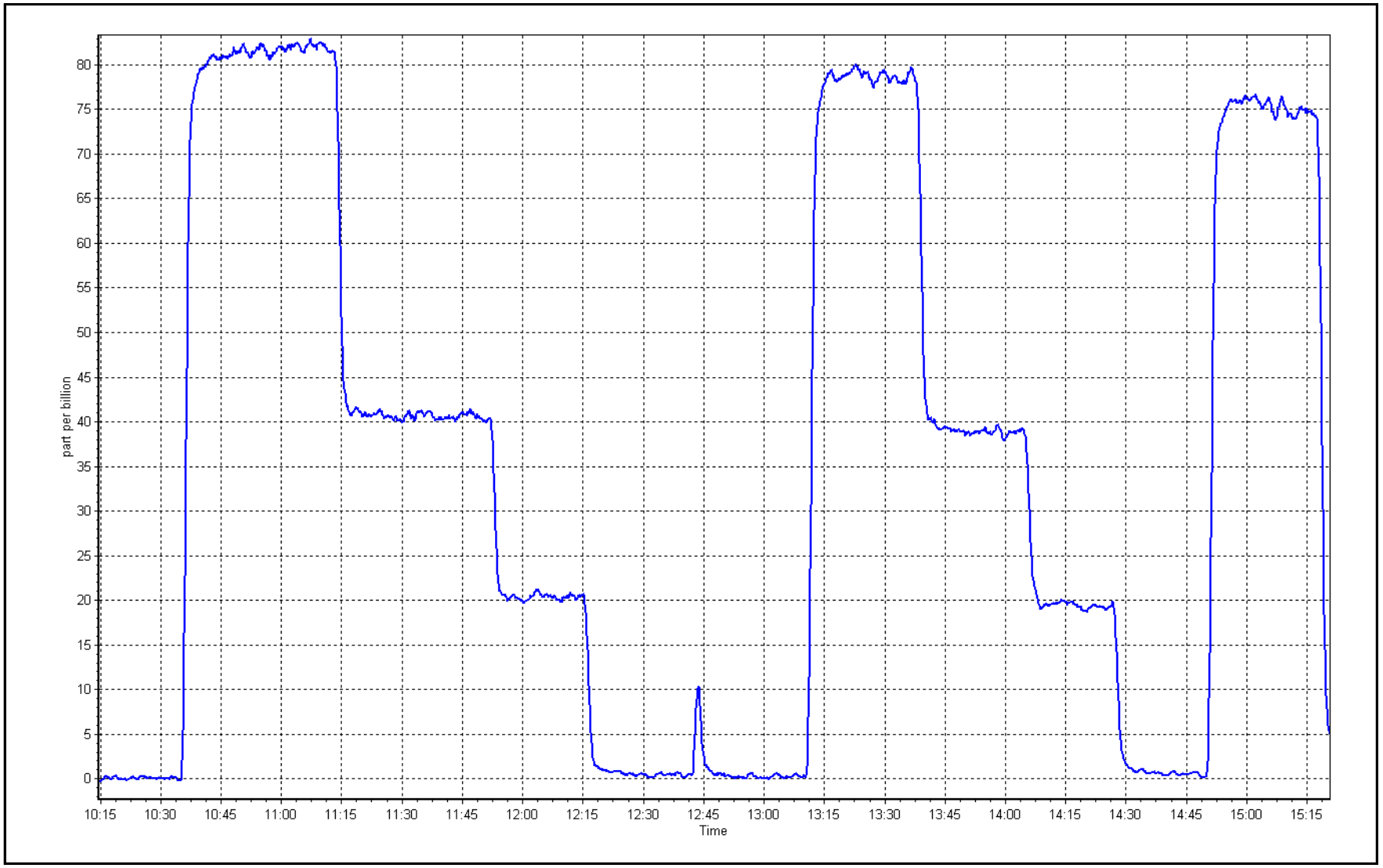
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
80.0	79.3	1.0094
40.0	39.2	1.0197
20.0	19.2	1.0434

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999872	*≥0.995*
Slope	0.990930	*0.90 - 1.10*
Intercept	-0.219831	*+/-3*



H_2S Calibration Plot Date: July 17, 2025 Location: Wapasu



Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name:	Wapasu	Station number:	AMS17
Calibration Date:	July 11, 2025	Last Cal Date:	June 10, 2025
Start time (MST):	10:31	End time (MST):	13:41
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	ALM066507		Cal Gas Expiry Date:	January 12, 2029	
CH4 Cal Gas Conc.	503.5	ppm	CH4 Equiv Conc.	1076.3	ppm
C3H8 Cal Gas Conc.	208.3	ppm			
Removed Gas Cert:		n/a	Removed Gas Expiry:		
Removed CH4 Conc.	503.5	ppm	CH4 Equiv Conc.	1076.3	ppm
Removed C3H8 Conc.	208.3	ppm	Diff between cyl:		
Calibrator Make/Model:	Teledyne API T700		Serial Number:	2449	
ZAG Make/Model:	Teledyne API 701H		Serial Number:	1238	

Analyzer Information

Analyzer make:	Thermo 51i-LT		Analyzer serial #:	1218153352	
Analyzer Range:	0 - 20 ppm				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.001644	0.992956	Background:	3.340	3.140
Calibration intercept:	-0.125948	-0.019000	Coefficient:	4.476	4.433

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	-0.13	----
As found High point	4921	79.4	17.09	16.98	0.999
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	17.11	Previous response	16.99	*% change	0.7%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.05	----
High point	4921	79.4	17.09	16.98	1.006
Mid point	4960	39.7	8.55	8.44	1.013
Low point	4980	19.8	4.26	4.14	1.030
As left zero	5000	0.0	0.00	0.04	----
As left span	4921	79.4	17.09	16.96	1.008
				Average Correction Factor	1.016

Notes: Zero adjusted.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

THC Calibration Summary

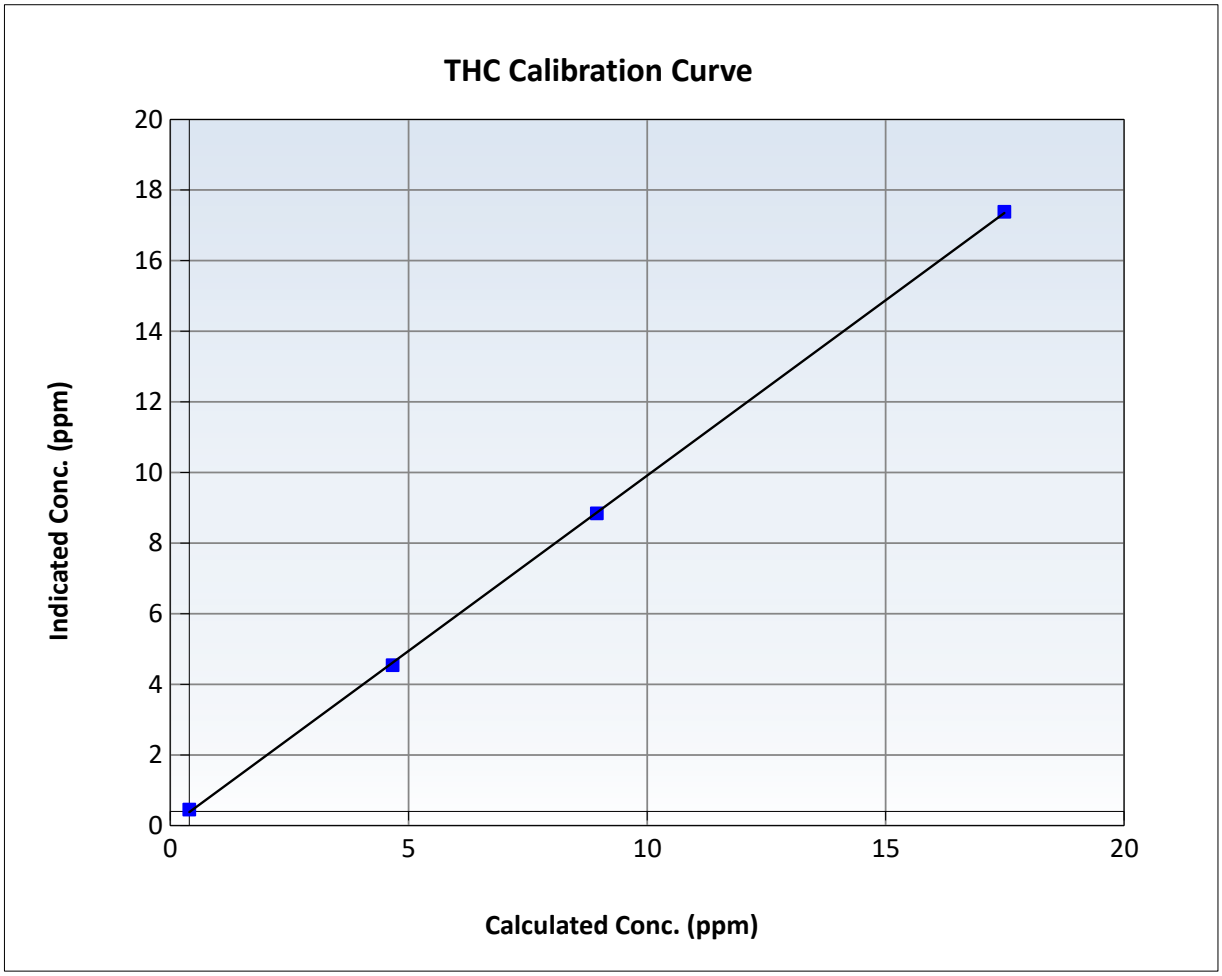
Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 10, 2025
Station Name:	Wapasu	Station Number:	AMS17
Start Time (MST):	10:31	End Time (MST):	13:41
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1218153352

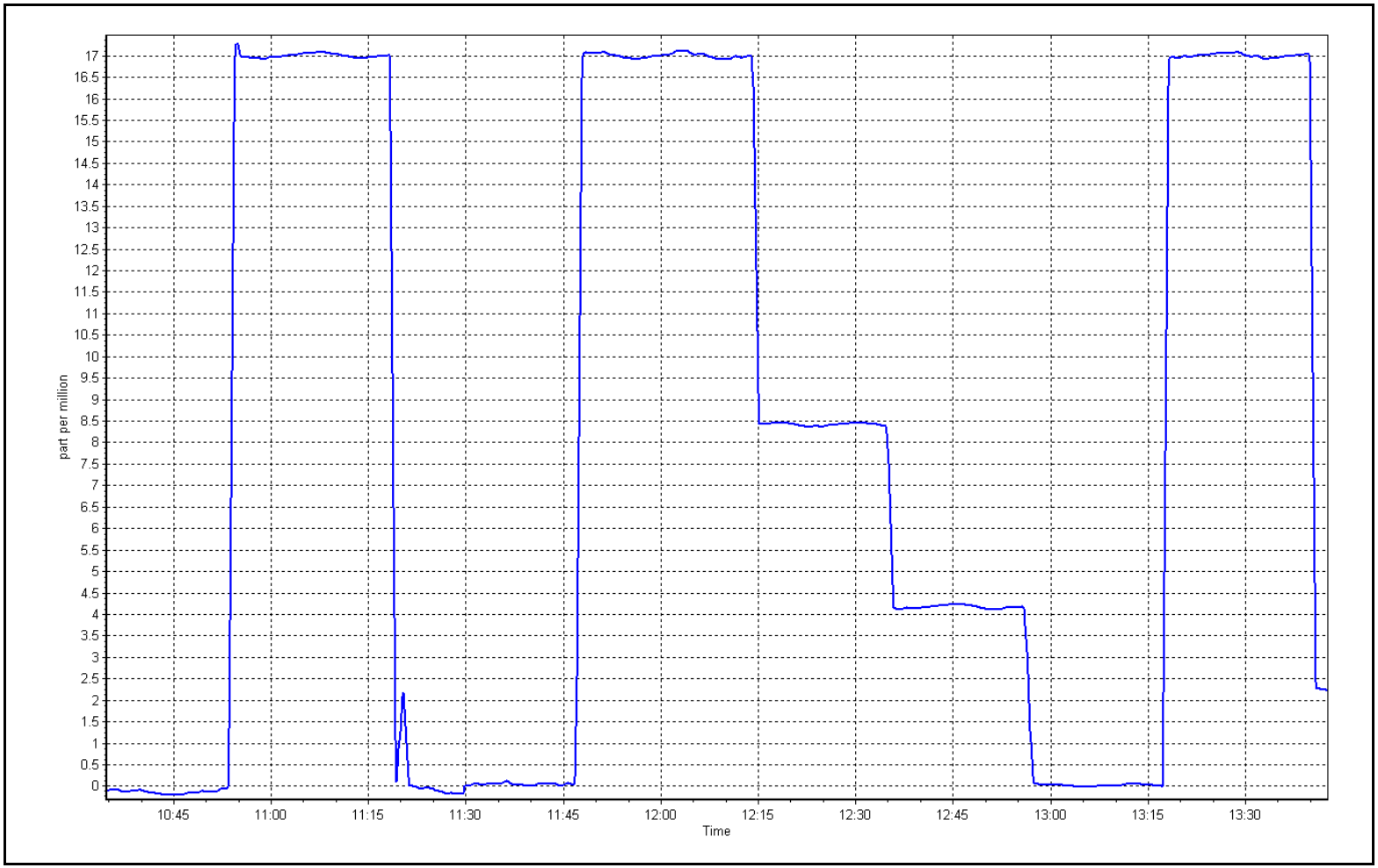
Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.05	----
17.09	16.98	1.0063
8.55	8.44	1.0127
4.26	4.14	1.0298

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999922	*≥0.995*
Slope	0.992956	*0.90 - 1.10*
Intercept	-0.019000	*+/-1.5*



THC Calibration Plot Date: July 11, 2025 Location: Wapasu



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Wapasu
Station number:	AMS 17
Calibration Date:	July 21, 2025
Last Cal Date:	June 18, 2025
Start time (MST):	10:59
End time (MST):	15:51
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	T375YK8	Cal Gas Expiry Date:	April 13, 2025
NOX Cal Gas Conc:	49.11 ppm	NO Cal Gas Conc:	48.07 ppm
Removed Cylinder #:	N/A	Removed Gas Exp Date:	N/A
Removed Gas NOX Conc:	49.11 ppm	Removed Gas NO Conc:	48.07 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	API T700	Serial Number:	2449
ZAG make/model:	API T701H	Serial Number:	359

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.2	0.1	0.1	----	----
AF High point	4917	83.2	817.2	799.9	17.3	810.9	793.5	17.4	1.0080	1.0082
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 815.8 ppb	NO = 799.0 ppb
Baseline Corr 1st pt	NO_X = 810.7 ppb	NO = 793.4 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

*Percent Change NO_X = -0.6%

*Percent Change NO = -0.7%

As Found Statistics

As found	NO_X r^2:	Nx Sl:	Nx Int:
As found	NO r^2:	NO Sl:	NO Int:
As found	NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo Scientific 42i
Serial Number: 1218153460
NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.116	1.123	NO bkgnd or offset:	3.9	3.9
NOX coeff or slope:	0.993	0.996	NOX bkgnd or offset:	4.3	4.4
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	244.5	248.0

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.999760	1.000599
NO_X Cal Offset:	-1.160000	-0.660000
NO Cal Slope:	1.000787	1.000658
NO Cal Offset:	-1.500000	-1.480000
NO_2 Cal Slope:	0.998829	1.001614
NO_2 Cal Offset:	-0.511740	-0.055111

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.3	-0.1	-0.2	----	----
High point	4917	83.2	817.2	799.9	17.3	817.2	799.6	17.5	1.0000	1.0004
Mid point	4958	41.6	408.6	399.9	8.7	408.0	398.1	9.9	1.0015	1.0046
Low point	4979	20.8	204.3	200.0	4.3	203.4	197.2	6.2	1.0044	1.0141
As left zero	5000	0.0	0.0	0.0	0.0	-0.2	0.0	-0.2	----	----
As left span	4917	83.2	817.2	402.1	415.1	819.1	402.1	417.0	0.9977	1.0000
							Average Correction Factor		1.0020	1.0063

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.2	----	----
High GPT point	798.3	399.3	416.3	416.7	0.9991	100.1%
Mid GPT point	798.3	600.5	215.1	215.9	0.9963	100.4%
Low GPT point	798.3	701.4	114.2	114.2	1.0000	100.0%
				Average Correction Factor	0.9985	100.2%

Notes: Sample inlet filter changed after as founds. Span adjusted.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

NO_X Calibration Summary

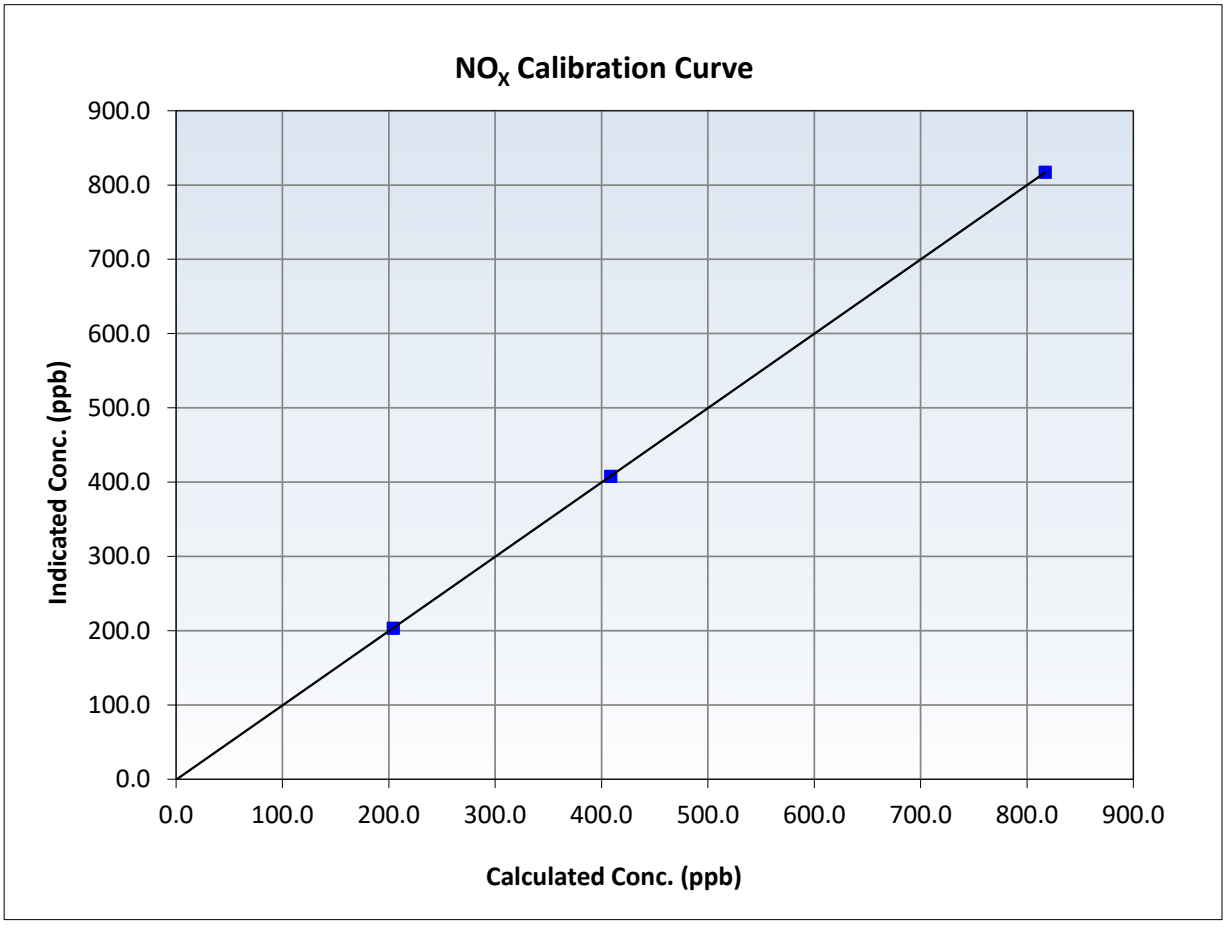
Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 18, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	10:59	End Time (MST):	15:51
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1218153460

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.3	----
817.2	817.2	1.0000
408.6	408.0	1.0015
204.3	203.4	1.0044

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	1.000599	*0.90 - 1.10*
Intercept	-0.660000	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

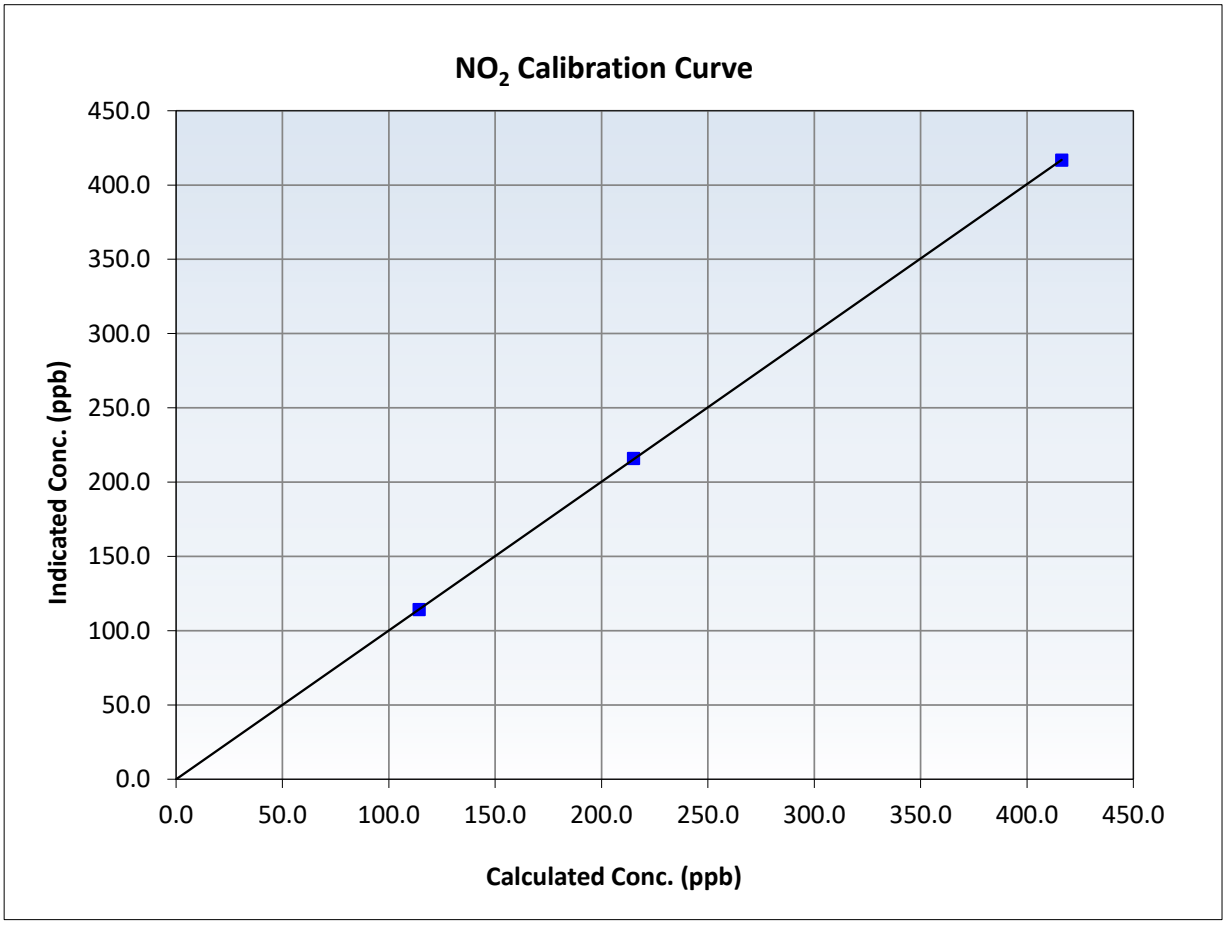
Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 18, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	10:59	End Time (MST):	15:51
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1218153460

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
416.3	416.7	0.9991
215.1	215.9	0.9963
114.2	114.2	1.0000

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999996	*≥0.995*
Slope	1.001614	*0.90 - 1.10*
Intercept	-0.055111	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

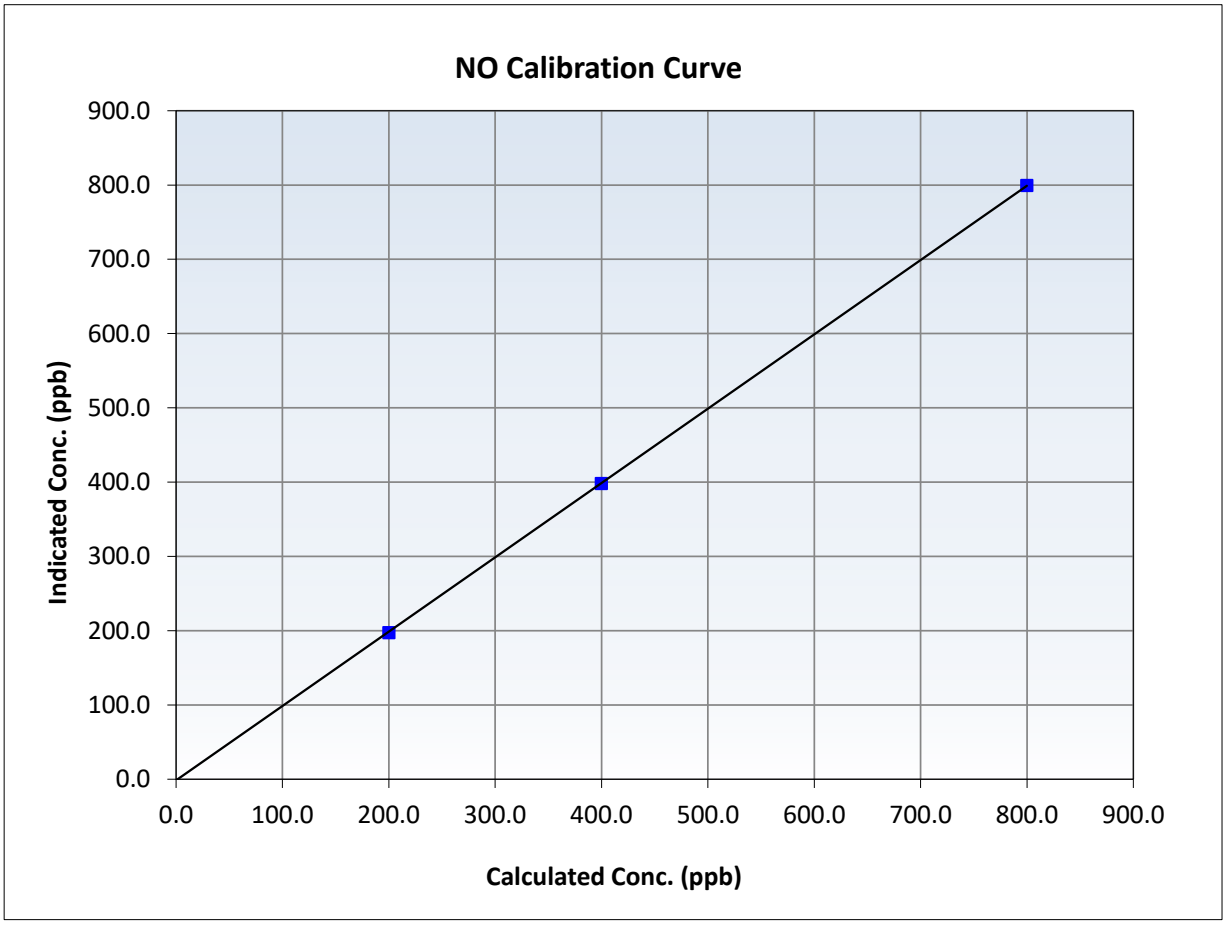
Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 18, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	10:59	End Time (MST):	15:51
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1218153460

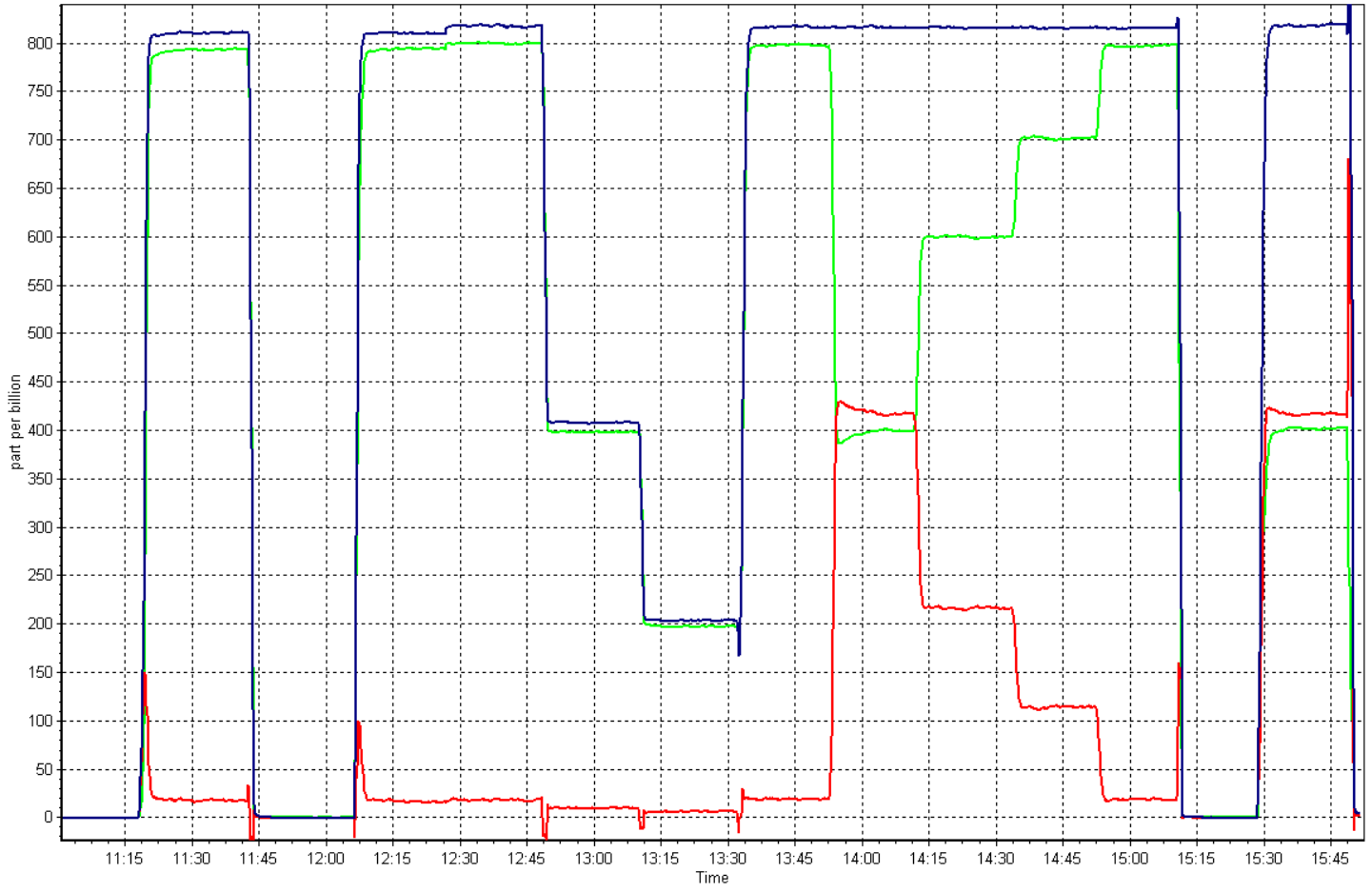
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
799.9	799.6	1.0004
399.9	398.1	1.0046
200.0	197.2	1.0141

Statistical Evaluation		Limits
Correlation Coefficient	0.999986	≥0.995
Slope	1.000658	0.90 - 1.10
Intercept	-1.480000	+/-20



NO_X Calibration Plot Date: July 21, 2025 Location: Wapasu



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Wapasu	Station number:	AMS17
Calibration Date:	July 2, 2025	Last Cal Date:	June 4, 2025
Start time (MST):	10:15	End time (MST):	14:49
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	API T700	Serial Number:	2449
ZAG Make/Model:	API T701H	Serial Number:	359

Analyzer Information

Analyzer make:	API T400		Analyzer serial #:	7045	
Analyzer Range	0 - 500 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.001286	1.000914	Backgd or Offset:	1.3	1.3
Calibration intercept:	-0.600000	-0.860000	Coeff or Slope:	1.025	1.025

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	5000	1104.7	400.0	402.6	0.993
As found Mid point					
As found Low point					
Baseline Corr As found:	402.7	Previous response	399.9	*% change	0.7%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.3	----
High point	5000	1104.7	400.0	400.2	1.000
Mid point	5000	917.3	200.0	198.4	1.008
Low point	5000	797.9	100.0	98.3	1.017
As left zero	5000	0.0	0.0	-0.1	----
As left span	5000	1104.0	400.0	407.1	0.983
				Average Correction Factor	1.008

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

O_3 Calibration Summary

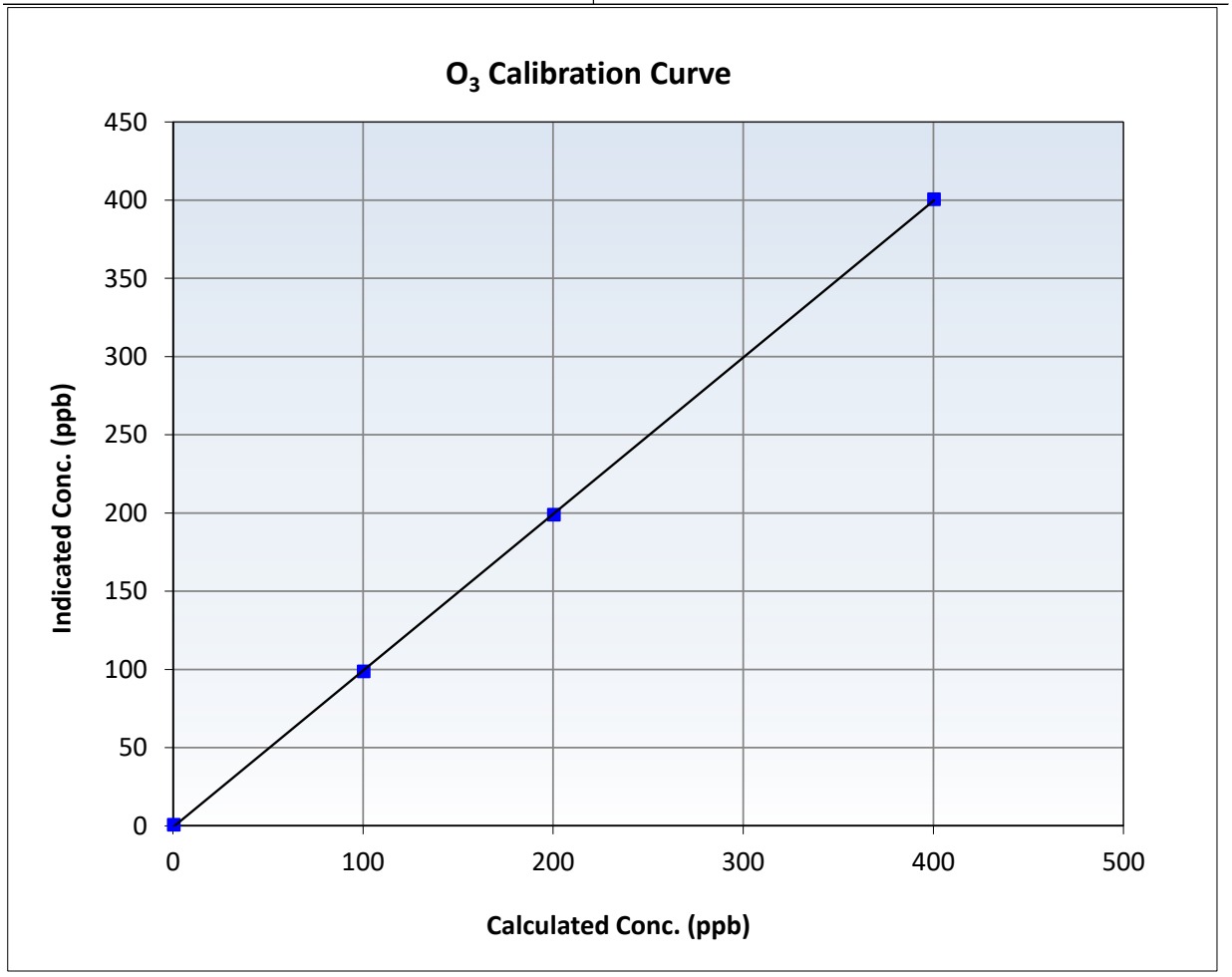
Station Information

Calibration Date:	July 2, 2025	Previous Calibration:	June 4, 2025
Station Name:	Wapasu	Station Number:	AMS17
Start Time (MST):	10:15	End Time (MST):	14:49
Analyzer make:	API T400	Analyzer serial #:	7045

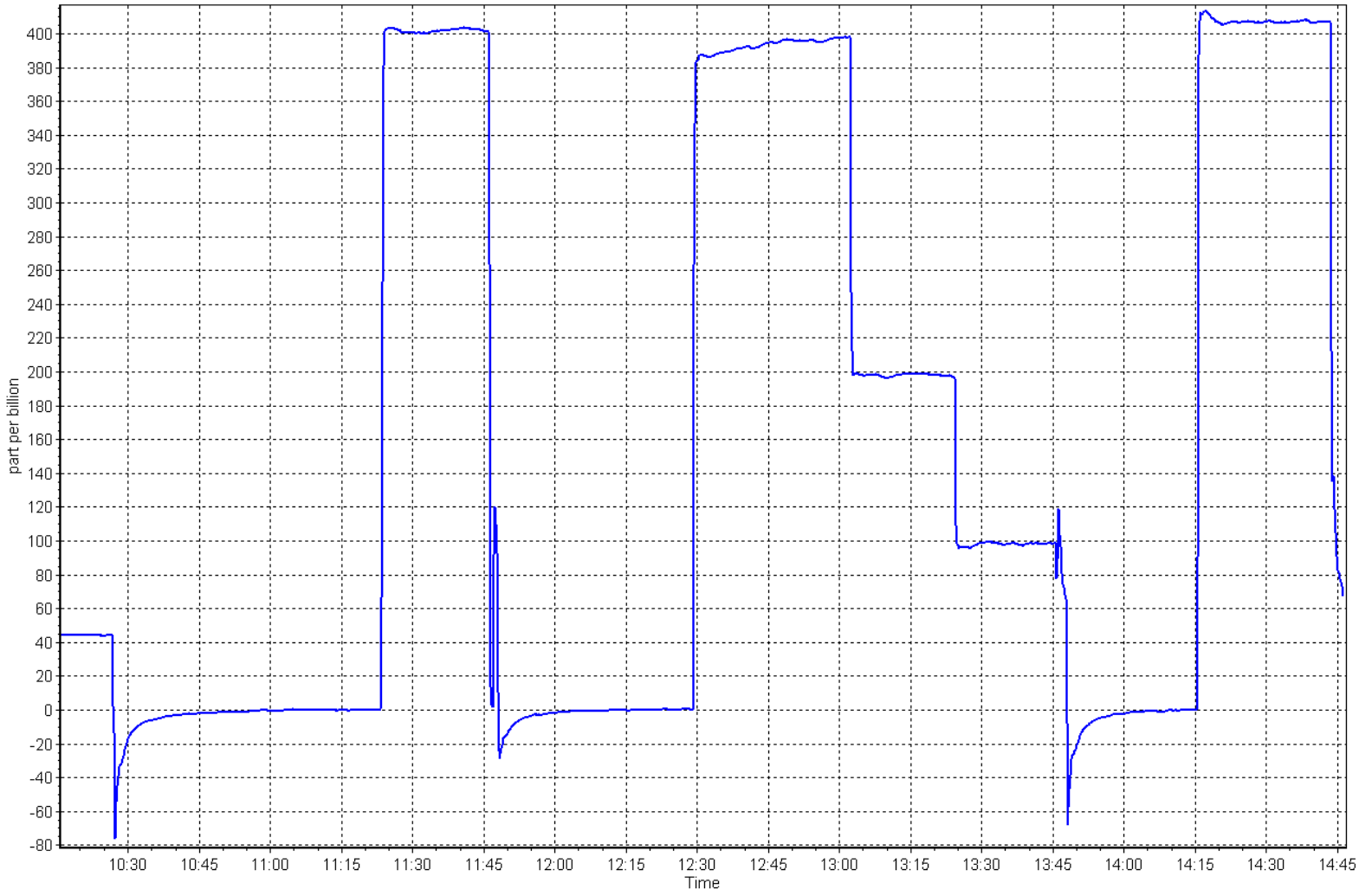
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.3	----
400.0	400.2	0.9995
200.0	198.4	1.0081
100.0	98.3	1.0173

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999960	*≥0.995*
Slope	1.000914	*0.90 - 1.10*
Intercept	-0.860000	*+/- 5*



O_3 Calibration Plot Date: July 2, 2025 Location: Wapasu



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Wapasu	Station number:	AMS 17
Calibration Date:	July 21, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	14:38	End time (MST):	15:29
Analyzer Make:	Teledyne API T640	S/N:	1183
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388749
Temp/RH standard:	Alicat FP-25BT	S/N:	388749

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (^{o}C)	14.50	14.10	14.50	☐	+/- 2 ^{o}C
P (mmHg)	715.40	716.60	715.40	☐	+/- 10 mmHg
Flow (LPM)	5.02	4.95	5.02	☐	+/- 0.25 LPM
PW% (pump)	34	-----	34	☐	>80%
Zero Verification	PM w/o HEPA:	3.1	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: October 6, 2024 — Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test	N/A	N/A	N/A	☐	+/- 0.5

Date Optical Chamber Cleaned: June 24, 2025

Date Disposable Filter Changed: July 21, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.00 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: July 21, 2025

Date RH/T Sensor Cleaned: July 21, 2025

Notes: Flow, temp and pressure checked. Leak check passed. DFU filter changed out. Annual maintenance done.

Calibration by: Aswin Sasi Kumar

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS18
STONY MOUNTAIN
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Stony Mountain	Station number:	AMS 18
Calibration Date:	July 23, 2025	Last Cal Date:	June 16, 2025
Start time (MST):	11:30	End time (MST):	15:29
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	51.22	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC417455			
Removed Cal Gas Conc:	51.22	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	CC417455		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	282
Zero Air Gen Model:	Teledyne API 701H		Serial Number:	321

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	JC1501301453	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.000278	1.005581	Backgd or Offset:	25.3	25.3
Calibration intercept:	-2.670930	-3.459390	Coeff or Slope:	0.818	0.818

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.4	----
As found High point	4921	78.1	800.2	800.5	1.000
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	800.1	Previous response	797.8	*% change	0.3%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.6	----
High point	4921	78.1	800.2	802.6	0.997
Mid point	4960	39.1	400.6	399.4	1.003
Low point	4980	20.0	204.9	197.1	1.039
As left zero	5000	0.0	0.0	0.5	----
As left span	4921	78.1	800.2	803.0	0.997
				Average Correction Factor:	1.013

Notes: Changed sample inlet filter. No adjustments made.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

SO_2 Calibration Summary

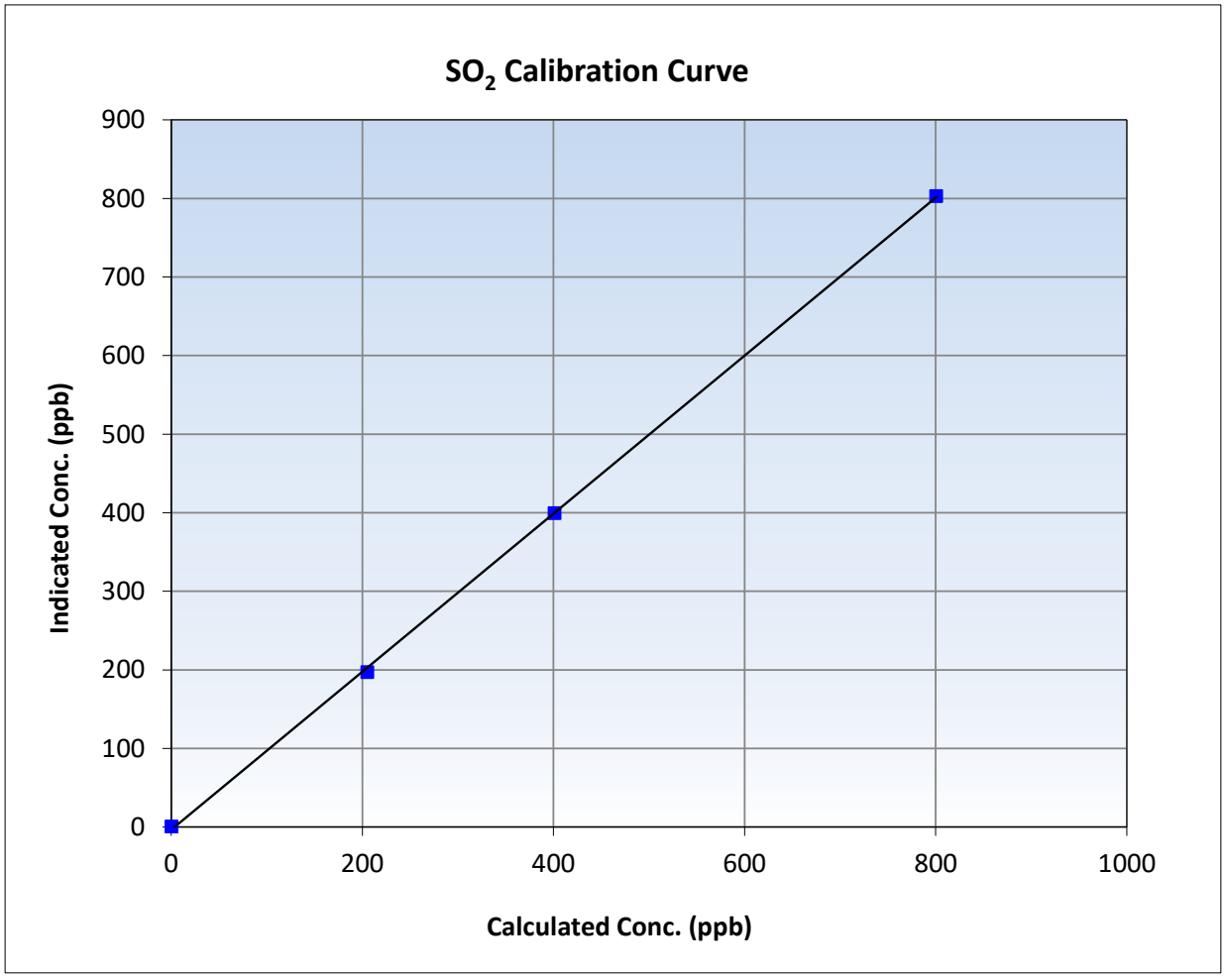
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 16, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:30	End Time (MST):	15:29
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1501301453

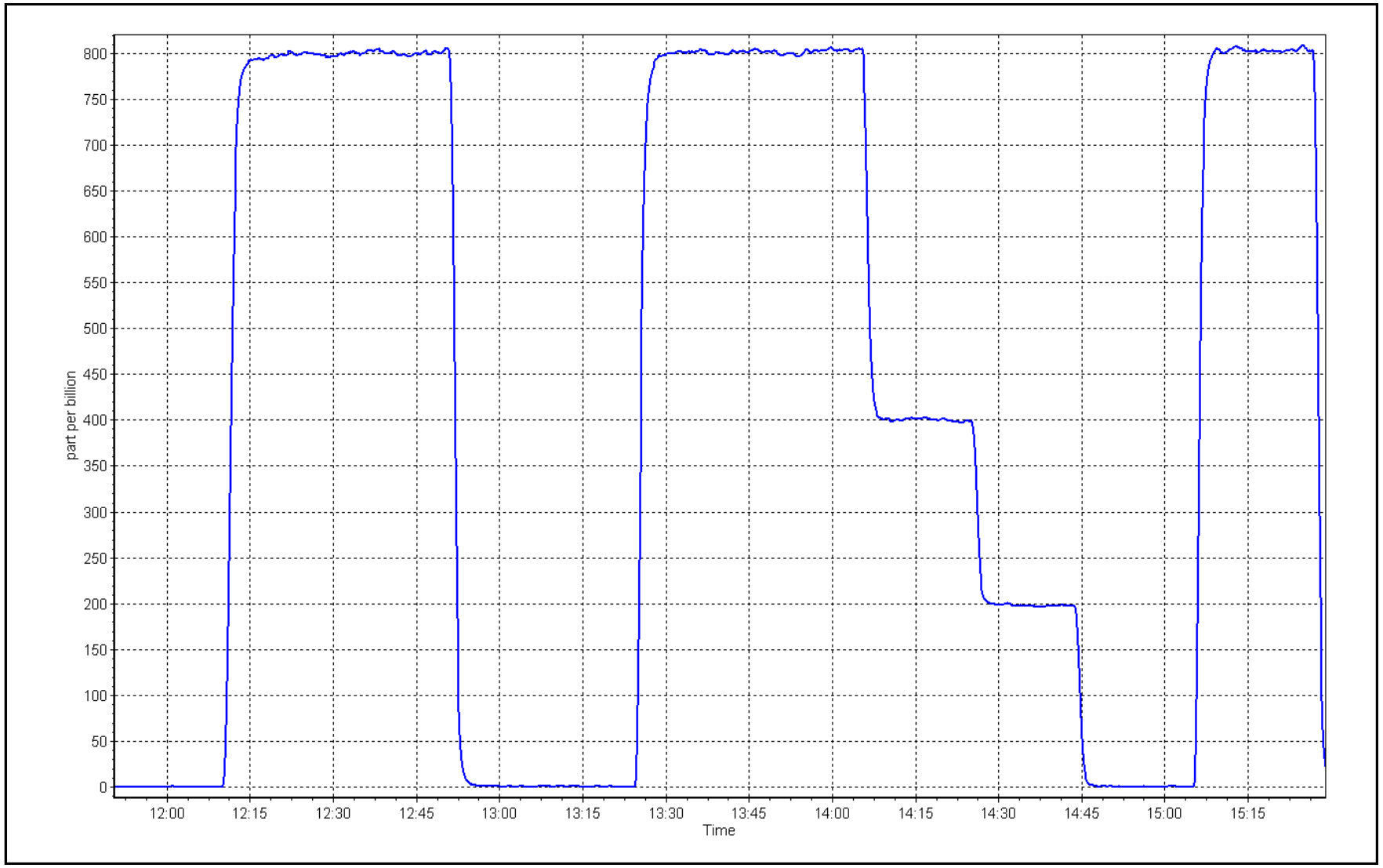
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.6	----
800.2	802.6	0.9970
400.6	399.4	1.0030
204.9	197.1	1.0395

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999863	*≥0.995*
Slope	1.005581	*0.90 - 1.10*
Intercept	-3.459390	*+/-30*



SO2 Calibration Plot Date: July 23, 2025 Location: Stony Mountain



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Stony Mountain	Station number:	AMS18
Calibration Date:	July 22, 2025	Last Cal Date:	June 17, 2025
Start time (MST):	10:55	End time (MST):	15:35
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.86	ppm	Cal Gas Exp Date:	May 9, 2027
Cal Gas Cylinder #:	CC523103			
Removed Cal Gas Conc:	4.86	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	2658
ZAG Make/Model:	Teledyne API T701		Serial Number:	360

Analyzer Information

Analyzer make:	Thermo 43i-TLE		Analyzer serial #:	1218153359	
Converter make:	CD Nova CDN-101		Converter serial #:	555	
Analyzer Range	0 - 100 ppb		Converter Temp:	800	degC

	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.992940	1.003226	Backgd or Offset:	2.94	2.94
Calibration intercept:	0.001163	-0.059096	Coeff or Slope:	1.181	1.181

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.1	----
As found High point	4917	82.3	80.0	83.3	0.962
As found Mid point	4958	41.2	40.1	41.8	0.960
As found Low point	4979	20.6	20.0	20.5	0.982
New cylinder response					

Baseline Corr As found:	83.2	Prev response:	79.44	*% change:	4.5%
Baseline Corr 2nd AF pt:	41.7	AF Slope:	1.041798	AF Intercept:	-0.059918
Baseline Corr 3rd AF pt:	20.4	AF Correlation:	0.999965	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4917	82.3	80.0	80.3	0.996
Mid point	4958	41.2	40.1	40.1	0.999
Low point	4979	20.6	20.0	19.7	1.016
As left zero	5000	0.0	0.0	0.4	----
As left span	4917	82.3	80.0	79.5	1.006
SO2 Scrubber Check	4923	77.1	771.0	0.0	----
Date of last scrubber change:		17-Dec-21		Ave Corr Factor	1.004
Date of last converter efficiency test:					

Notes: No adjustment made. SOX scrubber tested post filter change, no issues to note.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

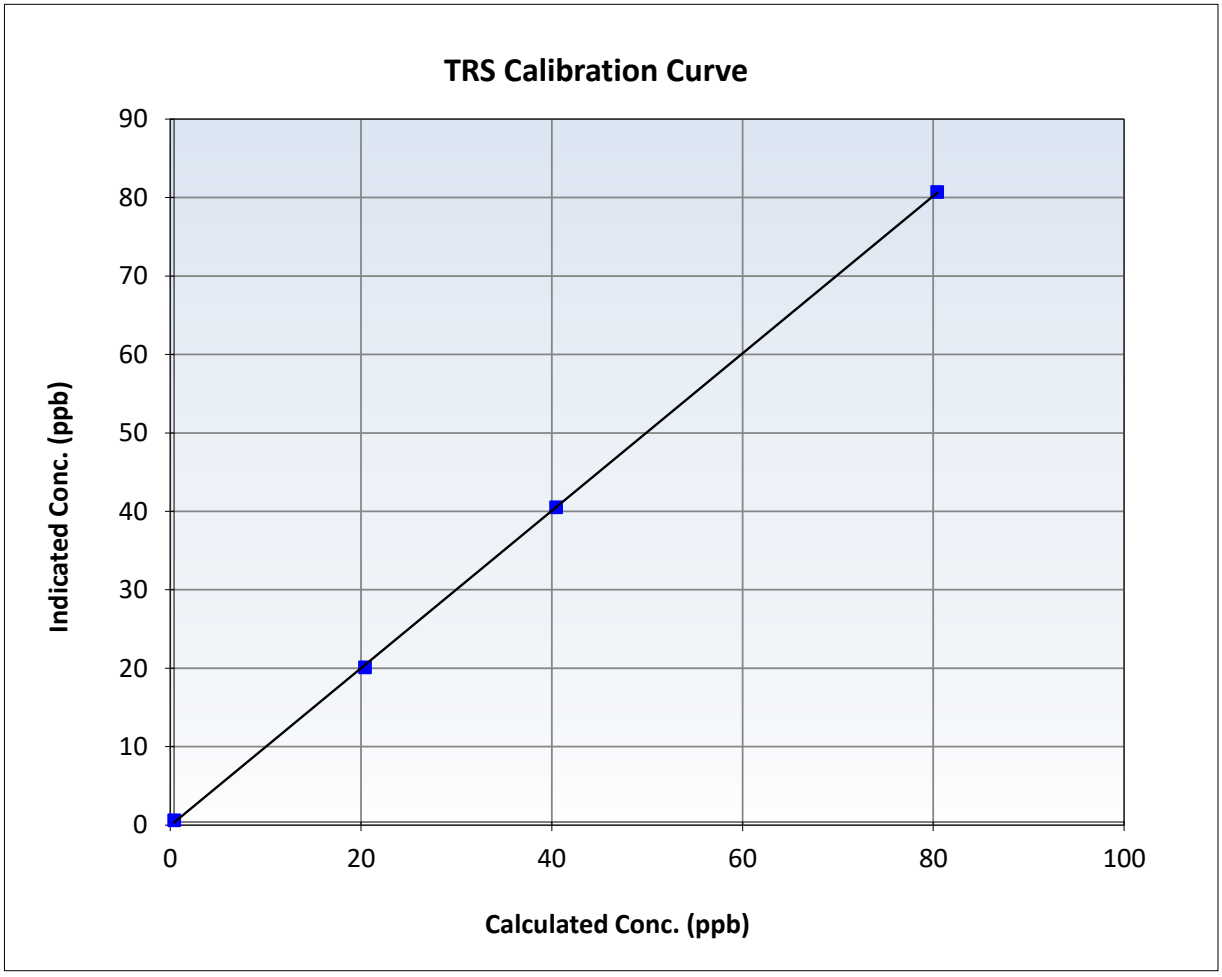
TRS Calibration Summary

Station Information

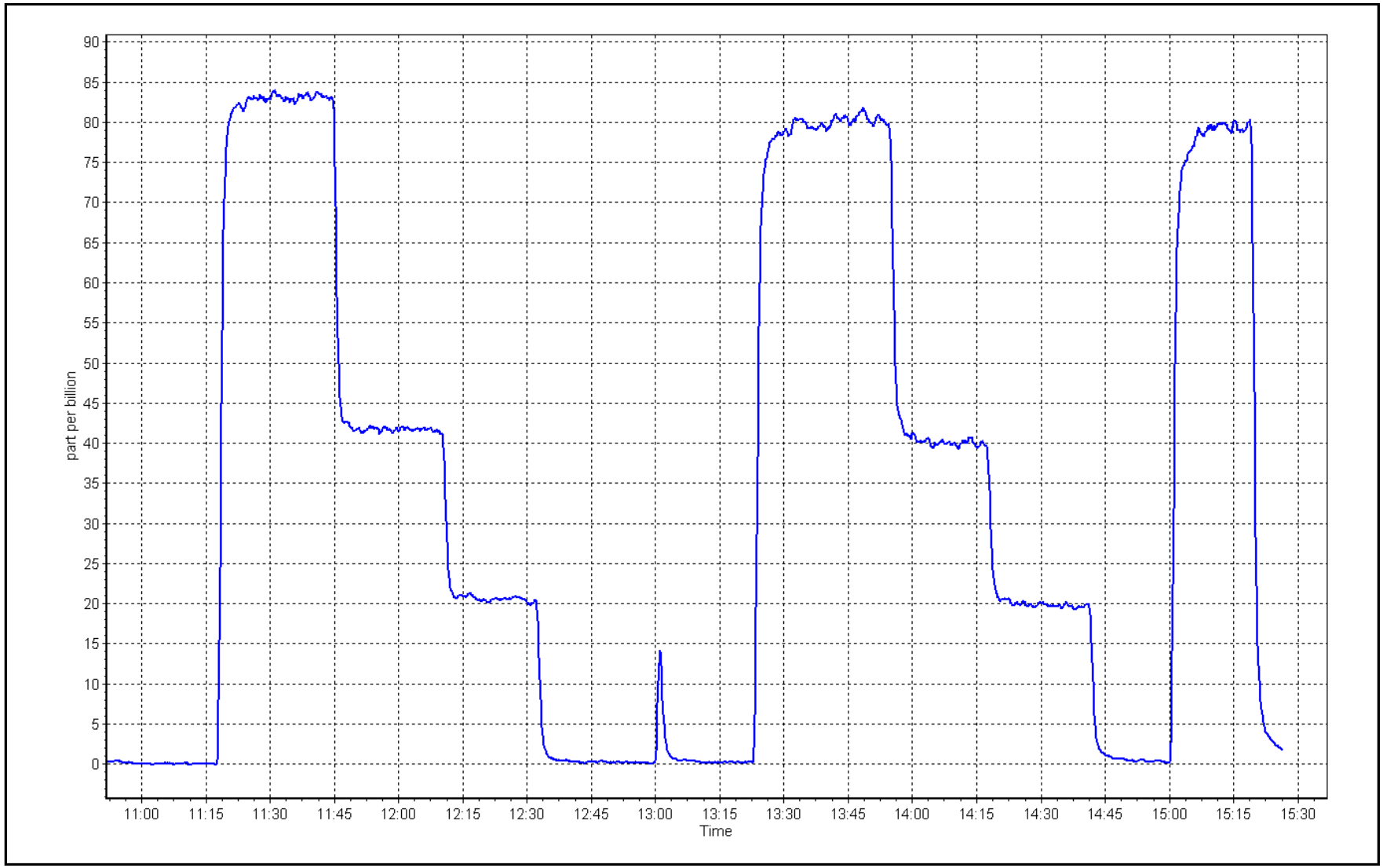
Calibration Date:	July 22, 2025	Previous Calibration:	June 17, 2025
Station Name:	Stony Mountain	Station Number:	AMS18
Start Time (MST):	10:55	End Time (MST):	15:35
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1218153359

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.2	----	Correlation Coefficient	0.999947	*≥0.995*
80.0	80.3	0.9963	Slope	1.003226	*0.90 - 1.10*
40.1	40.1	0.9988			
20.0	19.7	1.0165	Intercept	-0.059096	*+/-3*



TRS Calibration Plot Date: July 22, 2025 Location: Stony Mountain



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Stony Mountain	Station number:	AMS 18
Calibration Date:	July 6, 2025	Last Cal Date:	June 16, 2025
Start time (MST):	10:55	End time (MST):	12:20
Reason:	Cylinder Change		

Calibration Standards

Gas Cert Reference:	XC026809B	Cal Gas Expiry Date:	January 12, 2029
CH4 Cal Gas Conc.	504.9 ppm	CH4 Equiv Conc.	1076.6 ppm
C3H8 Cal Gas Conc.	207.9 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH4 Conc.	504.9 ppm	CH4 Equiv Conc.	1076.6 ppm
Removed C3H8 Conc.	207.9 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T750	Serial Number:	281
Zero Air Gen model:	Teledyne API T751	Serial Number:	529

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.68E-04	2.68E-04	NMHC SP Ratio:	4.79E-05	4.79E-05
CH4 Retention time:	14.8	14.8	NMHC Peak Area:	186547	186547
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.02	----
As found High point	4921	78.1	16.82	16.71	1.008
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.69	Prev response	16.78	*% change	-0.6%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.02	----
As left span	4921	78.1	16.82	17.12	0.983
				Average Correction Factor	

Notes: Changed the H2 cylinder after as founds. No adjustments made.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.1	8.93	8.85	1.009
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.85	Prev response	8.91	*% change	-0.7%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.1	8.93	9.02	0.991
				Average Correction Factor	

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.02	----
As found High point	4921	78.1	7.89	7.86	1.007
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.84	Prev response	7.87	*% change	-0.5%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

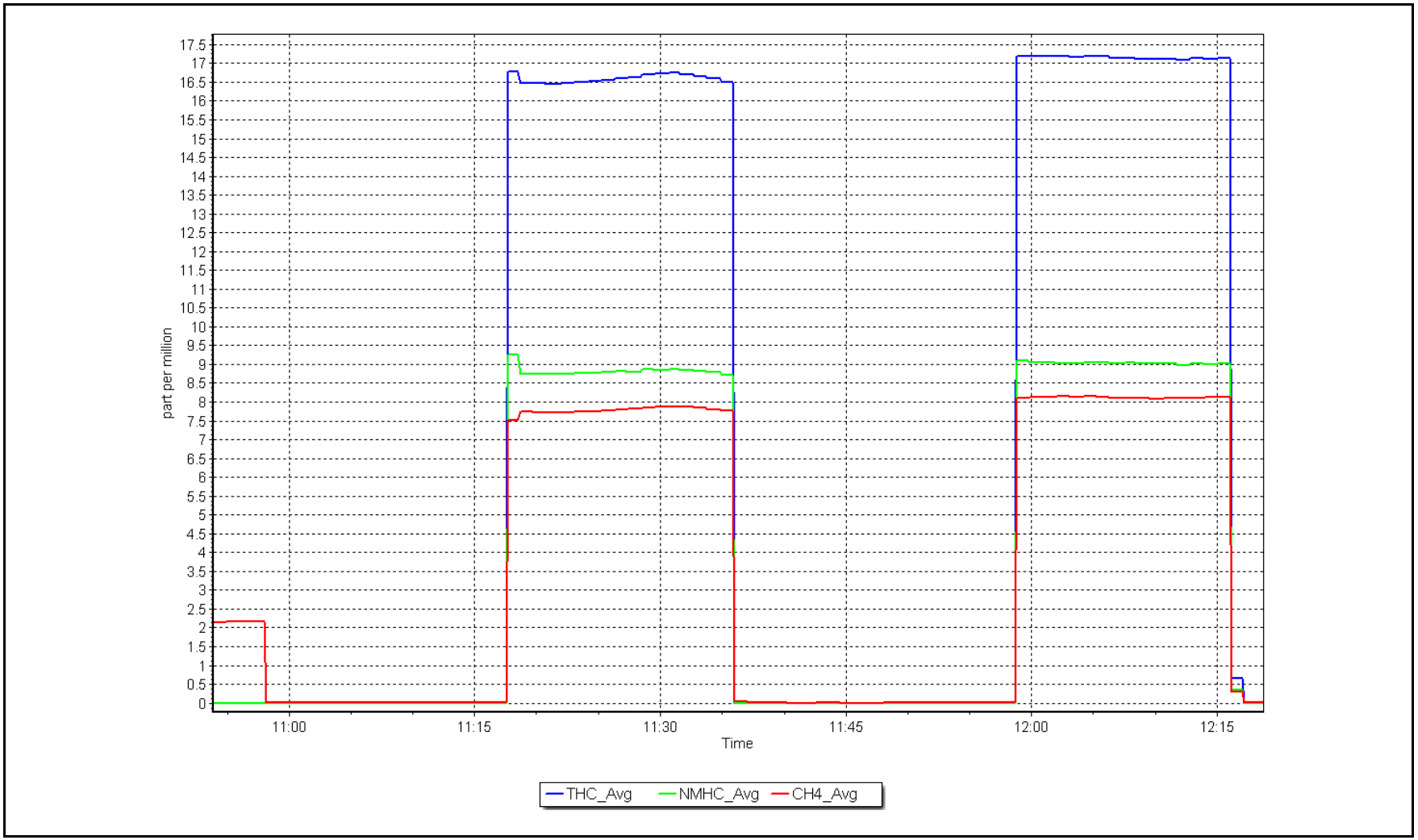
Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.02	----
As left span	4921	78.1	7.89	8.10	0.974
				Average Correction Factor	

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	0.999653	
THC Cal Offset:	-0.029223	
CH4 Cal Slope:	0.999071	
CH4 Cal Offset:	-0.006679	
NMHC Cal Slope:	1.000578	
NMHC Cal Offset:	-0.023155	

Calibration Performed By: Max Farrell

NMHC Calibration Plot Date: July 6, 2025 Location: Stony Mountain



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Stony Mountain	Station number:	AMS 18
Calibration Date:	July 23, 2025	Last Cal Date:	June 16, 2025
Start time (MST):	11:30	End time (MST):	15:29
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	XC026809B	Cal Gas Expiry Date:	January 12, 2029
CH4 Cal Gas Conc.	504.9 ppm	CH4 Equiv Conc.	1076.6 ppm
C3H8 Cal Gas Conc.	207.9 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH4 Conc.	504.9 ppm	CH4 Equiv Conc.	1076.6 ppm
Removed C3H8 Conc.	207.9 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T750	Serial Number:	281
Zero Air Gen model:	Teledyne API T751	Serial Number:	529

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.68E-04	2.62E-04	NMHC SP Ratio:	4.79E-05	4.67E-05
CH4 Retention time:	14.8	14.8	NMHC Peak Area:	186547	191140
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.02	----
As found High point	4921	78.1	16.82	17.19	0.980
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	17.17	Prev response	16.78	*% change	2.2%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.02	----
High point	4921	78.1	16.82	16.77	1.003
Mid point	4960	39.1	8.42	8.42	1.000
Low point	4980	20.0	4.31	4.18	1.031
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.1	16.82	16.85	0.999
				Average Correction Factor	1.011

Notes: Span adjusted.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.1	8.93	9.13	0.978
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.13	Prev response	8.91	*% change	2.4%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.1	8.93	8.90	1.003
Mid point	4960	39.1	4.47	4.47	1.001
Low point	4980	20.0	2.29	2.22	1.032
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.1	8.93	8.94	0.999
				Average Correction Factor	1.012

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.02	----
As found High point	4921	78.1	7.89	8.06	0.982
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.03	Prev response	7.87	*% change	2.0%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.02	----
High point	4921	78.1	7.89	7.87	1.002
Mid point	4960	39.1	3.95	3.95	0.999
Low point	4980	20.0	2.02	1.96	1.029
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.1	7.89	7.90	0.998
				Average Correction Factor	1.010

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	0.999653	0.998768
THC Cal Offset:	-0.029223	-0.029684
CH4 Cal Slope:	0.999071	0.998110
CH4 Cal Offset:	-0.006679	-0.006598
NMHC Cal Slope:	1.000578	0.999350
NMHC Cal Offset:	-0.023155	-0.023086

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

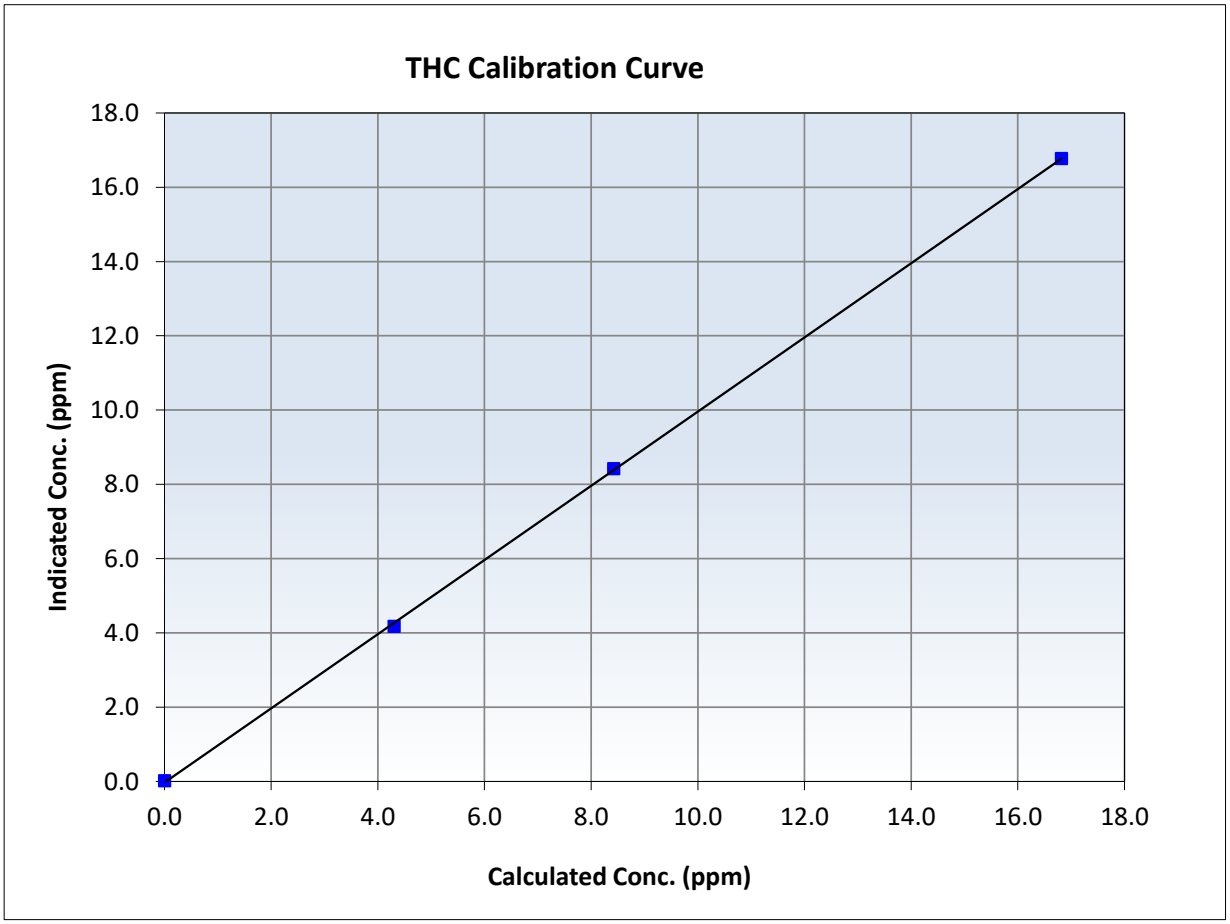
THC Calibration Summary

Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 16, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:30	End Time (MST):	15:29
Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.02	----	Correlation Coefficient	0.999918	≥0.995
16.82	16.77	1.0028	Slope	0.998768	0.90 - 1.10
8.42	8.42	1.0000			
4.31	4.18	1.0305	Intercept	-0.029684	+/-0.5



Wood Buffalo Environmental Association

CH_4 Calibration Summary

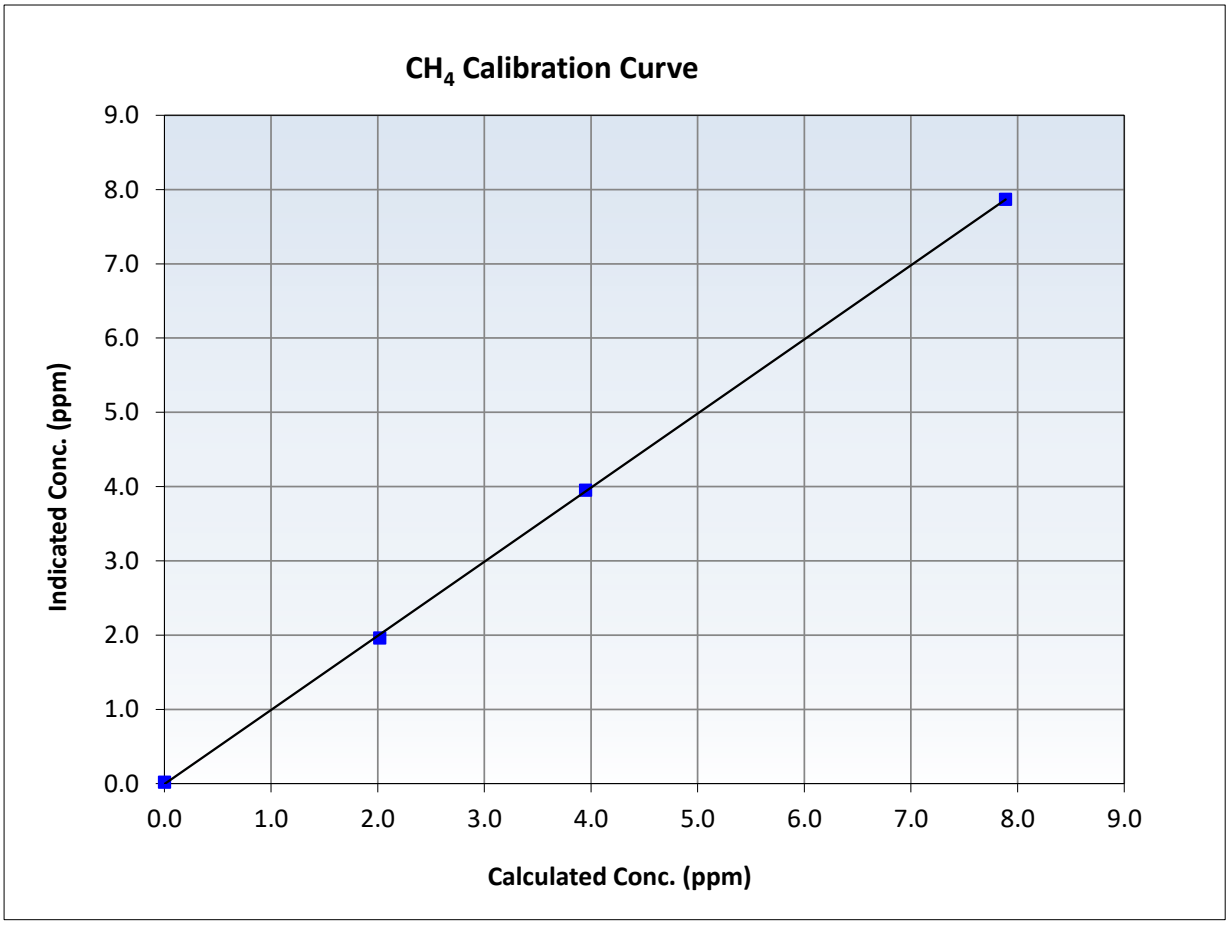
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 16, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:30	End Time (MST):	15:29
Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.02	----
7.89	7.87	1.0024
3.95	3.95	0.9987
2.02	1.96	1.0294

Statistical Evaluation		Limits
Correlation Coefficient	0.999904	≥0.995
Slope	0.998110	0.90 - 1.10
Intercept	-0.006598	+/-0.5



Wood Buffalo Environmental Association

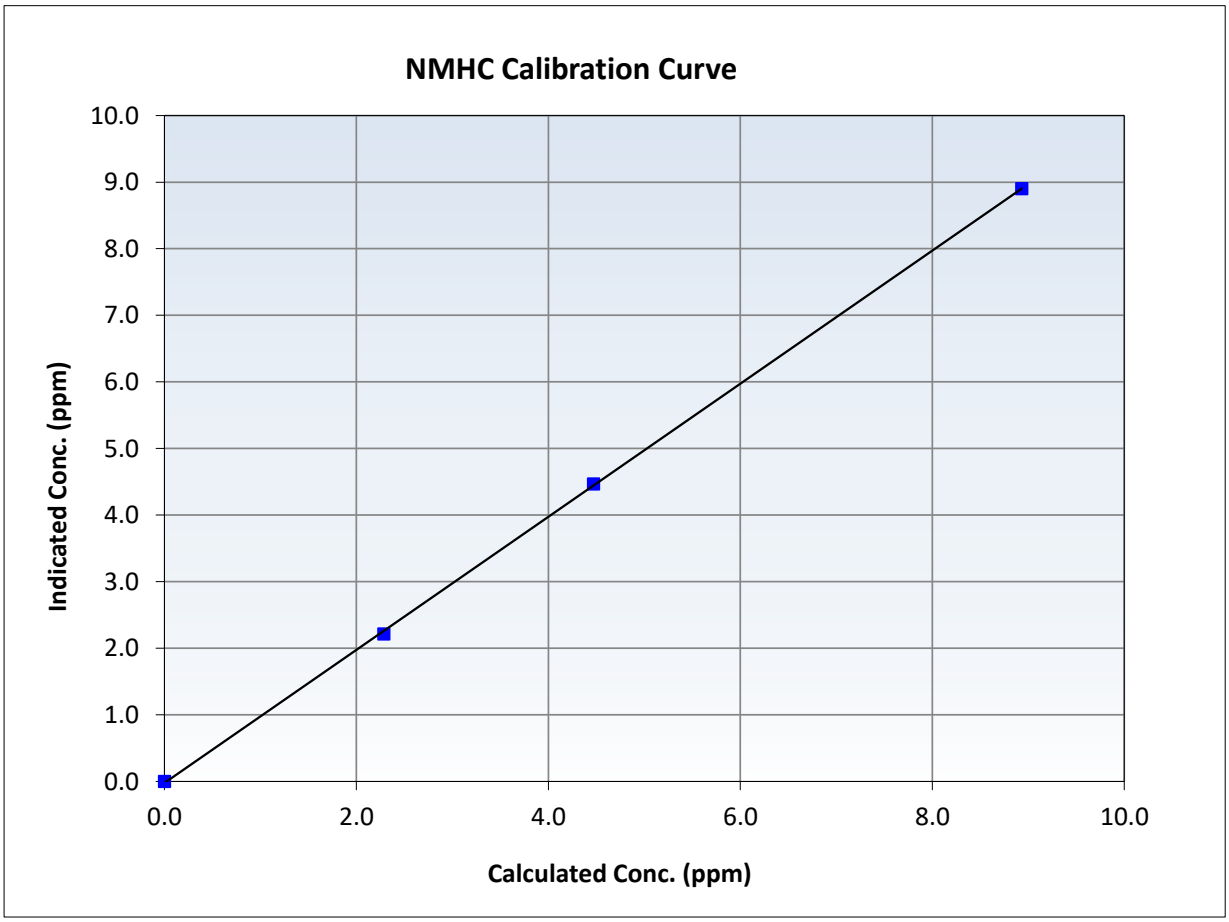
NMHC Calibration Summary

Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 16, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:30	End Time (MST):	15:29
Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999930	≥0.995
8.93	8.90	1.0031	Slope	0.999350	0.90 - 1.10
4.47	4.47	1.0011	Intercept	-0.023086	+/-0.5
2.29	2.22	1.0315			



NMHC Calibration Plot Date: July 23, 2025 Location: Stony Mountain

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Stony Mountain
Station number:	AMS 18
Calibration Date:	July 29, 2025
Last Cal Date:	June 26, 2025
Start time (MST):	11:29
End time (MST):	16:27
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0045516	Cal Gas Expiry Date:	November 17, 2026
NOX Cal Gas Conc:	60.30 ppm	NO Cal Gas Conc:	60.10 ppm
Removed Cylinder #:	N/A	Removed Gas Exp Date:	N/A
Removed Gas NOX Conc:	60.30 ppm	Removed Gas NO Conc:	60.10 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	2658
ZAG make/model:	Teledyne API 701	Serial Number:	4890

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	----	----
AF High point	4933	66.6	803.3	800.6	2.7	801.5	798.9	2.5	1.0021	1.0020
AF Mid point										
AF Low point										
New cyl resp										

Previous Respo	4933	NO_X =	800.6 ppb	NO =	798.8 ppb		
Baseline Corr 1st pt		NO_X =	801.6 ppb	NO =	799.0 ppb		
Baseline Corr 2nd pt		NO_X =	NA ppb	NO =	NA ppb		
Baseline Corr 3rd pt		NO_X =	NA ppb	NO =	NA ppb		

* = > +/-5% change initiates investigation

*Percent Change	NO_X =	0.1%	
*Percent Change	NO =	0.0%	
Nx Sl:	Nx Int:		
NO Sl:	NO Int:		
NO2 Sl:	NO_2 Int:		

As Found Statistics

As found	NO_X r^2:
As found	NO r^2:
As found	NO_2 r^2:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo Scientific 42i Serial Number: 1501663731

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.054	1.055	NO bkgnd or offset:	10.4	10.4
NOX coeff or slope:	0.996	0.999	NOX bkgnd or offset:	10.5	10.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	221.6	223.7

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.997044	1.002081
NO_X Cal Offset:	-0.248284	-0.867552
NO Cal Slope:	0.999723	1.002178
NO Cal Offset:	-1.549402	-2.109018
NO_2 Cal Slope:	0.995768	1.003367
NO_2 Cal Offset:	-1.334028	0.362949

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	-0.1	0.1	----	----
High point	4933	66.6	803.3	800.6	2.7	804.5	801.3	3.2	0.9985	0.9991
Mid point	4967	33.3	401.6	400.2	1.3	401.1	397.8	3.3	1.0012	1.0061
Low point	4983	16.6	200.2	199.5	0.7	198.9	196.0	2.9	1.0066	1.0181
As left zero	5000	0.0	0.0	0.0	0.0	0.1	-0.1	0.1	----	----
As left span	4933	66.6	803.3	383.2	420.1	806.8	383.2	423.5	0.9956	1.0000
								Average Correction Factor	1.0021	1.0078

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.1	----	----
High GPT point	801.9	383.8	420.8	422.4	0.9961	100.4%
Mid GPT point	801.9	599.3	205.3	206.5	0.9940	100.6%
Low GPT point	801.9	701.3	103.3	104.2	0.9910	100.9%
				Average Correction Factor	0.9937	100.6%

Notes: Span adjusted.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

NO_X Calibration Summary

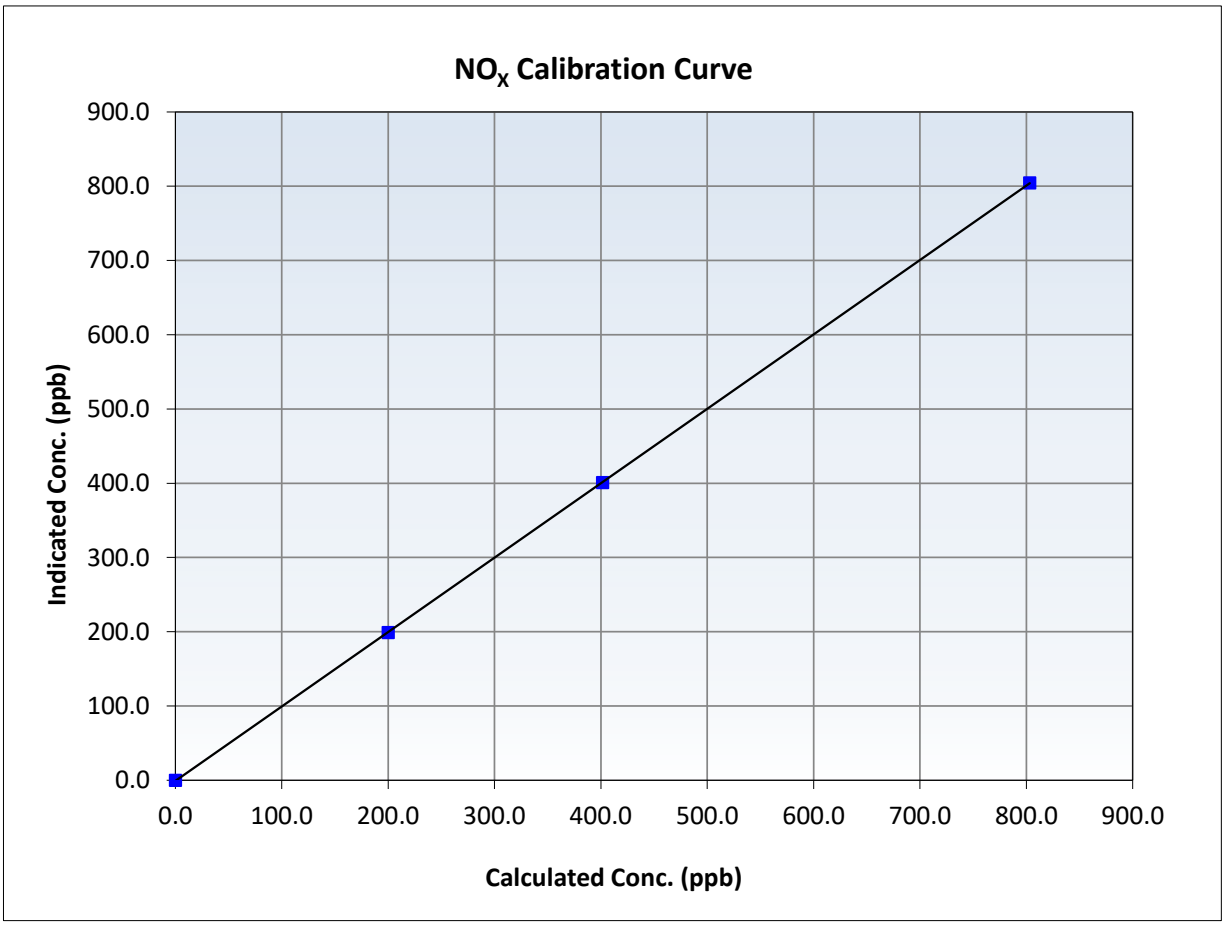
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	June 26, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:29	End Time (MST):	16:27
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1501663731

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
803.3	804.5	0.9985
401.6	401.1	1.0012
200.2	198.9	1.0066

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	1.002081	*0.90 - 1.10*
Intercept	-0.867552	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

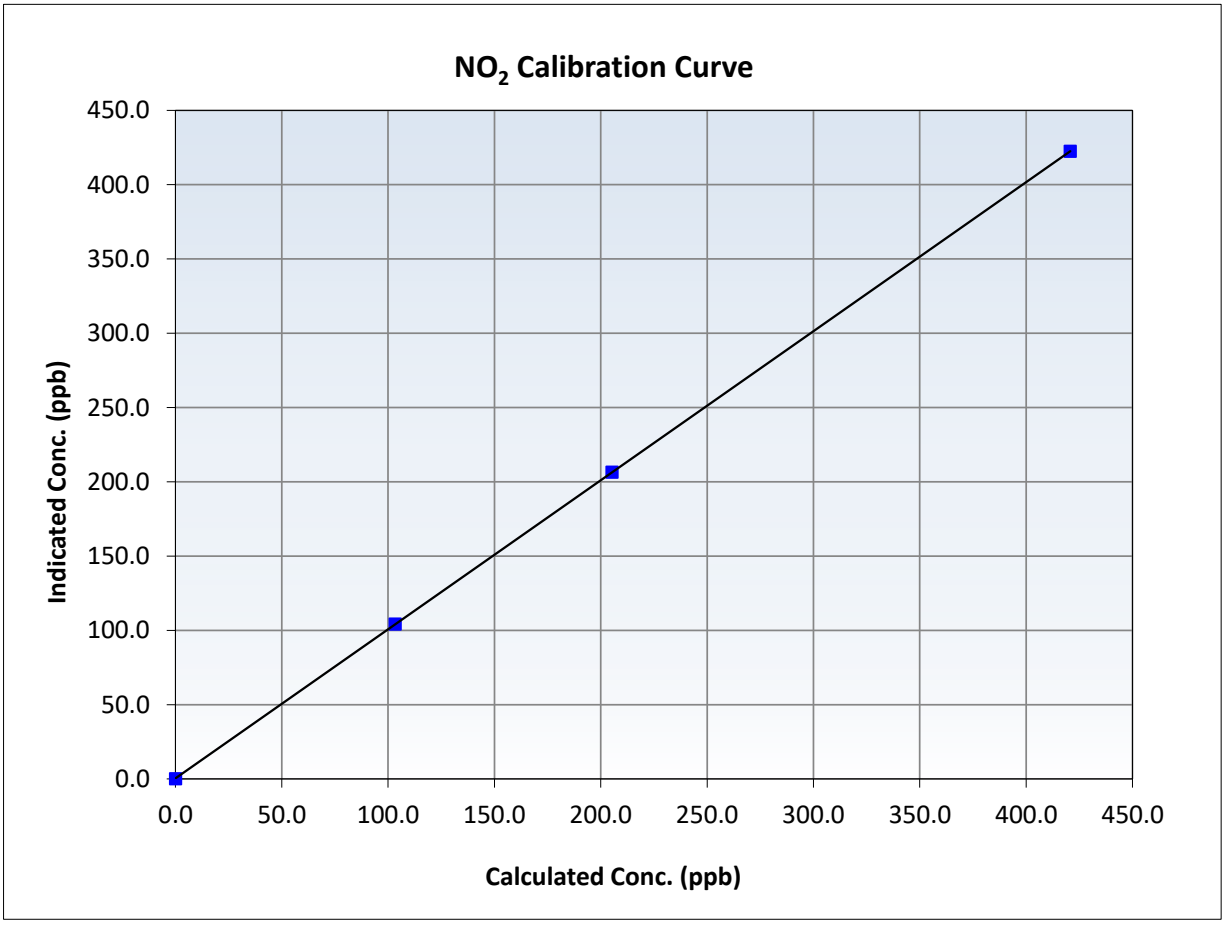
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	June 26, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:29	End Time (MST):	16:27
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1501663731

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
420.8	422.4	0.9961
205.3	206.5	0.9940
103.3	104.2	0.9910

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999998	*≥0.995*
Slope	1.003367	*0.90 - 1.10*
Intercept	0.362949	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

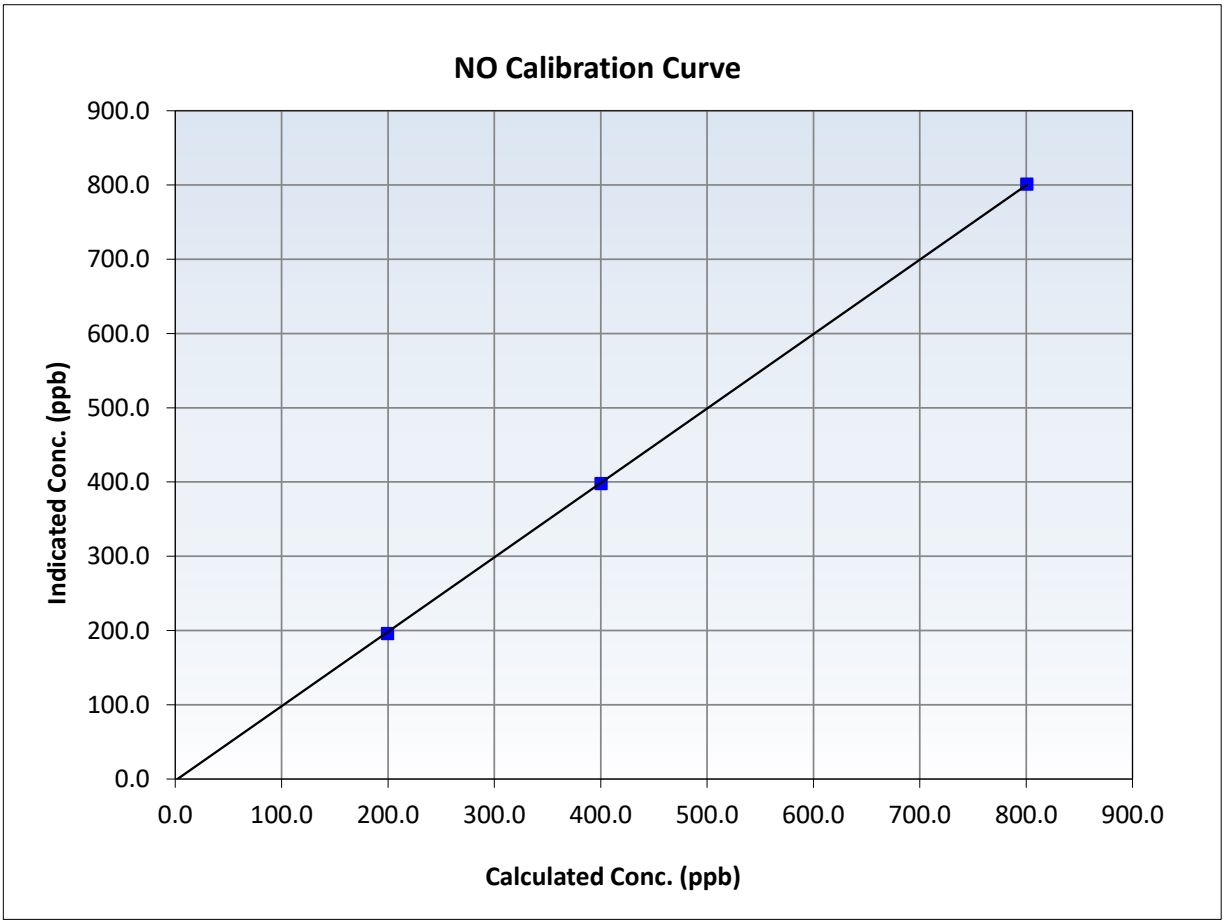
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	June 26, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:29	End Time (MST):	16:27
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1501663731

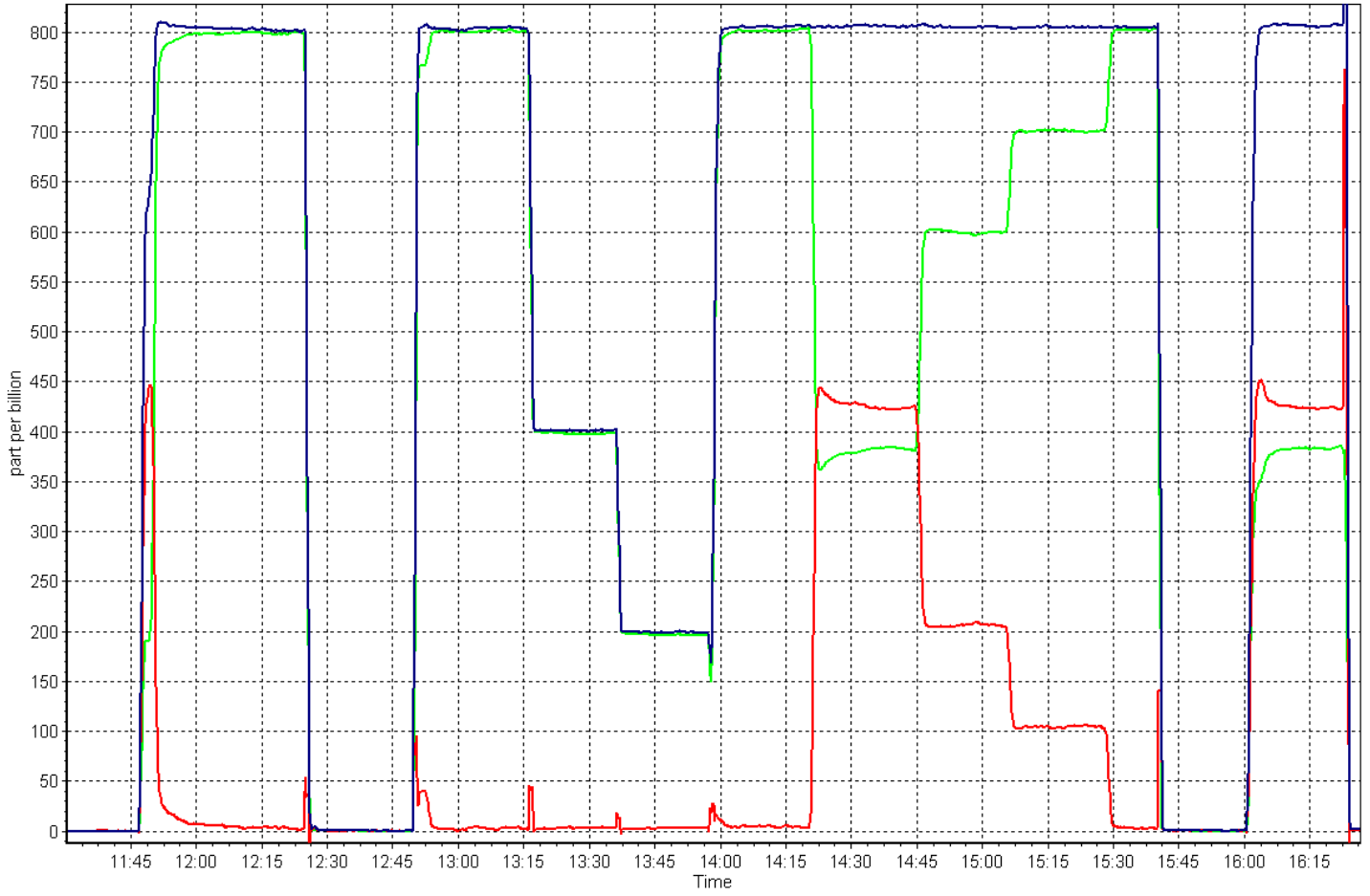
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
800.6	801.3	0.9991
400.2	397.8	1.0061
199.5	196.0	1.0181

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999971	*≥0.995*
Slope	1.002178	*0.90 - 1.10*
Intercept	-2.109018	*+/-20*



NO_X Calibration Plot Date: July 29, 2025 Location: Stony Mountain



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Stony Mountain	Station number:	AMS 18
Calibration Date:	July 16, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	11:06	End time (MST):	14:50
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	Teledyne API T700	Serial Number:	2658
ZAG Make/Model:	Teledyne API 701H	Serial Number:	355

Analyzer Information

Analyzer make:	API T400		Analyzer serial #:	825	
Analyzer Range	0 - 500 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.999946	1.006771	Backgd or Offset:	3.8	2.3
Calibration intercept:	-0.898000	0.040000	Coeff or Slope:	1.004	1.004

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	NA	0.0	-1.8	----
As found High point	4888	1138.1	400.0	402.7	0.989
As found Mid point					
As found Low point					
Baseline Corr As found:	404.5	Previous response	399.1	*% change	1.3%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	NA	0.0	-0.1	----
High point	4888	1138.1	400.0	402.7	0.993
Mid point	4888	884.5	200.0	201.4	0.993
Low point	4888	741.4	100.0	100.9	0.991
As left zero	5000	NA	0.0	-0.1	----
As left span	4812	1097.9	400.0	404.2	0.990
				Average Correction Factor	0.992

Notes: Zero adjusted.

Calibration Performed By: Aswin Sasi Kumar

Wood Buffalo Environmental Association

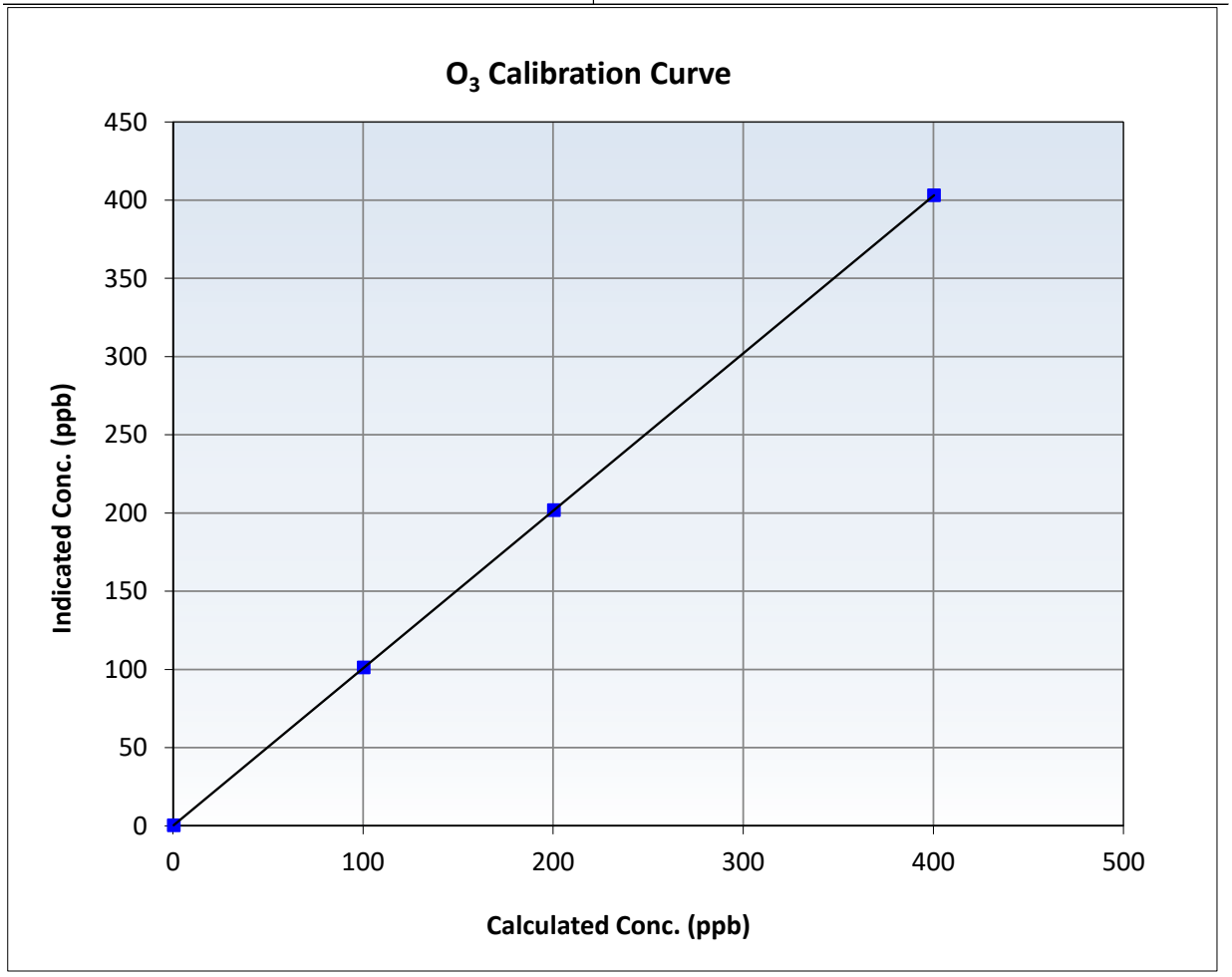
O_3 Calibration Summary

Station Information

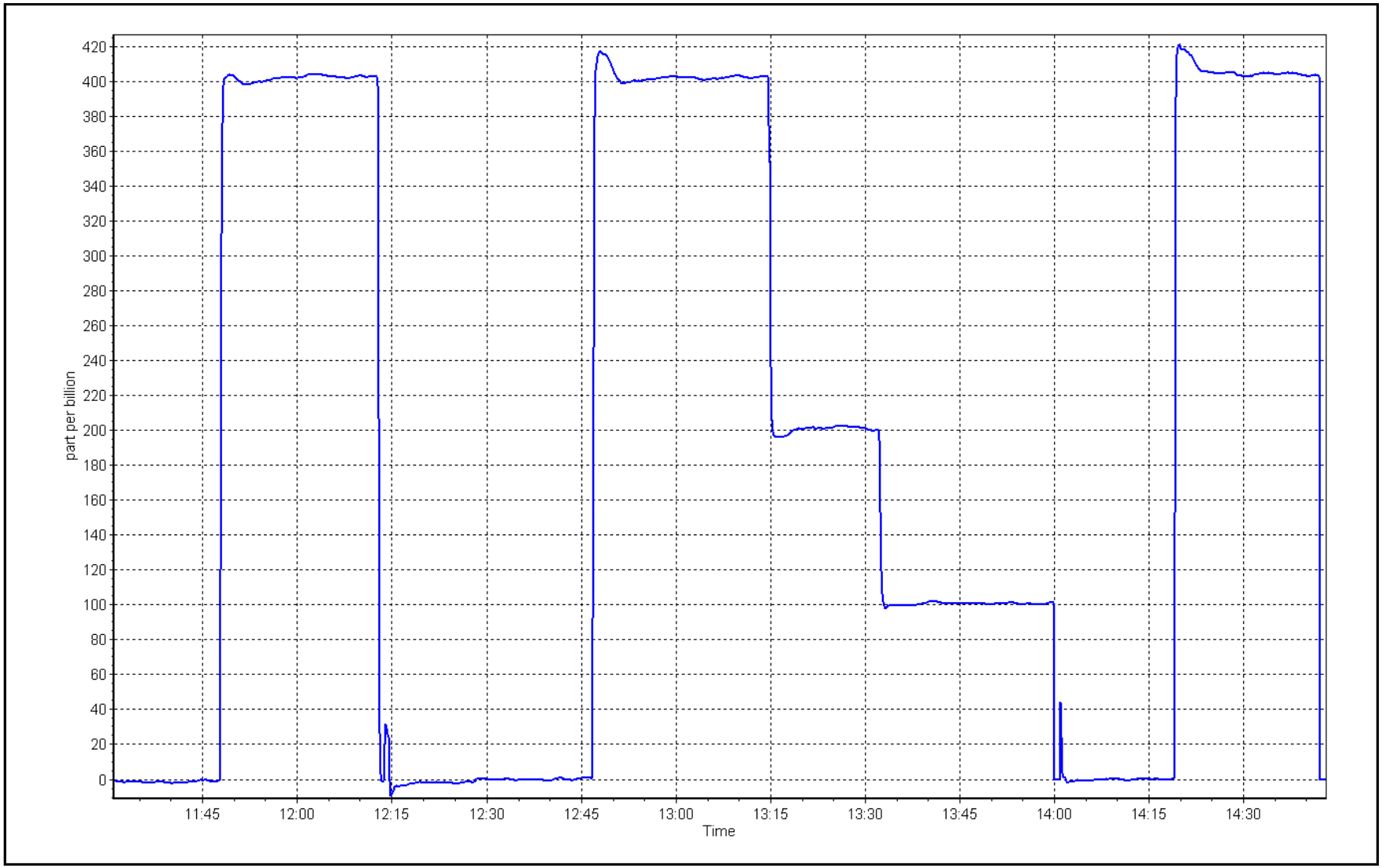
Calibration Date:	July 16, 2025	Previous Calibration:	June 11, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:06	End Time (MST):	14:50
Analyzer make:	API T400	Analyzer serial #:	825

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	-0.1	----	Correlation Coefficient	0.999999	*≥0.995*
400.0	402.7	0.9933	Slope	1.006771	*0.90 - 1.10*
200.0	201.4	0.9930			
100.0	100.9	0.9911	Intercept	0.040000	*+/- 5*



O_3 Calibration Plot Date: July 16, 2025 Location: Stony Mountain



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Stony Mountain	Station number:	AMS 18
Calibration Date:	July 29, 2025	Last Cal Date:	June 27, 2025
Start time (MST):	14:47	End time (MST):	15:57
Analyzer Make:	API T640	S/N:	324
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388749
Temp/RH standard:	Alicat FP-25BT	S/N:	388749

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	23.2	24.4	23.2	☐	+/- 2 °C
P (mmHg)	708.3	705.40	708.3	☐	+/- 10 mmHg
Flow (LPM)	5.02	5.1	5.02	☐	+/- 0.25 LPM
PW% (pump)	33	-----	33	☐	>80%
Zero Verification	PM w/o HEPA:	6.5	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: October 10, 2024 — Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: June 27, 2025

Date Disposable Filter Changed: June 27, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.0 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: July 4, 2024

Date RH/T Sensor Cleaned: July 4, 2024

Notes: Flow, temp and pressure checked. Leak check passed.

Calibration by: Aswin Sasi Kumar

Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Stony Mountain	Station Number:	AMS 18
Calibration Date:	July 30, 2025	Prev Cal Date:	February 21, 2024
Start Time (MST):	13:00	End Time (MST):	N/A
Tower Height (m):	10.0	Reason:	Removal

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	D16124
WS Calibrator:	MetOne 053	Serial Number:	P15103

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error *Limit = +/- 1.5%*
0	0.0	0.0	---
200	20.2	20.1	-0.3%
400	39.4	39.4	0.1%
600	58.6	58.4	-0.3%
800	77.8	77.6	-0.2%

	Start	***Finish***	*Limits*
Correl Coeff (r^2)		0.999998	*≥0.9995*
Calculated slope		1.002044	*0.98 - 1.02*
Calculated intercept		-0.014312	*+/- 2*

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	D14060
As Found Declination (deg east of True North):		As Left Declination (deg east of True North):	
Solar noon (MST):	13:30	Calc Declination*:	13 Degrees
WD Calibrator:	Met One 040		* - calculated declination as per NOAA website

Physical Direction (Degrees) (Cv)	Indicated Direction (Degrees) (Iv)	% Error (based on 360° FS) *Limit = +/- 1%*
10	9.6	-0.1%
90	89.3	-0.2%
180	179.8	-0.1%
270	269.7	-0.1%
350	348.6	-0.4%

	Start	***Finish***	*Limits*
Correl Coeff (r^2)		0.999995	*≥0.9995*
Calculated slope		1.001805	*0.97 - 1.03*
Calculated intercept		0.276251	*+/- 5*

Notes: Removal calibration.

Calibration Performed By: Aswin Sasi Kumar

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS19
FIREBAG
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Firebag	Station number:	AMS 19
Calibration Date:	July 18, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	10:14	End time (MST):	13:37
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.97	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC705799			
Removed Cal Gas Conc:	50.97	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	1607
Zero Air Gen Model:	Teledyne API T701H		Serial Number:	201

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1410661308	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.000017	0.997271	Backgd or Offset:	11.5	11.5
Calibration intercept:	1.040000	0.300000	Coeff or Slope:	1.021	1.021

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	4999	0.0	0.0	-0.2	----
As found High point	4922	78.4	799.2	794.0	1.006
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	794.2	Previous response	800.3	*% change	-0.8%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	4999	0.0	0.0	0.0	----
High point	4922	78.4	799.2	797.3	1.002
Mid point	4961	39.2	399.6	398.6	1.003
Low point	4980	19.6	199.8	200.1	0.999
As left zero	4999	0.0	0.0	-0.2	----
As left span	4922	78.4	799.2	796.8	1.003
				Average Correction Factor:	1.001

Notes: Changed sample inlet filter after as founds. No adjustments made.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

SO_2 Calibration Summary

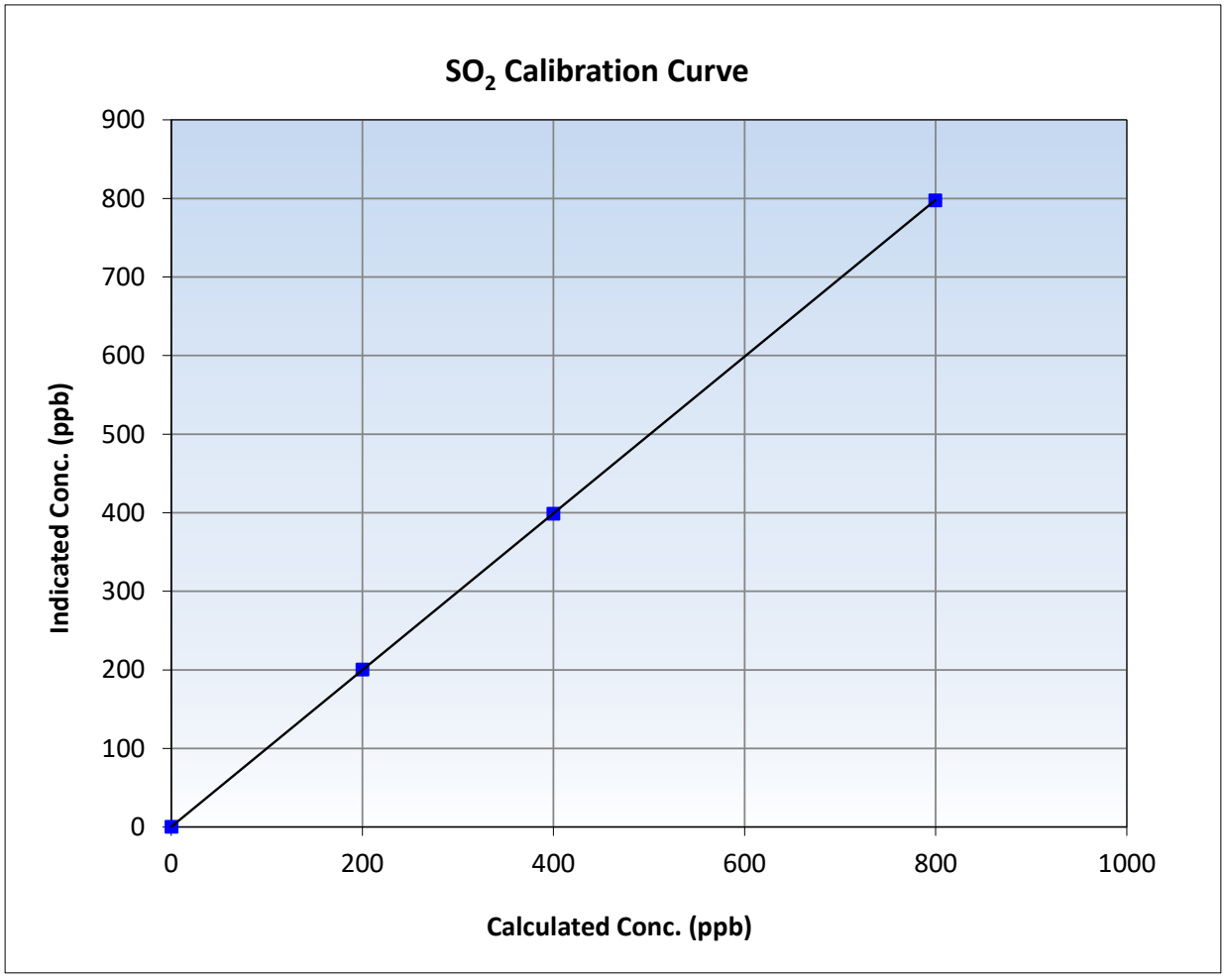
Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 24, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	10:14	End Time (MST):	13:37
Analyzer make:	Thermo 43i	Analyzer serial #:	1410661308

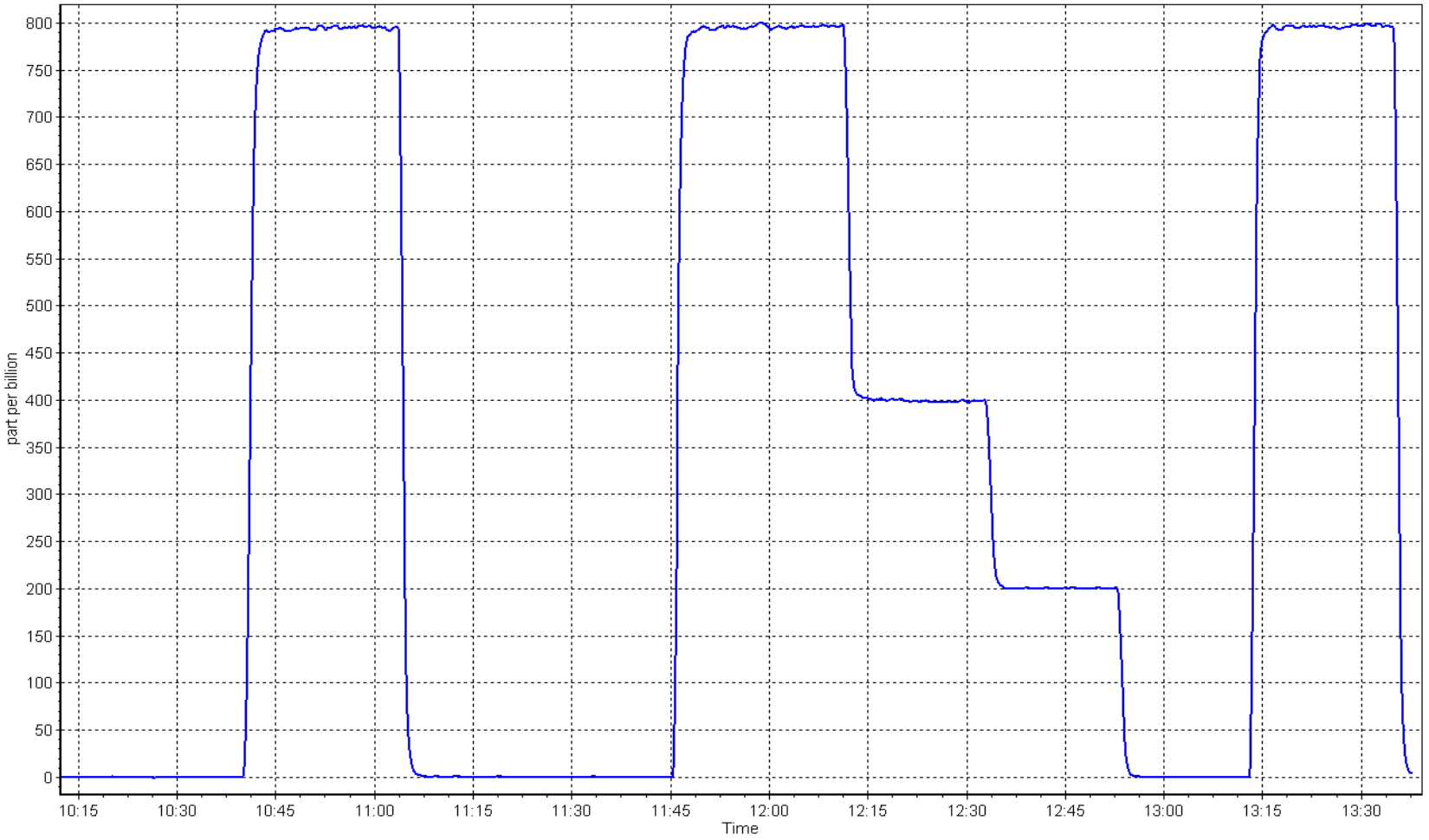
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
799.2	797.3	1.0024
399.6	398.6	1.0025
199.8	200.1	0.9985

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	0.997271	*0.90 - 1.10*
Intercept	0.300000	*+/-30*



SO2 Calibration Plot Date: July 18, 2025 Location: Firebag



Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name:	Firebag	Station number:	AMS 19
Calibration Date:	July 14, 2025	Last Cal Date:	June 18, 2025
Start time (MST):	9:48	End time (MST):	15:32
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.29	ppm	Cal Gas Exp Date:	March 19, 2027
Cal Gas Cylinder #:	DT0010492			
Removed Cal Gas Conc:	5.29	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	1607
ZAG Make/Model:	Teledyne API T701		Serial Number:	201

Analyzer Information

Analyzer make:	Thermo 43i-TLE		Analyzer serial #:	1151680032
Converter make:	Global		Converter serial #:	2022-222
Analyzer Range	0 - 100 ppb		Converter Temp:	325 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.002619	0.996904	Backgd or Offset:	2.86	2.82
Calibration intercept:	-0.060000	-0.060000	Coeff or Slope:	1.198	1.198

H2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4924	75.6	80.0	81.7	0.979
As found Mid point	4962	37.8	40.0	40.4	0.990
As found Low point	4981	18.9	20.0	20.2	0.990
New cylinder response					

Baseline Corr As found:	81.7	Prev response:	80.13	*% change:	1.9%
Baseline Corr 2nd AF pt:	40.4	AF Slope:	1.021766	AF Intercept:	-0.180000
Baseline Corr 3rd AF pt:	20.2	AF Correlation:	0.999962	* = > +/-5% change initiates investigation	

H2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4924	75.6	80.0	79.7	1.004
Mid point	4962	37.8	40.0	39.7	1.007
Low point	4981	18.9	20.0	20.0	1.000
As left zero	5000	0.0	0.0	0.1	----
As left span	4924	75.6	80.0	78.5	1.019
SO2 Scrubber Check	4922	78.4	784.0	-0.1	----

Date of last scrubber change:	18-Jan-23	Ave Corr Factor	1.004	
Date of last converter efficiency test:	November 26, 2024	106.2%	efficiency	

Notes: Changed sample inlet filter after as founds. No adjustments made. SOx scrubber check done after cal zero.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

H2S Calibration Summary

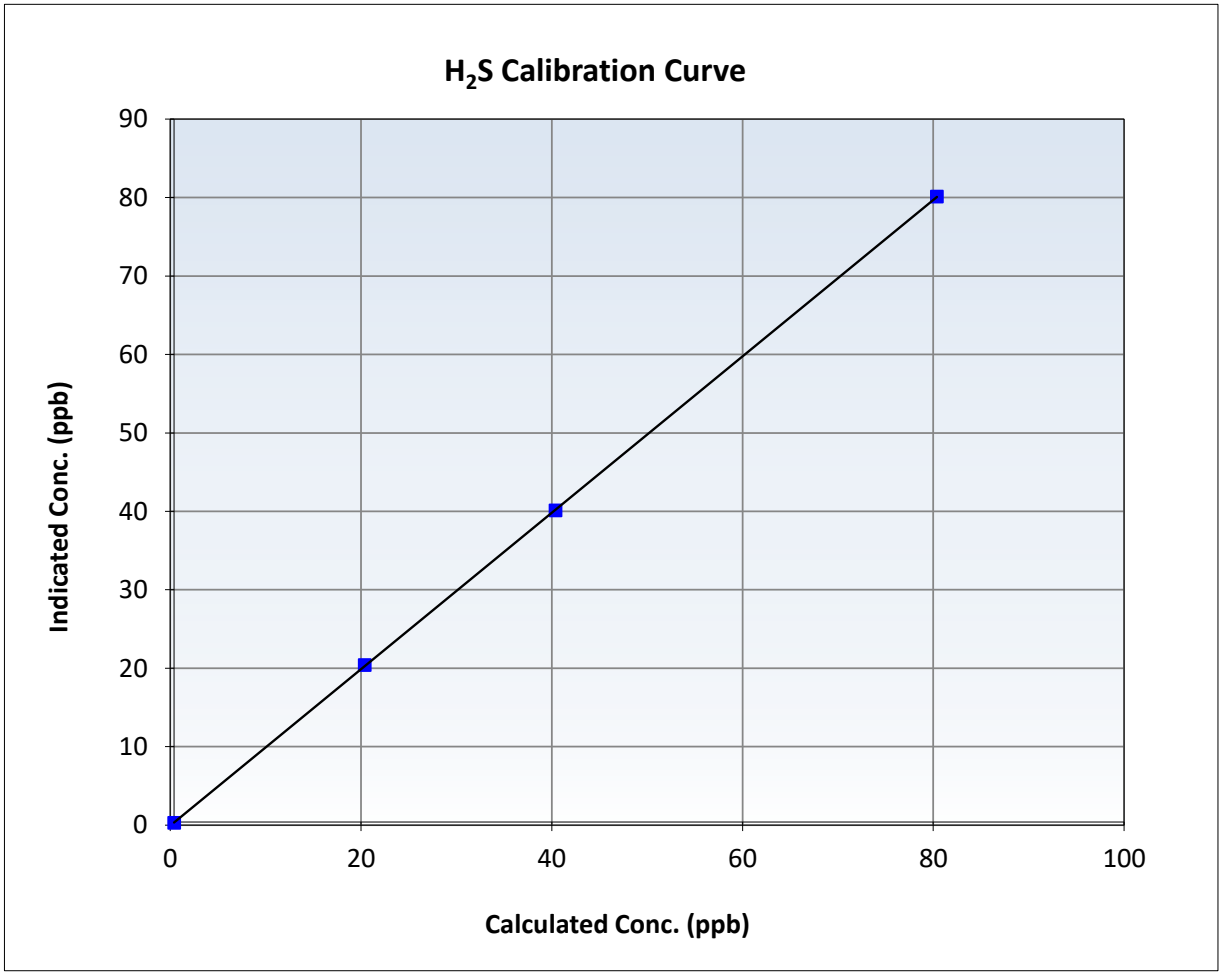
Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 18, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	9:48	End Time (MST):	15:32
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1151680032

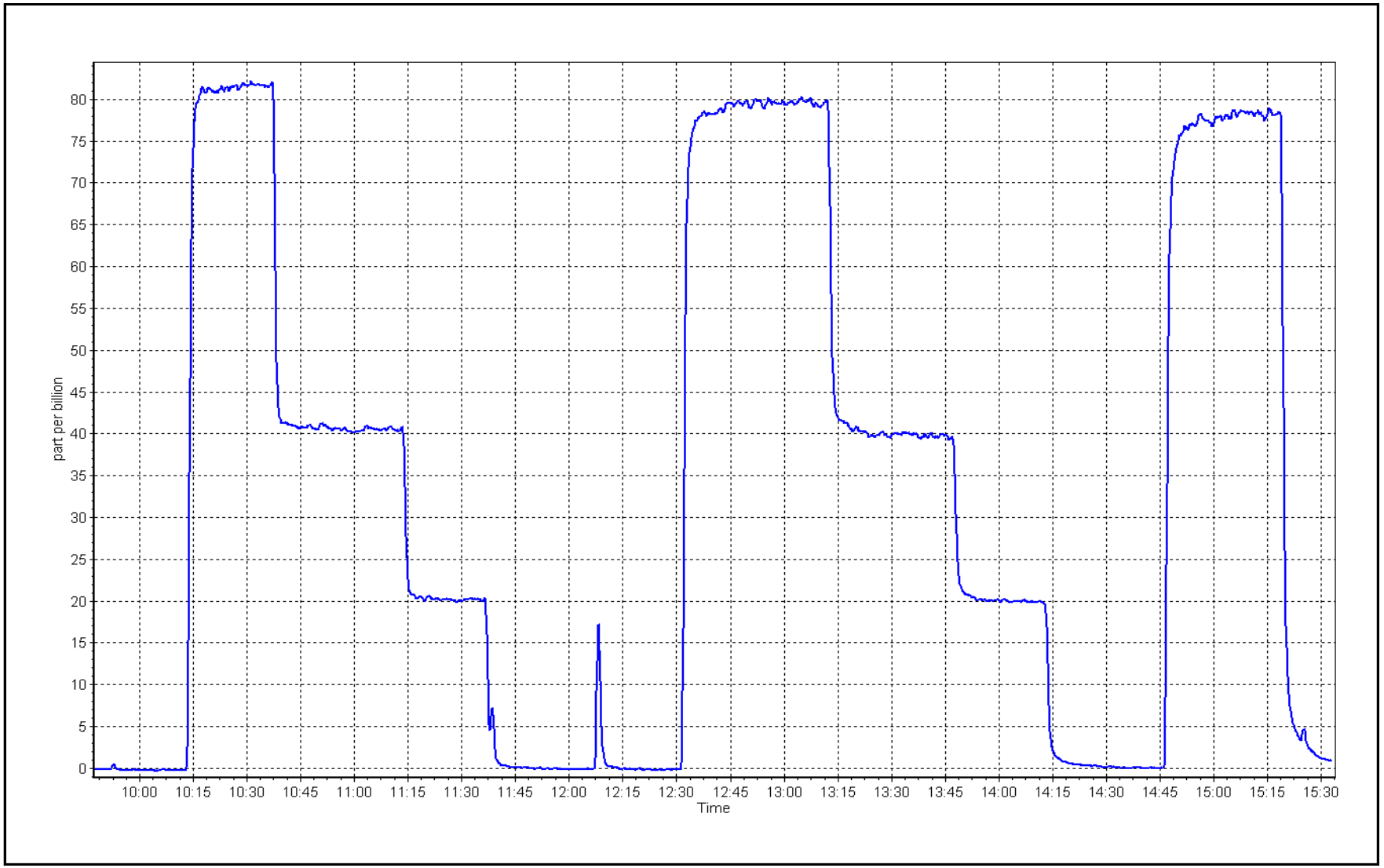
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
80.0	79.7	1.0036
40.0	39.7	1.0074
20.0	20.0	0.9998

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999991	*≥0.995*
Slope	0.996904	*0.90 - 1.10*
Intercept	-0.060000	*+/-3*



H2S Calibration Plot Date: July 14, 2025 Location: Firebag



Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name:	Firebag	Station number:	AMS 19
Calibration Date:	July 18, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	10:14	End time (MST):	13:37
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC705799		Cal Gas Expiry Date:	October 9, 2032	
CH4 Cal Gas Conc.	505.1	ppm	CH4 Equiv Conc.	1066.9	ppm
C3H8 Cal Gas Conc.	204.3	ppm			
Removed Gas Cert:			Removed Gas Expiry:		
Removed CH4 Conc.	505.1	ppm	CH4 Equiv Conc.	1066.9	ppm
Removed C3H8 Conc.	204.3	ppm	Diff between cyl:		
Calibrator Make/Model:	Teledyne API T700		Serial Number:	1607	
ZAG Make/Model:	Teledyne API T701H		Serial Number:	201	

Analyzer Information

Analyzer make:	Thermo 51i-LT		Analyzer serial #:	1336160089	
Analyzer Range:	0 - 20 ppm				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.994363	1.006674	Background:	2.16	2.30
Calibration intercept:	0.076067	-0.048535	Coefficient:	3.813	3.841

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	4999	0.0	0.00	0.11	----
As found High point	4922	78.4	16.73	16.79	1.003
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	16.68	Previous response	16.71	*% change	-0.2%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	4999	0.0	0.00	-0.03	----
High point	4922	78.4	16.73	16.82	0.995
Mid point	4961	39.2	8.36	8.31	1.007
Low point	4980	19.6	4.18	4.18	1.002
As left zero	4999	0.0	0.00	0.02	----
As left span	4922	78.4	16.73	16.77	0.998
				Average Correction Factor	1.001

Notes: Changed sample inlet filter after as founds. Adjusted zero.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

THC Calibration Summary

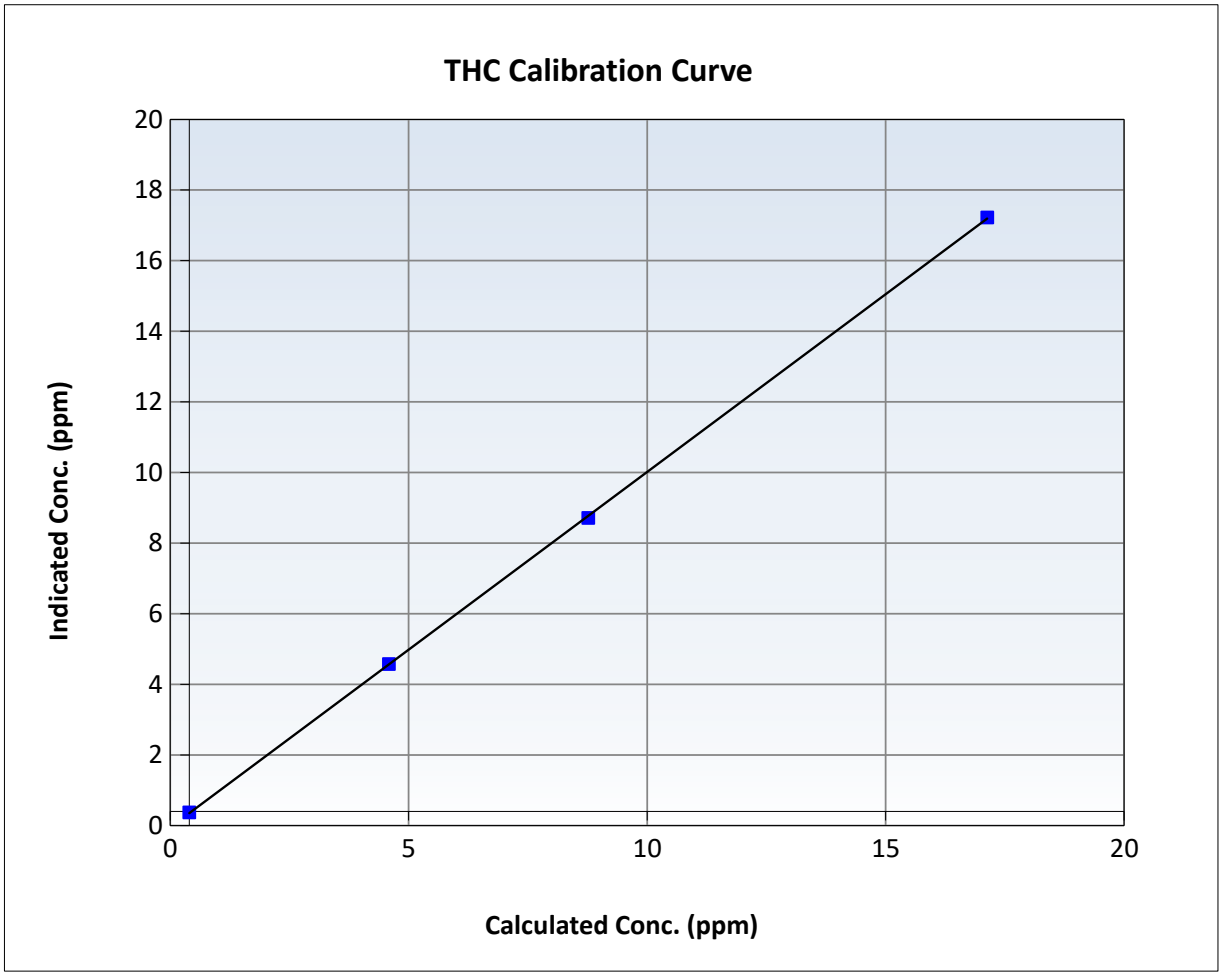
Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 24, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	10:14	End Time (MST):	13:37
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1336160089

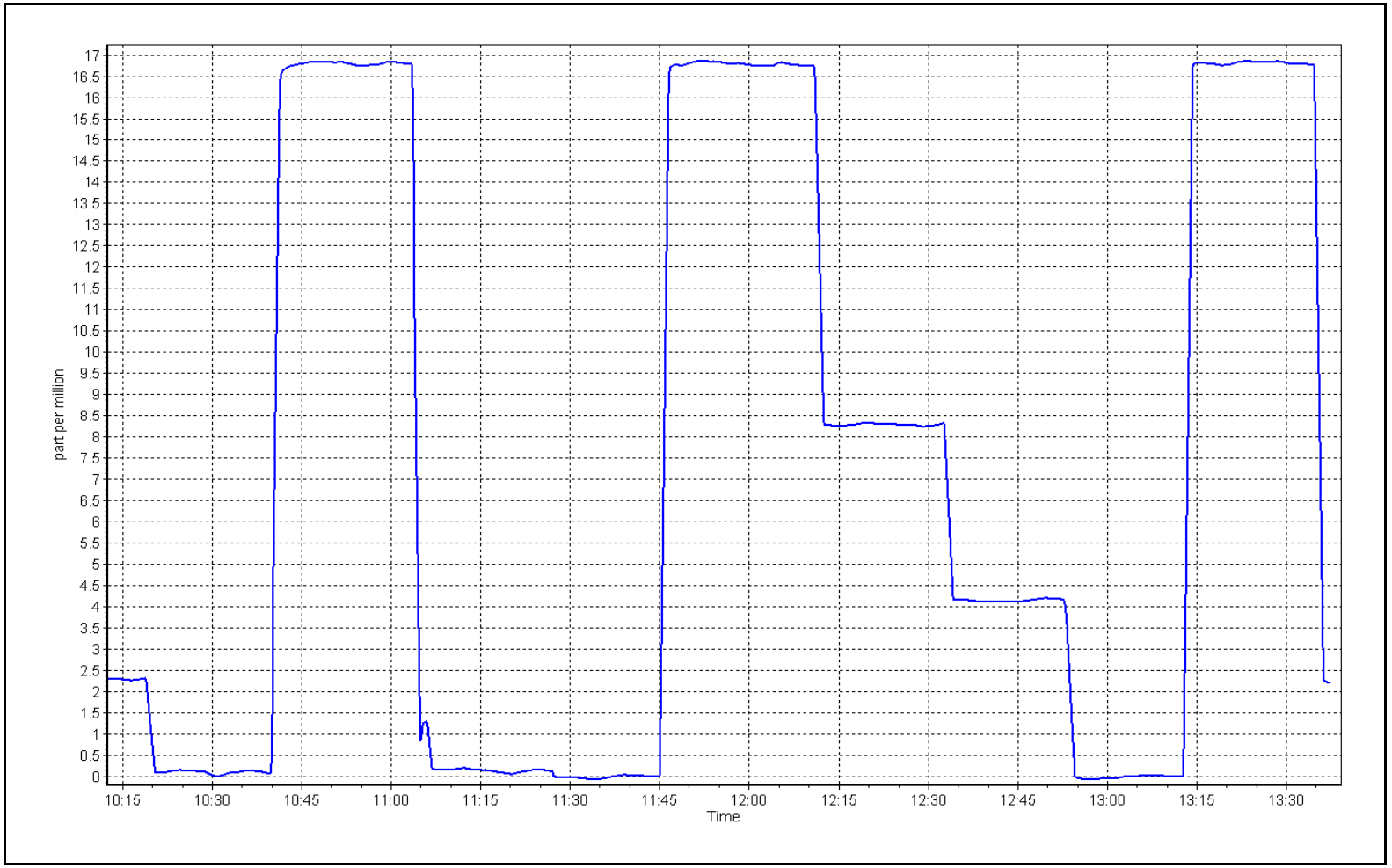
Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	-0.03	----
16.73	16.82	0.9946
8.36	8.31	1.0066
4.18	4.18	1.0016

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999966	*≥0.995*
Slope	1.006674	*0.90 - 1.10*
Intercept	-0.048535	*+/-1.5*



THC Calibration Plot Date: July 18, 2025 Location: Firebag



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Firebag
Station number:	AMS 19
Calibration Date:	July 31, 2025
Last Cal Date:	June 17, 2025
Start time (MST):	9:19
End time (MST):	13:52
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0044018	Cal Gas Expiry Date:	November 3, 2031
NOX Cal Gas Conc:	48.90 ppm	NO Cal Gas Conc:	48.70 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	48.90 ppm	Removed Gas NO Conc:	48.70 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	1607
ZAG make/model:	Teledyne API T701H	Serial Number:	201

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.1	0.0	0.1	----	----
AF High point	4918	82.1	802.9	799.7	3.3	802.0	799.4	2.4	1.0013	1.0003
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X =	803.2 ppb	NO =	801.5 ppb	* = > +/-5% change initiates investigation	*Percent Change	NO_X = -0.2%
Baseline Corr 1st pt	NO_X =	801.9 ppb	NO =	799.4 ppb	As Found Statistics	*Percent Change	NO = -0.3%
Baseline Corr 2nd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO_X r^2:	Nx Sl:	Nx Int:
Baseline Corr 3rd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO r^2:	NO Sl:	NO Int:
					As found NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1410661309

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	0.938	0.938	NO bkgnd or offset:	4.7	4.7
NOX coeff or slope:	0.991	0.991	NOX bkgnd or offset:	4.7	4.7
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	164.2	166.7

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.998316	1.000279
NO_X Cal Offset:	1.620007	1.080384
NO Cal Slope:	1.001516	1.001287
NO Cal Offset:	0.660105	0.639993
NO_2 Cal Slope:	0.994398	1.000414
NO_2 Cal Offset:	-0.361272	-0.537216

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.2	0.0	0.2	----	----
High point	4918	82.1	802.9	799.7	3.3	804.0	801.0	2.1	0.9987	0.9983
Mid point	4959	41.1	402.0	400.3	1.6	403.0	401.8	1.2	0.9974	0.9963
Low point	4980	20.5	200.5	199.7	0.8	202.9	201.2	1.8	0.9881	0.9924
As left zero	5000	0	0.0	0.0	0.0	0.2	-0.1	0.3	----	----
As left span	4918	82.1	802.9	392.7	410.2	803.0	392.7	410.2	0.9999	1.0000
								Average Correction Factor	0.9947	0.9957

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.2	----	----
High GPT point	799.7	391.6	411.4	411.4	1.0000	100.0%
Mid GPT point	799.7	598.1	204.9	204.0	1.0043	99.6%
Low GPT point	799.7	702.7	100.3	99.1	1.0119	98.8%
				Average Correction Factor	1.0054	99.5%

Notes: Changed sample inlet filter after as founds. No adjustments made.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

NO_X Calibration Summary

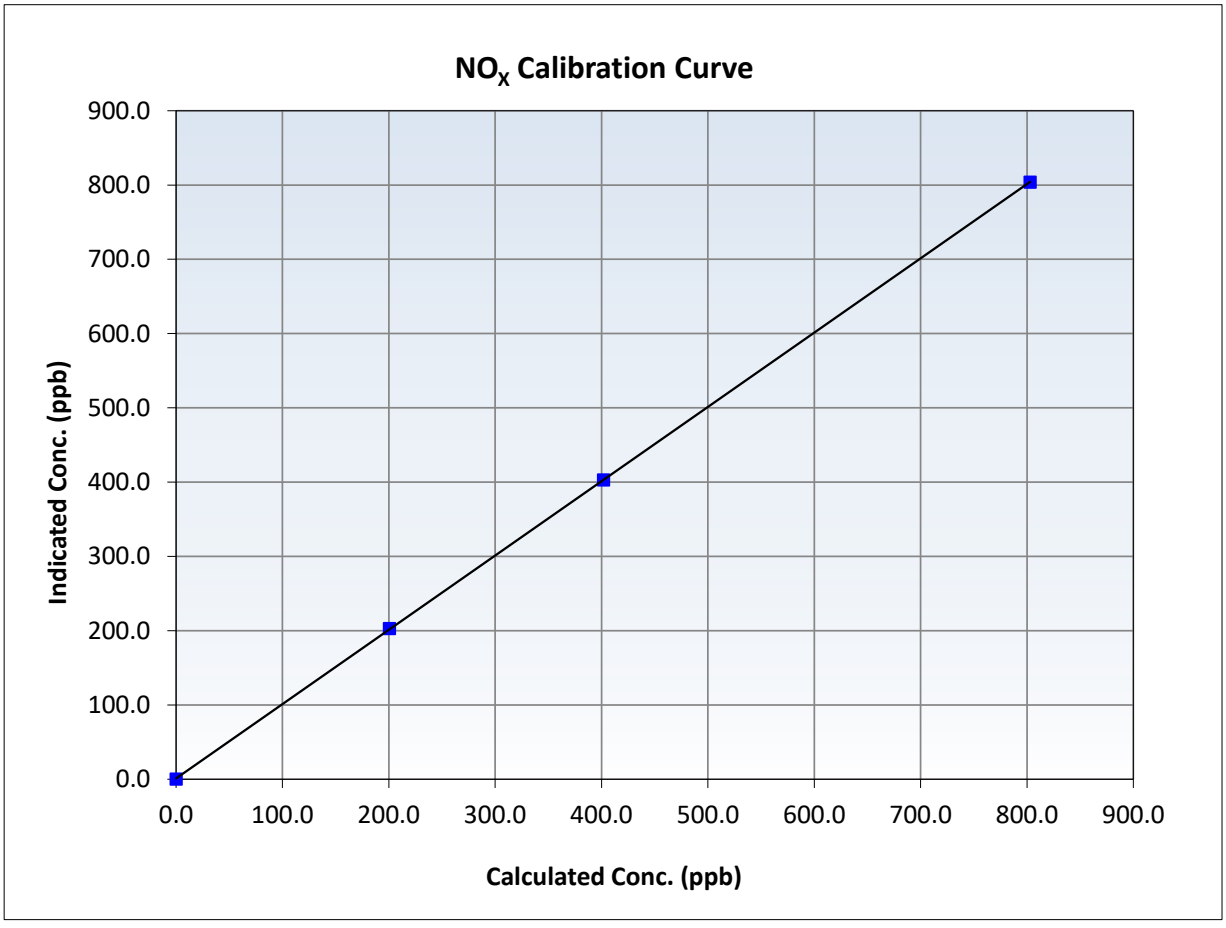
Station Information

Calibration Date:	July 31, 2025	Previous Calibration:	June 17, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	9:19	End Time (MST):	13:52
Analyzer make:	Thermo 42i	Analyzer serial #:	1410661309

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
802.9	804.0	0.9987
402.0	403.0	0.9974
200.5	202.9	0.9881

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999993	*≥0.995*
Slope	1.000279	*0.90 - 1.10*
Intercept	1.080384	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

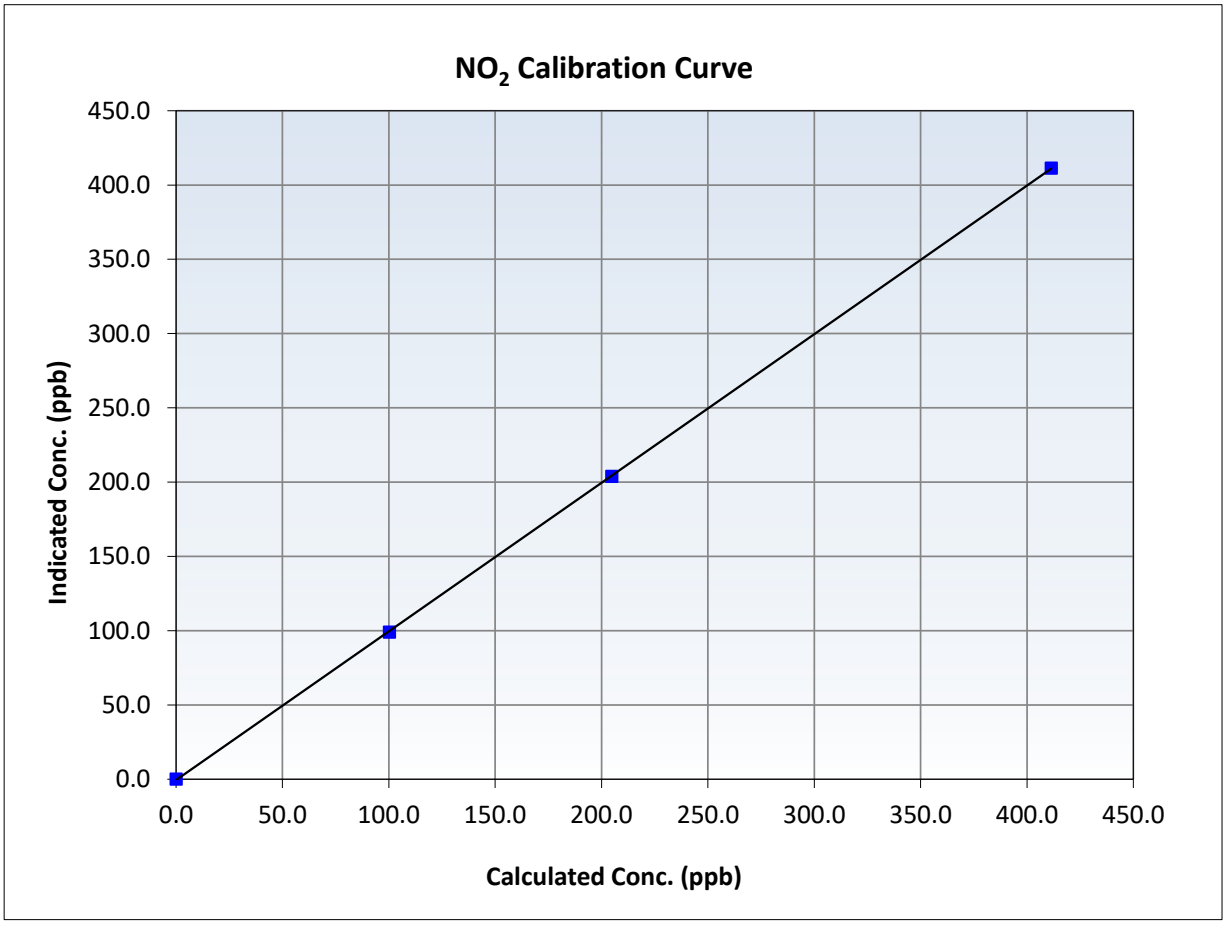
Station Information

Calibration Date:	July 31, 2025	Previous Calibration:	June 17, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	9:19	End Time (MST):	13:52
Analyzer make:	Thermo 42i	Analyzer serial #:	1410661309

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
411.4	411.4	1.0000
204.9	204.0	1.0043
100.3	99.1	1.0119

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999985	*≥0.995*
Slope	1.000414	*0.90 - 1.10*
Intercept	-0.537216	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

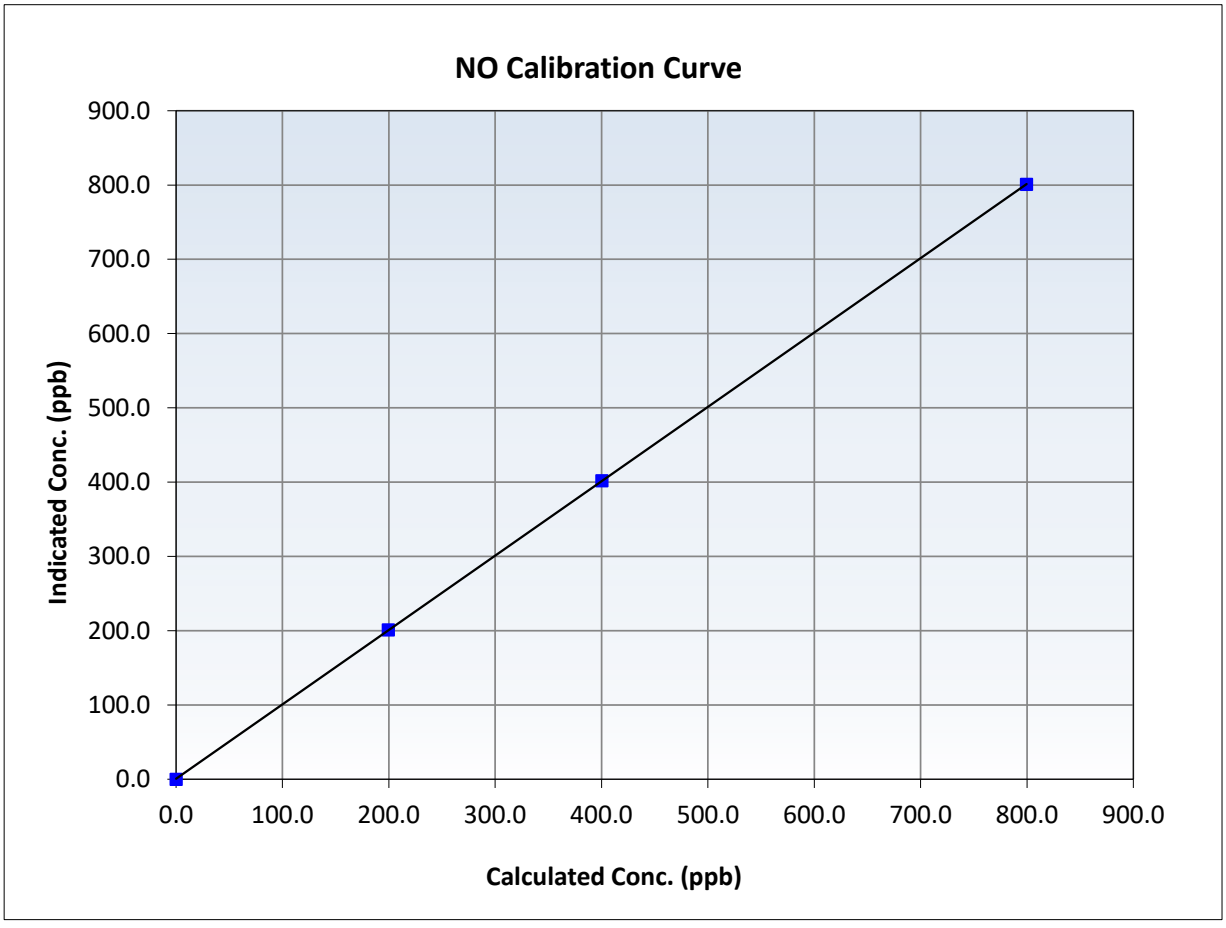
Station Information

Calibration Date:	July 31, 2025	Previous Calibration:	June 17, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	9:19	End Time (MST):	13:52
Analyzer make:	Thermo 42i	Analyzer serial #:	1410661309

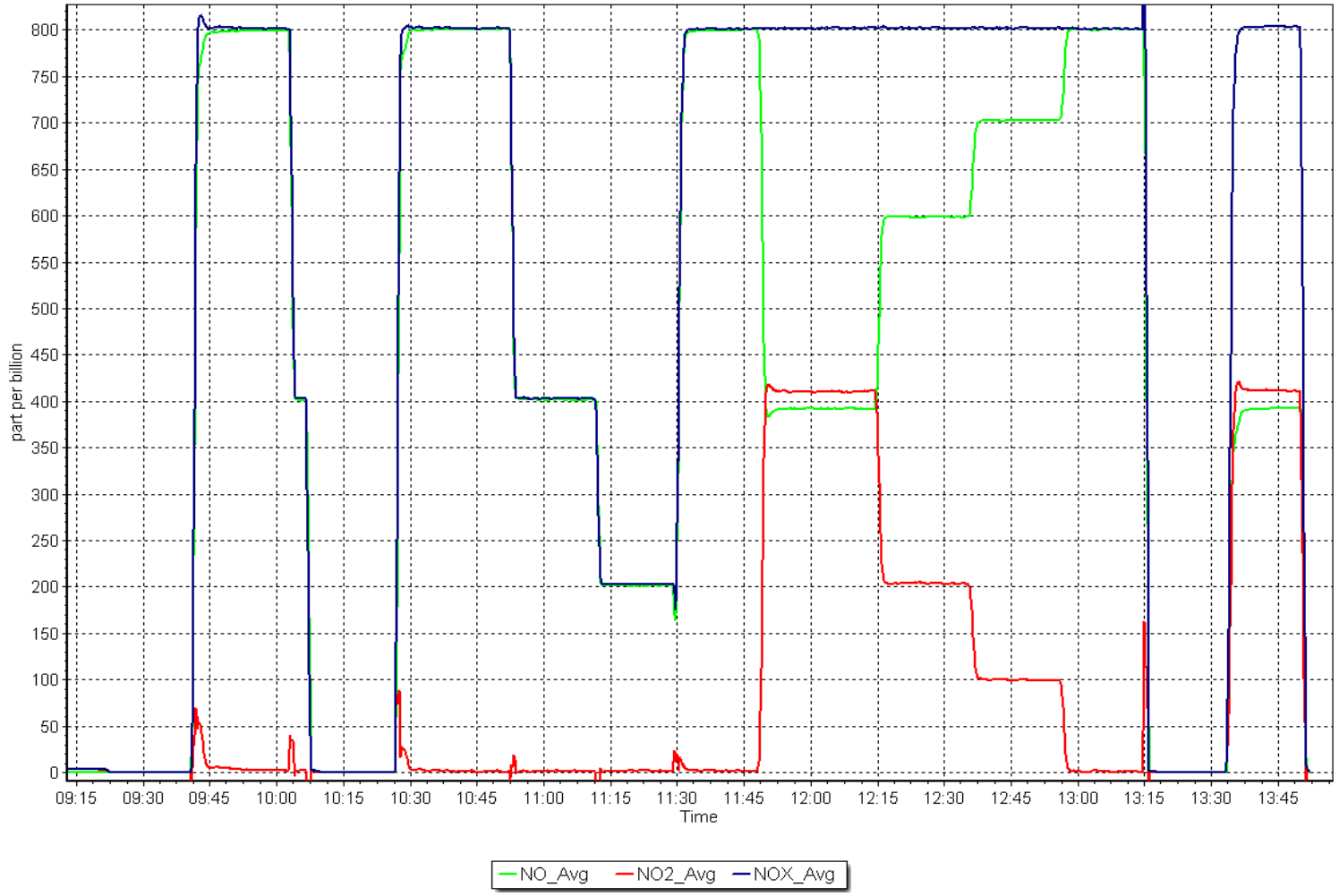
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
799.7	801.0	0.9983
400.3	401.8	0.9963
199.7	201.2	0.9924

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999997	*≥0.995*
Slope	1.001287	*0.90 - 1.10*
Intercept	0.639993	*+/-20*



NO_X Calibration Plot Date: July 31, 2025 Location: Firebag



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS20
MACKAY RIVER
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	MacKay River	Station number:	AMS 20
Calibration Date:	July 22, 2025	Last Cal Date:	June 12, 2025
Start time (MST):	8:01	End time (MST):	10:31
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	49.15	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC409669			
Removed Cal Gas Conc:	49.15	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	5706
Zero Air Gen Model:	API 701		Serial Number:	4888

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1501301450	
Analyzer Range:	0-1000ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.998504	1.002217	Backgd or Offset:	20.5	19.4
Calibration intercept:	-0.936338	0.964310	Coeff or Slope:	0.931	0.931

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-1.0	----
As found High point	4919	81.4	800.1	803.7	0.994
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	804.7	Previous response	798.0	*% change	0.8%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.7	----
High point	4919	81.4	800.1	802.7	0.997
Mid point	4959	40.7	400.1	402.1	0.995
Low point	4980	20.3	199.5	201.2	0.992
As left zero	5000	0.0	0.0	0.7	----
As left span	4919	81.4	800.1	806.2	0.992
				Average Correction Factor:	0.995

Notes: No Maintenance done. Zero adjusted.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

SO_2 Calibration Summary

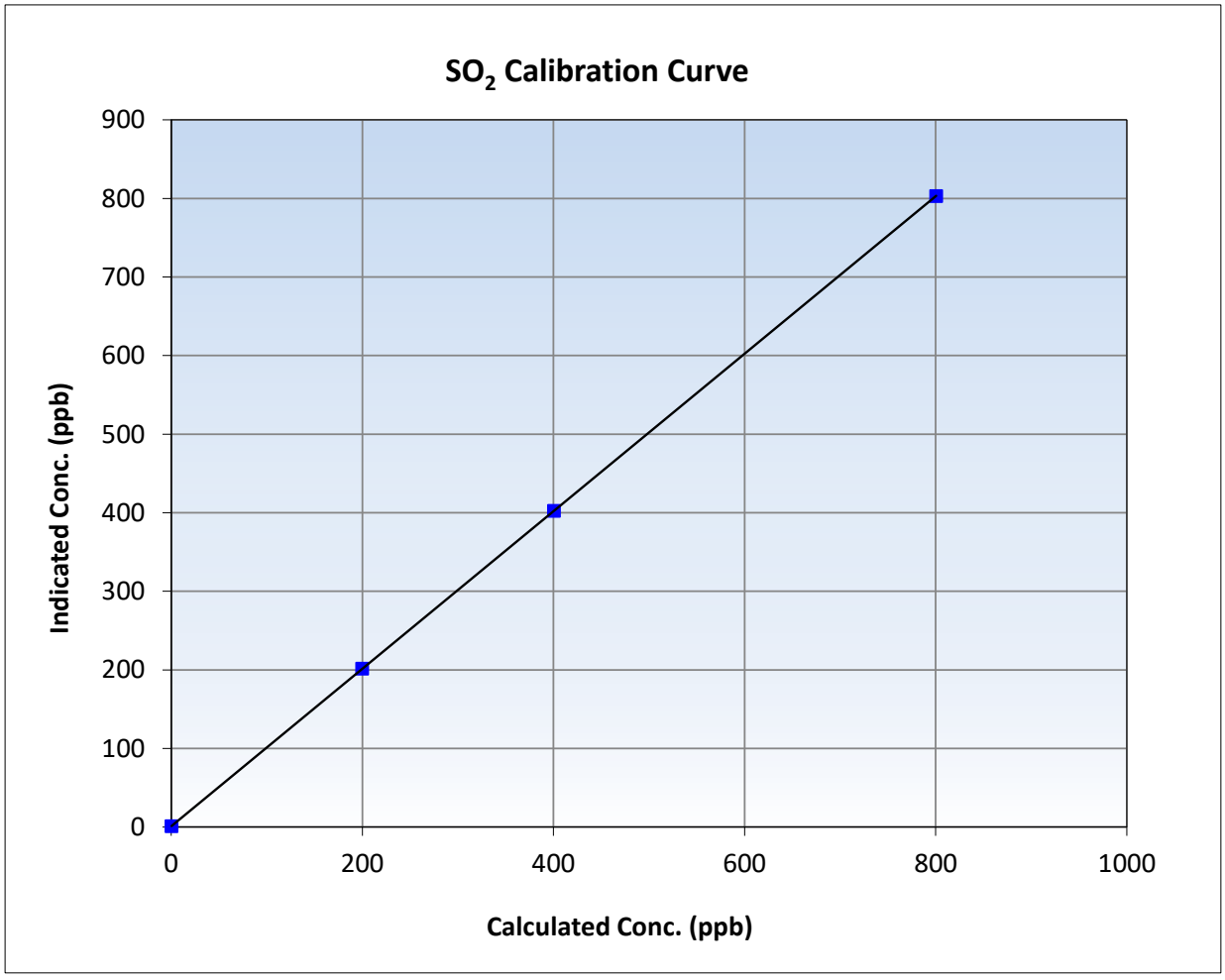
Station Information

Calibration Date:	July 22, 2025	Previous Calibration:	June 12, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	8:01	End Time (MST):	10:31
Analyzer make:	Thermo 43i	Analyzer serial #:	1501301450

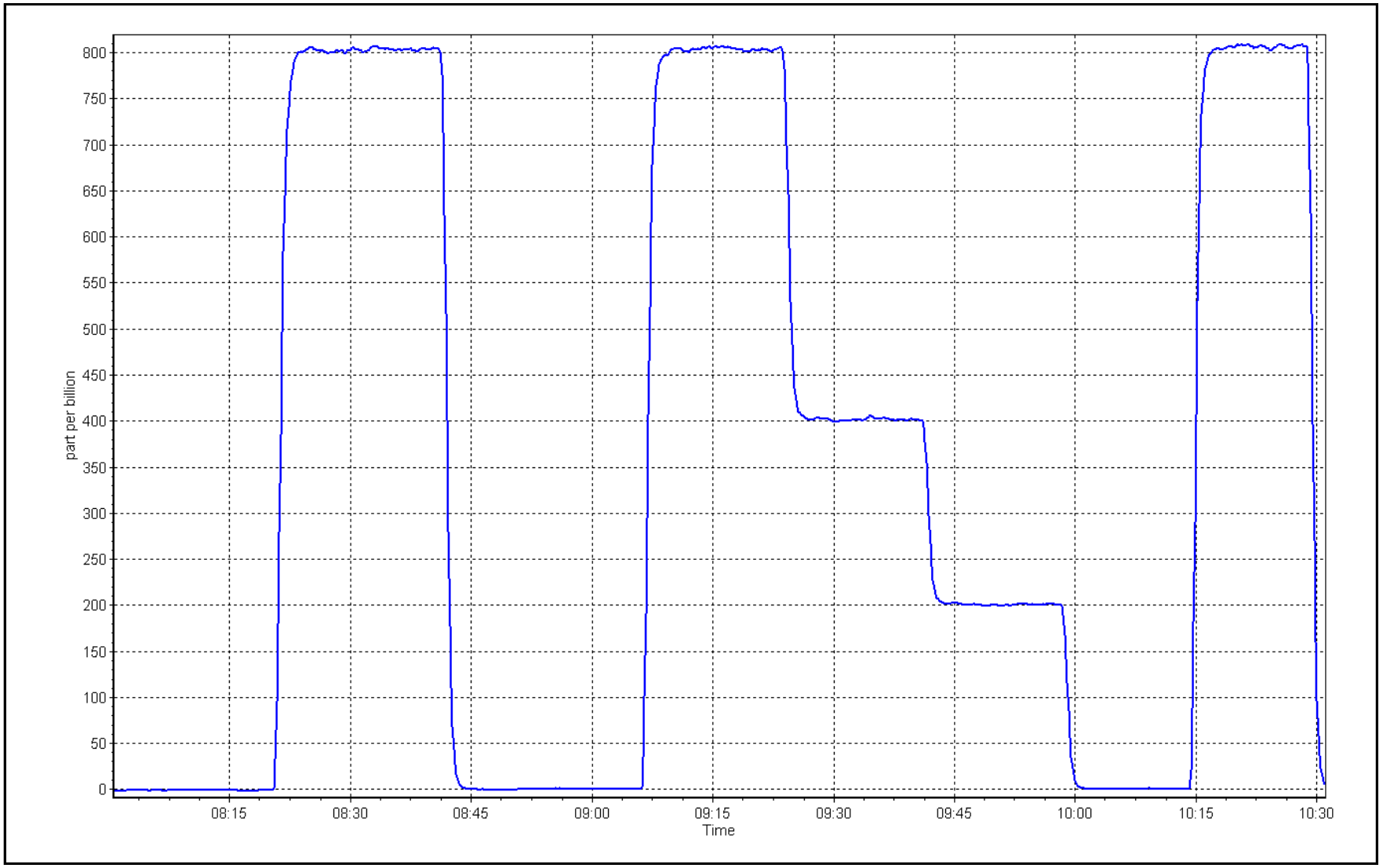
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.7	----
800.1	802.7	0.9968
400.1	402.1	0.9950
199.5	201.2	0.9917

Statistical Evaluation		*Limits*
Correlation Coefficient	1.000000	*≥0.995*
Slope	1.002217	*0.90 - 1.10*
Intercept	0.964310	*+/-30*



SO2 Calibration Plot Date: July 22, 2025 Location: MacKay River



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	MacKay River	Station number:	AMS 20
Calibration Date:	July 11, 2025	Last Cal Date:	June 5, 2025
Start time (MST):	5:26	End time (MST):	9:07
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.12	ppm	Cal Gas Exp Date:	January 3, 2026
Cal Gas Cylinder #:	CC515997			
Removed Cal Gas Conc:	5.12	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	5706
ZAG Make/Model:	API 701		Serial Number:	4888

Analyzer Information

Analyzer make:	Thermo 43i TLE		Analyzer serial #:	1236656117
Converter make:	Global		Converter serial #:	2022-226
Analyzer Range	0 - 100 ppb		Converter Temp:	325 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.001741	0.997310	Backgd or Offset:	3.77	3.77
Calibration intercept:	0.019427	-0.100631	Coeff or Slope:	1.071	1.071

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4922	78.1	80.0	80.4	0.992
As found Mid point	4961	39.0	39.9	40.1	0.991
As found Low point	4980	19.5	20.0	19.9	0.994
New cylinder response					

Baseline Corr As found:	80.6	Prev response:	80.13	*% change:	0.6%
Baseline Corr 2nd AF pt:	40.3	AF Slope:	1.008029	AF Intercept:	-0.200468
Baseline Corr 3rd AF pt:	20.1	AF Correlation:	0.999999	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4922	78.1	80.0	79.6	1.005
Mid point	4961	39.0	39.9	39.9	1.001
Low point	4980	19.5	20.0	19.7	1.014
As left zero	5000	0.0	0.0	0.1	----
As left span	4922	78.1	80.0	78.5	1.019
SO2 Scrubber Check	4982	81.3	802.8	0.0	----
Date of last scrubber change:		25-May-23		Ave Corr Factor	1.006
Date of last converter efficiency test:					

Notes: Sox scrubber checked after the calibrator zero. No adjustments done.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

H_2S Calibration Summary

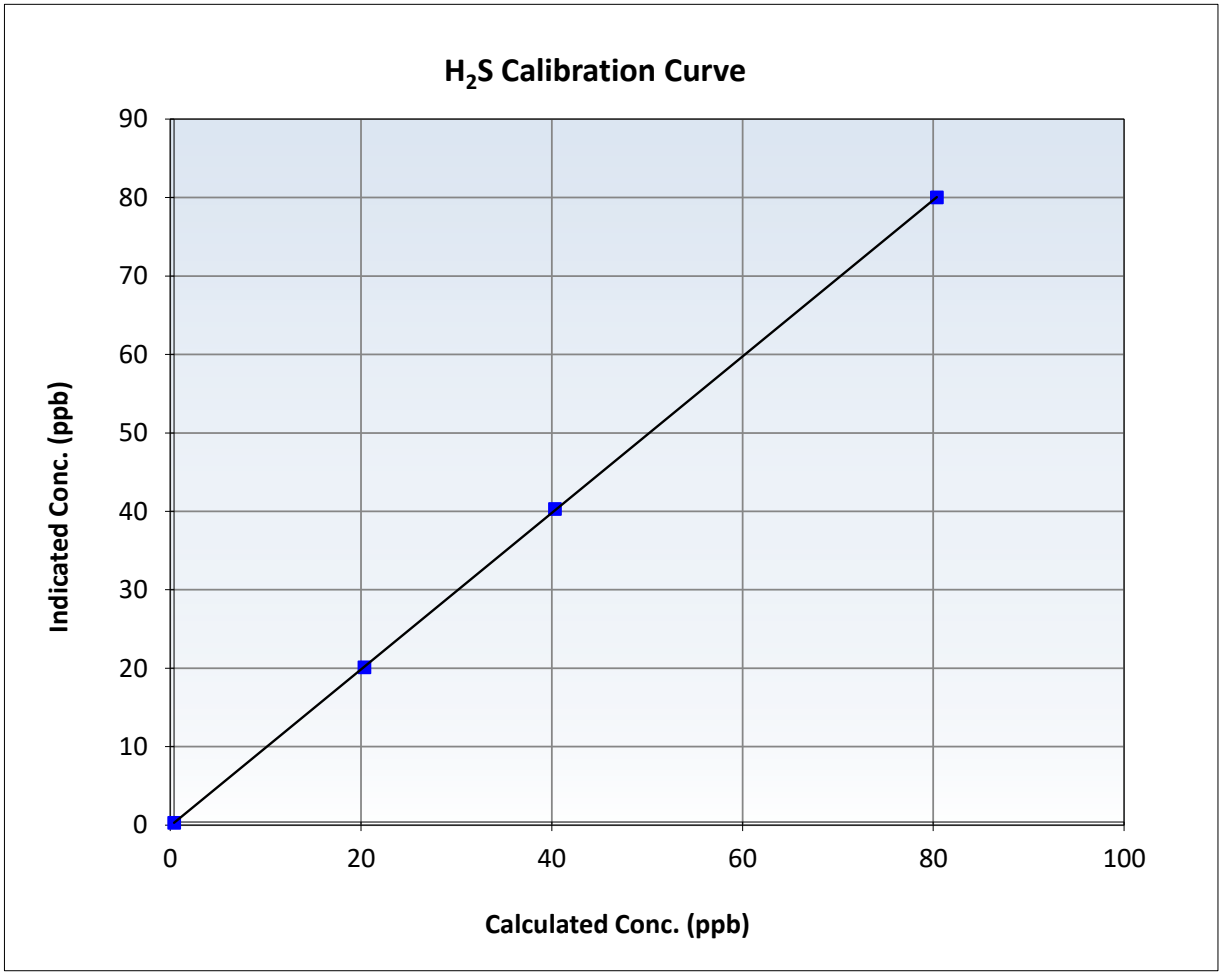
Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 5, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	5:26	End Time (MST):	9:07
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1236656117

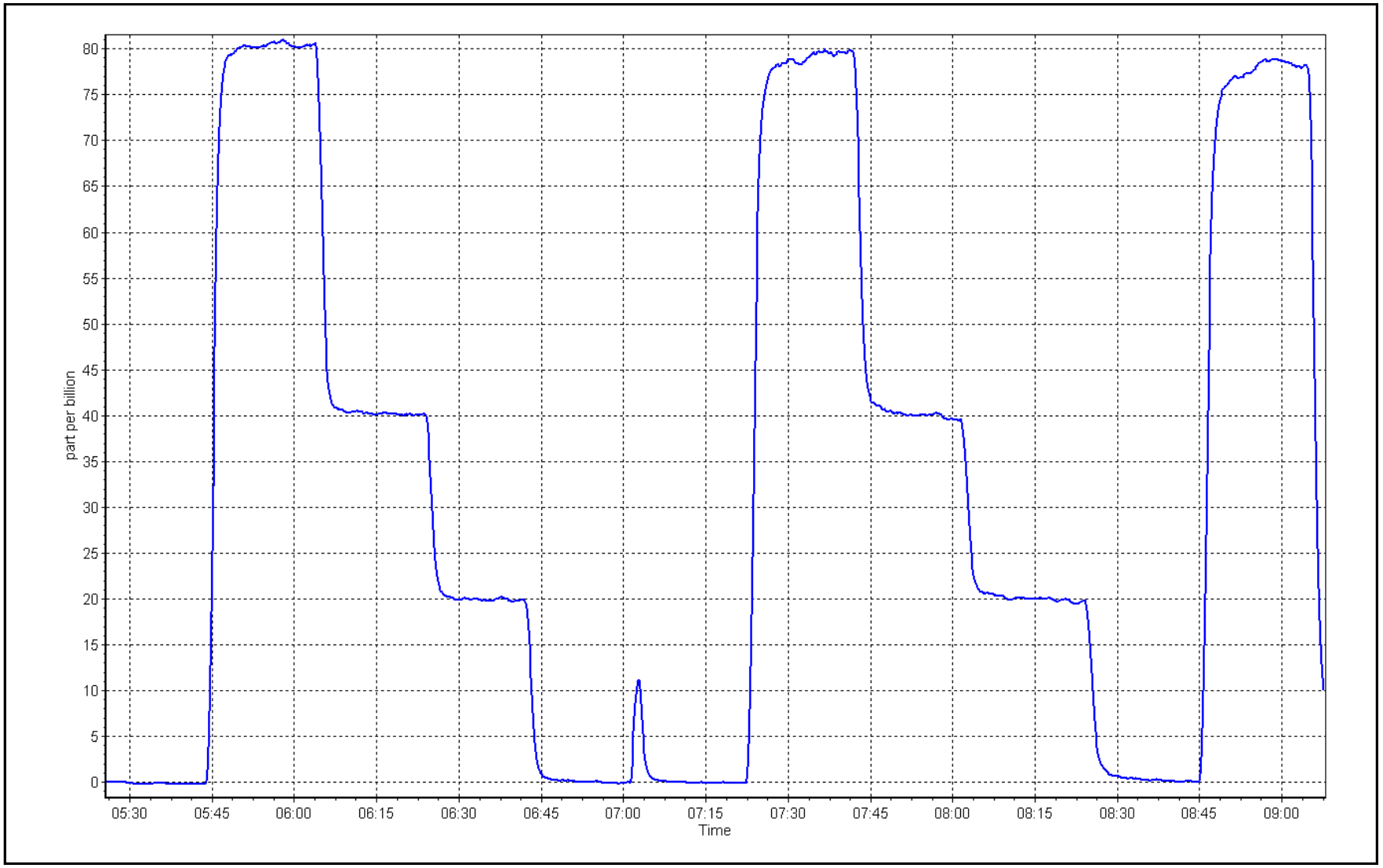
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
80.0	79.6	1.0047
39.9	39.9	1.0009
20.0	19.7	1.0137

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999987	*≥0.995*
Slope	0.997310	*0.90 - 1.10*
Intercept	-0.100631	*+/-3*



H_2S Calibration Plot Date: July 11, 2025 Location: MacKay River



Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name:	MacKay River	Station number:	AMS 20
Calibration Date:	July 22, 2025	Last Cal Date:	June 6, 2025
Start time (MST):	8:01	End time (MST):	10:30
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC409669		Cal Gas Expiry Date:	October 9, 2032	
CH4 Cal Gas Conc.	505.1	ppm	CH4 Equiv Conc.	1072.7	ppm
C3H8 Cal Gas Conc.	206.4	ppm			
Removed Gas Cert:			Removed Gas Expiry:		
Removed CH4 Conc.	505.1	ppm	CH4 Equiv Conc.	1072.7	ppm
Removed C3H8 Conc.	206.4	ppm	Diff between cyl:		
Calibrator Make/Model:	API T700		Serial Number:	5706	
ZAG Make/Model:	API 701		Serial Number:	4888	

Analyzer Information

Analyzer make: Thermo 51i-LT Analyzer serial #: 1501663727

Analyzer Range: 0 - 20 ppm

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.000215	0.994954	Background:	2.980	2.980
Calibration intercept:	-0.073986	0.027194	Coefficient:	5.009	5.009

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.11	----
As found High point	4919	81.4	17.46	17.50	1.004
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	17.40	Previous response	17.39	*% change	0.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.03	----
High point	4919	81.4	17.46	17.41	1.003
Mid point	4959	40.7	8.73	8.70	1.003
Low point	4980	20.3	4.35	4.37	0.997
As left zero	5000	0.0	0.00	0.02	----
As left span	4919	81.4	17.46	17.51	0.997
				Average Correction Factor	1.001

Notes: Hydrogen cylinder changed. No adjustments done.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

THC Calibration Summary

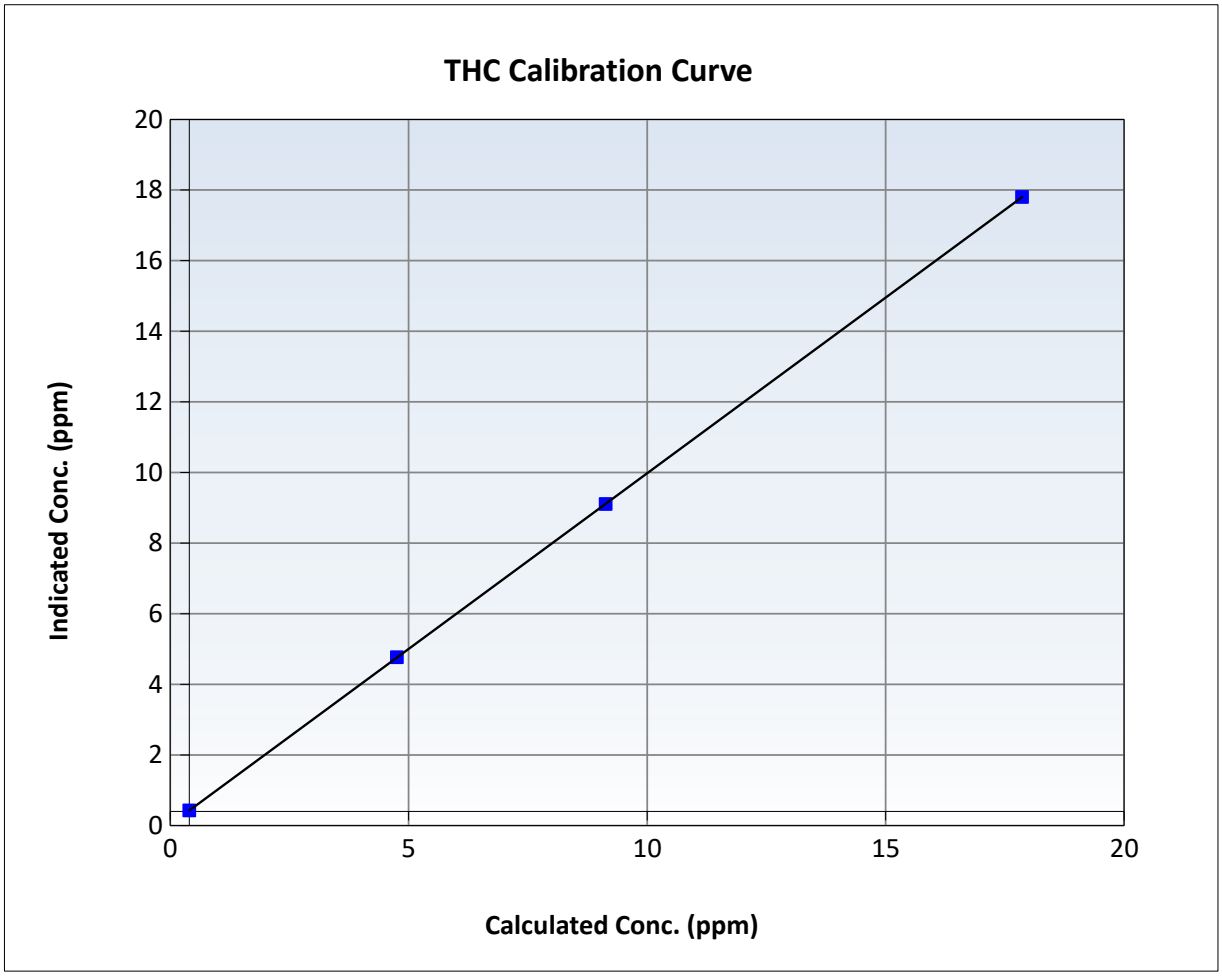
Station Information

Calibration Date:	July 22, 2025	Previous Calibration:	June 6, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	8:01	End Time (MST):	10:30
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1501663727

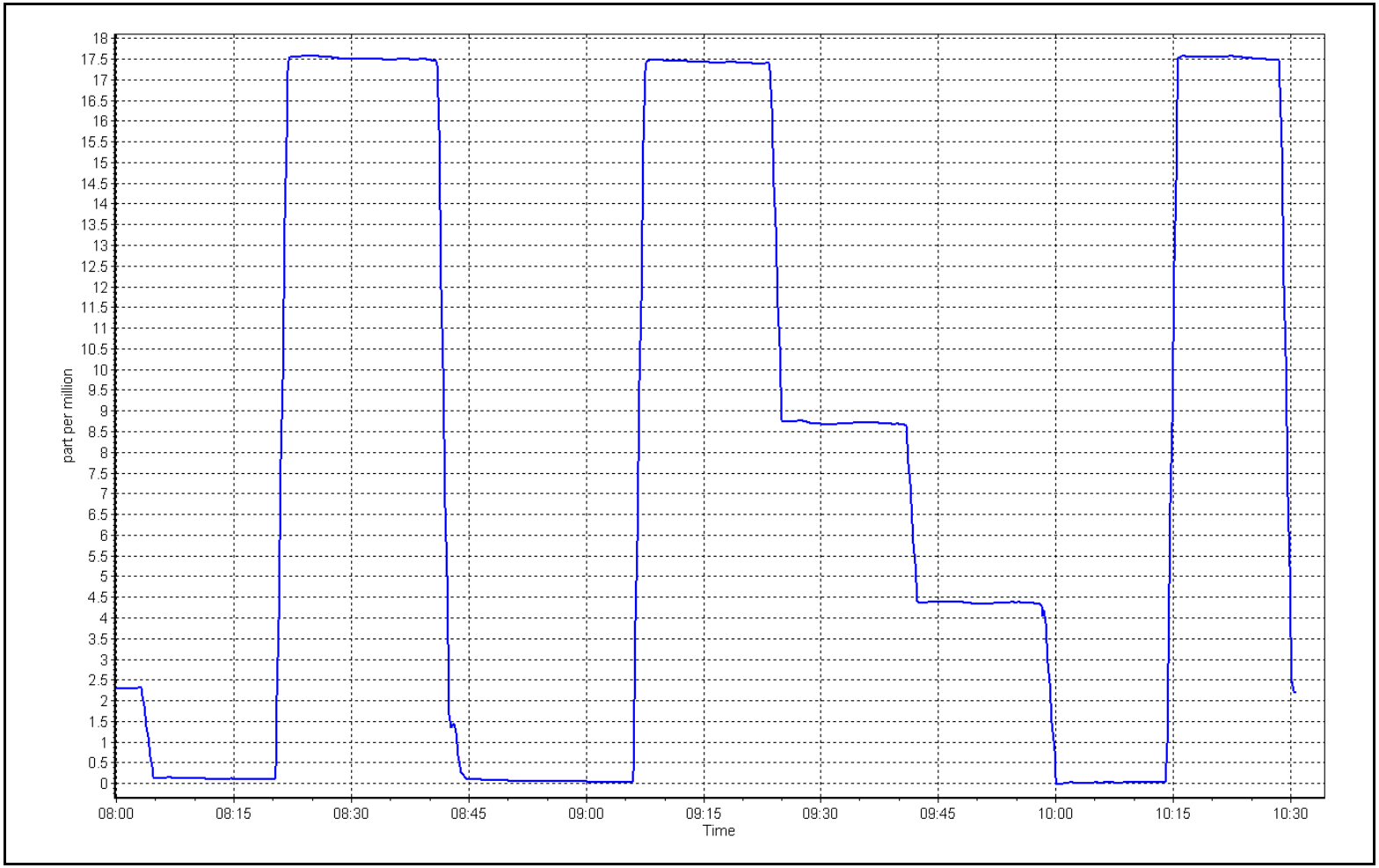
Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.03	----
17.46	17.41	1.0032
8.73	8.70	1.0034
4.35	4.37	0.9975

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	0.994954	*0.90 - 1.10*
Intercept	0.027194	*+/-1.5*



THC Calibration Plot Date: July 22, 2025 Location: MacKay River



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	MacKay River
Station number:	AMS 20
Calibration Date:	July 21, 2025
Last Cal Date:	June 2, 2025
Start time (MST):	7:22
End time (MST):	11:26
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0037393	Cal Gas Expiry Date:	July 22, 2032
NOX Cal Gas Conc:	62.00 ppm	NO Cal Gas Conc:	61.90 ppm
Removed Cylinder #:		Removed Gas Exp Date:	
Removed Gas NOX Conc:	62.00 ppm	Removed Gas NO Conc:	61.90 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	API T700	Serial Number:	5706
ZAG make/model:	API T701	Serial Number:	4888

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	----	----
AF High point	4935	64.6	801.1	799.8	1.3	804.7	803.6	1.1	0.9955	0.9954
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 805.3 ppb	NO = 804.6 ppb
Baseline Corr 1st pt	NO_X = 804.7 ppb	NO = 803.5 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

*Percent Change NO_X = -0.1%

*Percent Change NO = -0.1%

As Found Statistics

As found NO_X r^2: Nx Sl: Nx Int:

As found NO r^2: NO Sl: NO Int:

As found NO_2 r^2: NO2 Sl: NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1505164379

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.016	1.016	NO bkgnd or offset:	2.8	2.8
NOX coeff or slope:	1.000	1.000	NOX bkgnd or offset:	3.0	3.0
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	161.8	161.8

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.003936	1.001053
NO_X Cal Offset:	1.051925	0.812699
NO Cal Slope:	1.007256	1.005426
NO Cal Offset:	-0.967598	-0.827015
NO_2 Cal Slope:	0.994795	0.997263
NO_2 Cal Offset:	-1.179914	-0.843969

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.5	0.5	0.0	----	----
High point	4935	64.6	801.1	799.8	1.3	802.4	803.8	-1.4	0.9984	0.9950
Mid point	4968	32.3	400.5	399.9	0.6	402.5	401.1	1.5	0.9950	0.9969
Low point	4984	16.2	200.9	200.5	0.3	201.8	199.1	2.7	0.9954	1.0073
As left zero	5000	0.0	0.0	0.0	0.0	0.6	0.6	0.0	----	----
As left span	4935	64.6	801.1	406.4	394.7	803.1	406.4	396.7	0.9975	1.0000
							Average Correction Factor		0.9963	0.9997

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.0	----	----
High GPT point	800.7	408.3	393.7	392.2	1.0038	99.6%
Mid GPT point	800.7	603.2	198.8	197.0	1.0091	99.1%
Low GPT point	800.7	700.0	102.0	100.0	1.0199	98.0%
				Average Correction Factor	1.0109	98.9%

Notes: No adjustments or maintenance done.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

NO_X Calibration Summary

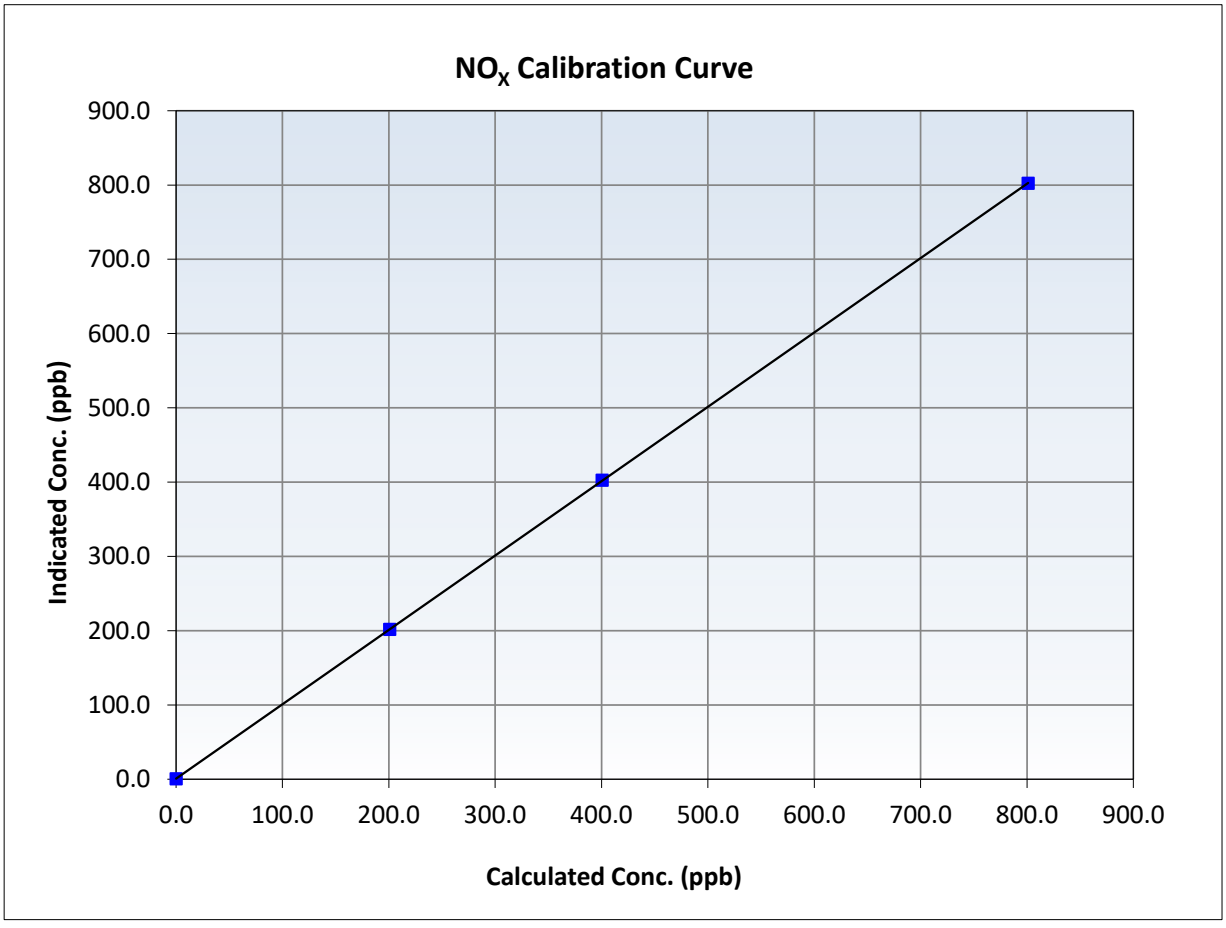
Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 2, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	7:22	End Time (MST):	11:26
Analyzer make:	Thermo 42i	6:50:00 AM	1505164379

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.5	----
801.1	802.4	0.9984
400.5	402.5	0.9950
200.9	201.8	0.9954

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999998	*≥0.995*
Slope	1.001053	*0.90 - 1.10*
Intercept	0.812699	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

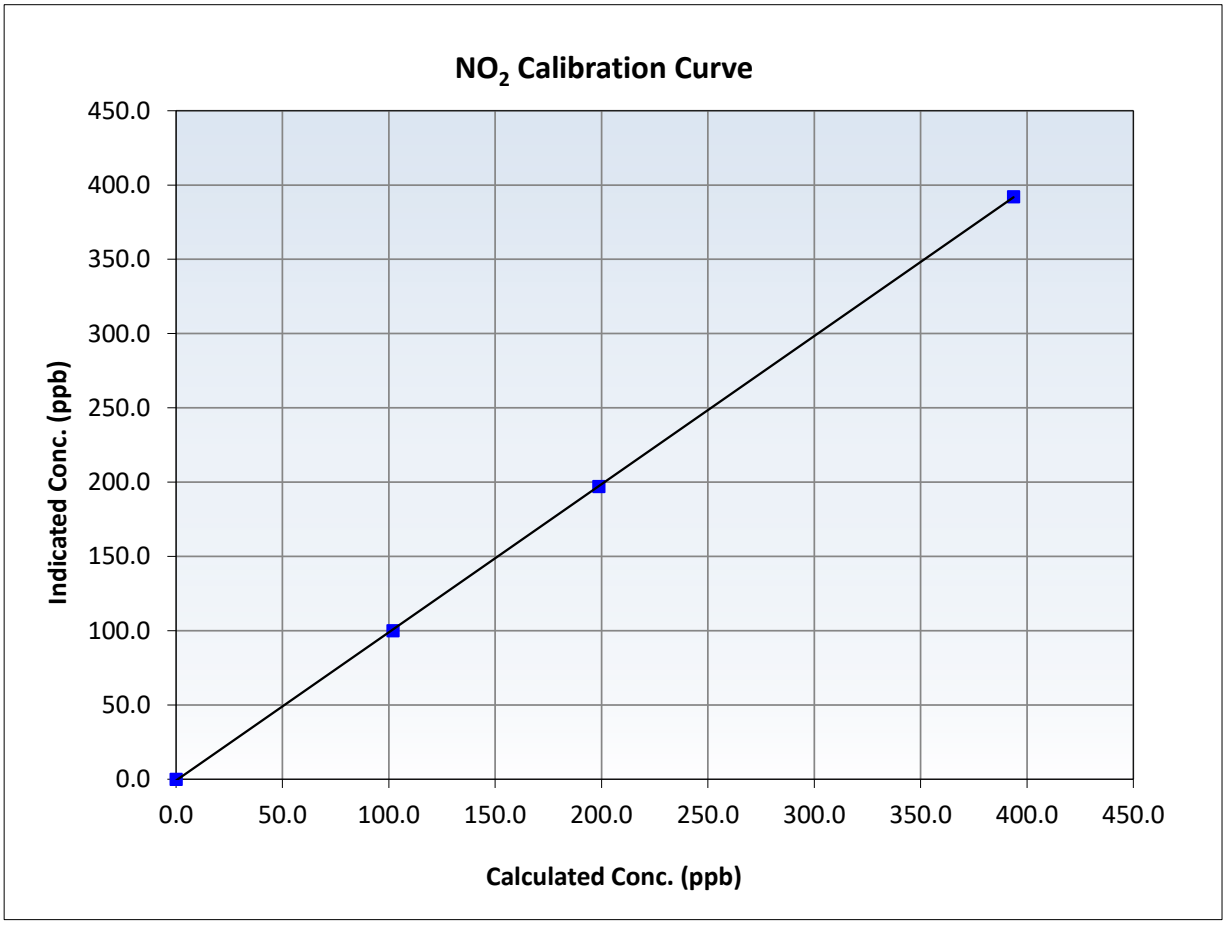
Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 2, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	7:22	End Time (MST):	11:26
Analyzer make:	Thermo 42i	6:50:00 AM	1505164379

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
393.7	392.2	1.0038
198.8	197.0	1.0091
102.0	100.0	1.0199

Statistical Evaluation		Limits
Correlation Coefficient	0.999978	≥0.995
Slope	0.997263	0.90 - 1.10
Intercept	-0.843969	+/-20



Wood Buffalo Environmental Association

NO Calibration Summary

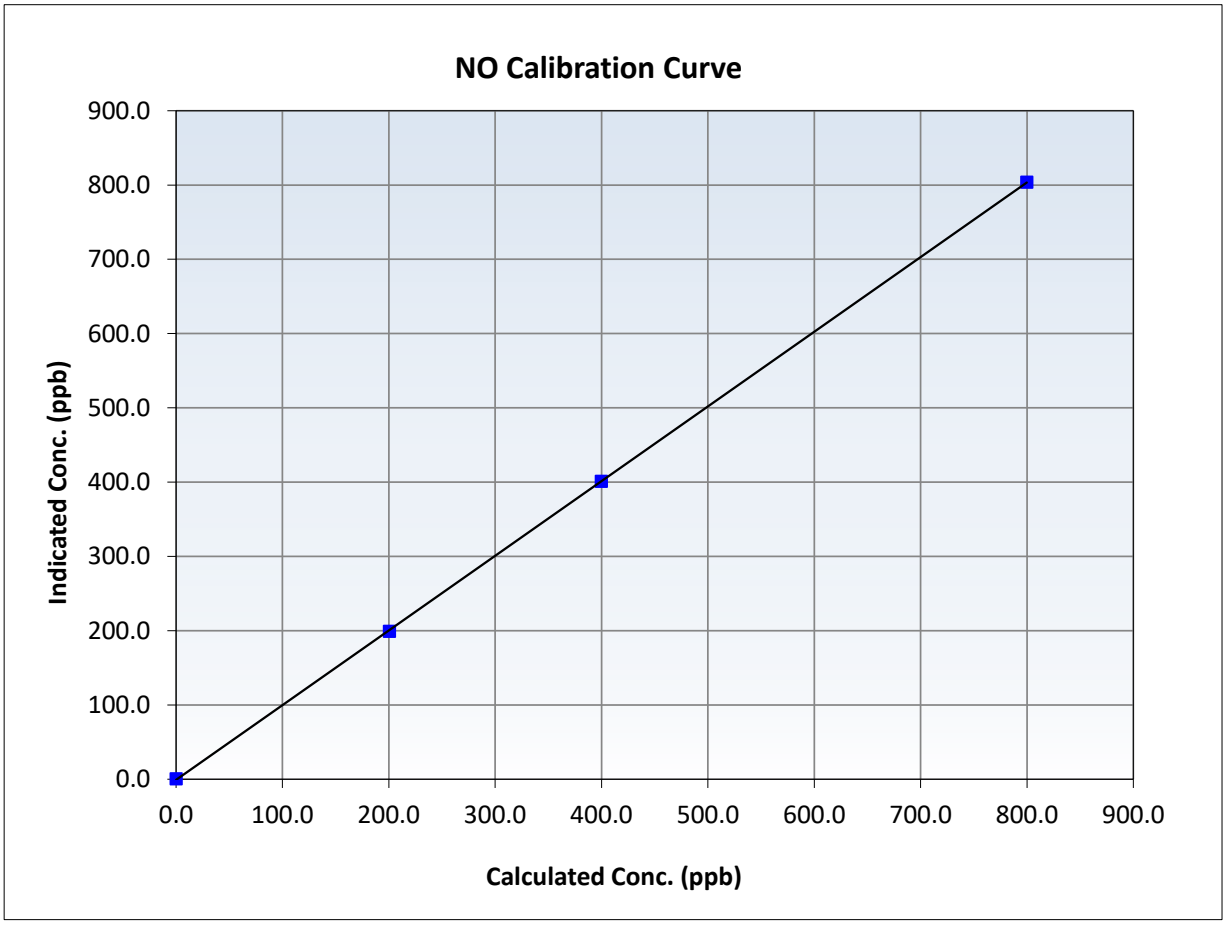
Station Information

Calibration Date:	July 21, 2025	Previous Calibration:	June 2, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	7:22	End Time (MST):	11:26
Analyzer make:	Thermo 42i	6:50:00 AM	1505164379

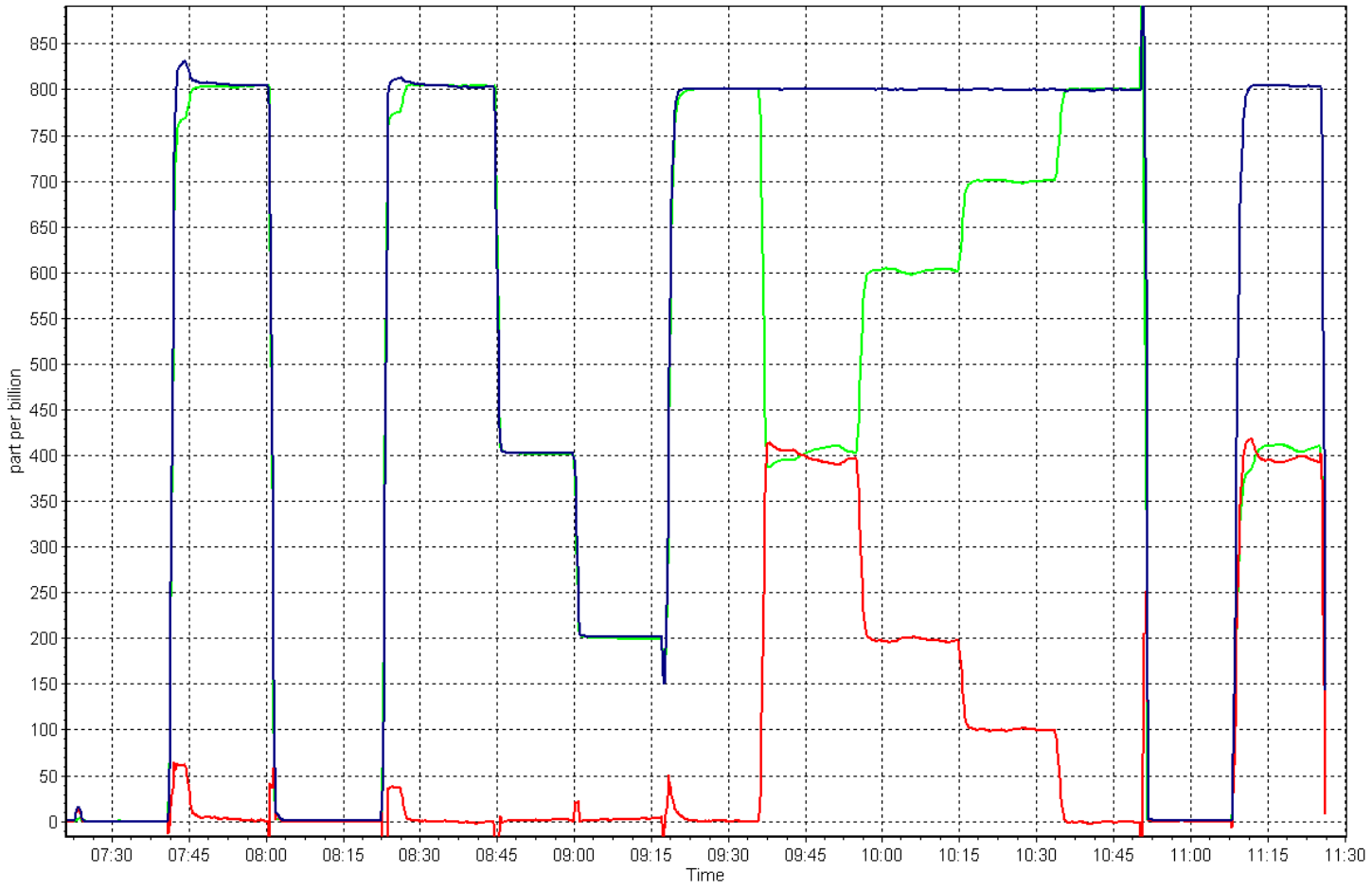
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.5	----
799.8	803.8	0.9950
399.9	401.1	0.9969
200.5	199.1	1.0073

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999986	*≥0.995*
Slope	1.005426	*0.90 - 1.10*
Intercept	-0.827015	*+/-20*



NO_X Calibration Plot Date: July 21, 2025 Location: MacKay River



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS21
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Conklin	Station number:	AMS 21
Calibration Date:	July 14, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	10:30	End time (MST):	13:27
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.34	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC340840			
Removed Cal Gas Conc:	50.34	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	Teledyne API T700P		Serial Number:	2659
Zero Air Gen Model:	Teledyne API T701		Serial Number:	953

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1428701363	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.003885	1.008525	Backgd or Offset:	30.4	29.3
Calibration intercept:	-1.862570	-1.763281	Coeff or Slope:	0.891	0.891

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.7	----
As found High point	4921	79.5	800.3	805.0	0.993
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	805.7	Previous response	801.6	*% change	0.5%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4921	79.5	800.3	806.1	0.993
Mid point	4960	39.8	400.7	402.1	0.997
Low point	4980	19.9	200.4	198.0	1.012
As left zero	5000	0.0	0.0	0.0	----
As left span	4921	79.5	800.3	804.0	0.995
				Average Correction Factor:	1.000

Notes: Sample inlet filter was changed after as founds. Adjusted zero only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

SO_2 Calibration Summary

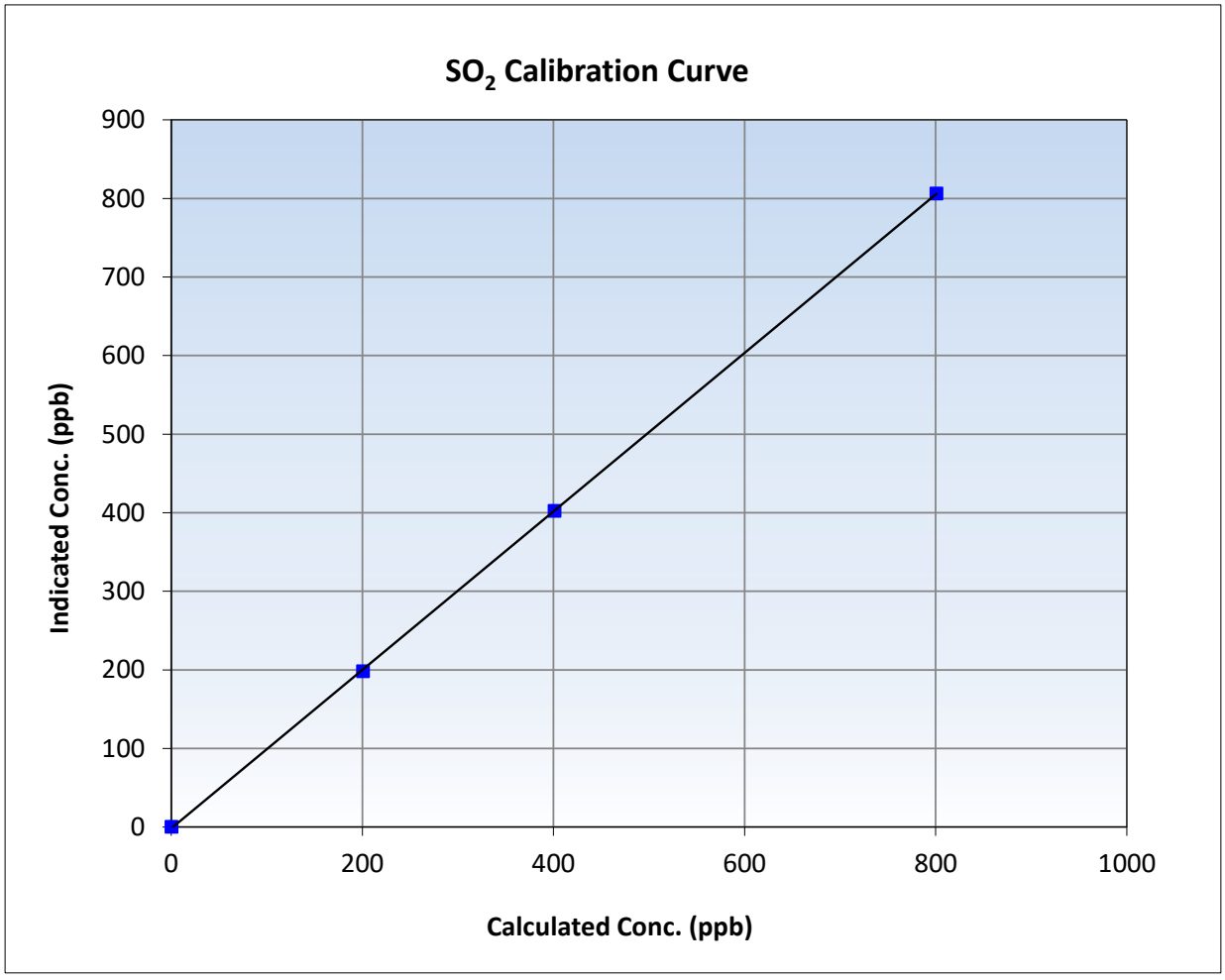
Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 9, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	10:30	End Time (MST):	13:27
Analyzer make:	Thermo 43i	Analyzer serial #:	1428701363

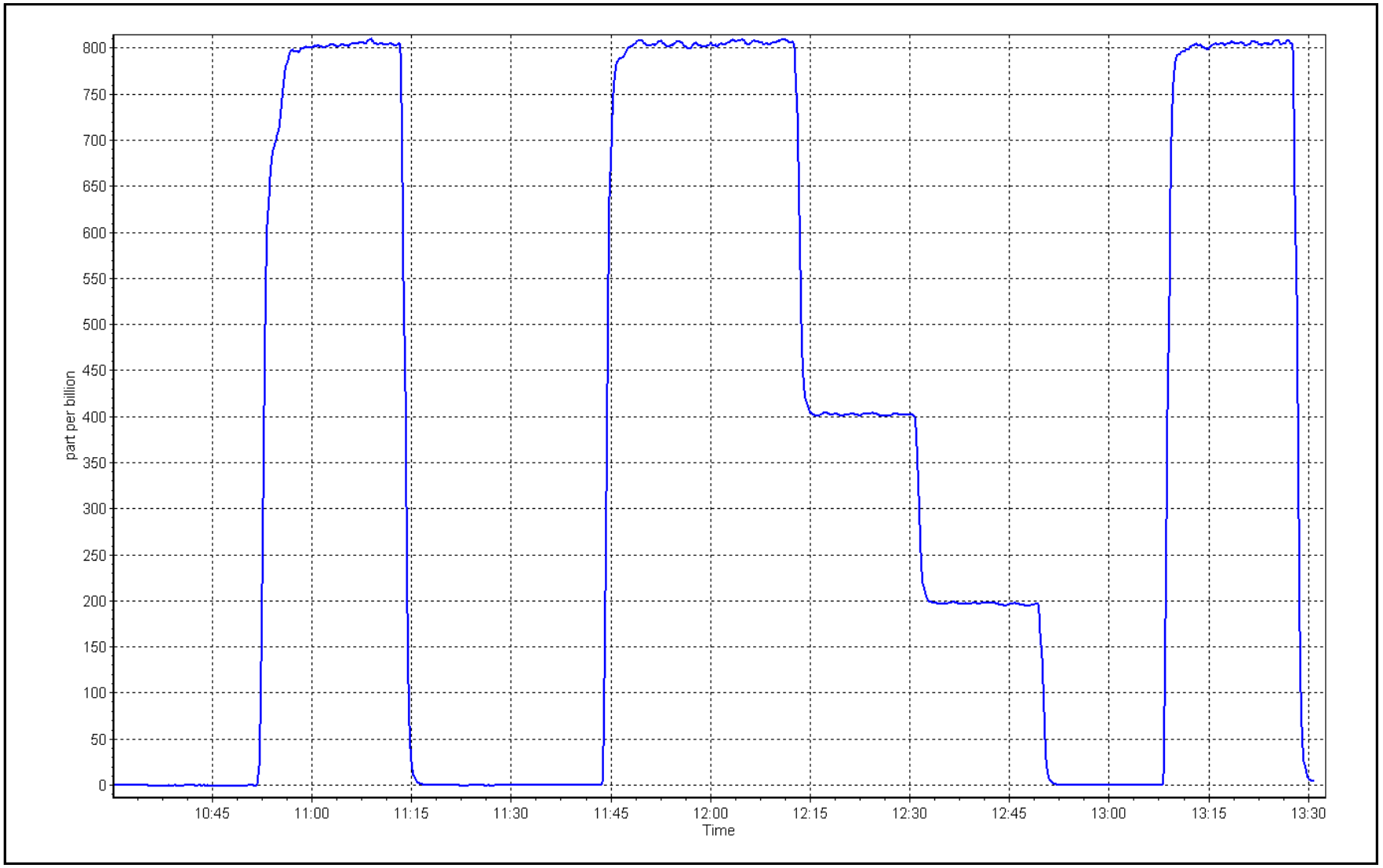
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
800.3	806.1	0.9928
400.7	402.1	0.9966
200.4	198.0	1.0119

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999974	*≥0.995*
Slope	1.008525	*0.90 - 1.10*
Intercept	-1.763281	*+/-30*



SO2 Calibration Plot Date: July 14, 2025 Location: Conklin



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Conklin	Station number:	AMS 21
Calibration Date:	July 9, 2025	Last Cal Date:	June 25, 2025
Start time (MST):	9:46	End time (MST):	13:46
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.14	ppm	Cal Gas Exp Date:	January 3, 2026
Cal Gas Cylinder #:	CC501204			
Removed Cal Gas Conc:	5.14	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne T700P		Serial Number:	2659
ZAG Make/Model:	Teledyne T701		Serial Number:	953

Analyzer Information

Analyzer make:	Thermo 43i-QTL		Analyzer serial #:	12228021058
Converter make:	CD-Nova 101		Converter serial #:	565
Analyzer Range	0 - 100 ppb		Converter Temp:	850 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.010574	1.002775	Backgd or Offset:	3.3	3.2
Calibration intercept:	-0.081632	-0.181617	Coeff or Slope:	1.539	1.510

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4922	78.4	80.6	80.9	0.992
As found Mid point	4961	39.2	40.3	40.8	0.980
As found Low point	4980	19.6	20.2	20.2	0.983
New cylinder response					

Baseline Corr As found:	81.2	Prev response:	81.36	*% change:	-0.2%
Baseline Corr 2nd AF pt:	41.1	AF Slope:	1.007455	AF Intercept:	-0.121630
Baseline Corr 3rd AF pt:	20.5	AF Correlation:	0.999954	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4922	78.4	80.6	80.6	1.000
Mid point	4961	39.2	40.3	40.3	1.000
Low point	4980	19.6	20.2	20.0	1.008
As left zero	5000	0.0	0.0	-0.2	----
As left span	4922	78.4	80.6	80.6	1.000
SO2 Scrubber Check	4921	79.5	794.9	0.0	----

Date of last scrubber change:	November 13, 2024	Ave Corr Factor	1.002
Date of last converter efficiency test:			

Notes: Sample inlet filter was changed after multipoint as founds. SO2 scrubber check done after calibrator zero and passed. Adjusted span only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

TRS Calibration Summary

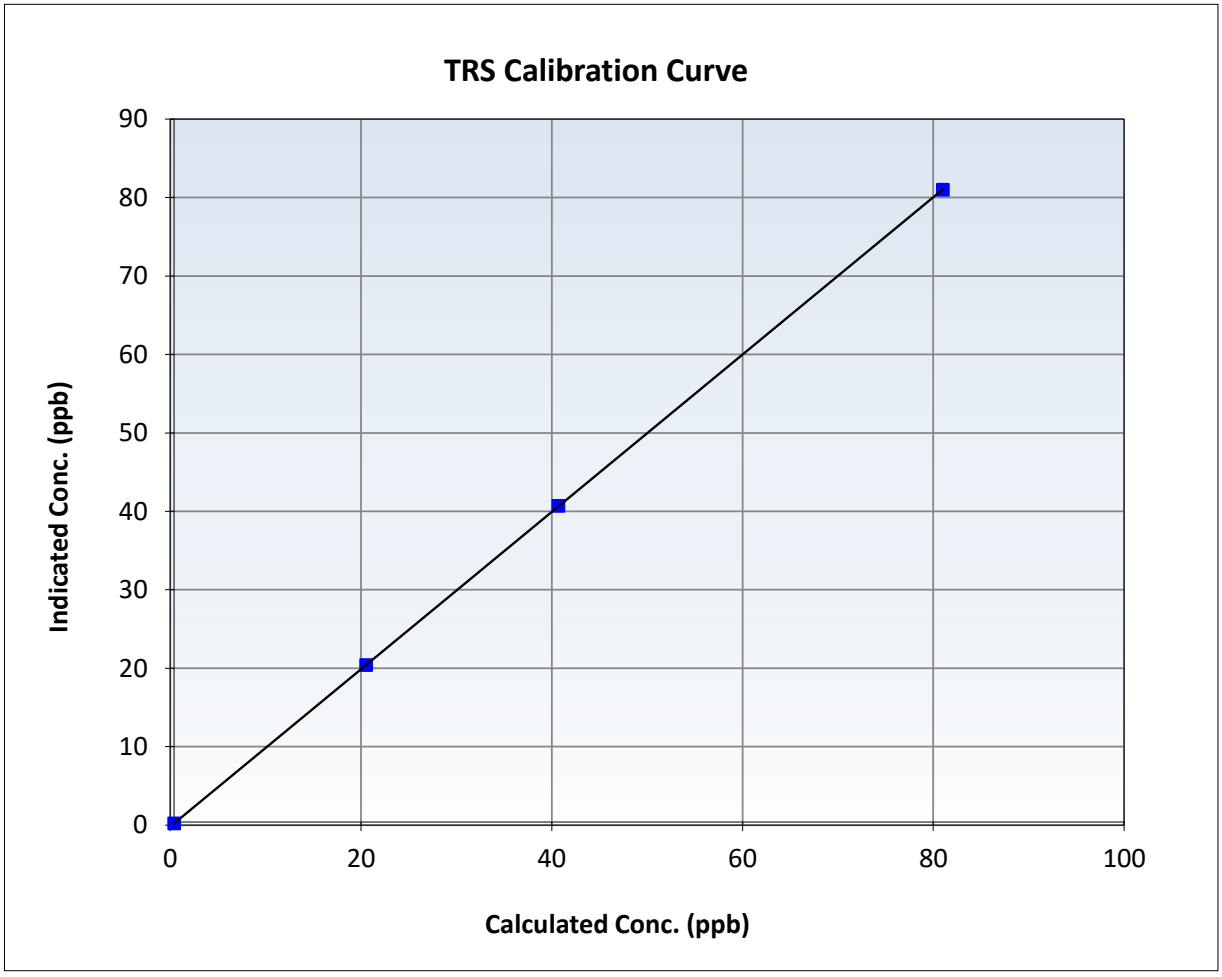
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	June 25, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:46	End Time (MST):	13:46
Analyzer make:	Thermo 43i-QTL	Analyzer serial #:	12228021058

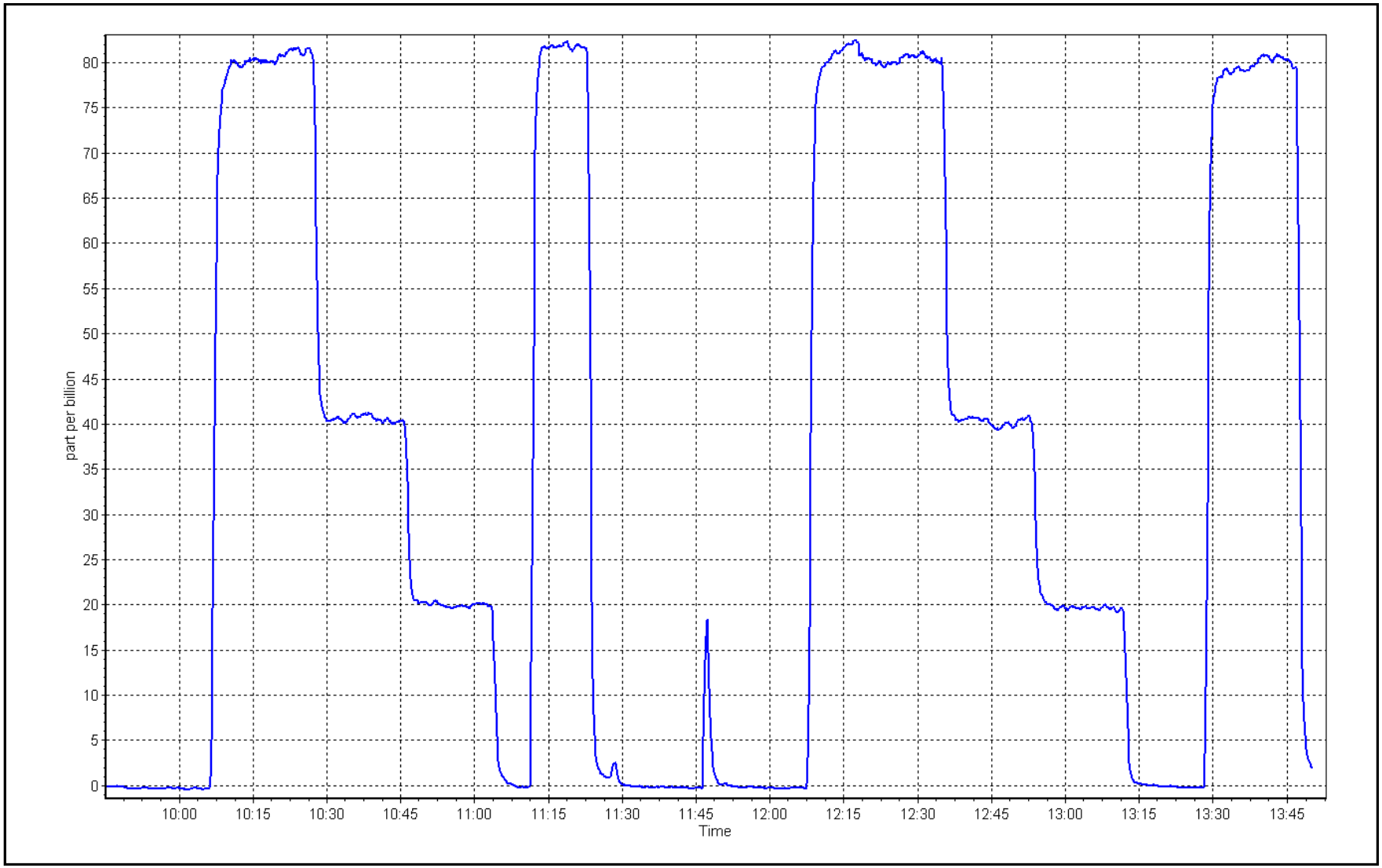
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
80.6	80.6	0.9999
40.3	40.3	0.9999
20.2	20.0	1.0075

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999998	*≥0.995*
Slope	1.002775	*0.90 - 1.10*
Intercept	-0.181617	*+/-3*



TRS Calibration Plot Date: July 9, 2025 Location: Conklin



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Conklin	Station number:	AMS 21
Calibration Date:	July 14, 2025	Last Cal Date:	June 9, 2025
Start time (MST):	10:30	End time (MST):	13:27
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC340840	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	503.8 ppm	CH4 Equiv Conc.	1067.6 ppm
C3H8 Cal Gas Conc.	205.0 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH4 Conc.	503.8 ppm	CH4 Equiv Conc.	1067.6 ppm
Removed C3H8 Conc.	205.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700P	Serial Number:	2659
Zero Air Gen model:	Teledyne API T701	Serial Number:	953

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.32E-04	2.28E-04	NMHC SP Ratio:	4.94E-05	4.84E-05
CH4 Retention time:	15.2	15.2	NMHC Peak Area:	181376	185126
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.5	16.97	17.27	0.983
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	17.27	Prev response	16.97	*% change	1.8%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.5	16.97	16.98	0.999
Mid point	4960	39.8	8.50	8.46	1.004
Low point	4980	19.9	4.25	4.17	1.019
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	16.97	16.99	0.999
				Average Correction Factor	1.008

Notes: Sample inlet filter was changed after as founds. Adjusted span only.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.5	8.96	9.14	0.981
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.14	Prev response	8.97	*% change	1.8%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.5	8.96	8.96	1.000
Mid point	4960	39.8	4.49	4.48	1.002
Low point	4980	19.9	2.24	2.22	1.013
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	8.96	8.97	0.999
				Average Correction Factor	1.005

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.5	8.01	8.14	0.984
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.14	Prev response	7.99	*% change	1.7%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.5	8.01	8.02	0.999
Mid point	4960	39.8	4.01	3.98	1.007
Low point	4980	19.9	2.01	1.95	1.027
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	8.01	8.02	0.999
				Average Correction Factor	1.011

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	1.001948	1.001901
THC Cal Offset:	-0.040304	-0.041701
CH4 Cal Slope:	1.001787	1.002943
CH4 Cal Offset:	-0.029812	-0.028615
NMHC Cal Slope:	1.001914	1.000995
NMHC Cal Offset:	-0.009294	-0.012686

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

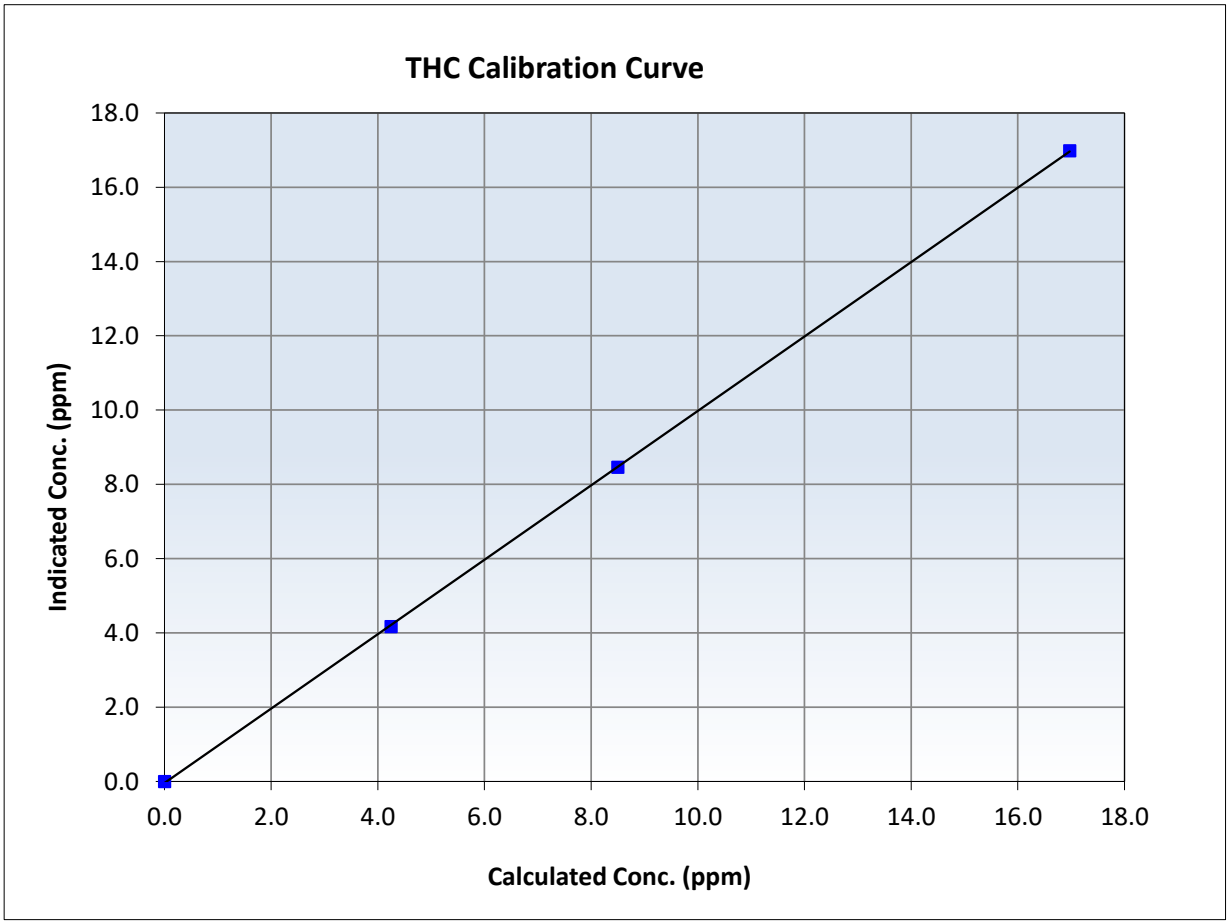
THC Calibration Summary

Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 9, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	10:30	End Time (MST):	13:27
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999972	≥0.995
16.97	16.98	0.9995	Slope	1.001901	0.90 - 1.10
8.50	8.46	1.0045	Intercept	-0.041701	+/-0.5
4.25	4.17	1.0194			



Wood Buffalo Environmental Association

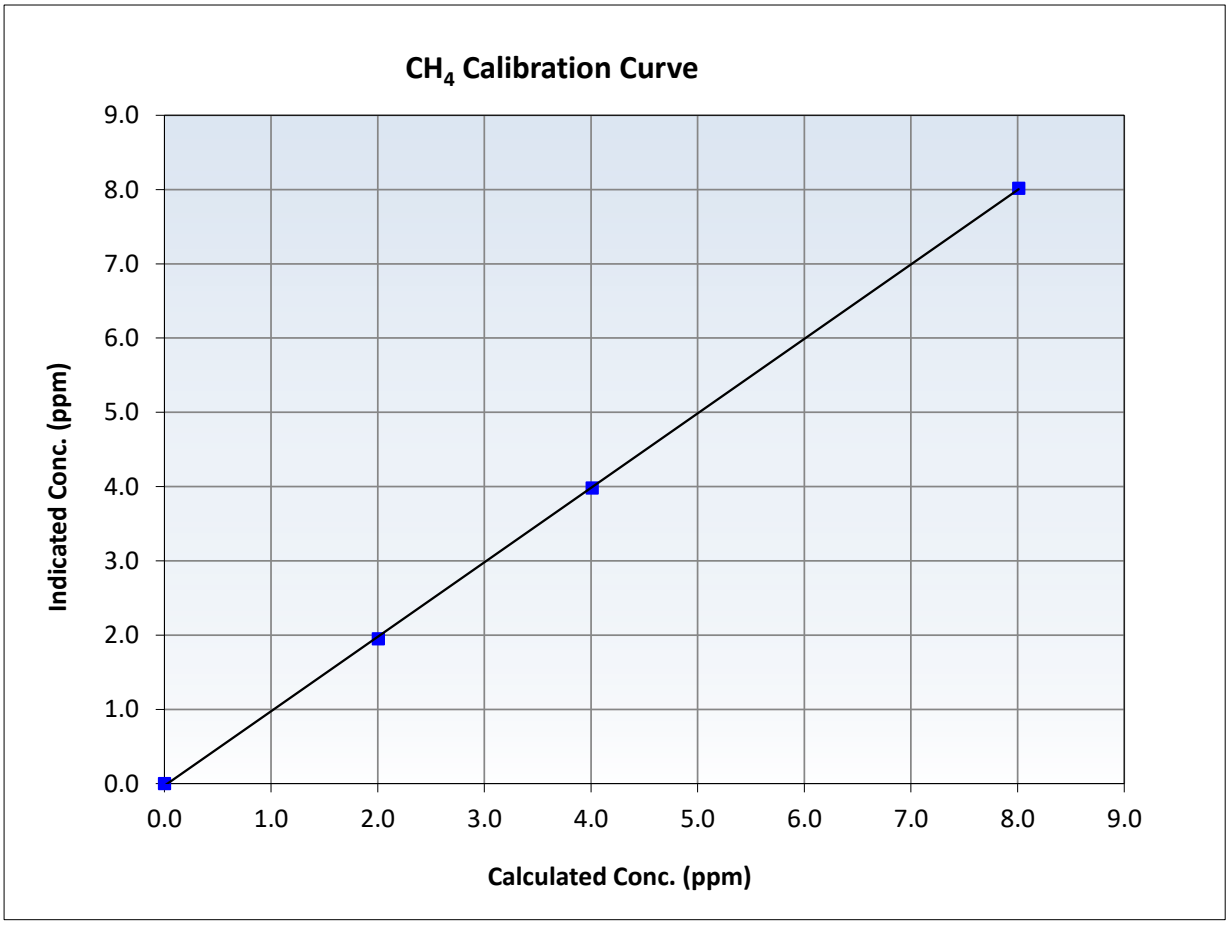
CH_4 Calibration Summary

Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 9, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	10:30	End Time (MST):	13:27
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999942	≥0.995
8.01	8.02	0.9990	Slope	1.002943	0.90 - 1.10
4.01	3.98	1.0071			
2.01	1.95	1.0272	Intercept	-0.028615	+/-0.5



Wood Buffalo Environmental Association

NMHC Calibration Summary

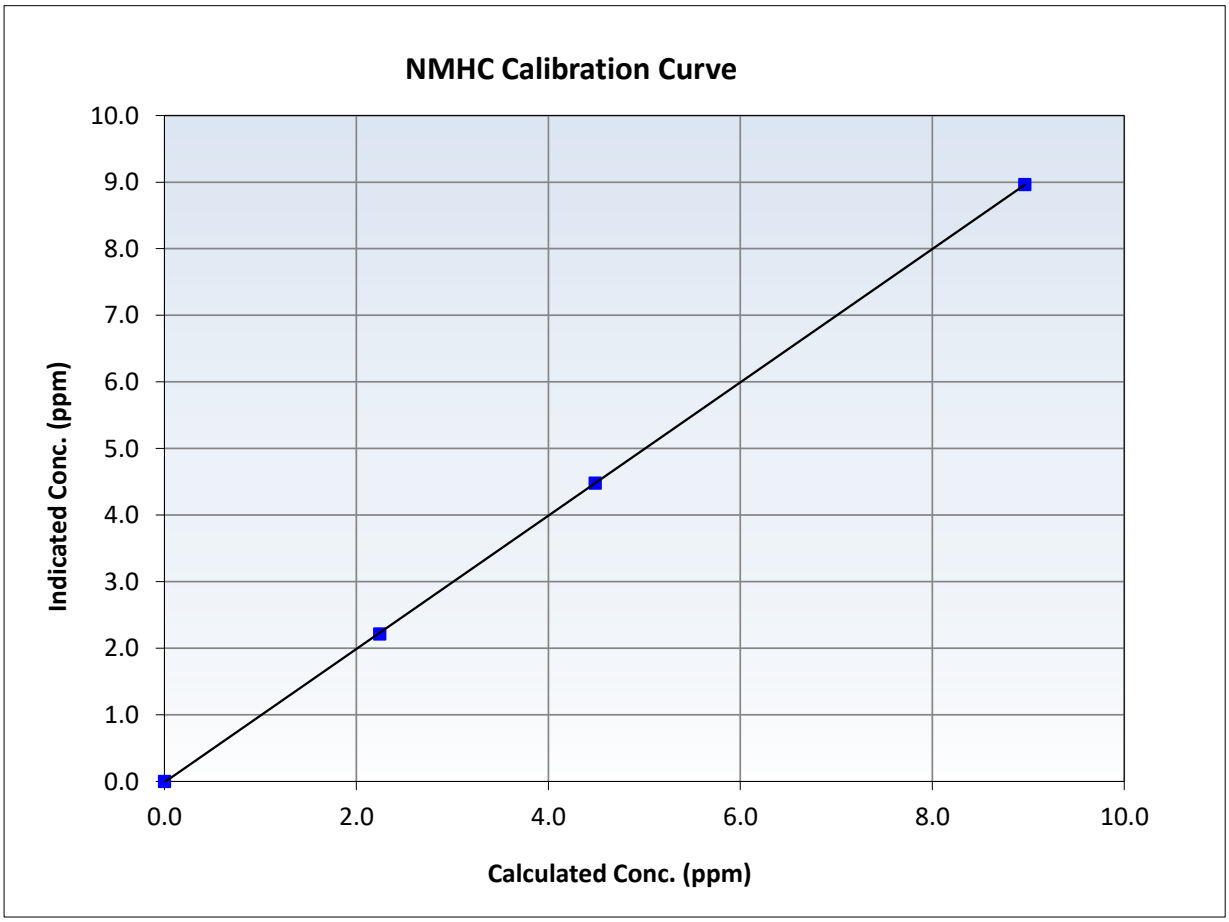
Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 9, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	10:30	End Time (MST):	13:27
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.96	8.96	1.0000
4.49	4.48	1.0017
2.24	2.22	1.0125

Statistical Evaluation		Limits
Correlation Coefficient	0.999989	≥0.995
Slope	1.000995	0.90 - 1.10
Intercept	-0.012686	+/-0.5



NMHC Calibration Plot Date: July 14, 2025 Location: Conklin

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Conklin	Station number:	AMS 21
Calibration Date:	July 30, 2025	Last Cal Date:	July 14, 2025
Start time (MST):	11:07	End time (MST):	13:30
Reason:	Maintenance		

Calibration Standards

Gas Cert Reference:	CC340840	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	503.8 ppm	CH4 Equiv Conc.	1067.6 ppm
C3H8 Cal Gas Conc.	205.0 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH4 Conc.	503.8 ppm	CH4 Equiv Conc.	1067.6 ppm
Removed C3H8 Conc.	205.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700P	Serial Number:	2659
Zero Air Gen model:	Teledyne API T701	Serial Number:	953

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	2.28E-04	2.28E-04	NMHC SP Ratio:	4.84E-05	4.84E-05
CH4 Retention time:	15.2	15.2	NMHC Peak Area:	185126	185126
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.20	----
As found High point	4921	79.5	16.97	5.82	3.017
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	5.63	Prev response	16.96	*% change	-201.6%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.5	16.97	16.95	1.001
Mid point	4960	39.8	8.50	8.45	1.006
Low point	4980	19.9	4.25	4.16	1.022
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	16.97	16.95	1.001
				Average Correction Factor	1.010

Notes: As founds out of limits due to low N2 cylinder pressure. N2 cylinder was changed after as founds. No adjustment made.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.5	8.96	5.75	1.560
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	5.75	Prev response	8.96	*% change	-55.9%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.5	8.96	8.94	1.002
Mid point	4960	39.8	4.49	4.47	1.003
Low point	4980	19.9	2.24	2.21	1.016
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	8.96	8.93	1.004
				Average Correction Factor	1.007

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.20	----
As found High point	4921	79.5	8.01	0.08	-66.195
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	-0.12	Prev response	8.00	*% change	6715.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.5	8.01	8.01	1.001
Mid point	4960	39.8	4.01	3.98	1.009
Low point	4980	19.9	2.01	1.95	1.029
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	8.01	8.02	0.999
				Average Correction Factor	1.013

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	1.001901	1.000231
THC Cal Offset:	-0.041701	-0.043293
CH4 Cal Slope:	1.002943	1.001344
CH4 Cal Offset:	-0.028615	-0.029011
NMHC Cal Slope:	1.000995	0.998789
NMHC Cal Offset:	-0.012686	-0.013281

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

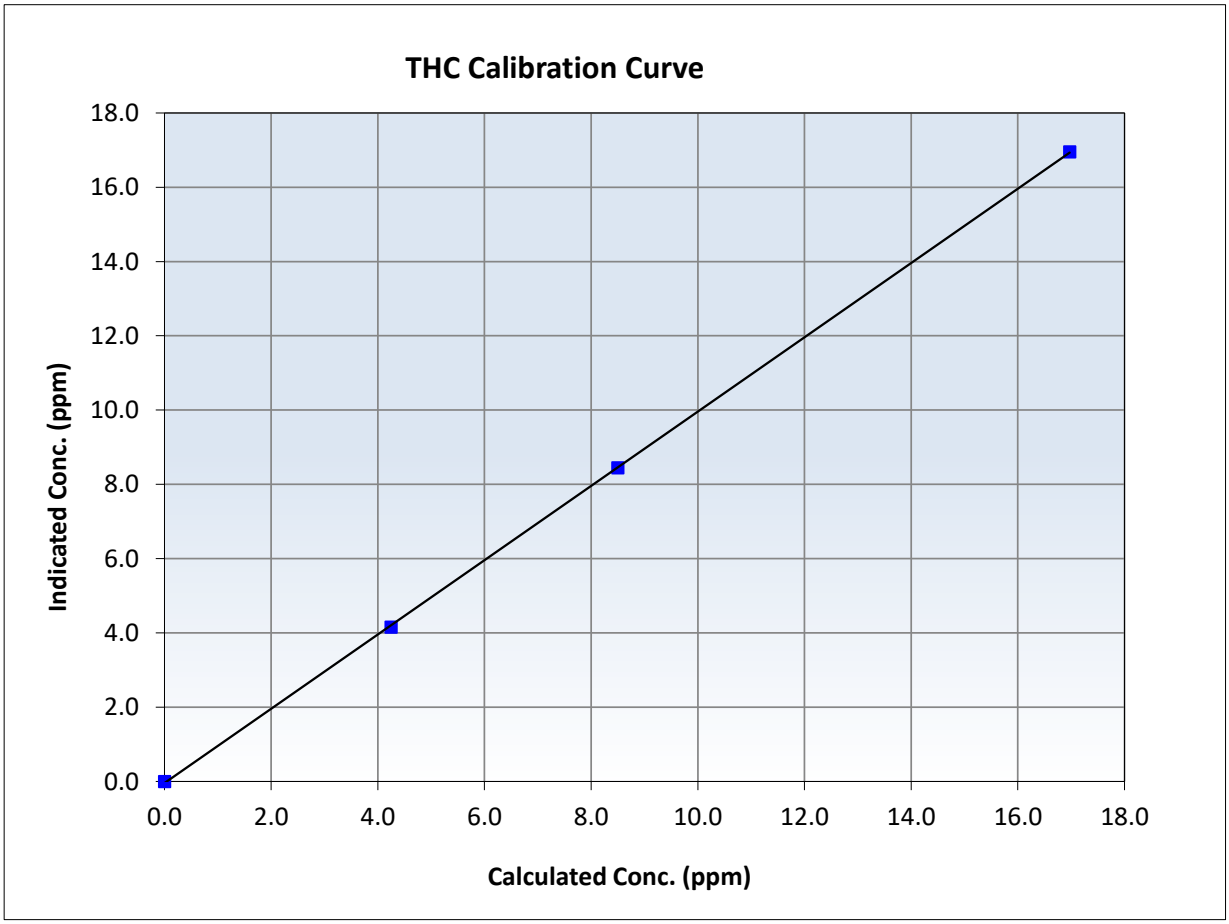
THC Calibration Summary

Station Information

Calibration Date:	July 30, 2025	Previous Calibration:	July 14, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	11:07	End Time (MST):	13:30
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999969	≥0.995
16.97	16.95	1.0013	Slope	1.000231	0.90 - 1.10
8.50	8.45	1.0062	Intercept	-0.043293	+/-0.5
4.25	4.16	1.0224			



Wood Buffalo Environmental Association

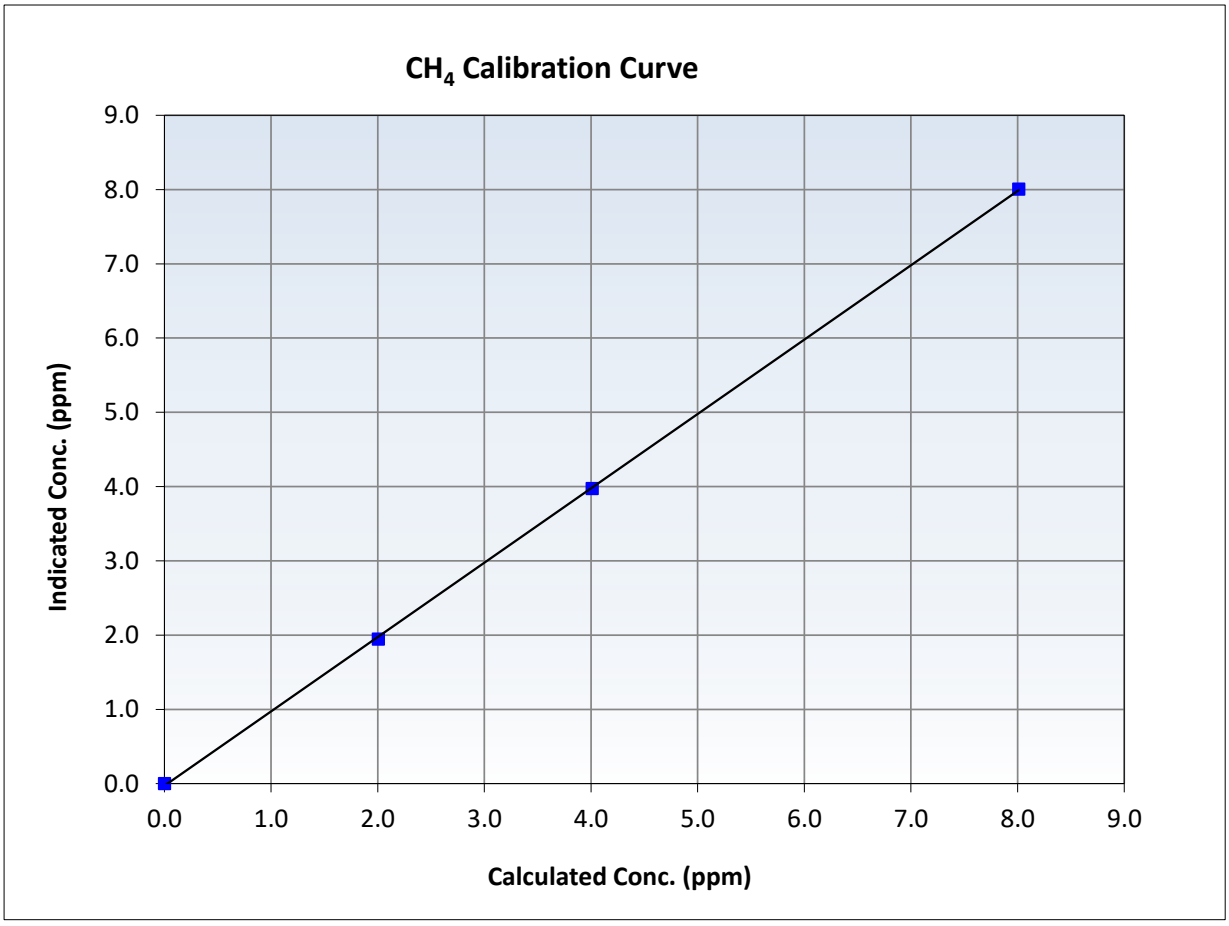
CH_4 Calibration Summary

Station Information

Calibration Date:	July 30, 2025	Previous Calibration:	July 14, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	11:07	End Time (MST):	13:30
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.00	0.00	----	Correlation Coefficient	0.999940	*≥0.995*
8.01	8.01	1.0006	Slope	1.001344	*0.90 - 1.10*
4.01	3.98	1.0089			
2.01	1.95	1.0293	Intercept	-0.029011	*+/-0.5*



Wood Buffalo Environmental Association

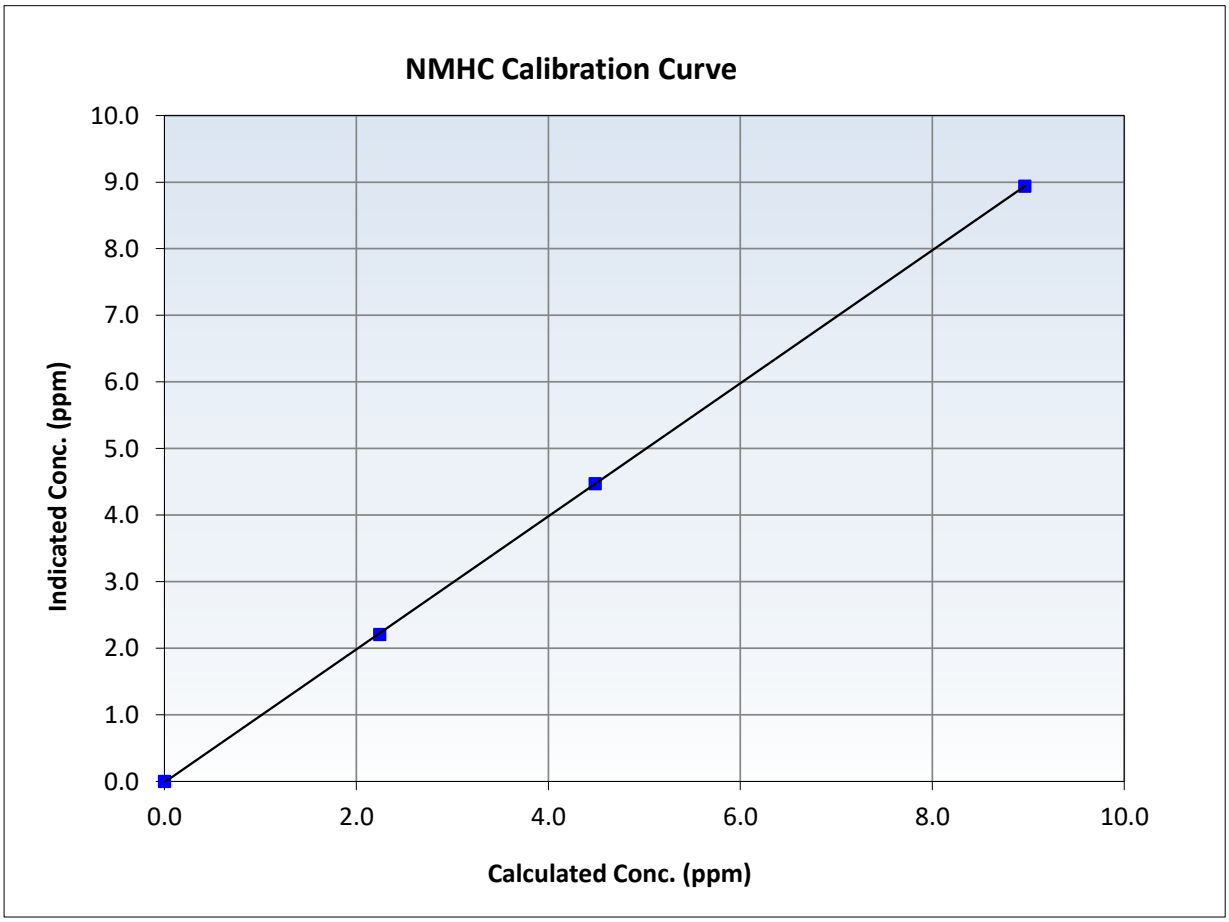
NMHC Calibration Summary

Station Information

Calibration Date:	July 30, 2025	Previous Calibration:	July 14, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	11:07	End Time (MST):	13:30
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999987	≥0.995
8.96	8.94	1.0023	Slope	0.998789	0.90 - 1.10
4.49	4.47	1.0035			
2.24	2.21	1.0162	Intercept	-0.013281	+/-0.5



NMHC Calibration Plot Date: July 30, 2025 Location: Conklin

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Conklin
Station number:	AMS 21
Calibration Date:	July 17, 2025
Last Cal Date:	June 4, 2025
Start time (MST):	9:41
End time (MST):	13:42
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	SA18828	Cal Gas Expiry Date:	November 3, 2031
NOX Cal Gas Conc:	48.90 ppm	NO Cal Gas Conc:	48.80 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	48.90 ppm	Removed Gas NO Conc:	48.80 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700P	Serial Number:	2659
ZAG make/model:	Teledyne API T701	Serial Number:	953

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.3	-0.4	0.1	----	----
AF High point	4918	82.0	802.0	800.3	1.6	848.4	842.7	5.8	0.9449	0.9493
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 803.2 ppb	NO = 799.9 ppb
Baseline Corr 1st pt	NO_X = 848.7 ppb	NO = 843.1 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	Nx Sl:	Nx Int:
As found	NO r^2:	NO Sl:	NO Int:
As found	NO_2 r^2:	NO2 Sl:	NO_2 Int:

*Percent Change	NO_X =	5.4%
*Percent Change	NO =	5.1%

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1218153356

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	0.706	0.669	NO bkgnd or offset:	3.9	3.7
NOX coeff or slope:	0.996	0.994	NOX bkgnd or offset:	3.9	3.7
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	163.2	163.5

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.003747	1.004473
NO_X Cal Offset:	-1.791998	-1.371987
NO Cal Slope:	1.003262	1.005604
NO Cal Offset:	-3.052033	-2.472009
NO_2 Cal Slope:	1.004631	1.000514
NO_2 Cal Offset:	0.007506	0.104705

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.2	0.1	----	----
High point	4918	82.0	802.0	800.3	1.6	804.4	803.2	1.3	0.9970	0.9964
Mid point	4959	41.0	401.0	400.2	0.8	402.0	399.6	2.4	0.9975	1.0014
Low point	4980	20.5	200.5	200.1	0.4	197.9	195.9	2.0	1.0130	1.0212
As left zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.3	0.1	----	----
As left span	4918	82.0	802.0	400.8	401.2	802.7	400.8	401.9	0.9991	1.0000
							Average Correction Factor		1.0025	1.0064

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.1	----	----
High GPT point	800.5	396.6	405.5	405.9	0.9991	100.1%
Mid GPT point	800.5	603.2	198.9	199.0	0.9997	100.0%
Low GPT point	800.5	704.2	97.9	98.2	0.9974	100.3%
				Average Correction Factor	0.9987	100.1%

Notes: Sample inlet filter was changed after as founds. Adjusted span only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

NO_X Calibration Summary

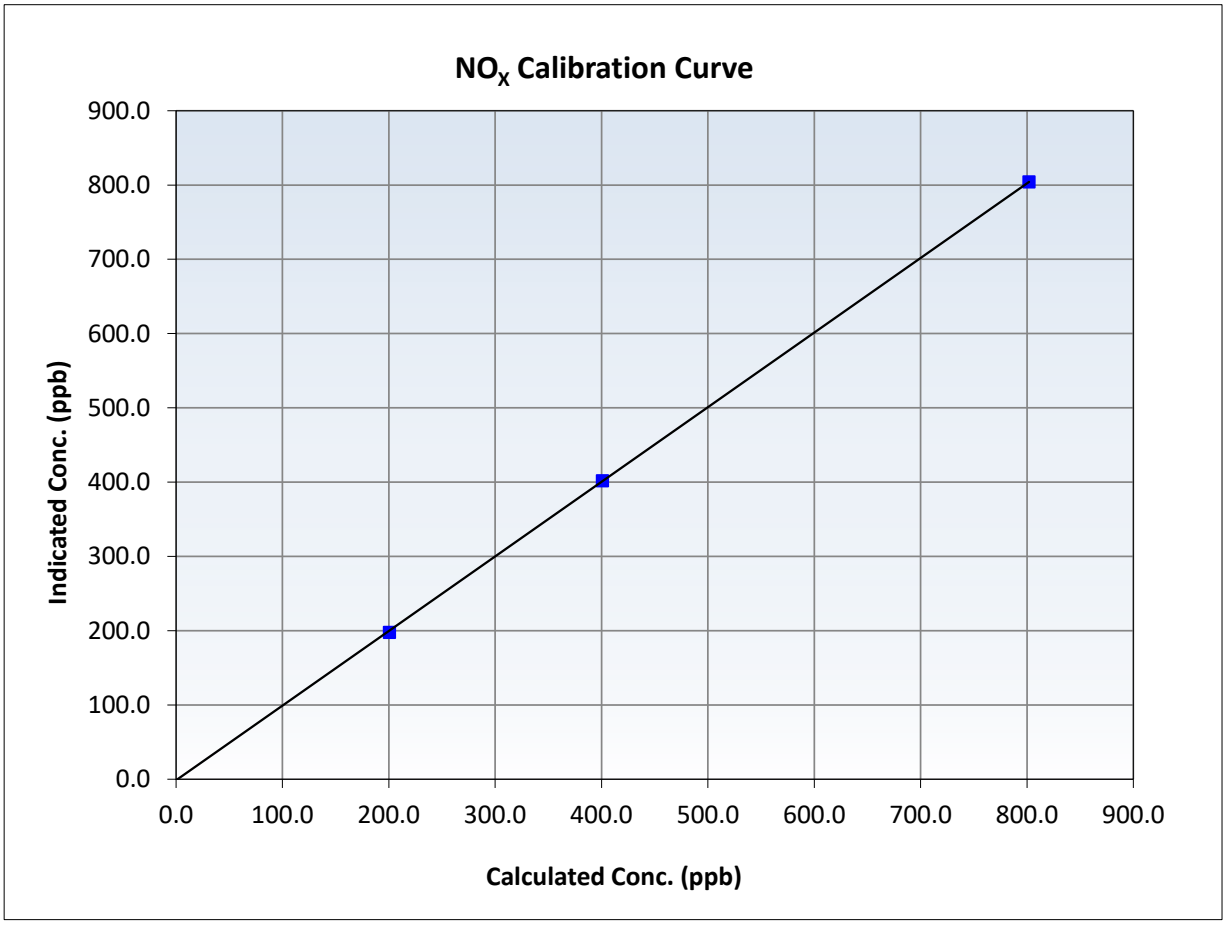
Station Information

Calibration Date:	July 17, 2025	Previous Calibration:	June 4, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:41	End Time (MST):	13:42
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153356

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
802.0	804.4	0.9970
401.0	402.0	0.9975
200.5	197.9	1.0130

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999982	*≥0.995*
Slope	1.004473	*0.90 - 1.10*
Intercept	-1.371987	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

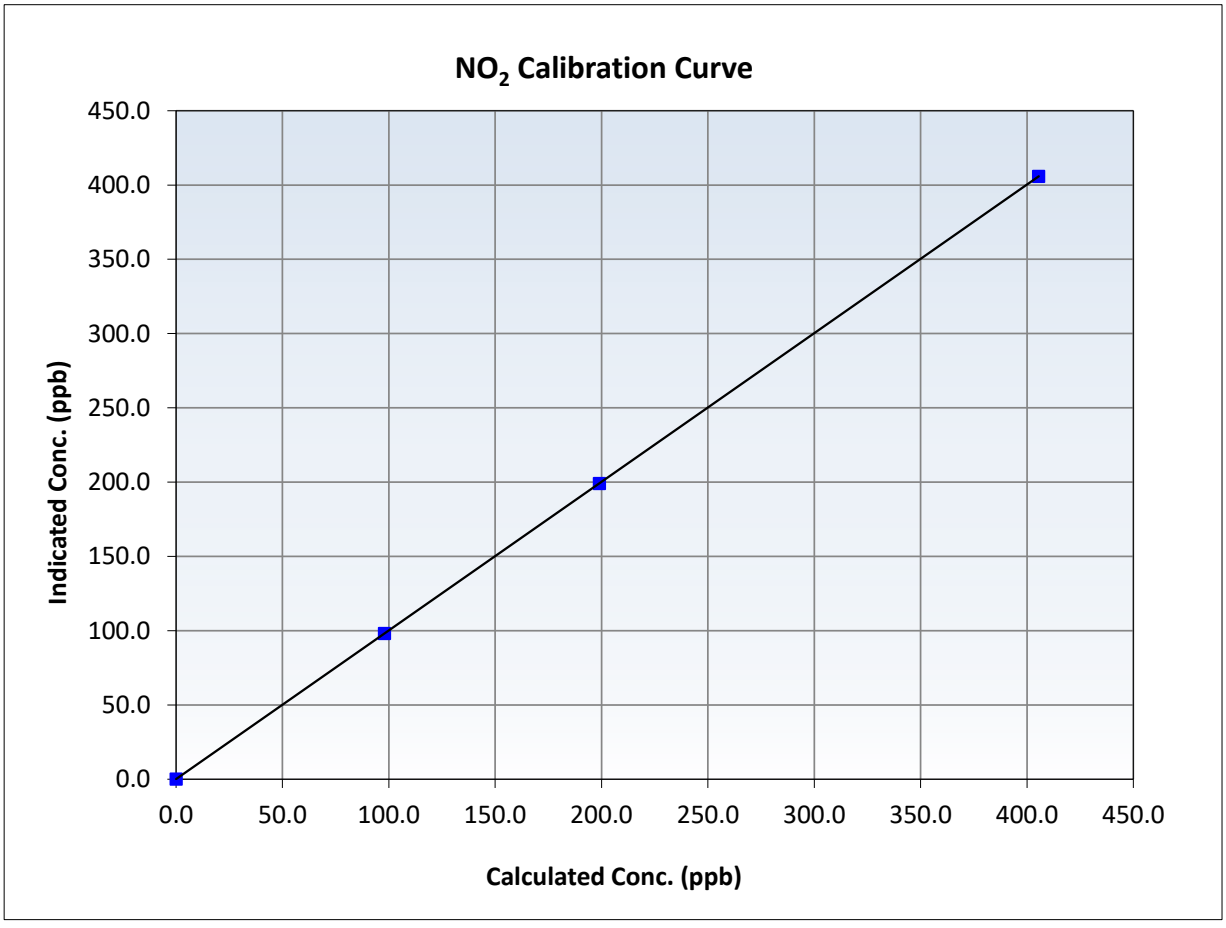
Station Information

Calibration Date:	July 17, 2025	Previous Calibration:	June 4, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:41	End Time (MST):	13:42
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153356

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
405.5	405.9	0.9991
198.9	199.0	0.9997
97.9	98.2	0.9974

Statistical Evaluation		*Limits*
Correlation Coefficient	1.000000	*≥0.995*
Slope	1.000514	*0.90 - 1.10*
Intercept	0.104705	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

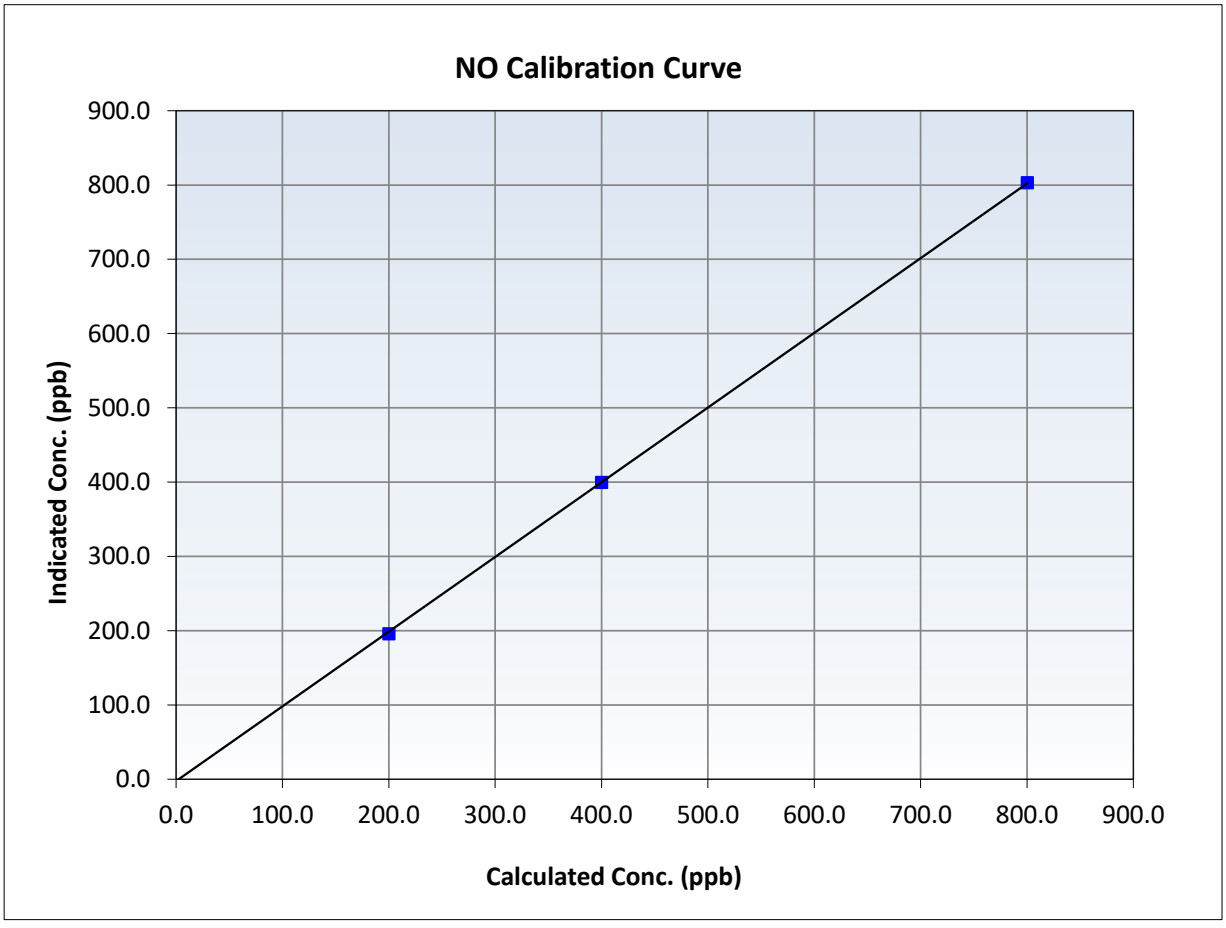
Station Information

Calibration Date:	July 17, 2025	Previous Calibration:	June 4, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:41	End Time (MST):	13:42
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153356

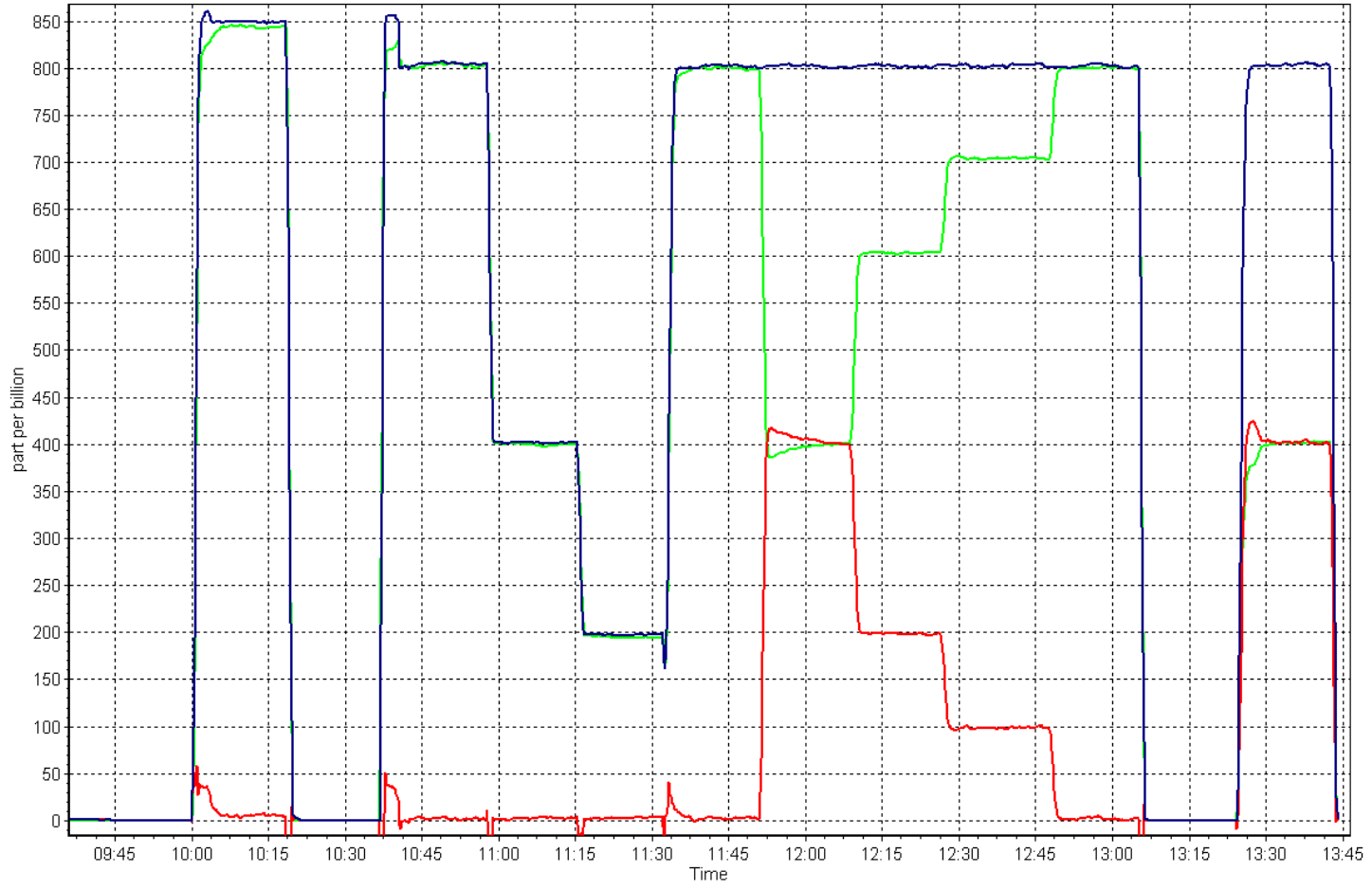
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
800.3	803.2	0.9964
400.2	399.6	1.0014
200.1	195.9	1.0212

Statistical Evaluation		Limits
Correlation Coefficient	0.999961	≥0.995
Slope	1.005604	0.90 - 1.10
Intercept	-2.472009	+/-20



NO_X Calibration Plot Date: July 17, 2025 Location: Conklin



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Conklin	Station number:	AMS 21
Calibration Date:	July 2, 2025	Last Cal Date:	June 16, 2025
Start time (MST):	9:45	End time (MST):	12:26
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	Teledyne API T700P	Serial Number:	2659
ZAG Make/Model:	Teledyne API T701H	Serial Number:	355

Analyzer Information

Analyzer make:	Thermo 49i	Analyzer serial #:	1501663734
Analyzer Range	0 - 500 ppb		

	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.004600	0.997571	Backgd or Offset:	0.7	0.2
Calibration intercept:	-0.980000	-0.700000	Coeff or Slope:	1.054	1.054

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	800.0	0.0	0.5	----
As found High point	5000	920.6	400.0	399.7	1.002
As found Mid point					
As found Low point					
Baseline Corr As found:	399.2	Previous response	400.9	*% change	-0.4%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	800.0	0.0	0.5	----
High point	5000	919.0	400.0	399.0	1.003
Mid point	5000	755.3	200.0	198.0	1.010
Low point	5000	646.4	100.0	98.0	1.020
As left zero	5000	800.0	0.0	-0.1	----
As left span	5000	917.0	400.0	407.0	0.983
				Average Correction Factor	1.011

Notes: Sample inlet filter was changed after as founds. Adjusted zero only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

O_3 Calibration Summary

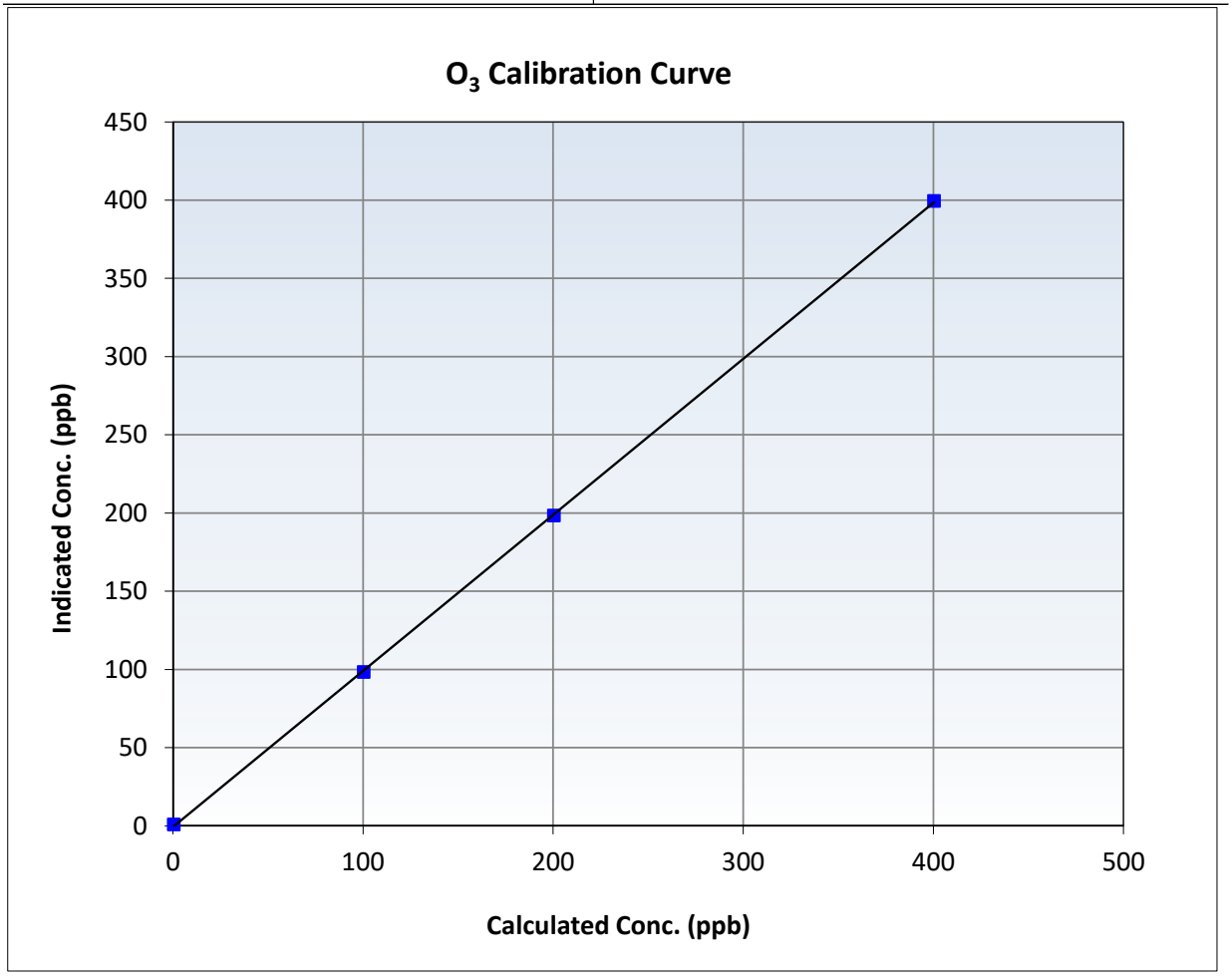
Station Information

Calibration Date:	July 2, 2025	Previous Calibration:	June 16, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:45	End Time (MST):	12:26
Analyzer make:	Thermo 49i	Analyzer serial #:	1501663734

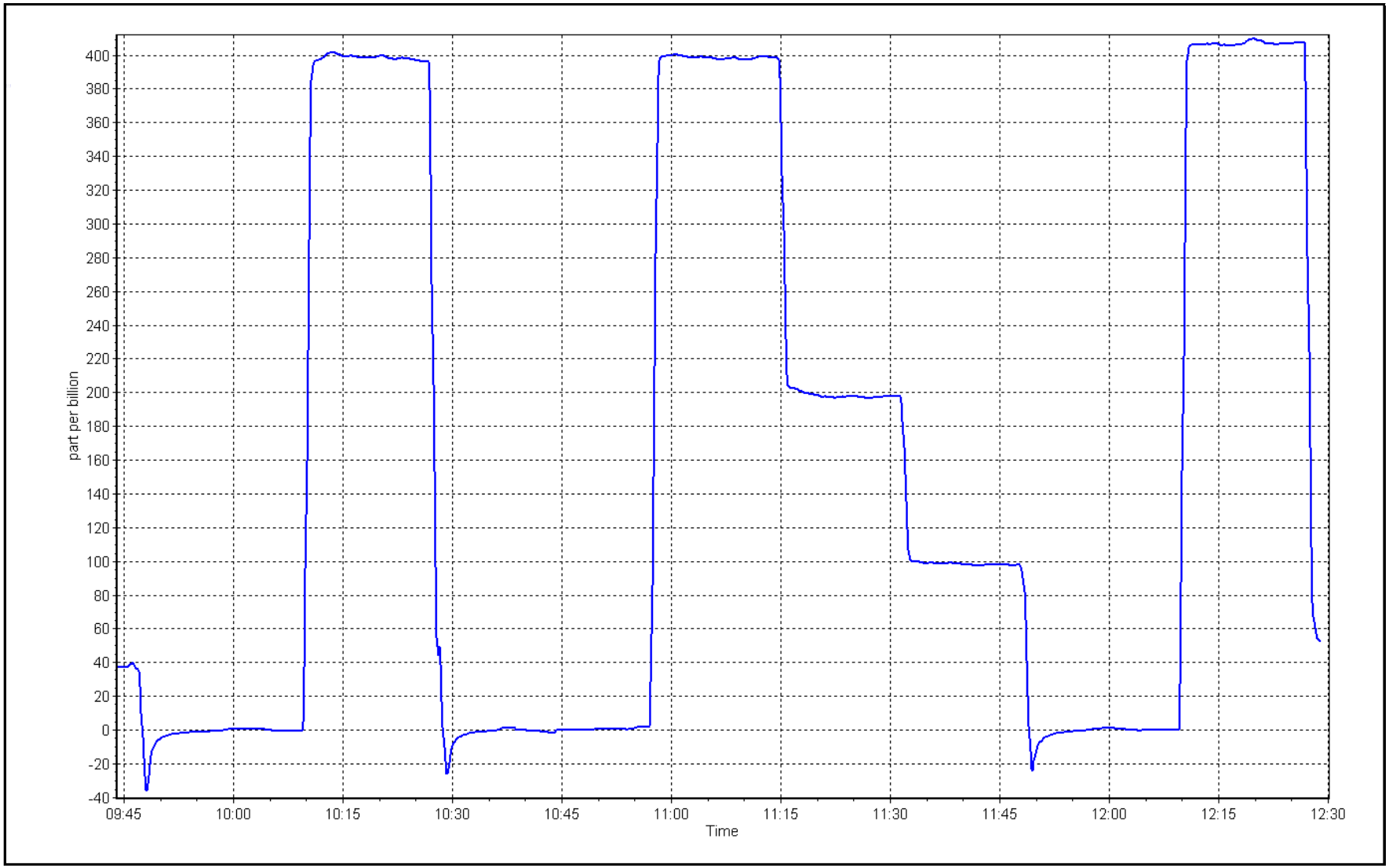
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.5	----
400.0	399.0	1.0025
200.0	198.0	1.0101
100.0	98.0	1.0204

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999958	*≥0.995*
Slope	0.997571	*0.90 - 1.10*
Intercept	-0.700000	*+/- 5*



O_3 Calibration Plot Date: July 2, 2025 Location: Conklin



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Conklin	Station number:	AMS 21
Calibration Date:	July 9, 2025	Last Cal Date:	June 30, 2025
Start time (MST):	11:51	End time (MST):	12:13
Analyzer Make:	API T640	S/N:	1266
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388754
Temp/RH standard:	Alicat FP-25BT	S/N:	388754

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	22.10	21.50	22.10	☐	+/- 2 °C
P (mmHg)	701.30	703.64	701.30	☐	+/- 10 mmHg
Flow (LPM)	4.95	5.14	4.95	☐	+/- 0.25 LPM
PW% (pump)	38	-----	38	☐	>80%
Zero Verification	PM w/o HEPA:	2.20	PM w/ HEPA:	0.00	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.90 — Expiry Date: July 16, 2026 — Lot No.: 100128-050-040

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	+/- 0.5

Date Optical Chamber Cleaned: June 30, 2025

Date Disposable Filter Changed: June 30, 2025

Post- maintenance Zero Verification: PM w/ HEPA: _____ <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: June 4, 2025

Date RH/T Sensor Cleaned: June 30, 2025

Notes: Verified flow, pressure, temperature and pump power. Leak check passed. No adjustment needed.

Calibration by: Jan Castro

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS22
JANVIER
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Janvier	Station number:	AMS 22
Calibration Date:	July 25, 2025	Last Cal Date:	June 26, 2025
Start time (MST):	11:39	End time (MST):	14:53
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.11	ppm	Cal Gas Exp Date:	January 18, 2029
Cal Gas Cylinder #:	CC281519			
Removed Cal Gas Conc:	50.11	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	3806
Zero Air Gen Model:	Teledyne API T701		Serial Number:	691

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1152430006	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.002479	0.998763	Backgd or Offset:	26.0	26.1
Calibration intercept:	1.803963	0.404805	Coeff or Slope:	1.006	0.986

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.7	----
As found High point	4920	79.8	799.8	811.0	0.987
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	810.3	Previous response	803.6	*% change	0.8%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4920	79.8	799.8	798.8	1.001
Mid point	4960	39.9	399.9	400.8	0.998
Low point	4980	20.0	200.4	200.2	1.001
As left zero	5000	0.0	0.0	0.5	----
As left span	4920	79.8	799.8	797.5	1.003
				Average Correction Factor:	1.000

Notes: Changed the inlet filter after as founds. Adjusted the zero and span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

SO_2 Calibration Summary

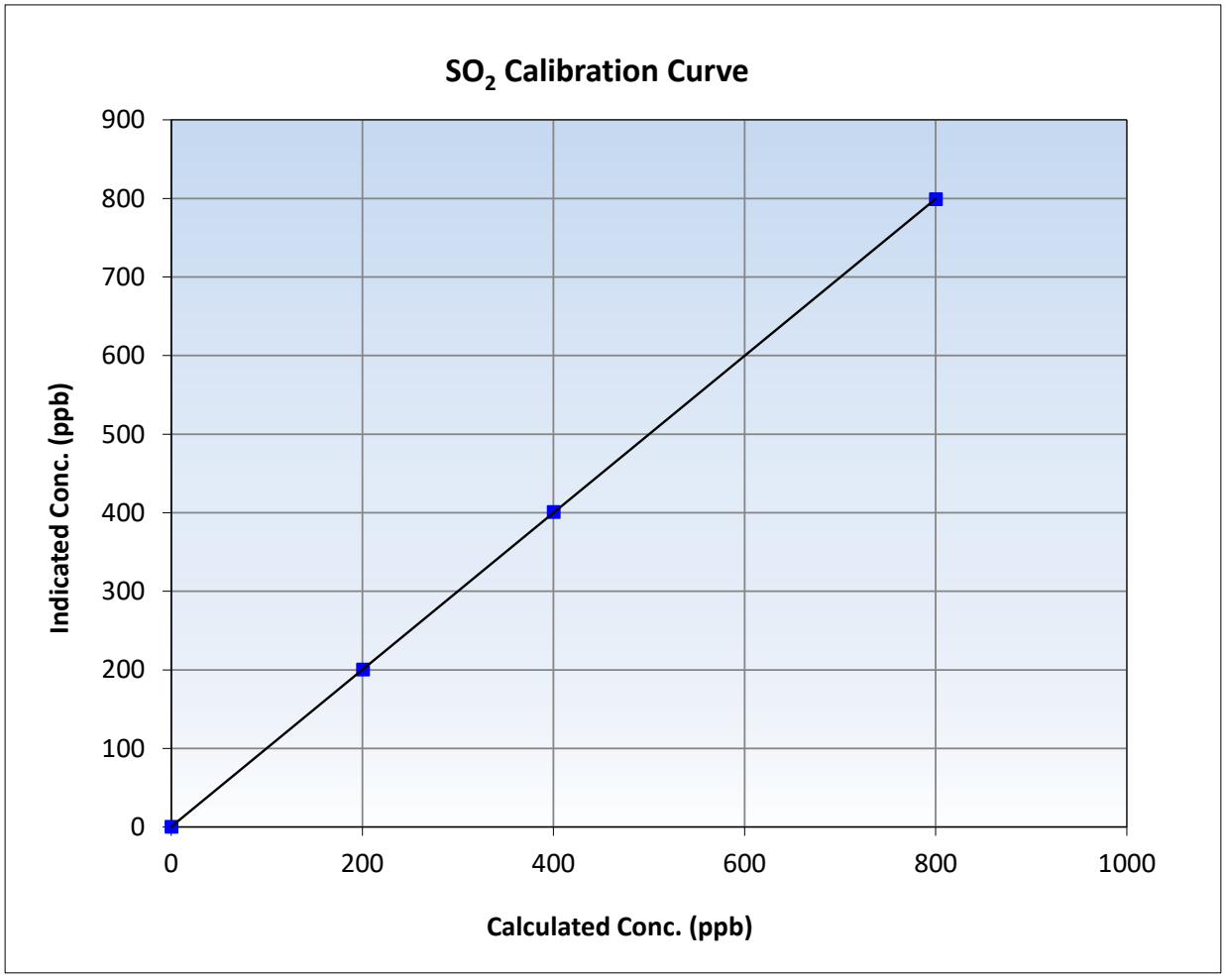
Station Information

Calibration Date:	July 25, 2025	Previous Calibration:	June 26, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:39	End Time (MST):	14:53
Analyzer make:	Thermo 43i	Analyzer serial #:	1152430006

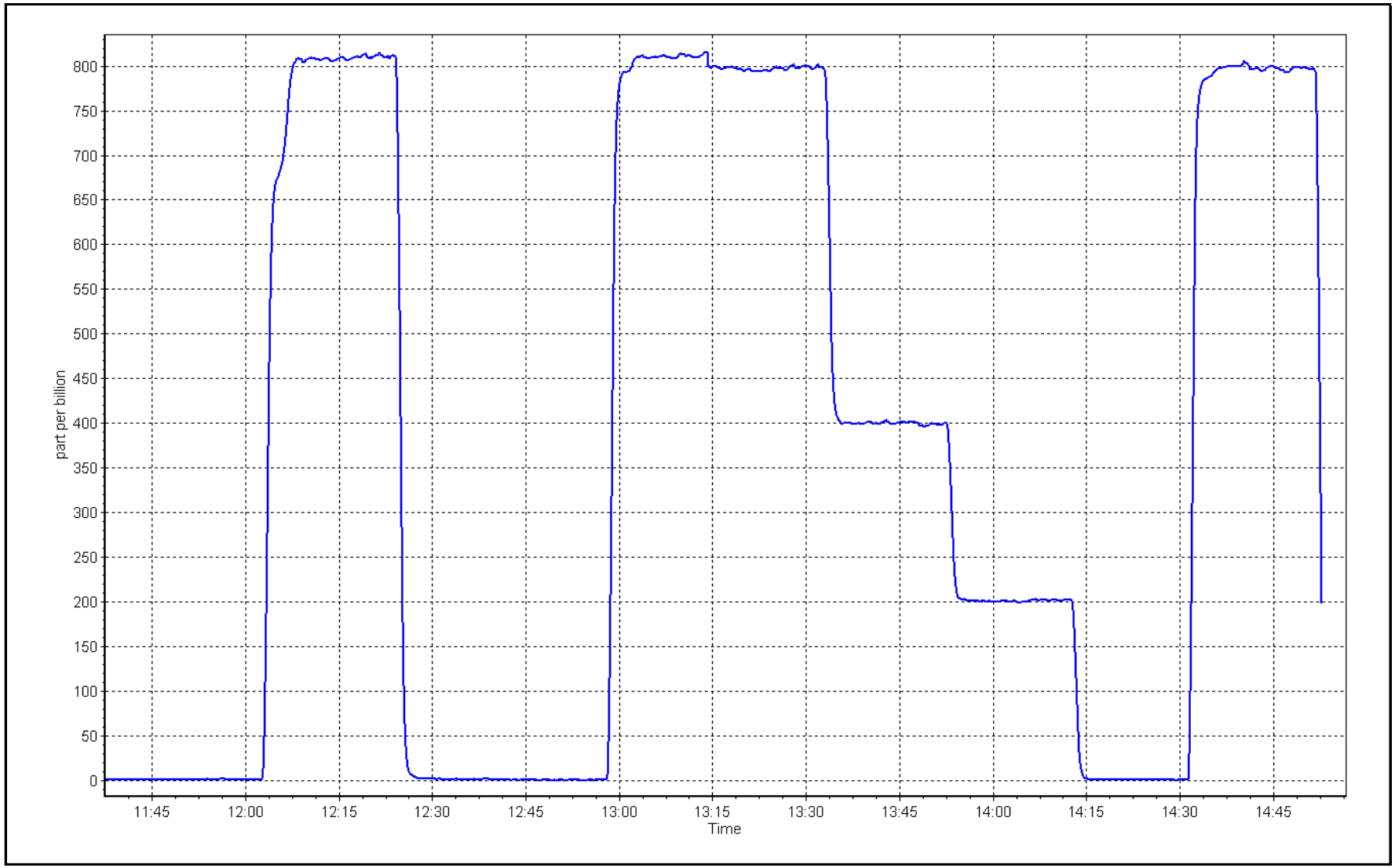
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
799.8	798.8	1.0012
399.9	400.8	0.9977
200.4	200.2	1.0012

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999996	*≥0.995*
Slope	0.998763	*0.90 - 1.10*
Intercept	0.404805	*+/-30*



SO2 Calibration Plot Date: July 25, 2025 Location: Janvier



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Janvier	Station number:	AMS 22
Calibration Date:	July 22, 2025	Last Cal Date:	June 25, 2025
Start time (MST):	11:23	End time (MST):	15:27
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.02	ppm	Cal Gas Exp Date:	November 15, 2026
Cal Gas Cylinder #:	CC424047			
Removed Cal Gas Conc:	5.02	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	3806
ZAG Make/Model:	Teledyne API T701		Serial Number:	691

Analyzer Information

Analyzer make:	Thermo 43i-TLE		Analyzer serial #:	1151680031
Converter make:	CDN-101		Converter serial #:	620
Analyzer Range	0 - 100 ppb		Converter Temp:	850 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.005235	1.003521	Backgd or Offset:	3.81	3.79
Calibration intercept:	-0.199288	-0.039299	Coeff or Slope:	1.196	1.196

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4920	79.7	80.0	82.2	0.970
As found Mid point	4960	39.8	40.0	41.2	0.963
As found Low point	4980	19.9	20.0	20.2	0.975
New cylinder response					

Baseline Corr As found:	82.5	Prev response:	80.24	*% change:	2.7%
Baseline Corr 2nd AF pt:	41.5	AF Slope:	1.031797	AF Intercept:	-0.278695
Baseline Corr 3rd AF pt:	20.5	AF Correlation:	0.999976	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4920	79.7	80.0	80.2	0.998
Mid point	4960	39.8	40.0	40.1	0.997
Low point	4980	19.9	20.0	20.2	0.989
As left zero	5000	0.0	0.0	-0.1	----
As left span	4920	79.7	80.0	77.7	1.030
SO2 Scrubber Check	4920	79.8	798.0	0.2	----
Date of last scrubber change:				Ave Corr Factor	0.994
Date of last converter efficiency test:					

Notes: Changed the inlet filter after as founds. Scrubber test performed, no issues. No adjustments made.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

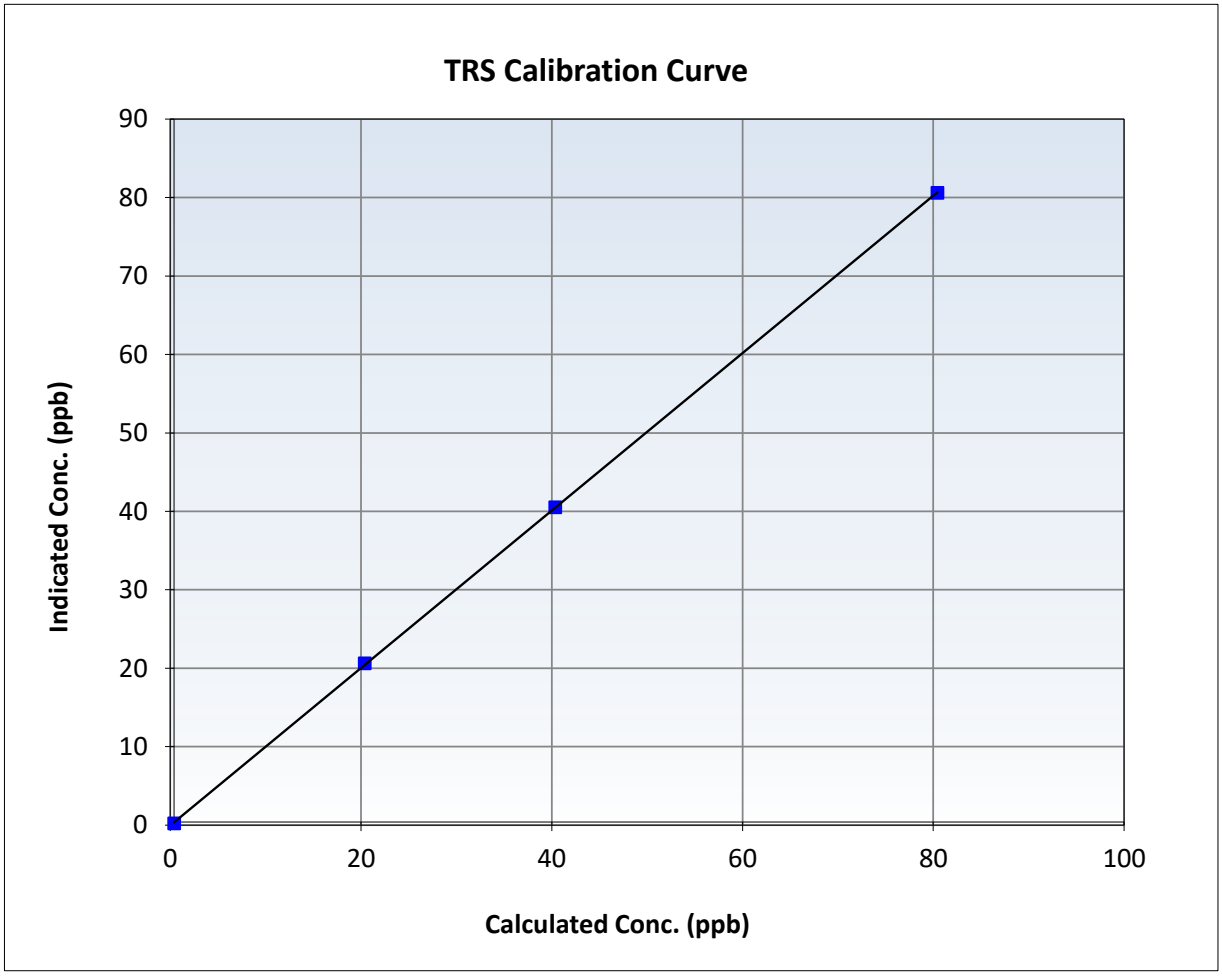
TRS Calibration Summary

Station Information

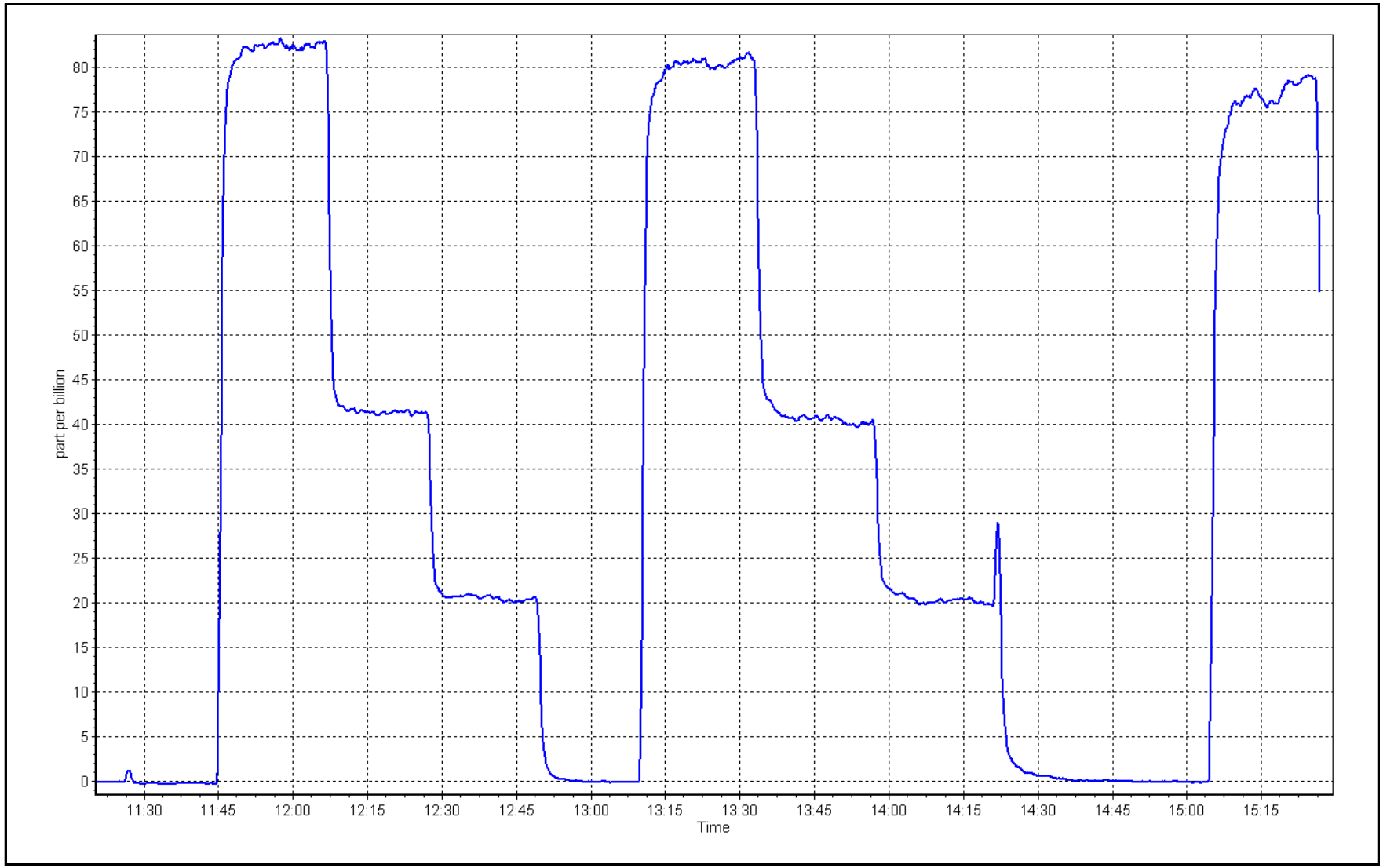
Calibration Date:	July 22, 2025	Previous Calibration:	June 25, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:23	End Time (MST):	15:27
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1151680031

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	-0.2	----	Correlation Coefficient	0.999981	*≥0.995*
80.0	80.2	0.9978	Slope	1.003521	*0.90 - 1.10*
40.0	40.1	0.9965			
20.0	20.2	0.9891	Intercept	-0.039299	*+/-3*



TRS Calibration Plot Date: July 22, 2025 Location: Janvier



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Janvier	Station number:	AMS 22
Calibration Date:	July 25, 2025	Last Cal Date:	June 26, 2025
Start time (MST):	11:39	End time (MST):	14:53
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC281519		Cal Gas Expiry Date:	January 18, 2029	
CH4 Cal Gas Conc.	502.8	ppm	CH4 Equiv Conc.	1075.9	ppm
C3H8 Cal Gas Conc.	208.4	ppm			
Removed Gas Cert:	NA		Removed Gas Expiry:	NA	
Removed CH4 Conc.	502.8	ppm	CH4 Equiv Conc.	1075.9	ppm
Removed C3H8 Conc.	208.4	ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):			Diff between cyl (NM):		
Calibrator Model:	Teledyne API 700		Serial Number:	3806	
Zero Air Gen model:	Teledyne API 701		Serial Number:	691	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	1317958219	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	2.61E-04	2.54E-04	NMHC SP Ratio:	6.23E-05	6.10E-05
CH4 Retention time:	11.8	11.6	NMHC Peak Area:	146823	150044
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	17.17	17.32	0.991
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	17.32	Prev response	17.18	*% change	0.8%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	17.17	17.18	0.999
Mid point	4960	39.9	8.59	8.47	1.013
Low point	4980	20.0	4.30	4.24	1.015
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	17.17	16.93	1.014
				Average Correction Factor	1.009

Notes: Changed the inlet filter after as founds. Adjusted the span.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	9.15	9.24	0.990
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.24	Prev response	9.16	*% change	0.9%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	9.15	9.15	1.000
Mid point	4960	39.9	4.57	4.53	1.011
Low point	4980	20.0	2.29	2.27	1.010
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	9.15	8.97	1.020
				Average Correction Factor	1.007

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	8.03	8.08	0.993
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.08	Prev response	8.02	*% change	0.7%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.03	8.03	0.999
Mid point	4960	39.9	4.01	3.95	1.016
Low point	4980	20.0	2.01	1.97	1.021
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	8.03	7.96	1.008
				Average Correction Factor	1.012

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	1.000802	1.001194
THC Cal Offset:	-0.006404	-0.050597
CH4 Cal Slope:	1.002079	1.001994
CH4 Cal Offset:	-0.016962	-0.031160
NMHC Cal Slope:	0.999969	1.000342
NMHC Cal Offset:	0.010157	-0.018836

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

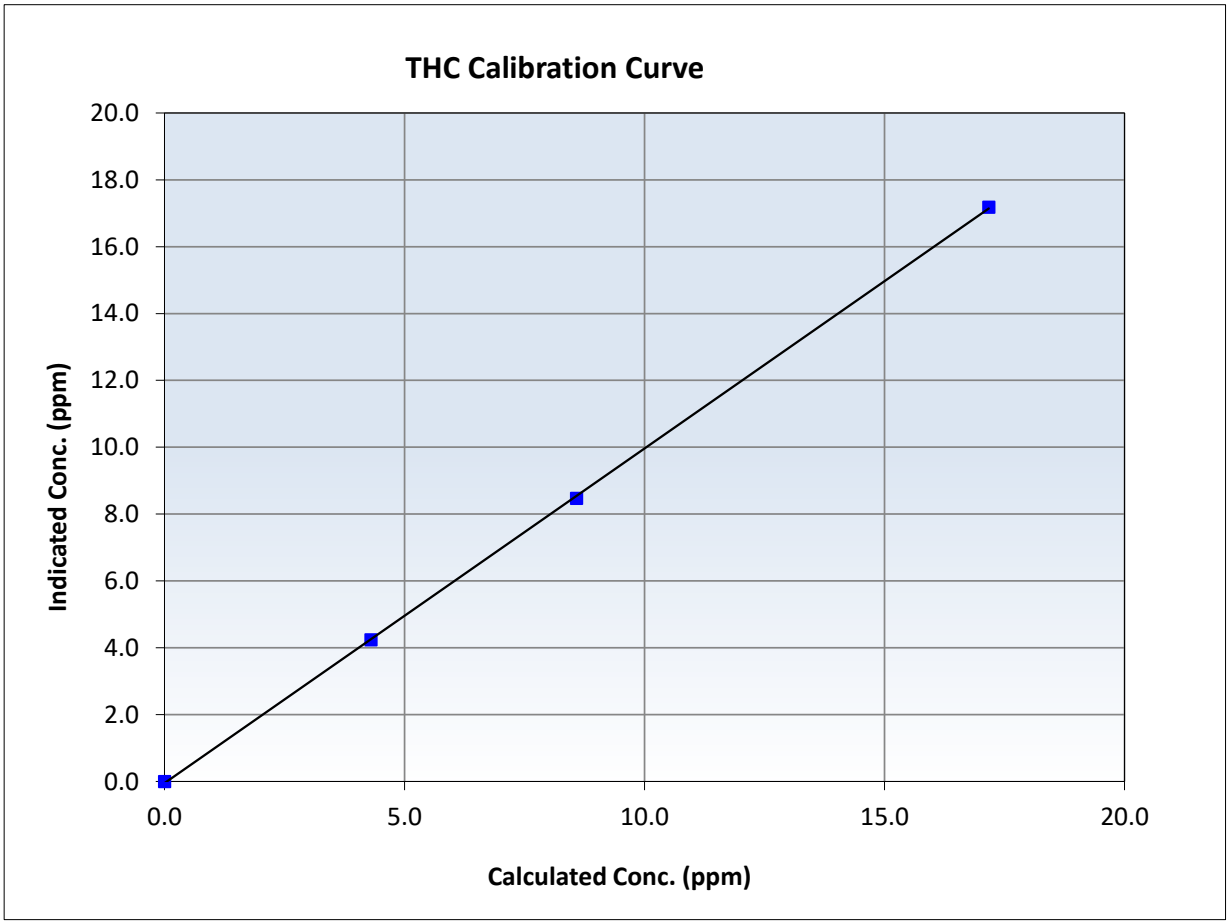
THC Calibration Summary

Station Information

Calibration Date:	July 25, 2025	Previous Calibration:	June 26, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:39	End Time (MST):	14:53
Analyzer make:	Thermo 55i	Analyzer serial #:	1317958219

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.00	0.00	----	Correlation Coefficient	0.999939	*≥0.995*
17.17	17.18	0.9994	Slope	1.001194	*0.90 - 1.10*
8.59	8.47	1.0133			
4.30	4.24	1.0152	Intercept	-0.050597	*+/-0.5*



Wood Buffalo Environmental Association

CH_4 Calibration Summary

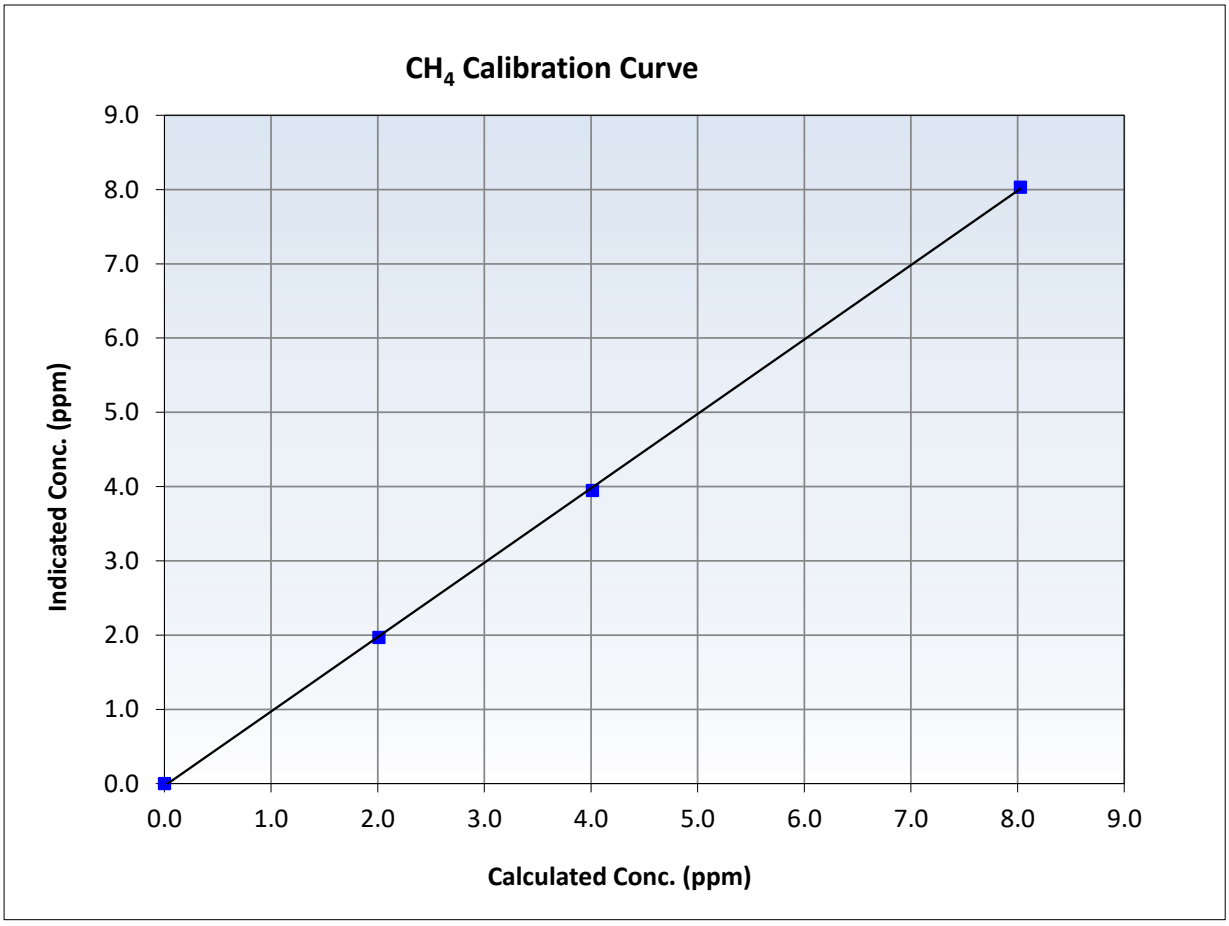
Station Information

Calibration Date:	July 25, 2025	Previous Calibration:	June 26, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:39	End Time (MST):	14:53
Analyzer make:	Thermo 55i	Analyzer serial #:	1317958219

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.03	8.03	0.9989
4.01	3.95	1.0163
2.01	1.97	1.0209

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999902	*≥0.995*
Slope	1.001994	*0.90 - 1.10*
Intercept	-0.031160	*+/-0.5*



Wood Buffalo Environmental Association

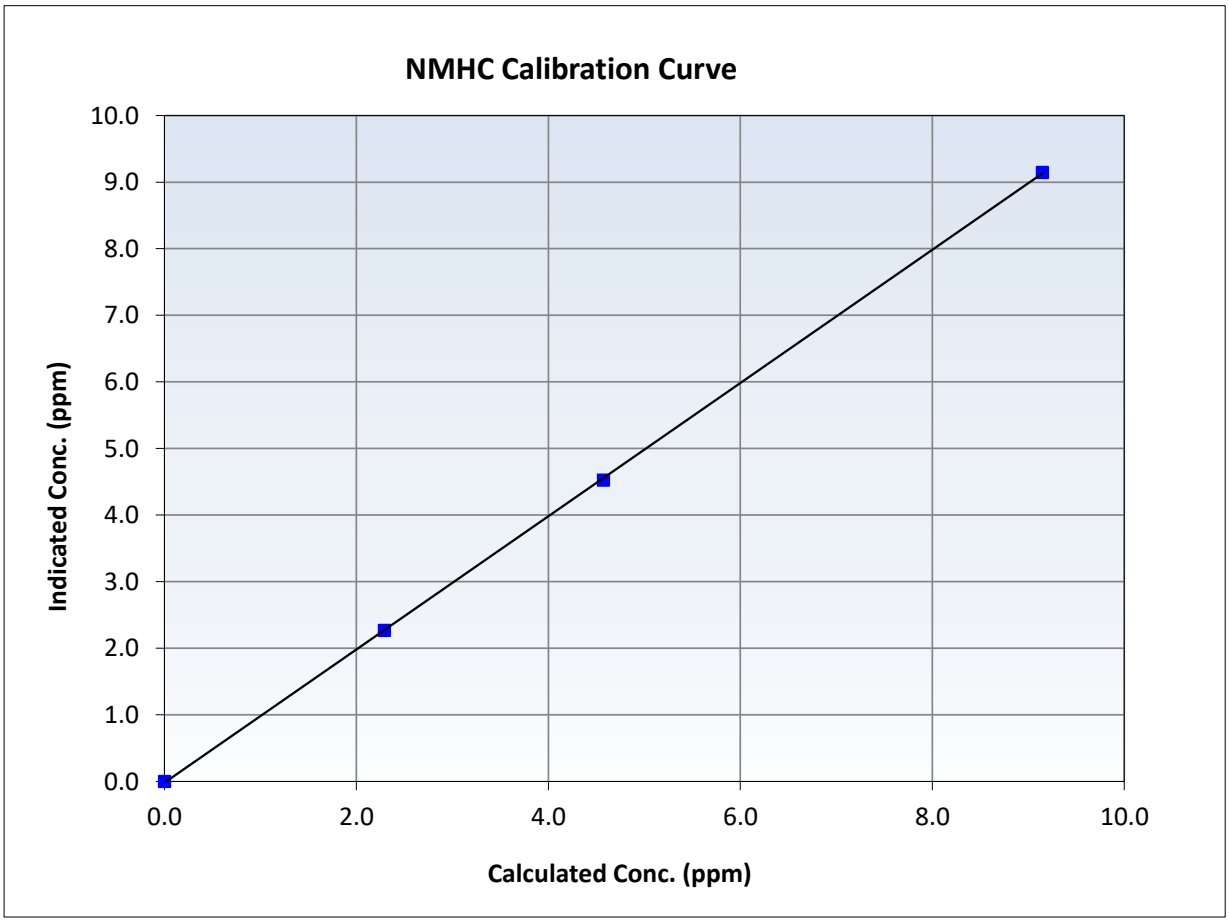
NMHC Calibration Summary

Station Information

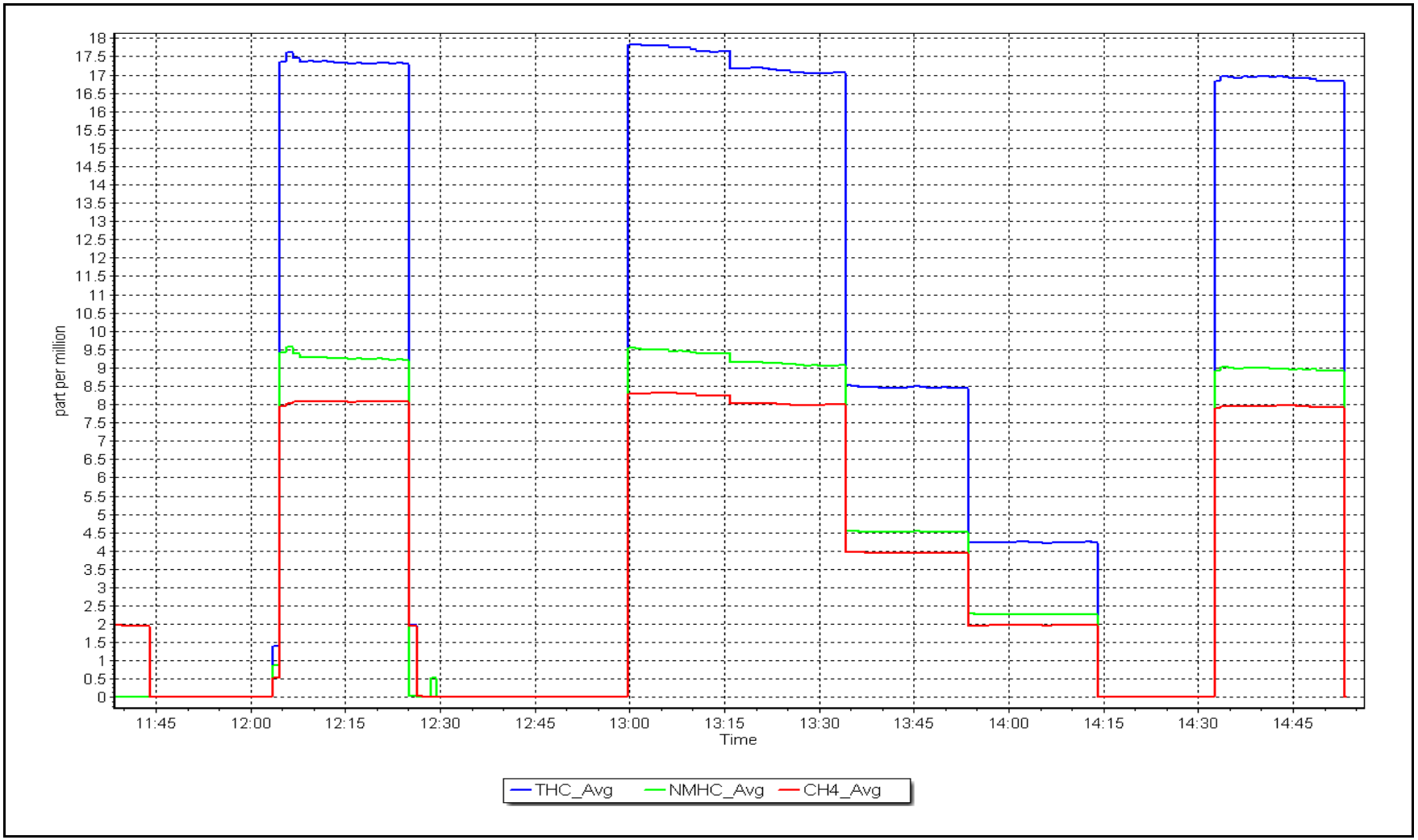
Calibration Date:	July 25, 2025	Previous Calibration:	June 26, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:39	End Time (MST):	14:53
Analyzer make:	Thermo 55i	Analyzer serial #:	1317958219

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999965	≥0.995
9.15	9.15	0.9999	Slope	1.000342	0.90 - 1.10
4.57	4.53	1.0107	Intercept	-0.018836	+/-0.5
2.29	2.27	1.0099			



NMHC Calibration Plot Date: July 25, 2025 Location: Janvier



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Janvier
Station number:	AMS 22
Calibration Date:	July 23, 2025
Last Cal Date:	June 30, 2025
Start time (MST):	11:34
End time (MST):	16:05
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0047765	Cal Gas Expiry Date:	March 11, 2031
NOX Cal Gas Conc:	48.90 ppm	NO Cal Gas Conc:	48.80 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	48.90 ppm	Removed Gas NO Conc:	48.80 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	3806
ZAG make/model:	Teledyne API T701	Serial Number:	691

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.2	0.0	----	----
AF High point	4918	82.0	802.0	800.3	1.6	802.2	792.6	9.7	0.9995	1.0095
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 800.7 ppb	NO = 797.2 ppb
Baseline Corr 1st pt	NO_X = 802.4 ppb	NO = 792.8 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

*Percent Change NO_X = 0.2%

*Percent Change NO = -0.6%

As Found Statistics

As found	NO_X r^2:	Nx Sl:	Nx Int:
As found	NO r^2:	NO Sl:	NO Int:
As found	NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1229254994

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	0.998	1.003	NO bkgnd or offset:	2.7	2.7
NOX coeff or slope:	0.998	0.997	NOX bkgnd or offset:	2.8	2.9
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	172.9	173.8

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.997687	1.000893
NO_X Cal Offset:	0.604037	0.604128
NO Cal Slope:	0.996904	1.001131
NO Cal Offset:	-0.656109	-0.936016
NO_2 Cal Slope:	1.003200	1.001655
NO_2 Cal Offset:	1.084488	0.801280

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	-0.1	0.1	----	----
High point	4918	82.0	802.0	800.3	1.6	802.9	800.7	2.2	0.9988	0.9995
Mid point	4960	41.0	400.9	400.1	0.8	402.4	399.2	3.2	0.9963	1.0022
Low point	4980	20.5	200.5	200.1	0.4	201.7	198.5	3.2	0.9939	1.0079
As left zero	5000	0.0	0.0	0.0	0.0	0.1	0.0	0.1	----	----
As left span	4918	82.0	802.0	394.4	407.6	803.8	394.4	409.4	0.9977	1.0000
								Average Correction Factor	0.9963	1.0032

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.1	----	----
High GPT point	798.5	395.2	404.9	406.1	0.9971	100.3%
Mid GPT point	798.5	597.9	202.2	203.6	0.9933	100.7%
Low GPT point	798.5	697.6	102.5	104.3	0.9831	101.7%
				Average Correction Factor	0.9912	100.9%

Notes: Inlet filter was changed after as founds. Adjusted the span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

NO_X Calibration Summary

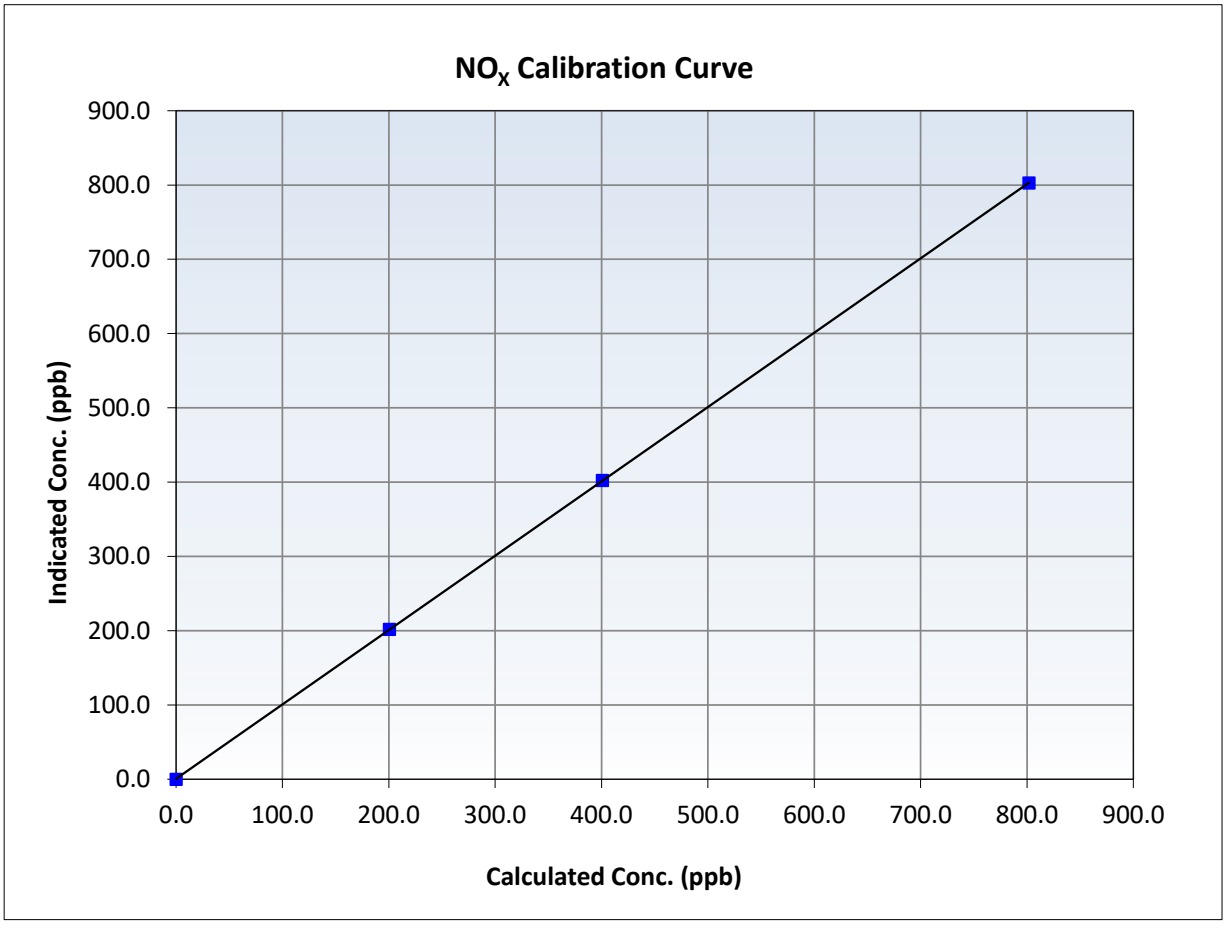
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 30, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:34	End Time (MST):	16:05
Analyzer make:	Thermo 42i	Analyzer serial #:	1229254994

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
802.0	802.9	0.9988
400.9	402.4	0.9963
200.5	201.7	0.9939

Statistical Evaluation		Limits
Correlation Coefficient	0.999997	≥0.995
Slope	1.000893	0.90 - 1.10
Intercept	0.604128	+/-20



Wood Buffalo Environmental Association

NO_2 Calibration Summary

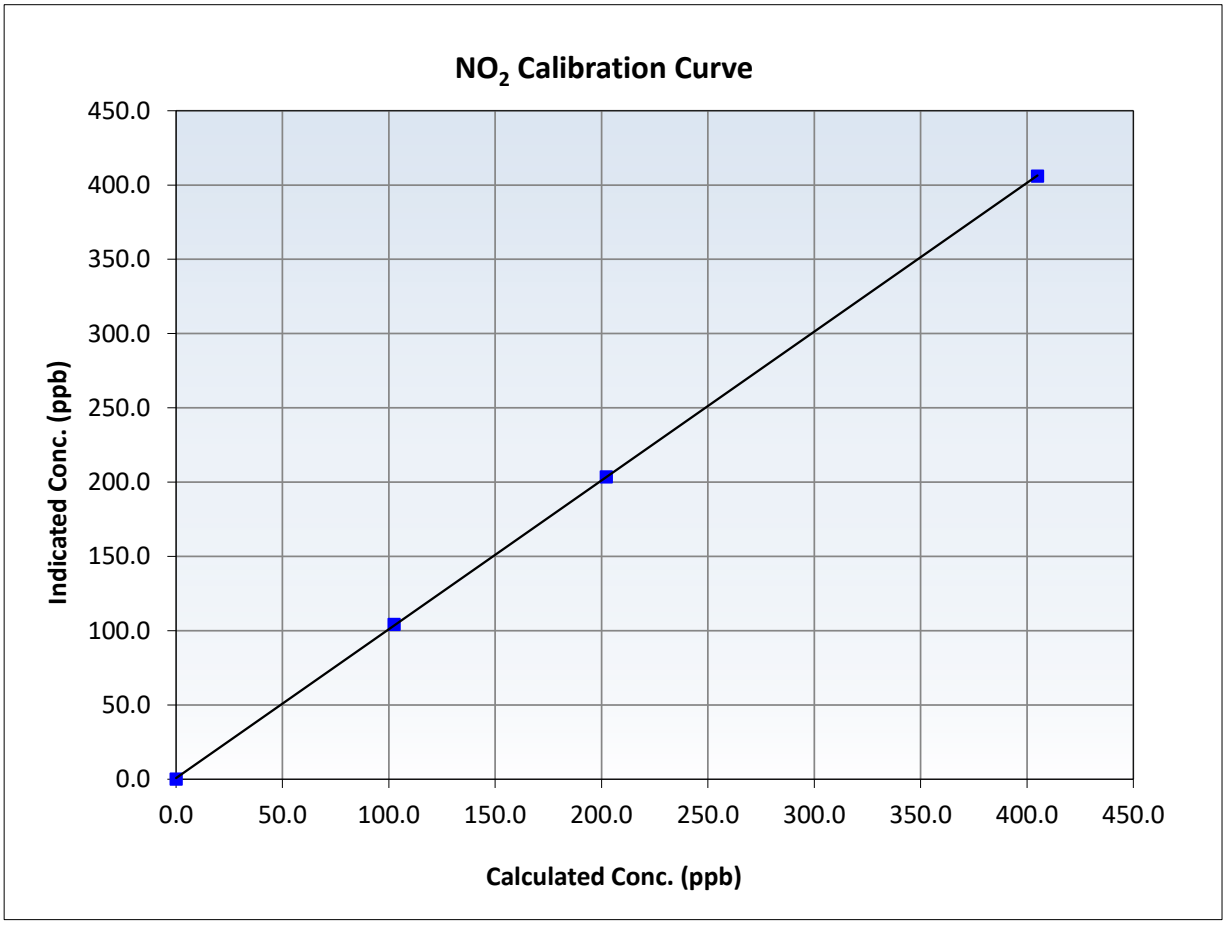
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 30, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:34	End Time (MST):	16:05
Analyzer make:	Thermo 42i	Analyzer serial #:	1229254994

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
404.9	406.1	0.9971
202.2	203.6	0.9933
102.5	104.3	0.9831

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999986	*≥0.995*
Slope	1.001655	*0.90 - 1.10*
Intercept	0.801280	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

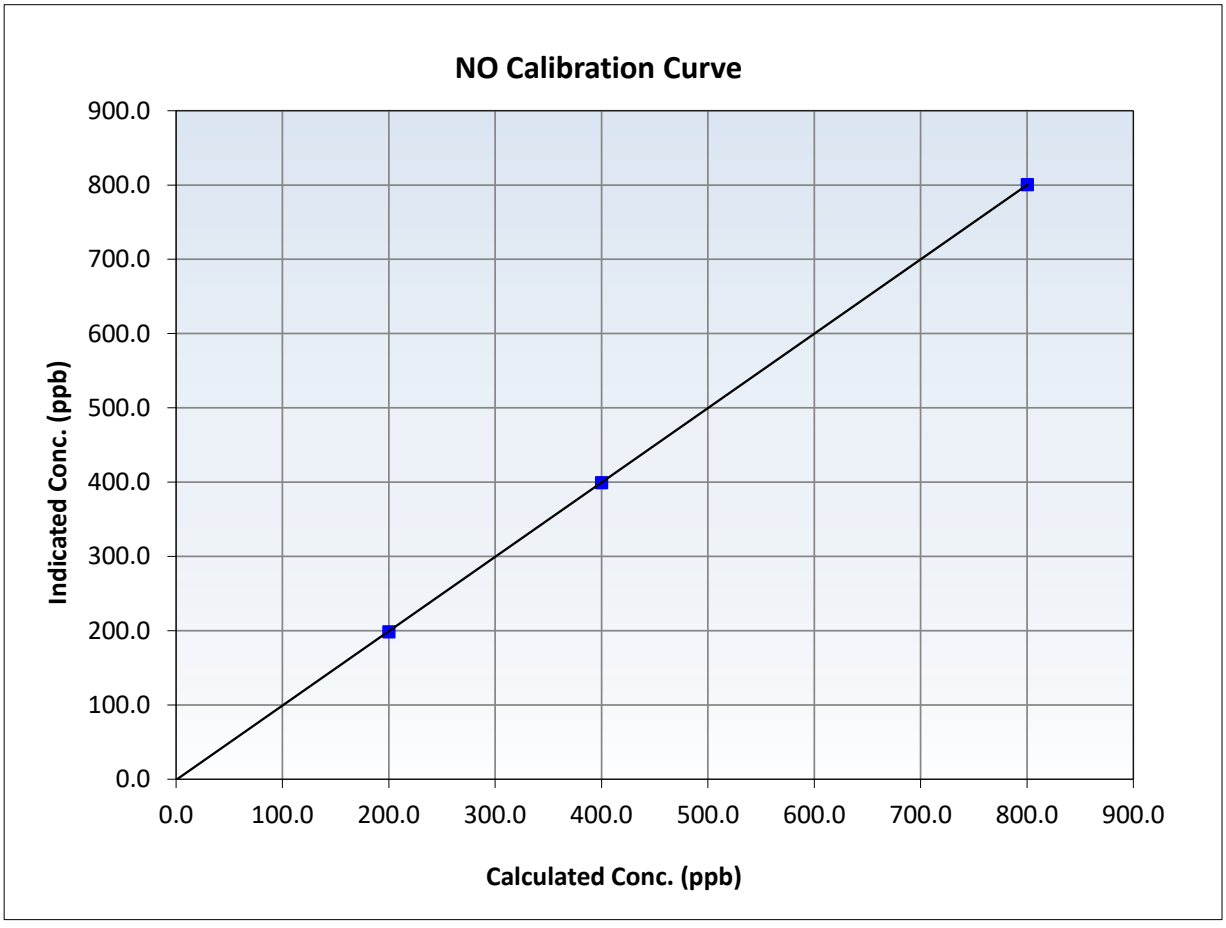
Station Information

Calibration Date:	July 23, 2025	Previous Calibration:	June 30, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:34	End Time (MST):	16:05
Analyzer make:	Thermo 42i	Analyzer serial #:	1229254994

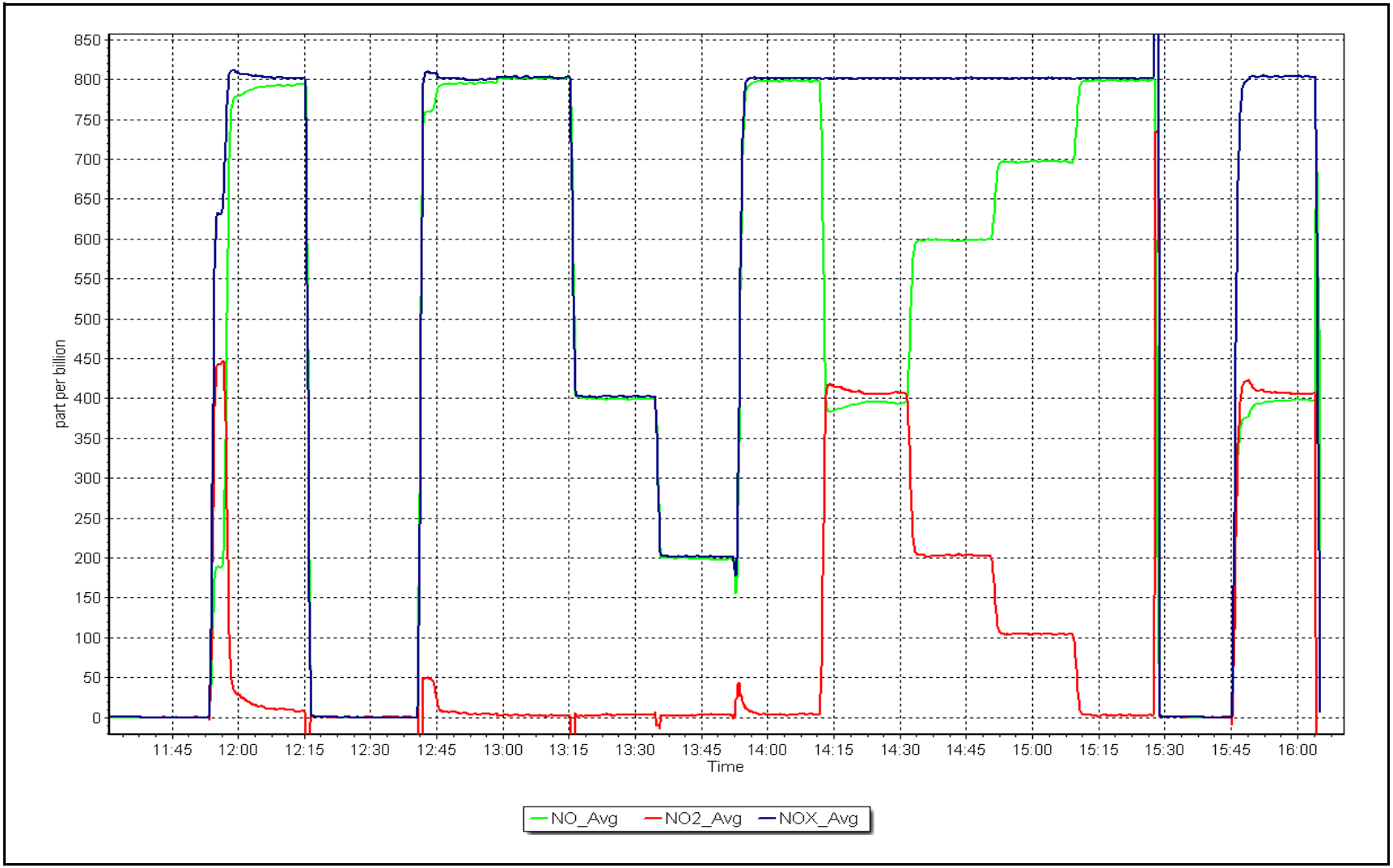
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
800.3	800.7	0.9995
400.1	399.2	1.0022
200.1	198.5	1.0079

Statistical Evaluation		Limits
Correlation Coefficient	0.999995	≥0.995
Slope	1.001131	0.90 - 1.10
Intercept	-0.936016	+/-20



NO_X Calibration Plot Date: July 23, 2025 Location: Janvier



Wood Buffalo Environmental Association

O_3 Calibration Report

Station Information

Station Name:	Janvier	Station number:	AMS 22
Calibration Date:	July 9, 2025	Last Cal Date:	June 27, 2025
Start time (MST):	11:52	End time (MST):	15:01
Reason:	Routine		

Calibration Standards

O3 generation mode:	Photometer		
Calibrator Make/Model:	Teledyne API T700	Serial Number:	3806
ZAG Make/Model:	Teledyne API T701H	Serial Number:	691

Analyzer Information

Analyzer make:	Teledyne API T400		Analyzer serial #:	7046	
Analyzer Range	0 - 500 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.994829	1.003457	Backgd or Offset:	1.5	1.6
Calibration intercept:	1.480000	1.520000	Coeff or Slope:	1.011	1.018

O_3 As Found Data

Set Point	Dilution air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	800.0	0.0	-0.3	----
As found High point	5000	926.2	400.0	398.6	1.003
As found Mid point					
As found Low point					
Baseline Corr As found:	398.9	Previous response	399.4	*% change	-0.1%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O_3 Calibration Data

Set Point	Total air flow rate (sccm)	Calibrator Lamp Voltage Drive (mV)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	800.0	0.0	0.2	----
High point	5000	926.2	400.0	402.1	0.995
Mid point	5000	768.9	200.0	203.3	0.984
Low point	5000	666.4	100.0	102.9	0.972
As left zero	5000	800.0	0.0	0.1	----
As left span	5000	926.2	400.0	404.5	0.989
				Average Correction Factor	0.983

Notes: Changed the inlet filter after the as founds. Adjusted the span.

Calibration Performed By: Rene Chamberland

Wood Buffalo Environmental Association

O_3 Calibration Summary

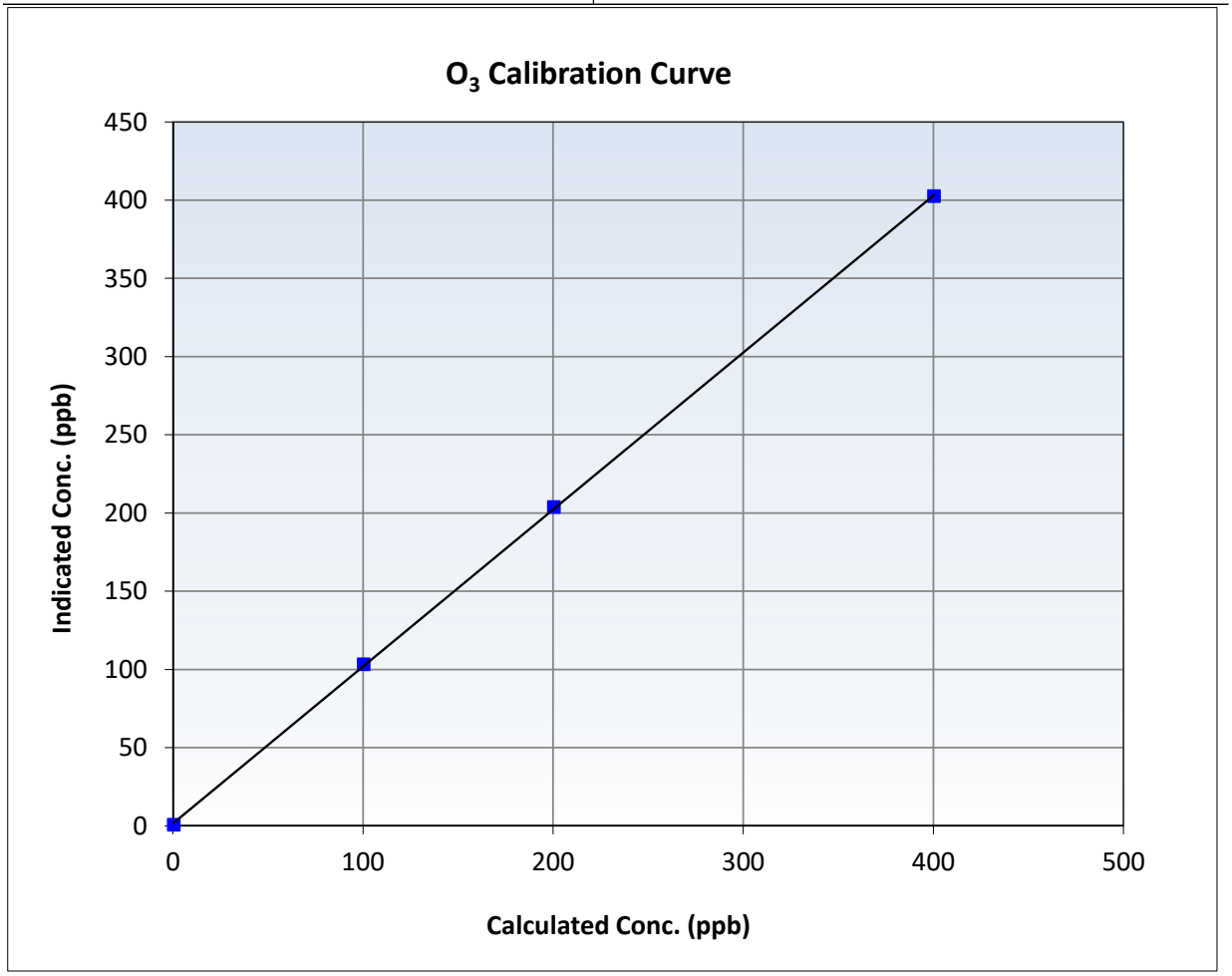
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	June 27, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:52	End Time (MST):	15:01
Analyzer make:	Teledyne API T400	Analyzer serial #:	7046

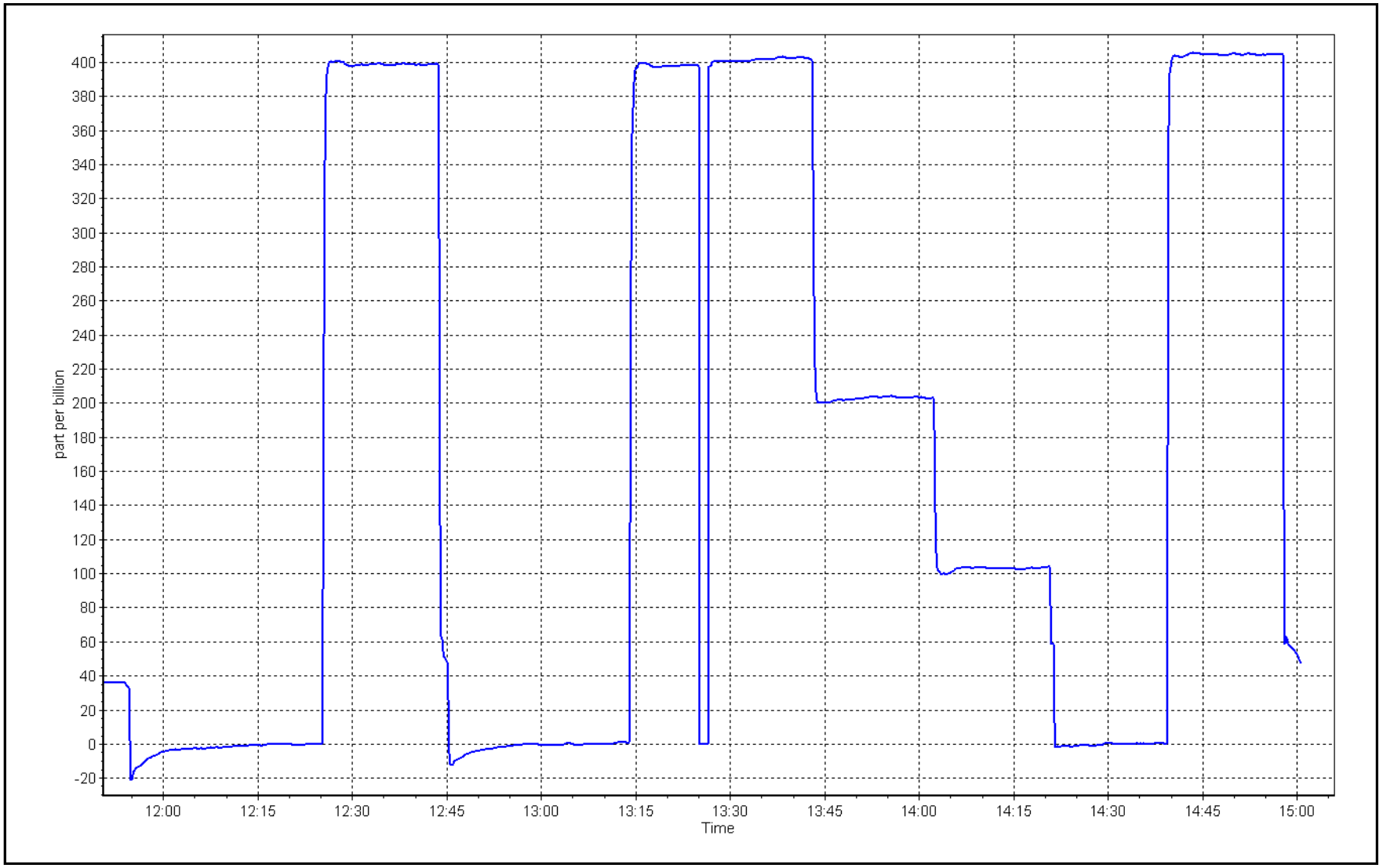
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
400.0	402.1	0.9948
200.0	203.3	0.9838
100.0	102.9	0.9718

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999947	*≥0.995*
Slope	1.003457	*0.90 - 1.10*
Intercept	1.520000	*+/- 5*



O_3 Calibration Plot Date: July 9, 2025 Location: Janvier



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Janvier	Station number:	AMS 22
Calibration Date:	July 23, 2025	Last Cal Date:	June 30, 2025
Start time (MST):	12:09	End time (MST):	13:15
Analyzer Make:	Teledyne API T640	S/N:	325
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388749
Temp/RH standard:	Alicat FP-25BT	S/N:	388749

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	23.3	23.44	23.3	☐	+/- 2 °C
P (mmHg)	716.6	717.5	716.6	☐	+/- 10 mmHg
Flow (LPM)	5.00	5.023	5.00	☐	+/- 0.25 LPM
PW% (pump)	35	-----	35	☐	>80%
Zero Verification	PM w/o HEPA:	14.9	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: — Lot No.: — Expiry Date:

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test				☐	10.9 +/- 0.5

Date Optical Chamber Cleaned: May 28, 2025

Date Disposable Filter Changed: May 28, 2025

Post- maintenance Zero Verification: PM w/ HEPA: _____ <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: May 28, 2025

Date RH/T Sensor Cleaned: May 28, 2025

Notes: Verified flow, temperature, and pressure. Leak check passed.

Calibration by: Rene Chamberland

Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Version-10-2022

Station Information

Station Name:	Janvier	Station Number:	AMS 22
Calibration Date:	July 9, 2025	Prev Cal Date:	October 8, 2024
Start Time (MST):	12:48	End Time (MST):	13:37
Tower Height (m):	10.0	Reason:	Removal

Wind Speed Information

Sensor make/model:	Met One 010C-1	Serial Number:	D16121
WS Calibrator:	MetOne 053	Serial Number:	R10866

Shaft RPM	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error *Limit = +/- 1.5%*
0	0.0	0.0	---
200	20.2	20.1	-0.2%
400	39.4	39.4	0.1%
600	58.6	58.5	0.0%
800	77.8	77.8	0.1%

	Start	***Finish***	*Limits*
Correl Coeff (r^2)	0.999999	0.999999	*≥0.9995*
Calculated slope	0.998868	0.998868	*0.90 - 1.10*
Calculated intercept	0.028930	0.029112	*+/- 2*

Wind Direction Information

Sensor make/model:	Met One 020C-1	Serial Number:	D14528
As Found Declination (deg east of True North):	14	As Left Declination (deg east of True North):	14
Solar noon time (MST):	13:28	Calc Declination*:	12.75 Degrees
Deadband calc:	1.1 degrees (*Limit 4 deg*)		* - calculated declination as per NOAA website

Physical Direction (Degrees) (Cv)	Indicated Direction (Degrees) (Iv)	% Error (based on 357° FS) *Limit = +/- 1.0%*
0	0.3	---
90	88.4	-0.5%
180	179.1	-0.3%
270	271.0	0.3%
357	356.2	-0.2%

	Start	***Finish***	*Limits*
Correl Coeff (r^2)	0.999972	0.999972	*≥0.9995*
Calculated slope	1.000103	0.999452	*0.90 - 1.10*
Calculated intercept	0.839965	0.508607	*+/- 4*

Notes: Removing WS/WD sensors. Solar noon was verified via compass before bringing the tower down.

Calibration Performed By: Rene Chamberland

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS23
FORT HILLS
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Fort Hills	Station number:	AMS 23
Calibration Date:	July 10, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	7:42	End time (MST):	10:21
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.35	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC484463			
Removed Cal Gas Conc:	50.35	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	1222
Zero Air Gen Model:	API T701		Serial Number:	1117

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1160290012	
Analyzer Range:	0-1000ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.002120	0.999462	Backgd or Offset:	19.0	19.0
Calibration intercept:	-0.139048	0.540537	Coeff or Slope:	1.092	1.092

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.2	----
As found High point	4921	79.4	799.5	798.4	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	798.2	Previous response	801.0	*% change	-0.4%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4921	79.4	799.5	799.4	1.000
Mid point	4960	39.7	399.8	400.5	0.998
Low point	4980	19.8	199.4	199.9	0.997
As left zero	5000	0.0	0.0	0.3	----
As left span	4921	79.4	799.5	803.6	0.995
				Average Correction Factor:	0.999

Notes: No maintenance or adjustments done.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

SO_2 Calibration Summary

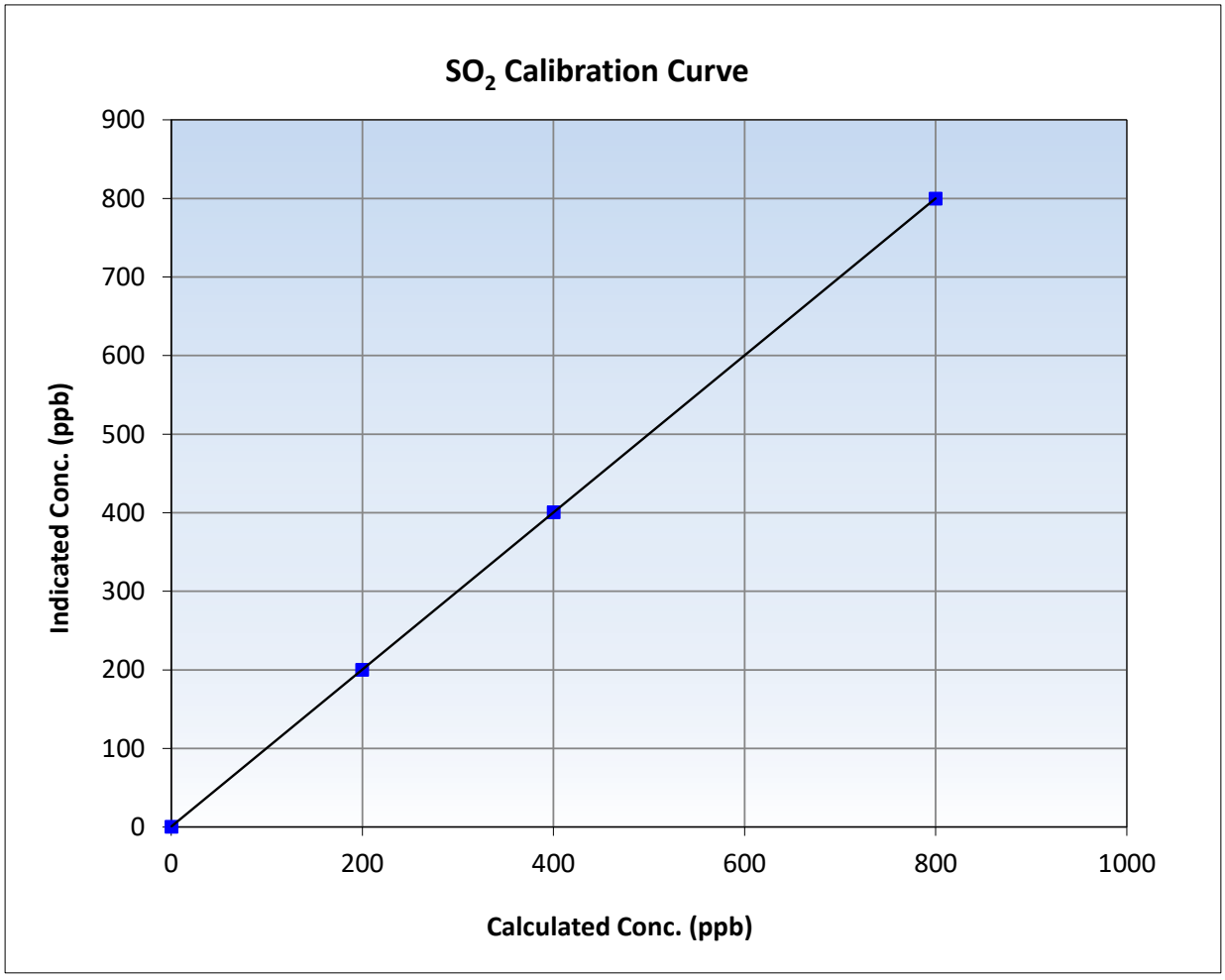
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:42	End Time (MST):	10:21
Analyzer make:	Thermo 43i	Analyzer serial #:	1160290012

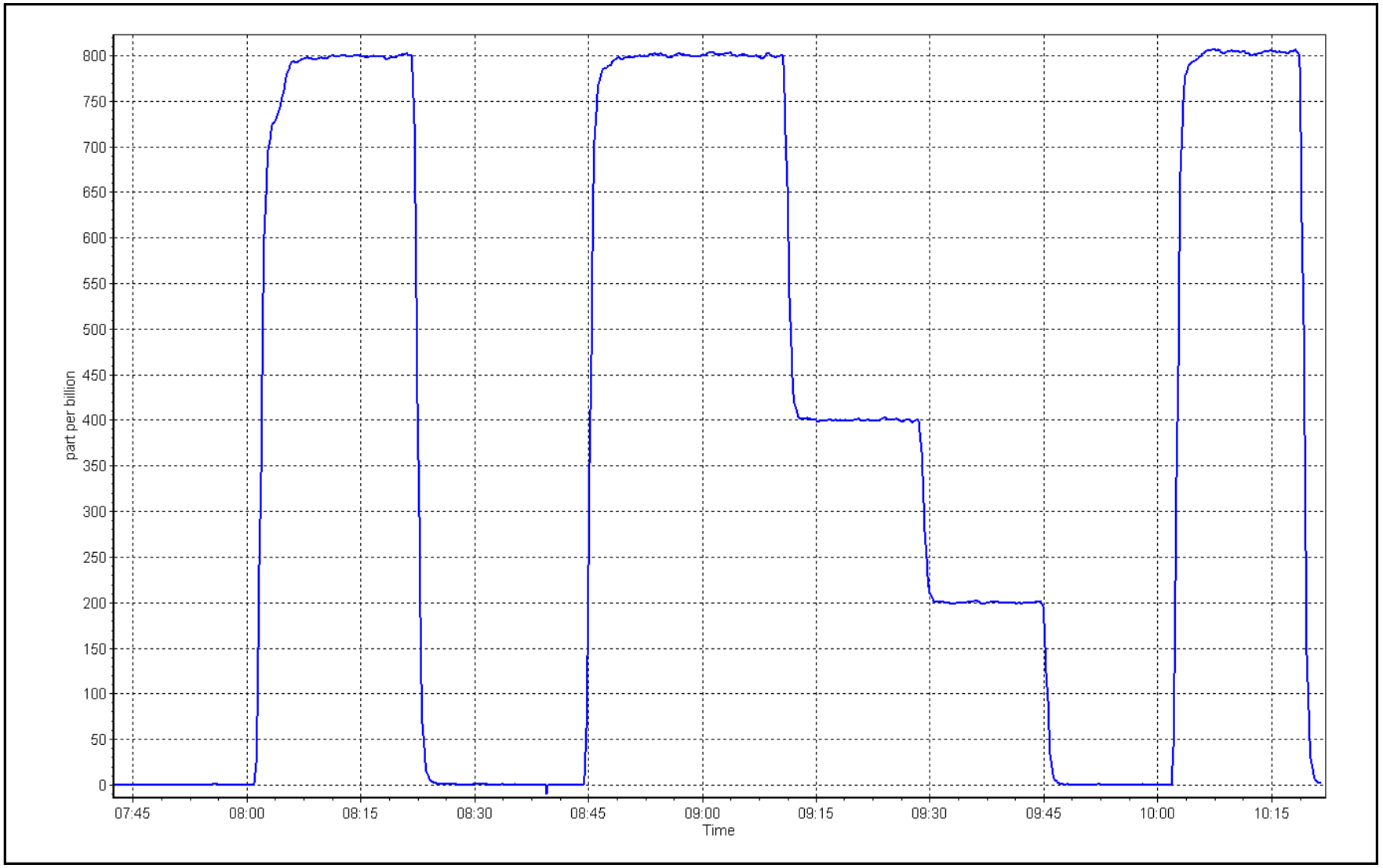
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.3	----
799.5	799.4	1.0001
399.8	400.5	0.9983
199.4	199.9	0.9975

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	0.999462	*0.90 - 1.10*
Intercept	0.540537	*+/-30*



SO2 Calibration Plot Date: July 10, 2025 Location: Fort Hills



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Fort Hills	Station number:	AMS 23
Calibration Date:	July 9, 2025	Last Cal Date:	June 10, 2025
Start time (MST):	6:32	End time (MST):	10:50
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.84	ppm	Cal Gas Exp Date:	August 28, 2027
Cal Gas Cylinder #:	DT0021910			
Removed Cal Gas Conc:	4.84	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	1222
ZAG Make/Model:	API T701		Serial Number:	1117

Analyzer Information

Analyzer make:	Thermo 43i TLE		Analyzer serial #:	1300156232	
Converter make:	CDN-101		Converter serial #:	594	
Analyzer Range	0 - 100 ppb		Converter Temp:	800	degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.010678	1.006535	Backgd or Offset:	1.99	1.92
Calibration intercept:	-0.318167	0.001795	Coeff or Slope:	1.137	1.000

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4917	82.6	80.0	77.7	1.028
As found Mid point	4959	41.3	40.0	38.7	1.030
As found Low point	4979	20.7	20.0	19.1	1.044
New cylinder response					

Baseline Corr As found:	77.8	Prev response:	80.50	*% change:	-3.5%
Baseline Corr 2nd AF pt:	38.8	AF Slope:	0.974082	AF Intercept:	-0.237526
Baseline Corr 3rd AF pt:	19.2	AF Correlation:	0.999984	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4917	82.6	80.0	80.4	0.995
Mid point	4959	41.3	40.0	40.4	0.990
Low point	4979	20.7	20.0	20.2	0.992
As left zero	5000	0.0	0.0	0.1	----
As left span	4917	82.6	80.0	81.8	0.978
SO2 Scrubber Check	4920	80.3	803.0	0.2	----

Date of last scrubber change:			Ave Corr Factor	0.992
Date of last converter efficiency test:	March 13, 2024		110.3%	efficiency

Notes: SOx scrubber checked after the calibrator zero. Lamp voltage and intial lamp adjusted. Lamp voltage was 952 now 1007. Lamp intesity was 91% now 96%. Zero and Span adjusted.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

TRS Calibration Summary

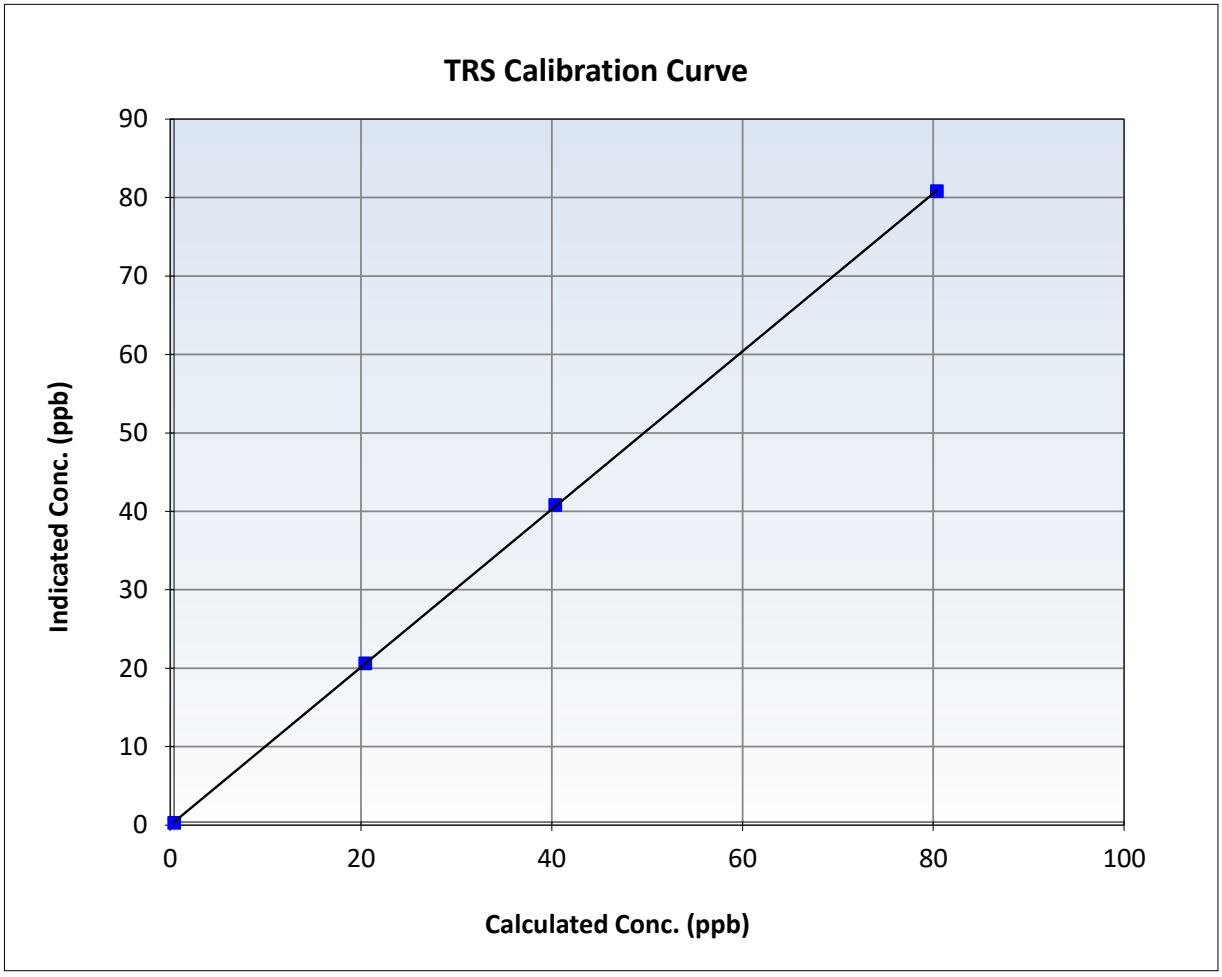
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	June 10, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	6:32	End Time (MST):	10:50
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1300156232

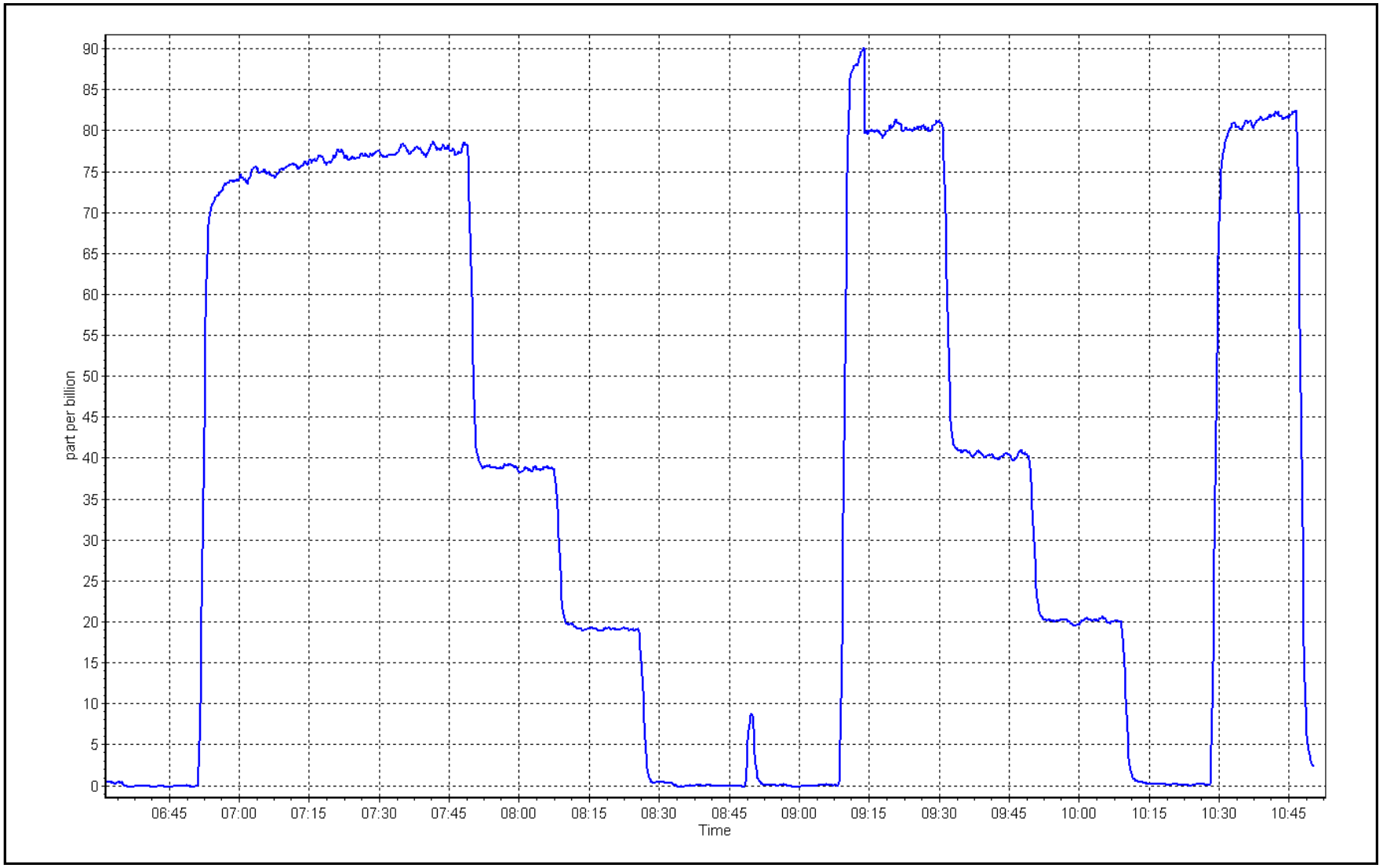
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
80.0	80.4	0.9946
40.0	40.4	0.9895
20.0	20.2	0.9920

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999987	*≥0.995*
Slope	1.006535	*0.90 - 1.10*
Intercept	0.001795	*+/-3*



TRS Calibration Plot Date: July 9, 2025 Location: Fort Hills



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Fort Hills	Station number:	AMS 23
Calibration Date:	July 10, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	7:42	End time (MST):	10:21
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC484463	Cal Gas Expiry Date:	October 9, 2032
CH4 Cal Gas Conc.	504.3 ppm	CH4 Equiv Conc.	1065.6 ppm
C3H8 Cal Gas Conc.	204.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH4 Conc.	504.3 ppm	CH4 Equiv Conc.	1065.6 ppm
Removed C3H8 Conc.	204.1 ppm	Diff between cyl (THC):	
Diff between cyl (CH_4):		Diff between cyl (NM):	
Calibrator Model:	API T700	Serial Number:	1222
Zero Air Gen model:	API T701	Serial Number:	1117

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	12227620777
THC Range:	0 - 20 ppm	NMHC/CH4 Range:	0 - 10 ppm

	Start	*Finish*		*Start*	*Finish*
CH4 SP Ratio:	3.65E-04	3.70E-04	NMHC SP Ratio:	5.51E-05	5.64E-05
CH4 Retention time:	15.2	15.2	NMHC Peak Area:	161613	157868
Zero Chromatogram:	OFF	OFF	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.4	16.92	16.70	1.013
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	16.70	Prev response	16.83	*% change	-0.8%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.4	16.92	16.79	1.008
Mid point	4960	39.7	8.46	8.34	1.014
Low point	4980	19.8	4.22	4.20	1.004
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.4	16.92	16.77	1.009
				Average Correction Factor	1.009

Notes: No Maintenance done. Span adjusted.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.4	8.91	8.76	1.018
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.76	Prev response	8.87	*% change	-1.3%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.4	8.91	8.83	1.009
Mid point	4960	39.7	4.46	4.41	1.010
Low point	4980	19.8	2.22	2.24	0.994
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.4	8.91	8.82	1.010
				Average Correction Factor	1.005

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.4	8.01	7.94	1.009
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.94	Prev response	7.96	*% change	-0.2%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.4	8.01	7.97	1.005
Mid point	4960	39.7	4.00	3.93	1.019
Low point	4980	19.8	2.00	1.97	1.015
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.4	8.01	7.95	1.007
				Average Correction Factor	1.013

Calibration Statistics

	Start	***Finish***
THC Cal Slope:	0.995390	0.991892
THC Cal Offset:	-0.011384	-0.004995
CH4 Cal Slope:	0.996307	0.994765
CH4 Cal Offset:	-0.019598	-0.018199
NMHC Cal Slope:	0.994579	0.989412
NMHC Cal Offset:	0.008414	0.012804

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

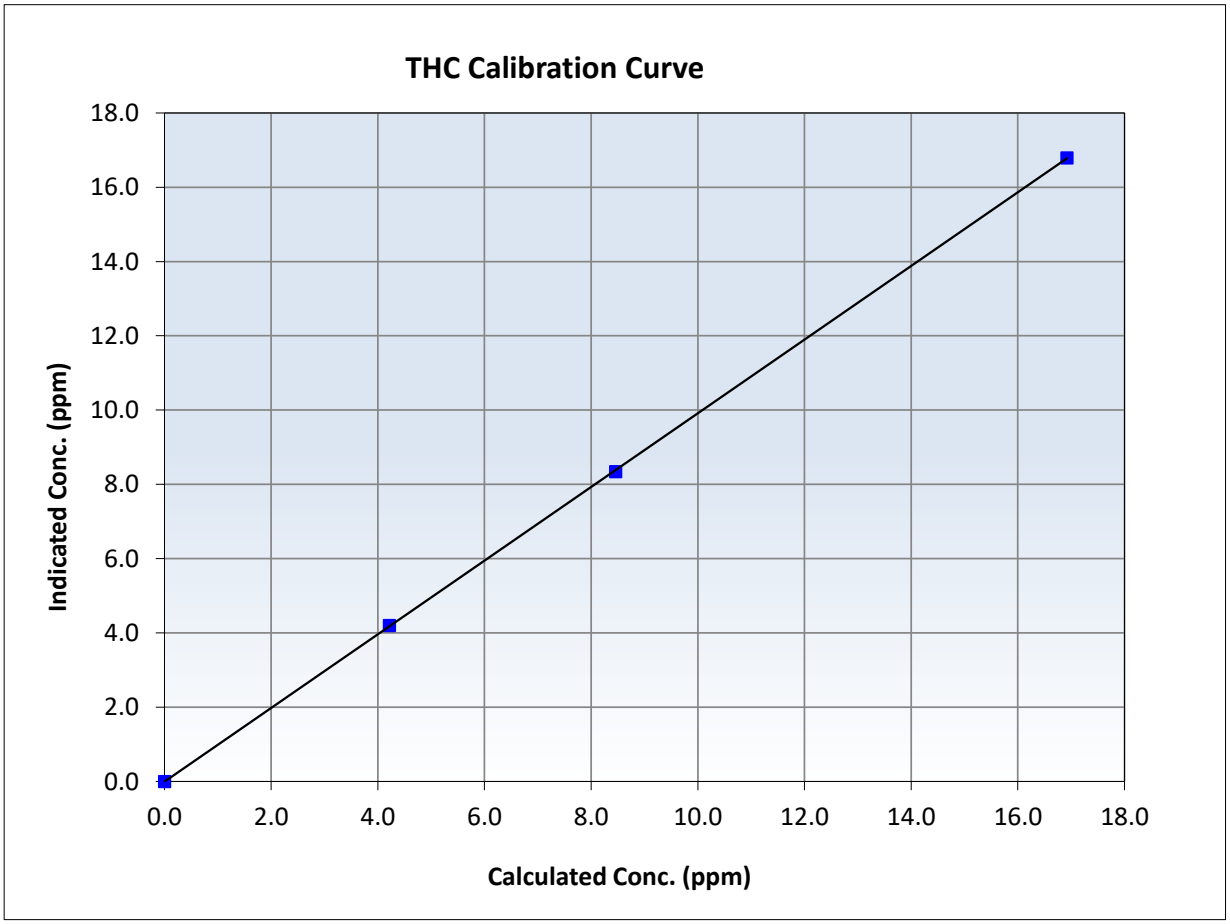
THC Calibration Summary

Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:42	End Time (MST):	10:21
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620777

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999983	≥0.995
16.92	16.79	1.0075	Slope	0.991892	0.90 - 1.10
8.46	8.34	1.0140	Intercept	-0.004995	+/-0.5
4.22	4.20	1.0040			



Wood Buffalo Environmental Association

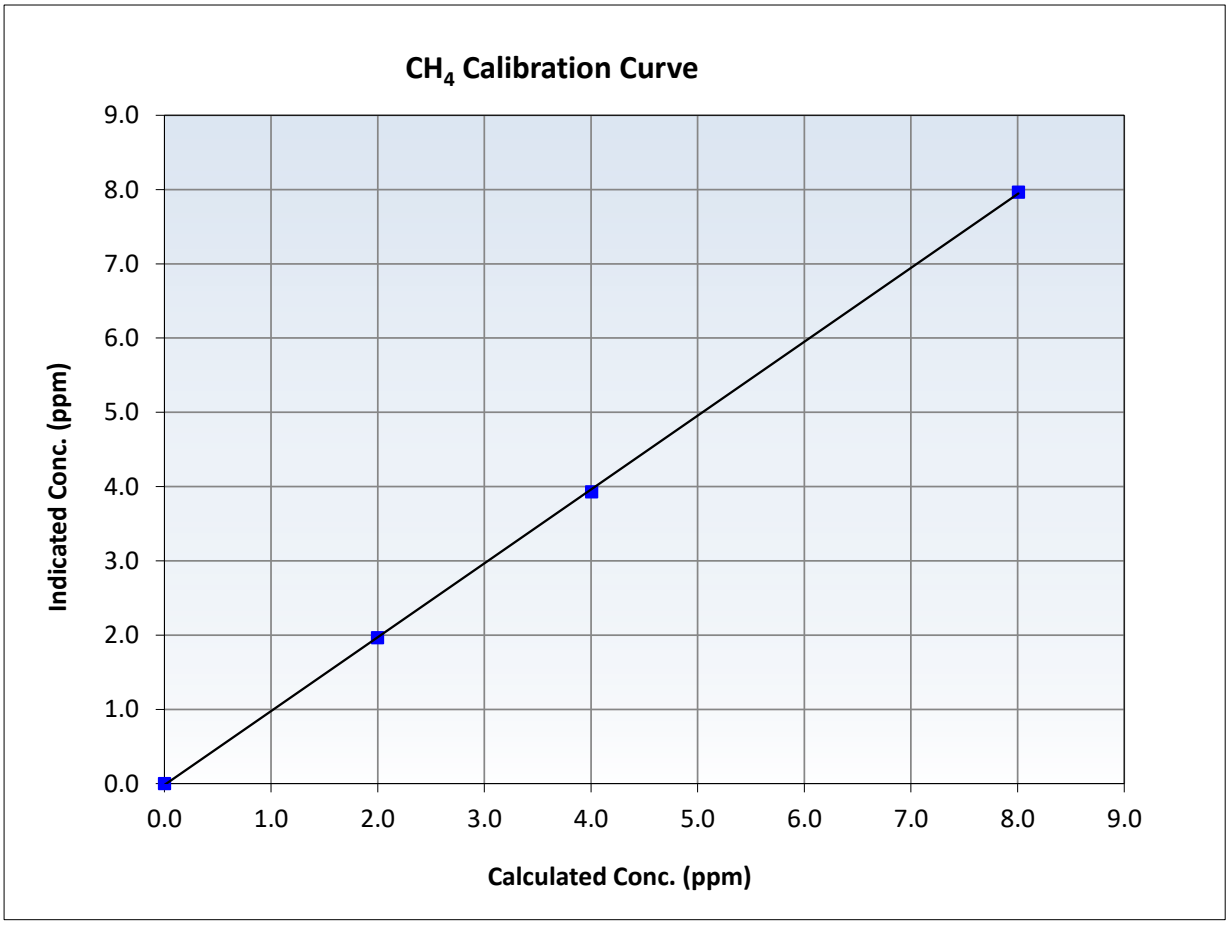
CH_4 Calibration Summary

Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:42	End Time (MST):	10:21
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620777

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999948	≥0.995
8.01	7.97	1.0054	Slope	0.994765	0.90 - 1.10
4.00	3.93	1.0187			
2.00	1.97	1.0153	Intercept	-0.018199	+/-0.5



Wood Buffalo Environmental Association

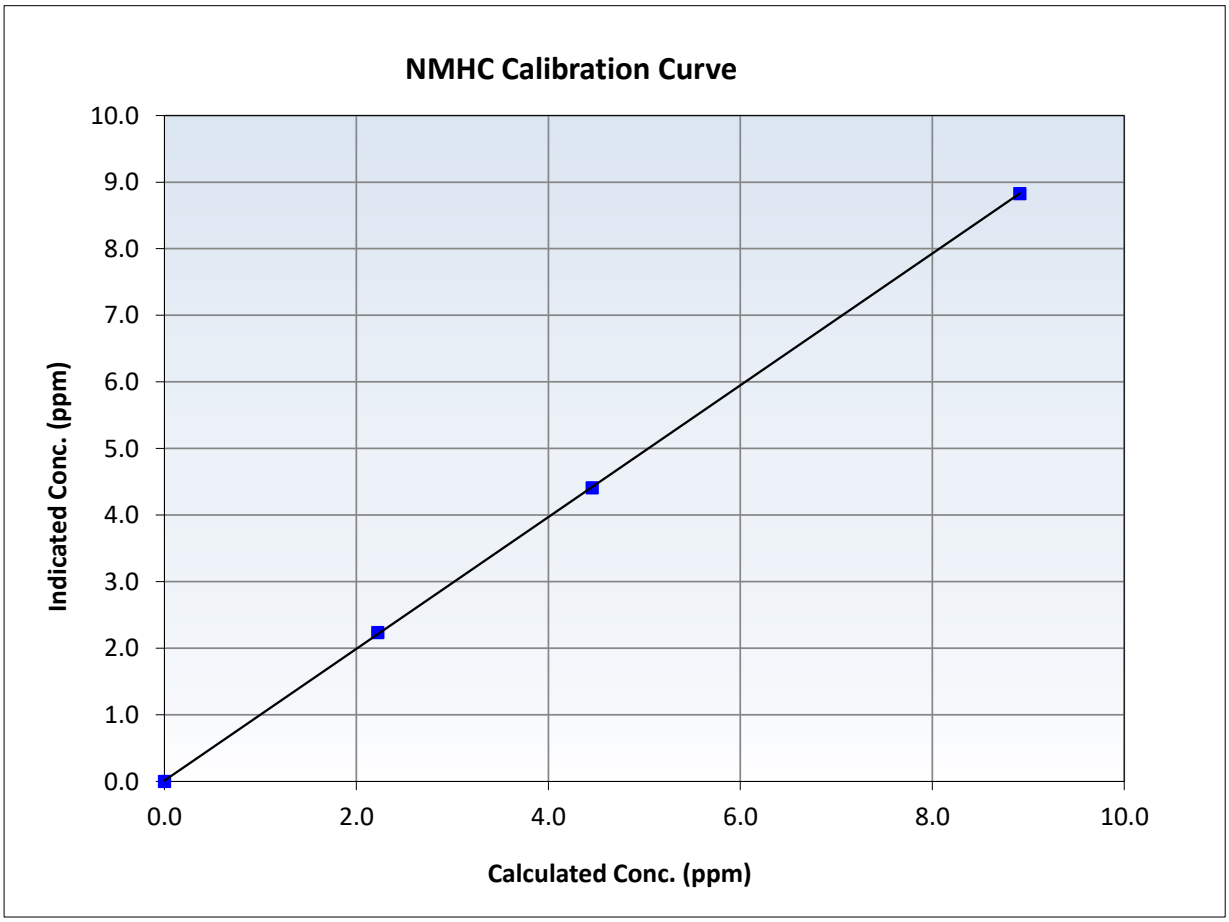
NMHC Calibration Summary

Station Information

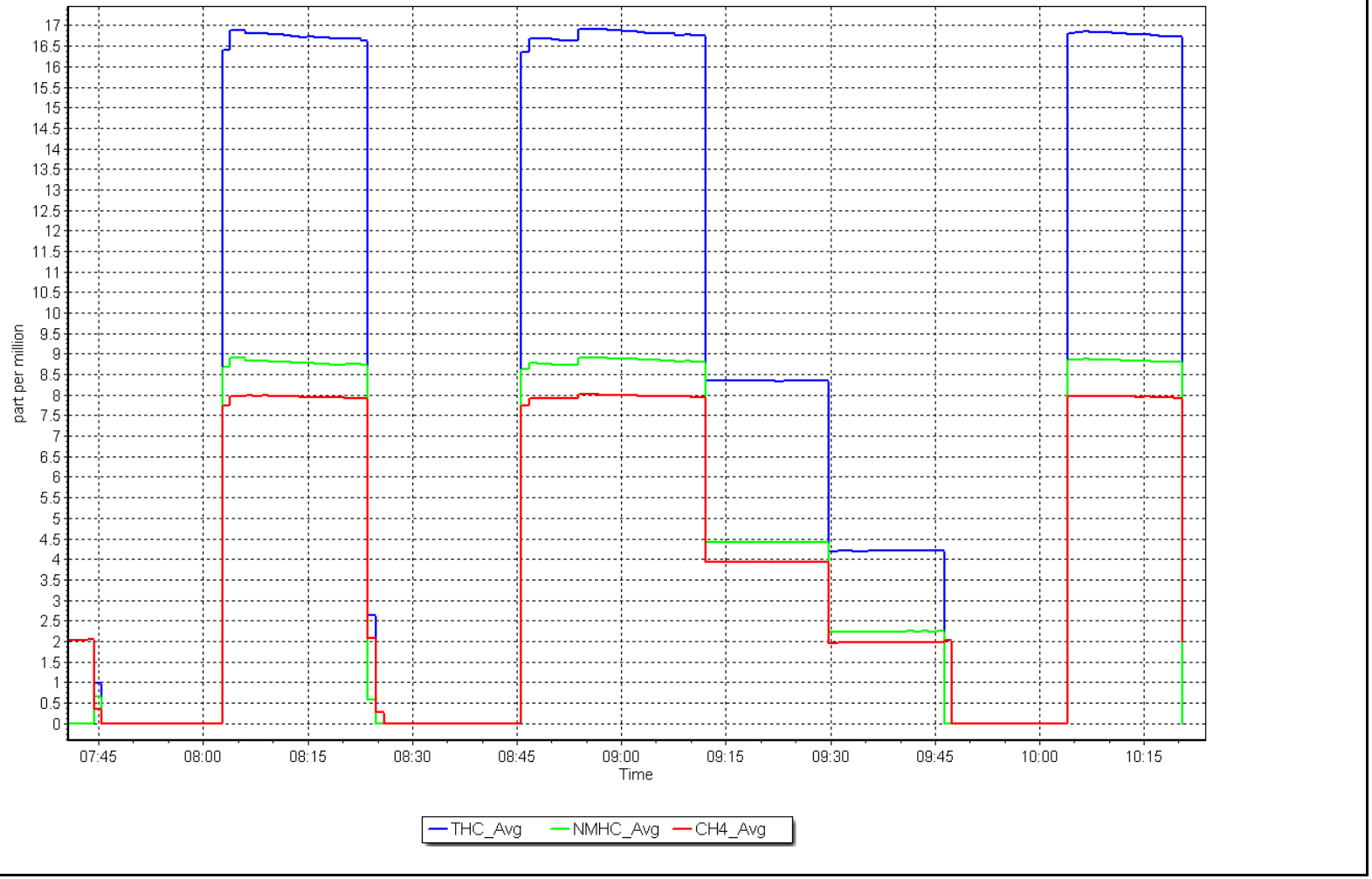
Calibration Date:	July 10, 2025	Previous Calibration:	June 11, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:42	End Time (MST):	10:21
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620777

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999980	≥0.995
8.91	8.83	1.0093	Slope	0.989412	0.90 - 1.10
4.46	4.41	1.0102	Intercept	0.012804	+/-0.5
2.22	2.24	0.9941			



NMHC Calibration Plot Date: July 10, 2025 Location: Fort Hills



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Fort Hills
Station number:	AMS 23
Calibration Date:	July 7, 2025
Last Cal Date:	June 9, 2025
Start time (MST):	6:54
End time (MST):	10:51
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	CC358149	Cal Gas Expiry Date:	January 5, 2032
NOX Cal Gas Conc:	60.30 ppm	NO Cal Gas Conc:	60.10 ppm
Removed Cylinder #:		Removed Gas Exp Date:	
Removed Gas NOX Conc:	60.30 ppm	Removed Gas NO Conc:	60.10 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	API T700	Serial Number:	1222
ZAG make/model:	API T701	Serial Number:	1117

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.4	-0.4	-0.1	----	----
AF High point	4934	66.3	799.5	796.9	2.7	795.9	794.7	1.2	1.0041	1.0022
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X =	799.4 ppb	NO =	799.4 ppb	* = > +/-5% change initiates investigation	*Percent Change	NO_X = -0.4%
Baseline Corr 1st pt	NO_X =	796.3 ppb	NO =	795.1 ppb	As Found Statistics	*Percent Change	NO = -0.5%
Baseline Corr 2nd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO_X r^2:	Nx Sl:	Nx Int:
Baseline Corr 3rd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO r^2:	NO Sl:	NO Int:
					As found NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1152430007

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	0.992	0.997	NO bkgnd or offset:	3.2	3.2
NOX coeff or slope:	0.988	0.989	NOX bkgnd or offset:	3.6	3.6
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	147.8	147.8

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.000355	0.998841
NO_X Cal Offset:	-0.453668	-0.173749
NO Cal Slope:	1.006004	1.003897
NO Cal Offset:	-2.213107	-1.753170
NO_2 Cal Slope:	0.994493	0.998289
NO_2 Cal Offset:	-1.516093	-1.291753

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.4	-0.3	-0.1	----	----
High point	4934	66.3	799.5	796.9	2.7	798.4	799.0	-0.6	1.0014	0.9973
Mid point	4967	33.2	400.4	399.0	1.3	399.6	398.0	1.7	1.0019	1.0026
Low point	4983	16.6	200.2	199.5	0.7	200.2	197.2	3.0	1.0001	1.0119
As left zero	5000	0.0	0.0	0.0	0.0	-0.4	-0.3	-0.1	----	----
As left span	4934	66.3	799.5	301.5	498.0	796.6	301.5	495.1	1.0037	1.0000
								Average Correction Factor	1.0011	1.0040

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	797.3	304.8	495.2	493.5	1.0033	99.7%
Mid GPT point	797.3	551.9	248.1	246.1	1.0079	99.2%
Low GPT point	797.3	673.3	126.7	123.7	1.0239	97.7%
				Average Correction Factor	1.0117	98.8%

Notes: No maintenance done. Span adjusted.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

NO_X Calibration Summary

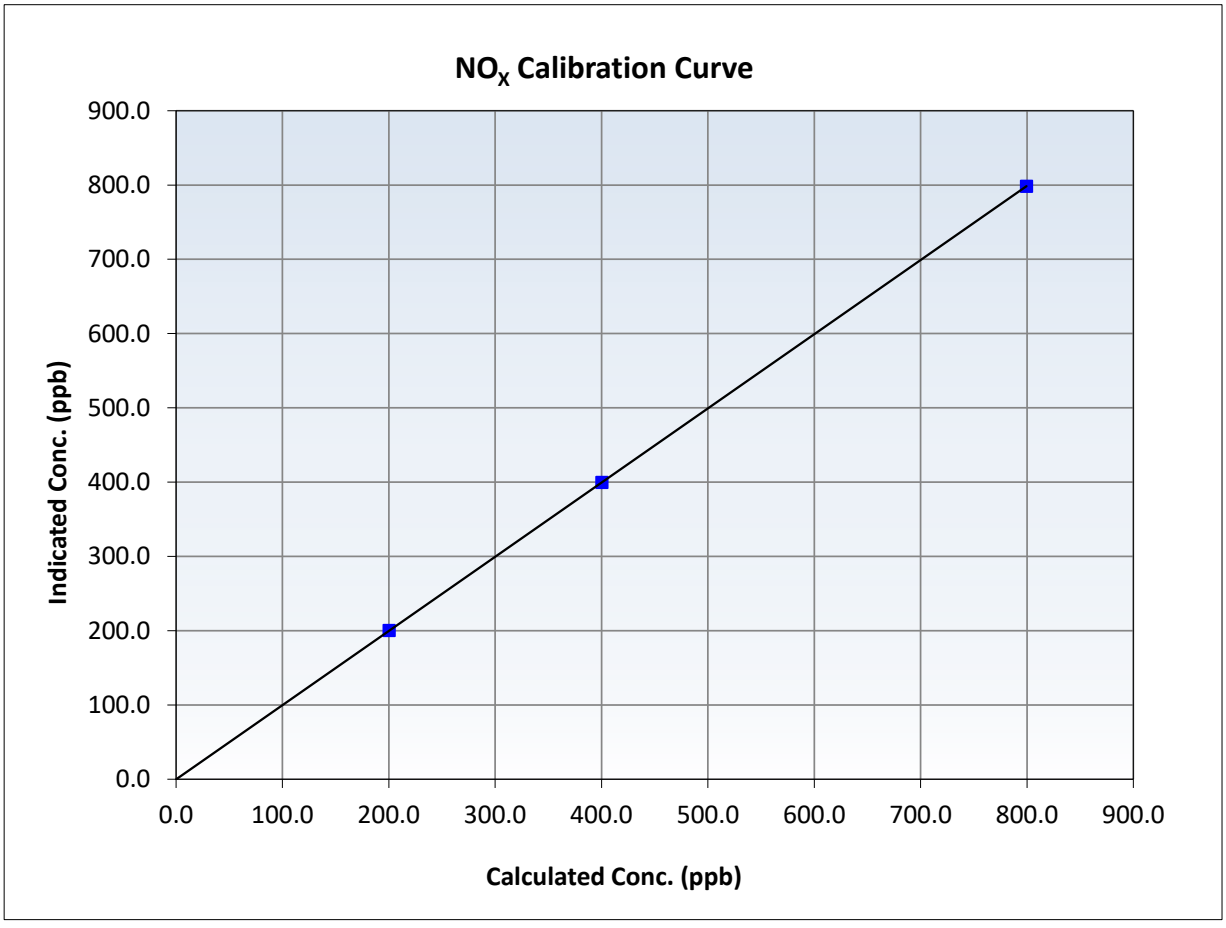
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 9, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	6:54	End Time (MST):	10:51
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430007

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.4	----
799.5	798.4	1.0014
400.4	399.6	1.0019
200.2	200.2	1.0001

Statistical Evaluation		Limits
Correlation Coefficient	0.999999	≥0.995
Slope	0.998841	0.90 - 1.10
Intercept	-0.173749	+/-20



Wood Buffalo Environmental Association

NO_2 Calibration Summary

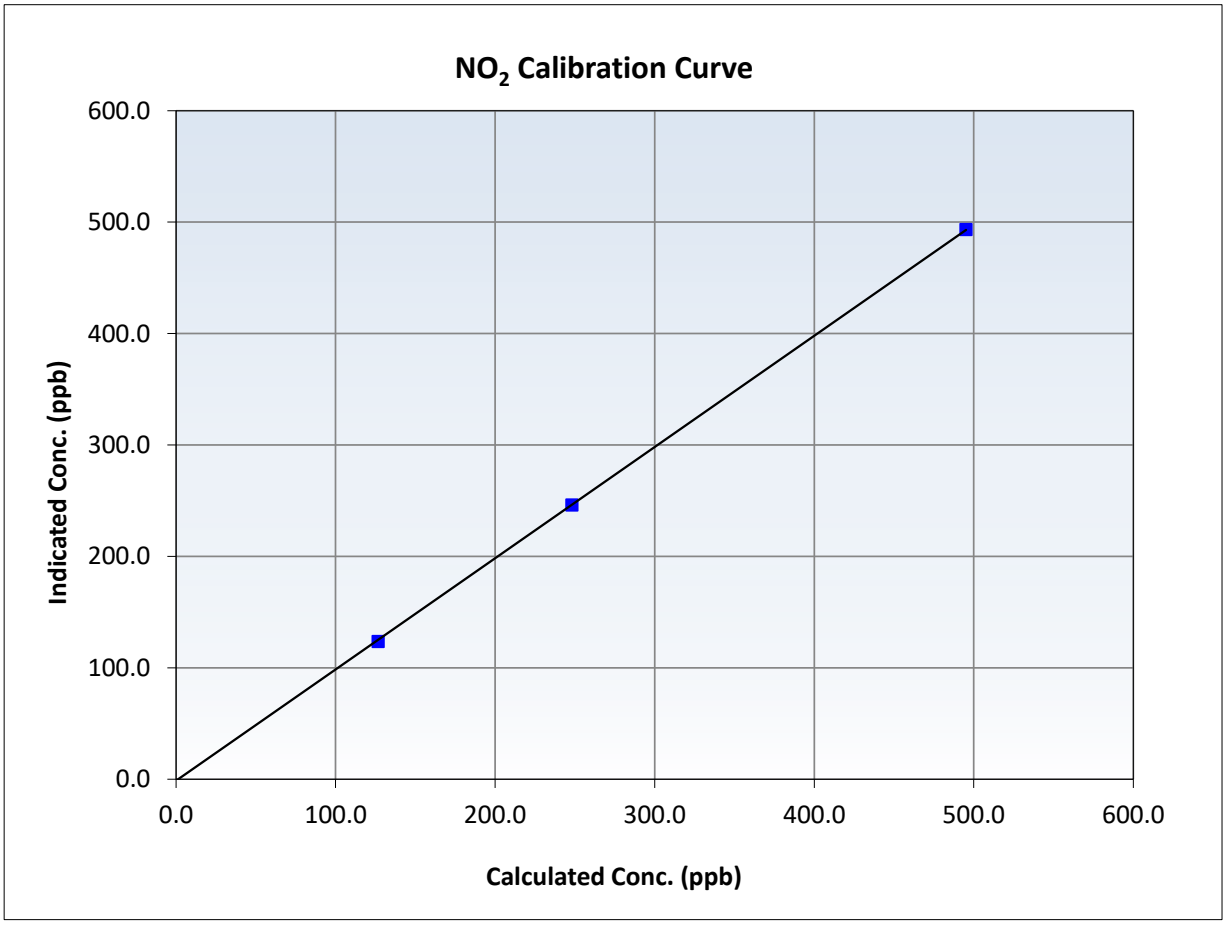
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 9, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	6:54	End Time (MST):	10:51
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430007

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
495.2	493.5	1.0033
248.1	246.1	1.0079
126.7	123.7	1.0239

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999971	*≥0.995*
Slope	0.998289	*0.90 - 1.10*
Intercept	-1.291753	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

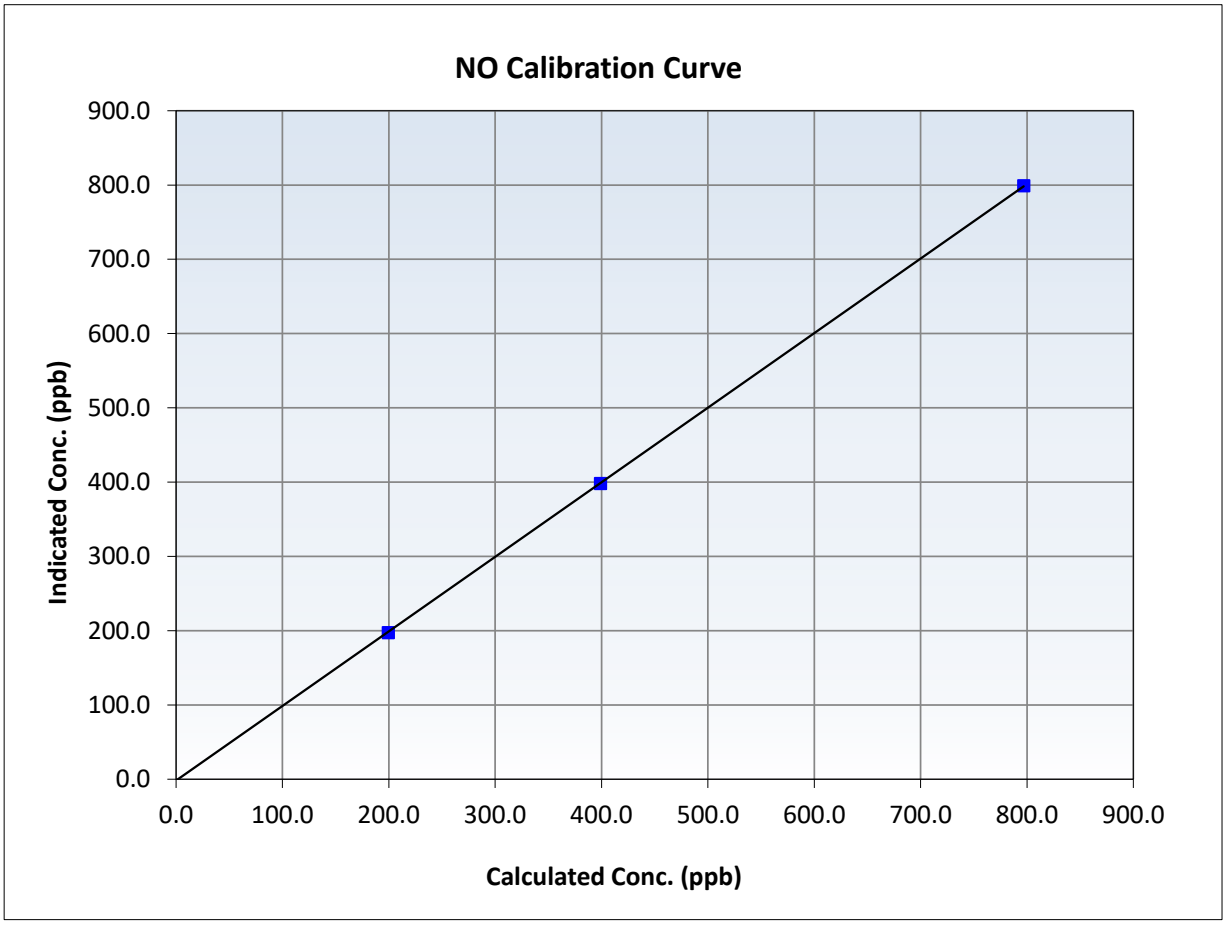
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 9, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	6:54	End Time (MST):	10:51
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430007

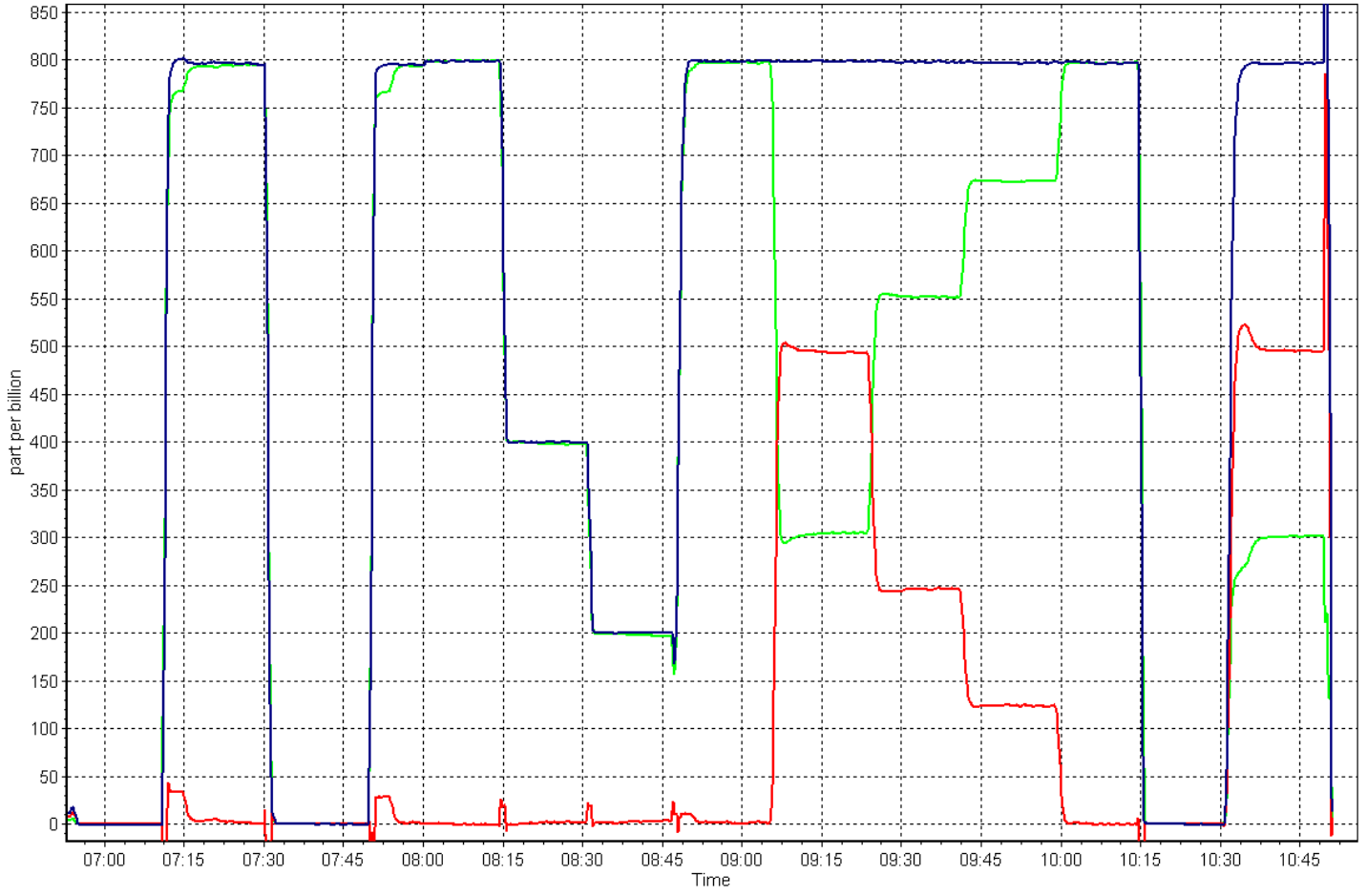
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.3	----
796.9	799.0	0.9973
399.0	398.0	1.0026
199.5	197.2	1.0119

Statistical Evaluation		Limits
Correlation Coefficient	0.999985	≥0.995
Slope	1.003897	0.90 - 1.10
Intercept	-1.753170	+/-20



NO_X Calibration Plot Date: July 7, 2025 Location: Fort Hills



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Fort Hills	Station number:	AMS 23
Calibration Date:	July 10, 2025	Last Cal Date:	June 10, 2025
Start time (MST):	6:46	End time (MST):	7:43
Analyzer Make:	API T640	S/N:	320
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388744
Temp/RH standard:	Alicat FP-25BT	S/N:	388744

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	16.9	16.8	16.9	☐	+/- 2 °C
P (mmHg)	730.1	729.3	730.1	☐	+/- 10 mmHg
Flow (LPM)	4.99	4.97	4.99	☐	+/- 0.25 LPM
PW% (pump)	49	-----	51	☐	>80%
Zero Verification	PM w/o HEPA:	14.8	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: 16-Jul-26 — Lot No.: 100128-050-050

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test	8.1	11.4	11.4	☐	+/- 0.5

Date Optical Chamber Cleaned: July 10, 2025

Date Disposable Filter Changed: July 10, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: July 10, 2025

Date RH/T Sensor Cleaned: July 10, 2025

Notes: No adjustments done. Leak Check, Flow and PMT checked before and after cleaning.

Calibration by: Melissa Lemay

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS25
WASKŌW OHCI PIMÂTISIWIN
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Waskow ohci Pimatisiwin	Station number:	AMS 25
Calibration Date:	July 29, 2025	Last Cal Date:	June 25, 2025
Start time (MST):	6:58	End time (MST):	9:43
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	49.70	ppm	Cal Gas Exp Date:	March 10, 2031
Cal Gas Cylinder #:	CC342445			
Removed Cal Gas Conc:	49.70	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	621
Zero Air Gen Model:	API T701		Serial Number:	4765

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1118148497	
Analyzer Range:	0-1000ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	0.999284	1.000255	Backgd or Offset:	10.2	10.5
Calibration intercept:	0.587369	0.447870	Coeff or Slope:	1.038	1.038

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.5	----
As found High point	4920	80.5	800.1	801.0	0.999
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	800.5	Previous response	800.1	*% change	0.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4920	80.5	800.1	800.5	0.999
Mid point	4960	40.2	399.6	400.6	0.997
Low point	4980	20.1	199.8	200.3	0.997
As left zero	5000	0.0	0.0	0.8	----
As left span	4920	80.5	800.1	803.6	0.996
				Average Correction Factor:	0.998

Notes: No maintenance done. Zero adjusted.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

SO_2 Calibration Summary

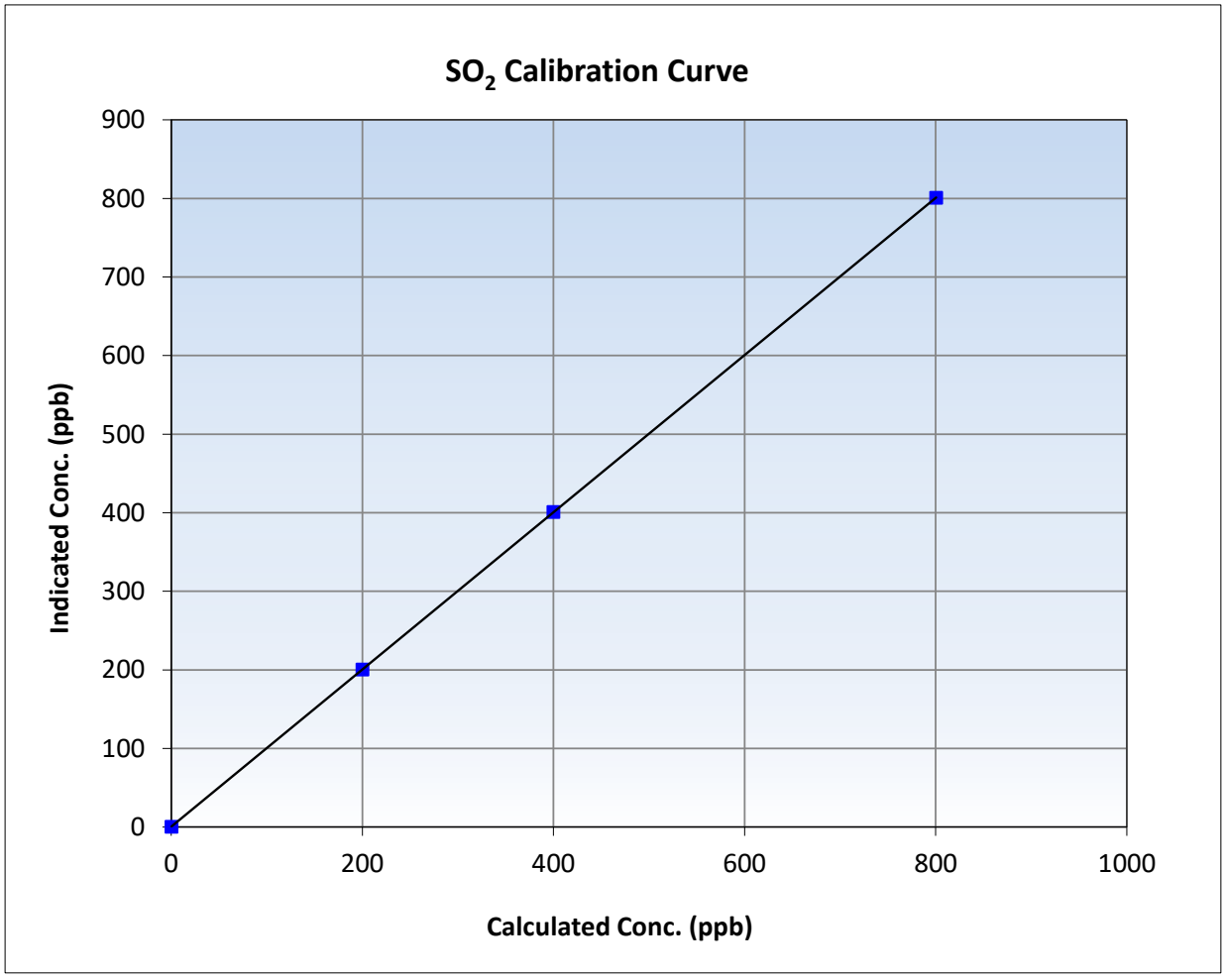
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	June 25, 2025
Station Name:	Waskow ohci Pimatisiwin	Station Number:	AMS 25
Start Time (MST):	6:58	End Time (MST):	9:43
Analyzer make:	Thermo 43i	Analyzer serial #:	1118148497

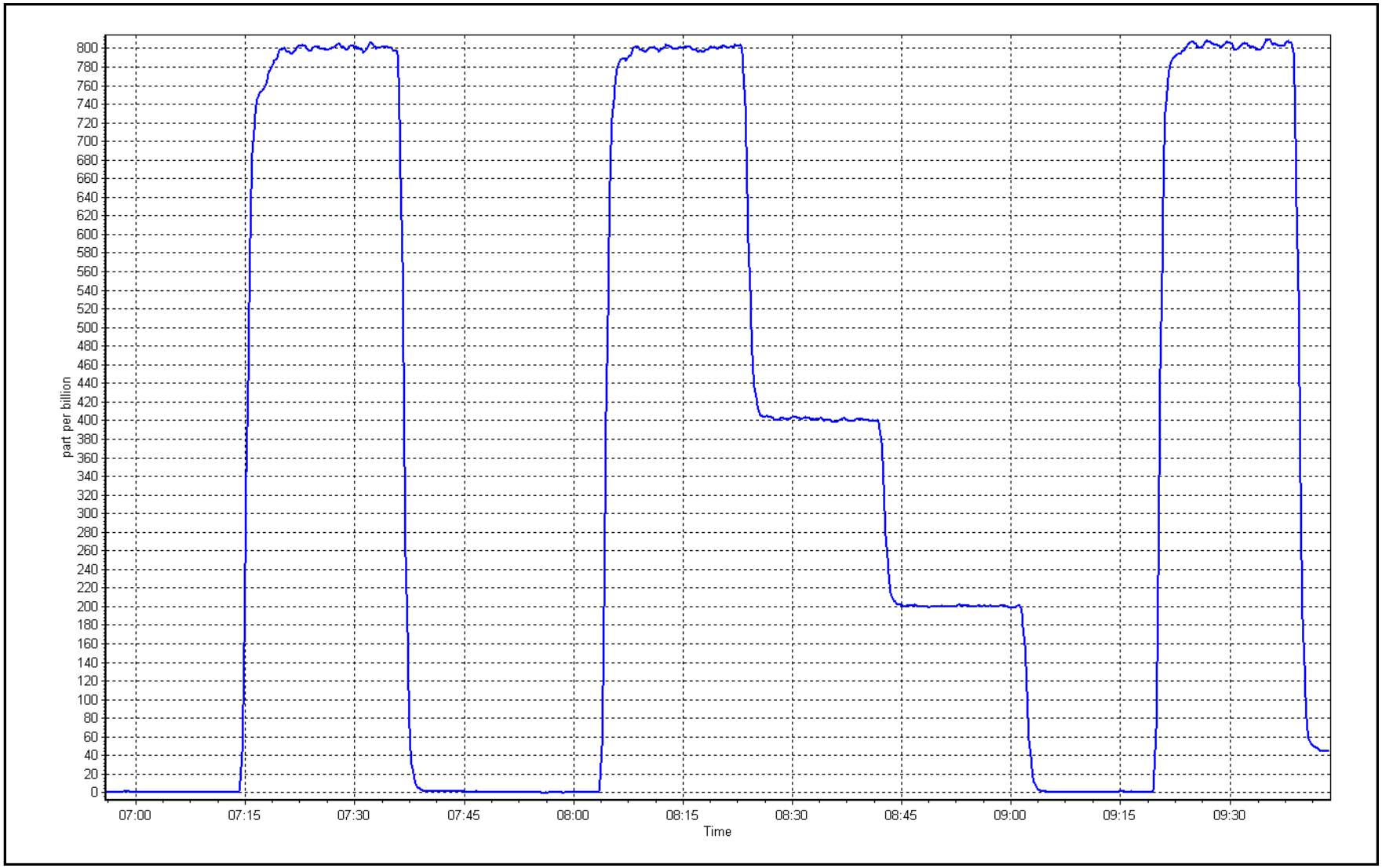
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
800.1	800.5	0.9995
399.6	400.6	0.9974
199.8	200.3	0.9975

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	1.000255	*0.90 - 1.10*
Intercept	0.447870	*+/-30*



SO2 Calibration Plot Date: July 29, 2025 Location: Waskow ohci Pimatisiwin



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Waskow ohci Pimatisiwin	Station number:	AMS 25
Calibration Date:	July 25, 2025	Last Cal Date:	June 23, 2025
Start time (MST):	5:29	End time (MST):	9:42
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.97	ppm	Cal Gas Exp Date:	January 3, 2026
Cal Gas Cylinder #:	CC517099			
Removed Cal Gas Conc:	4.97	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	747
ZAG Make/Model:	API T701		Serial Number:	261

Analyzer Information

Analyzer make:	Thermo 43i-LTE		Analyzer serial #:	1170050146
Converter make:	Global G-150		Converter serial #:	2022-219
Analyzer Range	0 - 100 ppb		Converter Temp:	325 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.002651	1.005076	Backgd or Offset:	3.50	3.55
Calibration intercept:	0.042240	-0.017692	Coeff or Slope:	1.102	1.094

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4919	80.5	80.0	81.2	0.983
As found Mid point	4960	40.3	40.1	40.5	0.984
As found Low point	4980	20.1	20.0	20.4	0.970
New cylinder response					

Baseline Corr As found:	81.4	Prev response:	80.28	*% change:	1.4%
Baseline Corr 2nd AF pt:	40.7	AF Slope:	1.015927	AF Intercept:	-0.097627
Baseline Corr 3rd AF pt:	20.6	AF Correlation:	0.999983	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4919	80.5	80.0	80.4	0.995
Mid point	4960	40.3	40.1	40.2	0.996
Low point	4980	20.1	20.0	20.2	0.989
As left zero	5000	0.0	0.0	0.1	----
As left span	4920	80.0	800.0	809.5	0.988
SO2 Scrubber Check	4920	80.0	800.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	0.994
Date of last converter efficiency test:		February 12, 2025		111.0%	efficiency

Notes: SOx Scrubber checked after the calibrator zero. Span adjusted.

Calibration Performed By: Melissa Lemay

Wood Buffalo Environmental Association

H_2S Calibration Summary

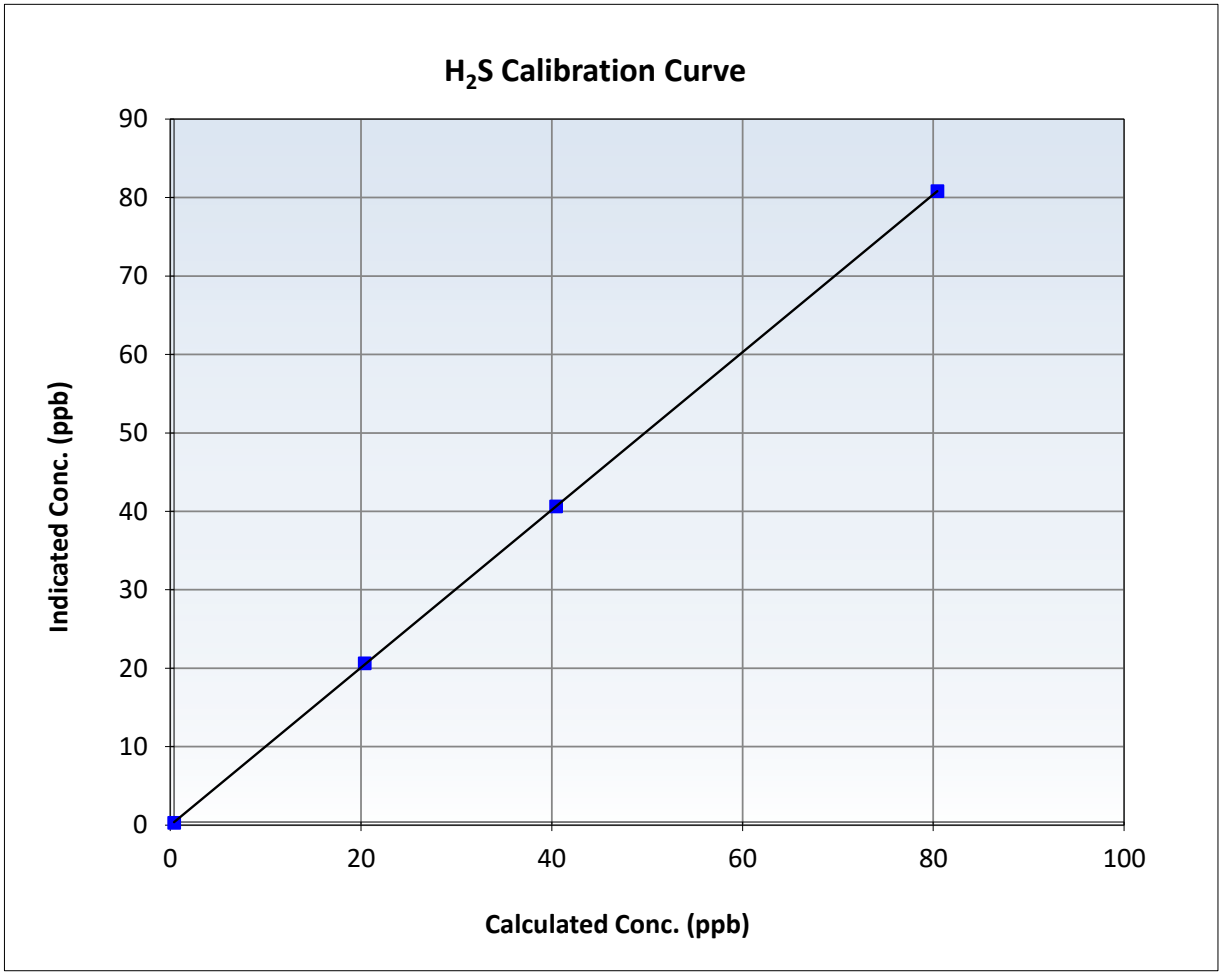
Station Information

Calibration Date:	July 25, 2025	Previous Calibration:	June 23, 2025
Station Name:	Waskow ohci Pimatisiwin	Station Number:	10:47:00 AM
Start Time (MST):	5:29	End Time (MST):	9:42
Analyzer make:	Thermo 43i-LTE	Analyzer serial #:	1170050146

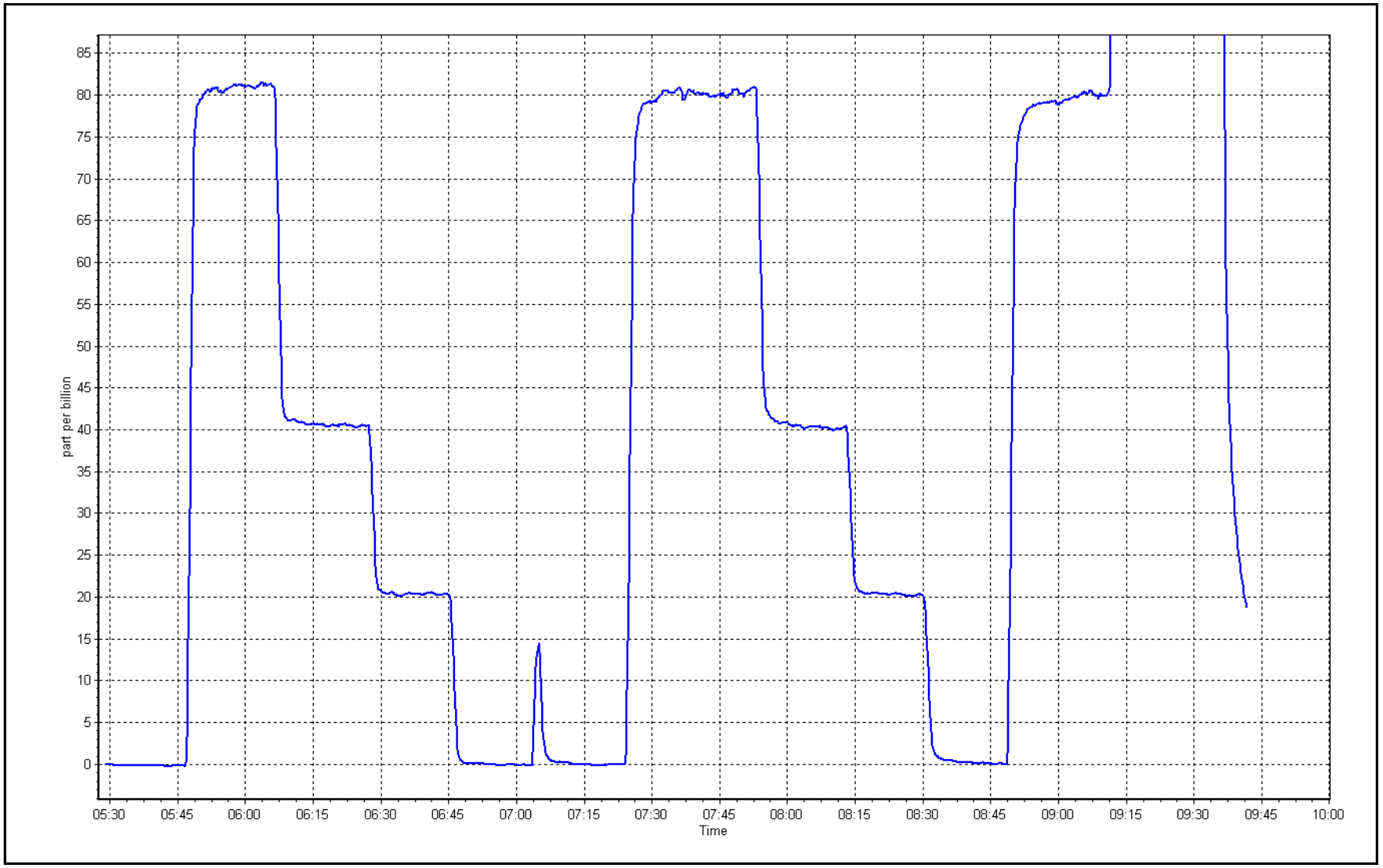
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
80.0	80.4	0.9953
40.1	40.2	0.9964
20.0	20.2	0.9891

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999992	*≥0.995*
Slope	1.005076	*0.90 - 1.10*
Intercept	-0.017692	*+/-3*



H_2S Calibration Plot Date: July 25, 2025 Location: Waskow ohci Pimatisiwin



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS27
JACKFISH 2/3
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Jackfish 2/3	Station number:	AMS 27
Calibration Date:	July 14, 2025	Last Cal Date:	June 18, 2025
Start time (MST):	10:54	End time (MST):	14:31
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.58	ppm	Cal Gas Exp Date:	December 29, 2028
Cal Gas Cylinder #:	SG9133974BAL			
Removed Cal Gas Conc:	50.58	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	5252
Zero Air Gen Model:	API 701		Serial Number:	268

Analyzer Information

Analyzer make:	Thermo 43iQ-TL		Serial Number:	12124313138	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.013181	0.998916	Backgd or Offset:	8.2	9.2
Calibration intercept:	0.883047	0.522481	Coeff or Slope:	0.923	0.907

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	1.0	----
As found High point	4913	78.9	799.4	813.6	0.984
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	812.6	Previous response	810.9	*% change	0.2%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4913	78.9	799.4	798.9	1.001
Mid point	4955	39.5	400.0	400.3	0.999
Low point	4971	19.7	199.7	200.4	0.996
As left zero	5000	0.0	0.0	-0.1	----
As left span	4913	78.9	799.4	800.4	0.999
				Average Correction Factor:	0.999

Notes: Changed the sample inlet filter after as founds. Adjusted zero and span.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

SO_2 Calibration Summary

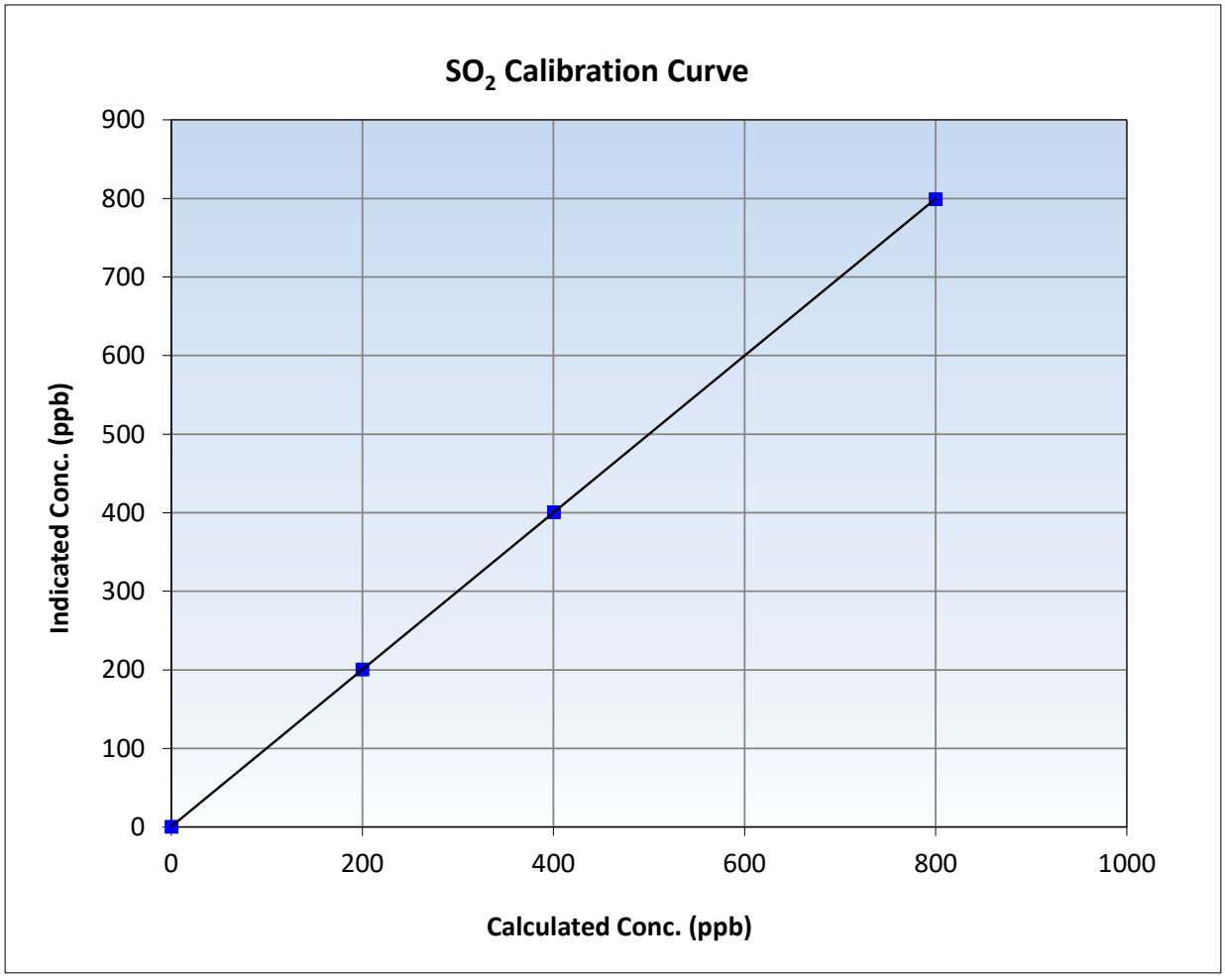
Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 18, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	10:54	End Time (MST):	14:31
Analyzer make:	Thermo 43iQ-TL	Analyzer serial #:	12124313138

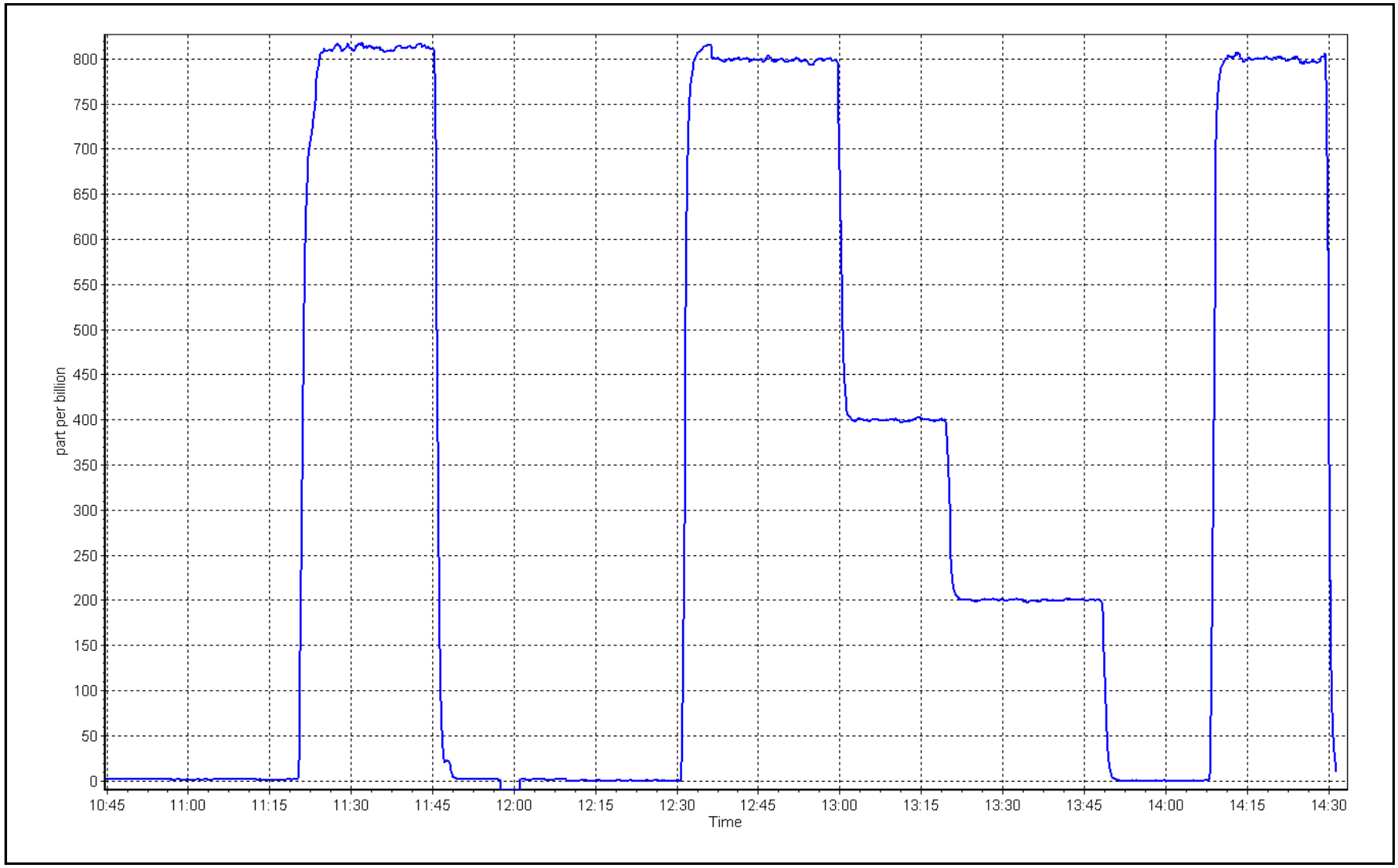
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
799.4	798.9	1.0007
400.0	400.3	0.9993
199.7	200.4	0.9963

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999999	*≥0.995*
Slope	0.998916	*0.90 - 1.10*
Intercept	0.522481	*+/-30*



SO2 Calibration Plot Date: July 14, 2025 Location: Jackfish 2/3



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Jackfish 2/3	Station number:	AMS 27
Calibration Date:	July 16, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	11:37	End time (MST):	16:44
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.87	ppm	Cal Gas Exp Date:	September 5, 2027
Cal Gas Cylinder #:	CC523090			
Removed Cal Gas Conc:	4.87	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	5252
ZAG Make/Model:	Teledyne API T701H		Serial Number:	268

Analyzer Information

Analyzer make:	Thermo 43iQ		Analyzer serial #:	12228021055	
Converter make:	Global G150		Converter serial #:	2022-195	
Analyzer Range	0 - 100 ppb		Converter Temp:	325	degC
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.005298	1.017160	Backgd or Offset:	3.26	3.26
Calibration intercept:	0.075924	-0.164112	Coeff or Slope:	1.228	1.228

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4918	82.1	80.0	79.1	1.010
As found Mid point	4951	41.0	40.0	39.4	1.013
As found Low point	4973	20.5	20.0	19.7	1.010
New cylinder response					

Baseline Corr As found:	79.2	Prev response:	80.46	*% change:	-1.6%
Baseline Corr 2nd AF pt:	39.5	AF Slope:	0.990291	AF Intercept:	-0.123983
Baseline Corr 3rd AF pt:	19.8	AF Correlation:	0.999997	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4918	82.1	80.0	81.2	0.985
Mid point	4951	41.0	40.0	40.6	0.985
Low point	4973	20.5	20.0	19.9	1.005
As left zero	5000	0.0	0.0	0.1	----
As left span	4911	82.0	80.0	80.8	0.990
SO2 Scrubber Check	4915	78.9	790.0	0.1	----

Date of last scrubber change:	21-Feb-25	Ave Corr Factor	0.992	
Date of last converter efficiency test:	April 23, 2025	91.4%	efficiency	

Notes: Changed sample inlet filter after as founds. Scrubber check passed. No adjustments made.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

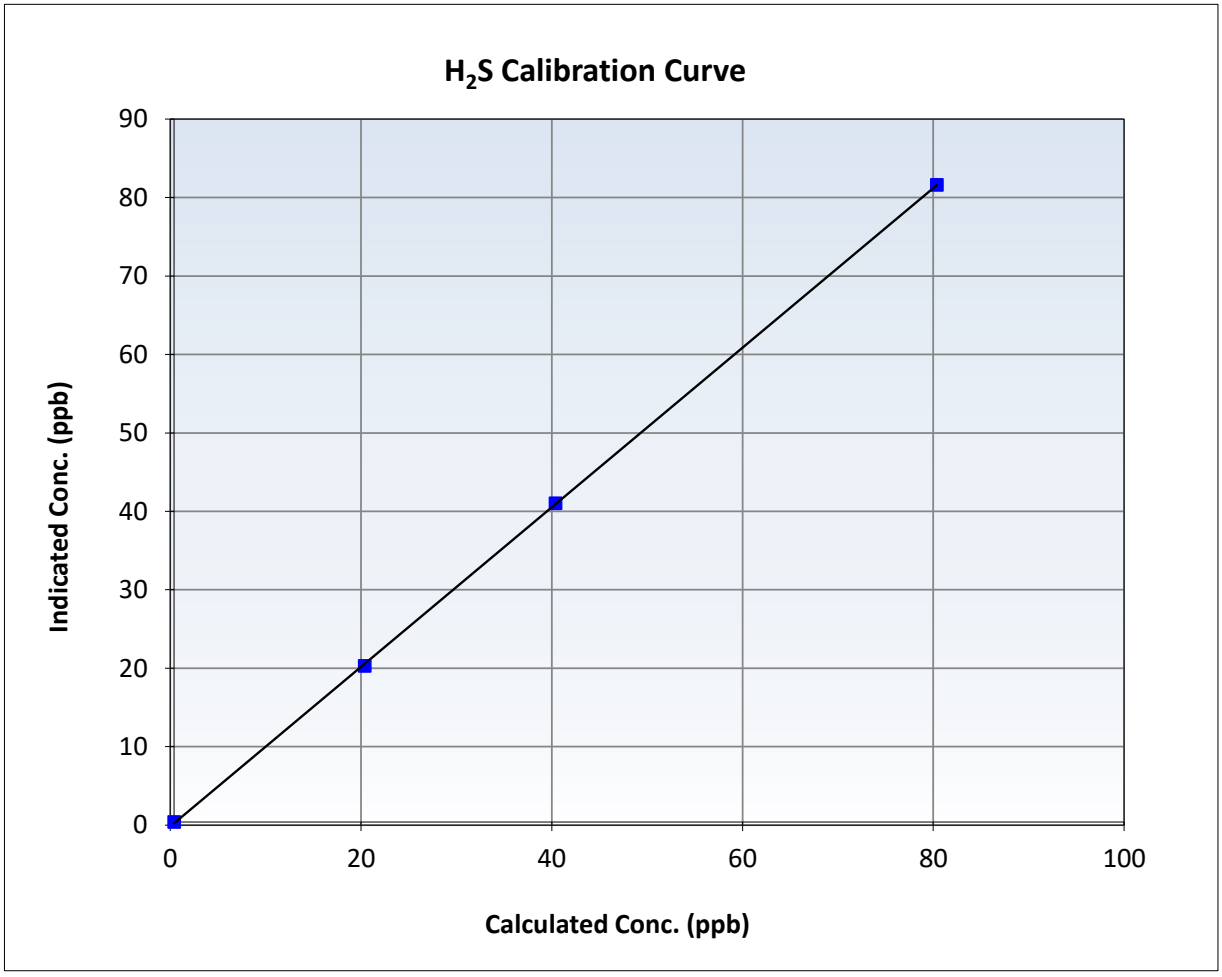
H_2S Calibration Summary

Station Information

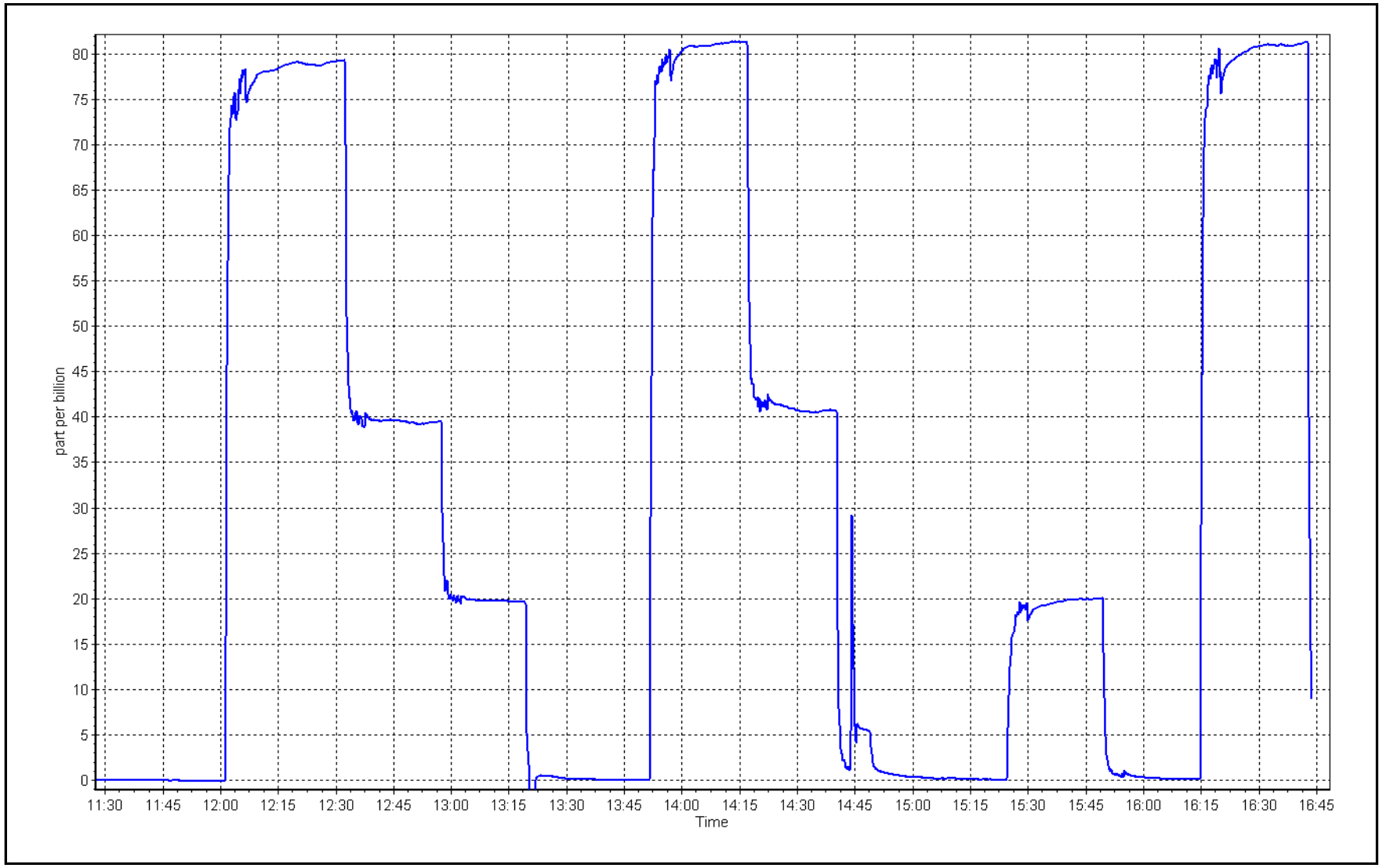
Calibration Date:	July 16, 2025	Previous Calibration:	June 24, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	11:37	End Time (MST):	16:44
Analyzer make:	Thermo 43iQ	Analyzer serial #:	12228021055

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.0	----	Correlation Coefficient	0.999970	*≥0.995*
80.0	81.2	0.9848	Slope	1.017160	*0.90 - 1.10*
40.0	40.6	0.9852			
20.0	19.9	1.0047	Intercept	-0.164112	*+/-3*



H_2S Calibration Plot Date: July 16, 2025 Location: Jackfish 2/3



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Jackfish 2/3
Station number:	AMS 27
Calibration Date:	July 18, 2025
Last Cal Date:	June 20, 2025
Start time (MST):	11:21
End time (MST):	16:20
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	CC757838	Cal Gas Expiry Date:	January 9, 2032
NOX Cal Gas Conc:	60.30 ppm	NO Cal Gas Conc:	60.20 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	60.30 ppm	Removed Gas NO Conc:	60.20 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	5252
ZAG make/model:	Teledyne API T701	Serial Number:	268

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	1.1	0.9	0.2	----	----
AF High point	4924	66.3	801.1	799.8	1.3	786.8	780.0	6.8	1.0196	1.0266
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X =	800.3 ppb	NO =	797.0 ppb	* = > +/-5% change initiates investigation	*Percent Change	NO_X = -1.9%
Baseline Corr 1st pt	NO_X =	785.7 ppb	NO =	779.1 ppb	As Found Statistics	*Percent Change	NO = -2.3%
Baseline Corr 2nd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO_X r^2:	Nx Sl:	Nx Int:
Baseline Corr 3rd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO r^2:	NO Sl:	NO Int:
					As found NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1218153357

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.306	1.333	NO bkgnd or offset:	4.4	4.4
NOX coeff or slope:	0.996	0.996	NOX bkgnd or offset:	4.4	4.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	167.9	169.9

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.996304	0.998045
NO_X Cal Offset:	2.090330	2.629762
NO Cal Slope:	0.996514	0.998116
NO Cal Offset:	-0.028881	0.410595
NO_2 Cal Slope:	1.002731	1.001080
NO_2 Cal Offset:	0.242583	1.183955

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	1.8	1.0	0.8	----	----
High point	4924	66.3	801.1	799.8	1.3	801.8	798.9	3.0	0.9992	1.0011
Mid point	4958	33.2	401.1	400.4	0.7	403.3	400.1	3.2	0.9945	1.0008
Low point	4976	16.6	200.5	200.2	0.3	203.6	199.4	4.2	0.9847	1.0038
As left zero	5000	0.0	0.0	0.0	0.0	3.8	1.1	2.8	----	----
As left span	4924	66.3	801.1	401.4	399.7	799.2	401.4	397.8	1.0024	1.0000
								Average Correction Factor	0.9928	1.0019

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.8	----	----
High GPT point	795.7	400.1	396.9	398.4	0.9963	100.4%
Mid GPT point	795.7	587.3	209.7	211.1	0.9935	100.7%
Low GPT point	795.7	683.1	113.9	115.8	0.9838	101.6%
				Average Correction Factor	0.9912	100.9%

Notes: Changed sample inlet filter after as founds. Adjusted span only.

Calibration Performed By: Mohammed Kashif

Wood Buffalo Environmental Association

NO_X Calibration Summary

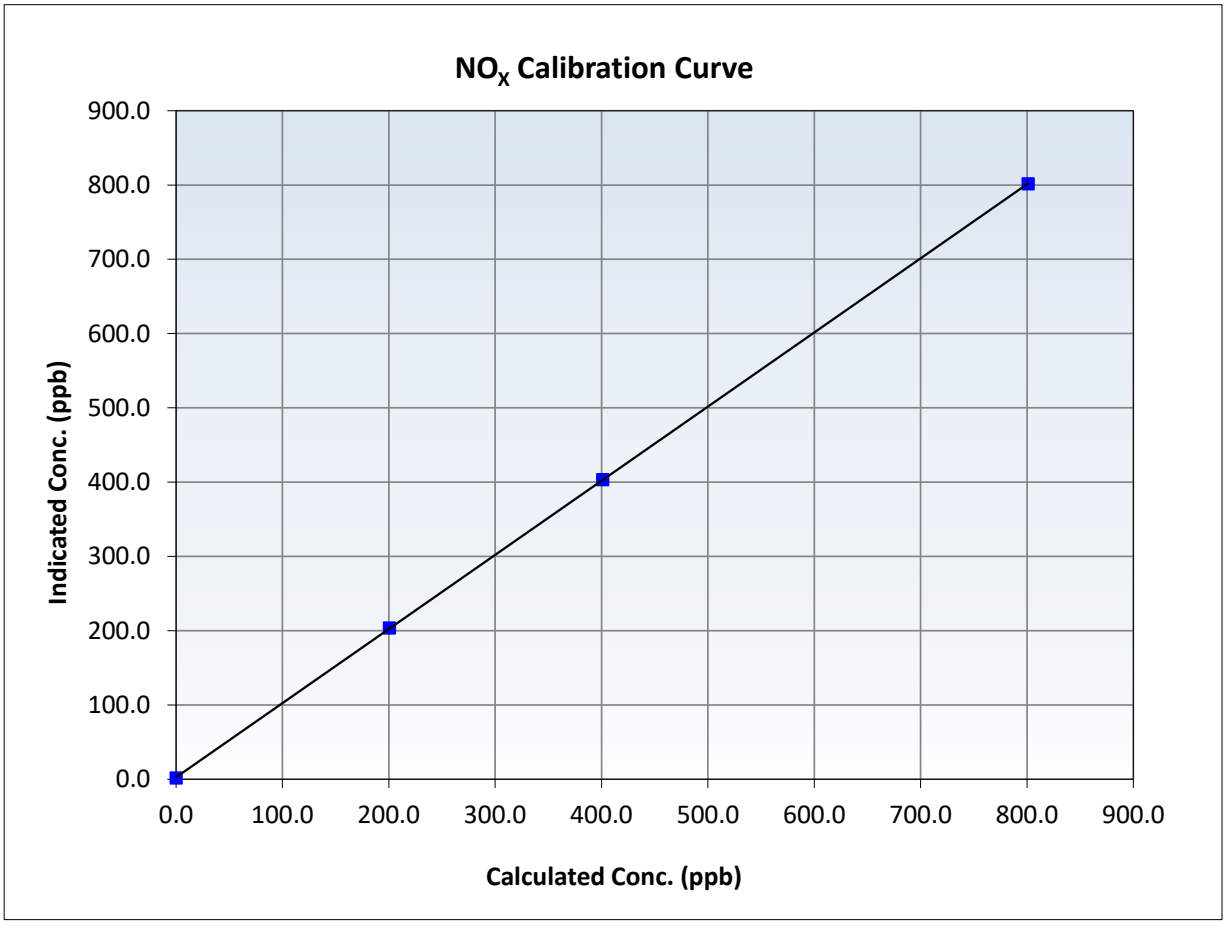
Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 20, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	11:21	End Time (MST):	16:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153357

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	1.8	----
801.1	801.8	0.9992
401.1	403.3	0.9945
200.5	203.6	0.9847

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	0.998045	*0.90 - 1.10*
Intercept	2.629762	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

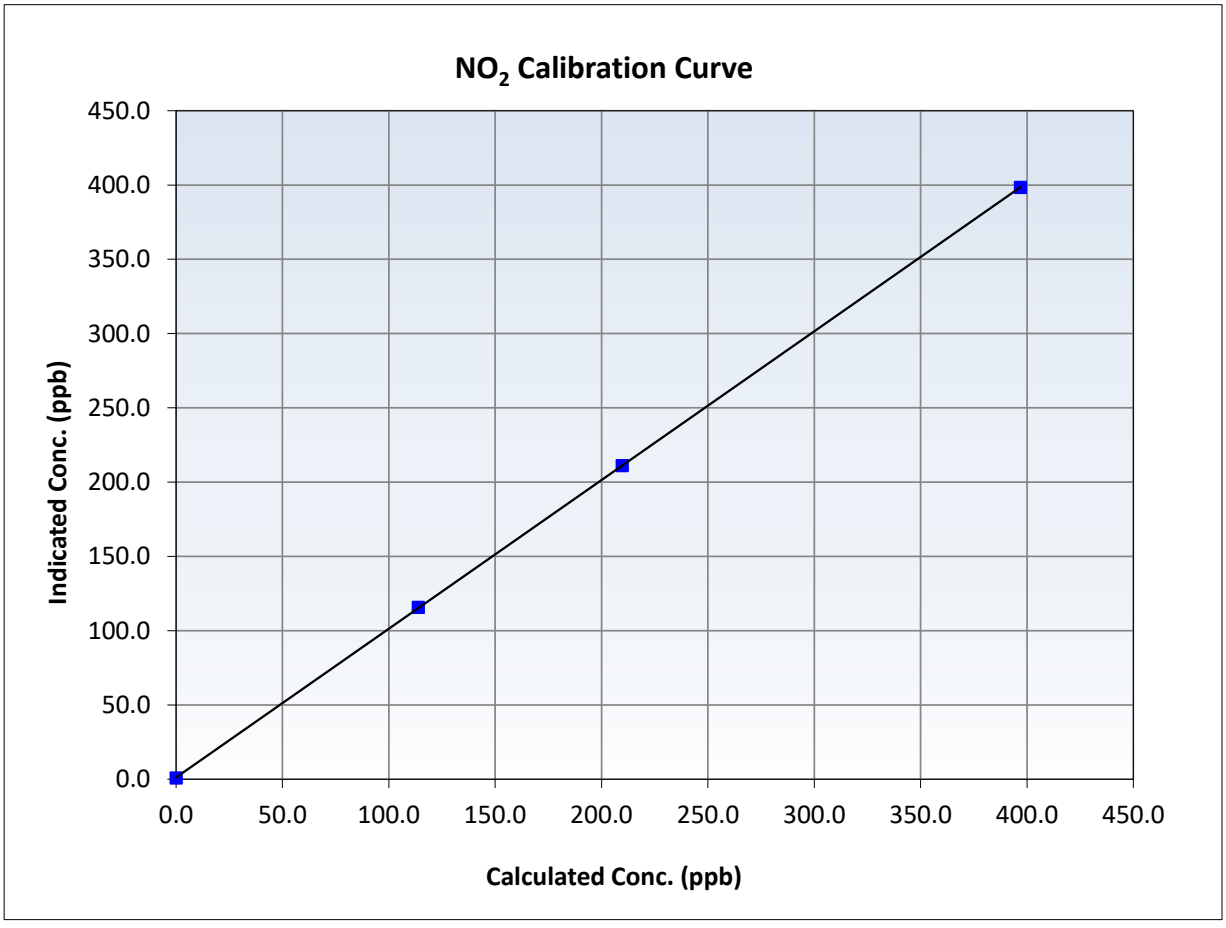
Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 20, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	11:21	End Time (MST):	16:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153357

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.8	----
396.9	398.4	0.9963
209.7	211.1	0.9935
113.9	115.8	0.9838

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999994	*≥0.995*
Slope	1.001080	*0.90 - 1.10*
Intercept	1.183955	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

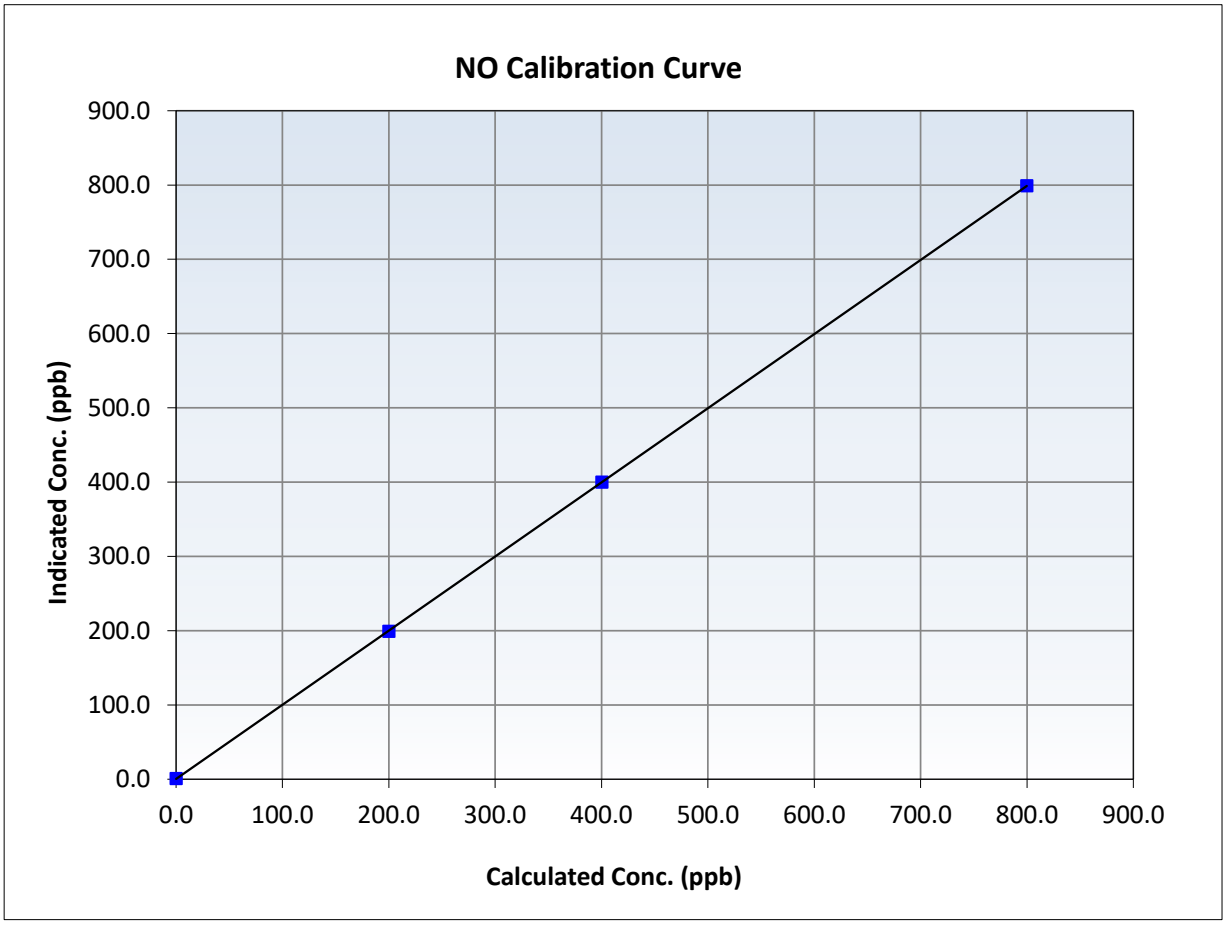
Station Information

Calibration Date:	July 18, 2025	Previous Calibration:	June 20, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	11:21	End Time (MST):	16:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153357

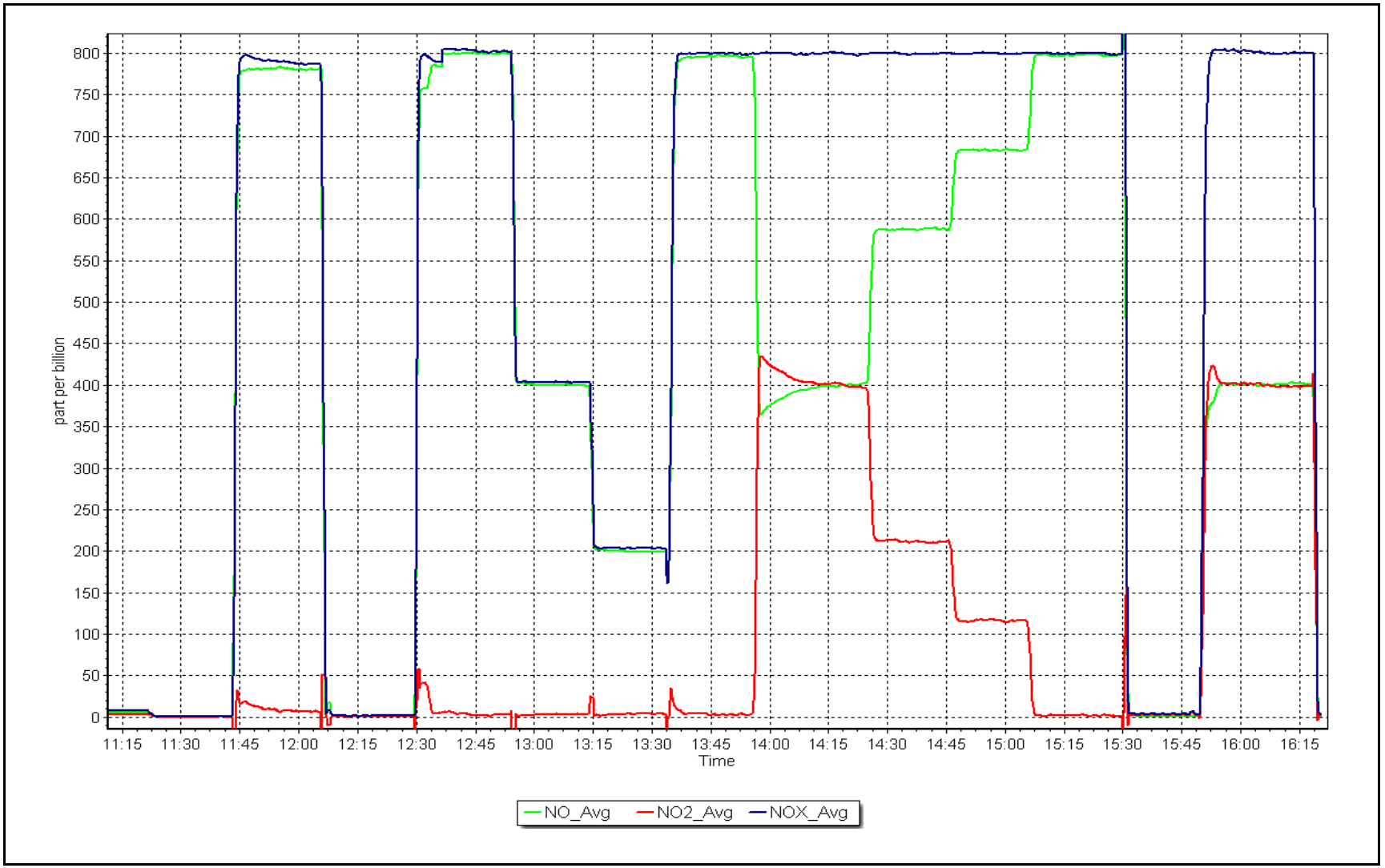
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	1.0	----
799.8	798.9	1.0011
400.4	400.1	1.0008
200.2	199.4	1.0038

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999997	*≥0.995*
Slope	0.998116	*0.90 - 1.10*
Intercept	0.410595	*+/-20*



NO_X Calibration Plot Date: July 18, 2025 Location: Jackfish 2/3



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS29
SURMONT 2
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Surmont 2	Station number:	AMS 29
Calibration Date:	July 7, 2025	Last Cal Date:	June 16, 2025
Start time (MST):	10:43	End time (MST):	14:59
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	49.95	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC356229			
Removed Cal Gas Conc:	49.95	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	5472
Zero Air Gen Model:	Teledyne API T701		Serial Number:	4428

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1170050150	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.002315	1.000545	Backgd or Offset:	13.7	14.0
Calibration intercept:	-1.059746	-0.940397	Coeff or Slope:	0.949	0.949

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.3	----
As found High point	4919.9	80.1	800.2	802.0	0.998
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	801.7	Previous response	801.0	*% change	0.1%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4920	80.1	800.2	800.0	1.000
Mid point	4960	40.0	399.6	398.9	1.002
Low point	4980	20.0	199.8	197.7	1.011
As left zero	5000	0.0	0.0	0.2	----
As left span	4920	80.1	800.2	801.0	0.999
				Average Correction Factor:	1.004

Notes: Changed sample inlet filter after as founds. Adjusted zero.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

SO_2 Calibration Summary

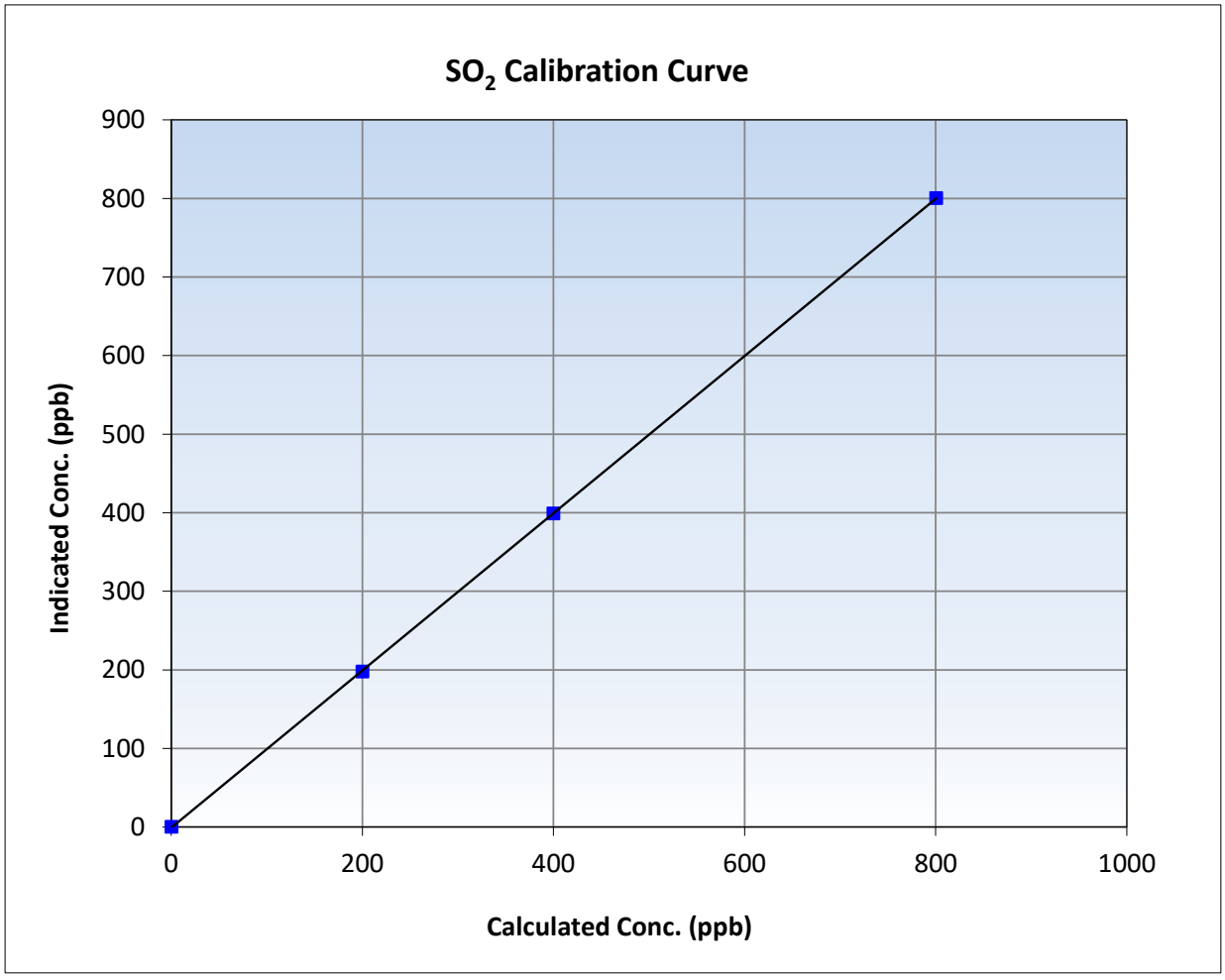
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 16, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	10:43	End Time (MST):	14:59
Analyzer make:	Thermo 43i	Analyzer serial #:	1170050150

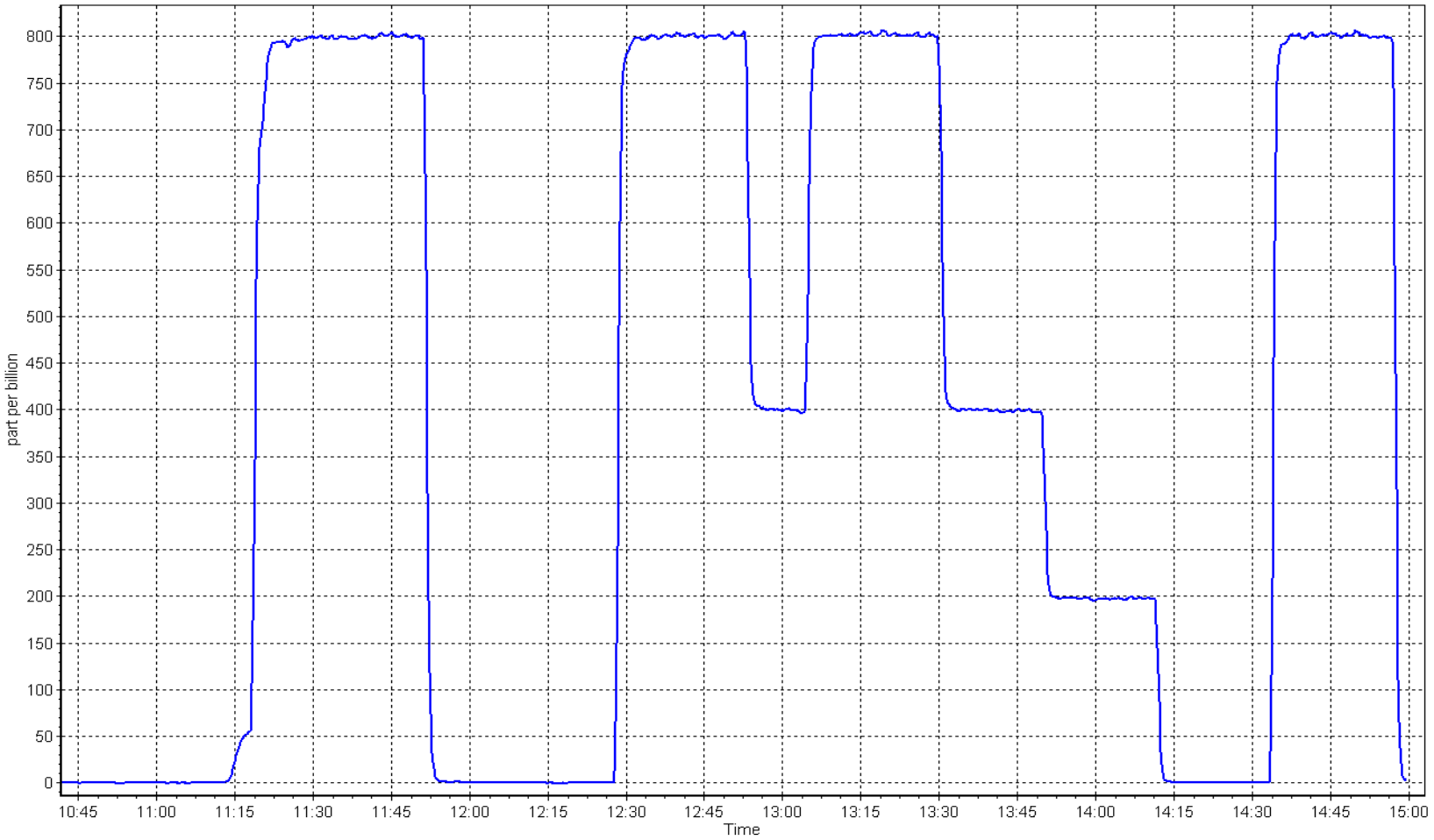
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
800.2	800.0	1.0002
399.6	398.9	1.0018
199.8	197.7	1.0106

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999993	*≥0.995*
Slope	1.000545	*0.90 - 1.10*
Intercept	-0.940397	*+/-30*



SO2 Calibration Plot Date: July 7, 2025 Location: Surmont 2



Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name:	Surmont 2	Station number:	AMS 29
Calibration Date:	July 3, 2025	Last Cal Date:	June 12, 2025
Start time (MST):	10:06	End time (MST):	16:03
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.750	ppm	Cal Gas Exp Date:	August 28, 2027
Cal Gas Cylinder #:	CC737848			
Removed Cal Gas Conc:	4.750	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	5472
ZAG Make/Model:	Teledyne API T701		Serial Number:	4428

Analyzer Information

Analyzer make:	Thermo 43iQ-TLE		Analyzer serial #:	1200326170
Converter make:	Global		Converter serial #:	2022-220
Analyzer Range	0 - 100 ppb		Converter Temp:	325.0 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.002739	0.997310	Backgd or Offset:	0.94	0.96
Calibration intercept:	-0.040481	-0.100478	Coeff or Slope:	1.040	1.040

H2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4916	84.2	80.0	81.3	0.981
As found Mid point	4958	42.1	40.0	40.3	0.988
As found Low point	4979	21.1	20.0	20.0	0.990
New cylinder response					

Baseline Corr As found:	81.5	Prev response:	80.17	*% change:	1.6%
Baseline Corr 2nd AF pt:	40.5	AF Slope:	1.019313	AF Intercept:	-0.320488
Baseline Corr 3rd AF pt:	20.2	AF Correlation:	0.999987	* = > +/-5% change initiates investigation	

H2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4916	84.2	80.0	79.7	1.004
Mid point	4958	42.1	40.0	39.8	1.005
Low point	4979	21.1	20.0	19.7	1.015
As left zero	5000	0.0	0.0	0.0	----
As left span	4916	84.2	80.0	78.2	1.023
SO2 Scrubber Check	4919	81.3	813.0	-0.1	----

Date of last scrubber change:				Ave Corr Factor	1.008
Date of last converter efficiency test:		December 5, 2024		108.1%	efficiency

Notes: Changed sample inlet filter after as founds. Ran SOx scrubber check after cal zero, passed. No adjustments made.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

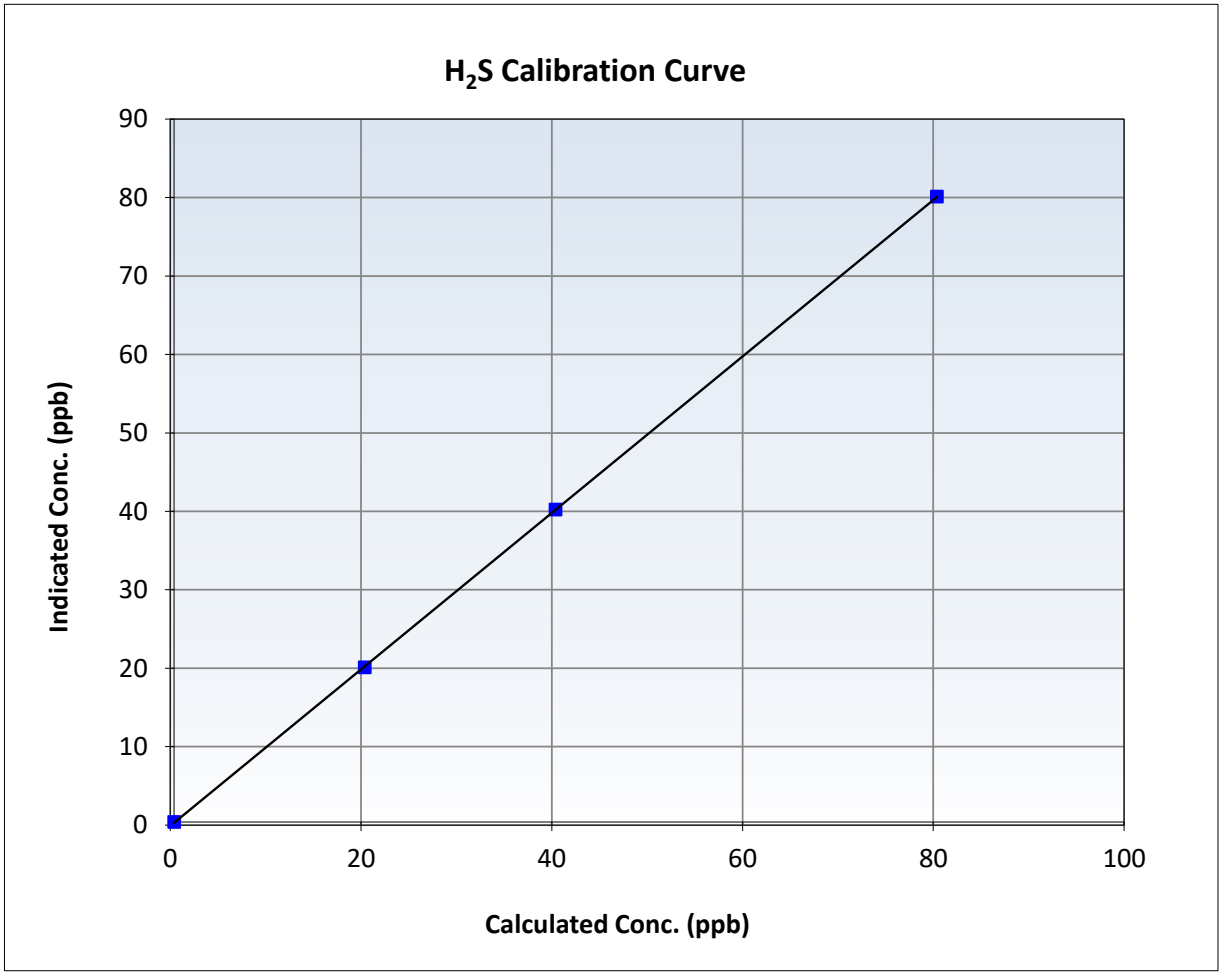
H2S Calibration Summary

Station Information

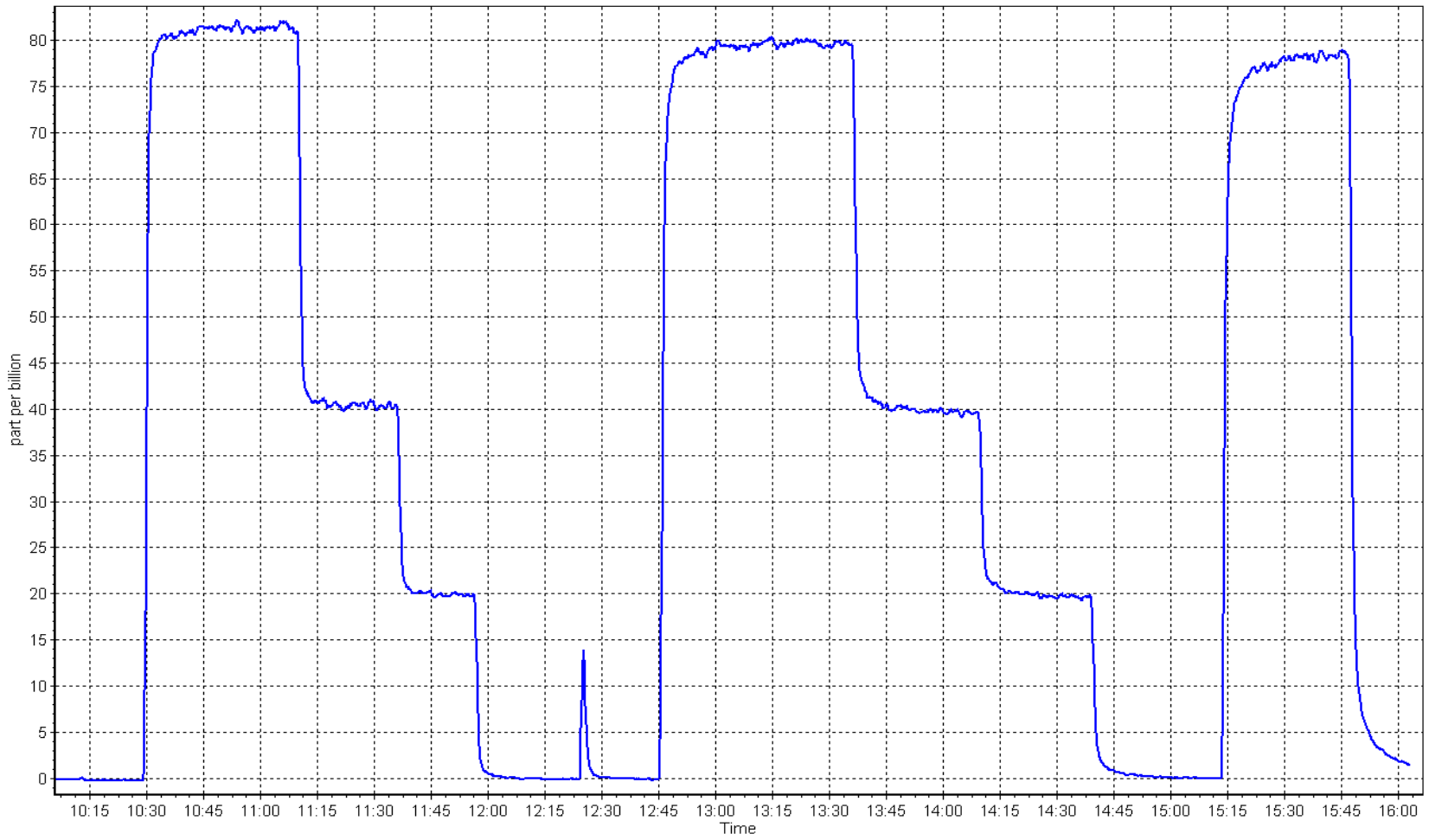
Calibration Date:	July 3, 2025	Previous Calibration:	June 12, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	10:06	End Time (MST):	16:03
Analyzer make:	Thermo 43iQ-TLE	Analyzer serial #:	1200326170

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.0	----	Correlation Coefficient	0.999991	*≥0.995*
80.0	79.7	1.0036	Slope	0.997310	*0.90 - 1.10*
40.0	39.8	1.0049			
20.0	19.7	1.0151	Intercept	-0.100478	*+/-3*



H2S Calibration Plot Date: July 3, 2025 Location: Surmont 2



Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name:	Surmont 2	Station number:	AMS 29
Calibration Date:	July 7, 2025	Last Cal Date:	June 16, 2025
Start time (MST):	10:43	End time (MST):	14:59
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC356229		Cal Gas Expiry Date:	October 9, 2032	
CH4 Cal Gas Conc.	503.7	ppm	CH4 Equiv Conc.	1066.9	ppm
C3H8 Cal Gas Conc.	204.8	ppm			
Removed Gas Cert:	NA		Removed Gas Expiry:	NA	
Removed CH4 Conc.	503.7	ppm	CH4 Equiv Conc.	1066.9	ppm
Removed C3H8 Conc.	204.8	ppm	Diff between cyl:		
Calibrator Make/Model:	Teledyne API T700		Serial Number:	5472	
ZAG Make/Model:	Teledyne API T701		Serial Number:	4428	

Analyzer Information

Analyzer make: Thermo 51i-LT Analyzer serial #: 1170050149

Analyzer Range: 0 - 20 ppm

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	0.996526	1.005647	Background:	3.55	3.61
Calibration intercept:	-0.064169	-0.040090	Coefficient:	3.973	4.038

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	-0.02	----
As found High point	4920	80.1	17.09	16.83	1.014
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	16.85	Previous response	16.97	*% change	-0.7%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	-0.04	----
High point	4920	80.1	17.09	17.13	0.998
Mid point	4960	40.0	8.54	8.60	0.992
Low point	4980	20.0	4.27	4.21	1.013
As left zero	5000	0.0	0.00	-0.02	----
As left span	4920	80.1	17.09	17.17	0.995
				Average Correction Factor	1.001

Notes: Changed sample inlet filter and hydrogen cylinder after as founds. Adjusted span.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

THC Calibration Summary

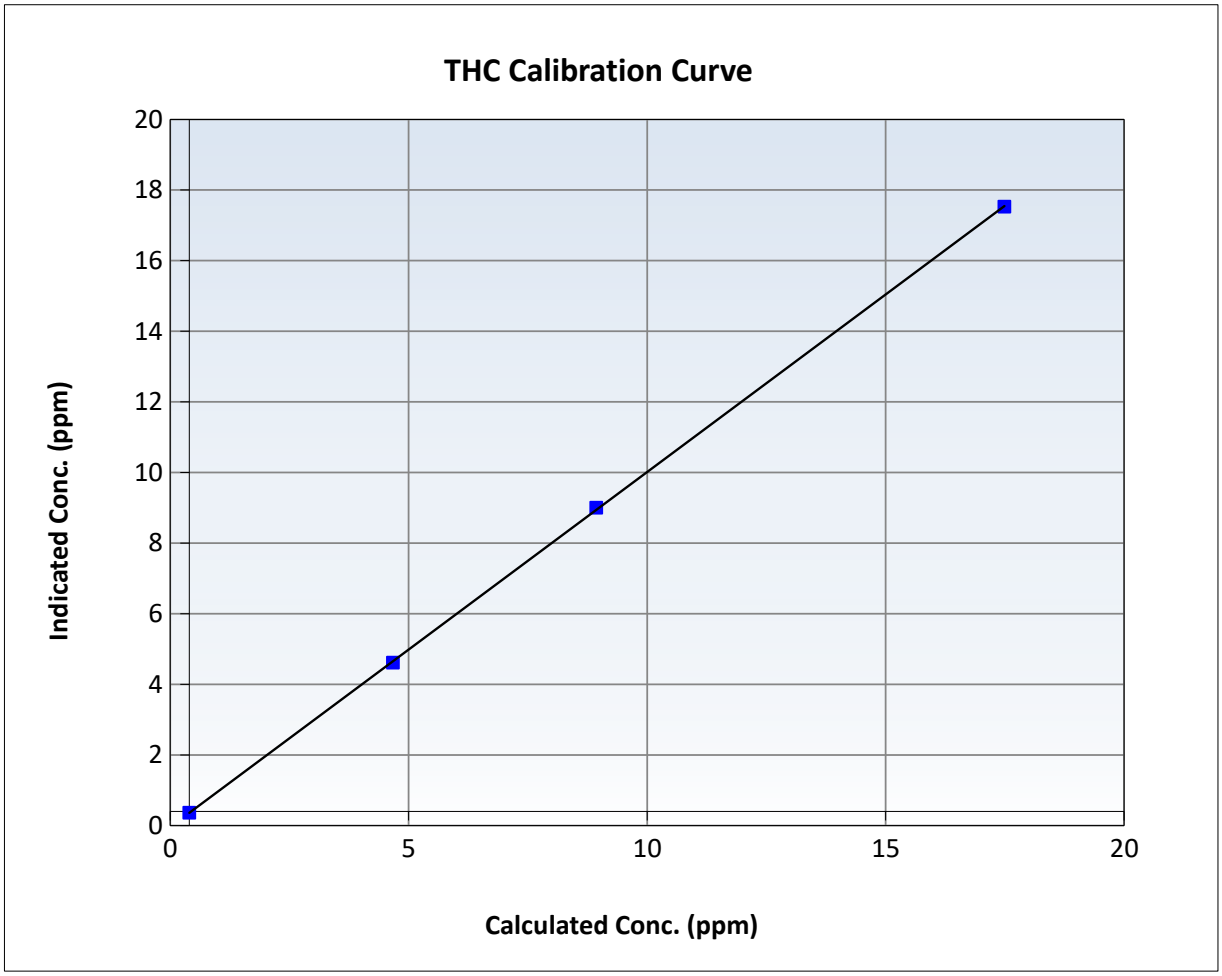
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 16, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	10:43	End Time (MST):	14:59
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1170050149

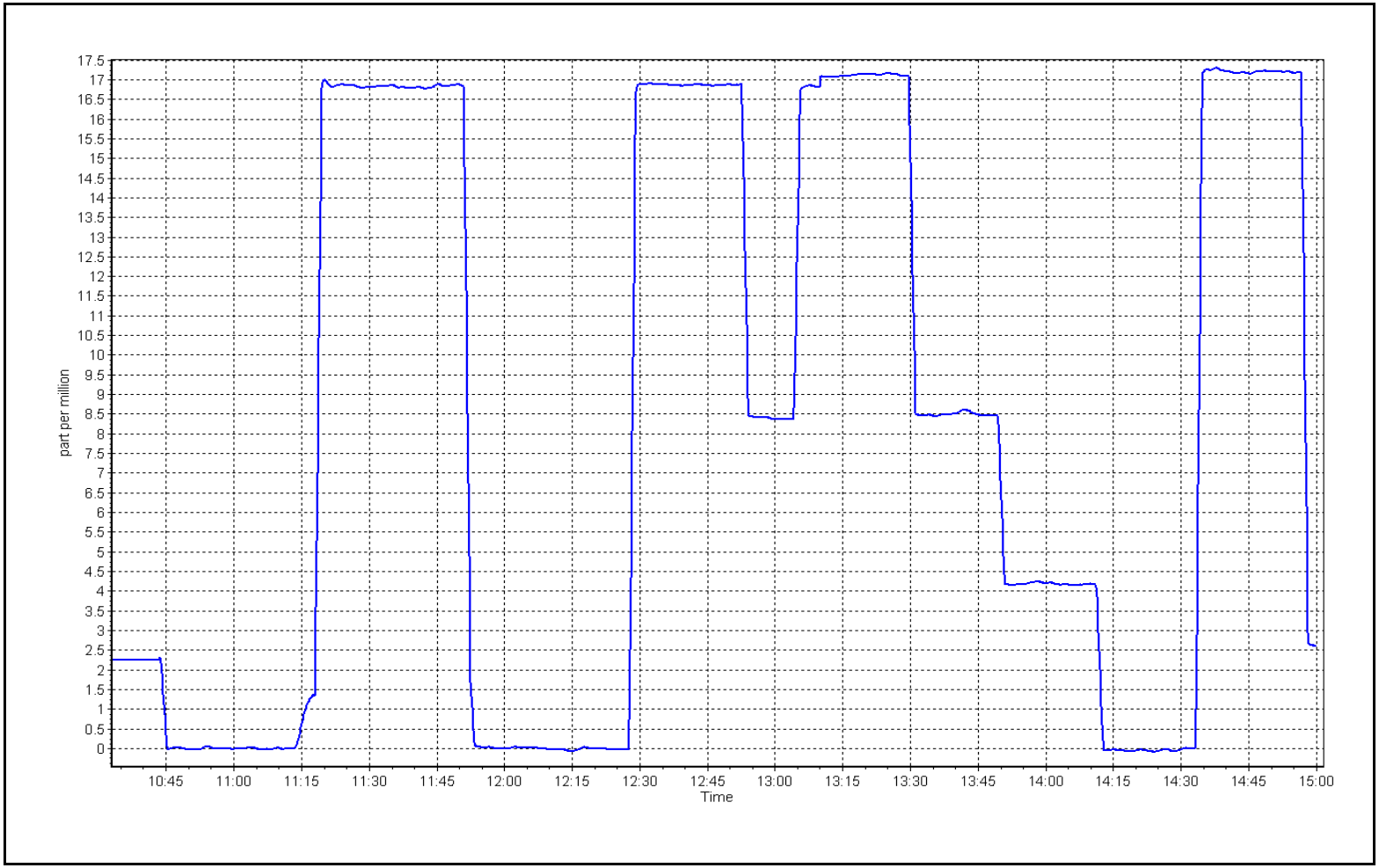
Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	-0.04	----
17.09	17.13	0.9978
8.54	8.60	0.9925
4.27	4.21	1.0134

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999968	*≥0.995*
Slope	1.005647	*0.90 - 1.10*
Intercept	-0.040090	*+/-1.5*



THC Calibration Plot Date: July 7, 2025 Location: Surmont 2



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Surmont 2
Station number:	AMS 29
Calibration Date:	July 15, 2025
Last Cal Date:	June 3, 2025
Start time (MST):	9:47
End time (MST):	15:43
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	CC218007	Cal Gas Expiry Date:	January 9, 2032
NOX Cal Gas Conc:	60.20 ppm	NO Cal Gas Conc:	60.00 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	60.20 ppm	Removed Gas NO Conc:	60.00 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	5472
ZAG make/model:	Teledyne API T701	Serial Number:	4428

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0	0.0	0.0	0.0	-0.6	-0.1	-0.5	----	----
AF High point	4933	66.7	803.1	800.4	2.7	781.6	775.8	5.8	1.0267	1.0316
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X =	796.5 ppb	NO =	795.7 ppb	* = > +/-5% change initiates investigation	*Percent Change	NO_X = -1.8%
Baseline Corr 1st pt	NO_X =	782.2 ppb	NO =	775.9 ppb	As Found Statistics	*Percent Change	NO = -2.5%
Baseline Corr 2nd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO_X r^2:	Nx Sl:	Nx Int:
Baseline Corr 3rd pt	NO_X =	NA ppb	NO =	NA ppb	As found NO r^2:	NO Sl:	NO Int:
					As found NO_2 r^2:	NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1170050148

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	Finish		Start	Finish
NO coeff or slope:	1.024	1.050	NO bkgnd or offset:	1.3	1.4
NOX coeff or slope:	0.922	0.990	NOX bkgnd or offset:	1.9	1.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	149.3	151.1

Calibration Statistics

	Start	Finish
NO_X Cal Slope:	0.990952	1.001518
NO_X Cal Offset:	0.652304	-1.709177
NO Cal Slope:	0.995198	1.003169
NO Cal Offset:	-0.927820	-2.468522
NO_2 Cal Slope:	0.993556	0.990533
NO_2 Cal Offset:	0.106812	0.265734

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	----	----
High point	4933	66.7	803.1	800.4	2.7	803.0	801.0	2.3	1.0001	0.9993
Mid point	4967	33.3	400.9	399.6	1.3	400.4	399.4	1.0	1.0013	1.0004
Low point	4983	16.7	201.1	200.4	0.7	197.0	194.6	2.5	1.0207	1.0299
As left zero	5000	0.0	0.0	0.0	0.0	0.1	0.0	0.1	----	----
As left span	4933	66.7	803.1	413.8	389.3	794.9	413.8	381.1	1.0103	1.0000
							Average Correction Factor		1.0074	1.0099

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.0	----	----
High GPT point	795.2	408.3	389.6	385.8	1.0098	99.0%
Mid GPT point	795.2	610.9	187.0	186.3	1.0036	99.6%
Low GPT point	795.2	701.8	96.1	95.2	1.0091	99.1%
				Average Correction Factor	1.0075	99.3%

Notes: Changed sample inlet filter after as founds. Adjusted zero and span.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

NO_X Calibration Summary

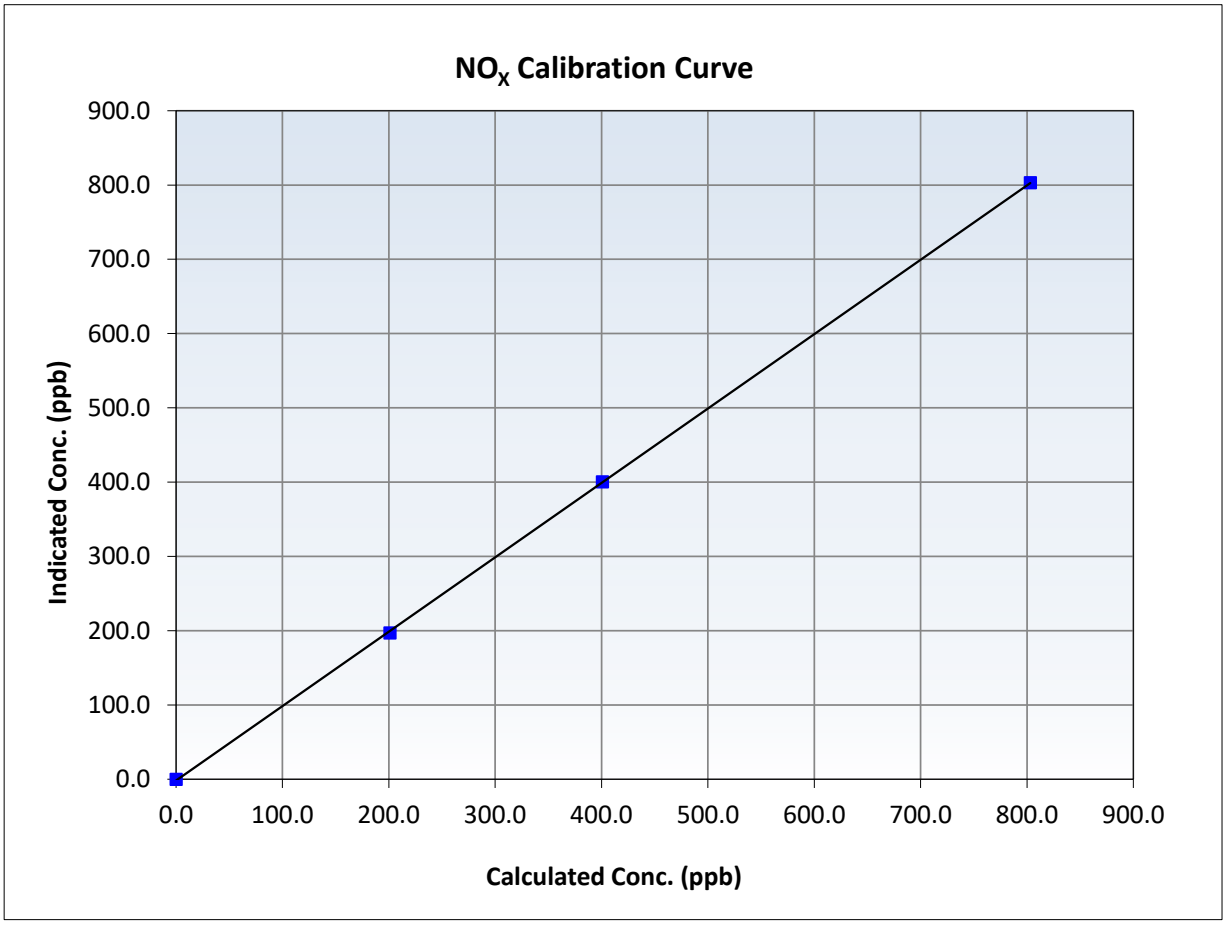
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 3, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:47	End Time (MST):	15:43
Analyzer make:	Thermo 42i	Analyzer serial #:	1170050148

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
803.1	803.0	1.0001
400.9	400.4	1.0013
201.1	197.0	1.0207

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999970	*≥0.995*
Slope	1.001518	*0.90 - 1.10*
Intercept	-1.709177	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

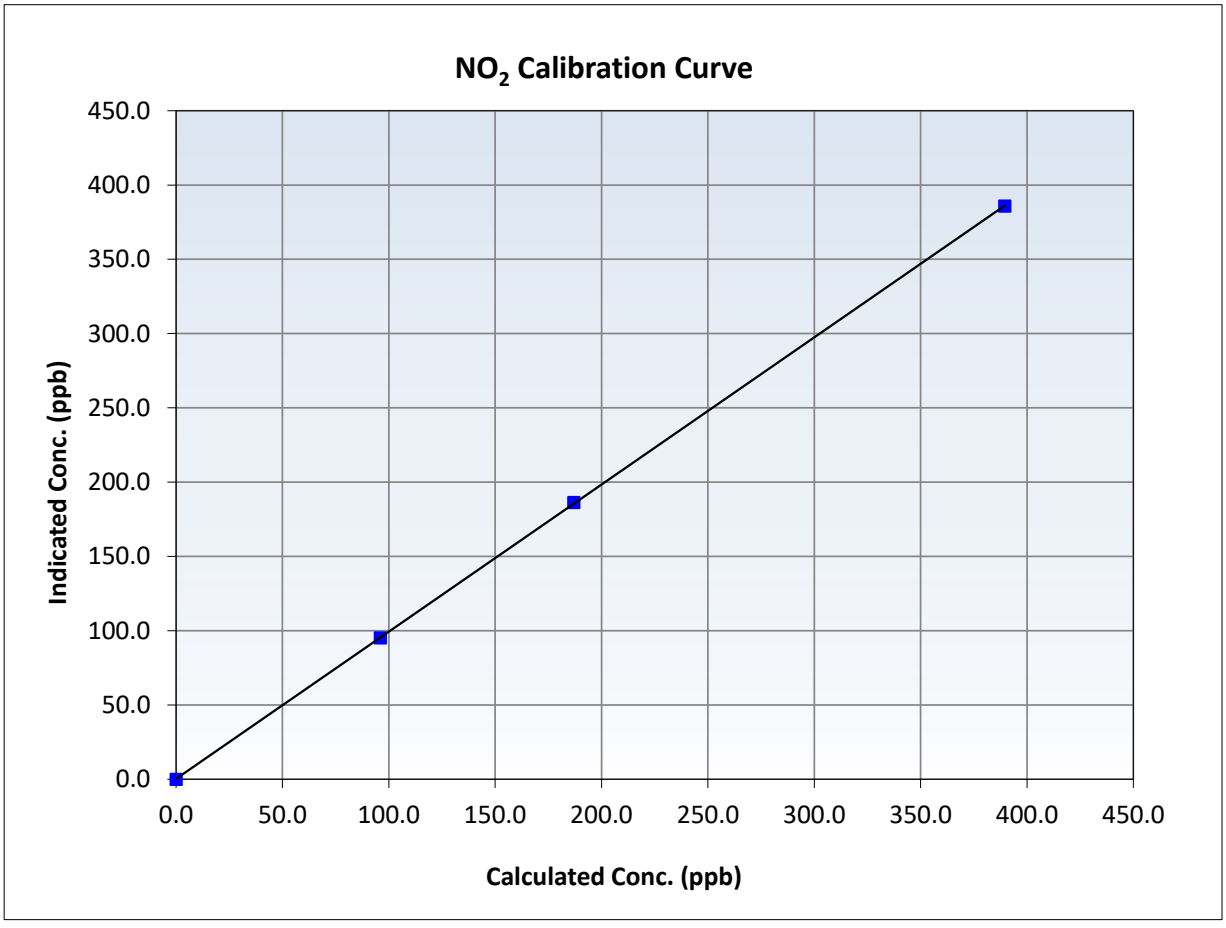
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 3, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:47	End Time (MST):	15:43
Analyzer make:	Thermo 42i	Analyzer serial #:	1170050148

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
389.6	385.8	1.0098
187.0	186.3	1.0036
96.1	95.2	1.0091

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999988	*≥0.995*
Slope	0.990533	*0.90 - 1.10*
Intercept	0.265734	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

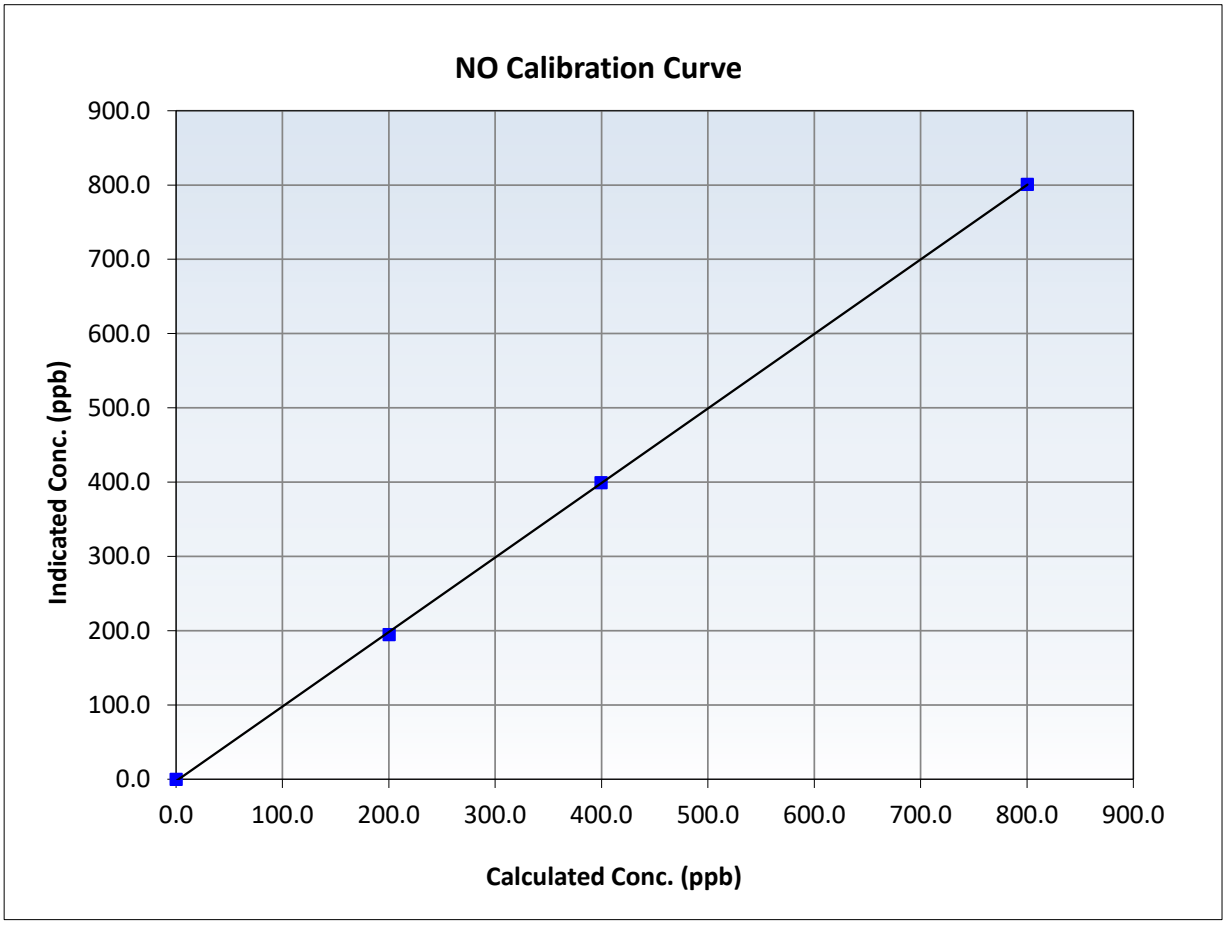
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 3, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:47	End Time (MST):	15:43
Analyzer make:	Thermo 42i	Analyzer serial #:	1170050148

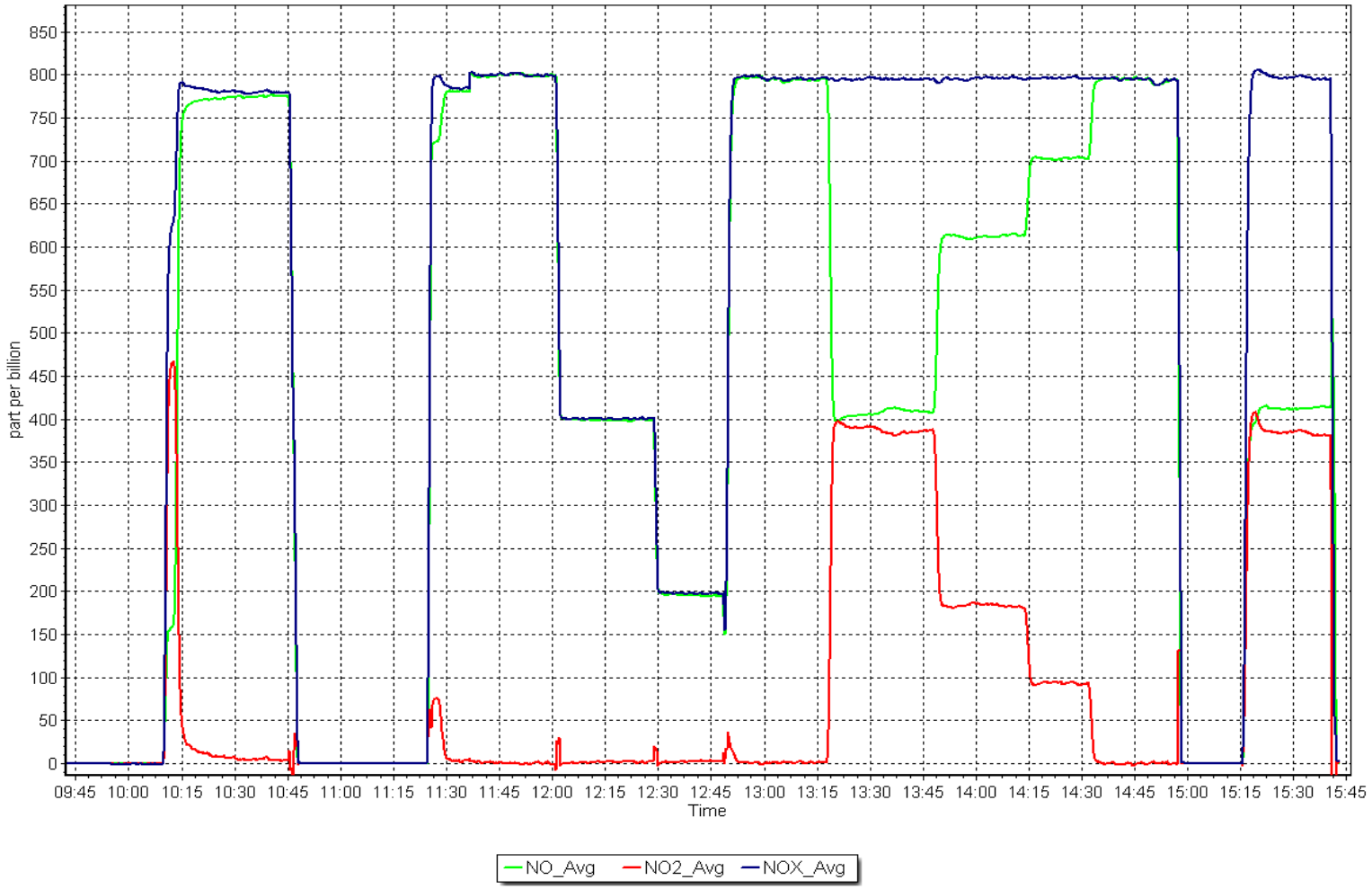
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
800.4	801.0	0.9993
399.6	399.4	1.0004
200.4	194.6	1.0299

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999934	*≥0.995*
Slope	1.003169	*0.90 - 1.10*
Intercept	-2.468522	*+/-20*



NO_X Calibration Plot Date: July 15, 2025 Location: Surmont 2



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Surmont 2	Station number:	AMS 29
Calibration Date:	July 15, 2025	Last Cal Date:	June 16, 2025
Start time (MST):	10:09	End time (MST):	11:52
Analyzer Make:	API T640	S/N:	2236
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388754
Temp/RH standard:	Alicat FP-25BT	S/N:	388754

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (°C)	17.5	17.83	17.5	☐	+/- 2 °C
P (mmHg)	721.3	720.00	721.3	☐	+/- 10 mmHg
Flow (LPM)	5.01	4.951	4.951	☑	+/- 0.25 LPM
PW% (pump)	31	-----	31	☐	>80%
Zero Verification	PM w/o HEPA:	3.9	PM w/ HEPA:	0.0	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.9 — Expiry Date: June 10, 2024 — Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test	11.1	11.0	11.0	☑	+/- 0.5

Date Optical Chamber Cleaned: July 15, 2025

Date Disposable Filter Changed: July 15, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.0 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: April 14, 2025

Date RH/T Sensor Cleaned: July 15, 2025

Notes: Verified temperature, pressure and flow. Cleaned RH/T sensor. Adjusted PMT voltage and flow.

Calibration by: Braiden Boutilier

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS30
ELLS RIVER
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Ells River	Station number:	AMS 30
Calibration Date:	July 7, 2025	Last Cal Date:	June 6, 2025
Start time (MST):	9:48	End time (MST):	12:28
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	48.75	ppm	Cal Gas Exp Date:	March 10, 2031
Cal Gas Cylinder #:	CC350110			
Removed Cal Gas Conc:	48.75	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	API T700		Serial Number:	3061
Zero Air Gen Model:	API T701H		Serial Number:	358

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1008841397	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.002418	1.003719	Backgd or Offset:	11.3	10.6
Calibration intercept:	-3.072052	-3.352039	Coeff or Slope:	0.991	0.991

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-1.1	----
As found High point	4918	82.0	799.5	797.1	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	798.2	Previous response	798.4	*% change	0.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4918	82.0	799.5	800.8	0.998
Mid point	4959	41.0	399.8	396.1	1.009
Low point	4980	20.5	199.9	194.1	1.030
As left zero	5000	0.0	0.0	-0.4	----
As left span	4918	82.0	799.5	802.0	0.997
				Average Correction Factor:	1.012

Notes: Sample inlet filter was changed after as founds. Adjusted zero only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

SO_2 Calibration Summary

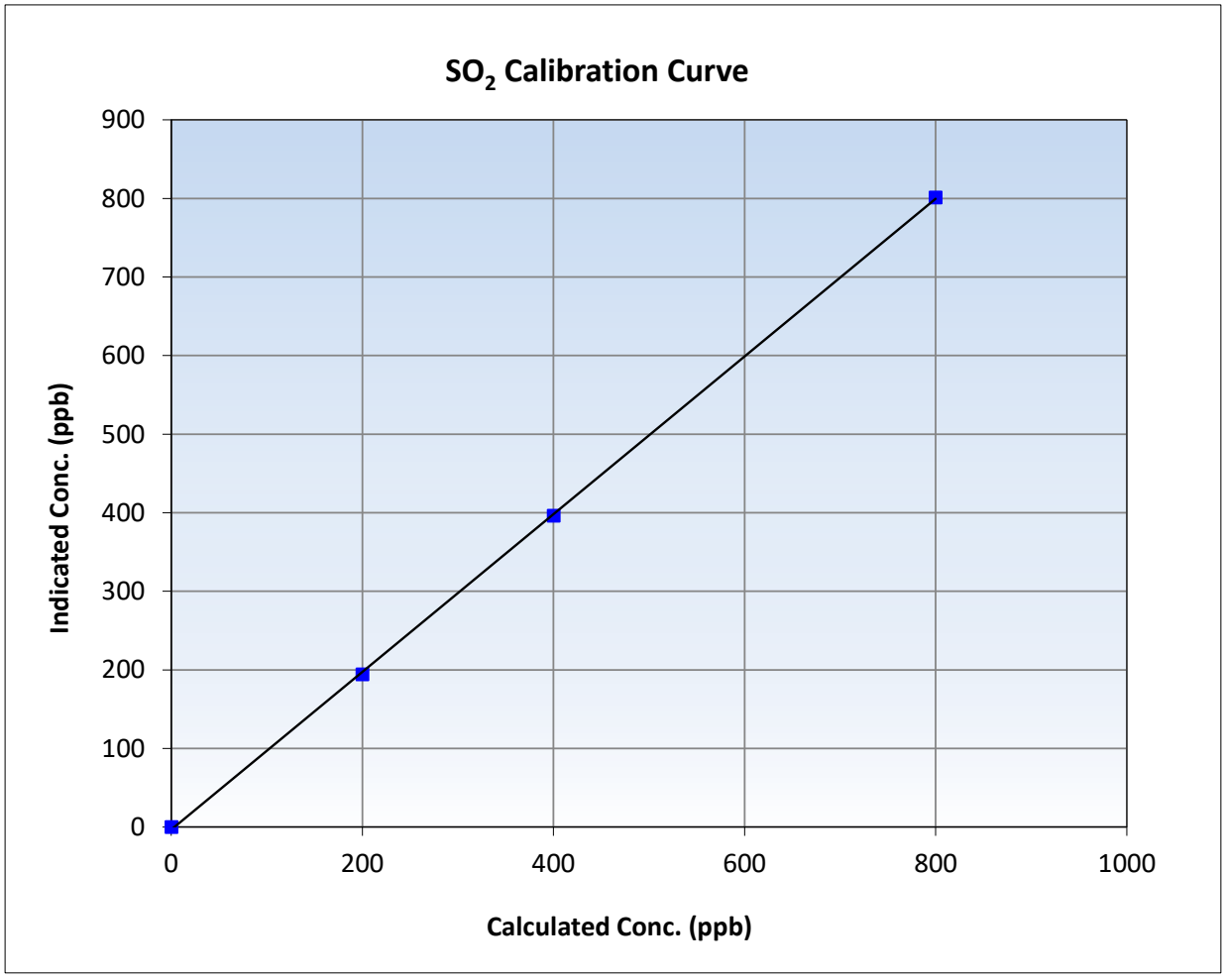
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 6, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:48	End Time (MST):	12:28
Analyzer make:	Thermo 43i	Analyzer serial #:	1008841397

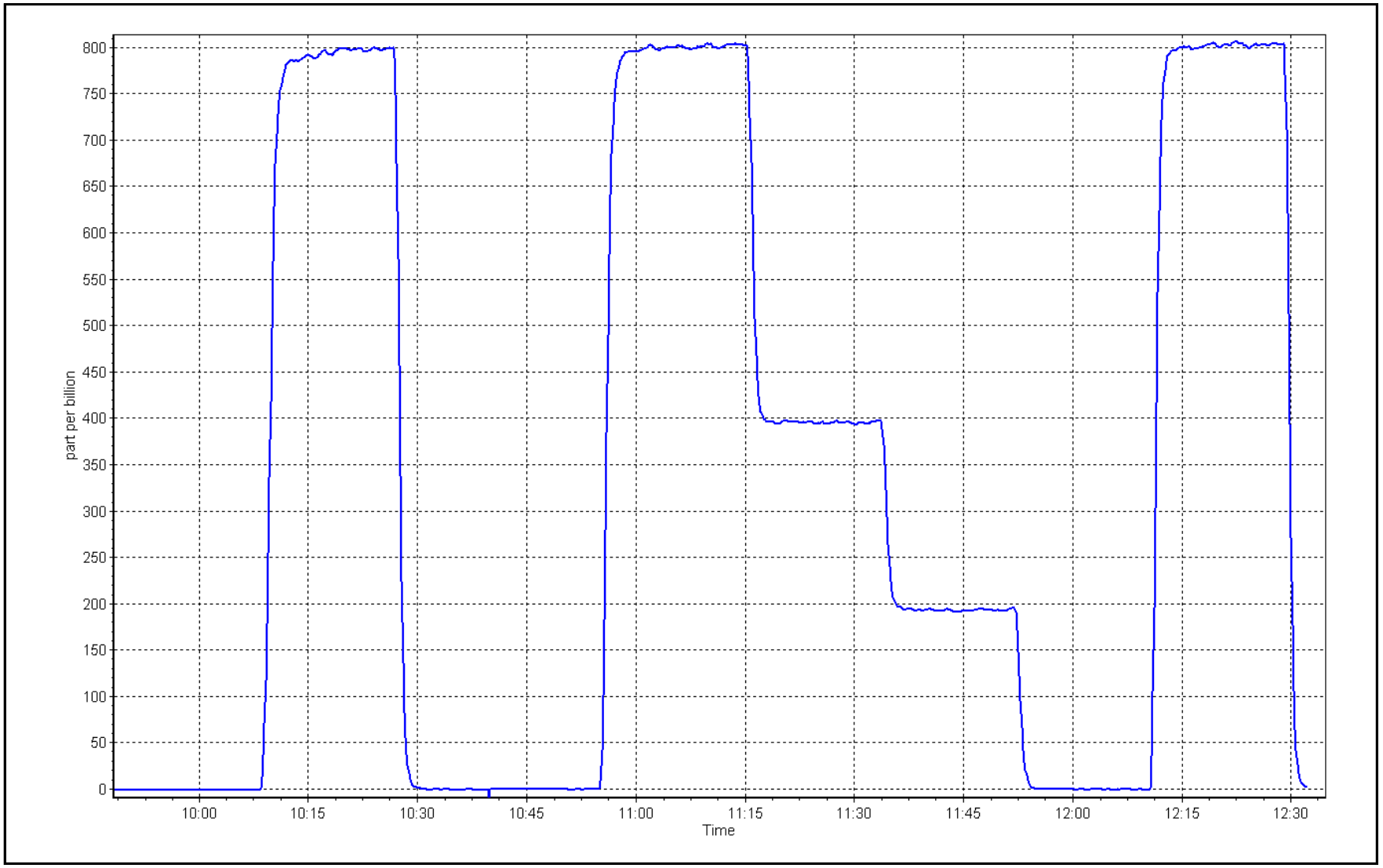
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
799.5	800.8	0.9984
399.8	396.1	1.0092
199.9	194.1	1.0296

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999925	*≥0.995*
Slope	1.003719	*0.90 - 1.10*
Intercept	-3.352039	*+/-30*



SO2 Calibration Plot Date: July 7, 2025 Location: Ells River



Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name:	Ells River	Station number:	AMS 30
Calibration Date:	July 14, 2025	Last Cal Date:	June 18, 2025
Start time (MST):	9:20	End time (MST):	13:07
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	4.99	ppm	Cal Gas Exp Date:	November 15, 2026
Cal Gas Cylinder #:	CC505806			
Removed Cal Gas Conc:	4.99	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	API T700		Serial Number:	3061
ZAG Make/Model:	API 701H		Serial Number:	358

Analyzer Information

Analyzer make:	Thermo 43i TLE		Analyzer serial #:	1410661331	
Converter make:	CDN- 101		Converter serial #:	562	
Analyzer Range	0 - 100 ppb		Converter Temp:	800	degC
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.006617	0.998624	Backgd or Offset:	1.7	1.7
Calibration intercept:	-0.060455	-0.280669	Coeff or Slope:	1.089	1.089

TRS As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.0	----
As found High point	4920	80.2	80.0	78.9	1.014
As found Mid point	4960	40.1	40.0	39.2	1.021
As found Low point	4980	20.0	20.0	19.2	1.040
New cylinder response					

Baseline Corr As found:	78.9	Prev response:	80.51	*% change:	-2.0%
Baseline Corr 2nd AF pt:	39.2	AF Slope:	0.987488	AF Intercept:	-0.240896
Baseline Corr 3rd AF pt:	19.2	AF Correlation:	0.999957	* = > +/-5% change initiates investigation	

TRS Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4920	80.2	80.0	79.8	1.003
Mid point	4960	40.1	40.0	39.5	1.013
Low point	4980	20.0	20.0	19.4	1.029
As left zero	5000	0.0	0.0	0.0	----
As left span	4920	80.2	80.0	80.0	1.000
SO2 Scrubber Check	4918	82.0	820.0	0.0	----

Date of last scrubber change:	18-Jun-25	Ave Corr Factor	1.015
Date of last converter efficiency test:			

Notes: Changed sample inlet filter, scrubber and lines after multipoint as founds. SO2 scrubber check done after calibrator zero and passed. No adjustment made.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

TRS Calibration Summary

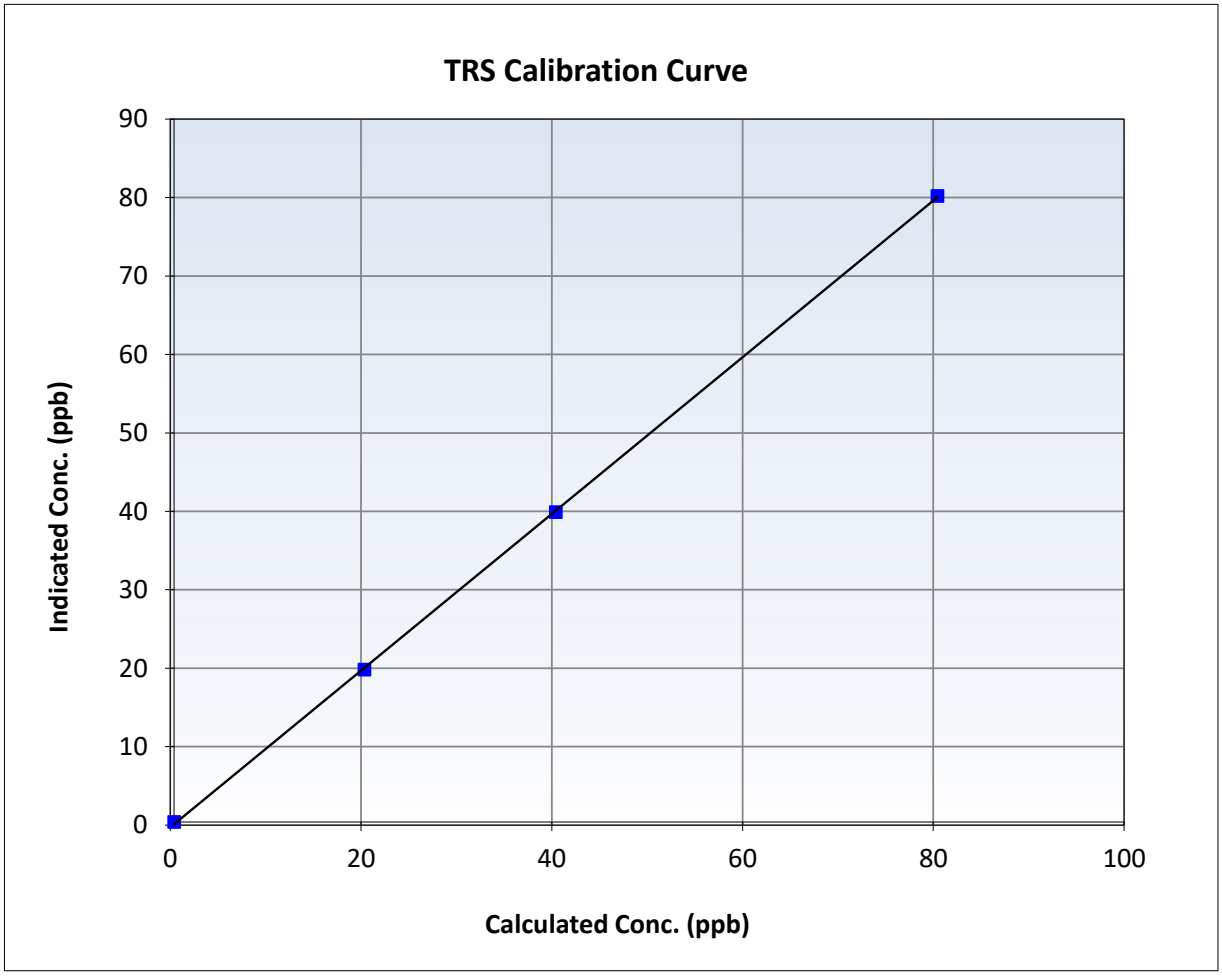
Station Information

Calibration Date:	July 14, 2025	Previous Calibration:	June 18, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:20	End Time (MST):	13:07
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1410661331

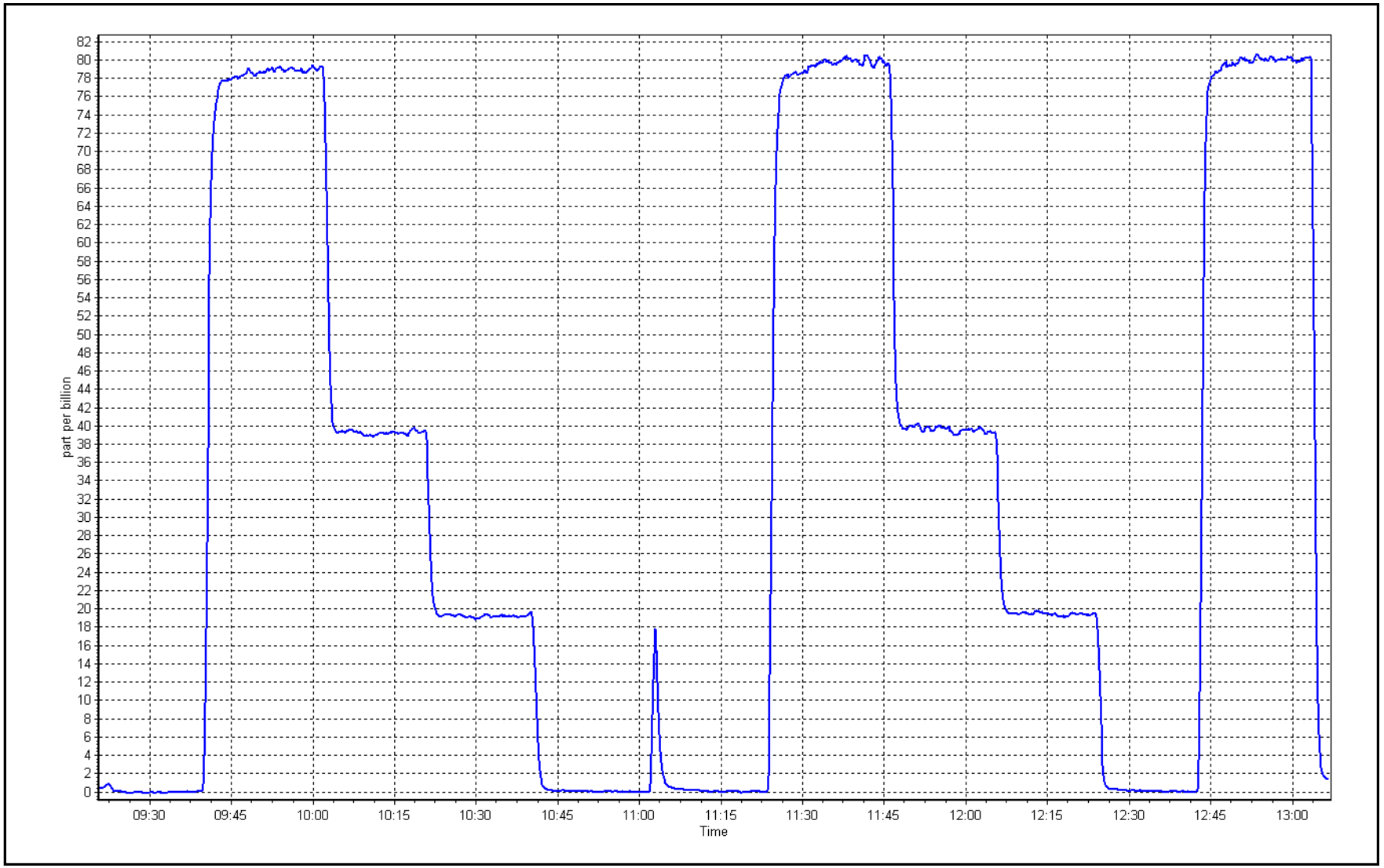
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
80.0	79.8	1.0030
40.0	39.5	1.0131
20.0	19.4	1.0289

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999943	*≥0.995*
Slope	0.998624	*0.90 - 1.10*
Intercept	-0.280669	*+/-3*



TRS Calibration Plot Date: July 14, 2025 Location: Ells River



Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

Station Information

Station Name:	Ells River	Station number:	AMS 30
Calibration Date:	July 7, 2025	Last Cal Date:	June 6, 2025
Start time (MST):	9:48	End time (MST):	12:28
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC350110		Cal Gas Expiry Date:	March 10, 2031	
CH4 Cal Gas Conc.	496.6	ppm	CH4 Equiv Conc.	1066.4	ppm
C3H8 Cal Gas Conc.	207.2	ppm			
Removed Gas Cert:	NA		Removed Gas Expiry:	NA	
Removed CH4 Conc.	496.6	ppm	CH4 Equiv Conc.	1066.4	ppm
Removed C3H8 Conc.	207.2	ppm	Diff between cyl (THC):		
Diff between cyl (CH_4):			Diff between cyl (NM):		
Calibrator Model:	API T700		Serial Number:	3061	
Zero Air Gen model:	API T701H		Serial Number:	358	

Analyzer Information

Analyzer make:	Thermo 55i		Analyzer serial #:	1152430011	
THC Range:	0 - 20 ppm		NMHC/CH4 Range:	0 - 10 ppm	
	Start	***Finish***		***Start***	***Finish***
CH4 SP Ratio:	3.11E-04	3.11E-04	NMHC SP Ratio:	5.96E-05	5.96E-05
CH4 Retention time:	17.4	17.4	NMHC Peak Area:	156612	156612
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	OFF

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	82.0	17.49	17.58	0.995
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr AF:	17.58	Prev response	17.33	*% change	1.4%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/(Ic-AFzero)) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	82.0	17.49	17.55	0.997
Mid point	4959	41.0	8.74	8.70	1.005
Low point	4980	20.5	4.37	4.29	1.018
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	82.0	17.49	17.53	0.998
				Average Correction Factor	1.007

Notes: Sample inlet filter was changed after as founds. No adjustment made.

Wood Buffalo Environmental Association

THC / CH_4 / NMHC Calibration Report

NMHC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	82.0	9.34	9.45	0.989
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.45	Prev response	9.26	*% change	2.2%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

NMHC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	82.0	9.34	9.43	0.991
Mid point	4959	41.0	4.67	4.70	0.995
Low point	4980	20.5	2.34	2.34	1.000
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	82.0	9.34	9.42	0.992
				Average Correction Factor	0.995

CH4 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	82.0	8.14	8.13	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.13	Prev response	8.06	*% change	0.9%
Baseline Corr 2nd AF:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

CH4 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	82.0	8.14	8.12	1.003
Mid point	4959	41.0	4.07	4.01	1.017
Low point	4980	20.5	2.04	1.96	1.040
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	82.0	8.14	8.11	1.004
				Average Correction Factor	1.020

Calibration Statistics

	Start	*Finish*
THC Cal Slope:	0.993984	1.004720
THC Cal Offset:	-0.051027	-0.051425
CH4 Cal Slope:	0.994349	0.999022
CH4 Cal Offset:	-0.037920	-0.039319
NMHC Cal Slope:	0.992540	1.009588
NMHC Cal Offset:	-0.011507	-0.011706

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

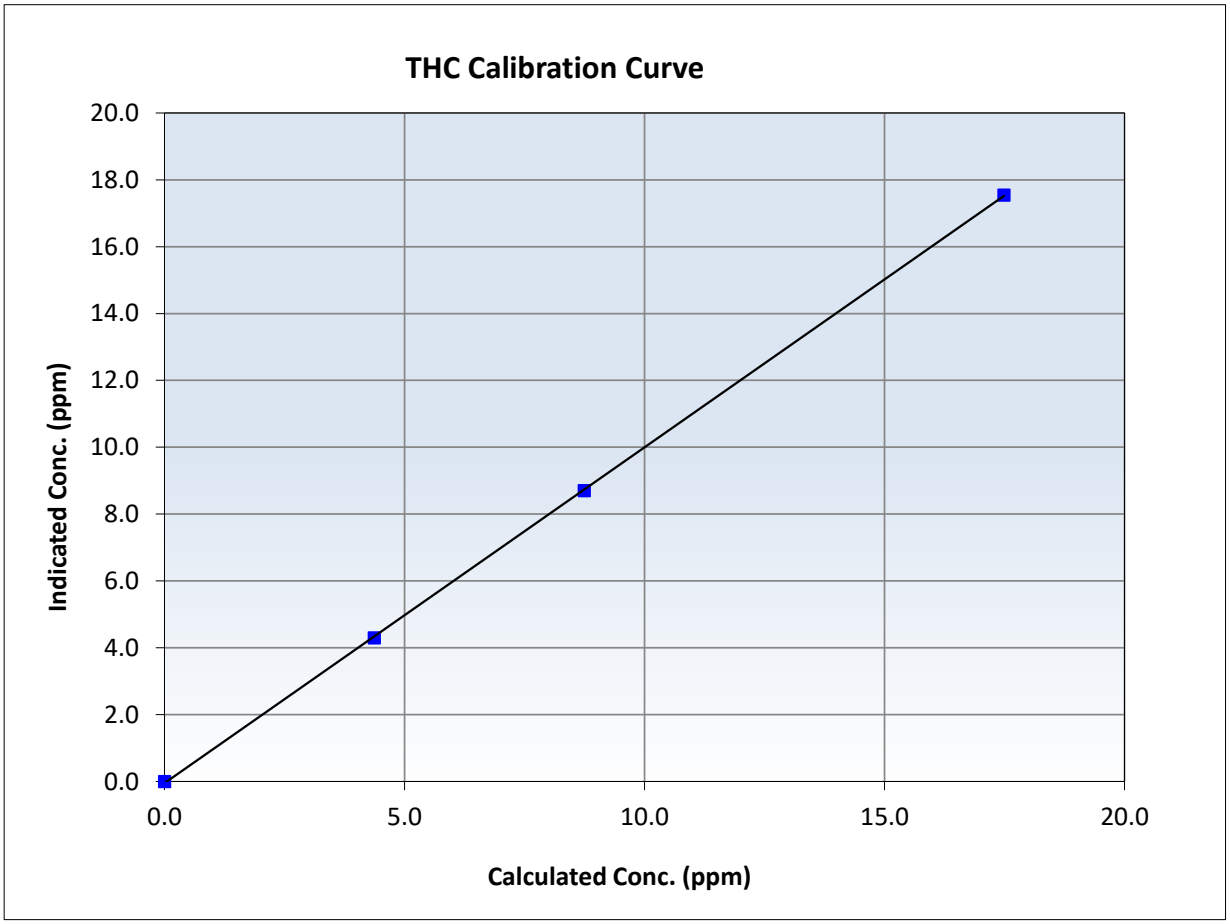
THC Calibration Summary

Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 6, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:48	End Time (MST):	12:28
Analyzer make:	Thermo 55i	Analyzer serial #:	1152430011

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999960	≥0.995
17.49	17.55	0.9966	Slope	1.004720	0.90 - 1.10
8.74	8.70	1.0049			
4.37	4.29	1.0181	Intercept	-0.051425	+/-0.5



Wood Buffalo Environmental Association

CH_4 Calibration Summary

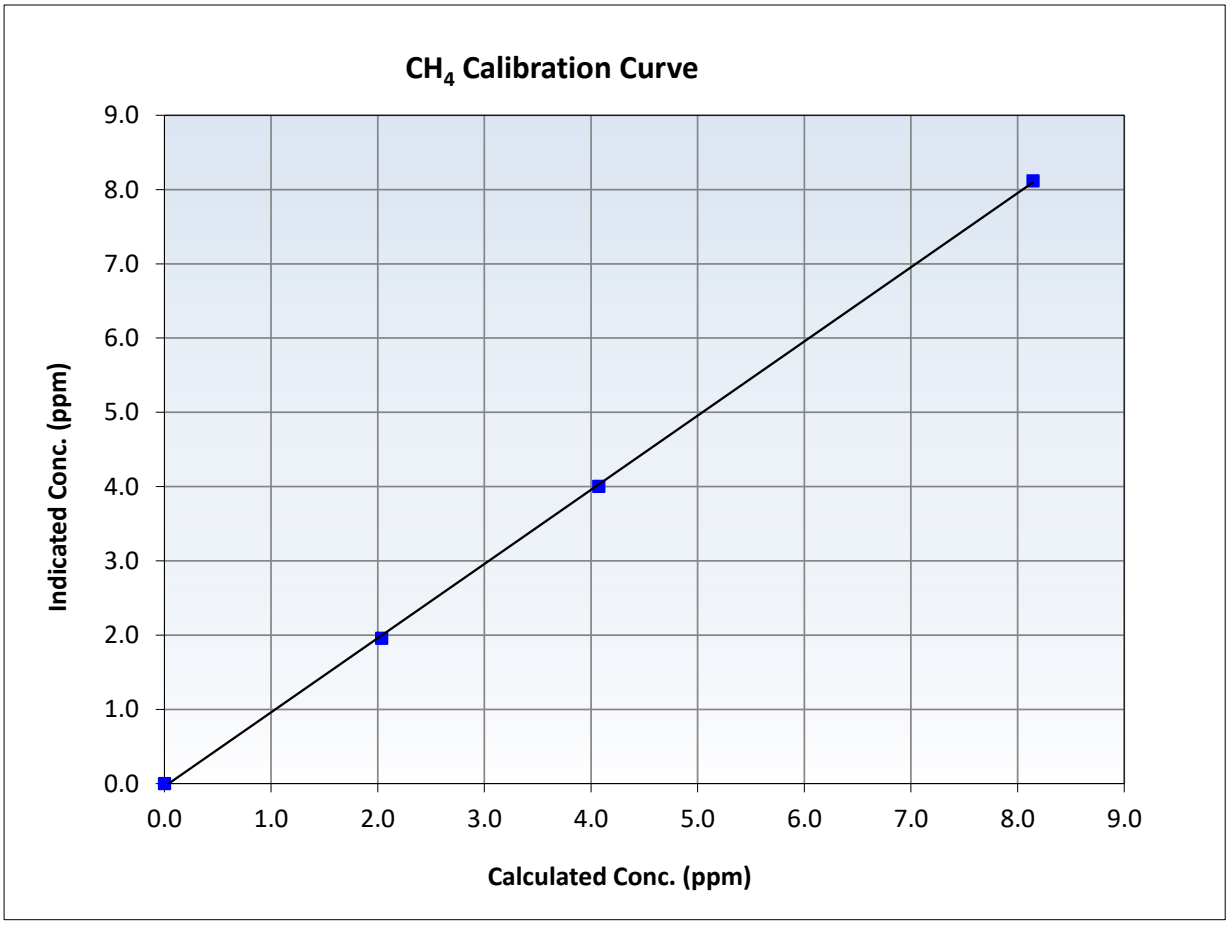
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 6, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:48	End Time (MST):	12:28
Analyzer make:	Thermo 55i	Analyzer serial #:	1152430011

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
8.14	8.12	1.0032
4.07	4.01	1.0168
2.04	1.96	1.0398

Statistical Evaluation		Limits
Correlation Coefficient	0.999893	≥0.995
Slope	0.999022	0.90 - 1.10
Intercept	-0.039319	+/-0.5



Wood Buffalo Environmental Association

NMHC Calibration Summary

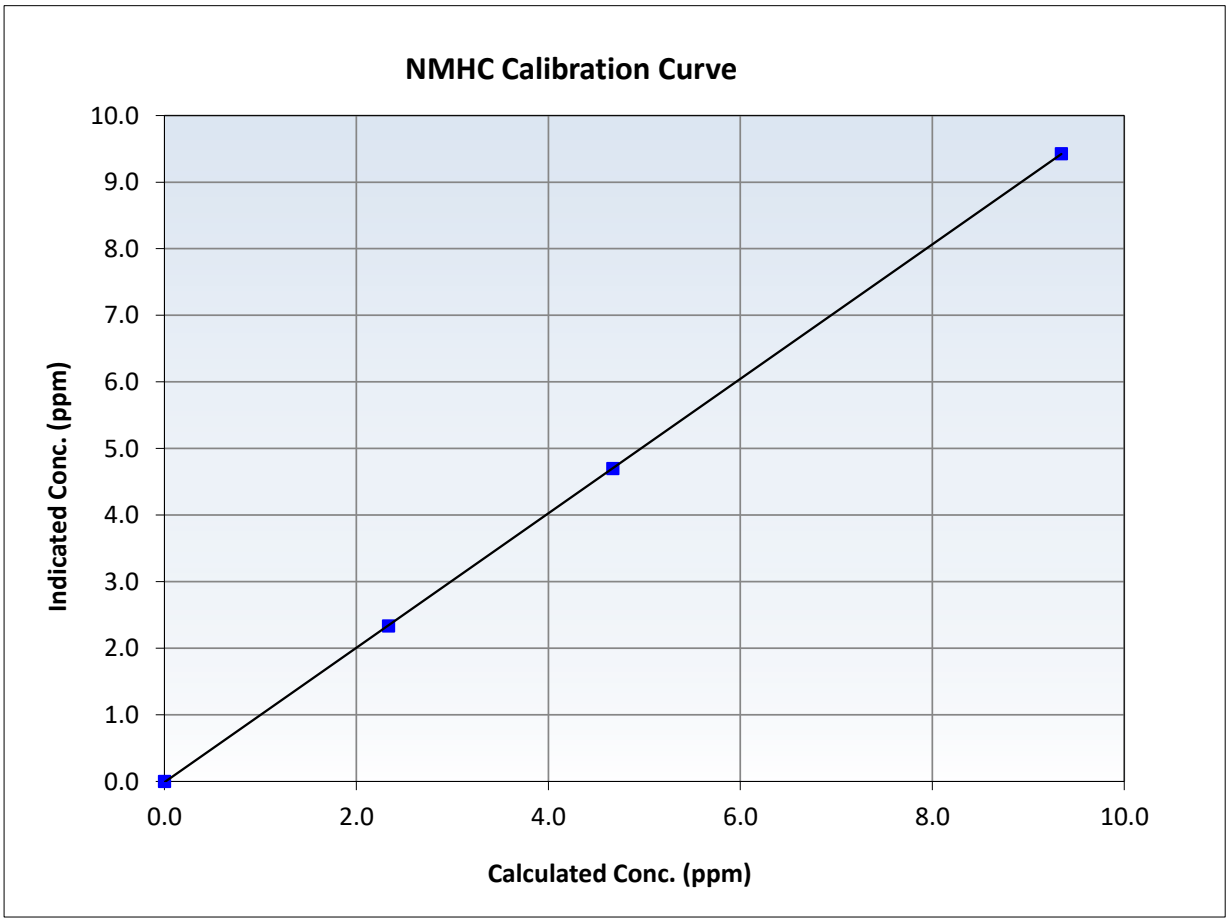
Station Information

Calibration Date:	July 7, 2025	Previous Calibration:	June 6, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:48	End Time (MST):	12:28
Analyzer make:	Thermo 55i	Analyzer serial #:	1152430011

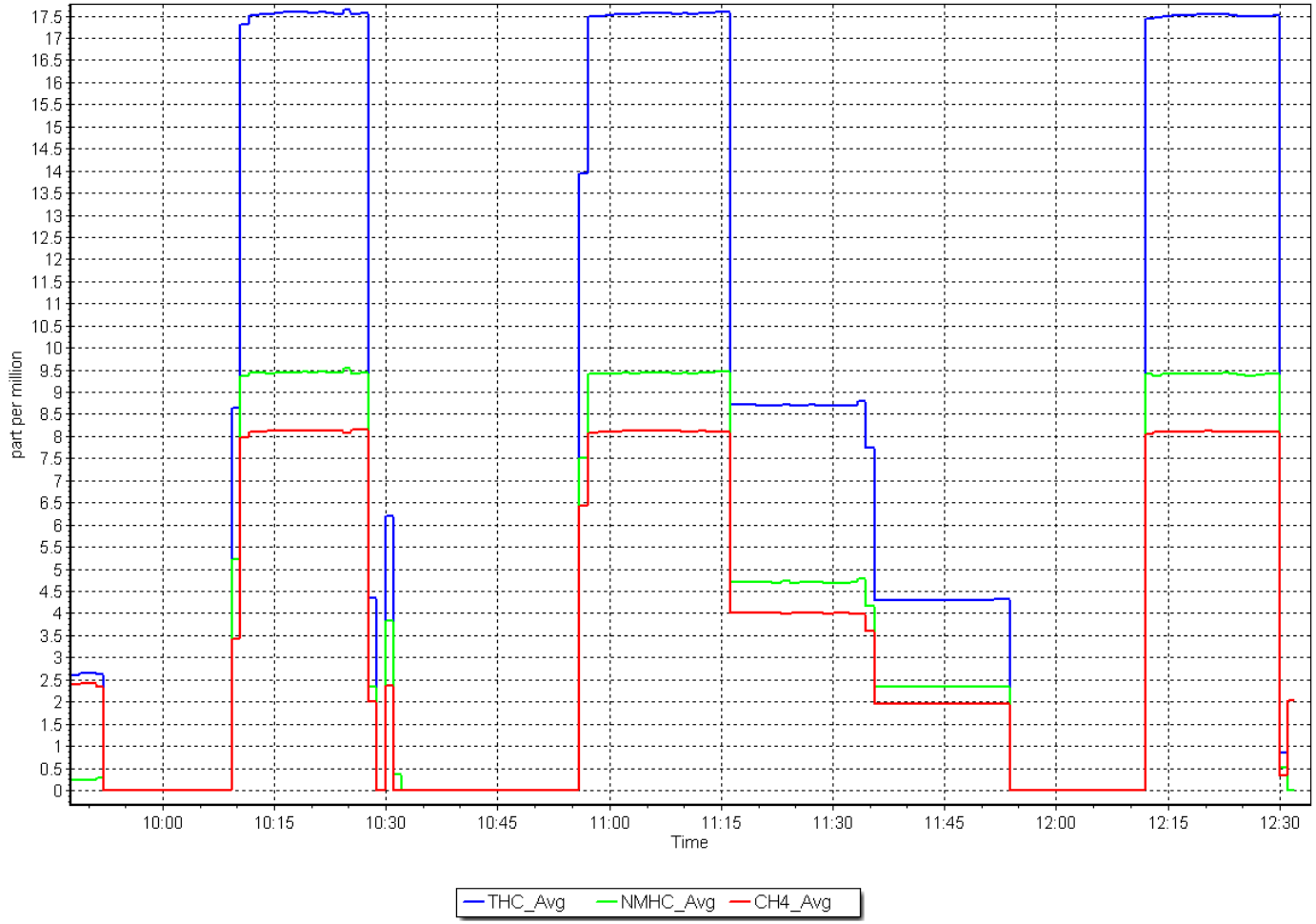
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.00	----
9.34	9.43	0.9911
4.67	4.70	0.9945
2.34	2.34	1.0000

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999993	*≥0.995*
Slope	1.009588	*0.90 - 1.10*
Intercept	-0.011706	*+/-0.5*



NMHC Calibration Plot Date: July 7, 2025 Location: Ells River



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Ells River
Station number:	AMS 30
Calibration Date:	July 11, 2025
Last Cal Date:	June 16, 2025
Start time (MST):	9:04
End time (MST):	13:09
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0027487	Cal Gas Expiry Date:	January 9, 2032
NOX Cal Gas Conc:	59.30 ppm	NO Cal Gas Conc:	59.10 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	59.30 ppm	Removed Gas NO Conc:	59.10 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	API T700	Serial Number:	3061
ZAG make/model:	API T701H	Serial Number:	358

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	0.3	0.3	0.0	----	----
AF High point	4932	67.7	803.0	800.3	2.7	808.7	804.4	4.3	0.9933	0.9952
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 800.9 ppb	NO = 797.6 ppb
Baseline Corr 1st pt	NO_X = 808.4 ppb	NO = 804.1 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	Nx Sl:	Nx Int:
As found	NO r^2:	NO Sl:	NO Int:
As found	NO_2 r^2:	NO2 Sl:	NO_2 Int:

*Percent Change	NO_X = 0.9%
*Percent Change	NO = 0.8%

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 710321429

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.176	1.268	NO bkgnd or offset:	13.5	14.4
NOX coeff or slope:	0.993	0.993	NOX bkgnd or offset:	13.6	14.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	197.8	196.9

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.999206	1.005398
NO_X Cal Offset:	-1.419239	-2.018135
NO Cal Slope:	1.000634	1.003019
NO Cal Offset:	-3.160802	-3.220169
NO_2 Cal Slope:	0.999422	0.998213
NO_2 Cal Offset:	0.412998	0.317699

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.5	0.5	0.1	----	----
High point	4932	67.7	803.0	800.3	2.7	806.5	801.2	5.2	0.9956	0.9988
Mid point	4966	33.8	400.9	399.5	1.4	399.9	396.0	3.9	1.0025	1.0089
Low point	4983	16.9	200.4	199.8	0.7	196.9	193.2	3.6	1.0180	1.0340
As left zero	5000	0.0	0.0	0.0	0.0	0.5	0.5	0.0	----	----
As left span	4932	67.7	803.0	428.5	374.5	806.2	428.5	377.8	0.9960	1.0000
							Average Correction Factor		1.0054	1.0139

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.1	----	----
High GPT point	798.9	422.5	379.1	378.7	1.0011	99.9%
Mid GPT point	798.9	610.1	191.5	191.4	1.0006	99.9%
Low GPT point	798.9	703.4	98.2	98.7	0.9950	100.5%
				Average Correction Factor	0.9989	100.1%

Notes: Sample inlet filter changed after as founds. No adjustment made.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

NO_X Calibration Summary

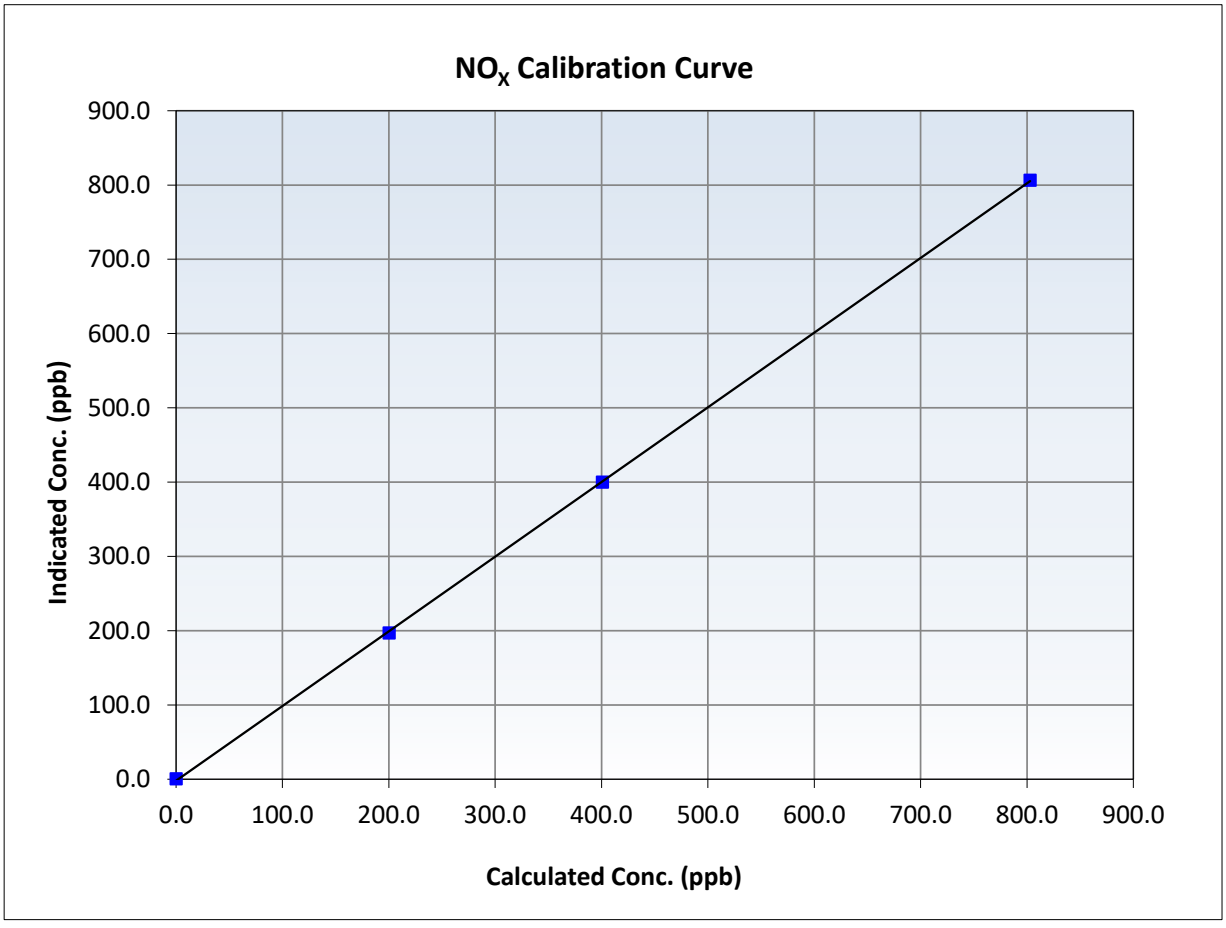
Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 16, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:04	End Time (MST):	13:09
Analyzer make:	Thermo 42i	Analyzer serial #:	710321429

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.5	----
803.0	806.5	0.9956
400.9	399.9	1.0025
200.4	196.9	1.0180

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999956	*≥0.995*
Slope	1.005398	*0.90 - 1.10*
Intercept	-2.018135	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

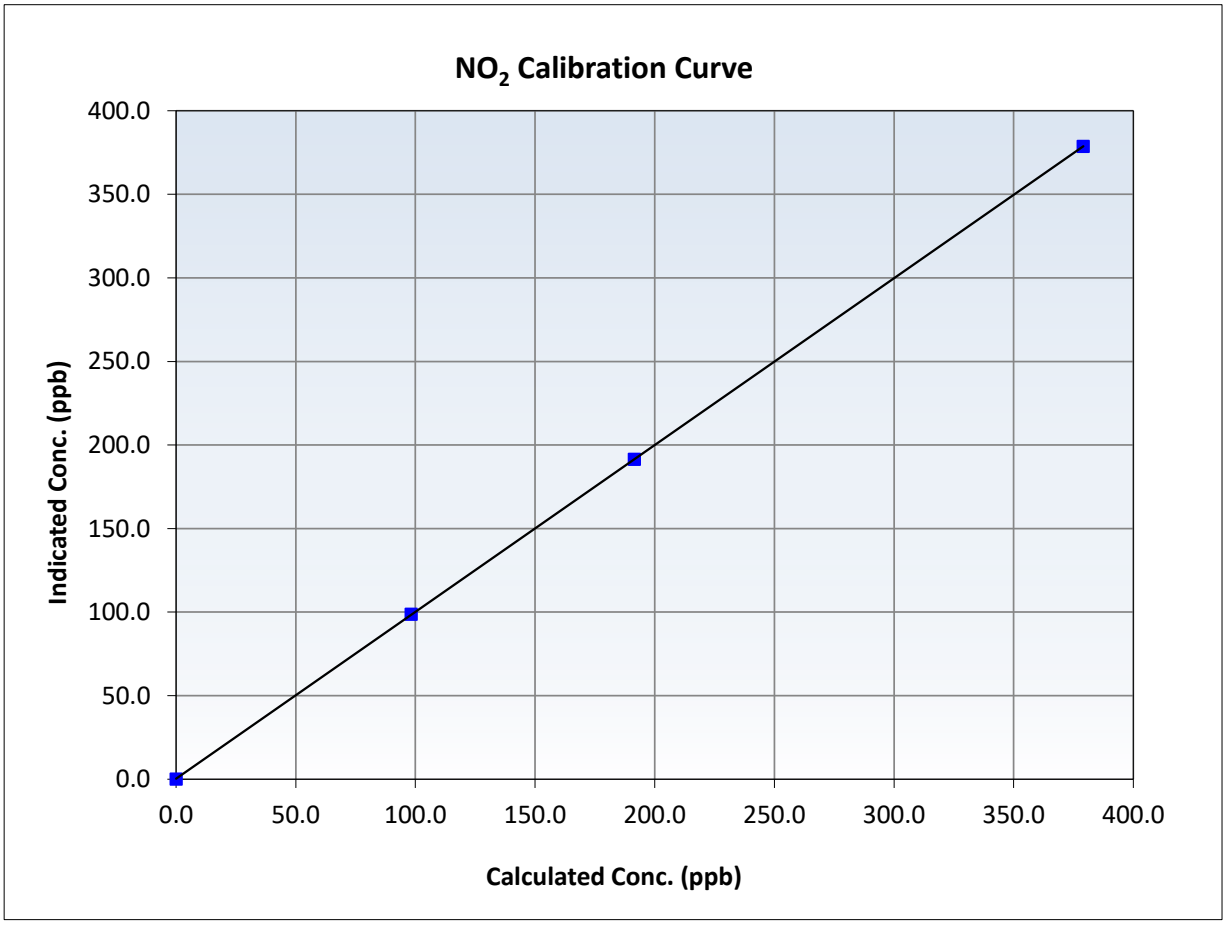
Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 16, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:04	End Time (MST):	13:09
Analyzer make:	Thermo 42i	Analyzer serial #:	710321429

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
379.1	378.7	1.0011
191.5	191.4	1.0006
98.2	98.7	0.9950

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999998	*≥0.995*
Slope	0.998213	*0.90 - 1.10*
Intercept	0.317699	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

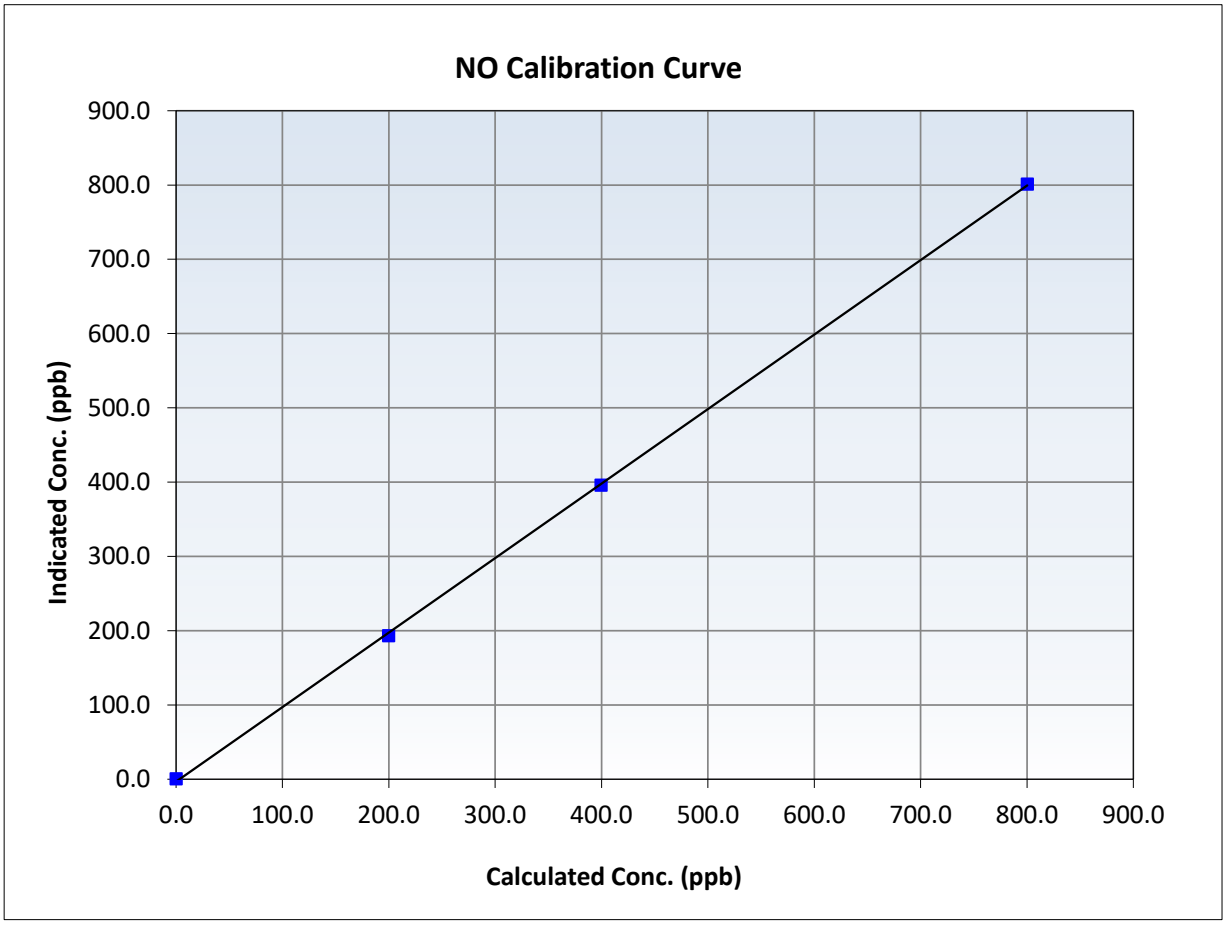
Station Information

Calibration Date:	July 11, 2025	Previous Calibration:	June 16, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:04	End Time (MST):	13:09
Analyzer make:	Thermo 42i	Analyzer serial #:	710321429

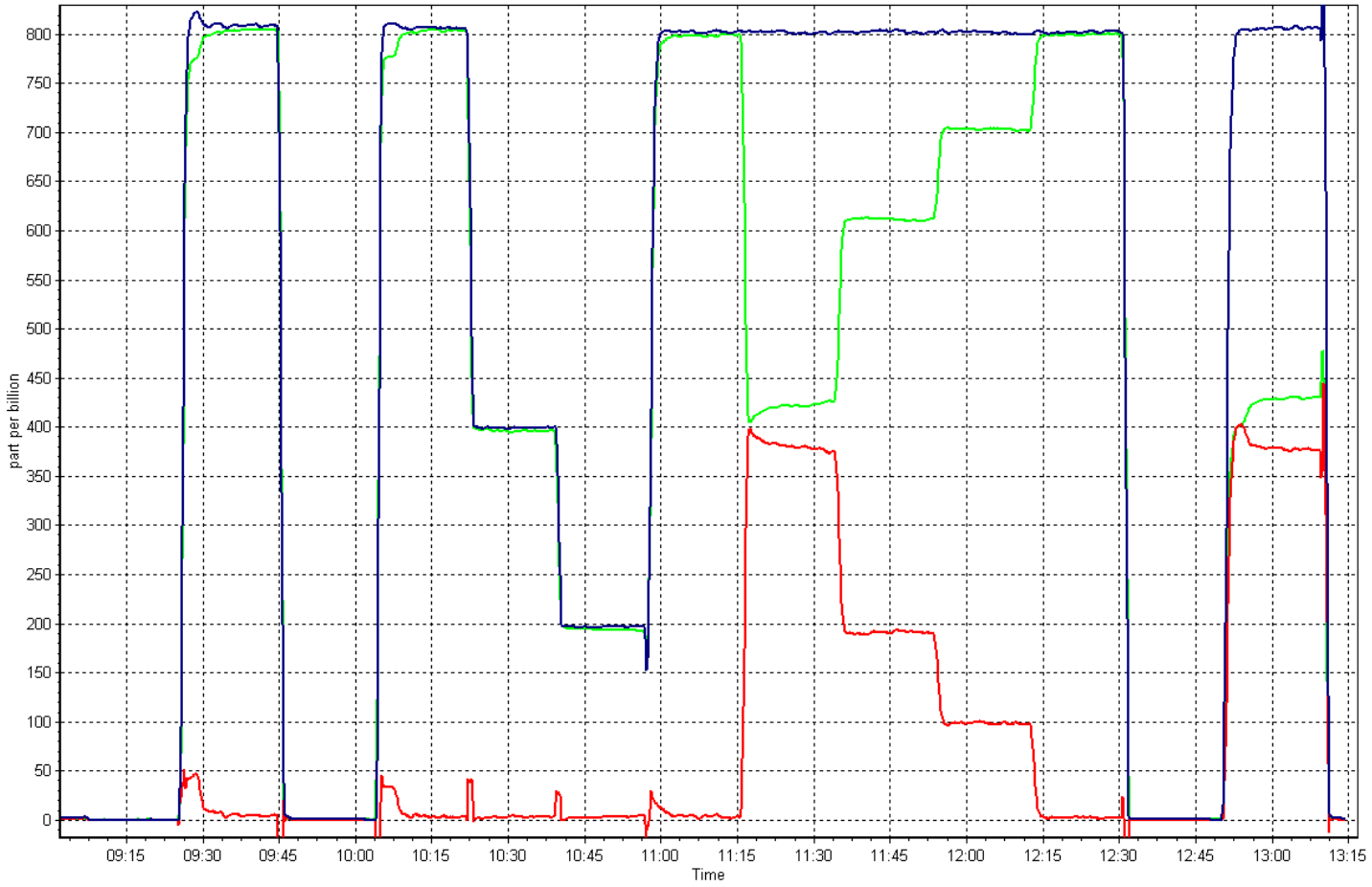
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.5	----
800.3	801.2	0.9988
399.5	396.0	1.0089
199.8	193.2	1.0340

Statistical Evaluation		Limits
Correlation Coefficient	0.999901	≥0.995
Slope	1.003019	0.90 - 1.10
Intercept	-3.220169	+/-20



NO_X Calibration Plot Date: July 11, 2025 Location: Ells River



Wood Buffalo Environmental Association

T640 $PM_{2.5}$ CALIBRATION

Version-01-2024

Station Information

Station Name:	Ells River	Station number:	AMS 30
Calibration Date:	July 11, 2025	Last Cal Date:	June 18, 2025
Start time (MST):	11:09	End time (MST):	12:09
Analyzer Make:	API T640	S/N:	875
Particulate Fraction:	PM2.5		
Flow Meter Make/Model:	Alicat FP-25BT	S/N:	388754
Temp/RH standard:	Alicat FP-25BT	S/N:	388754

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	*(Limits)*
T (^{o}C)	25.20	25.34	25.20	☐	+/- 2 ^{o}C
P (mmHg)	724.90	727.13	724.90	☐	+/- 10 mmHg
Flow (LPM)	4.99	4.95	4.99	☐	+/- 0.25 LPM
PW% (pump)	30	-----	30	☐	>80%
Zero Verification	PM w/o HEPA:	4.40	PM w/ HEPA:	0.00	<0.2 ug/m3

Note: this leak check will be completed before the quarterly work and will serve as the pre maintenance leak check

PM Inlet observation : Inlet Head Clean ☑ Alignment Factor On : ☑

Quarterly Calibration Test

SPAN DUST — Refractive Index: 10.90 — Expiry Date: January 30, 2027 — Lot No.: 100128-050-040

Parameter	As found	Post maintenance	As left	Adjusted	*(Limits)*
PMT Peak Test	0.20	10.50	10.50	☐	+/- 0.5

Date Optical Chamber Cleaned: July 11, 2025

Date Disposable Filter Changed: July 11, 2025

Post- maintenance Zero Verification: PM w/ HEPA: 0.00 <0.2 ug/m3

Annual Maintenance

Date Sample Tube Cleaned: June 18, 2025

Date RH/T Sensor Cleaned: June 18, 2025

Notes: Verified flow, temperature, pump power and pressure No adjustment made. Leak check passed.

Calibration by: Jan Castro

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS31
BLACKROD
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Blackrod	Station number:	AMS 31
Calibration Date:	July 29, 2025	Last Cal Date:	June 20, 2025
Start time (MST):	10:27	End time (MST):	13:12
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.25	ppm	Cal Gas Exp Date:	March 10, 2031
Cal Gas Cylinder #:	CC327023			
Removed Cal Gas Conc:	50.25	ppm	Rem Gas Exp Date:	N/A
Removed Gas Cyl #:	N/A		Diff between cyl:	
Calibrator Model:	Teledyne T700		Serial Number:	5762
Zero Air Gen Model:	Teledyne N701H		Serial Number:	72

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1160290014	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.008527	1.008913	Backgd or Offset:	37.8	37.8
Calibration intercept:	-0.871940	-0.031926	Coeff or Slope:	0.980	0.980

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4920	79.6	800.0	807.4	0.991
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	807.6	Previous response	806.0	*% change	0.2%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4920	79.6	800.0	807.0	0.991
Mid point	4960	39.8	400.0	404.2	0.990
Low point	4980	19.9	200.0	201.0	0.995
As left zero	5000	0.0	0.0	0.1	----
As left span	4920	79.6	800.0	810.0	0.988
				Average Correction Factor:	0.992

Notes: Sample inlet filter was changed after as founds. No adjustment made.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

SO_2 Calibration Summary

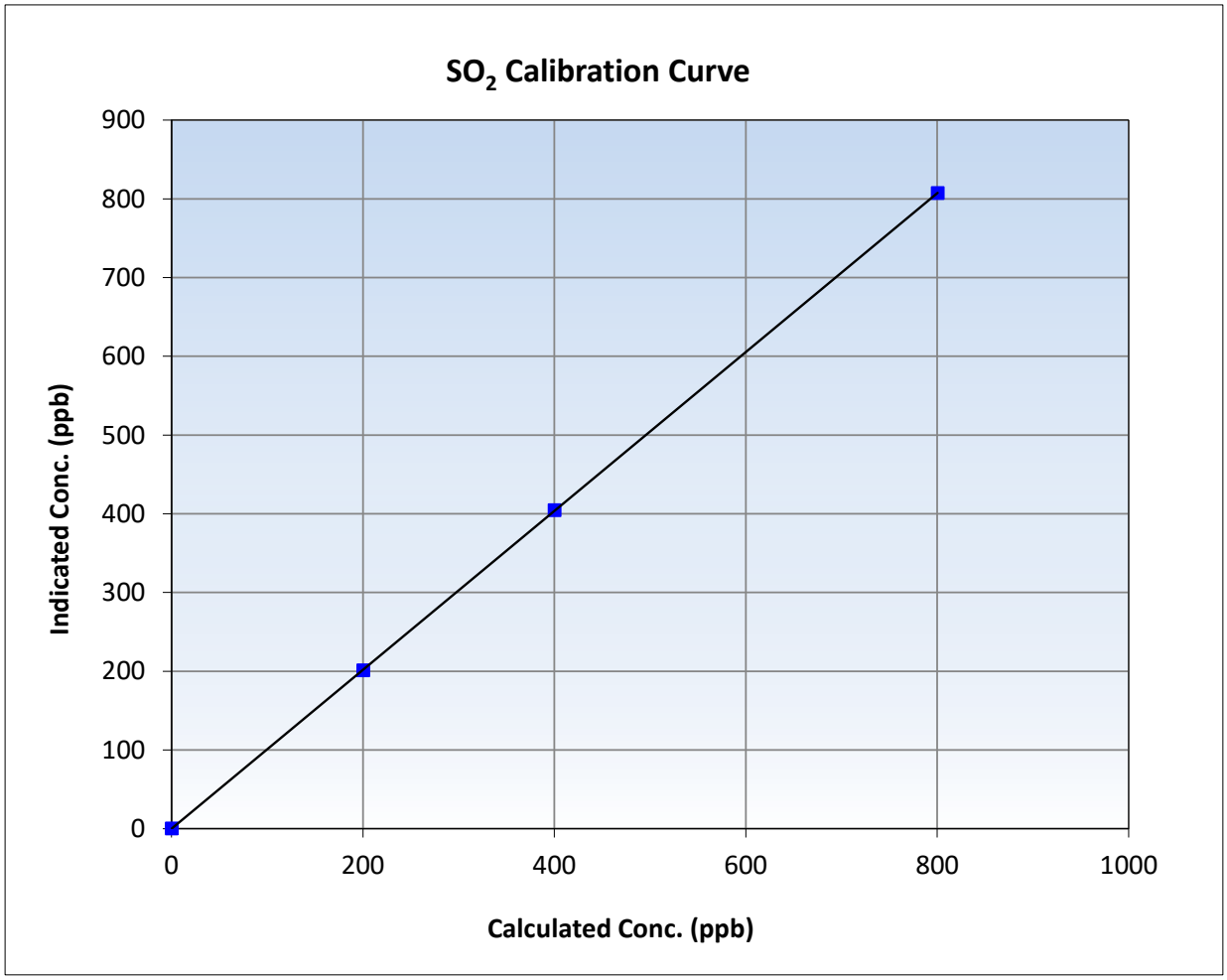
Station Information

Calibration Date:	July 29, 2025	Previous Calibration:	June 20, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	10:27	End Time (MST):	13:12
Analyzer make:	Thermo 43i	Analyzer serial #:	1160290014

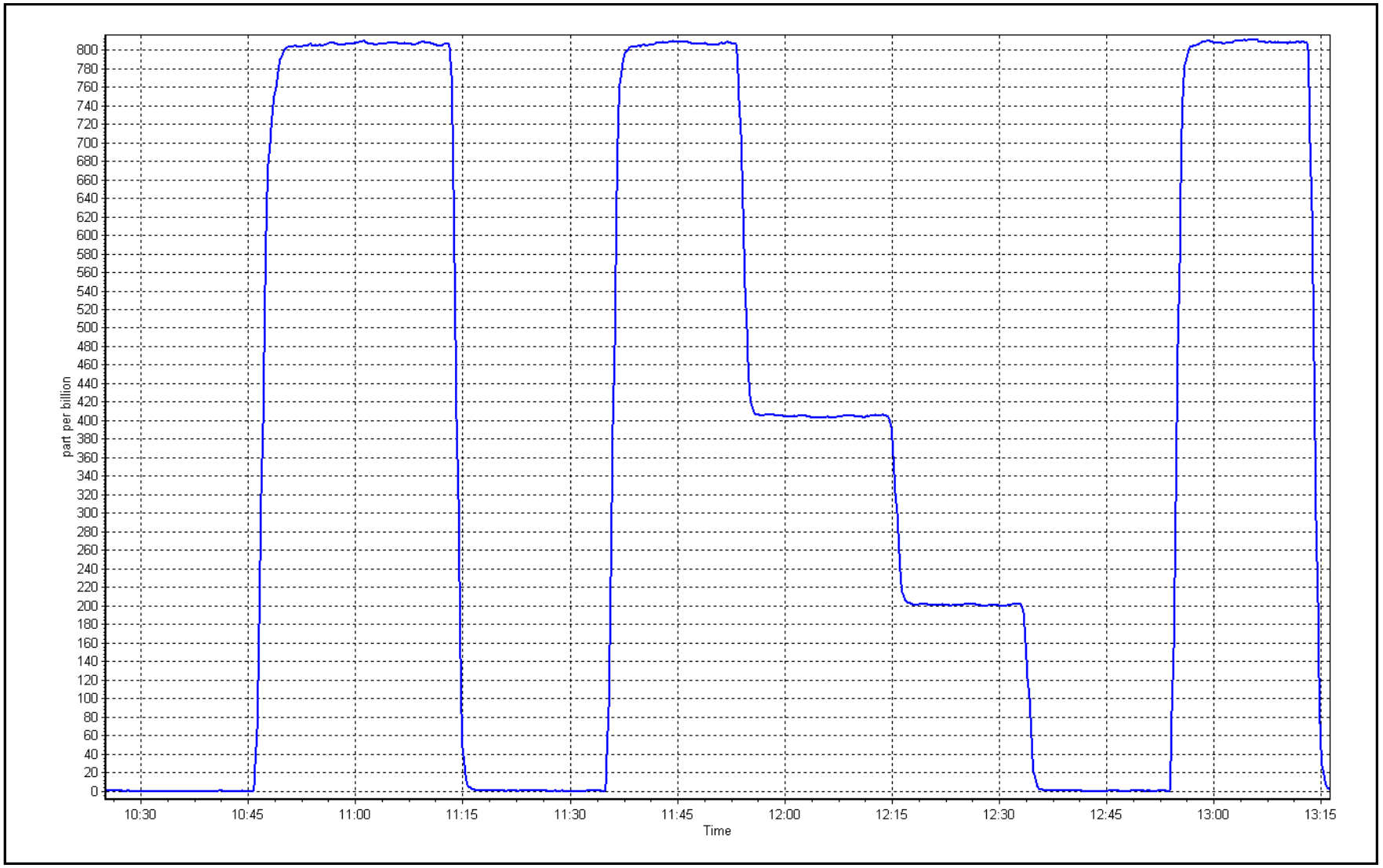
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
800.0	807.0	0.9914
400.0	404.2	0.9896
200.0	201.0	0.9950

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999997	*≥0.995*
Slope	1.008913	*0.90 - 1.10*
Intercept	-0.031926	*+/-30*



SO2 Calibration Plot Date: July 29, 2025 Location: Blackrod



Wood Buffalo Environmental Association

H_2S Calibration Report

Station Information

Station Name:	Blackrod	Station number:	AMS 31
Calibration Date:	July 16, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	10:16	End time (MST):	14:03
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.42	ppm	Cal Gas Exp Date:	March 19, 2027
Cal Gas Cylinder #:	DT0016926			
Removed Cal Gas Conc:	5.42	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	5762
ZAG Make/Model:	Teledyne API N701H		Serial Number:	72

Analyzer Information

Analyzer make:	Thermo 43iQTL		Analyzer serial #:	12228021056	
Converter make:	Global		Converter serial #:	2023-266	
Analyzer Range	0 - 100 ppb		Converter Temp:	325	degC

	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.001619	1.004049	Backgd or Offset:	2.62	2.62
Calibration intercept:	-0.020398	-0.080452	Coeff or Slope:	0.974	0.980

H_2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4926	73.8	80.0	80.1	0.996
As found Mid point	4963	36.9	40.0	40.2	0.990
As found Low point	4982	18.5	20.1	20.0	0.993
New cylinder response					

Baseline Corr As found:	80.3	Prev response:	80.11	*% change:	0.2%
Baseline Corr 2nd AF pt:	40.4	AF Slope:	1.003763	AF Intercept:	-0.120470
Baseline Corr 3rd AF pt:	20.2	AF Correlation:	0.999988	* = > +/-5% change initiates investigation	

H_2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4926	73.8	80.0	80.2	0.998
Mid point	4963	36.9	40.0	40.2	0.995
Low point	4982	18.5	20.1	20.0	1.003
As left zero	5000	0.0	0.0	0.2	----
As left span	4926	73.8	80.0	79.1	1.011
SO2 Scrubber Check	4920	79.6	796.1	0.1	----
Date of last scrubber change:				Ave Corr Factor	0.998
Date of last converter efficiency test:					

Notes: Sample inlet filter was changed after multipoint as founds. SO2 scrubber check done after calibrator zero and passed. Adjusted span only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

H_2S Calibration Summary

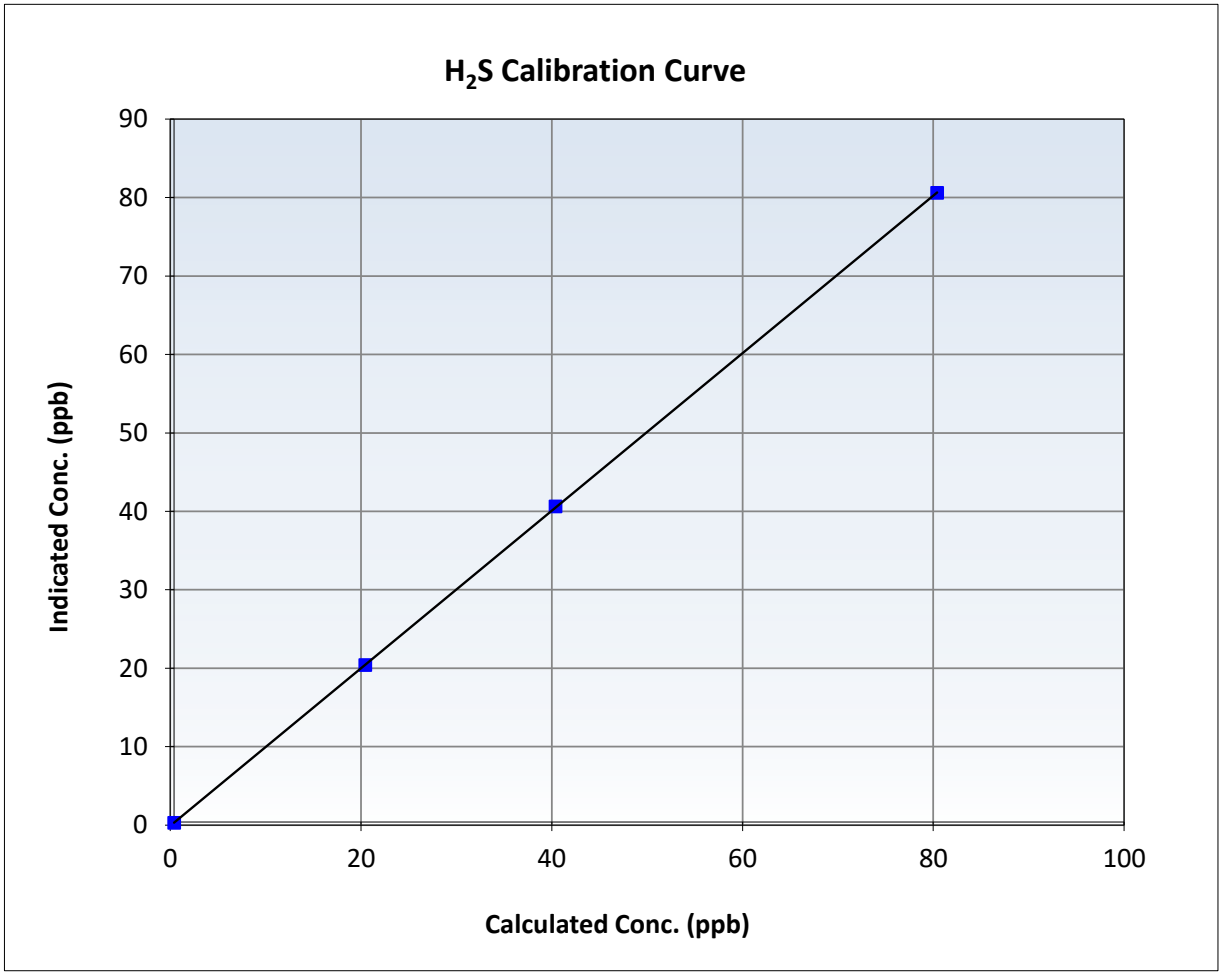
Station Information

Calibration Date:	July 16, 2025	Previous Calibration:	June 11, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	10:16	End Time (MST):	14:03
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12228021056

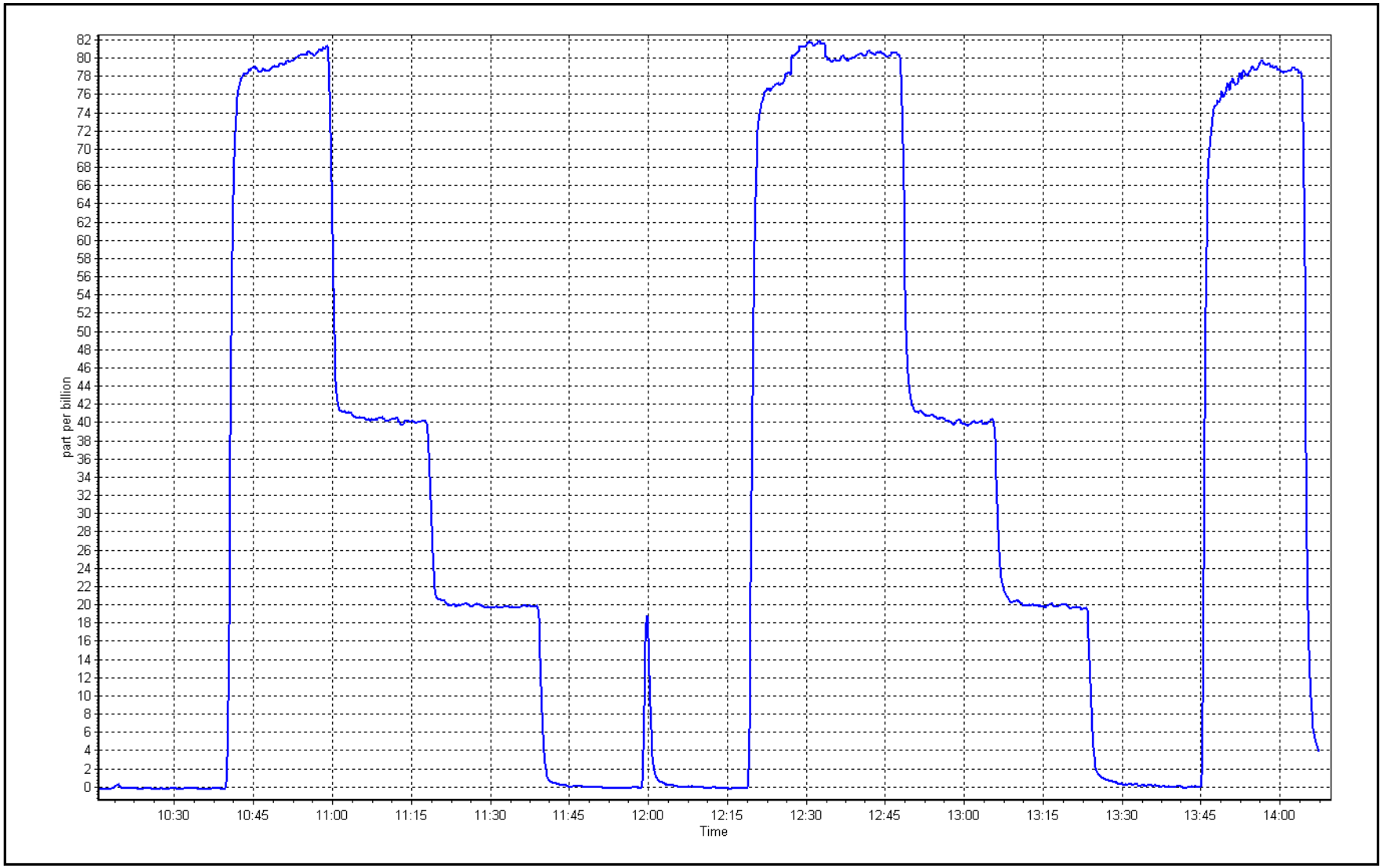
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
80.0	80.2	0.9975
40.0	40.2	0.9950
20.1	20.0	1.0026

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	1.004049	*0.90 - 1.10*
Intercept	-0.080452	*+/-3*



H_2S Calibration Plot Date: July 16, 2025 Location: Blackrod



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Blackrod
Station number:	AMS 31
Calibration Date:	July 15, 2025
Last Cal Date:	June 10, 2025
Start time (MST):	9:35
End time (MST):	13:37
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0035071	Cal Gas Expiry Date:	January 9, 2032
NOX Cal Gas Conc:	59.30 ppm	NO Cal Gas Conc:	59.10 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	59.30 ppm	Removed Gas NO Conc:	59.10 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	5762
ZAG make/model:	Teledyne API N701H	Serial Number:	72

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-1.3	0.2	-1.5	----	----
AF High point	4932	67.7	803.0	800.3	2.7	815.5	812.1	3.4	0.9831	0.9857
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 807.3 ppb	NO = 807.9 ppb
Baseline Corr 1st pt	NO_X = 816.8 ppb	NO = 811.9 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	*Percent Change	NO_X = 1.2%
As found	NO r^2:	*Percent Change	NO = 0.5%
As found	NO_2 r^2:	Nx Sl:	Nx Int:
		NO Sl:	NO Int:
		NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1426262592

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	Finish		Start	Finish
NO coeff or slope:	1.015	1.015	NO bkgnd or offset:	13.9	14.3
NOX coeff or slope:	0.993	0.993	NOX bkgnd or offset:	15.5	14.5
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	178.2	174.6

Calibration Statistics

	Start	Finish
NO_X Cal Slope:	1.006675	1.006453
NO_X Cal Offset:	-1.016585	2.286512
NO Cal Slope:	1.011769	1.008561
NO Cal Offset:	-1.757010	1.265522
NO_2 Cal Slope:	0.993747	0.990265
NO_2 Cal Offset:	0.261616	0.356789

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.2	0.0	-0.2	----	----
High point	4932	67.7	803.0	800.3	2.7	808.0	806.5	1.5	0.9938	0.9923
Mid point	4966	33.8	400.9	399.5	1.4	410.6	408.6	2.0	0.9763	0.9778
Low point	4983	16.9	200.4	199.8	0.7	204.1	201.5	2.6	0.9821	0.9914
As left zero	5000	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	----	----
As left span	4932	67.7	803.0	419.6	383.4	813.0	419.6	393.7	0.9877	1.0000
								Average Correction Factor	0.9841	0.9871

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.2	----	----
High GPT point	814.7	417.2	400.2	396.0	1.0106	98.9%
Mid GPT point	814.7	622.8	194.6	194.6	1.0000	100.0%
Low GPT point	814.7	718.7	98.7	97.8	1.0093	99.1%
				Average Correction Factor	1.0067	99.3%

Notes: Sample inlet filter was changed after as founds. Adjusted zero only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

NO_X Calibration Summary

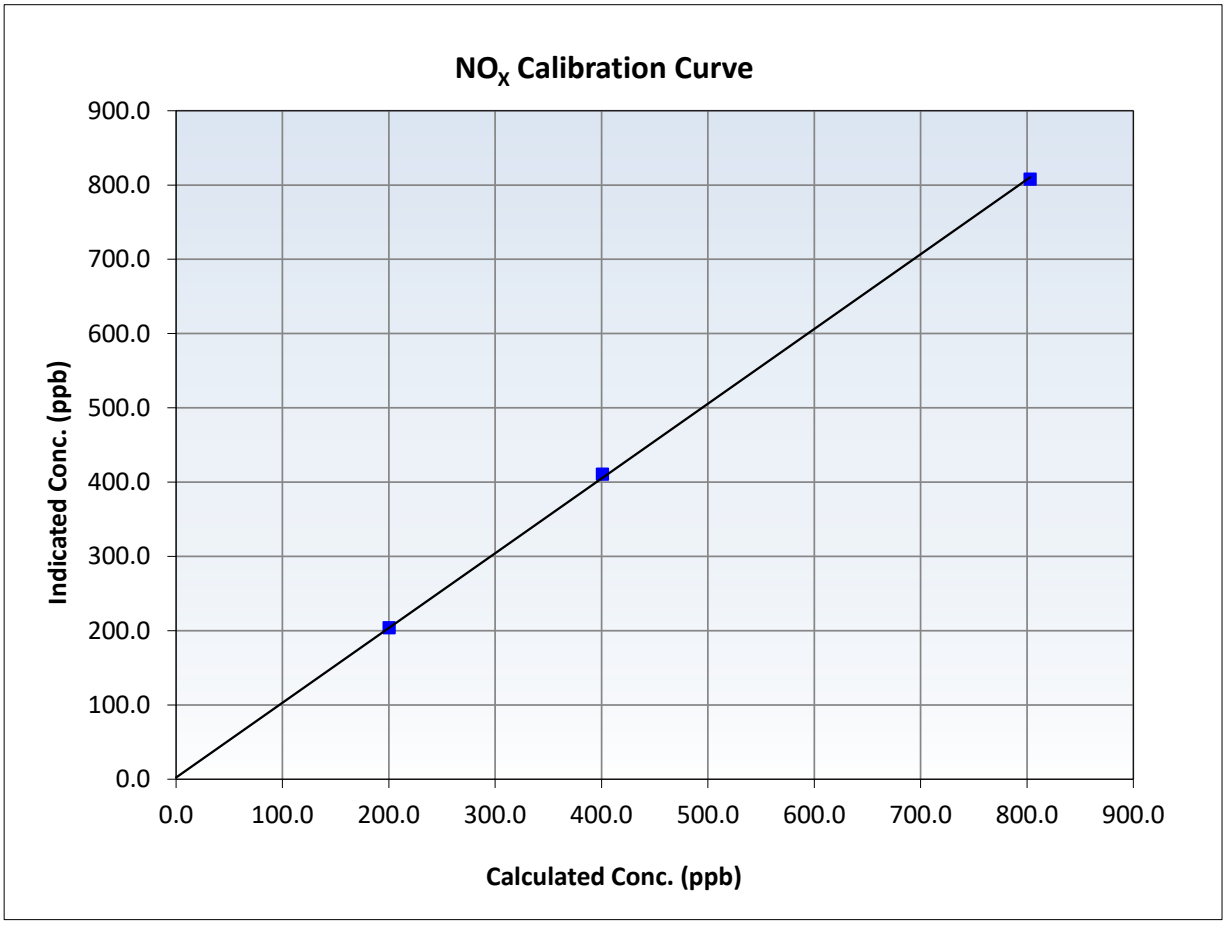
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 10, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	9:35	End Time (MST):	13:37
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262592

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
803.0	808.0	0.9938
400.9	410.6	0.9763
200.4	204.1	0.9821

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999900	*≥0.995*
Slope	1.006453	*0.90 - 1.10*
Intercept	2.286512	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

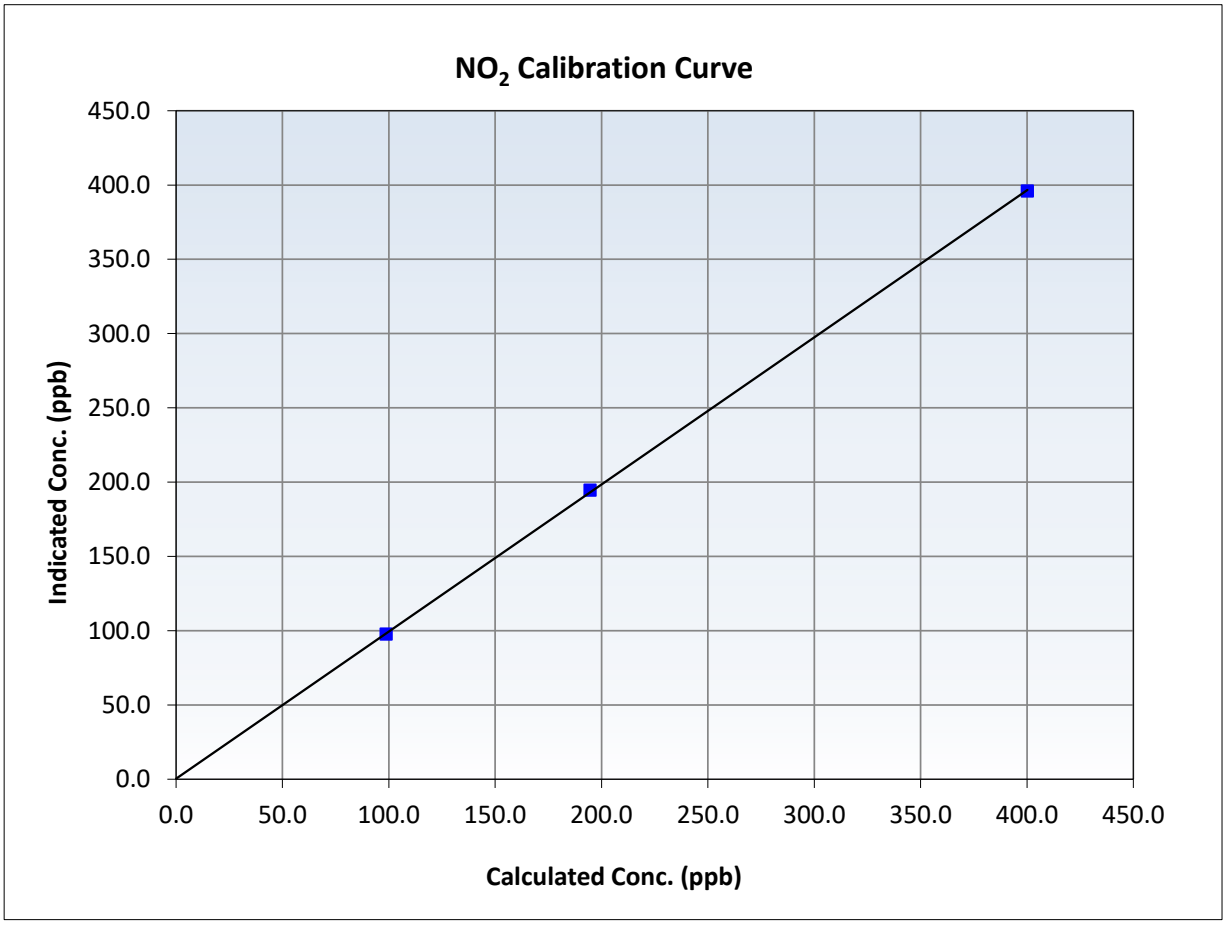
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 10, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	9:35	End Time (MST):	13:37
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262592

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
400.2	396.0	1.0106
194.6	194.6	1.0000
98.7	97.8	1.0093

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999963	*≥0.995*
Slope	0.990265	*0.90 - 1.10*
Intercept	0.356789	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

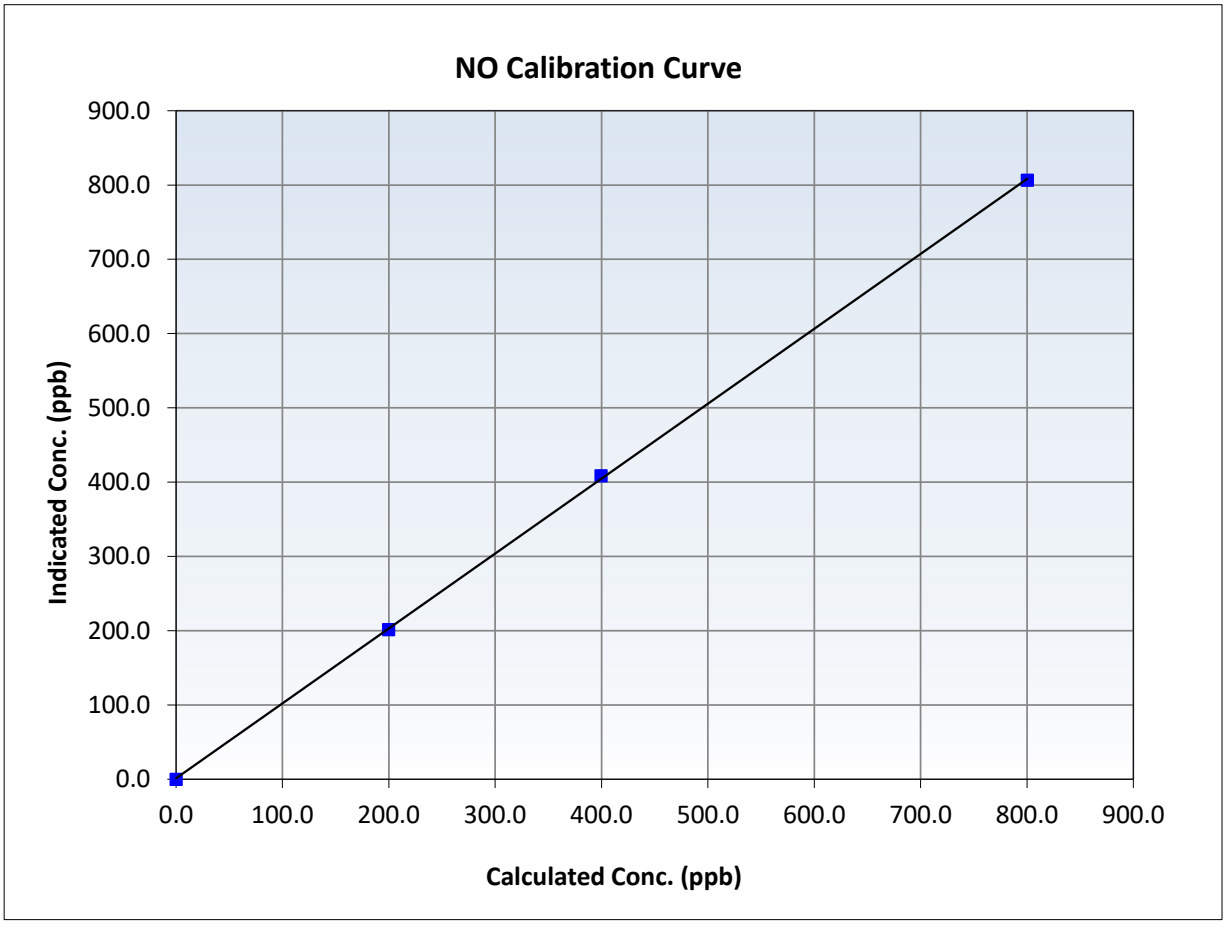
Station Information

Calibration Date:	July 15, 2025	Previous Calibration:	June 10, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	9:35	End Time (MST):	13:37
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262592

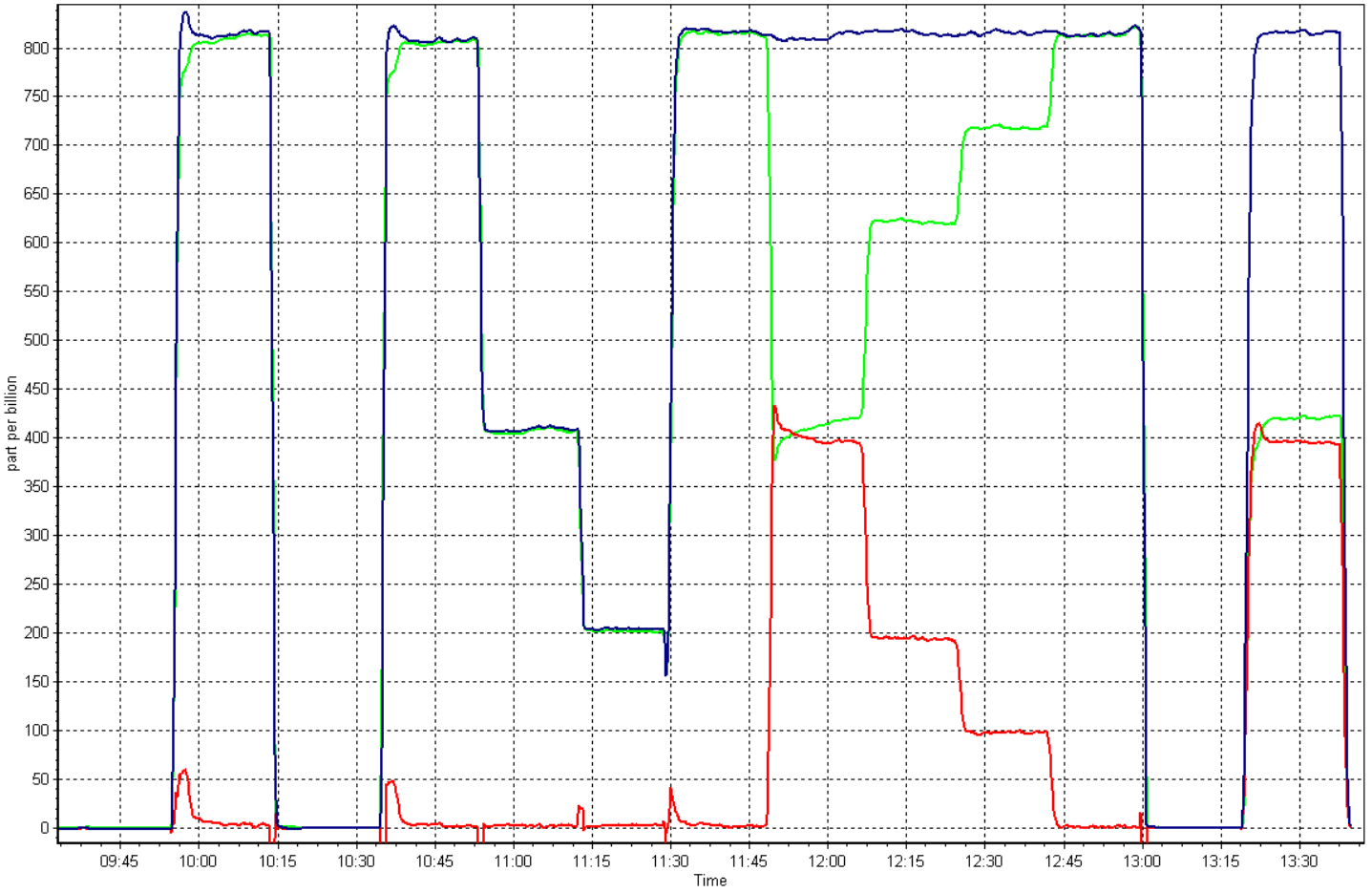
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
800.3	806.5	0.9923
399.5	408.6	0.9778
199.8	201.5	0.9914

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999927	*≥0.995*
Slope	1.008561	*0.90 - 1.10*
Intercept	1.265522	*+/-20*



NO_X Calibration Plot Date: July 15, 2025 Location: Blackrod



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS33
MONDAY CREEK
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Monday Creek	Station number:	AMS 33
Calibration Date:	July 10, 2025	Last Cal Date:	June 26, 2025
Start time (MST):	9:54	End time (MST):	12:24
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	50.62	ppm	Cal Gas Exp Date:	March 10, 2031
Cal Gas Cylinder #:	EB0008522			
Removed Cal Gas Conc:	50.62	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Model:	Teledyne T700		Serial Number:	3253
Zero Air Gen Model:	Teledyne T701H		Serial Number:	832

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	1152430005	
Analyzer Range:	0- 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.003239	0.999584	Backgd or Offset:	30.3	30.3
Calibration intercept:	-0.137941	0.342191	Coeff or Slope:	0.970	0.970

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.0	----
As found High point	4921	79.1	800.8	800.0	1.001
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	800.0	Previous response	803.2	*% change	-0.4%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4921	79.1	800.8	800.4	1.000
Mid point	4961	39.5	399.9	401.0	0.997
Low point	4980	19.8	200.5	200.4	1.000
As left zero	5000	0.0	0.0	0.2	----
As left span	4921	79.1	800.8	801.0	1.000
				Average Correction Factor:	0.999

Notes: Sample inlet filter was changed after as founds. No adjustment made.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

SO_2 Calibration Summary

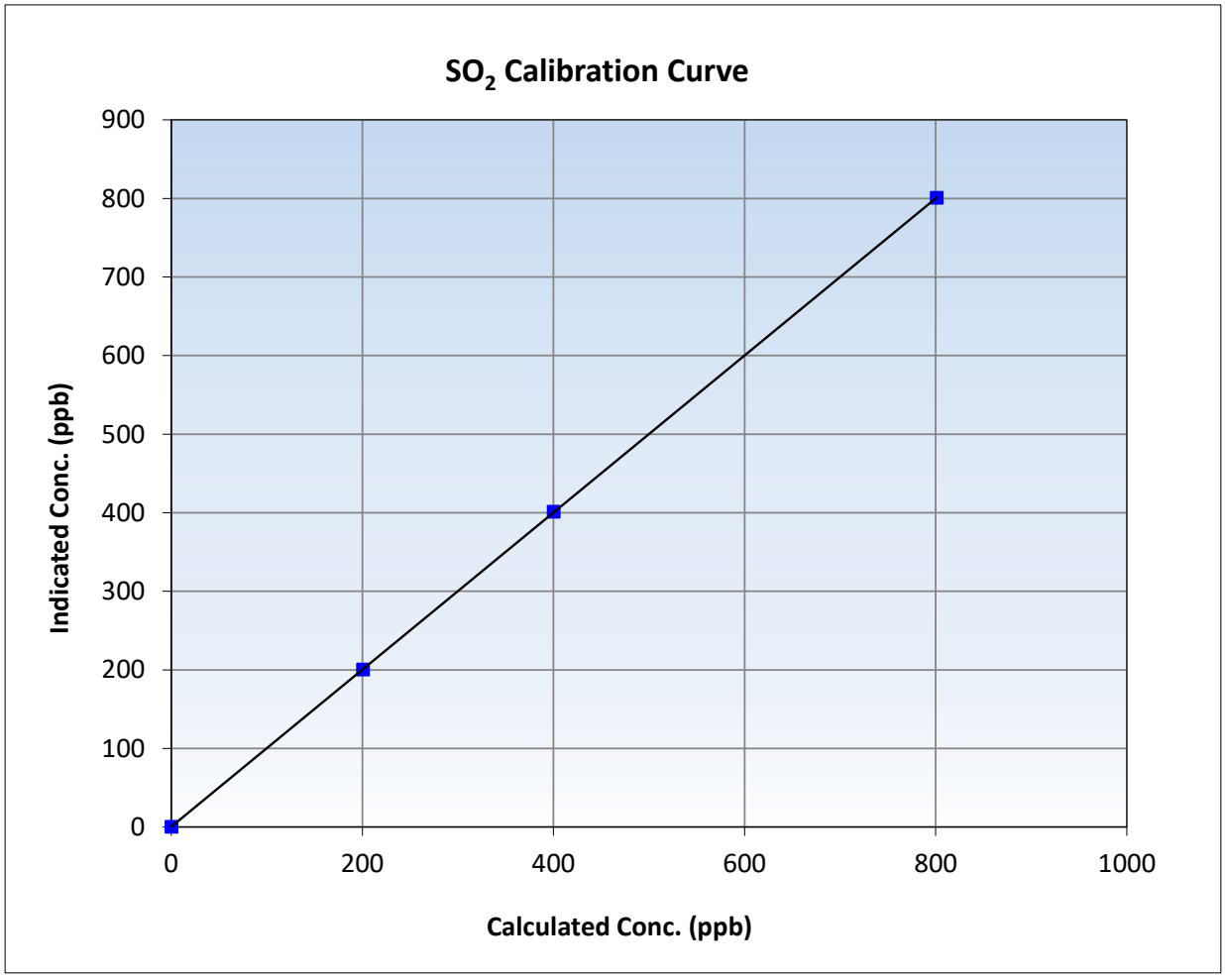
Station Information

Calibration Date:	July 10, 2025	Previous Calibration:	June 26, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	9:54	End Time (MST):	12:24
Analyzer make:	Thermo 43i	Analyzer serial #:	1152430005

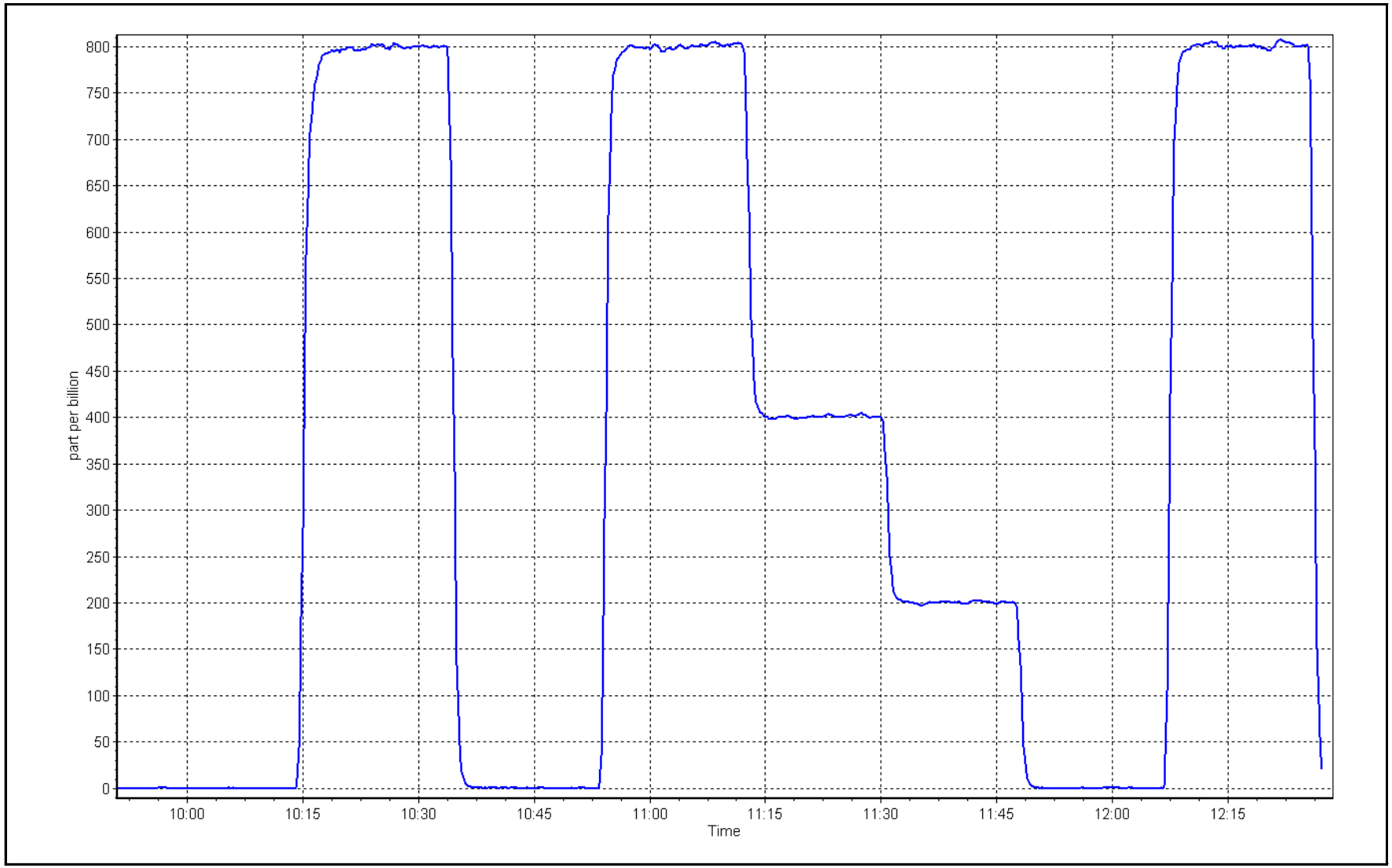
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.1	----
800.8	800.4	1.0005
399.9	401.0	0.9972
200.5	200.4	1.0003

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999996	*≥0.995*
Slope	0.999584	*0.90 - 1.10*
Intercept	0.342191	*+/-30*



SO2 Calibration Plot Date: July 10, 2025 Location: Monday Creek



Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name:	Monday Creek	Station number:	AMS 33
Calibration Date:	July 3, 2025	Last Cal Date:	June 24, 2025
Start time (MST):	10:44	End time (MST):	14:15
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.05	ppm	Cal Gas Exp Date:	November 15, 2026
Cal Gas Cylinder #:	DT0014831			
Removed Cal Gas Conc:	5.05	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	3253
ZAG Make/Model:	Teledyne T701H		Serial Number:	832

Analyzer Information

Analyzer make:	Thermo 43iQTL		Analyzer serial #:	12333331547
Converter make:	Global 150		Converter serial #:	2022-196
Analyzer Range	0 - 100 ppb		Converter Temp:	325 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	1.003426	1.006141	Backgd or Offset:	1.6	1.3
Calibration intercept:	-0.141607	0.038389	Coeff or Slope:	1.062	1.062

H2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4921	79.2	80.0	79.0	1.009
As found Mid point	4960	39.6	40.0	40.0	0.993
As found Low point	4980	19.8	20.0	20.1	0.980
New cylinder response					

Baseline Corr As found:	79.3	Prev response:	80.12	*% change:	-1.0%
Baseline Corr 2nd AF pt:	40.3	AF Slope:	0.989853	AF Intercept:	0.058396
Baseline Corr 3rd AF pt:	20.4	AF Correlation:	0.999893	* = > +/-5% change initiates investigation	

H2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4921	79.2	80.0	80.5	0.994
Mid point	4960	39.6	40.0	40.3	0.993
Low point	4980	19.8	20.0	20.2	0.990
As left zero	5000	0.0	0.0	0.0	----
As left span	4921	79.2	80.0	80.0	1.000
SO2 Scrubber Check	4921	79.1	791.0	0.0	----

Date of last scrubber change:	11-Apr-24	Ave Corr Factor	0.992
Date of last converter efficiency test:			

Notes: Sample inlet filter changed after multipoint as founds. SO2 scrubber check done after calibrator zero and passed. Adjusted zero only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

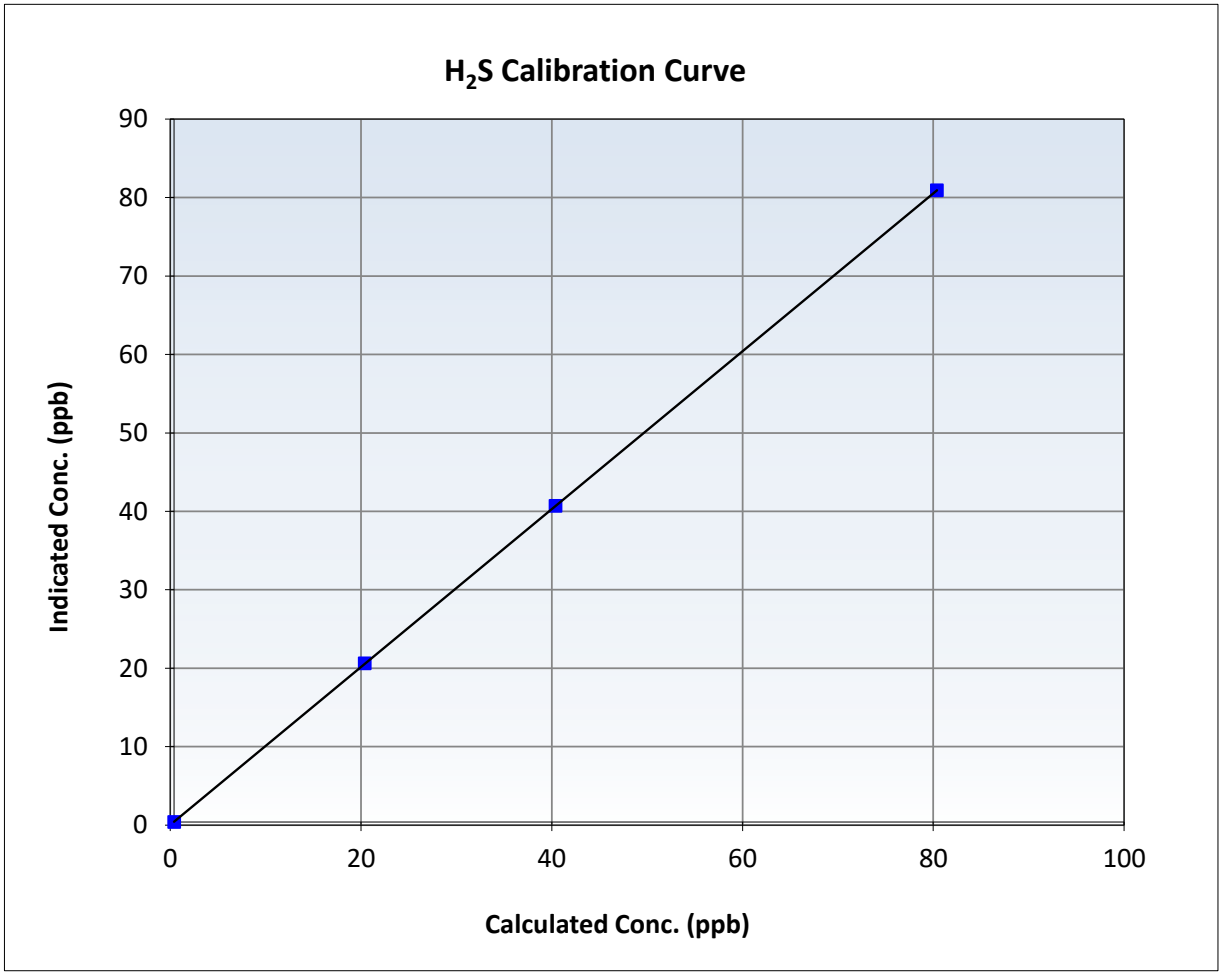
H2S Calibration Summary

Station Information

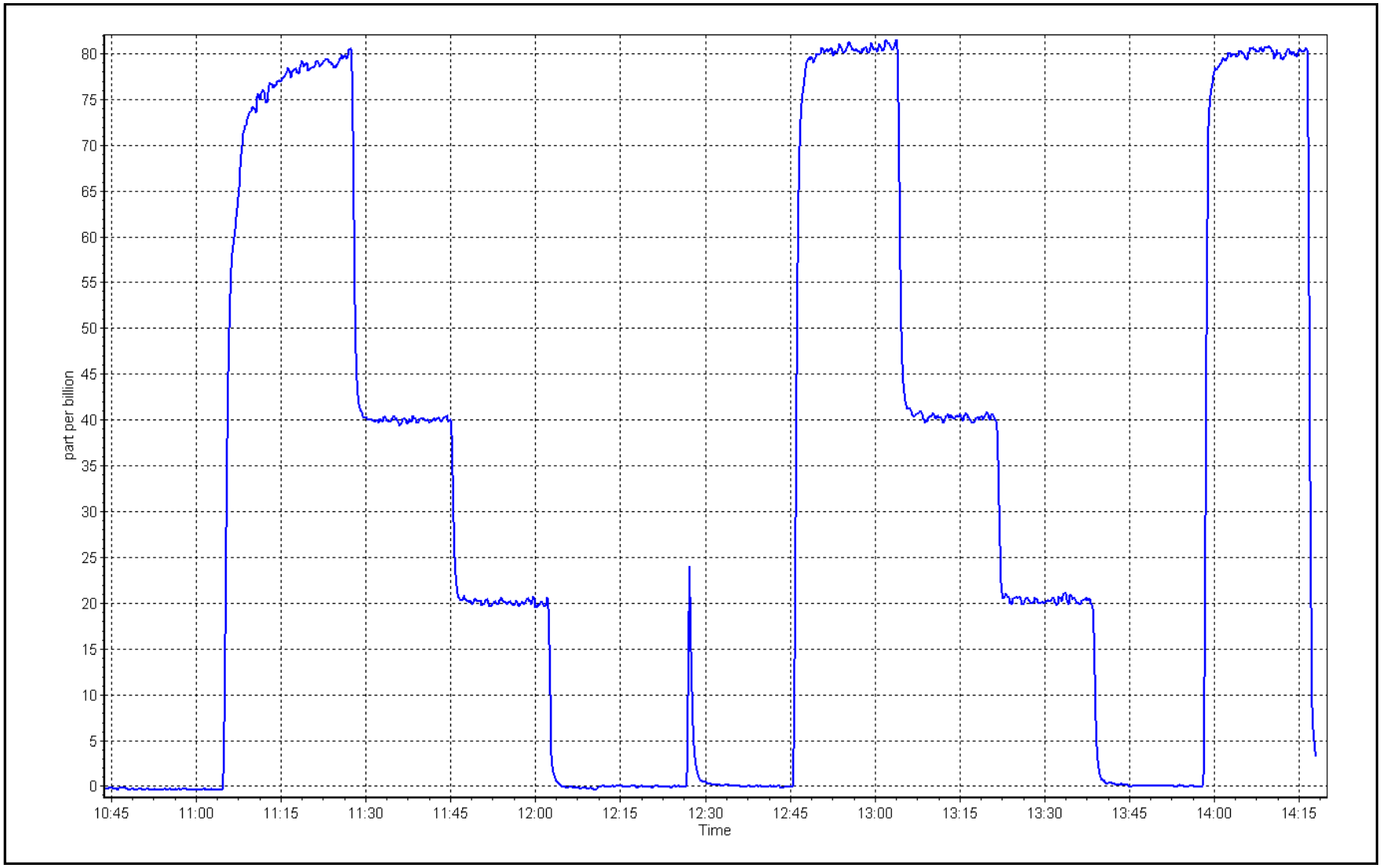
Calibration Date:	July 3, 2025	Previous Calibration:	June 24, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:44	End Time (MST):	14:15
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12333331547

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.0	----	Correlation Coefficient	0.999999	*≥0.995*
80.0	80.5	0.9936	Slope	1.006141	*0.90 - 1.10*
40.0	40.3	0.9925			
20.0	20.2	0.9900	Intercept	0.038389	*+/-3*



H2S Calibration Plot Date: July 3, 2025 Location: Monday Creek



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Monday Creek
Station number:	AMS 33
Calibration Date:	July 8, 2025
Last Cal Date:	June 17, 2025
Start time (MST):	10:25
End time (MST):	14:25
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	CC755290	Cal Gas Expiry Date:	March 11, 2031
NOX Cal Gas Conc:	48.90 ppm	NO Cal Gas Conc:	48.70 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	48.90 ppm	Removed Gas NO Conc:	48.70 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T700	Serial Number:	3253
ZAG make/model:	Teledyne API T701H	Serial Number:	832

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	----	----
AF High point	4918	82.1	802.9	799.6	3.3	820.2	812.2	7.9	0.9788	0.9844
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 799.6 ppb	NO = 794.8 ppb
Baseline Corr 1st pt	NO_X = 820.3 ppb	NO = 812.3 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

As Found Statistics

As found	NO_X r^2:	*Percent Change	NO_X = 2.5%
As found	NO r^2:	*Percent Change	NO = 2.2%
As found	NO_2 r^2:	Nx Sl:	Nx Int:
		NO Sl:	NO Int:
		NO2 Sl:	NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ

Serial Number: 12426335704

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	1.059	1.045	NO bkgnd or offset:	1.5	1.4
NOX coeff or slope:	1.002	0.999	NOX bkgnd or offset:	1.6	1.5
NO2 coeff or slope:	0.990	0.990	Reaction cell Press:	144.1	140.1

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	0.994647	0.999485
NO_X Cal Offset:	1.010251	0.710623
NO Cal Slope:	0.994201	1.000817
NO Cal Offset:	-0.229498	-0.069509
NO_2 Cal Slope:	0.986412	0.989518
NO_2 Cal Offset:	1.352716	1.303349

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	----	----
High point	4918	82.1	802.9	799.6	3.3	803.0	800.3	2.6	0.9999	0.9992
Mid point	4959	41.1	401.9	400.3	1.6	402.4	400.4	2.0	0.9989	0.9998
Low point	4979	20.5	200.5	199.7	0.8	202.1	199.8	2.3	0.9921	0.9994
As left zero	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	----	----
As left span	4918	82.1	802.9	402.1	400.8	798.4	402.1	396.4	1.0057	1.0000
							Average Correction Factor		0.9970	0.9995

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.0	----	----
High GPT point	799.4	398.5	404.2	400.5	1.0092	99.1%
Mid GPT point	799.4	604.0	198.7	198.9	0.9989	100.1%
Low GPT point	799.4	702.9	99.8	101.1	0.9870	101.3%
				Average Correction Factor	0.9984	100.2%

Notes: Sample inlet filter was changed after as founds. Adjusted span only.

Calibration Performed By: Jan Castro

Wood Buffalo Environmental Association

NO_X Calibration Summary

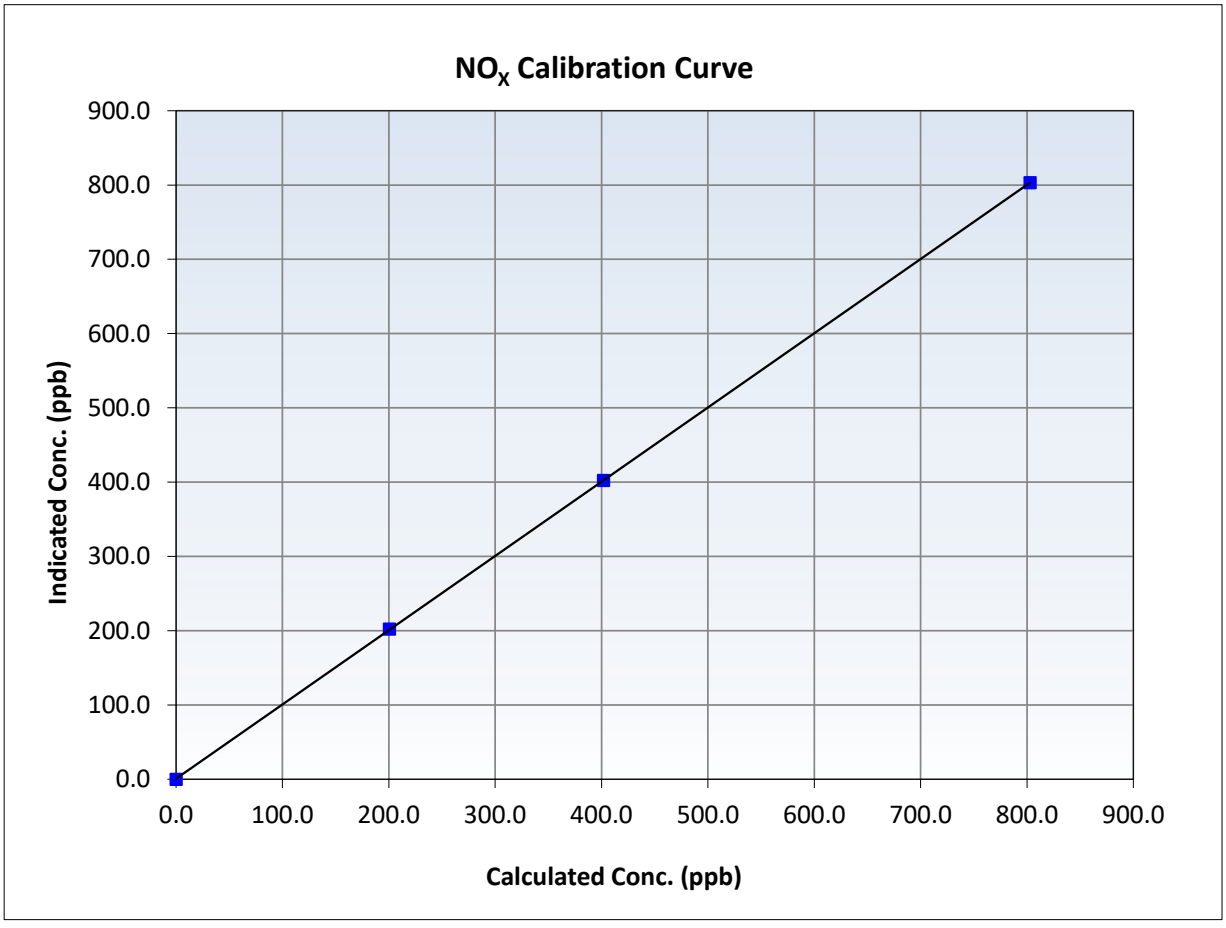
Station Information

Calibration Date:	July 8, 2025	Previous Calibration:	June 17, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:25	End Time (MST):	14:25
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12426335704

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
802.9	803.0	0.9999
401.9	402.4	0.9989
200.5	202.1	0.9921

Statistical Evaluation		Limits
Correlation Coefficient	0.999996	≥0.995
Slope	0.999485	0.90 - 1.10
Intercept	0.710623	+/-20



Wood Buffalo Environmental Association

NO_2 Calibration Summary

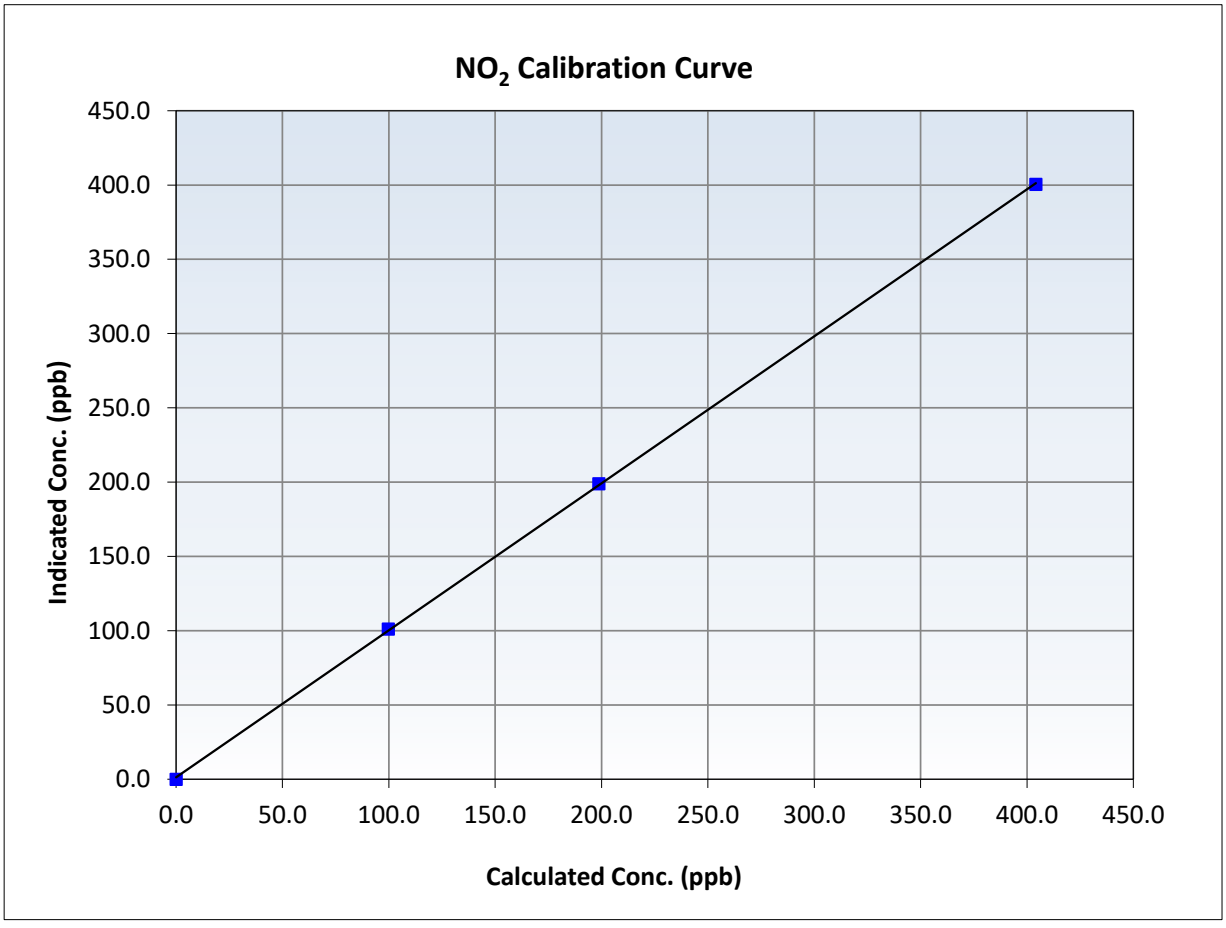
Station Information

Calibration Date:	July 8, 2025	Previous Calibration:	June 17, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:25	End Time (MST):	14:25
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12426335704

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
404.2	400.5	1.0092
198.7	198.9	0.9989
99.8	101.1	0.9870

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999950	*≥0.995*
Slope	0.989518	*0.90 - 1.10*
Intercept	1.303349	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

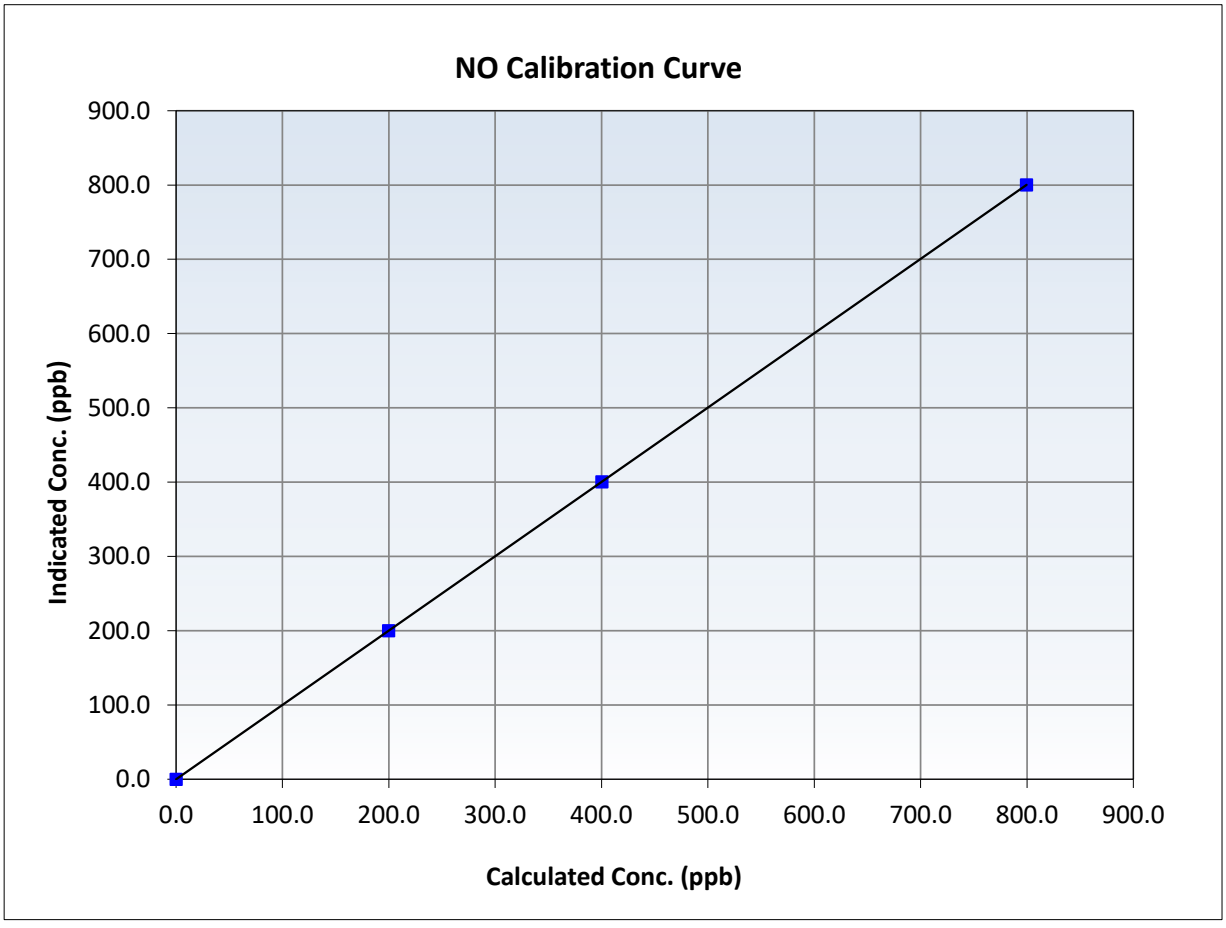
Station Information

Calibration Date:	July 8, 2025	Previous Calibration:	June 17, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:25	End Time (MST):	14:25
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12426335704

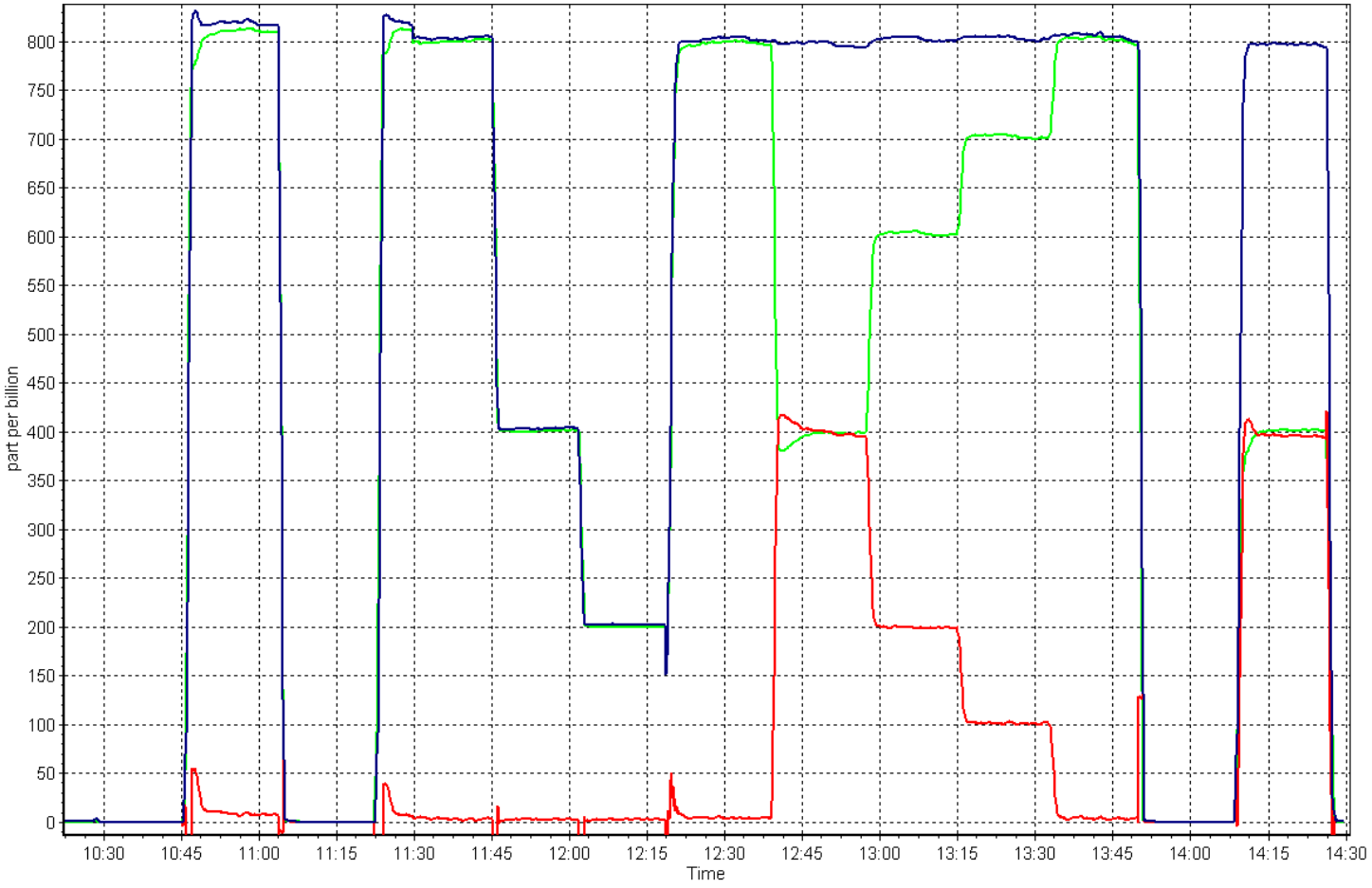
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
799.6	800.3	0.9992
400.3	400.4	0.9998
199.7	199.8	0.9994

Statistical Evaluation		*Limits*
Correlation Coefficient	1.000000	*≥0.995*
Slope	1.000817	*0.90 - 1.10*
Intercept	-0.069509	*+/-20*



NO_X Calibration Plot Date: July 8, 2025 Location: Monday Creek



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS505
SAWBONES BAY
JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Sawbones Bay	Station number:	AMS 505
Calibration Date:	July 24, 2025	Last Cal Date:	June 4, 2025
Start time (MST):	8:32	End time (MST):	11:20
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	51.40	ppm	Cal Gas Exp Date:	February 15, 2029
Cal Gas Cylinder #:	EY0000672			
Removed Cal Gas Conc:	51.40	ppm	Rem Gas Exp Date:	February 15, 2029
Removed Gas Cyl #:	EY0000672		Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	5112
Zero Air Gen Model:	Teledyne API T701		Serial Number:	690

Analyzer Information

Analyzer make:	Thermo 43i		Serial Number:	710321323	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	1.011414	0.995221	Backgd or Offset:	22.0	20.7
Calibration intercept:	-1.034356	-0.691279	Coeff or Slope:	1.111	1.111

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	-1.7	----
As found High point	4922	77.8	799.8	792.3	1.007
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	794.0	Previous response	807.9	*% change	-1.8%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4922	77.8	799.8	795.3	1.006
Mid point	4961	38.9	399.9	397.9	1.005
Low point	4981	19.5	200.4	197.6	1.014
As left zero	5000	0.0	0.0	-0.2	----
As left span	4922	77.8	799.8	795.4	1.006
				Average Correction Factor:	1.008

Notes: Changed inlet filter after as founds. Adjusted zero only.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

SO_2 Calibration Summary

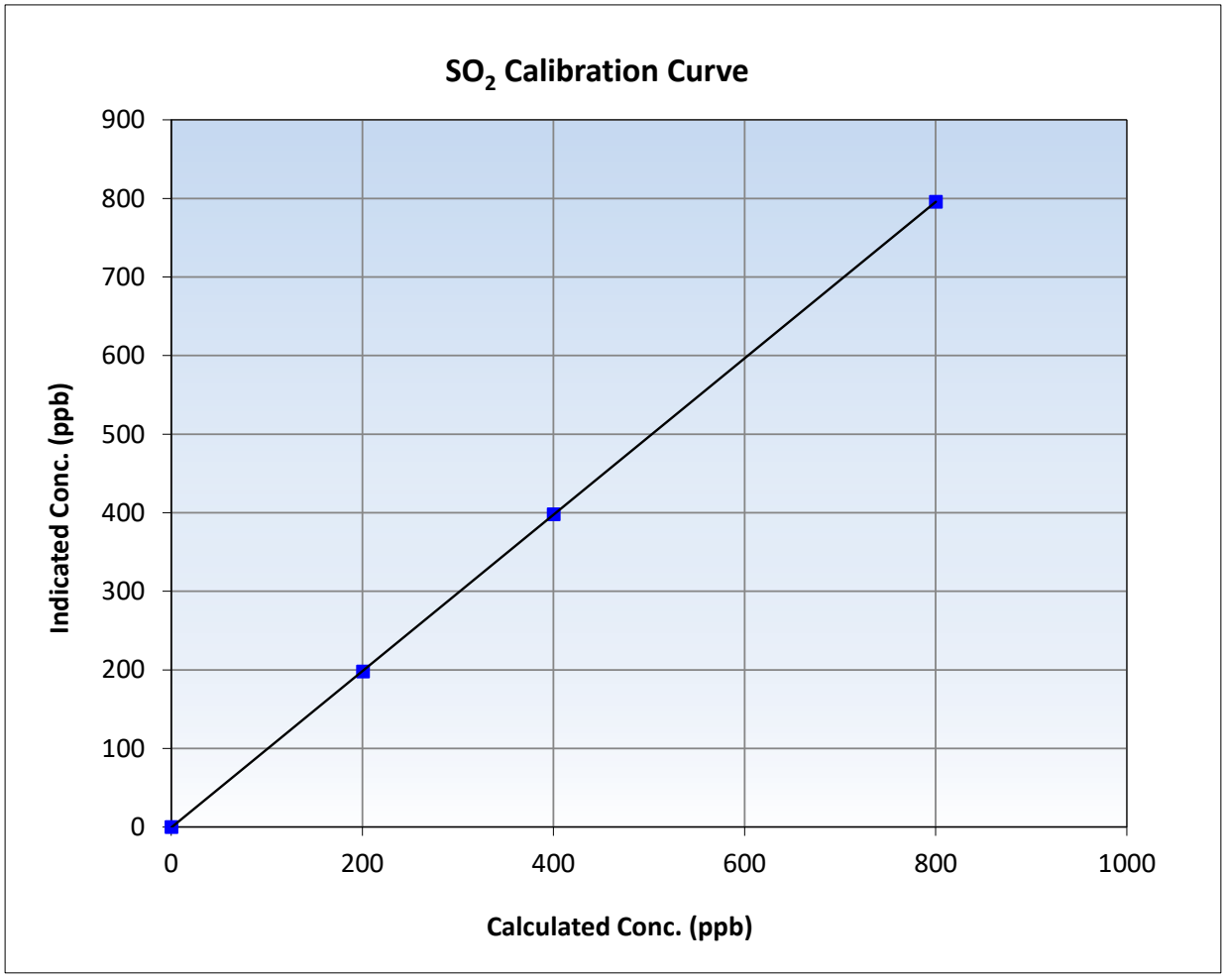
Station Information

Calibration Date:	July 24, 2025	Previous Calibration:	June 4, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:32	End Time (MST):	11:20
Analyzer make:	Thermo 43i	Analyzer serial #:	710321323

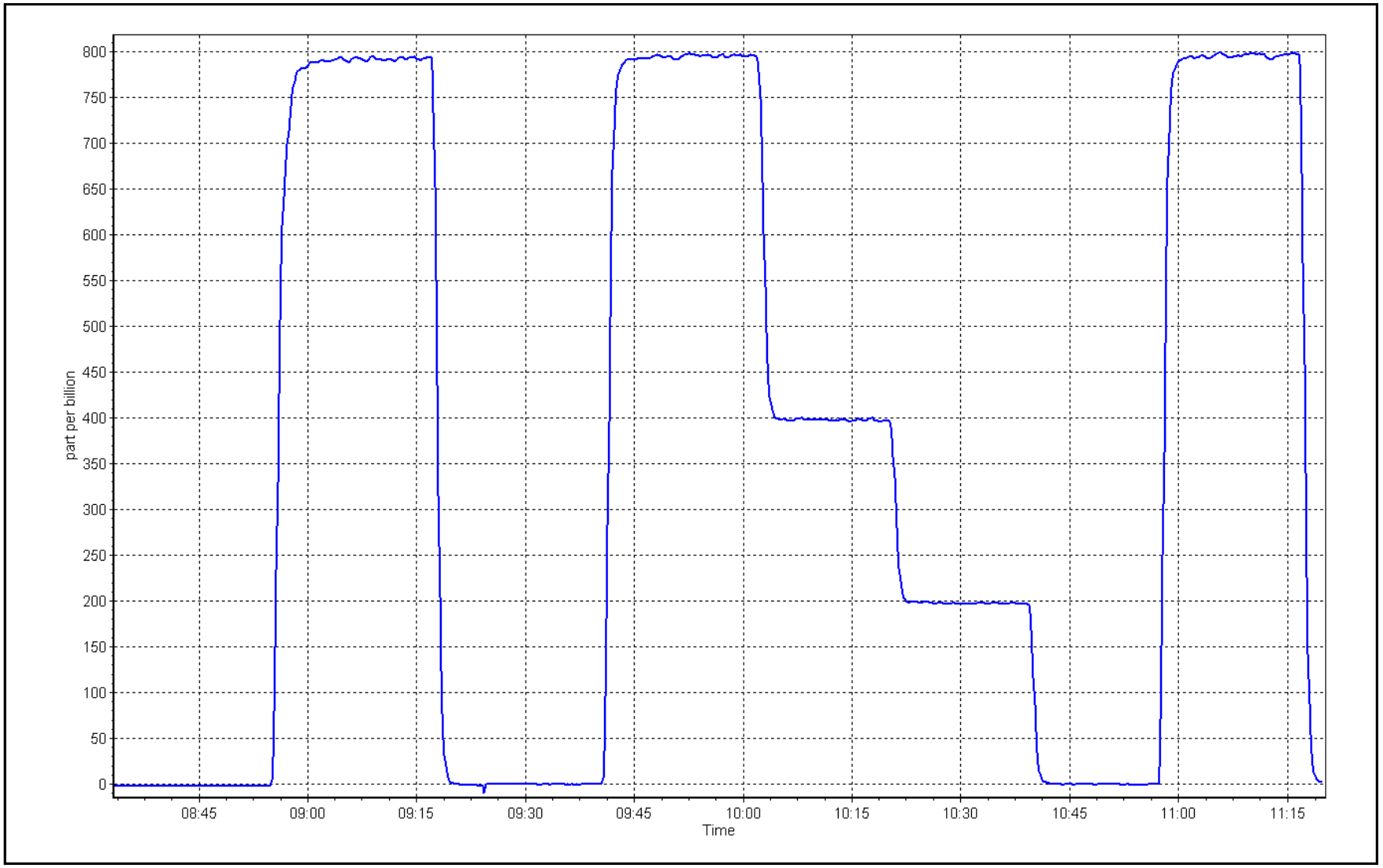
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
799.8	795.3	1.0057
399.9	397.9	1.0050
200.4	197.6	1.0144

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999994	*≥0.995*
Slope	0.995221	*0.90 - 1.10*
Intercept	-0.691279	*+/-30*



SO2 Calibration Plot Date: July 24, 2025 Location: Sawbones Bay



Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name:	Sawbones Bay	Station number:	AMS 505
Calibration Date:	July 23, 2025	Last Cal Date:	June 11, 2025
Start time (MST):	8:22	End time (MST):	12:24
Reason:	Routine		

Calibration Standards

Cal Gas Concentration:	5.26	ppm	Cal Gas Exp Date:	March 19, 2027
Cal Gas Cylinder #:	DT0034141			
Removed Cal Gas Conc:	5.26	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	NA		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T750		Serial Number:	282
ZAG Make/Model:	Teledyne API T751H		Serial Number:	321

Analyzer Information

Analyzer make:	Thermo 43iQTL		Analyzer serial #:	12113311965
Converter make:	Global 150		Converter serial #:	2022-224
Analyzer Range	0 - 100 ppb		Converter Temp:	325 degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	0.998742	1.003888	Backgd or Offset:	0.920	0.920
Calibration intercept:	0.040000	0.060000	Coeff or Slope:	1.105	1.105

H2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.0	0.0	----
As found High point	4924	76.0	80.0	80.8	0.990
As found Mid point	4962	38.0	40.0	40.0	0.999
As found Low point	4981	19.0	20.0	19.9	1.004
New cylinder response					

Baseline Corr As found:	80.8	Prev response:	79.89	*% change:	1.1%
Baseline Corr 2nd AF pt:	40.0	AF Slope:	1.011321	AF Intercept:	-0.200000
Baseline Corr 3rd AF pt:	19.9	AF Correlation:	0.999965	* = > +/-5% change initiates investigation	

H2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4924	76.0	80.0	80.4	0.994
Mid point	4962	38.0	40.0	40.0	0.999
Low point	4981	19.0	20.0	20.2	0.990
As left zero	5000	0.0	0.0	0.3	----
As left span	4924	76.0	80.0	79.4	1.007
SO2 Scrubber Check	4922	77.8	778.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	0.994
Date of last converter efficiency test:					

Notes: Changed inlet filter after as founds. Scrubber test was done after calibrator zero. No adjustment made.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

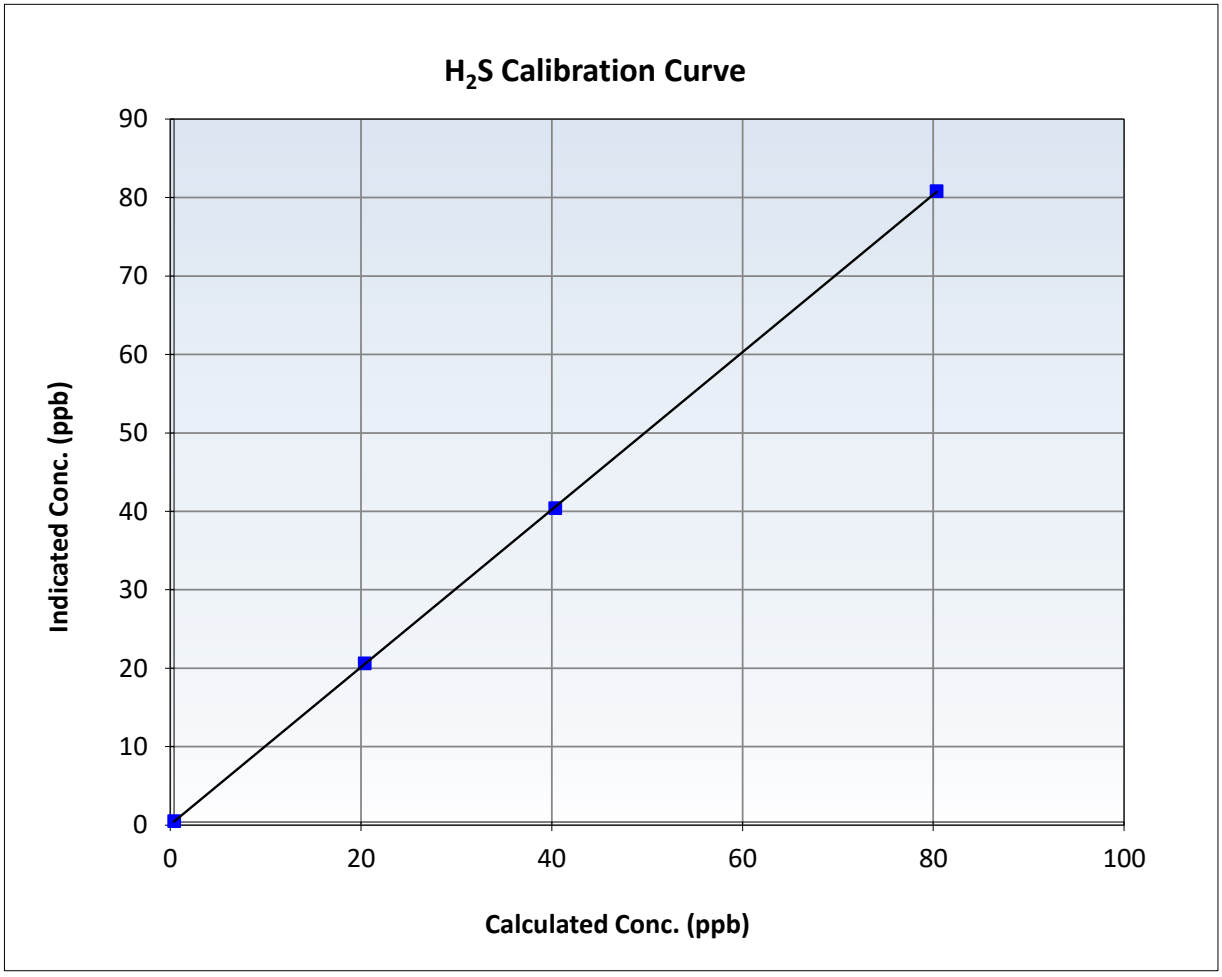
H2S Calibration Summary

Station Information

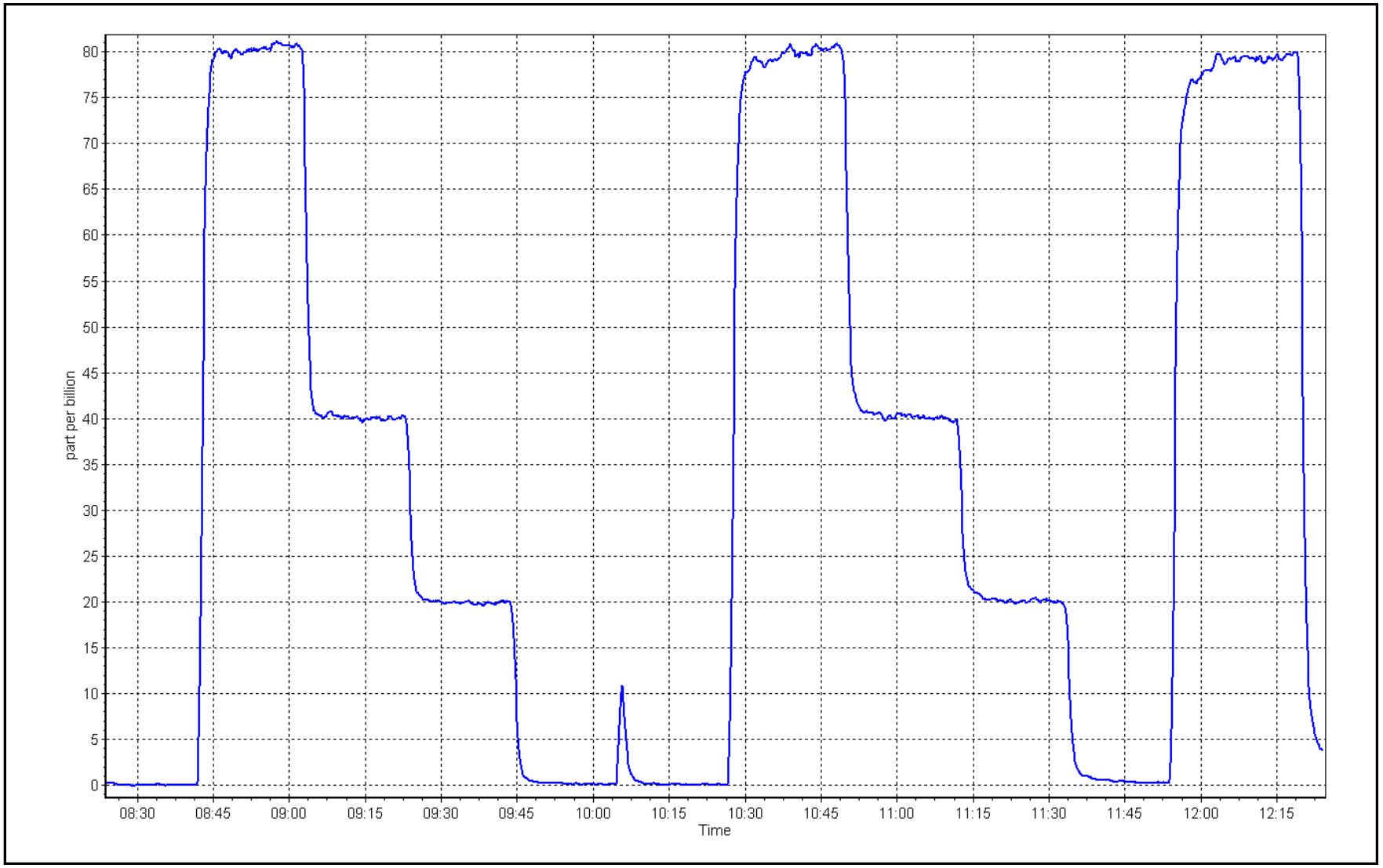
Calibration Date:	July 23, 2025	Previous Calibration:	June 11, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:22	End Time (MST):	12:24
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12113311965

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.1	----	Correlation Coefficient	0.999986	*≥0.995*
80.0	80.4	0.9944	Slope	1.003888	*0.90 - 1.10*
40.0	40.0	0.9994			
20.0	20.2	0.9895	Intercept	0.060000	*+/-3*



H2S Calibration Plot Date: July 23, 2025 Location: Sawbones Bay



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Sawbones Bay
Station number:	AMS 505
Calibration Date:	July 3, 2025
Last Cal Date:	June 12, 2025
Start time (MST):	8:15
End time (MST):	12:16
Reason:	Routine

Calibration Standards

NO Gas Cylinder #:	DT0009786	Cal Gas Expiry Date:	January 5, 2032
NOX Cal Gas Conc:	60.10 ppm	NO Cal Gas Conc:	60.00 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	60.10 ppm	Removed Gas NO Conc:	60.00 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	API T700	Serial Number:	5112
ZAG make/model:	API T701H	Serial Number:	690

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero	5000	0.0	0.0	0.0	0.0	-0.5	-0.5	0.0	----	----
AF High point	4933	66.7	801.8	800.4	1.3	801.0	797.7	3.3	1.0004	1.0028
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = 805.1 ppb	NO = 802.7 ppb
Baseline Corr 1st pt	NO_X = 801.5 ppb	NO = 798.2 ppb
Baseline Corr 2nd pt	NO_X = NA ppb	NO = NA ppb
Baseline Corr 3rd pt	NO_X = NA ppb	NO = NA ppb

* = > +/-5% change initiates investigation

*Percent Change NO_X = -0.5%

*Percent Change NO = -0.6%

As Found Statistics

As found NO_X r^2: Nx Sl: Nx Int:

As found NO r^2: NO Sl: NO Int:

As found NO_2 r^2: NO2 Sl: NO_2 Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: API T200 Serial Number: 4259

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	*Finish*		*Start*	*Finish*
NO coeff or slope:	0.940	0.940	NO bkgnd or offset:	0.8	0.8
NOX coeff or slope:	0.940	0.940	NOX bkgnd or offset:	1.3	1.3
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	3.8	3.7

Calibration Statistics

	Start	*Finish*
NO_X Cal Slope:	1.005537	1.005807
NO_X Cal Offset:	-1.109170	-1.228895
NO Cal Slope:	1.005256	1.006240
NO Cal Offset:	-1.949049	-1.668830
NO_2 Cal Slope:	1.000710	0.998322
NO_2 Cal Offset:	1.201848	0.120580

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	-0.3	-0.2	-0.1	----	----
High point	4933	66.7	801.8	800.4	1.3	805.1	803.9	1.3	0.9959	0.9957
Mid point	4967	33.3	400.2	399.6	0.7	402.6	401.5	1.1	0.9941	0.9952
Low point	4983	16.7	200.7	200.4	0.3	198.6	197.3	1.3	1.0108	1.0158
As left zero	5000	0.0	0.0	0.0	0.0	-0.3	-0.3	-0.1	----	----
As left span	4933	66.7	801.8	363.3	438.5	797.9	363.3	434.6	1.0049	1.0000
							Average Correction Factor		1.0003	1.0022

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	800.1	362.8	438.6	437.7	1.0021	99.8%
Mid GPT point	800.1	561.3	240.1	240.5	0.9985	100.2%
Low GPT point	800.1	655.2	146.2	146.0	1.0016	99.8%
				Average Correction Factor	1.0007	99.9%

Notes: Changed inlet filter after as founds. No adjustment made.

Calibration Performed By: Sean Bala

Wood Buffalo Environmental Association

NO_X Calibration Summary

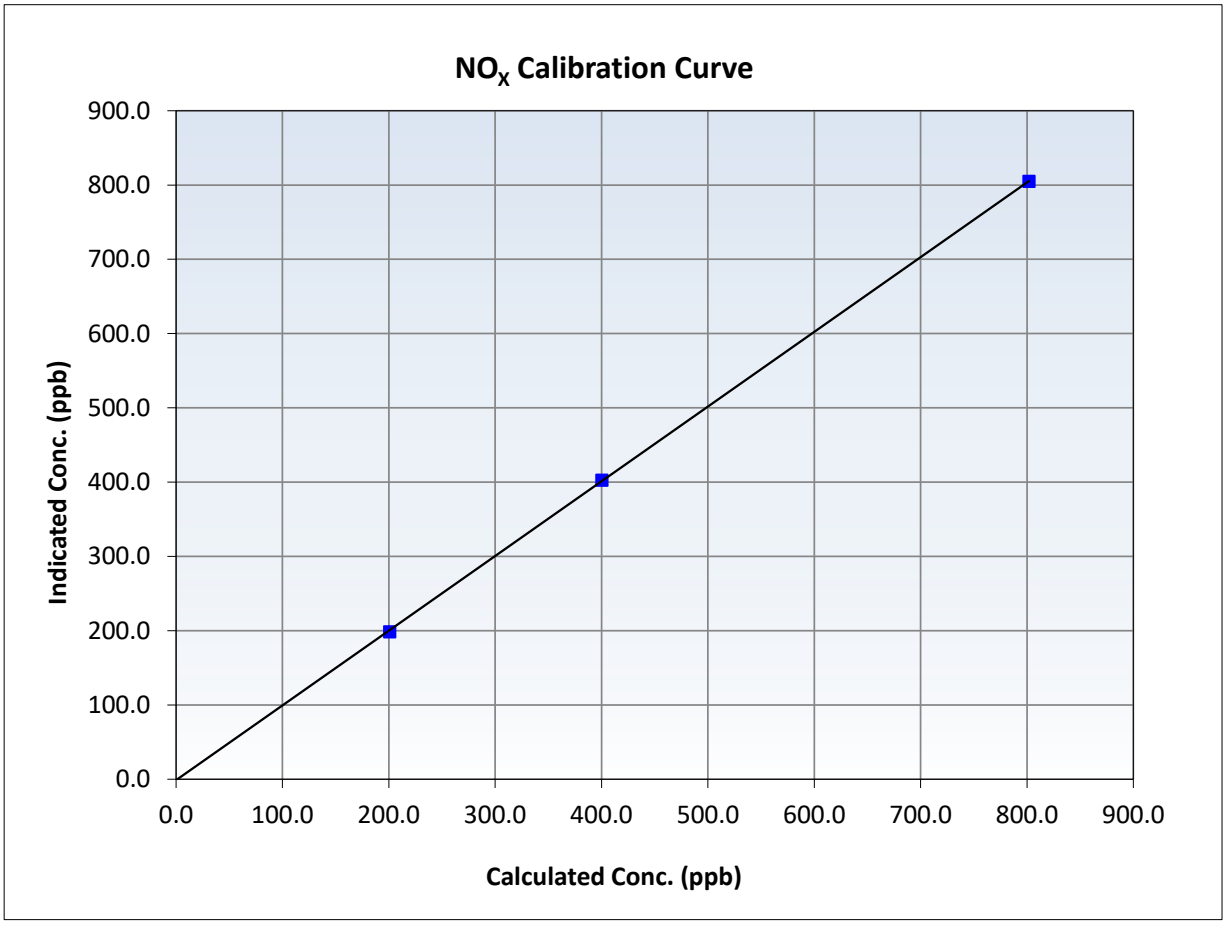
Station Information

Calibration Date:	July 3, 2025	Previous Calibration:	June 12, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:15	End Time (MST):	12:16
Analyzer make:	API T200	Analyzer serial #:	4259

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.3	----
801.8	805.1	0.9959
400.2	402.6	0.9941
200.7	198.6	1.0108

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999981	*≥0.995*
Slope	1.005807	*0.90 - 1.10*
Intercept	-1.228895	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

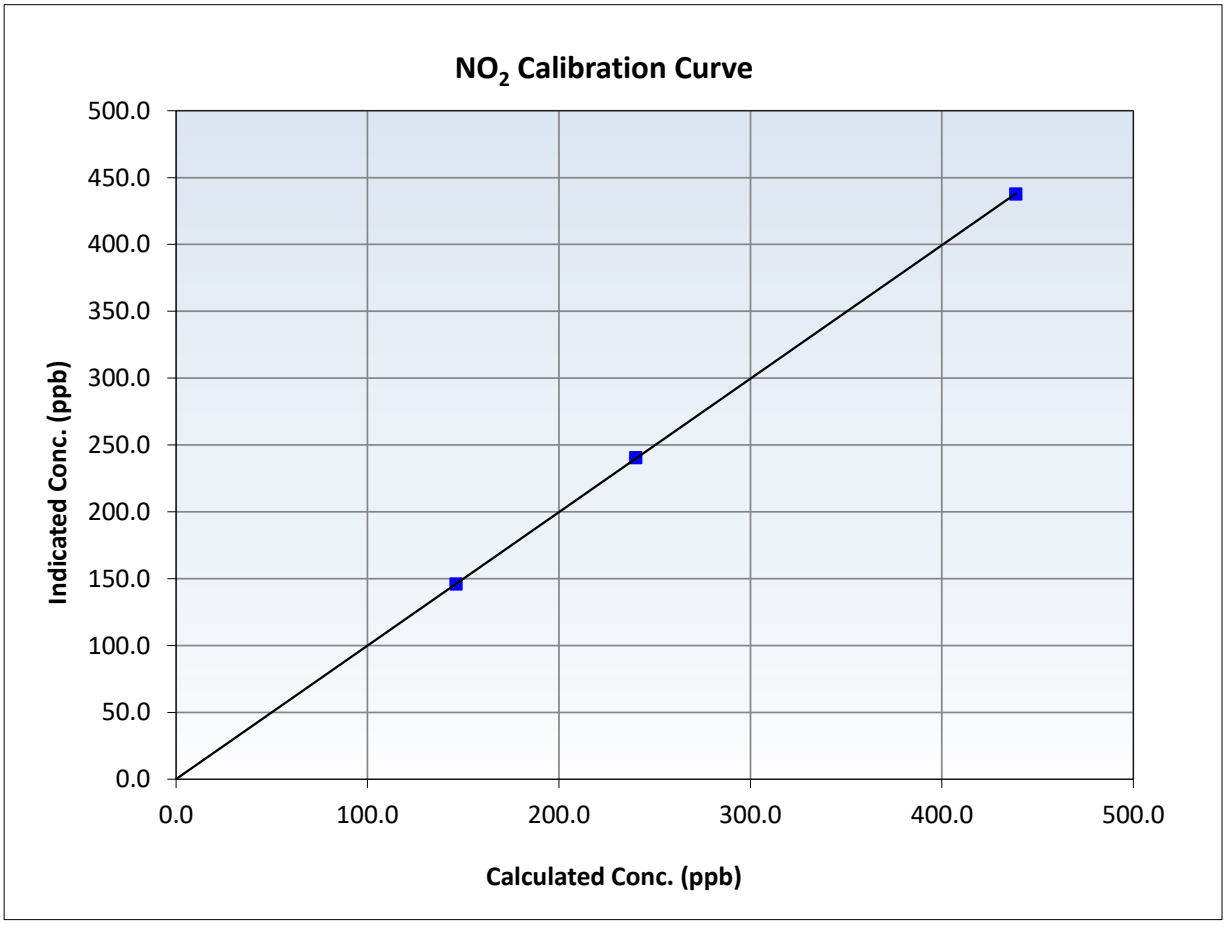
Station Information

Calibration Date:	July 3, 2025	Previous Calibration:	June 12, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:15	End Time (MST):	12:16
Analyzer make:	API T200	Analyzer serial #:	4259

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.1	----
438.6	437.7	1.0021
240.1	240.5	0.9985
146.2	146.0	1.0016

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999994	*≥0.995*
Slope	0.998322	*0.90 - 1.10*
Intercept	0.120580	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

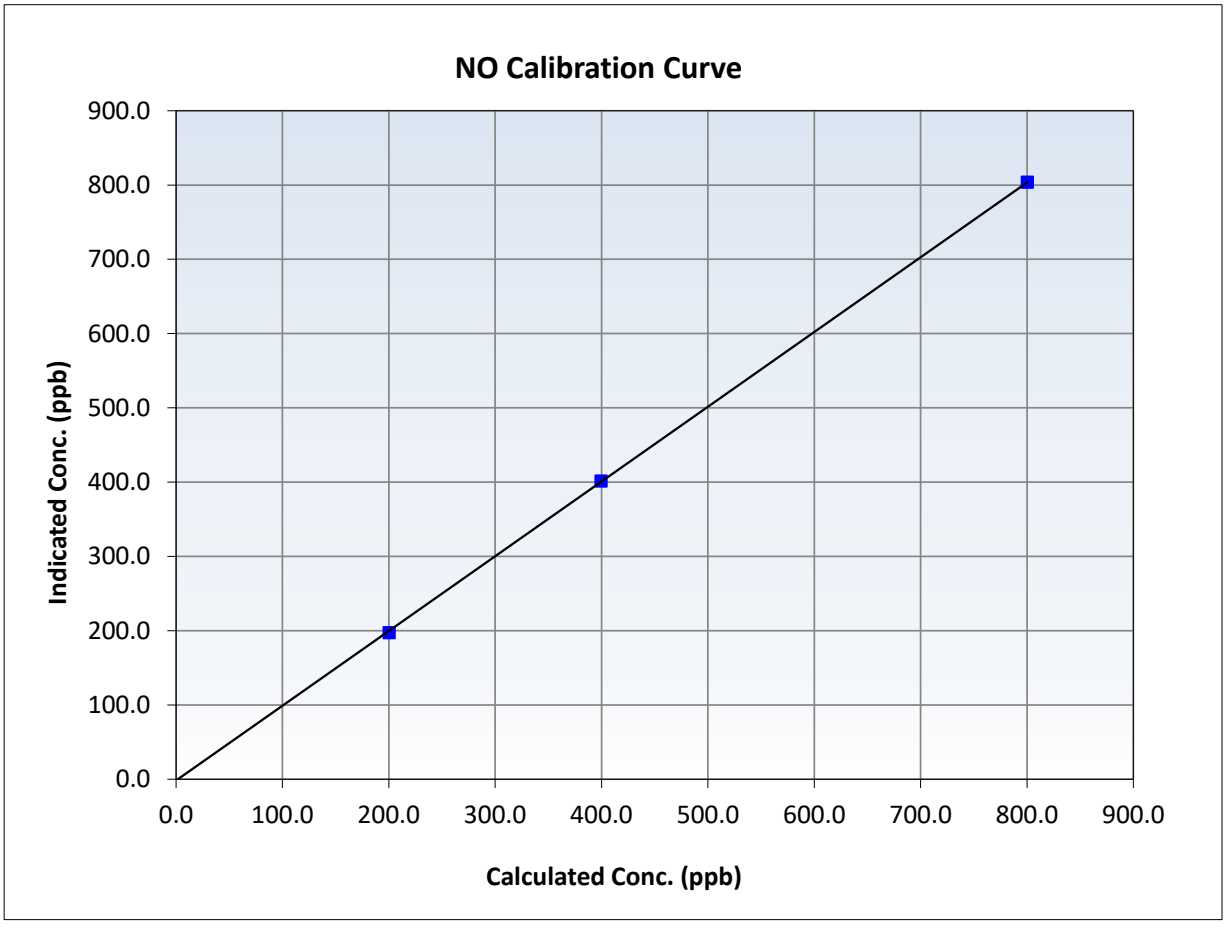
Station Information

Calibration Date:	July 3, 2025	Previous Calibration:	June 12, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:15	End Time (MST):	12:16
Analyzer make:	API T200	Analyzer serial #:	4259

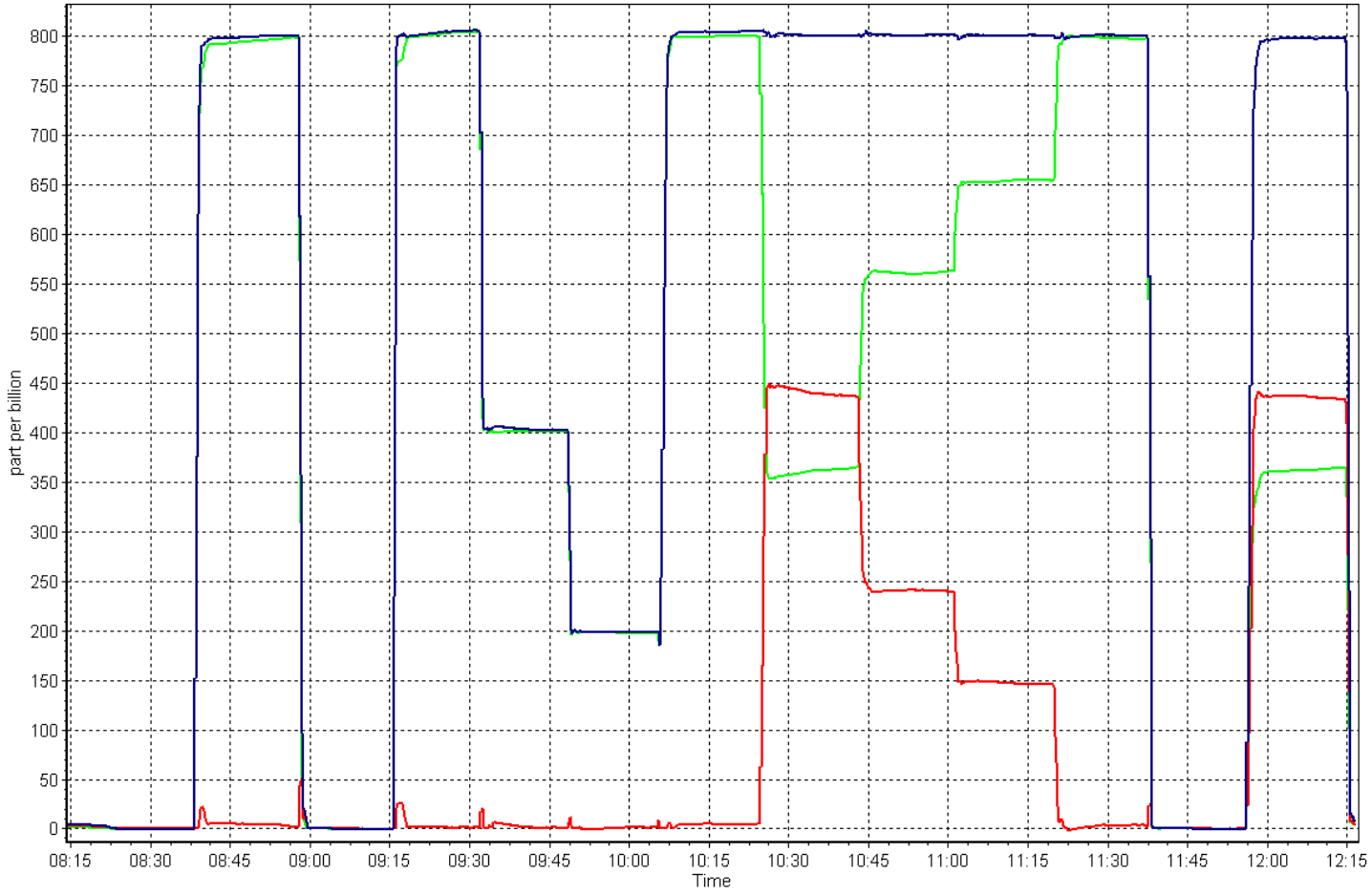
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
800.4	803.9	0.9957
399.6	401.5	0.9952
200.4	197.3	1.0158

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999970	*≥0.995*
Slope	1.006240	*0.90 - 1.10*
Intercept	-1.668830	*+/-20*



NO_X Calibration Plot Date: July 3, 2025 Location: Sawbones Bay



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS507
KIRBY SOUTH

JULY 2025

Operations, Data Collection,
QA/QC, Data Validation and Reporting by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

August 29, 2025

Wood Buffalo Environmental Association

SO_2 Calibration Report

Station Information

Station Name:	Kirby South	Station number:	AMS 507
Calibration Date:	July 9, 2025	Last Cal Date:	NA
Start time (MST):	15:40	End time (MST):	18:47
Reason:	Install		

Calibration Standards

Cal Gas Concentration:	50.74	ppm	Cal Gas Exp Date:	October 9, 2032
Cal Gas Cylinder #:	CC255918			
Removed Cal Gas Conc:	50.74	ppm	Rem Gas Exp Date:	
Removed Gas Cyl #:			Diff between cyl:	
Calibrator Model:	Teledyne API T700		Serial Number:	2445
Zero Air Gen Model:	Teledyne API T701H		Serial Number:	880

Analyzer Information

Analyzer make:	Thermo 43iQ		Serial Number:	1182340007	
Analyzer Range:	0 - 1000 ppb				
	Start	***Finish***		***Start***	***Finish***
Calibration slope:	NA	1.004045	Backgd or Offset:	NA	28.4
Calibration intercept:	NA	-0.483826	Coeff or Slope:	NA	1.106

SO_2 As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	NA	Previous response	NA	*% change	NA
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO_2 Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4921	78.8	799.7	803.0	0.996
Mid point	4961	39.4	399.8	399.8	1.000
Low point	4980	19.7	199.9	200.3	0.998
As left zero	5000	0.0	0.0	-0.1	----
As left span	4921	78.8	799.7	803.0	0.996
				Average Correction Factor:	0.998

Notes: Install completed following the move to Kirby South. Swapped pump before calibrating. Adjusted zero.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

SO_2 Calibration Summary

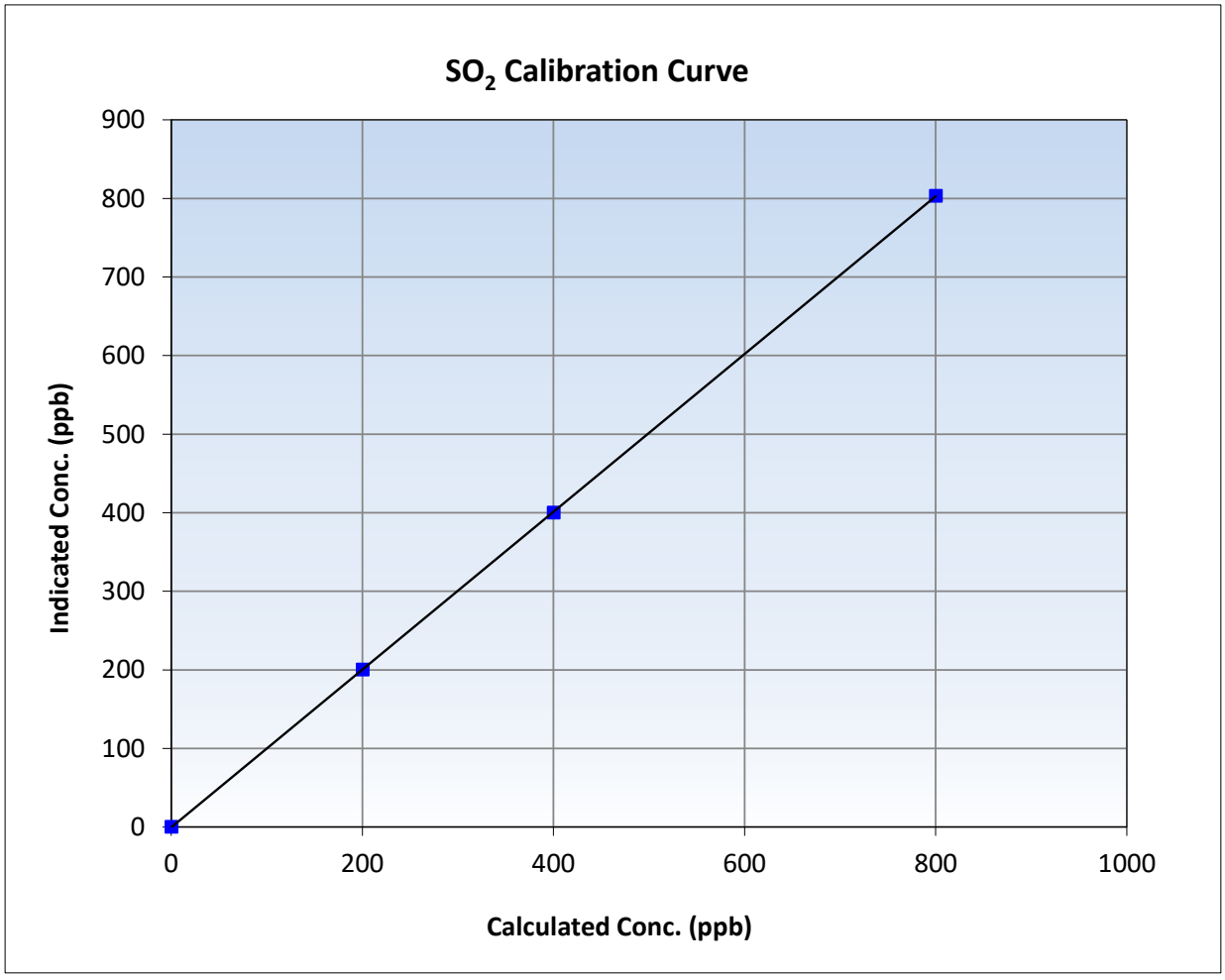
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	NA
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	15:40	End Time (MST):	18:47
Analyzer make:	Thermo 43iQ	Analyzer serial #:	1182340007

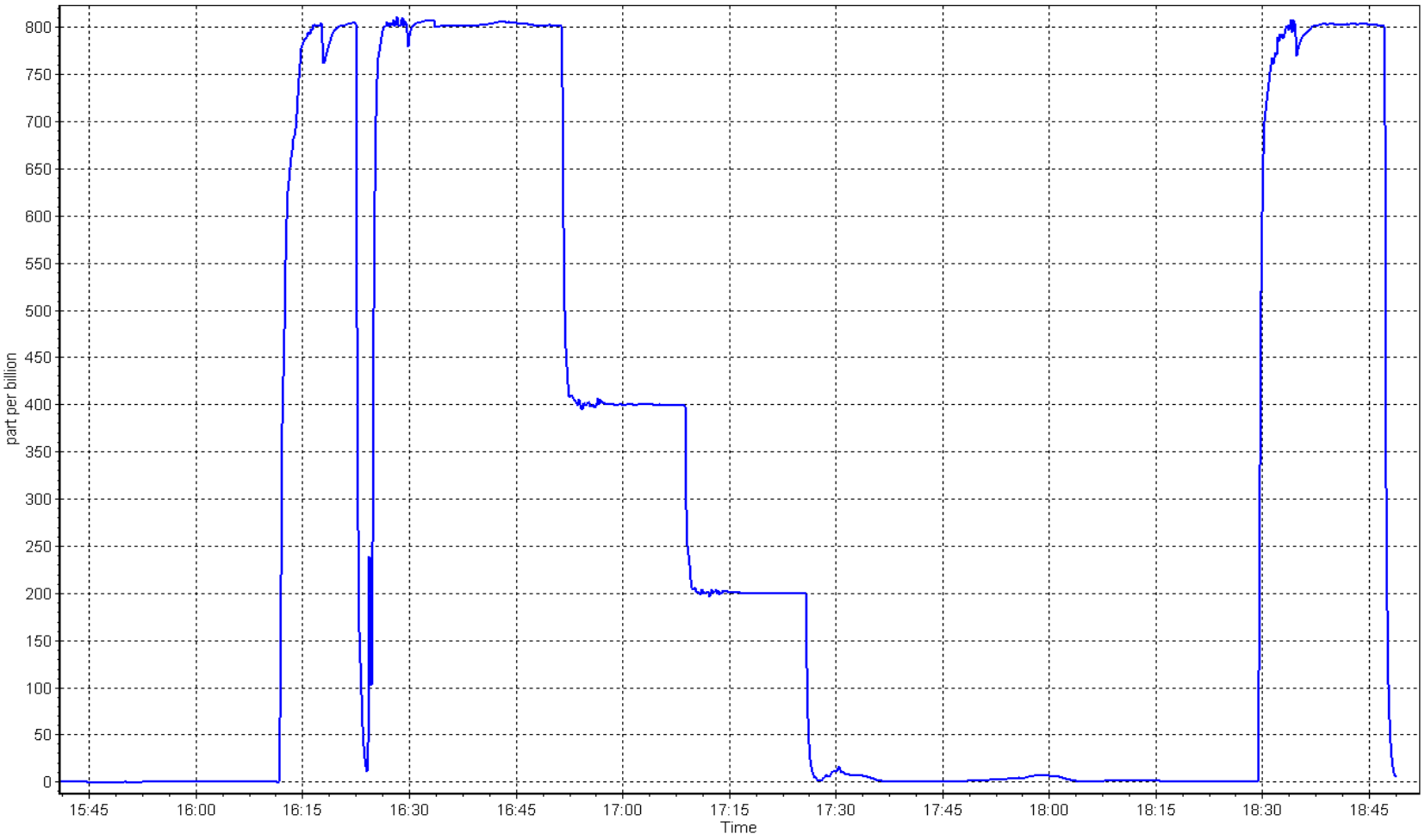
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
799.7	803.0	0.9959
399.8	399.8	1.0000
199.9	200.3	0.9981

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	1.004045	*0.90 - 1.10*
Intercept	-0.483826	*+/-30*



SO2 Calibration Plot Date: July 9, 2025 Location: Kirby South



Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name:	Kirby South	Station number:	AMS 507
Calibration Date:	July 9, 2025	Last Cal Date:	NA
Start time (MST):	11:35	End time (MST):	16:00
Reason:	Install		

Calibration Standards

Cal Gas Concentration:	5.05	ppm	Cal Gas Exp Date:	November 15, 2026
Cal Gas Cylinder #:	DT0019762			
Removed Cal Gas Conc:	5.05	ppm	Rem Gas Exp Date:	NA
Removed Gas Cyl #:	n/a		Diff between cyl:	
Calibrator Make/Model:	Teledyne API T700		Serial Number:	2445
ZAG Make/Model:	Teledyne API T701H		Serial Number:	880

Analyzer Information

Analyzer make:	Thermo 43i-TLE		Analyzer serial #:	1150840012	
Converter make:	Global		Converter serial #:	2022-197	
Analyzer Range	0 - 100 ppb		Converter Temp:	325	degC

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	NA	1.014058	Backgd or Offset:	NA	1.70
Calibration intercept:	NA	-0.280000	Coeff or Slope:	NA	1.053

H2S As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	NA	Prev response:	NA	*% change:	NA
Baseline Corr 2nd AF pt:	NA	AF Slope:	NA	AF Intercept:	NA
Baseline Corr 3rd AF pt:	NA	AF Correlation:	NA		

* = > +/-5% change initiates investigation

H2S Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4922	78.4	79.2	80.2	0.987
Mid point	4961	39.2	39.6	39.6	1.000
Low point	4980	19.6	19.8	19.6	1.010
As left zero	5000	0.0	0.0	0.1	----
As left span	4922	78.4	79.2	81.3	0.974
SO2 Scrubber Check	4919	80.0	800.2	0.0	----
Date of last scrubber change:		July 25, 2023		Ave Corr Factor	0.999
Date of last converter efficiency test:		n/a			

Notes: Install completed for deployment to Kirby South. Swapped pump prior to calibrating. Scrubber check done after cal zero, passed.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

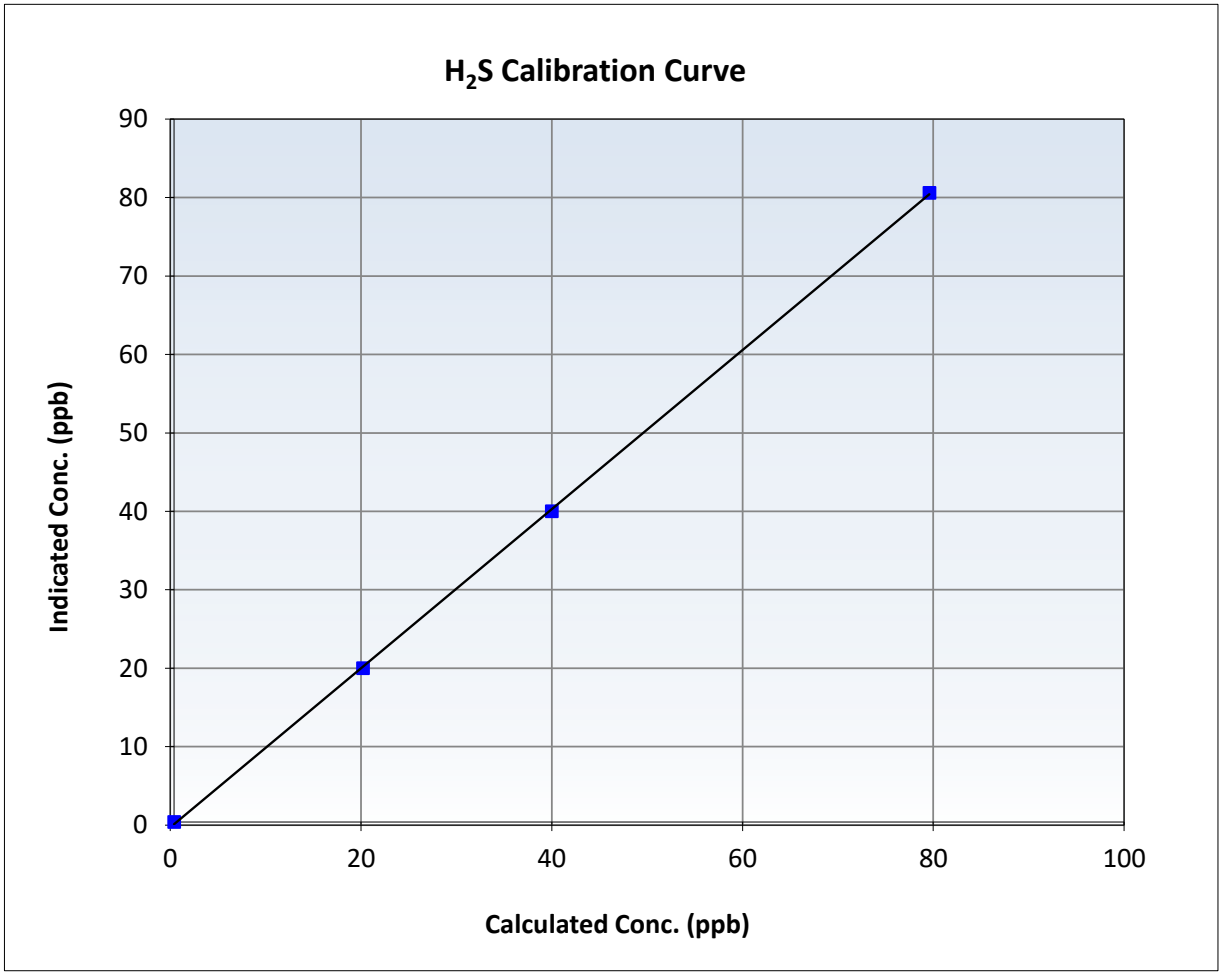
H2S Calibration Summary

Station Information

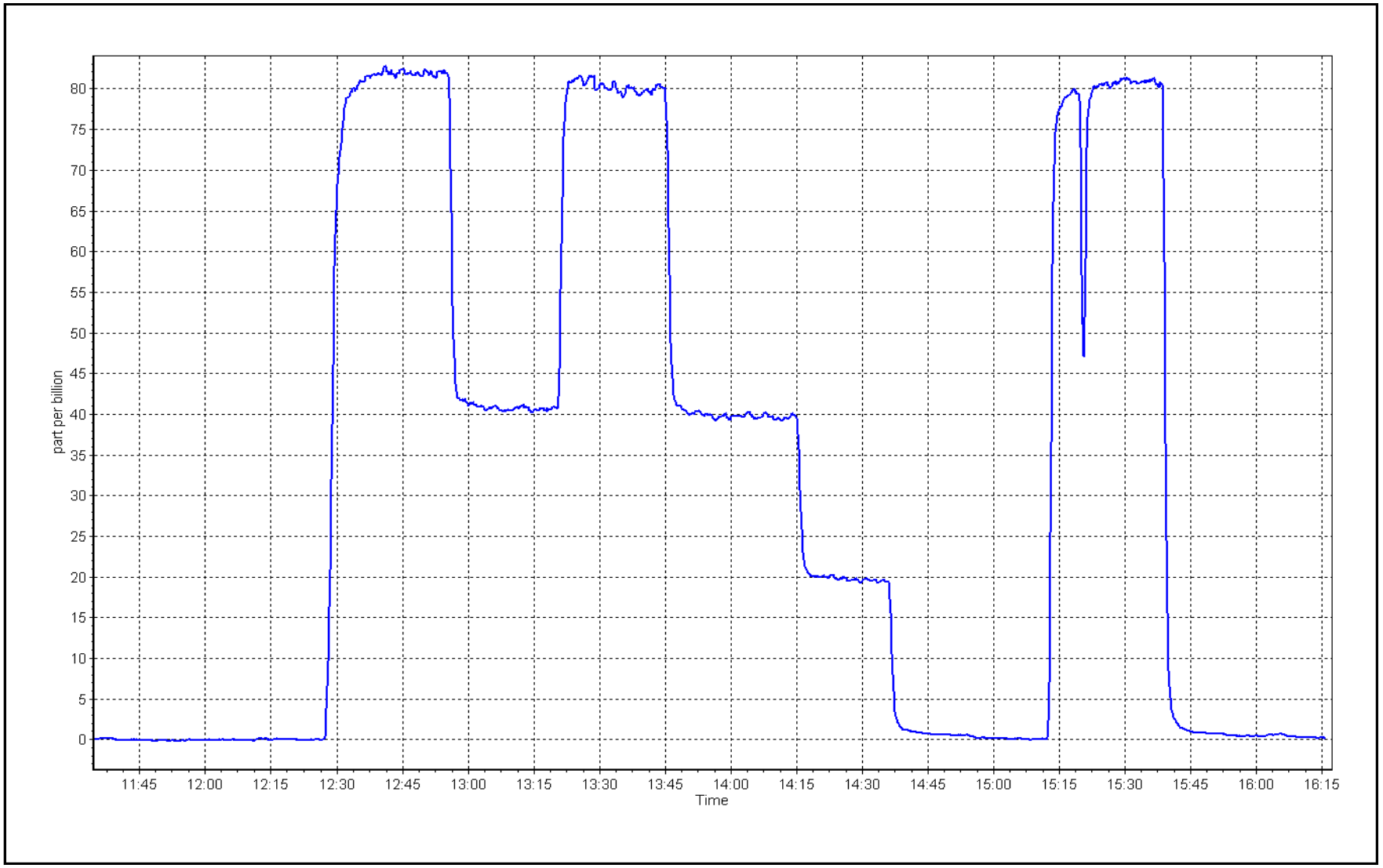
Calibration Date:	July 9, 2025	Previous Calibration:	NA
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	11:35	End Time (MST):	16:00
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1150840012

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		*Limits*
0.0	0.0	----	Correlation Coefficient	0.999937	*≥0.995*
79.2	80.2	0.9873	Slope	1.014058	*0.90 - 1.10*
39.6	39.6	0.9998	Intercept	-0.280000	*+/-3*
19.8	19.6	1.0100			



H2S Calibration Plot Date: July 9, 2025 Location: Kirby South



Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name:	Kirby South	Station number:	AMS 507
Calibration Date:	July 9, 2025	Last Cal Date:	NA
Start time (MST):	15:40	End time (MST):	19:05
Reason:	Install		

Calibration Standards

Gas Cert Reference:	CC255918		Cal Gas Expiry Date:	October 9, 2032	
CH4 Cal Gas Conc.	506.4	ppm	CH4 Equiv Conc.	1070.2	ppm
C3H8 Cal Gas Conc.	205.0	ppm			
Removed Gas Cert:			Removed Gas Expiry:		
Removed CH4 Conc.	506.4	ppm	CH4 Equiv Conc.	1070.2	ppm
Removed C3H8 Conc.	205.0	ppm	Diff between cyl:		
Calibrator Make/Model:	Teledyne API T700		Serial Number:	2445	
ZAG Make/Model:	Teledyne API T701H		Serial Number:	880	

Analyzer Information

Analyzer make: Thermo 51i-LT Analyzer serial #: 1182340005

Analyzer Range: 0 - 20 ppm

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	NA	0.996718	Background:	NA	1.91
Calibration intercept:	NA	-0.008033	Coefficient:	NA	3.774

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero					----
As found High point					
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	NA	Previous response	NA	*% change	NA
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero	5000	0.0	0.00	0.05	
High point	4921	78.8	16.87	16.83	1.002
Mid point	4961	39.4	8.43	8.37	1.007
Low point	4980	19.7	4.22	4.14	1.019
As left zero	5000	0.0	0.00	-0.01	----
As left span	4921	78.8	16.87	16.83	1.002
				Average Correction Factor	1.009

Notes: Install calibration completed following the station move from Kirby North. Swapped internal pump. Adjusted zero and span.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

THC Calibration Summary

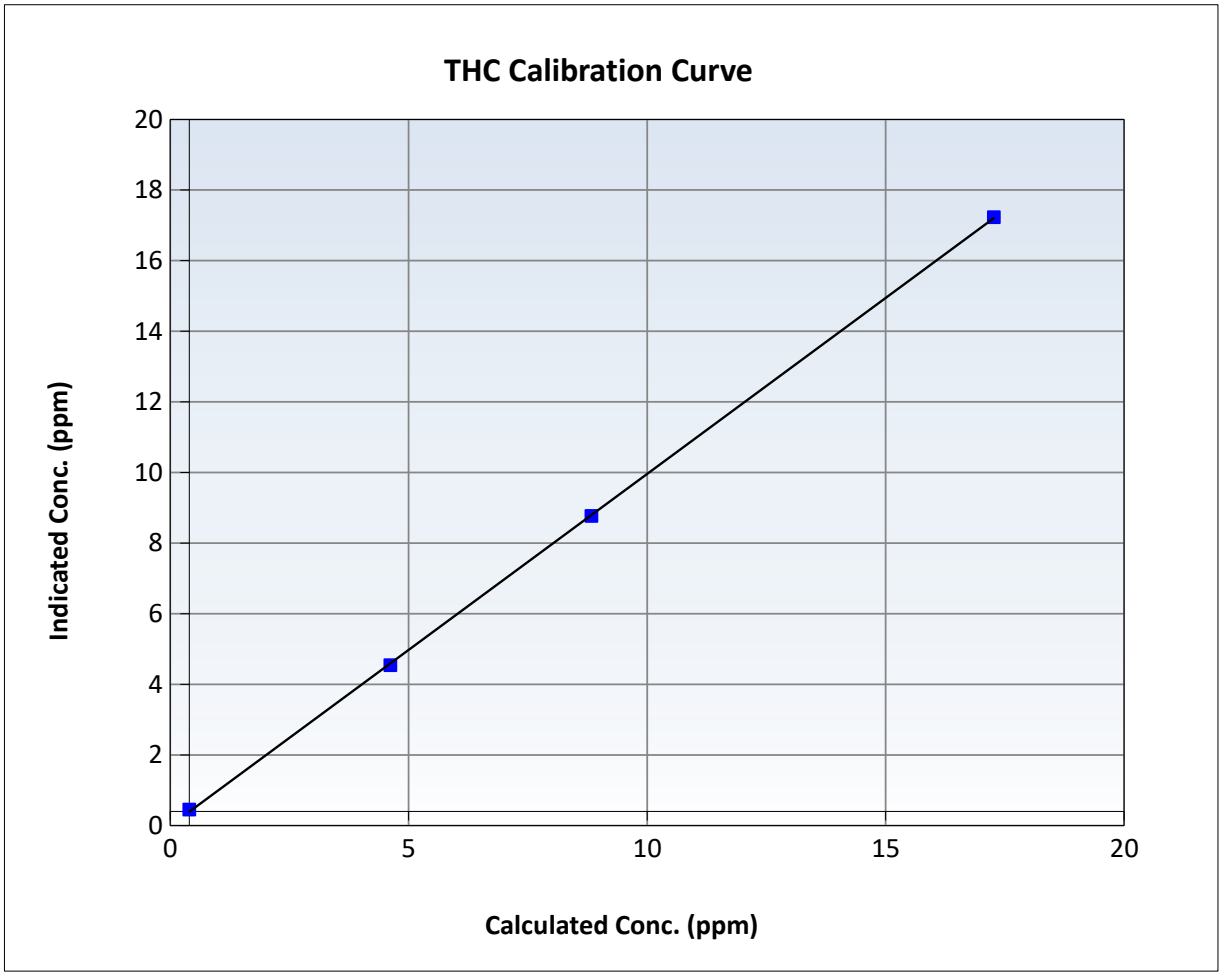
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	NA
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	15:40	End Time (MST):	19:05
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1182340005

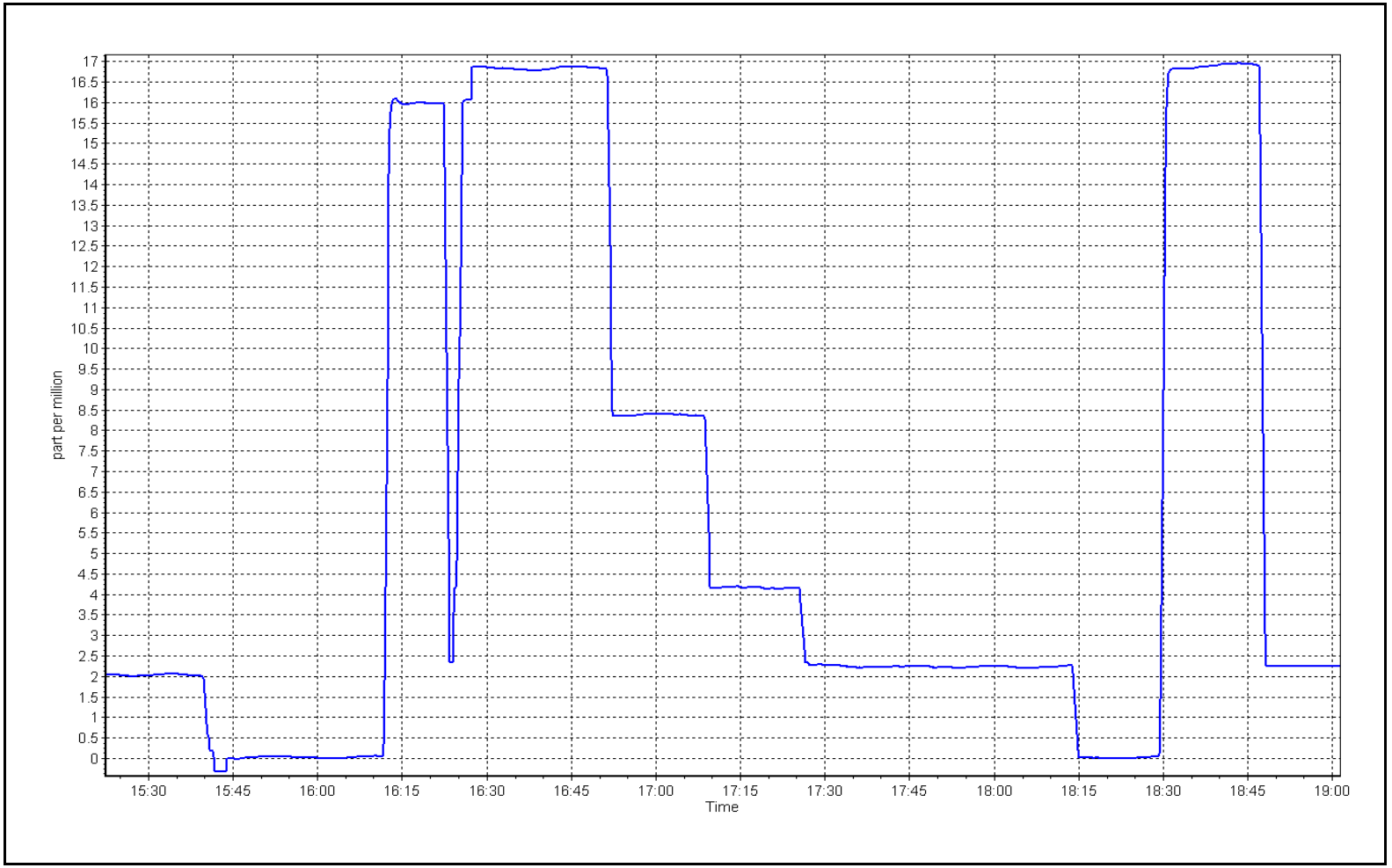
Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0.00	0.05	----
16.87	16.83	1.0022
8.43	8.37	1.0074
4.22	4.14	1.0188

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999951	*≥0.995*
Slope	0.996718	*0.90 - 1.10*
Intercept	-0.008033	*+/-1.5*



THC Calibration Plot Date: July 9, 2025 Location: Kirby South



Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name:	Kirby South	Station number:	AMS 507
Calibration Date:	July 16, 2025	Last Cal Date:	July 9, 2025
Start time (MST):	11:53	End time (MST):	13:36
Reason:	Cylinder Change		

Calibration Standards

Gas Cert Reference:	CC255918		Cal Gas Expiry Date:	October 9, 2032	
CH4 Cal Gas Conc.	506.4	ppm	CH4 Equiv Conc.	1070.2	ppm
C3H8 Cal Gas Conc.	205.0	ppm			
Removed Gas Cert:			Removed Gas Expiry:		
Removed CH4 Conc.	506.4	ppm	CH4 Equiv Conc.	1070.2	ppm
Removed C3H8 Conc.	205.0	ppm	Diff between cyl:		
Calibrator Make/Model:	Teledyne API T700		Serial Number:	2445	
ZAG Make/Model:	Teledyne API T701H		Serial Number:	880	

Analyzer Information

Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1182340005
Analyzer Range:	0 - 20 ppm		

	Start	*Finish*		*Start*	*Finish*
Calibration slope:	NA		Background:	NA	1.91
Calibration intercept:	NA		Coefficient:	NA	3.774

THC As Found Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Baseline Adjusted Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90-1.10*
As found zero	5000	0.0	0.00	0.01	
As found High point	4921	78.8	16.87	17.20	0.981
As found Mid point					
As found Low point					
New cylinder response					

Baseline Corr As found:	17.19	Previous response	NA	*% change	NA
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

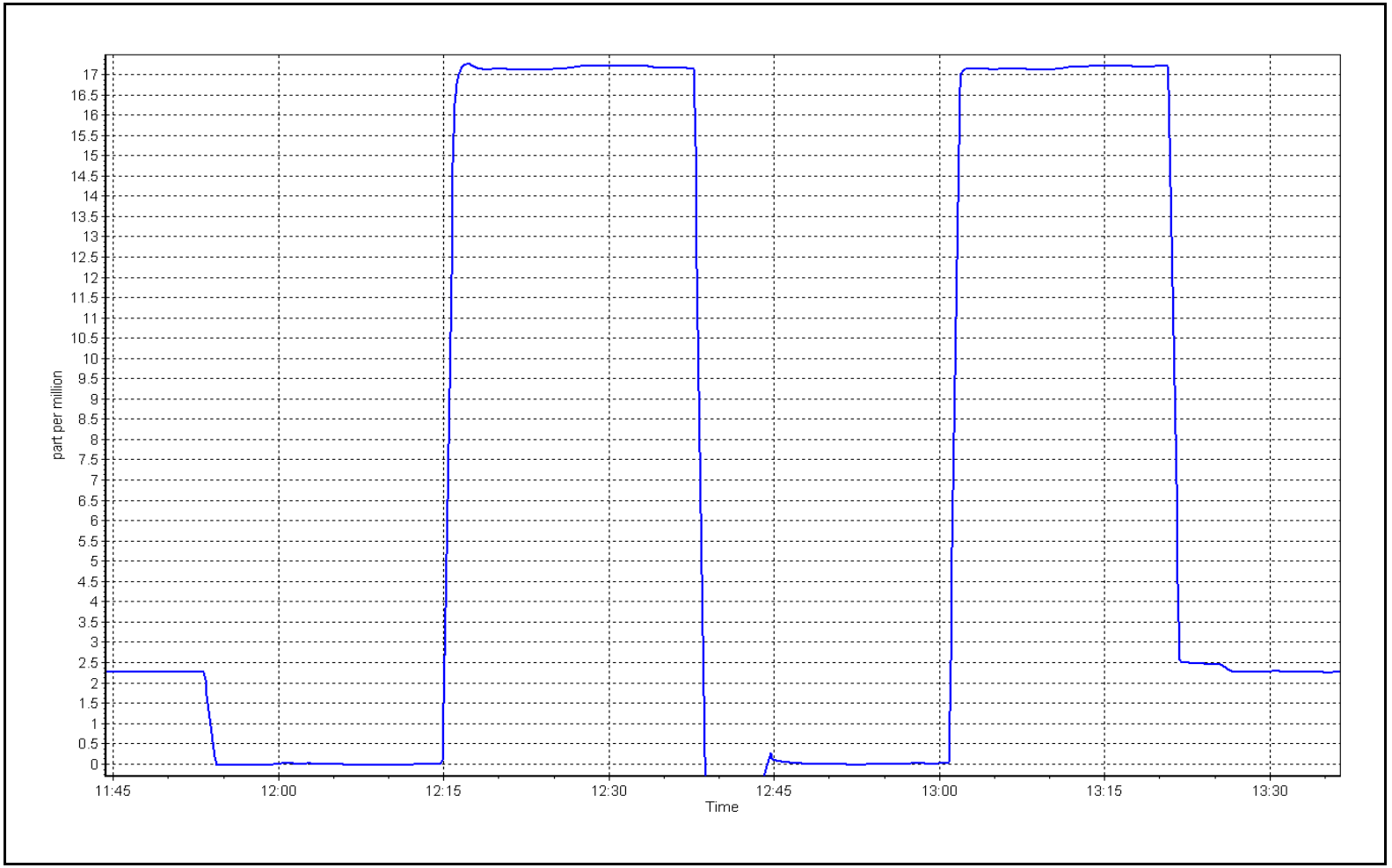
THC Calibration Data

Set Point	Dilution air flow rate (sccm)	Source gas flow rate (sccm)	Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	-0.02	----
As left span	4921	78.8	16.87	17.16	0.983
				Average Correction Factor	

Notes: Swapped hydrogen cylinder. Leak check passed.

Calibration Performed By: Braiden Boutilier

THC Calibration Plot Date: July 16, 2025 Location: Kirby South



Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Station Information

Station Name:	Kirby South
Station number:	AMS 507
Calibration Date:	July 9, 2025
Last Cal Date:	NA
Start time (MST):	11:30
End time (MST):	18:30
Reason:	Install

Calibration Standards

NO Gas Cylinder #:	DT0019572	Cal Gas Expiry Date:	January 5, 2032
NOX Cal Gas Conc:	60.00 ppm	NO Cal Gas Conc:	59.90 ppm
Removed Cylinder #:	NA	Removed Gas Exp Date:	NA
Removed Gas NOX Conc:	60.00 ppm	Removed Gas NO Conc:	59.90 ppm
NOX gas Diff:		NO gas Diff:	
Calibrator Model:	Teledyne API T750	Serial Number:	282
ZAG make/model:	Teledyne API T751H	Serial Number:	530

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NOx Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*
As found zero										
AF High point										
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO_X = NA	ppb	NO = NA	ppb	* = > +/-5% change initiates investigation	*Percent Change	NO_X =	NA
Baseline Corr 1st pt	NO_X = NA	ppb	NO = NA	ppb	As Found Statistics	*Percent Change	NO =	NA
Baseline Corr 2nd pt	NO_X = NA	ppb	NO = NA	ppb	As found NO_X r^2:	Nx Sl:	Nx Int:	
Baseline Corr 3rd pt	NO_X = NA	ppb	NO = NA	ppb	As found NO r^2:	NO Sl:	NO Int:	
					As found NO_2 r^2:	NO2 Sl:	NO_2 Int:	

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	Baseline Adjusted NO2 Correction factor (Cc/(Ic-AFzero)) *Limit = 0.90 - 1.10*	Converter Efficiency *Limit = 96-104%*
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						

Wood Buffalo Environmental Association

NO_X \ NO \ NO_2 Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i Serial Number: 1173480006

NOX Range (ppb): 0 - 1000 ppb

Instrument Settings

	Start	Finish		Start	Finish
NO coeff or slope:	NA	0.748	NO bkgnd or offset:	NA	7.7
NOX coeff or slope:	NA	0.996	NOX bkgnd or offset:	NA	8.2
NO2 coeff or slope:	NA	1.000	Reaction cell Press:	NA	143.2

Calibration Statistics

	Start	Finish
NO_X Cal Slope:	NA	1.001128
NO_X Cal Offset:	NA	-0.453577
NO Cal Slope:	NA	1.000314
NO Cal Offset:	NA	-0.433592
NO_2 Cal Slope:	NA	1.008592
NO_2 Cal Offset:	NA	0.795640

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NOx concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO2 concentration (ppb) (Cc)	Indicated NOx concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO2 concentration (ppb) (Ic)	NOx Correction factor (Cc/Ic) *Limit = 0.95-1.05*	NO Correction factor (Cc/Ic) *Limit = 0.95-1.05*
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	-0.2	0.2	----	----
High point	4933	66.8	801.6	800.3	1.3	802.0	800.0	1.2	0.9995	1.0004
Mid point	4967	33.4	400.8	400.1	0.7	401.5	400.4	1.0	0.9983	0.9993
Low point	4983	16.7	200.4	200.1	0.3	199.1	199.0	0.1	1.0065	1.0054
As left zero	5000	0.0	0.0	0.0	0.0	-0.9	-0.5	-0.4	----	----
As left span	4933	66.8	801.6	417.0	384.6	794.2	417.0	377.2	1.0094	1.0000
								Average Correction Factor	1.0014	1.0017

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO2 concentration (ppb) (Cc)	Indicated NO2 concentration (ppb) (Ic)	NO2 Correction factor (Cc/Ic) *Limit = 0.95-1.05*	Converter Efficiency *Limit = 96-104%*
Cal zero	----	----	0.0	0.2	----	----
High GPT point	795.6	414.7	382.2	386.2	0.9897	101.0%
Mid GPT point	795.6	609.1	187.8	190.0	0.9886	101.2%
Low GPT point	795.6	702.5	94.4	97.0	0.9736	102.7%
				Average Correction Factor	0.9840	101.6%

Notes: Install completed with station move to Kirby South. Swapped pump and charcoal scrubber. Adjusted zero and span.

Calibration Performed By: Braiden Boutilier

Wood Buffalo Environmental Association

NO_X Calibration Summary

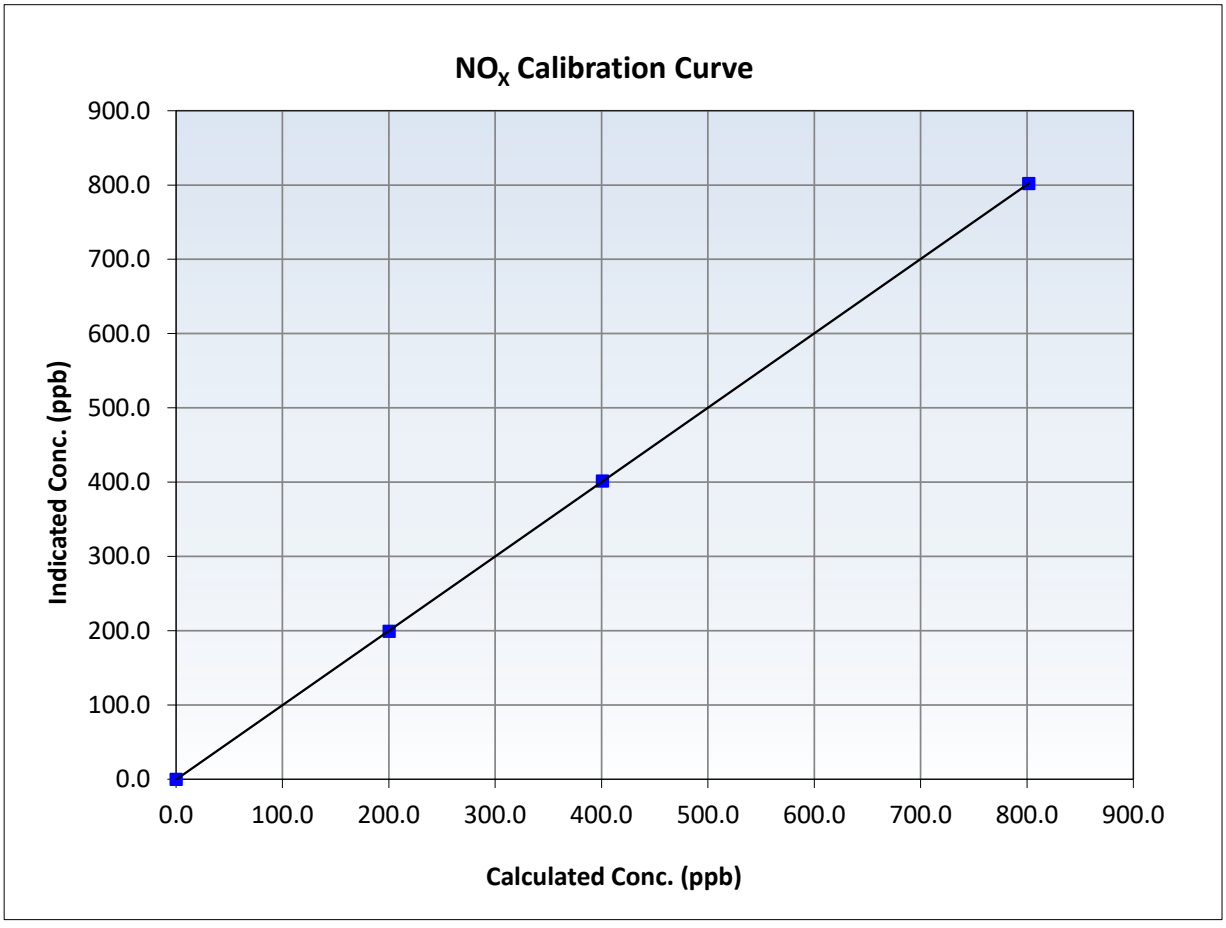
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	NA
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	11:30	End Time (MST):	18:30
Analyzer make:	Thermo 42i	Analyzer serial #:	1173480006

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.0	----
801.6	802.0	0.9995
400.8	401.5	0.9983
200.4	199.1	1.0065

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999995	*≥0.995*
Slope	1.001128	*0.90 - 1.10*
Intercept	-0.453577	*+/-20*



Wood Buffalo Environmental Association

NO_2 Calibration Summary

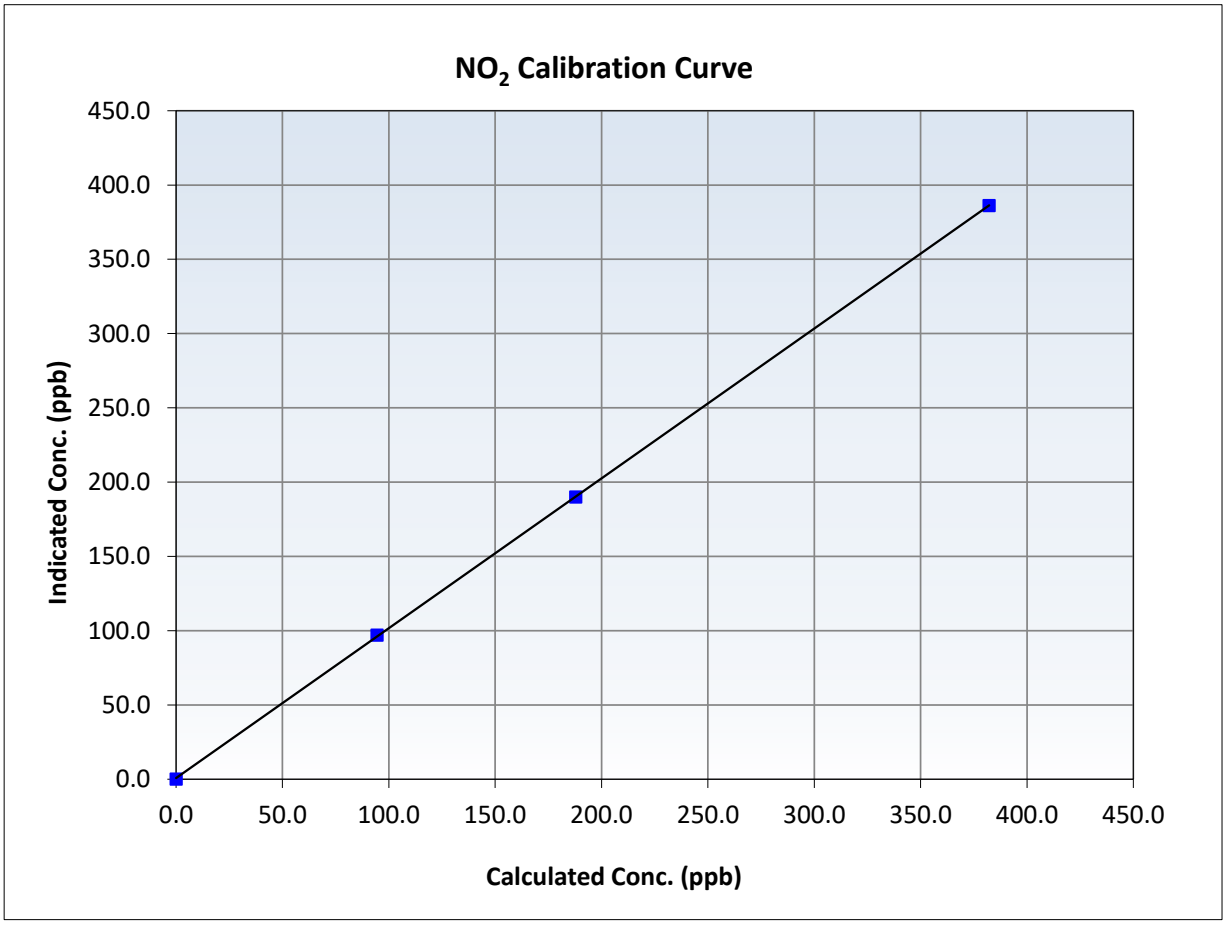
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	NA
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	11:30	End Time (MST):	18:30
Analyzer make:	Thermo 42i	Analyzer serial #:	1173480006

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	0.2	----
382.2	386.2	0.9897
187.8	190.0	0.9886
94.4	97.0	0.9736

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999983	*≥0.995*
Slope	1.008592	*0.90 - 1.10*
Intercept	0.795640	*+/-20*



Wood Buffalo Environmental Association

NO Calibration Summary

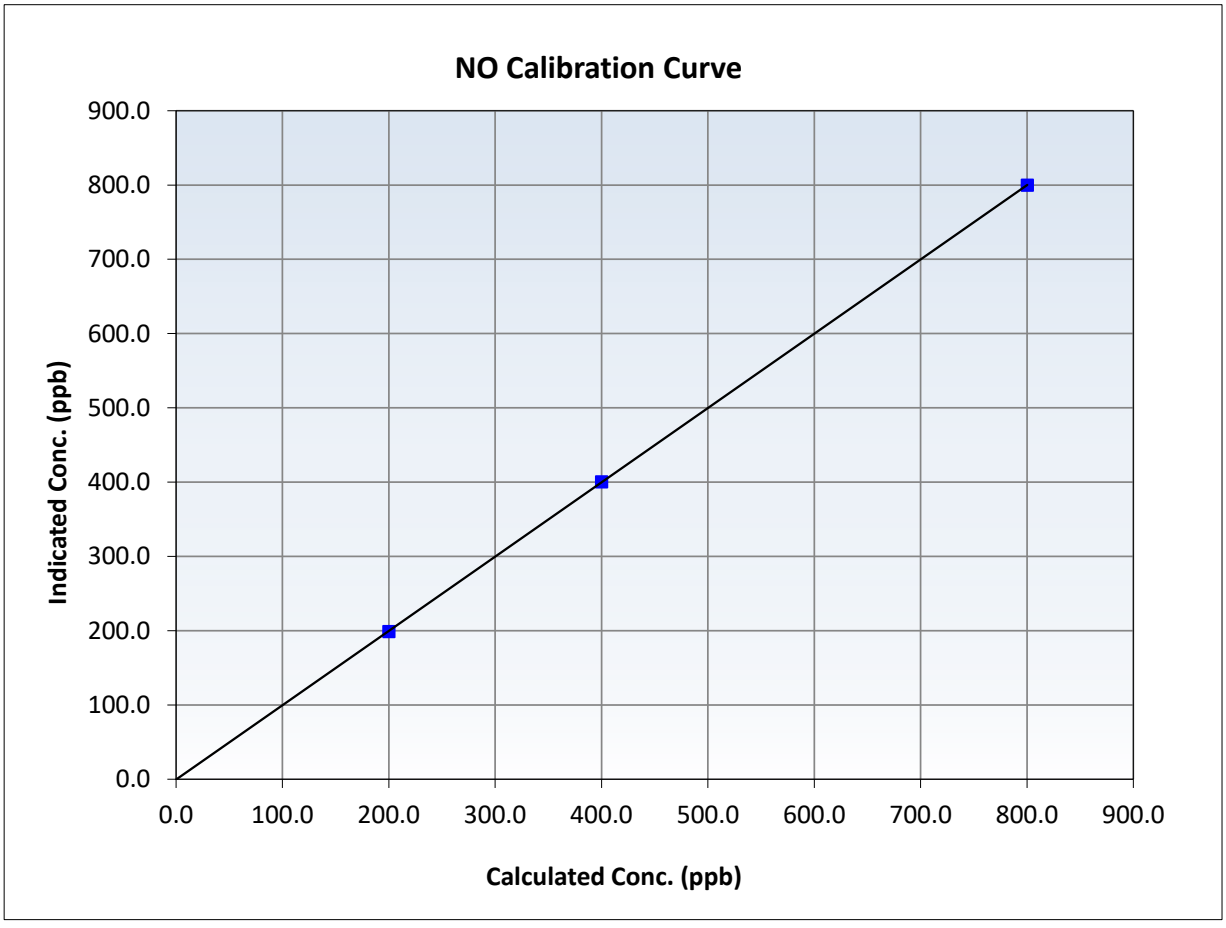
Station Information

Calibration Date:	July 9, 2025	Previous Calibration:	NA
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	11:30	End Time (MST):	18:30
Analyzer make:	Thermo 42i	Analyzer serial #:	1173480006

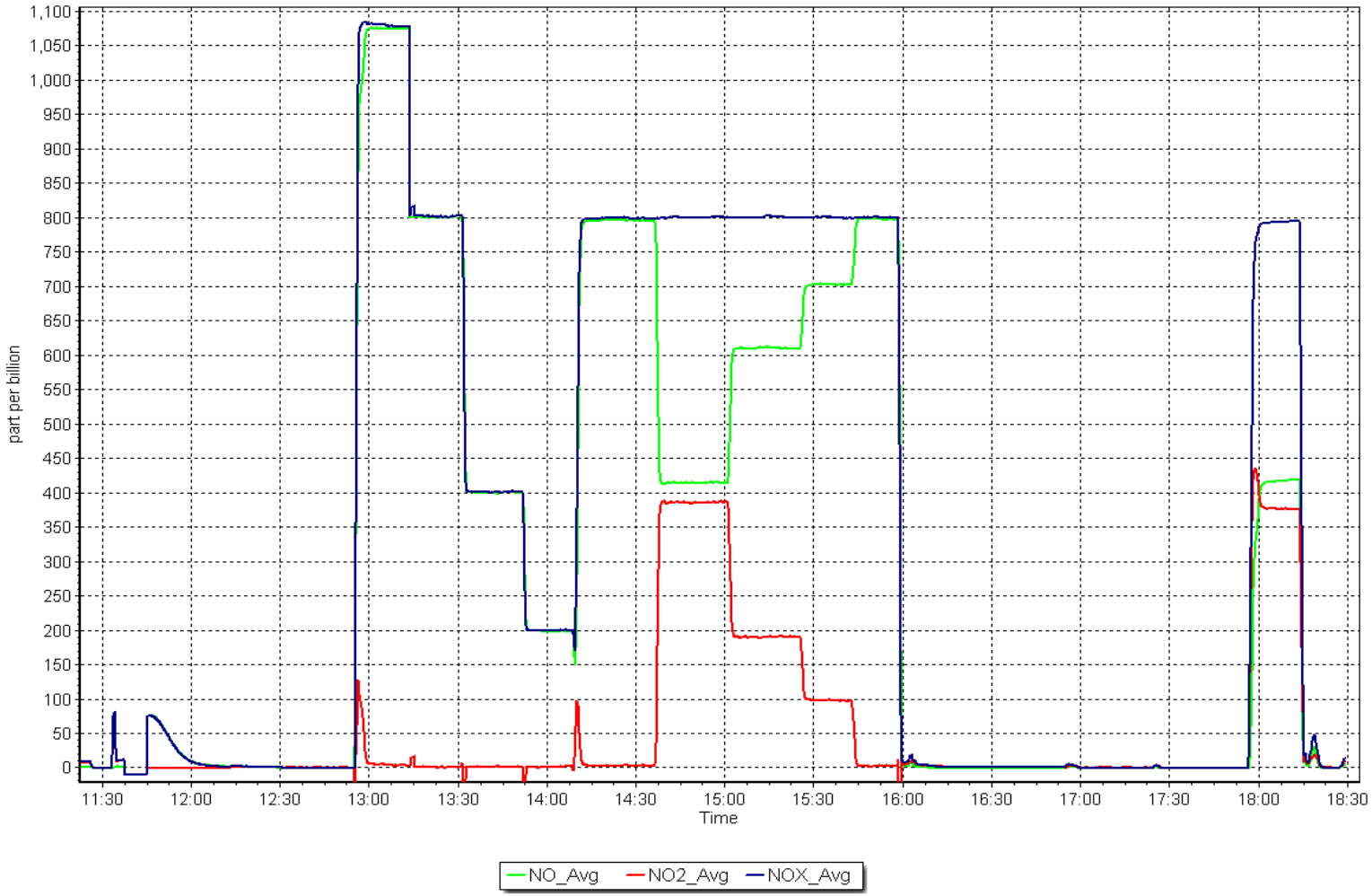
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
0.0	-0.2	----
800.3	800.0	1.0004
400.1	400.4	0.9993
200.1	199.0	1.0054

Statistical Evaluation		*Limits*
Correlation Coefficient	0.999997	*≥0.995*
Slope	1.000314	*0.90 - 1.10*
Intercept	-0.433592	*+/-20*



NO_X Calibration Plot Date: July 9, 2025 Location: Kirby South



Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Kirby South	Station Number:	AMS 507
Calibration Date:	July 9, 2025	Prev Cal Date:	NA
Start Time (MST):	12:45	End Time (MST):	15:30
Tower Height (m):	10.0	Reason:	Install

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	X16479
WS Calibrator:	MetOne 053	Serial Number:	CA 03988

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error *Limit = +/- 1.5%*
0	0.0	0.0	---
200	20.2	20.3	0.4%
400	39.4	39.4	0.1%
600	58.6	58.5	0.0%
800	77.8	77.8	0.1%

	Start	***Finish***	*Limits*
Correl Coeff (r^2)	0.999999	0.999999	*≥0.9995*
Calculated slope	0.998909	0.999615	*0.98 - 1.02*
Calculated intercept	0.030357	-0.025296	*+/- 2*

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	D13601
As Found Declination (deg east of True North):	13	As Left Declination (deg east of True North):	13
Solar noon (MST):	13:28	Calc Declination*:	13 Degrees
WD Calibrator:	Met One 040		* - calculated declination as per NOAA website

Physical Direction (Degrees) (Cv)	Indicated Direction (Degrees) (Iv)	% Error (based on 360° FS) *Limit = +/- 1%*
10	9.3	-0.2%
90	87.9	-0.6%
180	178.0	-0.6%
270	271.5	0.4%
350	351.7	0.5%

	Start	***Finish***	*Limits*
Correl Coeff (r^2)	0.999977	0.999957	*≥0.9995*
Calculated slope	0.995429	0.990175	*0.97 - 1.03*
Calculated intercept	0.501444	2.083423	*+/- 5*

Notes: Installation completed. Tower aligned with solar noon. No issues to note.

Calibration Performed By: Braiden Boutilier

End of Report