



**WOOD BUFFALO
ENVIRONMENTAL ASSOCIATION**

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Wood Buffalo Environmental Association

SEPTEMBER 2025 MONTHLY CALIBRATION REPORT

CONTINUOUS MONITORING

October 31, 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 SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Bertha Ganter-Fort McKay Station number: AMS 01
Calibration Date: September 3, 2025 Last Cal Date: August 8, 2025
Start time (MST): 9:30 End time (MST): 12:41
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.000908	1.001893	Backgd or Offset:	21.5	21.6
Calibration intercept:	-0.313285	-0.333051	Coeff or Slope:	0.883	0.879

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.4	----
As found High point	4918	81.3	800.3	801.6	0.998
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	802.0	Previous response	800.7	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4918	81.3	800.3	801.9	0.998
Mid point	4959	40.7	400.6	400.0	1.001
Low point	4979	20.3	199.8	200.1	0.999
As left zero	5000	0.0	0.0	-0.1	----
As left span	4918	81.3	800.3	799.9	1.000

Average Correction Factor: 0.999

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

Calibration Performed By: Rene Chamberland



Wood Buffalo Environmental Association

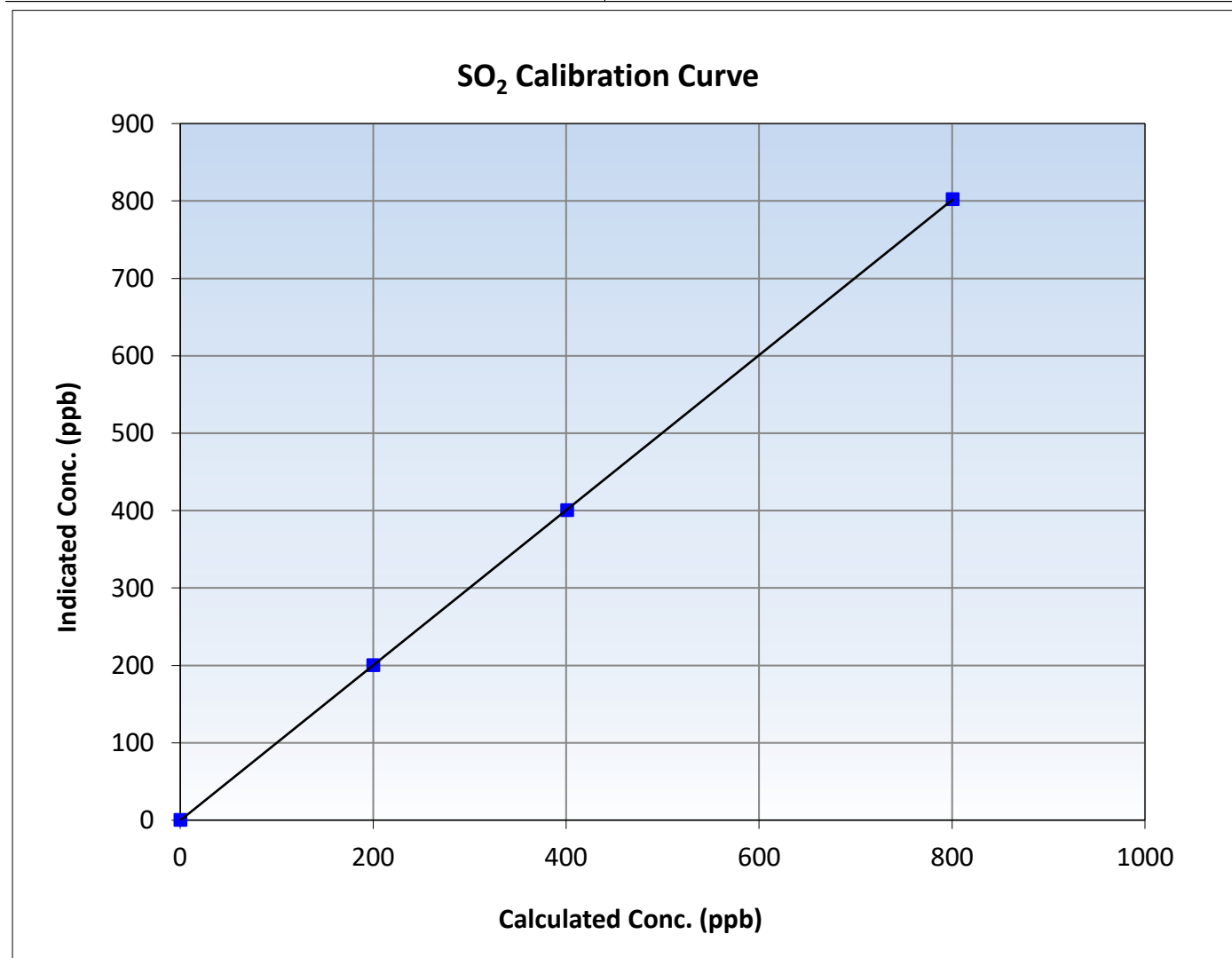
SO₂ Calibration Summary

Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 8, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:30	End Time (MST):	12:41
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1501301448

Calibration Data

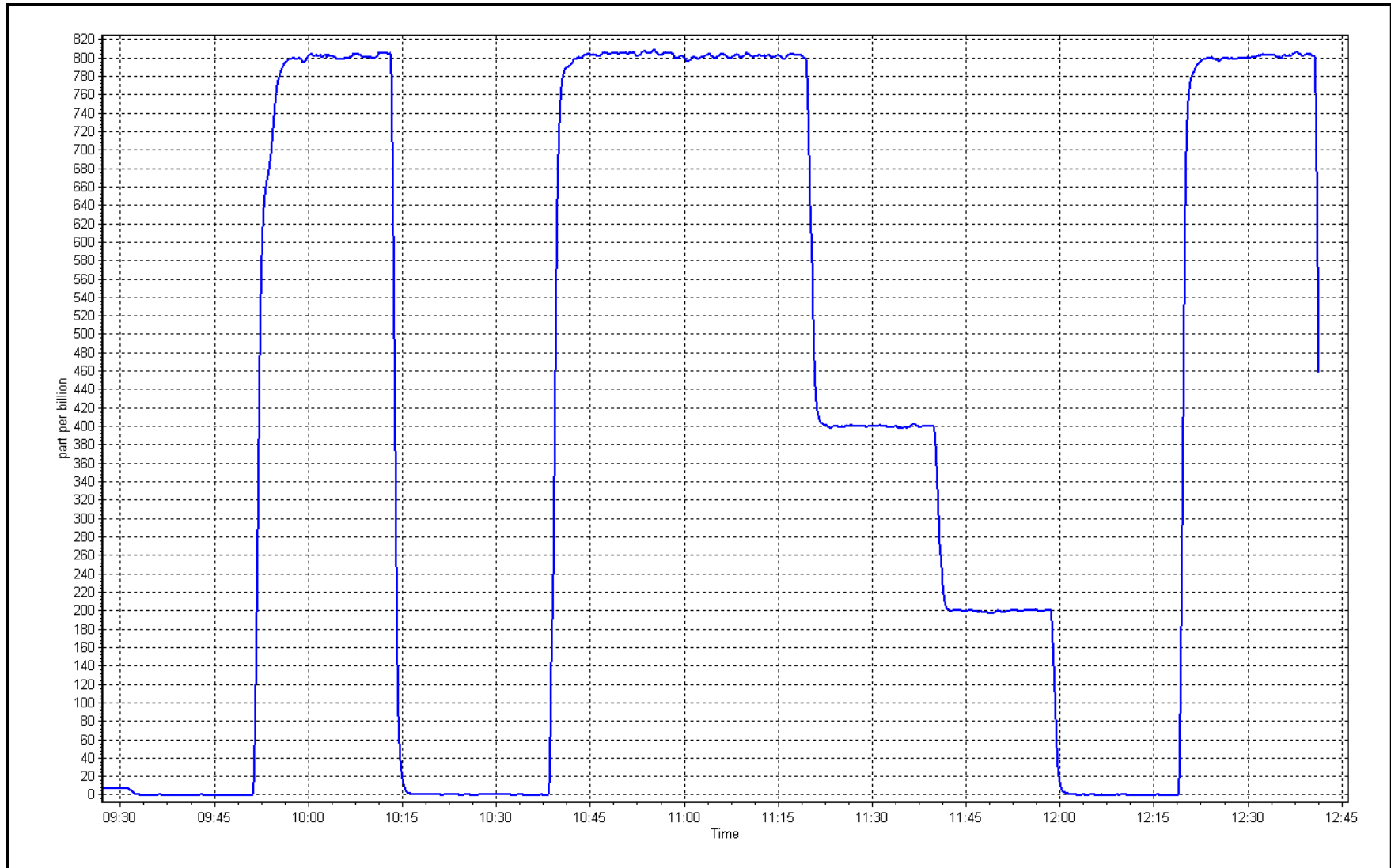
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999996		≥0.995
800.3	801.9	0.9980	Slope	1.001893		0.90 - 1.10
400.6	400.0	1.0015	Intercept	-0.333051		+/-30
199.8	200.1	0.9986				



SO2 Calibration Plot

Date: September 3, 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: September 8, 2025 Last Cal Date: August 20, 2025
Start time (MST): 10:32 End time (MST): 15:20
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 #: 580
Analyzer Range: 0 - 100 ppb Converter Temp: 850 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002674	1.000671	Backgd or Offset:	2.19	2.15
Calibration intercept:	-0.238059	-0.317986	Coeff or Slope:	1.150	1.131

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4917	82.6	80.0	81.5	0.979
As found Mid point	4959	41.3	40.0	40.8	0.975
As found Low point	4979	20.7	20.0	20.3	0.978
New cylinder response					
Baseline Corr As found:	81.7	Prev response:	79.94	*% change:	2.2%
Baseline Corr 2nd AF pt:	41.0	AF Slope:	1.021831	AF Intercept:	-0.158462
Baseline Corr 3rd AF pt:	20.5	AF Correlation:	0.999995	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4917	82.6	80.0	79.8	1.002
Mid point	4959	41.3	40.0	39.6	1.009
Low point	4979	20.7	20.0	19.5	1.028
As left zero	5000	0.0	0.0	-0.1	----
As left span	4917	82.6	80.0	77.8	1.028
SO2 Scrubber Check	4919	81.3	813.0	0.1	----
Date of last scrubber change:	December 17, 2021			Ave Corr Factor	1.013
Date of last converter efficiency test:					

Notes: Inlet filter change completed after as founds. Adjusted the span. Scrubber check passed.

Calibration Performed By: Rene Chamberland



Wood Buffalo Environmental Association

TRS Calibration Summary

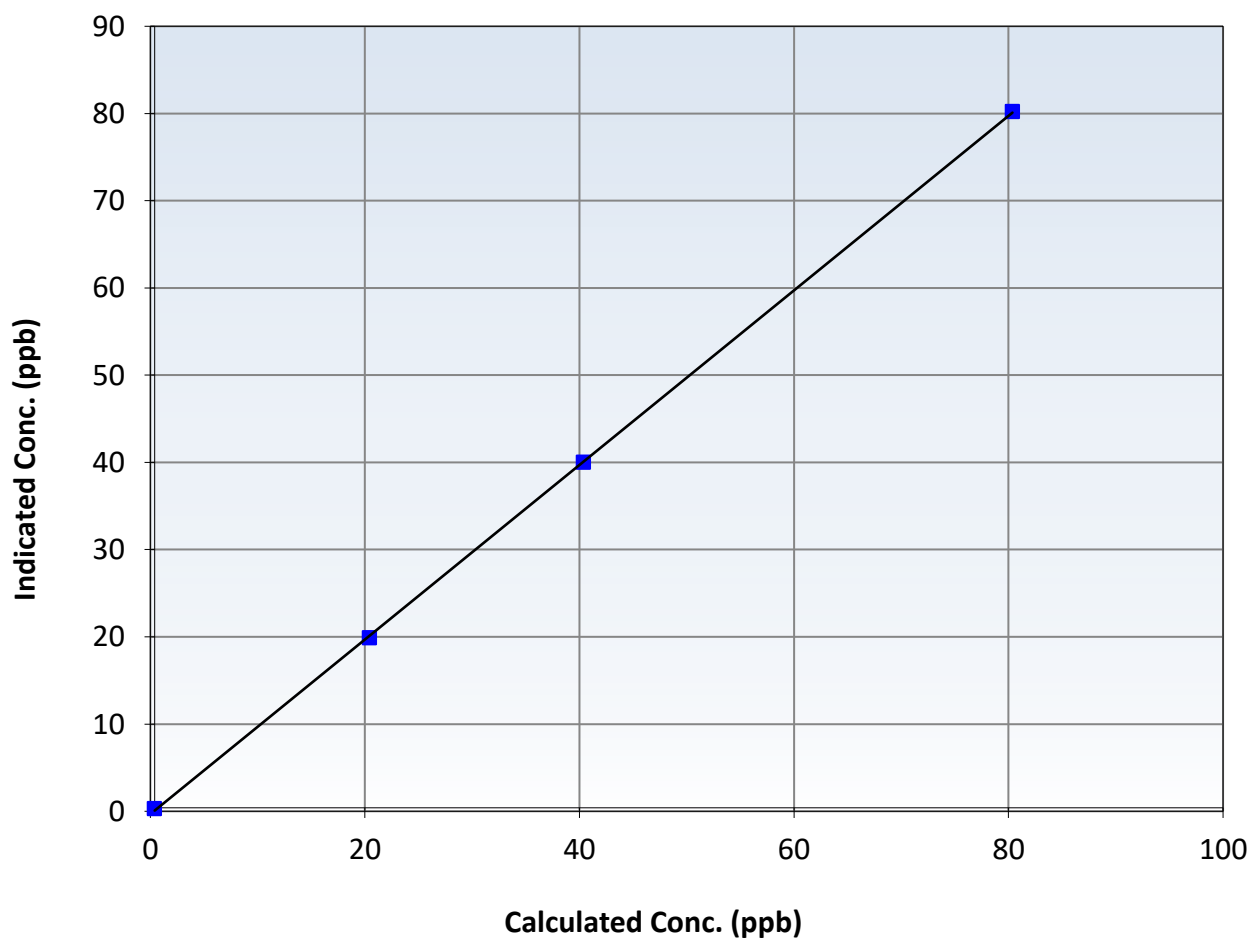
Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 20, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	10:32	End Time (MST):	15:20
Analyzer make:	Thermo 43iQ-TLE	Analyzer serial #:	12113311966

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999966	≥ 0.995
80.0	79.8	1.0020	Slope	1.000671	$0.90 - 1.10$
40.0	39.6	1.0095	Intercept	-0.317986	± 3
20.0	19.5	1.0276			

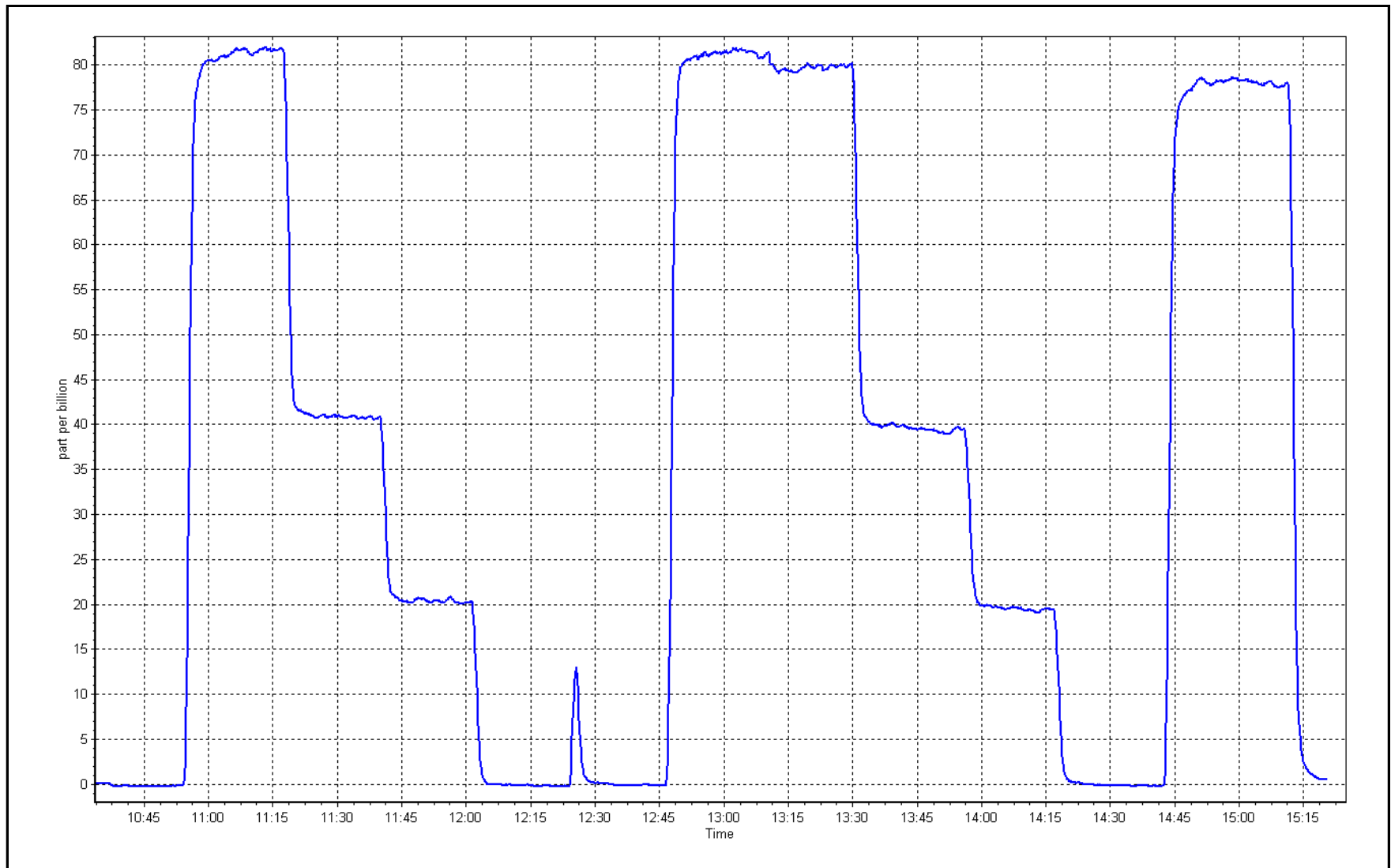
TRS Calibration Curve



TRS Calibration Plot

Date: September 8, 2025

Location: Bertha Ganter-Fort McKay





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H₂S Calibration Report

Station Information

Station Name: Bertha Ganter-Fort McKay Station number: AMS 01
Calibration Date: September 8, 2025 Last Cal Date: August 20, 2025
Start time (MST): 10:32 End time (MST): 15:20
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002674	1.004245	Backgd or Offset:	2.01	2.01
Calibration intercept:	-0.238059	-0.318056	Coeff or Slope:	0.977	0.977

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4917	82.6	80.0	80.8	0.986
As found Mid point	4959	41.3	40.0	40.0	0.992
As found Low point	4979	20.7	20.0	19.9	0.992
New cylinder response					
Baseline Corr As found:	81.1	Prev response:	79.94	*% change:	1.4%
Baseline Corr 2nd AF pt:	40.3	AF Slope:	1.014398	AF Intercept:	-0.398337
Baseline Corr 3rd AF pt:	20.2	AF Correlation:	0.999989	* = > +/-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) <i>Limit = 0.95-1.05</i>
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	19.6	1.022
As left zero	5000	0.0	0.0	-0.1	----
As left span	4917	82.6	80.0	79.1	1.011
SO2 Scrubber Check	4919	81.3	813.0	-0.1	----
Date of last scrubber change:	January 25, 2024		Ave Corr Factor		1.008
Date of last converter efficiency test:	November 7, 2024		107.9% efficiency		

Notes: Inlet filter change completed after as founds. No adjustments made. Scrubber check passed.

Calibration Performed By: Rene Chamberland



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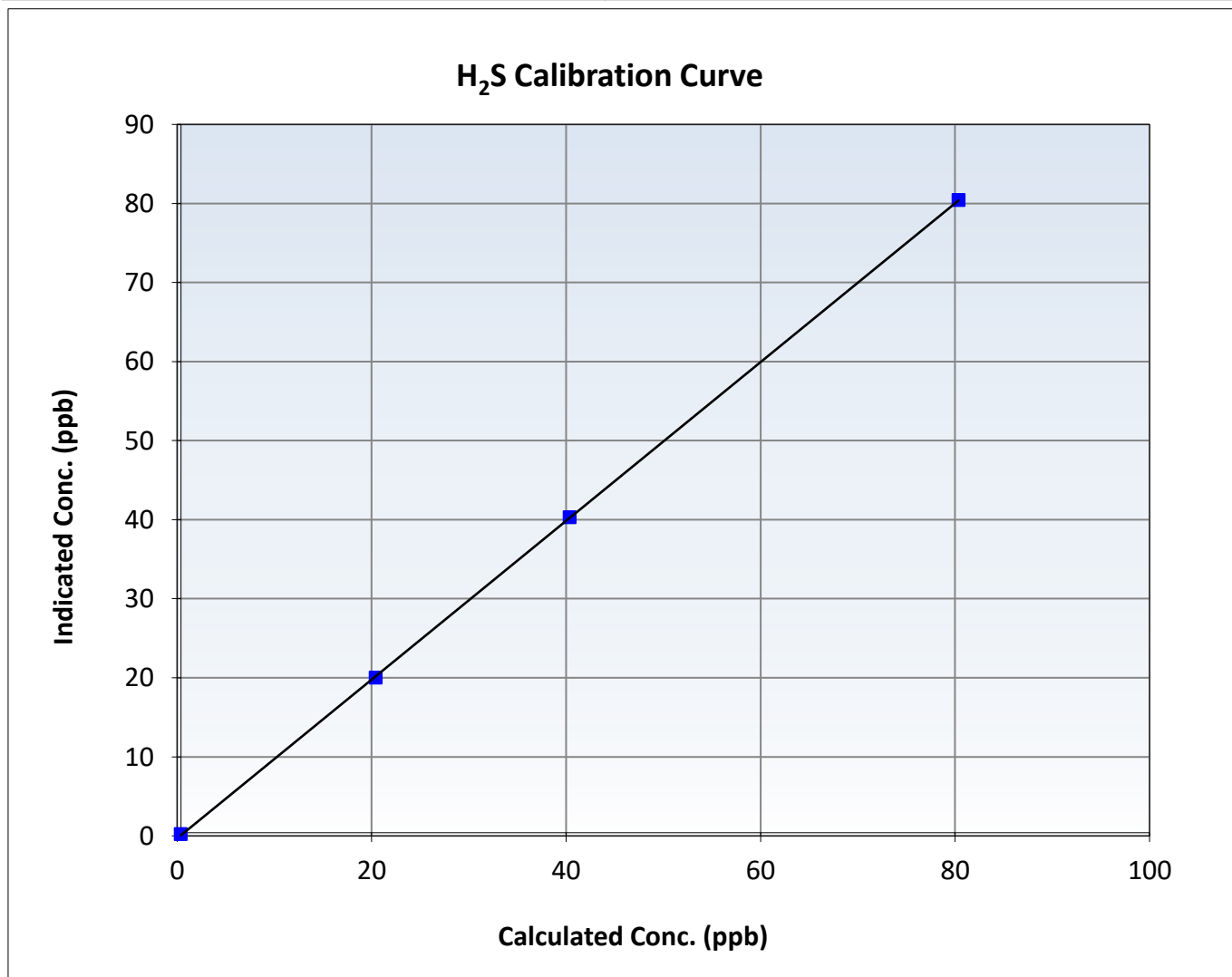
H₂S Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 20, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	10:32	End Time (MST):	15:20
Analyzer make:	Thermo 43iQ-TL	Analyzer serial #:	1200326167

Calibration Data

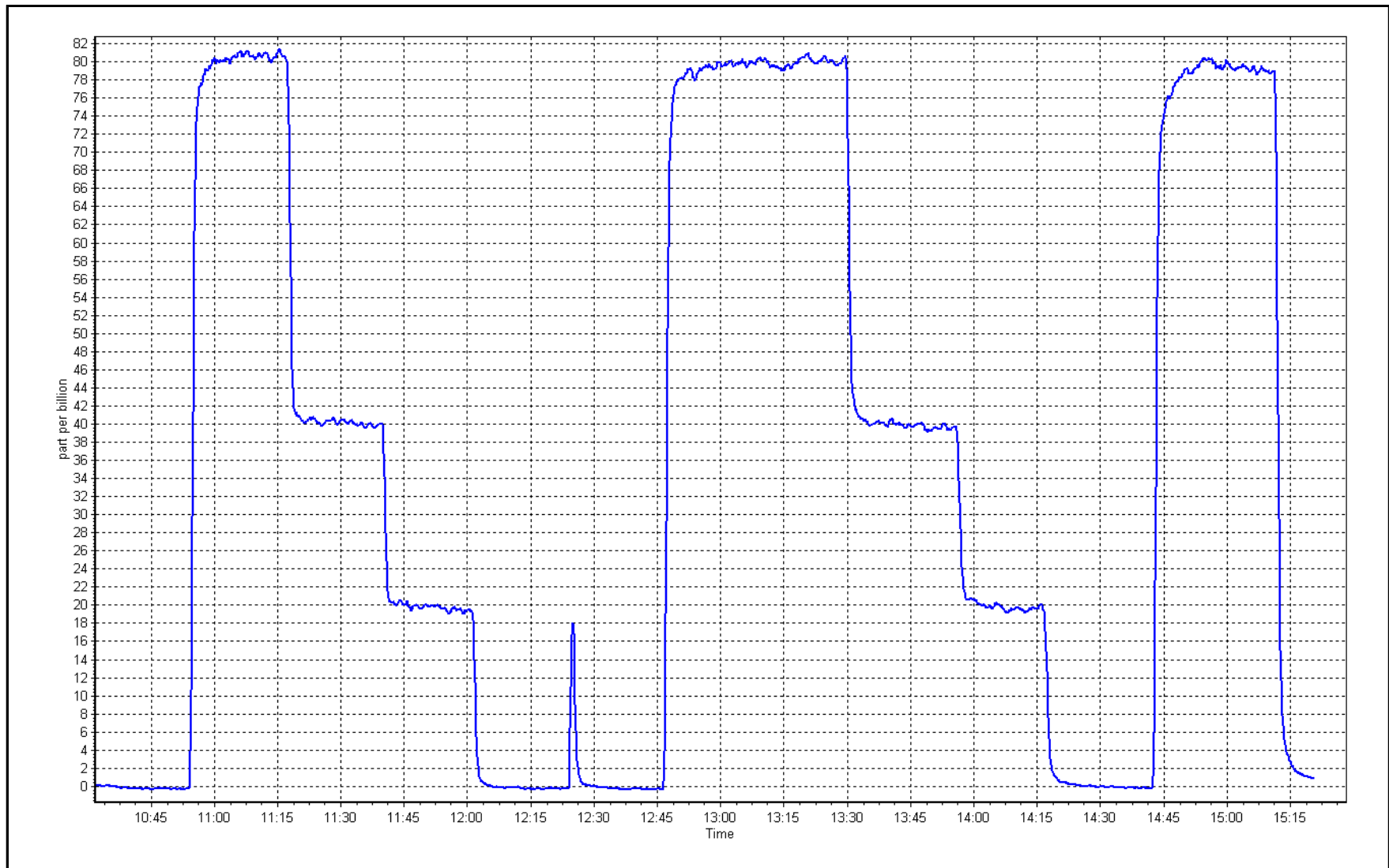
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999982		≥0.995
80.0	80.0	0.9995	Slope	1.004245		0.90 - 1.10
40.0	39.9	1.0019	Intercept	-0.318056		+/-3
20.0	19.6	1.0224				



H₂S Calibration Plot

Date: September 8, 2025

Location: Bertha Ganter-Fort McKay





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Bertha Ganter-Fort McKay
Calibration Date: September 3, 2025
Start time (MST): 9:30
Reason: Routine
Station number: AMS 01
Last Cal Date: August 8, 2025
End time (MST): 12:41

Calibration Standards

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

Analyzer Information

Analyzer make: Thermo 55i
THC Range: 0 - 20 ppm
Analyzer serial #: 1193585648
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.47E-04	2.49E-04	NMHC SP Ratio:	4.91E-05	4.95E-05
CH ₄ Retention time:	15.0	15.0	NMHC Peak Area:	187065	185423
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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	17.27	17.11	1.009
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.11	Prev response	17.21	*% 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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	81.3	17.27	17.30	0.998
Mid point	4959	40.7	8.64	8.70	0.993
Low point	4979	20.3	4.31	4.36	0.989
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	17.27	17.36	0.995
Average Correction Factor					0.993

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



Wood Buffalo Environmental Association

THC / CH₄ / 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	9.18	9.10	1.009
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.10	Prev response	9.15	*% change	-0.5%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	81.3	9.18	9.22	0.996
Mid point	4959	40.7	4.60	4.67	0.985
Low point	4979	20.3	2.29	2.34	0.981
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	9.18	9.26	0.991
Average Correction Factor					0.988

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	8.09	8.01	1.009
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.01	Prev response	8.07	*% 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	81.3	8.09	8.08	1.001
Mid point	4959	40.7	4.05	4.04	1.003
Low point	4979	20.3	2.02	2.02	0.997
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	81.3	8.09	8.10	0.999
Average Correction Factor					1.000

Calibration Statistics

	<i>Start</i>	<i>Finish</i>
THC Cal Slope:	0.994770	1.001304
THC Cal Offset:	0.033351	0.024732
CH ₄ Cal Slope:	0.997735	0.998414
CH ₄ Cal Offset:	-0.001729	0.001869
NMHC Cal Slope:	0.992619	1.003352
NMHC Cal Offset:	0.034480	0.023863

Calibration Performed By: Rene Chamberland



Wood Buffalo Environmental Association

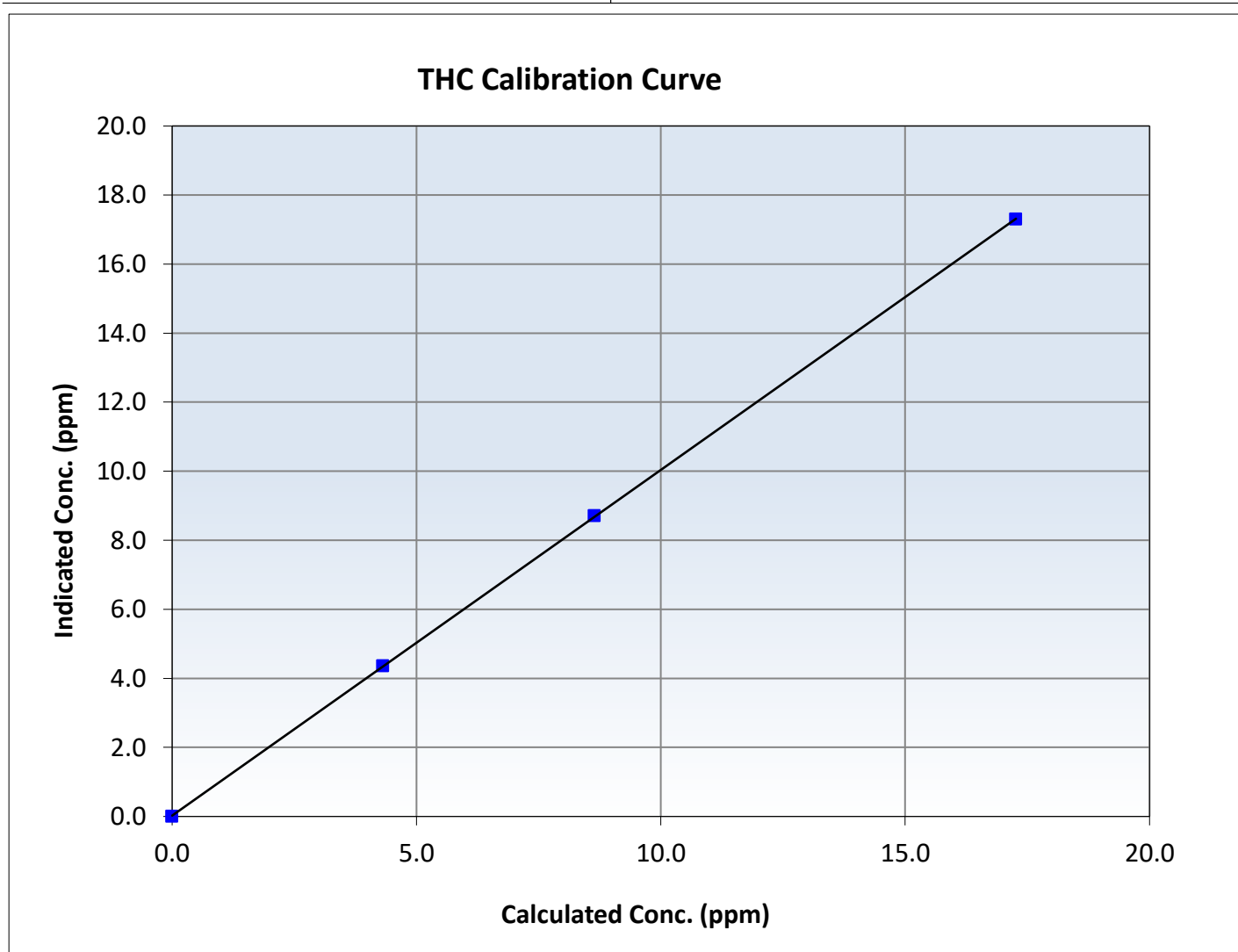
THC Calibration Summary

Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 8, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:30	End Time (MST):	12:41
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585648

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999989	≥ 0.995
17.27	17.30	0.9982	Slope	1.001304	$0.90 - 1.10$
8.64	8.70	0.9931	Intercept	0.024732	± 0.5
4.31	4.36	0.9891			





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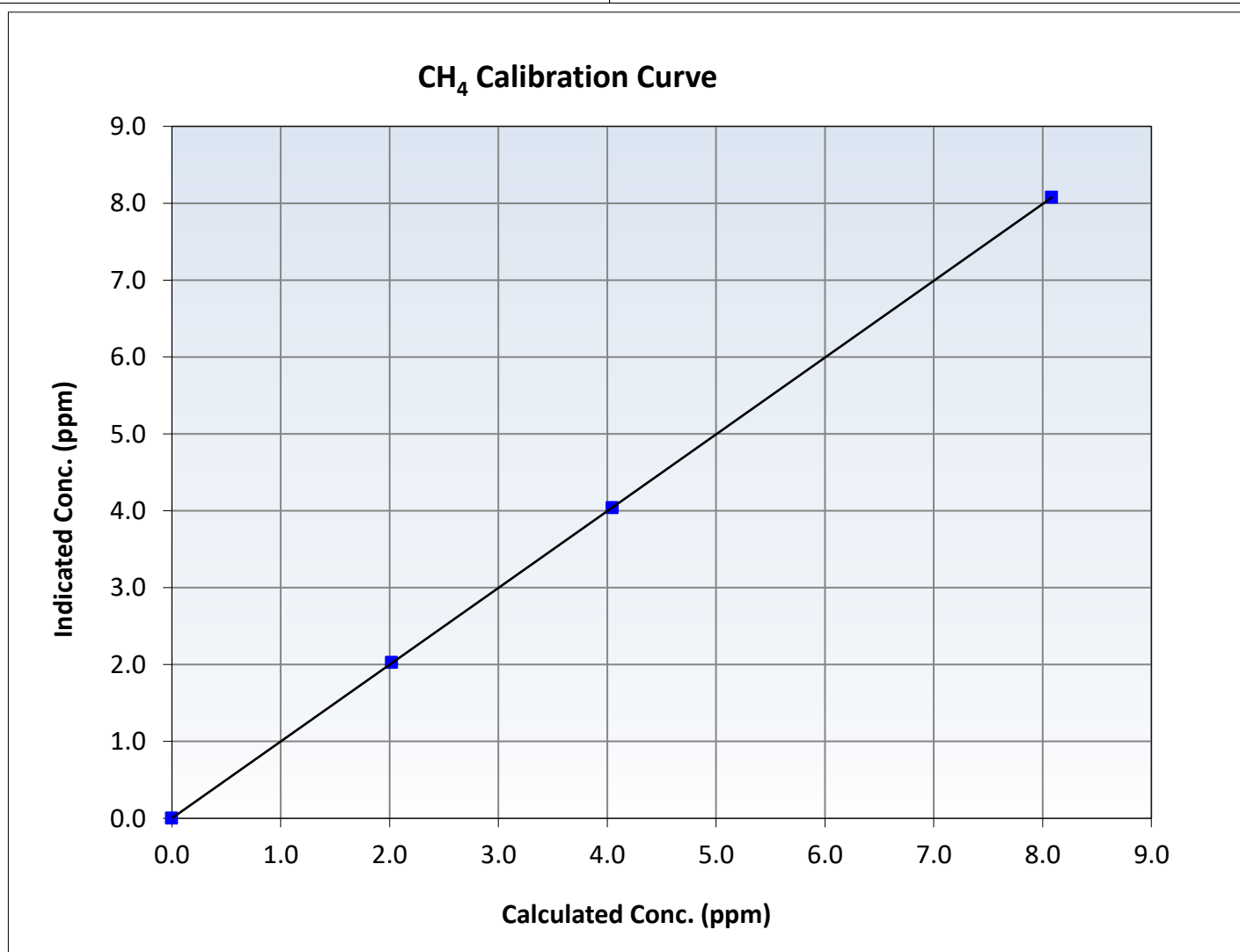
CH₄ Calibration Summary

Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 8, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:30	End Time (MST):	12:41
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585648

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999998	≥ 0.995
8.09	8.08	1.0012	Slope	0.998414	$0.90 - 1.10$
4.05	4.04	1.0026	Intercept	0.001869	± 0.5
2.02	2.02	0.9975			





Wood Buffalo Environmental Association

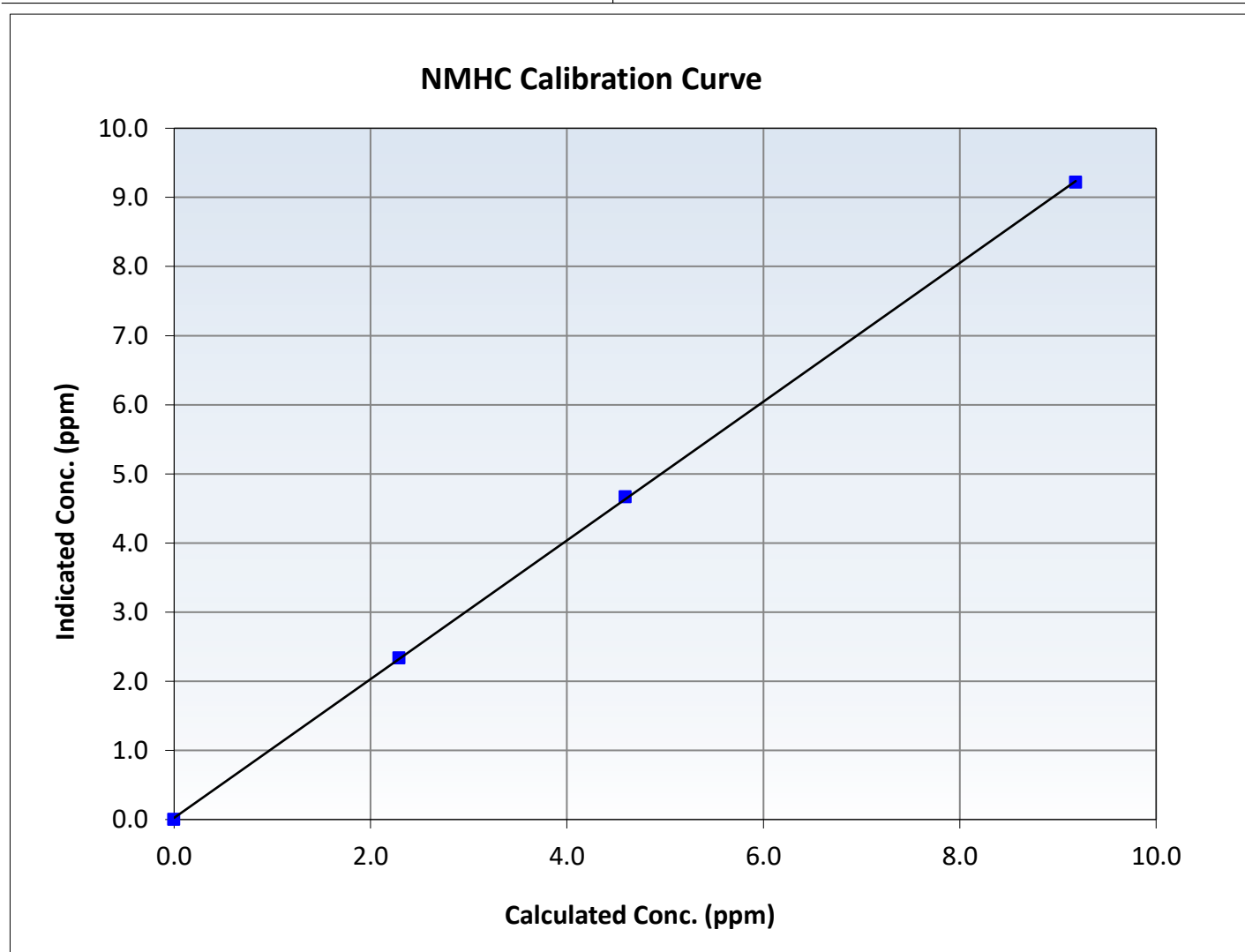
NMHC Calibration Summary

Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 8, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:30	End Time (MST):	12:41
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585648

Calibration Data

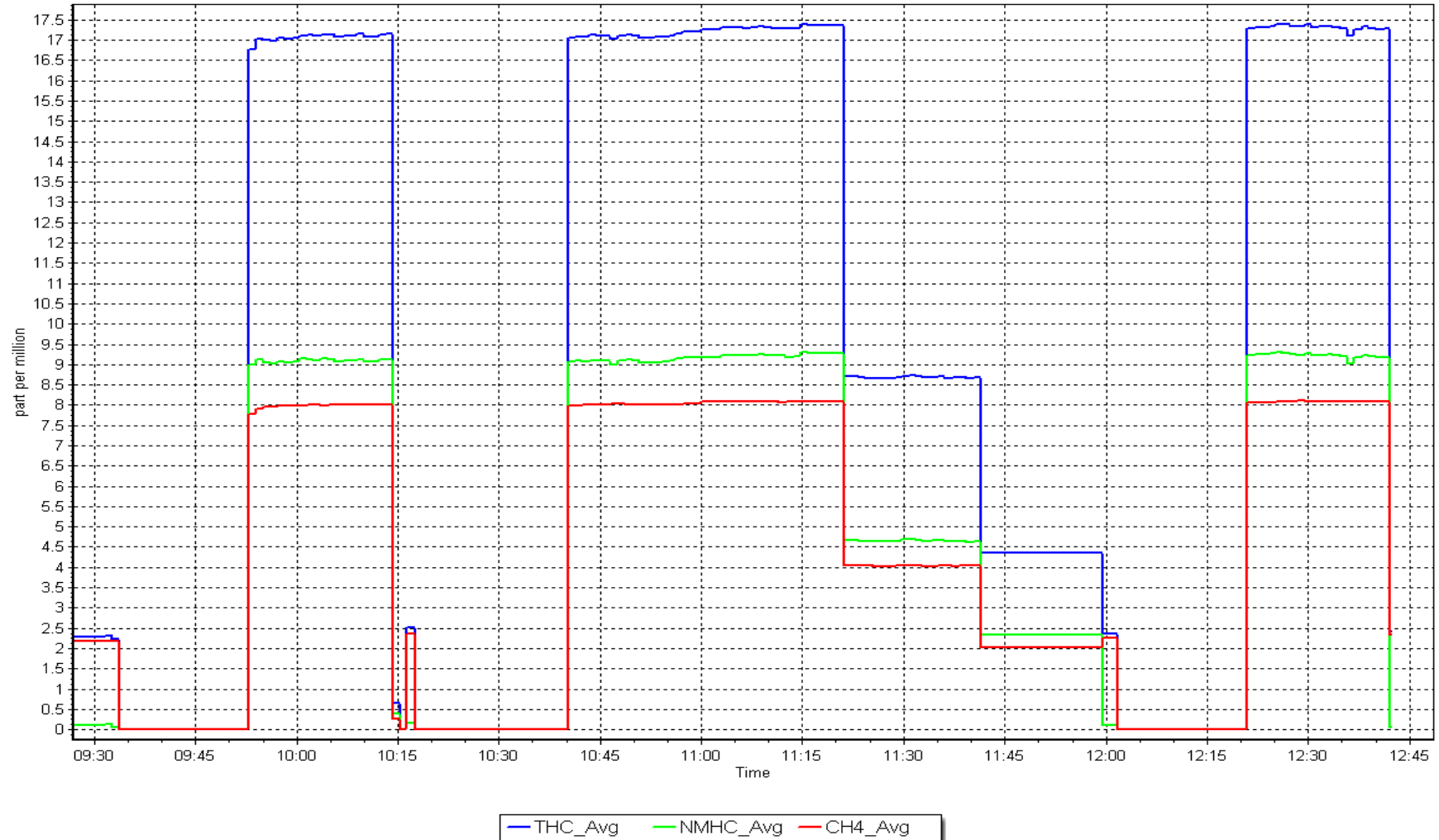
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999959	≥ 0.995
9.18	9.22	0.9960	Slope	1.003352	$0.90 - 1.10$
4.60	4.67	0.9852	Intercept	0.023863	± 0.5
2.29	2.34	0.9814			



NMHC Calibration Plot

Date: September 3, 2025

Location: Bertha Ganter-Fort McKay





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Bertha Ganter-Fort McKay
Calibration Date: September 23, 2025
Start time (MST): 10:39
Reason: Cylinder Change
Station number: AMS 01
Last Cal Date: September 3, 2025
End time (MST): 14:21

Calibration Standards

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

Analyzer Information

Analyzer make: Thermo 55i
THC Range: 0 - 20 ppm
Analyzer serial #: 1193585648
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.49E-04	2.49E-04	NMHC SP Ratio:	4.95E-05	4.95E-05
CH ₄ Retention time:	15.0	15.0	NMHC Peak Area:	185423	185423
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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	17.27	17.11	1.009
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.11	Prev response	17.31	*% change	-1.2%
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)) <i>Limit = 0.95-1.05</i>
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	17.18	1.005
Average Correction Factor					

Notes: Changed the H2 cylinder after as founds.



Wood Buffalo Environmental Association

THC / CH₄ / 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	9.18	9.05	1.014
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.05	Prev response	9.24	*% change	-2.0%
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) <i>Limit = 0.95-1.05</i>
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	9.11	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	81.3	8.09	8.06	1.003
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.06	Prev response	8.07	*% 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) <i>Limit = 0.95-1.05</i>
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	8.07	1.002
Average Correction Factor					

Calibration Statistics

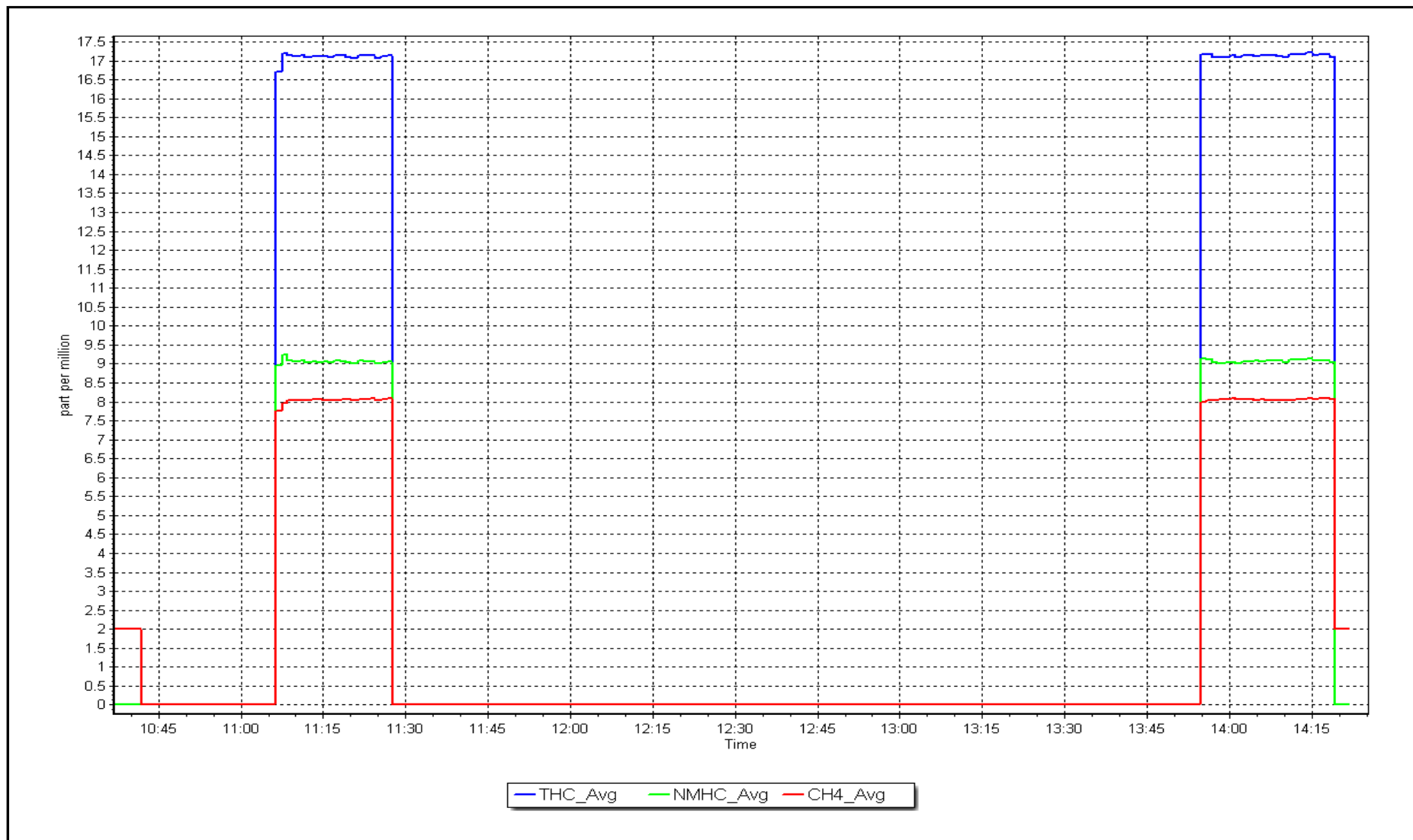
	<u>Start</u>	<u>Finish</u>
THC Cal Slope:	1.001304	
THC Cal Offset:	0.024732	
CH ₄ Cal Slope:	0.998414	
CH ₄ Cal Offset:	0.001869	
NMHC Cal Slope:	1.003352	
NMHC Cal Offset:	0.023863	

Calibration Performed By: Rene Chamberland

NMHC Calibration Plot

Date: September 23, 2025

Location: Bertha Ganter-Fort McKay





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Bertha Ganter-Fort McKay
Station number: AMS 01
Calibration Date: September 11, 2025
Last Cal Date: August 15, 2025
Start time (MST): 10:37
End time (MST): 15:29
Reason: Routine

Calibration Standards

NO Gas Cylinder #: CC335700
NOX Cal Gas Conc: 59.40 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 59.40 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: September 1, 2032
NO Cal Gas Conc: 59.20 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 59.20 ppm
NO gas Diff:
Serial Number: 3565
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.4	-0.6	1.0	----	----
AF High point	4932	67.6	803.1	800.4	2.7	794.6	787.1	7.4	1.0112	1.0161
AF Mid point										
AF Low point										
New cyl resp										
Previous Response	NO _x = 805.7 ppb	NO = 801.2 ppb				<i>* = > +/-5% change initiates investigation</i>		*Percent Change	NO _x = -1.5%	
Baseline Corr 1st pt	NO _x = 794.2 ppb	NO = 787.7 ppb				<u>As Found Statistics</u>		*Percent Change	NO = -1.7%	
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb				As found	NO _x r ² :	Nx SI:	Nx Int:	
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb				As found	NO r ² :	NO SI:	NO Int:	
						As found	NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Teledyne API T200
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 7117

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.199	1.198	NO bkgnd or offset:	-3.1	-4.1
NOX coeff or slope:	1.200	1.200	NOX bkgnd or offset:	-2.9	-3.1
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	8.6	8.5

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.002829	0.999542
NO _x Cal Offset:	0.380000	0.160000
NO Cal Slope:	1.001733	0.999277
NO Cal Offset:	-0.600000	-0.740000
NO ₂ Cal Slope:	1.007365	1.002291
NO ₂ Cal Offset:	0.673311	0.364020

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	-0.3	0.1	-0.4	----	----
High point	4932	67.6	803.1	800.4	2.7	802.6	799.4	3.1	1.0006	1.0012
Mid point	4966	33.8	401.5	400.2	1.4	401.9	399.0	2.9	0.9991	1.0030
Low point	4983	16.9	200.8	200.1	0.7	201.2	198.2	3.1	0.9979	1.0096
As left zero	5000	0.0	0.0	0.0	0.0	0.4	0.7	-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									0.9992	1.0046

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	-0.4	----	----
High GPT point	799.5	401.4	400.8	401.8	0.9975	100.2%
Mid GPT point	799.5	594.4	207.8	208.7	0.9957	100.4%
Low GPT point	799.5	698.5	103.7	105.3	0.9848	101.5%
Average Correction Factor					0.9927	100.7%

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

Calibration Performed By: Rene Chamberland



Wood Buffalo Environmental Association

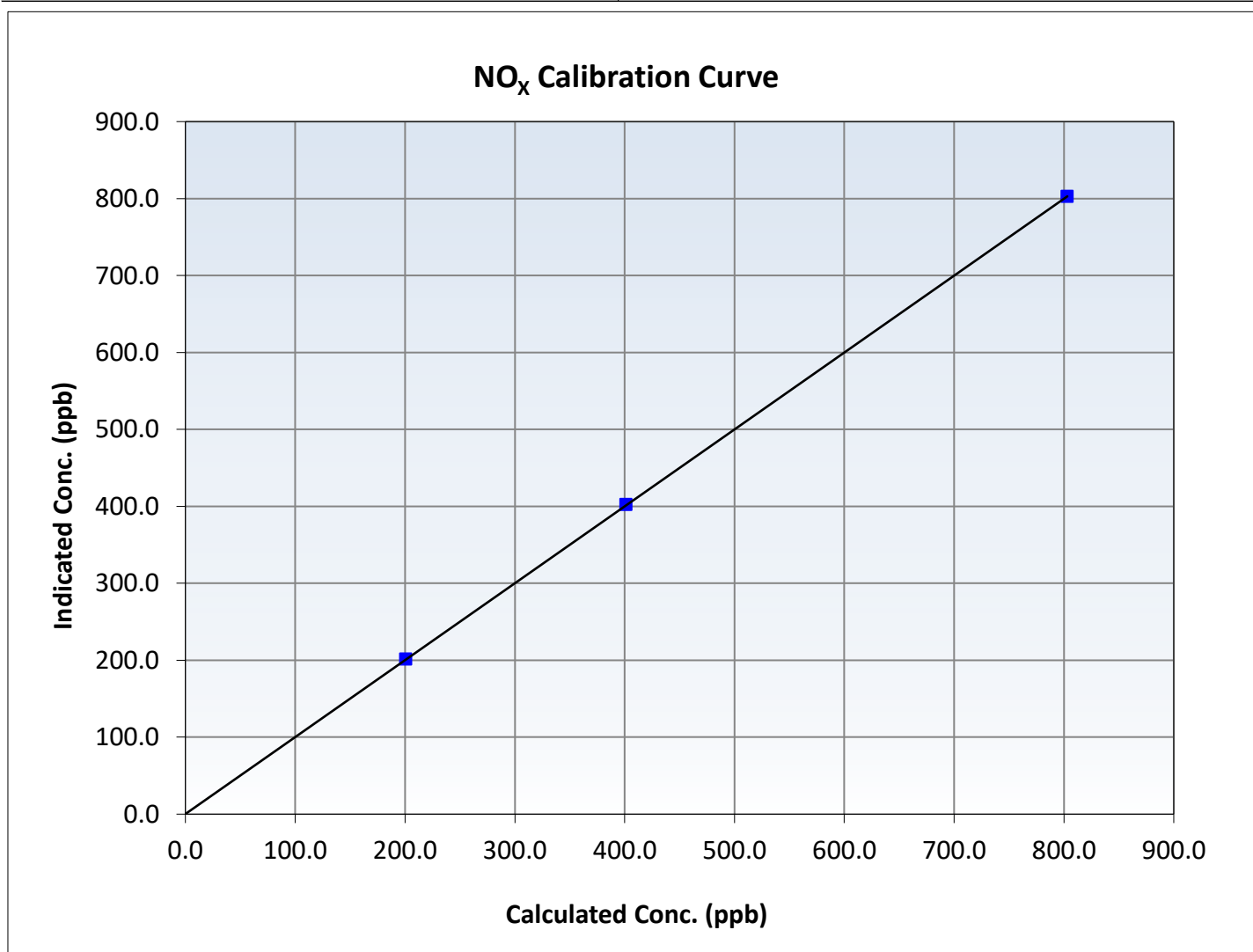
NO_x Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 15, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	10:37	End Time (MST):	15:29
Analyzer make:	Teledyne API T200	Analyzer serial #:	7117

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	-0.3	----	Correlation Coefficient	0.999998		≥0.995
803.1	802.6	1.0006	Slope	0.999542		0.90 - 1.10
401.5	401.9	0.9991	Intercept	0.160000		+/-20
200.8	201.2	0.9979				





Wood Buffalo Environmental Association

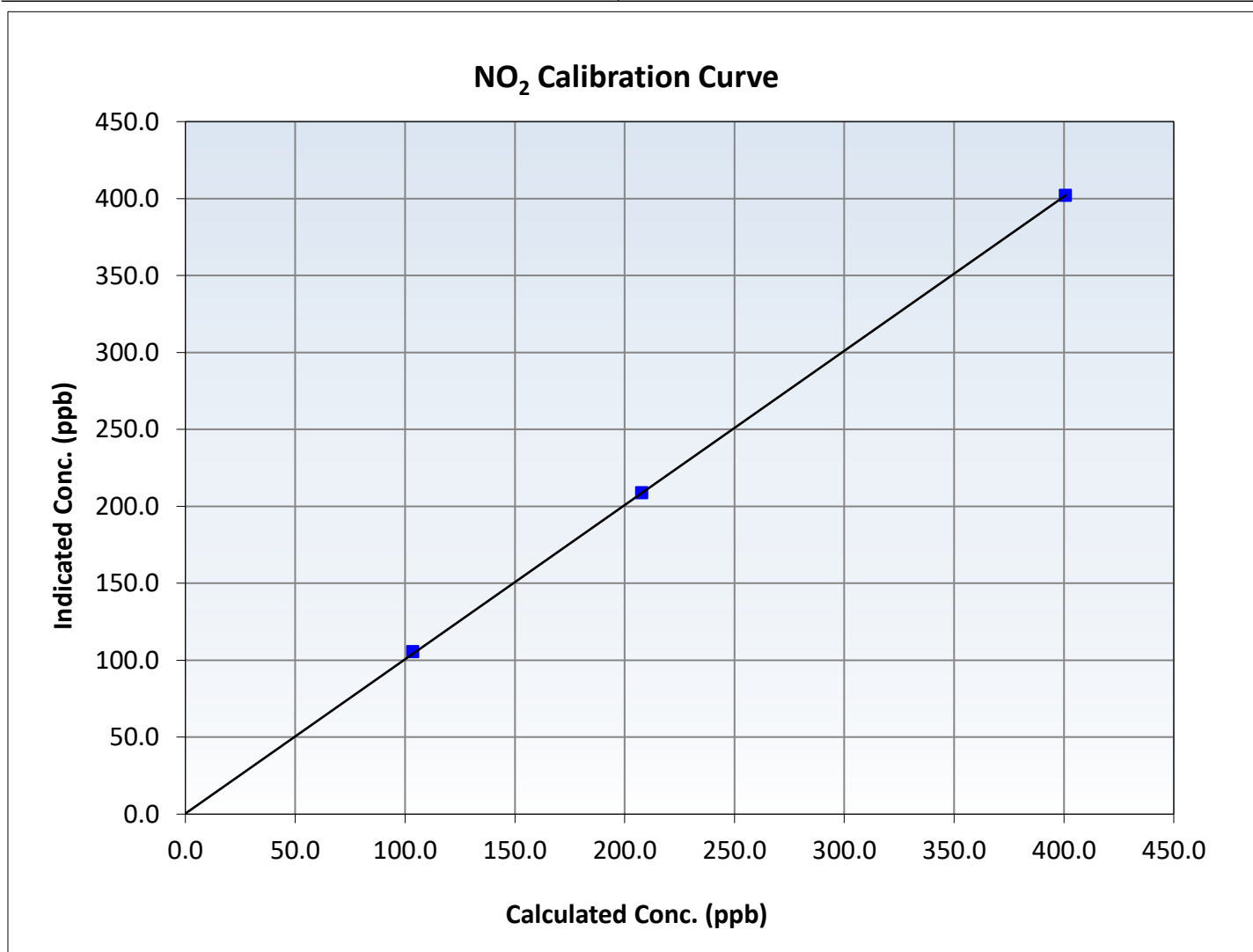
NO₂ Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 15, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	10:37	End Time (MST):	15:29
Analyzer make:	Teledyne API T200	Analyzer serial #:	7117

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	-0.4	----	Correlation Coefficient	0.999981		≥ 0.995
400.8	401.8	0.9975	Slope	1.002291		0.90 - 1.10
207.8	208.7	0.9957	Intercept	0.364020		+/-20
103.7	105.3	0.9848				





Wood Buffalo Environmental Association

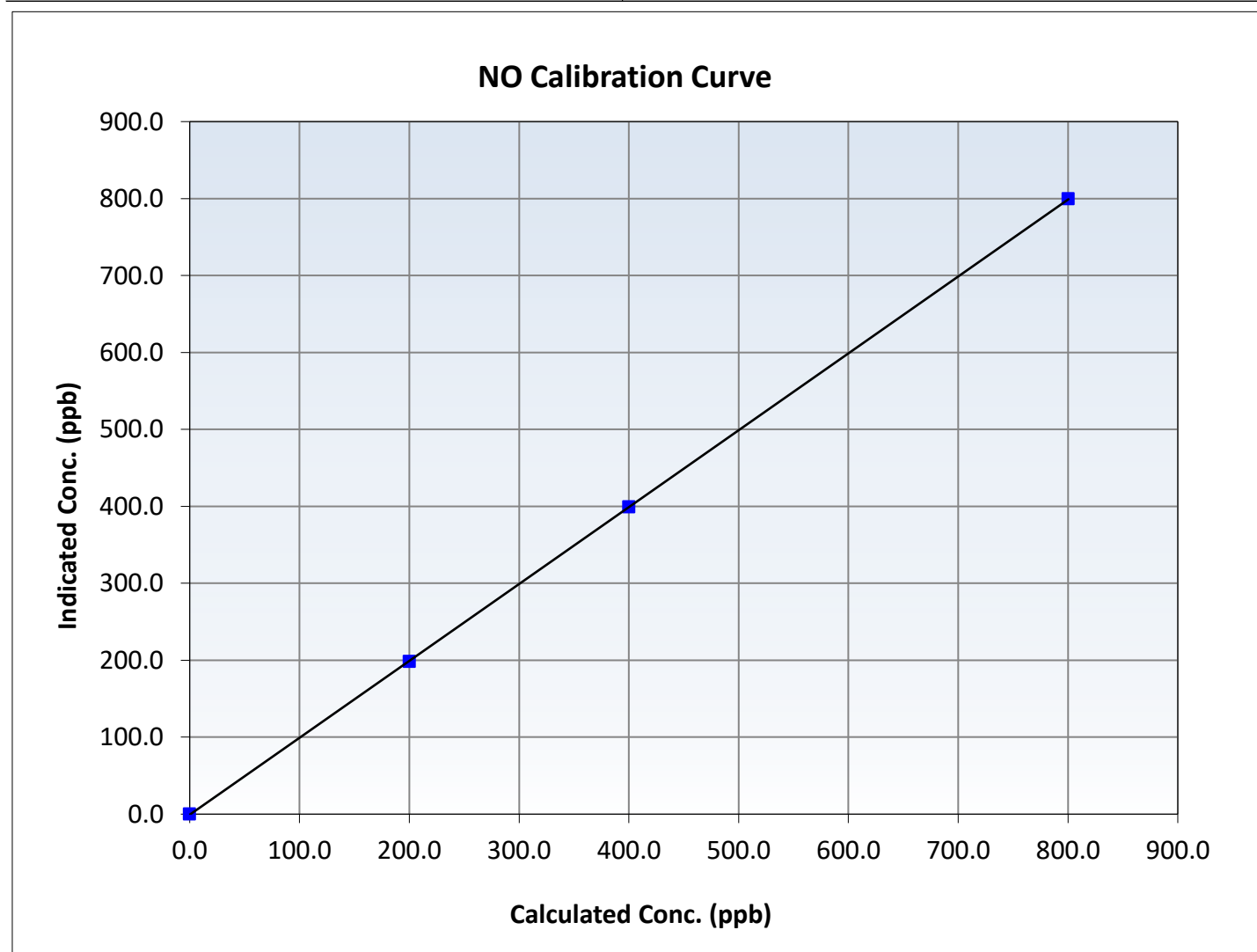
NO Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 15, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	10:37	End Time (MST):	15:29
Analyzer make:	Teledyne API T200	Analyzer serial #:	7117

Calibration Data

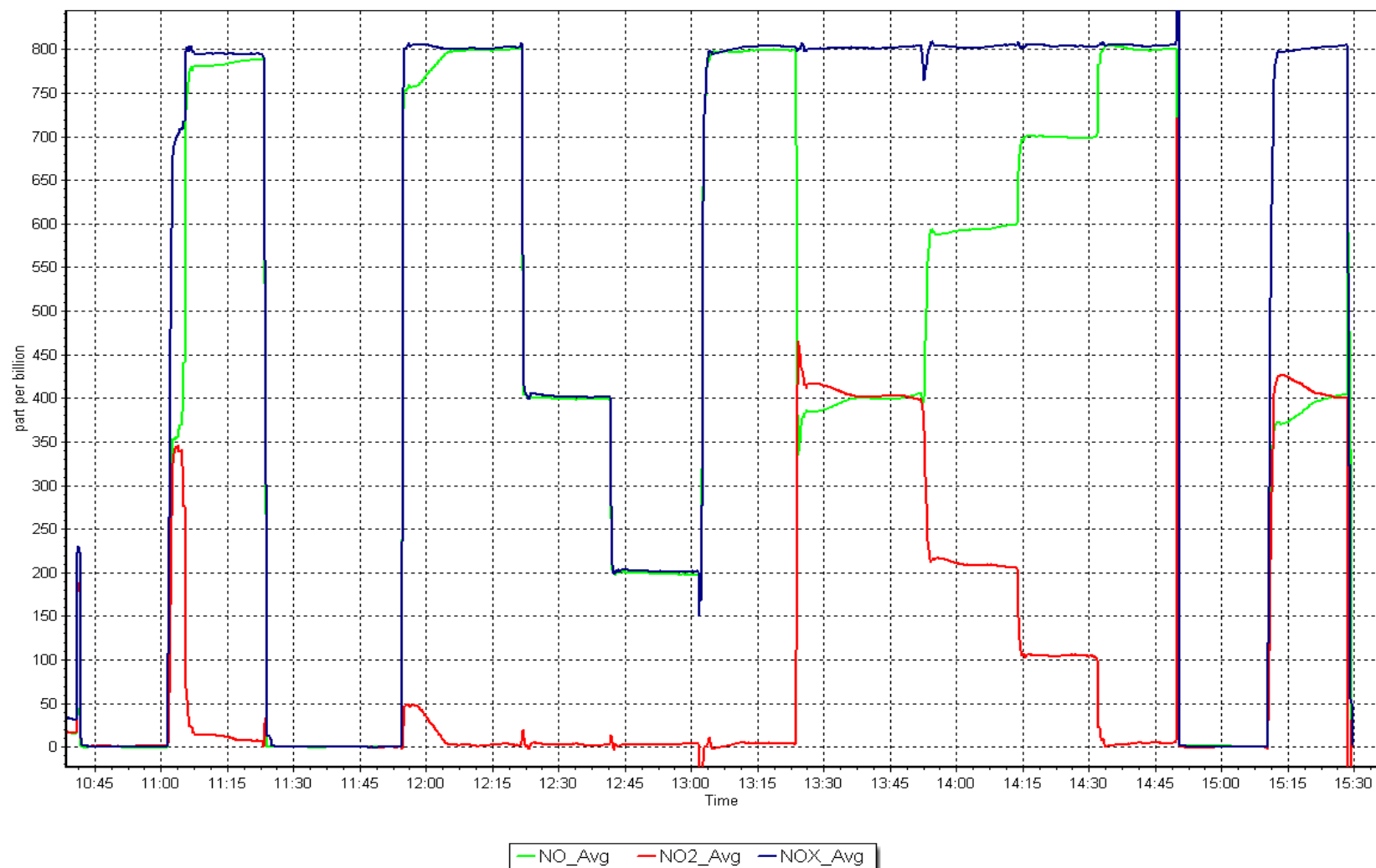
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999995		≥ 0.995
800.4	799.4	1.0012	Slope	0.999277		0.90 - 1.10
400.2	399.0	1.0030	Intercept	-0.740000		+/-20
200.1	198.2	1.0096				



NO_x Calibration Plot

Date: September 11, 2025

Location: Bertha Ganter-Fort McKay





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Bertha Ganter-Fort McKay Station number: AMS 01
Calibration Date: September 2, 2025 Last Cal Date: August 7, 2025
Start time (MST): 9:40 End time (MST): 13:18
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.998571	1.001429	Backgd or Offset:	8.6	5.6
Calibration intercept:	0.500000	-0.400000	Coeff or Slope:	1.004	1.006

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-2.7	----
As found High point	5000	863.1	400.0	395.3	1.005
As found Mid point					
As found Low point					
Baseline Corr As found:	398.0	Previous response	399.9	*% 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	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	5000	863.1	400.0	400.3	0.999
Mid point	5000	744.0	200.0	200.0	1.000
Low point	5000	651.7	100.0	99.0	1.010
As left zero	5000	0.0	0.0	-0.4	----
As left span	5000	863.1	400.0	403.0	0.993
Average Correction Factor					1.003

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

Calibration Performed By: Rene Chamberland



Wood Buffalo Environmental Association

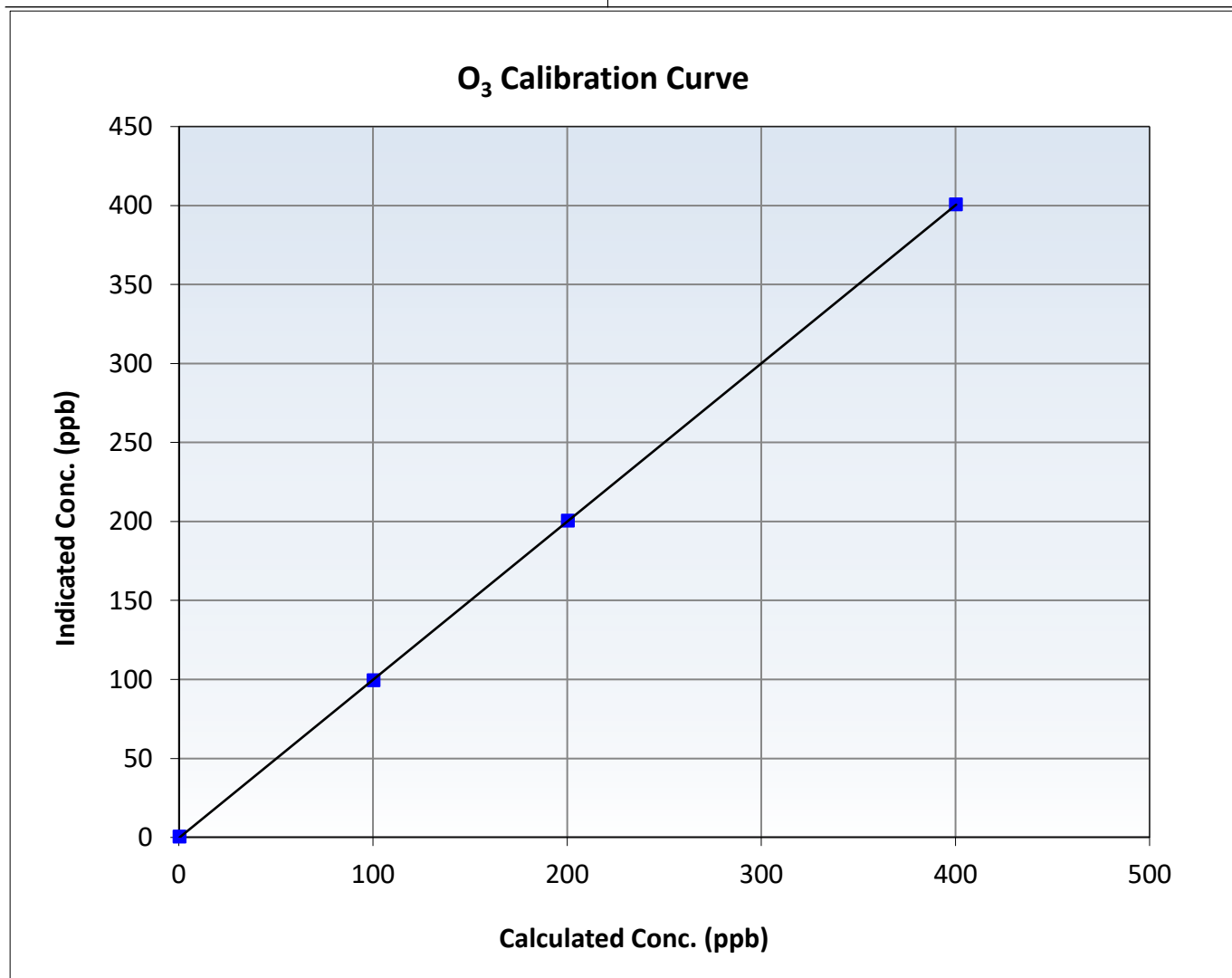
O₃ Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	August 7, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	9:40	End Time (MST):	13:18
Analyzer make:	Teledyne API T400	Analyzer serial #:	1107

Calibration Data

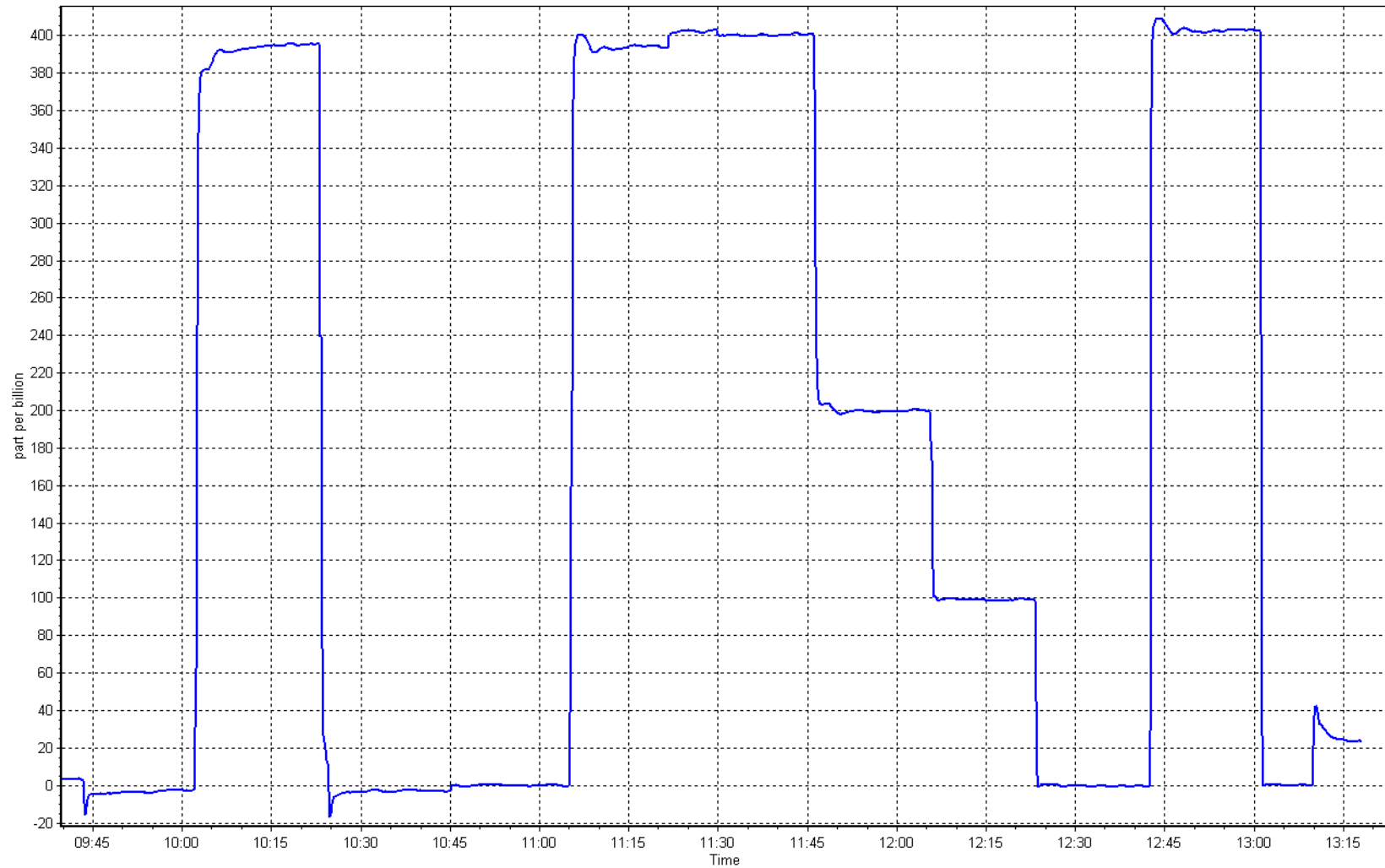
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999991	≥0.995
400.0	400.3	0.9993	Slope	1.001429	0.90 - 1.10
200.0	200.0	1.0000	Intercept	-0.400000	+/- 5
100.0	99.0	1.0101			



O₃ Calibration Plot

Date: September 2, 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: September 10, 2025 Last Cal Date: August 20, 2025
Start time (MST): 12:20 End time (MST): 14:25

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 (°C)	25.8	26.0	25.8	☐	+/- 2 °C
P (mmHg)	731.1	733.23	731.1	☐	+/- 10 mmHg
Flow (LPM)	5.01	5.333	5.02	☒	+/- 0.25 LPM
PW% (pump)	37		37	☐	>80%
Zero Verification	PM w/o HEPA:	8.9	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				☐	10.9 +/- 0.5

Date Optical Chamber Cleaned: August 20, 2025
Date Disposable Filter Changed: August 20, 2025

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

Annual Maintenance

Date Sample Tube Cleaned: August 20, 2025
Date RH/T Sensor Cleaned: August 20, 2025

Notes: Flow, temperature, and pressure were verified. Flow was adjusted. 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:	September 4, 2025	Last Cal Date:	August 18, 2025
Start time (MST):	11:14	End time (MST):	15:43
NH3 Cal Date:	September 5, 2025	Last Cal Date:	August 19, 2025
Start time (MST):	10:25	End time (MST):	15:18
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:	5.80
NOX Range (ppb):	0 - 1000 ppb	Sample Flow:	537

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coefficient:	0.997	0.984	Nt coefficient:	1.011	0.997
NOX coefficient:	1.001	0.989	NO bkgnd:	-3.0	-3.0
NO2 coefficient:	1.000	1.000	NOX bkgnd:	-2.8	-2.8
NH3 coefficient:	0.987	0.987	Nt bkgnd:	-1.9	-1.9

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.997891	0.997535
NO _x Cal Offset:	-1.160000	-0.960000
NO Cal Slope:	0.999920	0.998878
NO Cal Offset:	-3.240000	-2.800000
NO ₂ Cal Slope:	1.005373	0.997147
NO ₂ Cal Offset:	0.396184	-0.284956
NH3 Cal Slope:	1.001653	0.998912
NH3 Cal Offset:	1.382778	6.194453
Nt Cal Slope:	1.005123	1.002428
Nt Cal Offset:	1.893544	6.567914



Wood Buffalo Environmental Association

NO_x - NO - NO₂ Calibration Report

NO_x / NO / Nt As Found Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	Baseline corr NO _x Correction factor (Cc/Ic) <i>Limit = 0.9 - 1.0</i>	Baseline corr NO Correction factor (Cc/Ic) <i>Limit = 0.9 - 1.0</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.5	0.5	0.5	----	----
As found span	4932	67.6	803.2	800.4	803.2	818.0	811.2	816.5	0.9818	0.9867
AF GPT span	4932	67.6	803.2	-----	803.2	801.0	-----	801.9	1.0027	-----
new NO cyl rp										

Baseline Corr As Fd	Nt = 816 ppb	NO _x = 817.5 ppb	NO = 810.7 ppb	*Percent Change	Nt _(NO) = 0.8%
Previous Response	Nt = 809.16 ppb	NO _x = 800.3 ppb	NO = 797.1 ppb	*Percent Change	NO _x = 2.1%
**NO _x Δ (NO to GPT response) = -2.1%				*Percent Change	NO = 1.7%
* = > +/-2% difference initiates investigation				* = > +/-5% change initiates investigation	

NO_x / NO / Nt Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Calibration zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.3	0.0	----	----
High point	4932	67.6	803.1	800.4	803.1	800.6	798.4	802.0	1.0031	1.0025
Mid point	4966	33.8	401.5	400.2	401.5	399.0	394.3	398.5	1.0064	1.0149
Low point	4983	16.9	200.8	200.1	200.8	198.7	195.5	199.2	1.0104	1.0235
Average Correction Factor									1.0066	1.0136

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
As Found zero	----	----	0.0	0.0	----	----
Calibration zero	----	----	0.0	0.1	----	----
High GPT point (400 ppb O3)	794.7	391.5	405.9	404.5	1.0035	99.7%
Mid GPT point (200 ppb O3)	794.7	585.0	212.4	211.8	1.0029	99.7%
Low GPT point (100 ppb O3)	794.7	689.4	108.0	106.7	1.0122	98.8%
Average Correction Factor					1.0062	99.4%



Wood Buffalo Environmental Association NH₃ - 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)) <i>Limit = 0.9 - 1.1</i>	Baseline corr NH3 Correction factor (Cc/(Ic-zero)) <i>Limit = 0.9 - 1.1</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.4	0.4	0.0	----	----
AF High point	2931	69.4	1799.5	0.0	1799.5	1809.5	6.5	1803.1	0.995	0.998
AF Mid point										
AF Low point										
new NH3 cyl rp										
Baseline Corr As Fd	Nt = 1809.1 ppb		NH3 = 1803.1 ppb					*Percent Change	Nt _(NH3) = -0.1%	
Previous Response	Nt = 1810.6 ppb		NH3 = 1803.9 ppb				* = > +/-5% change initiates investigation	*Percent Change	NH3 = 0.0%	

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) <i>Limit = 0.95-1.05</i>	NH3 Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Calibration zero	5000	0.0	0.0	0.0	0.0	0.0	-0.2	0.2	----	----
High point	2931	69.4	1799.8	0.0	1799.8	1809.5	6.5	1803.1	0.995	0.998
Mid point	2961	38.6	1001.0	0.0	1001.0	1006.6	4.4	1002.5	0.994	0.999
Low point	2981	19.3	500.5	0.0	500.5	519.5	2.8	516.7	0.963	0.969
Average Correction Factor									0.9842	0.9885
NH3 Previous Converter Efficiency =		98.7 %								
NH3 Current Converter Efficiency =		98.7 %								

Notes:

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

Calibration Performed By:

Rene Chamberland



Wood Buffalo Environmental Association

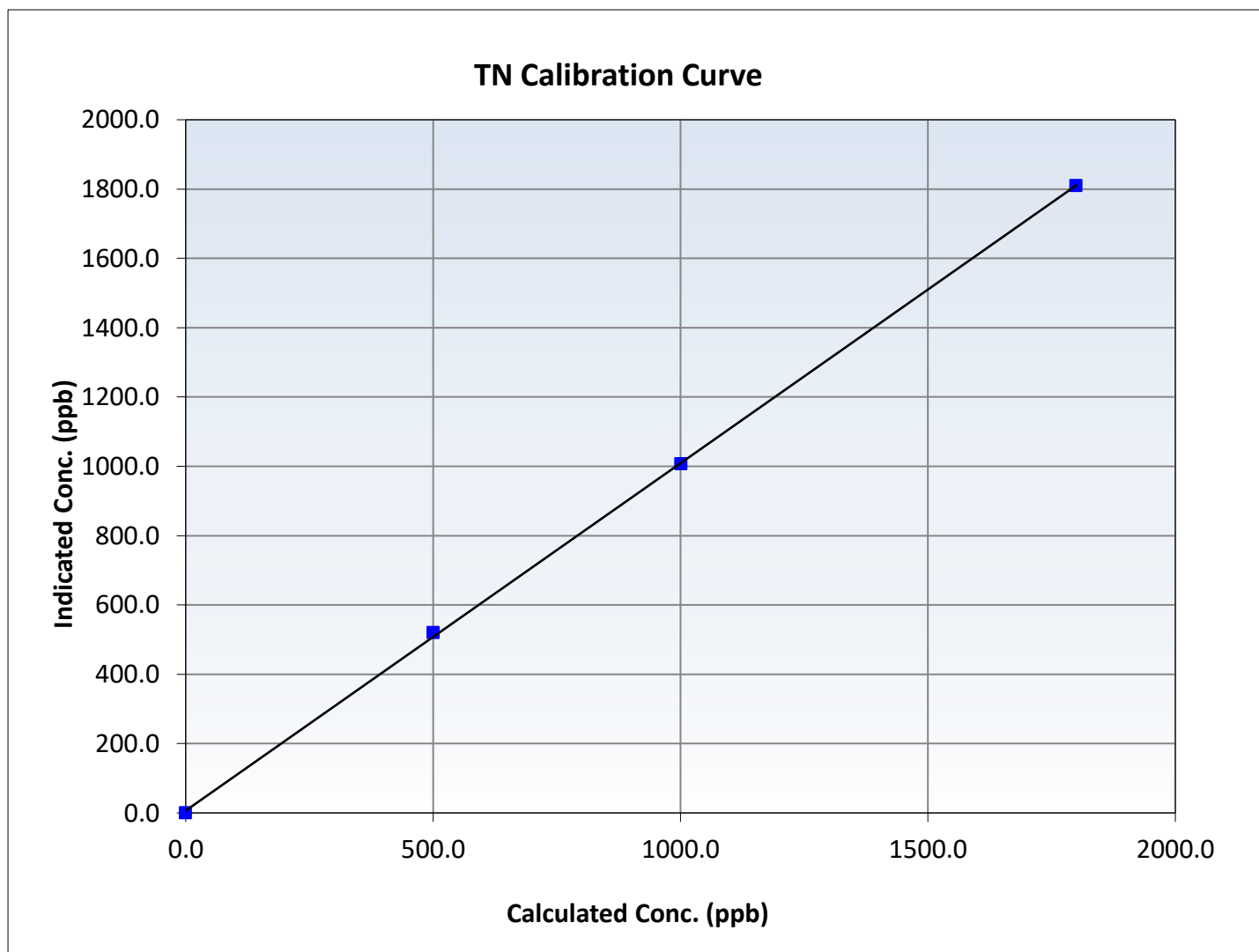
Nt Calibration Summary

Station Information

Calibration Date:	September 5, 2025	Previous Calibration:	August 18, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:14	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	475

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	0.0	----	Correlation Coefficient	0.999898	≥ 0.995
1799.8	1809.5	0.9946	Slope	1.002428	$0.90 - 1.10$
1001.0	1006.6	0.9945	Intercept	6.567914	± 20
500.5	519.5	0.9635			





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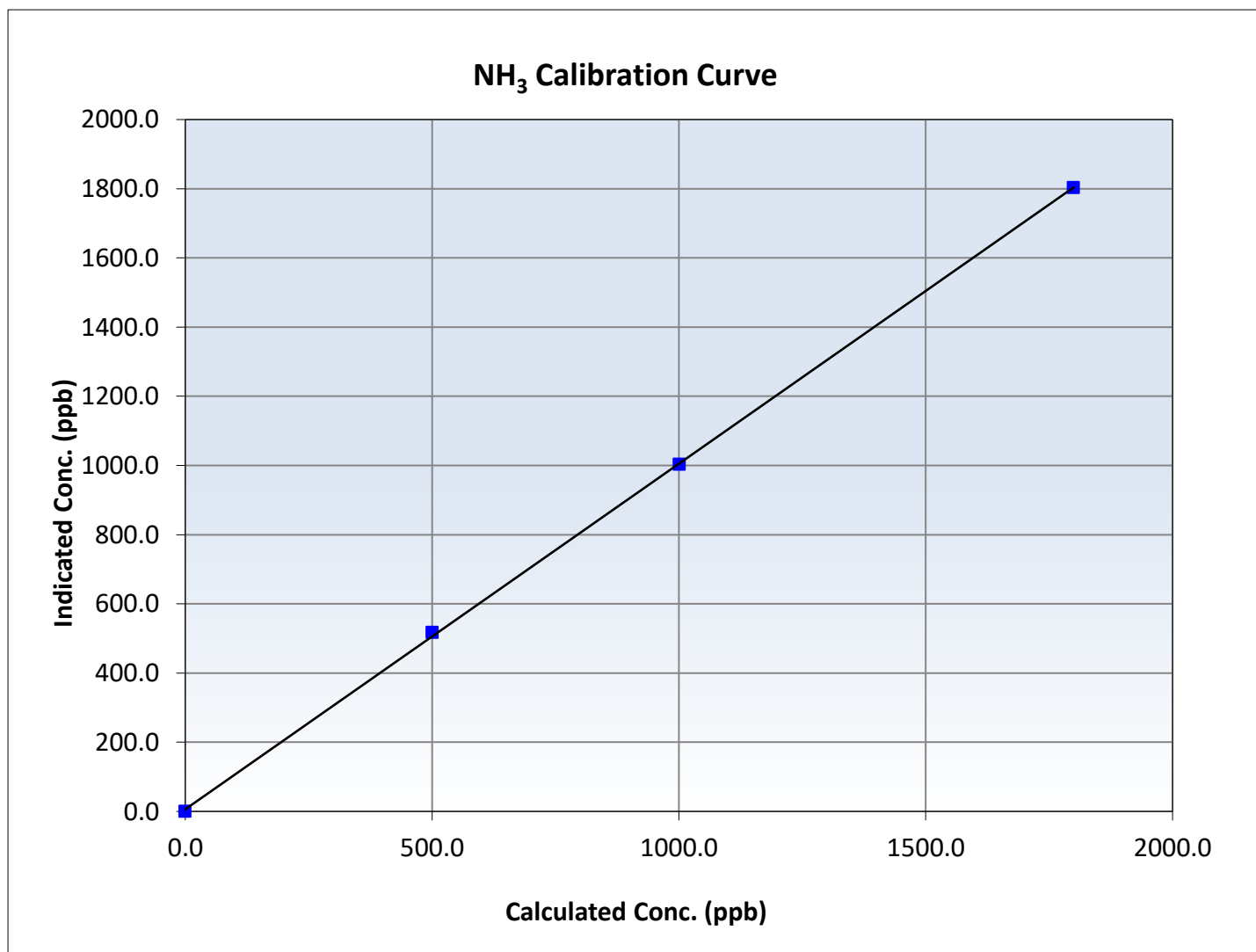
NH₃ Calibration Summary

Station Information

Calibration Date:	September 5, 2025	Previous Calibration:	August 18, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:14	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	475

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999909	≥0.995
1799.8	1803.1	0.9982	Slope	0.998912	0.90 - 1.10
1001.0	1002.5	0.9985	Intercept	6.194453	+/-20
500.5	516.7	0.9687			





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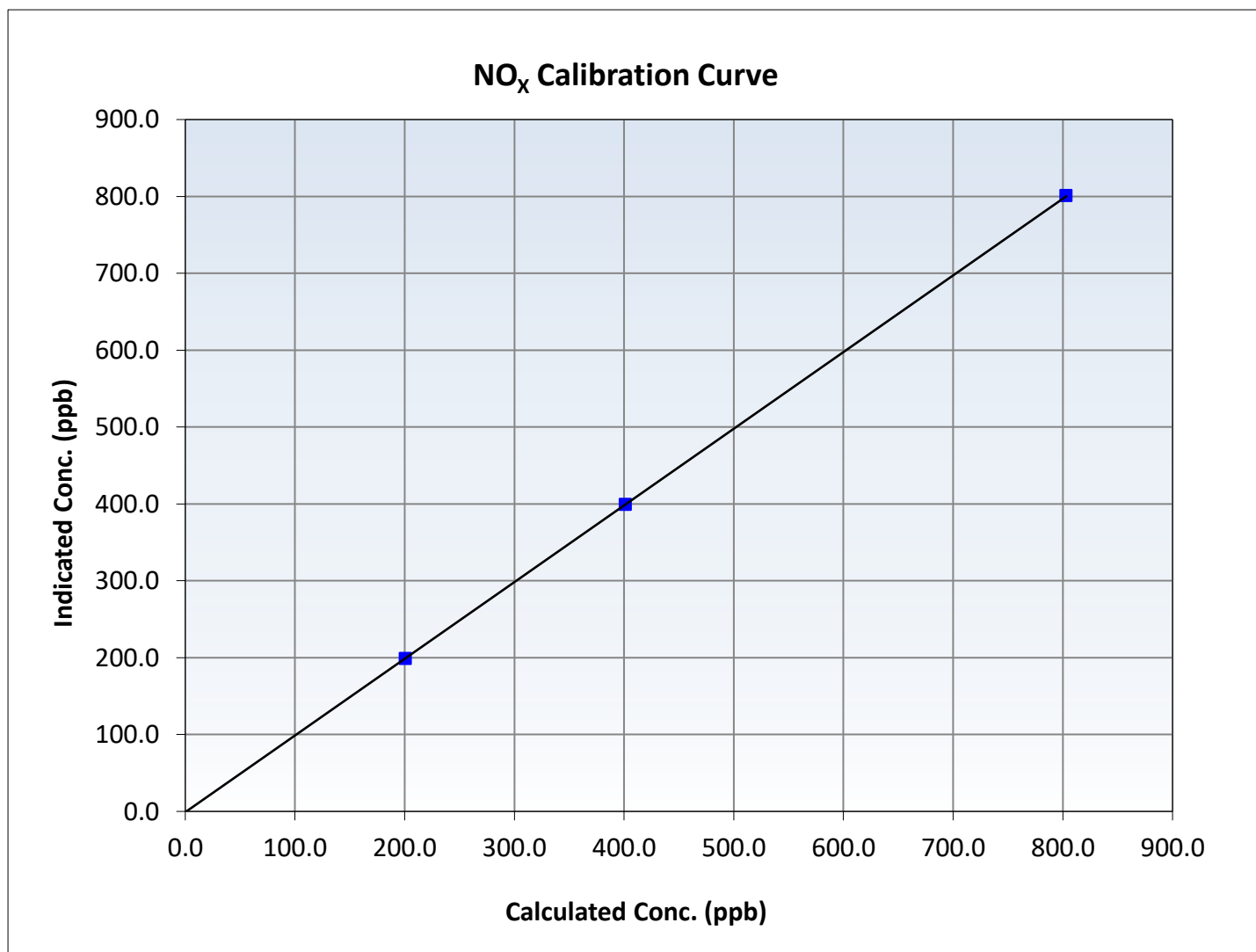
NO_x Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 18, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:14	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	475

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999996	≥0.995
803.1	800.6	1.0031	Slope	0.997535	0.90 - 1.10
401.5	399.0	1.0064	Intercept	-0.960000	+/-20
200.8	198.7	1.0104			





Wood Buffalo Environmental Association

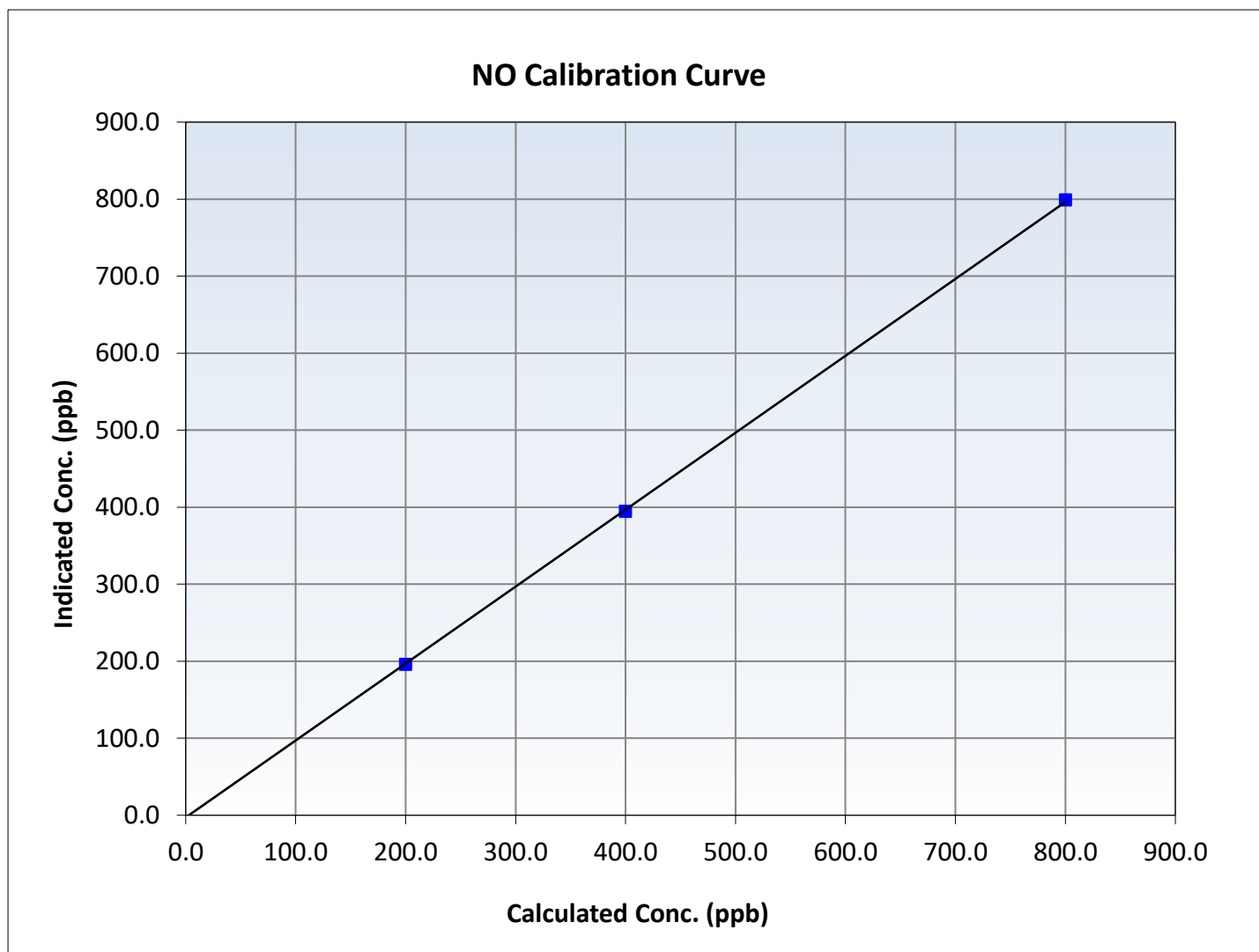
NO Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 18, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:14	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	475

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.3	----	Correlation Coefficient	0.999947	≥ 0.995
800.4	798.4	1.0025	Slope	0.998878	$0.90 - 1.10$
400.2	394.3	1.0149	Intercept	-2.800000	± 20
200.1	195.5	1.0235			





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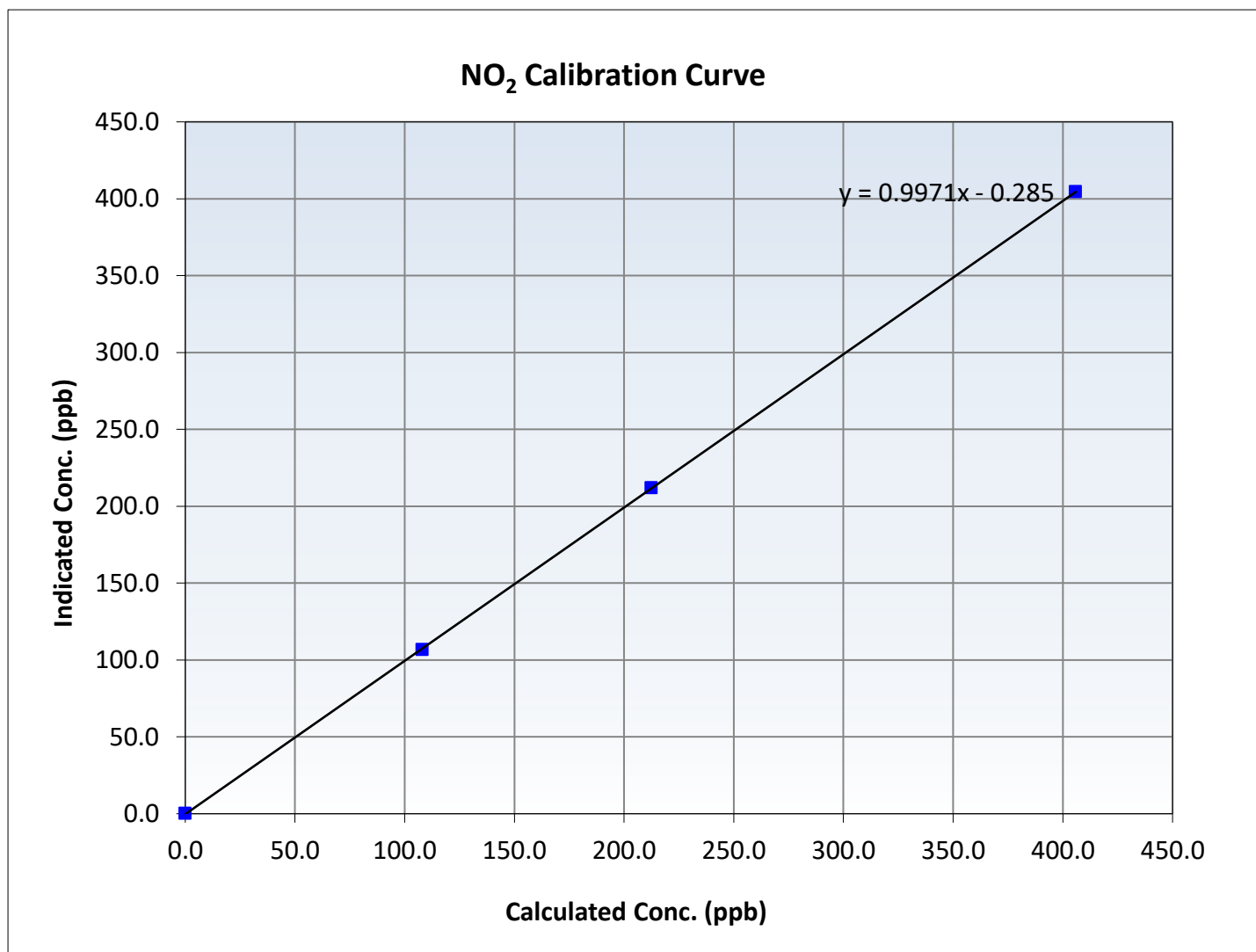
NO₂ Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 18, 2025
Station Name:	Bertha Ganter-Fort McKay	Station Number:	AMS 01
Start Time (MST):	11:14	End Time (MST):	15:43
Analyzer make:	API T201	Analyzer serial #:	475

Calibration Data

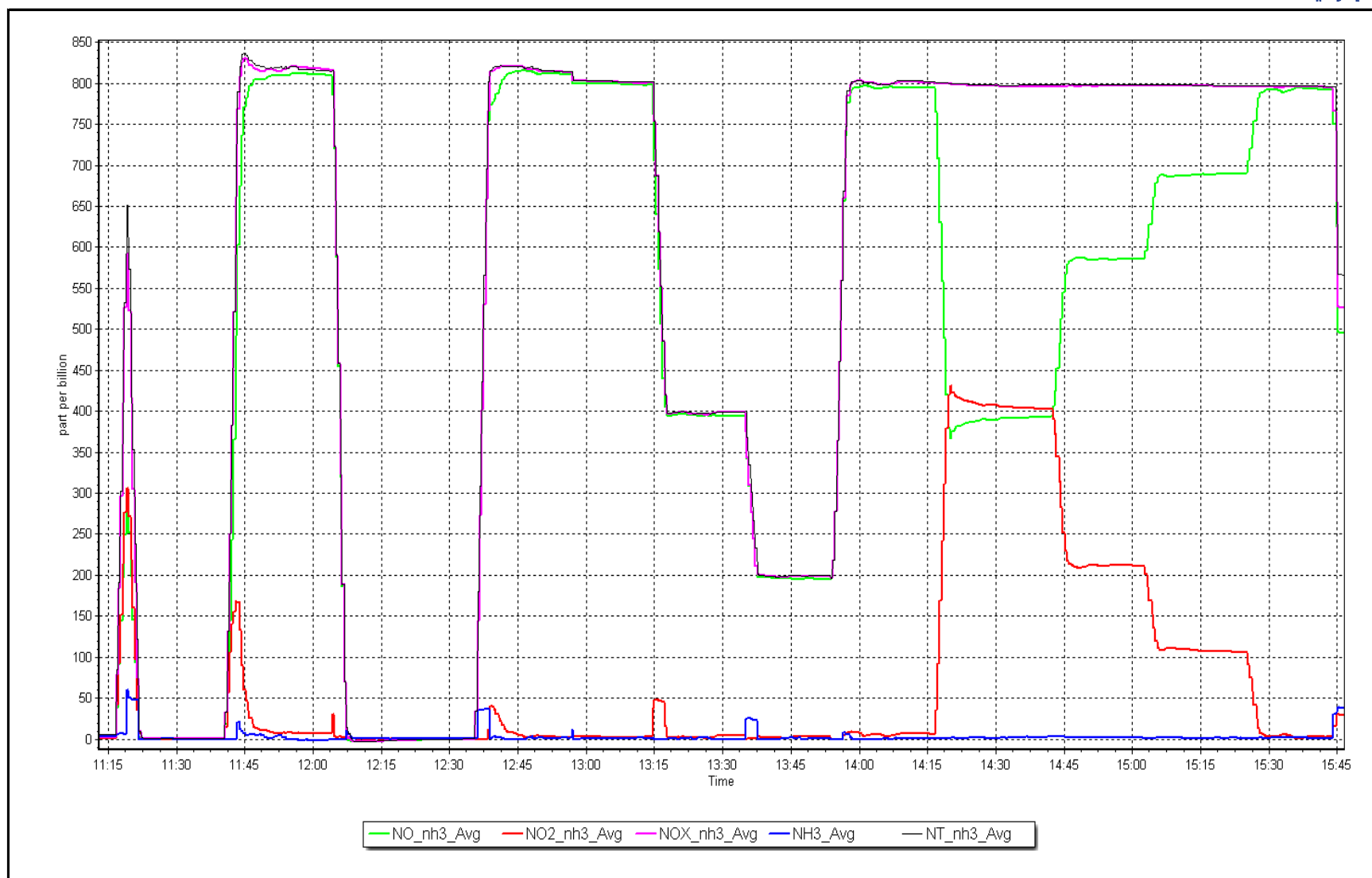
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999992	≥0.995
405.9	404.5	1.0035	Slope	0.997147	0.90 - 1.10
212.4	211.8	1.0029	Intercept	-0.284956	+/-20
108.0	106.7	1.0122			

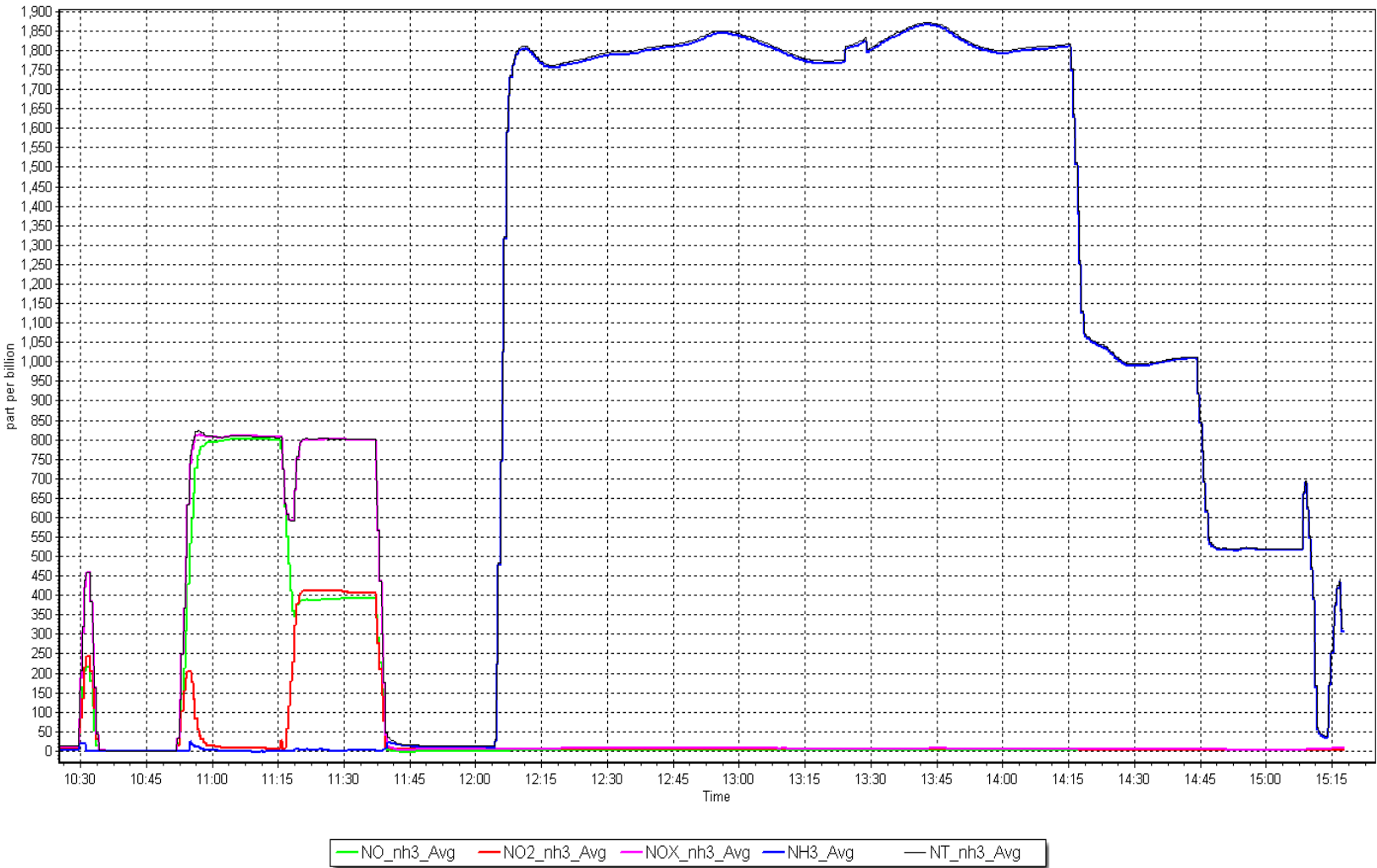


NO_x Calibration Plot

Date: September 4, 2025

Location: Bertha Ganter-Fort McKay







Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Version-10-2022

Station Information

Station Name: Fort McKay - Bertha Ganter Station Number: AMS 01
Calibration Date: September 10, 2025 Prev Cal Date: December 4, 2024
Start Time (MST): 12:30 End Time (MST): 15:10
Tower Height (m): 10.0 Reason: Routine

Wind Speed Information

Sensor make/model: Met One 010C-1 Serial Number: P10041
WS Calibrator: MetOne 053 Serial Number: R10866

Shaft RPM	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
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%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999999	0.999999	≥ 0.9995
Calculated slope	0.998868	0.998919	$0.90 - 1.10$
Calculated intercept	0.028930	0.029167	± 2

Wind Direction Information

Sensor make/model: Met One 020C-1 Serial Number: R14655
As Found Declination (deg east of True North): 14 As Left Declination (deg east of True North): 14
Solar noon time (MST): 13:23 Calc Declination*: 13.42 Degrees
Deadband calc: 2.5 degrees (*Limit 4 deg*) * - calculated declination as per NOAA website

Physical Direction (Degrees) (Cv)	Indicated Direction (Degrees) (Iv)	% Error (based on 357° FS) <i>Limit = +/- 1.0%</i>
0	1.9	---
90	91.2	0.3%
180	180.8	0.2%
270	270.9	0.2%
354	356.4	0.7%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999987	0.999988	≥ 0.9995
Calculated slope	1.001036	0.999285	$0.90 - 1.10$
Calculated intercept	-0.841792	-1.301202	± 4

Notes: Performing the annual WS/WD calibration. No issues to note. Bearings good. Solar noon was verified with a compass.

Calibration Performed By: Rene Chamberland



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS02 MILDRED LAKE SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Mildred Lake Station number: AMS 02
Calibration Date: September 8, 2025 Last Cal Date: August 1, 2025
Start time (MST): 9:14 End time (MST): 16:28
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002428	1.007336	Backgd or Offset:	24.4	24.8
Calibration intercept:	-1.551879	-1.470446	Coeff or Slope:	0.752	0.762

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.9	----
As found High point	4913	78.6	803.0	782.0	1.026
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	782.9	Previous response	803.4	*% change	-2.6%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4913	78.4	801.0	806.0	0.994
Mid point	4961	39.2	399.8	400.6	0.998
Low point	4980	19.6	199.9	198.6	1.006
As left zero	5000	0.0	0.0	-0.6	----
As left span	4913	78.4	801.0	804.0	0.996
Average Correction Factor:					0.999

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

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

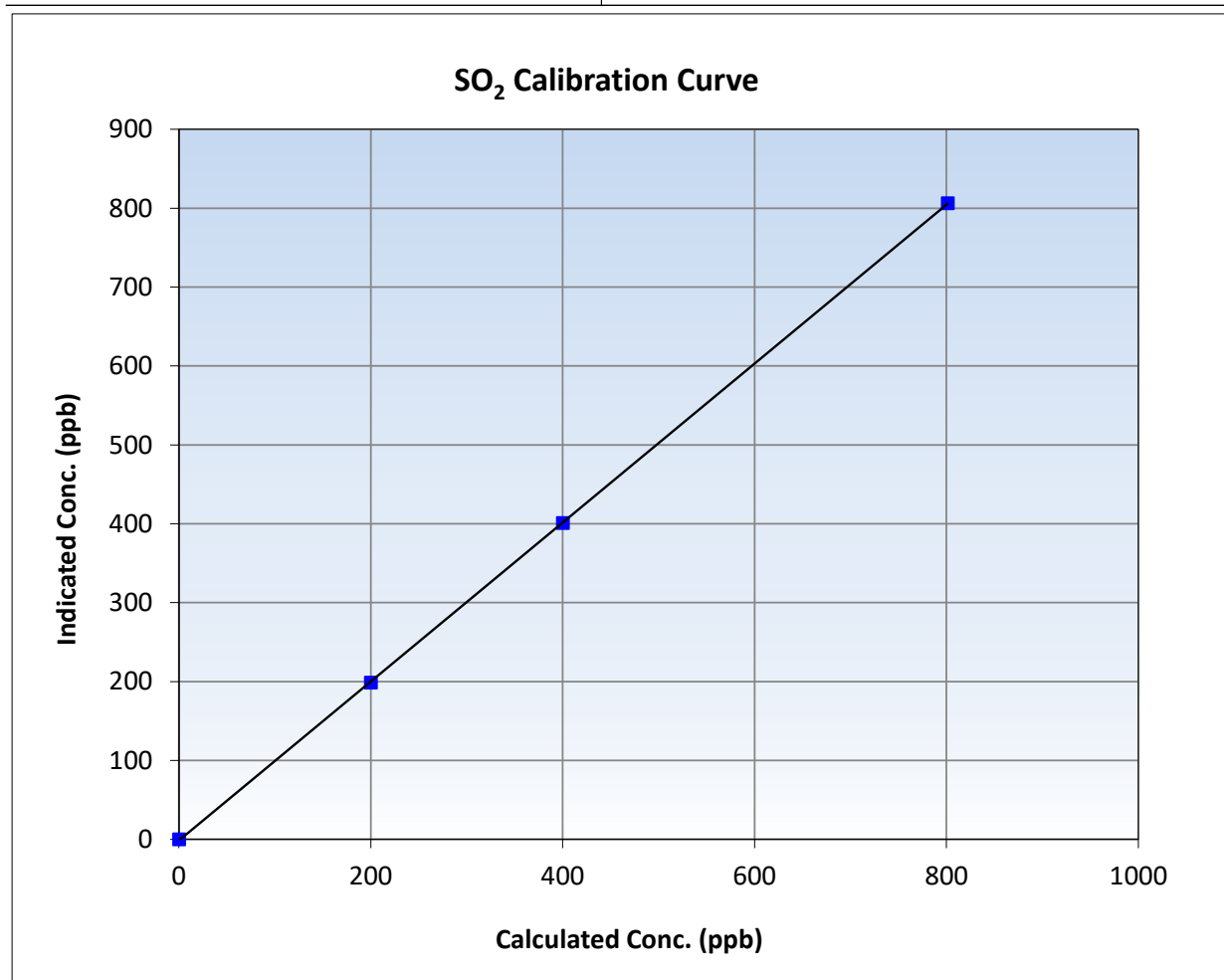
SO₂ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 1, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:14	End Time (MST):	16:28
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1404901075

Calibration Data

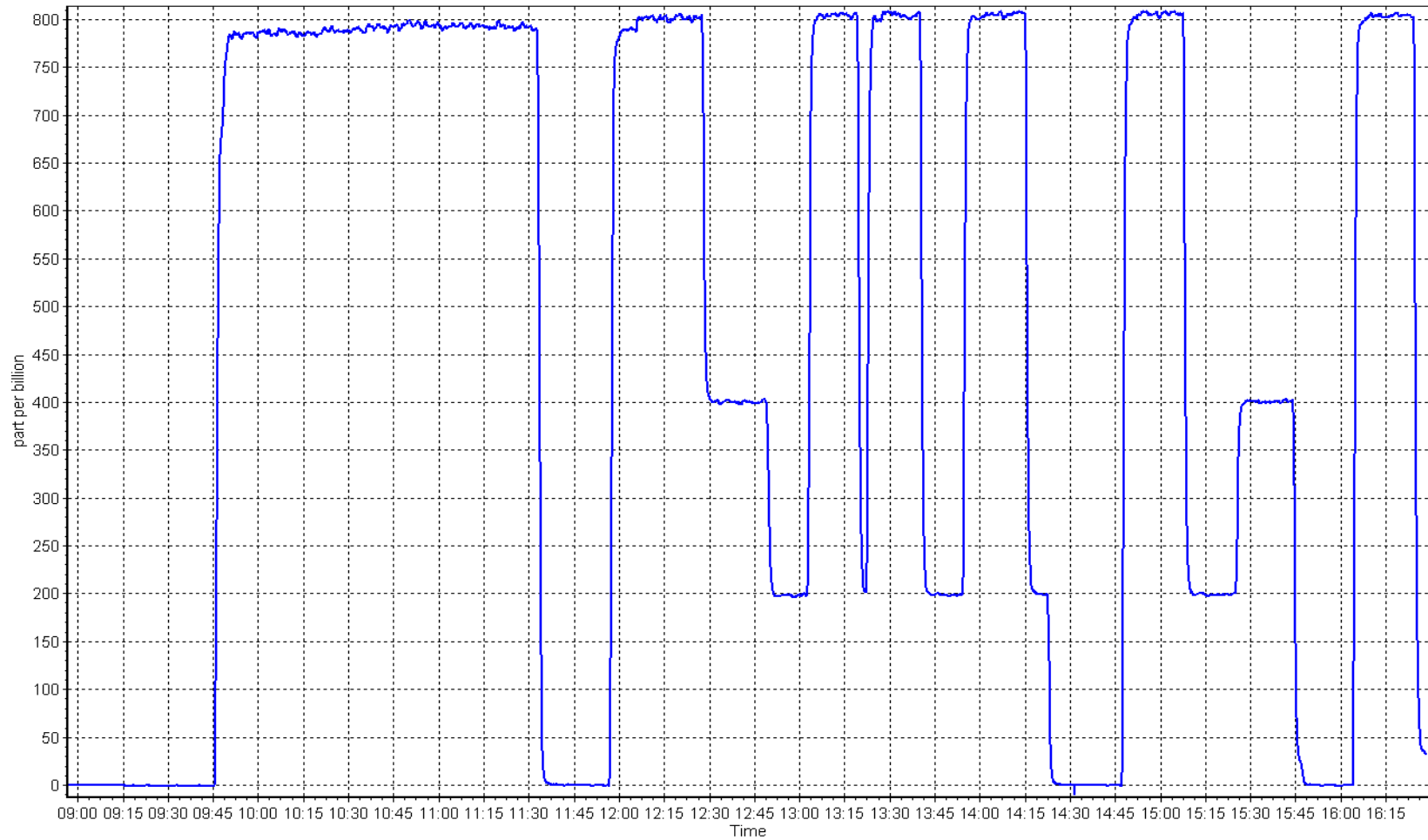
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999989	≥0.995
801.0	806.0	0.9938	Slope	1.007336	0.90 - 1.10
399.8	400.6	0.9979	Intercept	-1.470446	+/-30
199.9	198.6	1.0064			



SO2 Calibration Plot

Date: September 8, 2025

Location: Mildred Lake





Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name: Mildred Lake
Calibration Date: September 25, 2025
Start time (MST): 8:50
Reason: Routine

Station number: AMS 02
Last Cal Date: August 31, 2025
End time (MST): 13:36

Calibration Standards

Cal Gas Concentration: 4.75 ppm
Cal Gas Cylinder #: CC700774
Removed Cal Gas Conc: 4.75 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701

Cal Gas Exp Date: August 28, 2027
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 1185
Serial Number: 4891

Analyzer Information

Analyzer make: Thermo 43iQTL
Converter make: Global G150
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 12333331546
Converter serial #: 2023-267
Converter Temp: 325 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.005983	0.997268	Backgd or Offset:	1.38	1.39
Calibration intercept:	0.120000	0.100000	Coeff or Slope:	0.953	0.957

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4916	84.2	80.0	79.6	1.005
As found Mid point	4958	42.1	40.0	39.9	1.002
As found Low point	4979	21.1	20.0	19.9	1.005
New cylinder response					
Baseline Corr As found:	79.6	Prev response:	80.59	*% change:	-1.2%
Baseline Corr 2nd AF pt:	39.9	AF Slope:	0.995267	AF Intercept:	0.020000
Baseline Corr 3rd AF pt:	19.9	AF Correlation:	0.999998	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4916	84.2	80.0	79.8	1.002
Mid point	4958	42.1	40.0	40.1	0.997
Low point	4979	21.1	20.0	20.1	0.995
As left zero	5000	0.0	0.0	0.0	----
As left span	4916	84.2	80.0	80.0	1.000
SO2 Scrubber Check	4922	78.4	783.9	0.1	----
Date of last scrubber change:		July 16, 2024		Ave Corr Factor	0.998
Date of last converter efficiency test:		NA			

Notes: Changed sample inlet filter after multipoint as founds. SO2 scrubber check done and passed. No adjustment made.

Calibration Performed By: Braiden Boutillier



Wood Buffalo Environmental Association

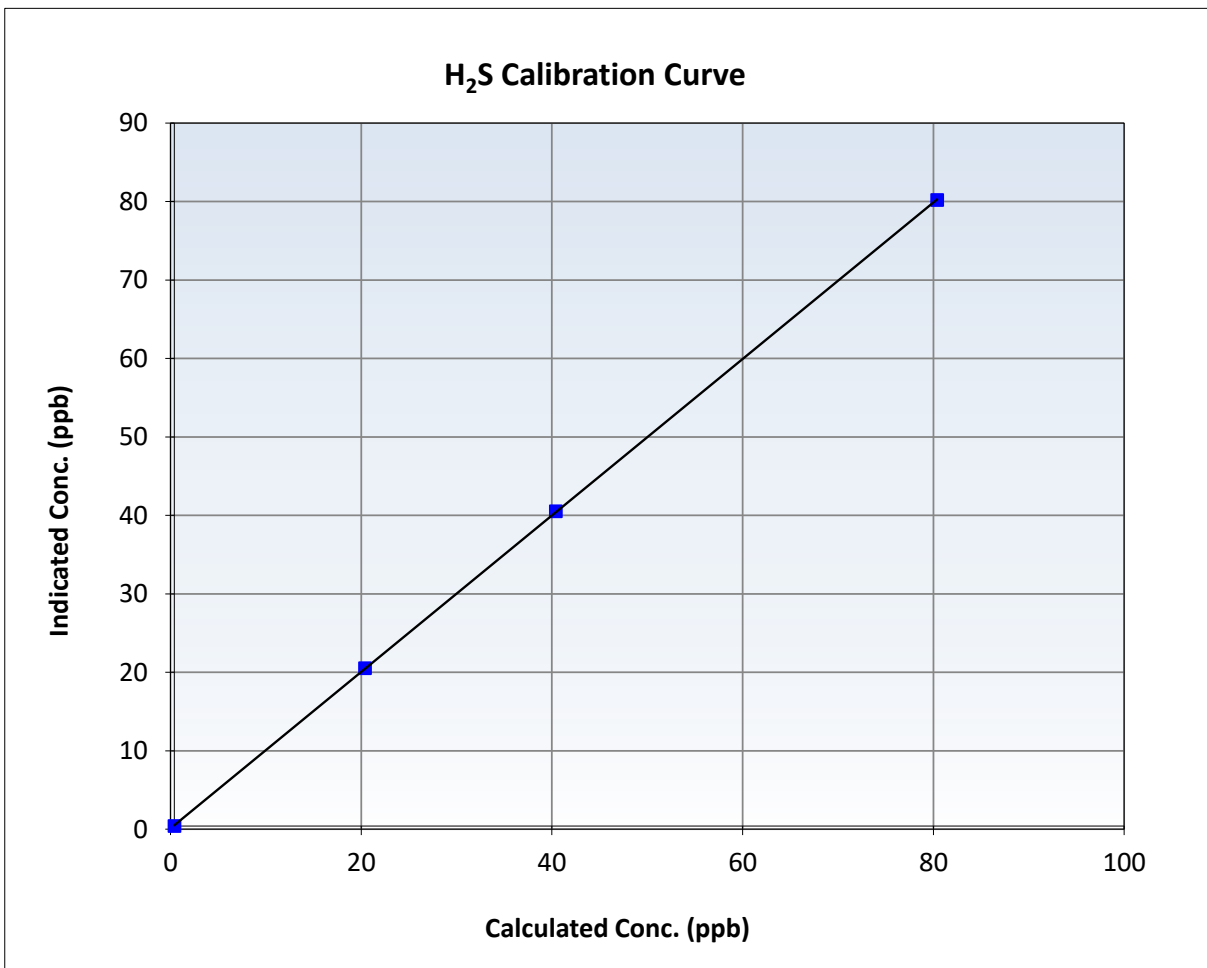
H2S Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 31, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	8:50	End Time (MST):	13:36
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12333331546

Calibration Data

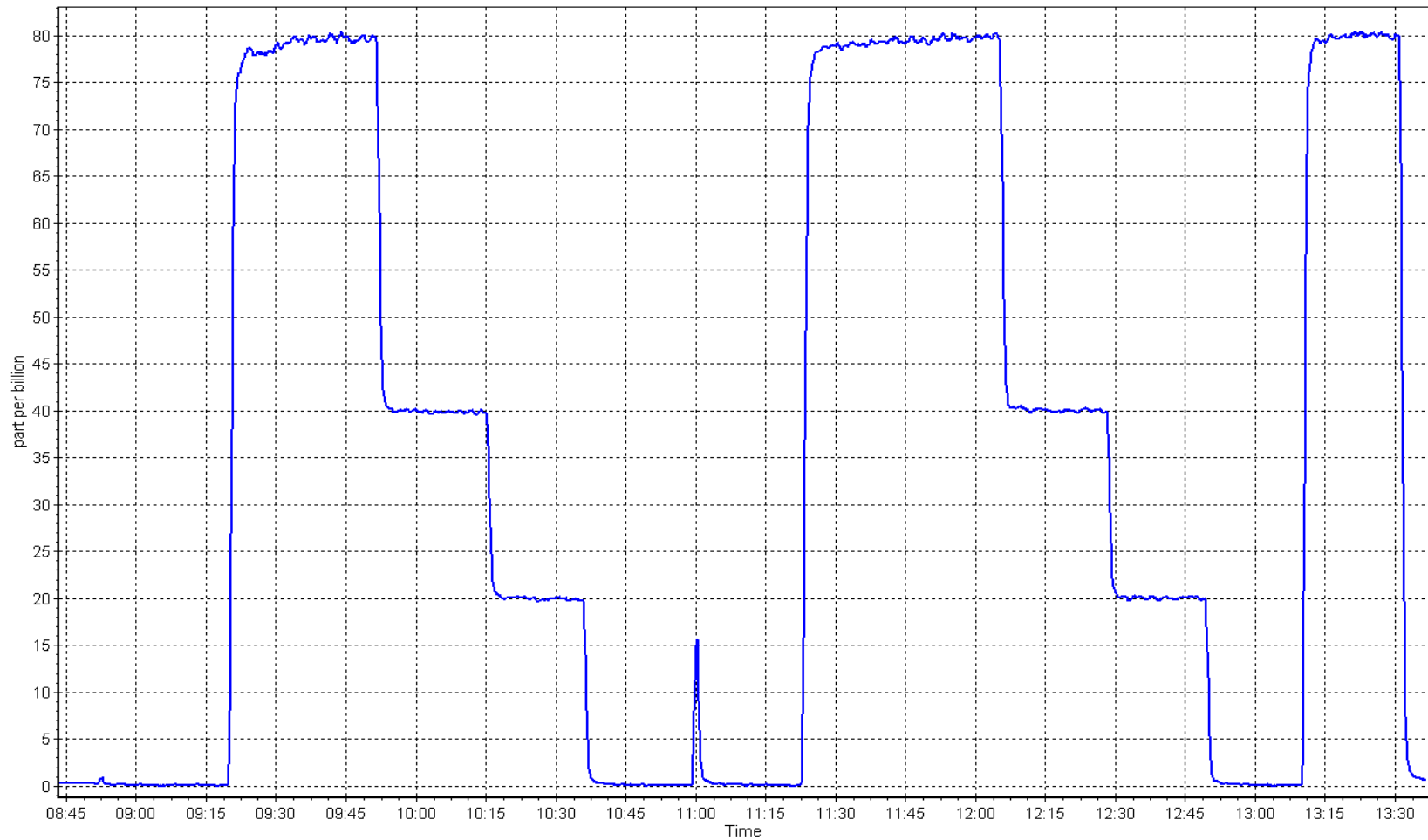
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999991		≥ 0.995
80.0	79.8	1.0024	Slope	0.997268		0.90 - 1.10
40.0	40.1	0.9974	Intercept	0.100000		+/-3
20.0	20.1	0.9949				



H2S Calibration Plot

Date: September 25, 2025

Location: Mildred Lake





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Mildred Lake
 Calibration Date: September 1, 2025
 Start time (MST): 10:05
 Reason: Routine

Station number: AMS 02
 Last Cal Date: August 18, 2025
 End time (MST): 12:47

Calibration Standards

Gas Cert Reference:	EB0112903	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	503.1 ppm	CH ₄ Equiv Conc.	1067.1 ppm
C ₃ H ₈ Cal Gas Conc.	205.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH ₄ Conc.	503.1 ppm	CH ₄ Equiv Conc.	1067.1 ppm
Removed C ₃ H ₈ 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
 THC Range: 0 - 20 ppm

Analyzer serial #: 1180320040
 NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	4.22E-04	4.02E-04	NMHC SP Ratio:	7.64E-05
CH ₄ Retention time:	15.6	15.4	NMHC Peak Area:	115999
Zero Chromatogram:	OFF	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.01	----
As found High point	4922	78.4	16.73	15.77	1.061
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	15.76	Prev response	16.65	*% change	-5.6%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	
High point	4922	78.4	16.73	16.71	1.002
Mid point	4961	39.2	8.37	8.23	1.017
Low point	4980	19.6	4.18	4.05	1.033
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	16.73	16.66	1.005
Average Correction Factor					1.017

Notes:

Calibrated due to baseline dips. Sample inlet filter was changed after as founds. Adjusted zero and span.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4922	78.4	8.84	7.45	1.188
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.45	Prev response	8.80	*% change	-18.2%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4922	78.4	8.84	8.83	1.002
Mid point	4961	39.2	4.42	4.40	1.005
Low point	4980	19.6	2.21	2.17	1.018
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	8.84	8.77	1.008
Average Correction Factor					1.008

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))
As found zero	5000	0.0	0.00	0.01	Limit = 0.90-1.10
As found High point	4922	78.4	7.89	8.32	0.949
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.31	Prev response	7.85	*% 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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4922	78.4	7.89	7.87	1.002
Mid point	4961	39.2	3.94	3.83	1.029
Low point	4980	19.6	1.97	1.88	1.050
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	7.89	7.88	1.001
Average Correction Factor					1.027

Calibration Statistics

	Start	Finish
THC Cal Slope:	0.994290	1.000228
THC Cal Offset:	0.016820	-0.075065
CH ₄ Cal Slope:	0.998020	1.000483
CH ₄ Cal Offset:	-0.026982	-0.056524
NMHC Cal Slope:	0.990434	0.999614
NMHC Cal Offset:	0.045603	-0.017541

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

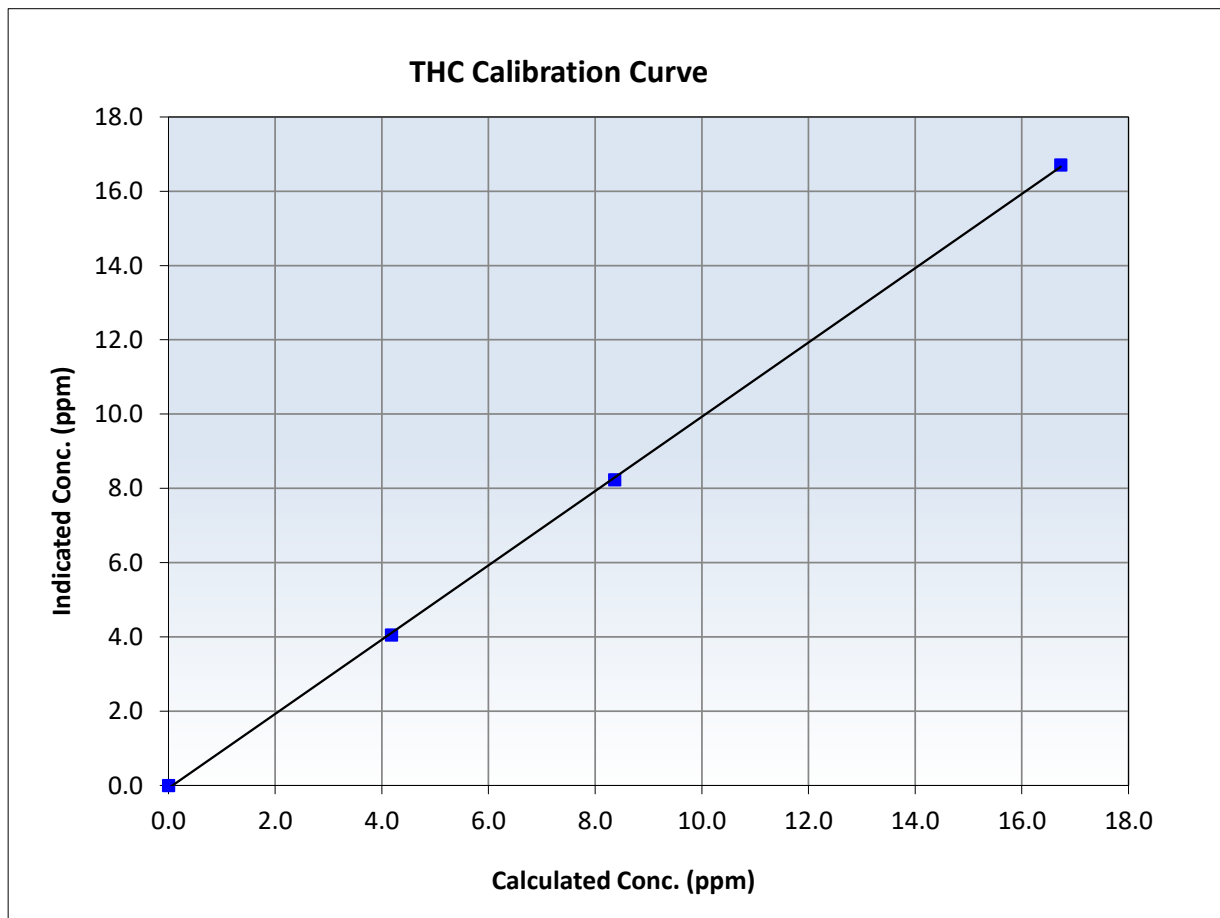
THC Calibration Summary

Station Information

Calibration Date:	September 1, 2025	Previous Calibration:	August 18, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	10:05	End Time (MST):	12:47
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999901	<i>≥0.995</i>
16.73	16.71	1.0015	Slope	1.000228	<i>0.90 - 1.10</i>
8.37	8.23	1.0166	Intercept	-0.075065	<i>+/-0.5</i>
4.18	4.05	1.0326			





Wood Buffalo Environmental Association

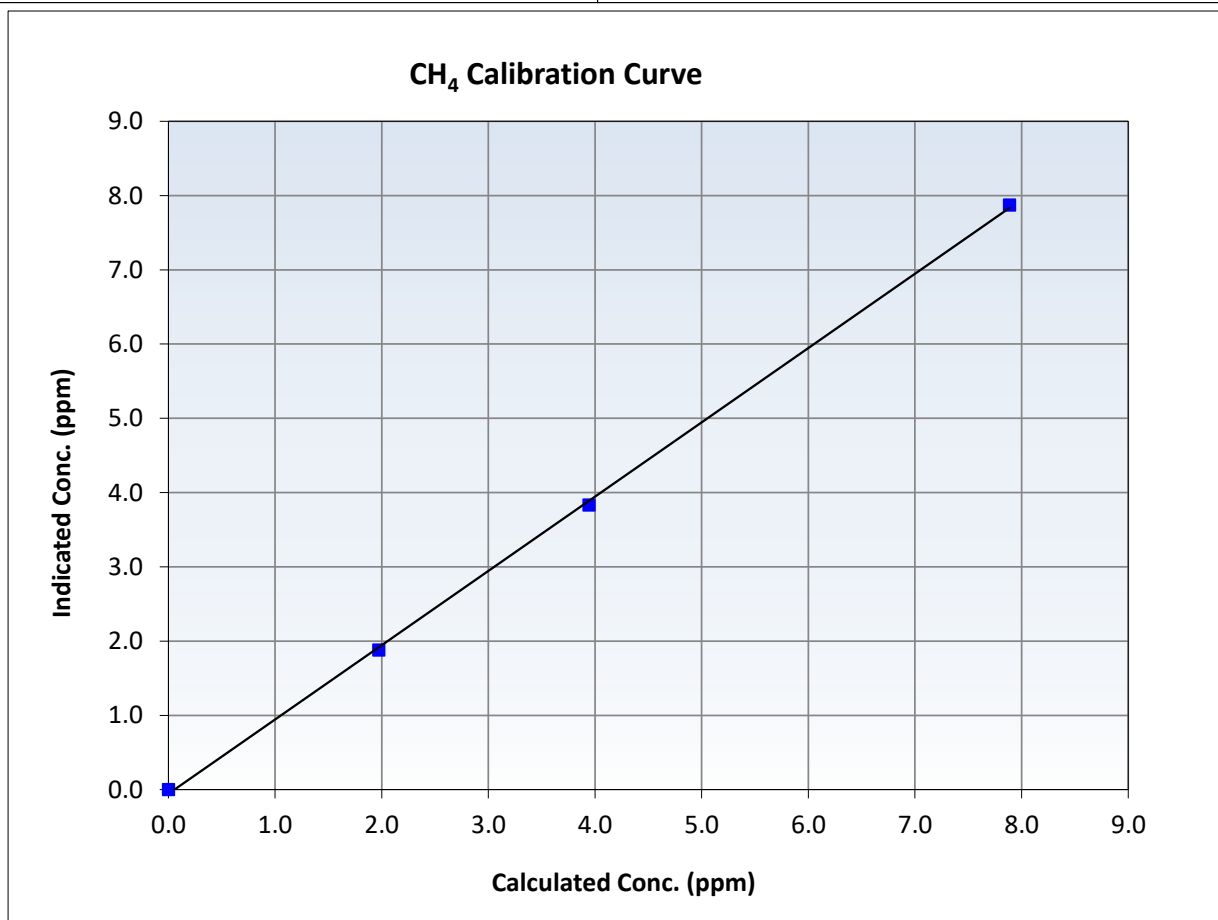
CH₄ Calibration Summary

Station Information

Calibration Date:	September 1, 2025	Previous Calibration:	August 18, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	10:05	End Time (MST):	12:47
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	0.999729		≥0.995
7.89	7.87	1.0019	Slope	1.000483		0.90 - 1.10
3.94	3.83	1.0290	Intercept	-0.056524		+/-0.5
1.97	1.88	1.0496				





Wood Buffalo Environmental Association

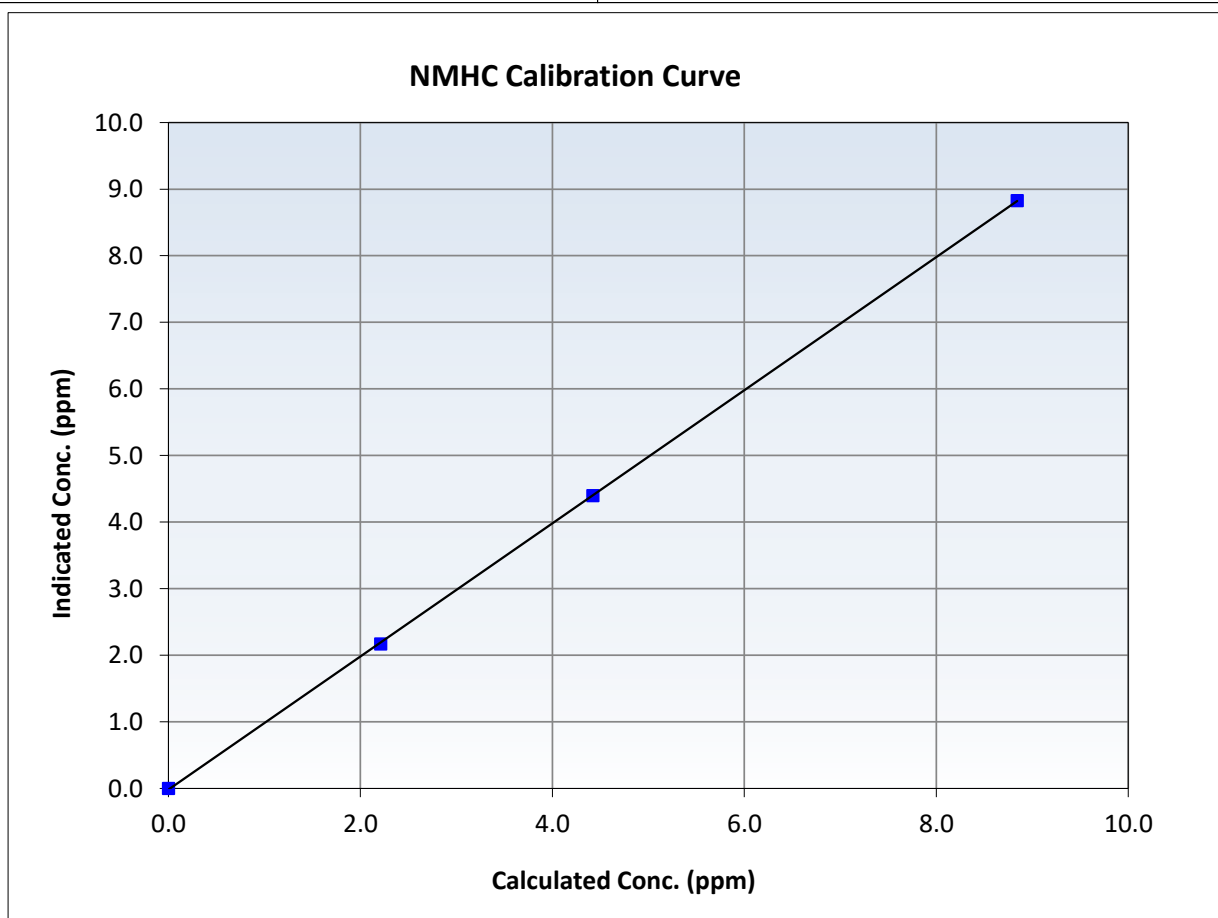
NMHC Calibration Summary

Station Information

Calibration Date:	September 1, 2025	Previous Calibration:	August 18, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	10:05	End Time (MST):	12:47
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	0.999981		≥ 0.995
8.84	8.83	1.0016	Slope	0.999614		0.90 - 1.10
4.42	4.40	1.0050	Intercept	-0.017541		± 0.5
2.21	2.17	1.0184				



NMHC Calibration Plot

Date: September 1, 2025

Location: Mildred Lake





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Mildred Lake
 Calibration Date: September 8, 2025
 Start time (MST): 9:14
 Reason: Maintenance

Station number: AMS 02
 Last Cal Date: September 1, 2025
 End time (MST): 16:26

Calibration Standards

Gas Cert Reference:	EB0112903	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	503.1 ppm	CH ₄ Equiv Conc.	1067.1 ppm
C ₃ H ₈ Cal Gas Conc.	205.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH ₄ Conc.	503.1 ppm	CH ₄ Equiv Conc.	1067.1 ppm
Removed C ₃ H ₈ 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
 THC Range: 0 - 20 ppm

Analyzer serial #: 1180320040
 NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	4.02E-04	4.39E-04	NMHC SP Ratio:	9.33E-05	7.68E-05
CH ₄ Retention time:	15.4	15.6	NMHC Peak Area:	94704	115113
Zero Chromatogram:	ON	ON	Flat Baseline:	OFF	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4922	78.4	16.73	16.71	1.001
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.71	Prev response	16.66	*% change	0.3%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	
High point	4922	78.4	16.73	16.94	0.988
Mid point	4961	39.2	8.37	8.39	0.997
Low point	4980	19.6	4.18	4.10	1.020
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	16.73	16.92	0.989
Average Correction Factor					1.001

Notes: Calibrated due to baseline dips. Decreased carrier pressure, turned on use flat baseline. Adjusted zero and span.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4922	78.4	8.84	8.71	1.015
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.71	Prev response	8.82	*% 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	4922	78.4	8.84	9.01	0.981
Mid point	4961	39.2	4.42	4.46	0.991
Low point	4980	19.6	2.21	2.19	1.010
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	8.84	8.94	0.989
Average Correction Factor					0.994

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))
As found zero	5000	0.0	0.00	0.01	Limit = 0.90-1.10
As found High point	4922	78.4	7.89	8.00	0.987
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.99	Prev response	7.84	*% 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	0.00	----
High point	4922	78.4	7.89	7.94	0.994
Mid point	4961	39.2	3.94	3.93	1.005
Low point	4980	19.6	1.97	1.91	1.031
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	7.89	7.98	0.989
Average Correction Factor					1.010

Calibration Statistics

	Start	Finish
THC Cal Slope:	1.000228	1.014641
THC Cal Offset:	-0.075065	-0.069070
CH ₄ Cal Slope:	1.000483	1.008423
CH ₄ Cal Offset:	-0.056524	-0.036926
NMHC Cal Slope:	0.999614	1.020731
NMHC Cal Offset:	-0.017541	-0.033743

Calibration Performed By: Braiden Boutillier



Wood Buffalo Environmental Association

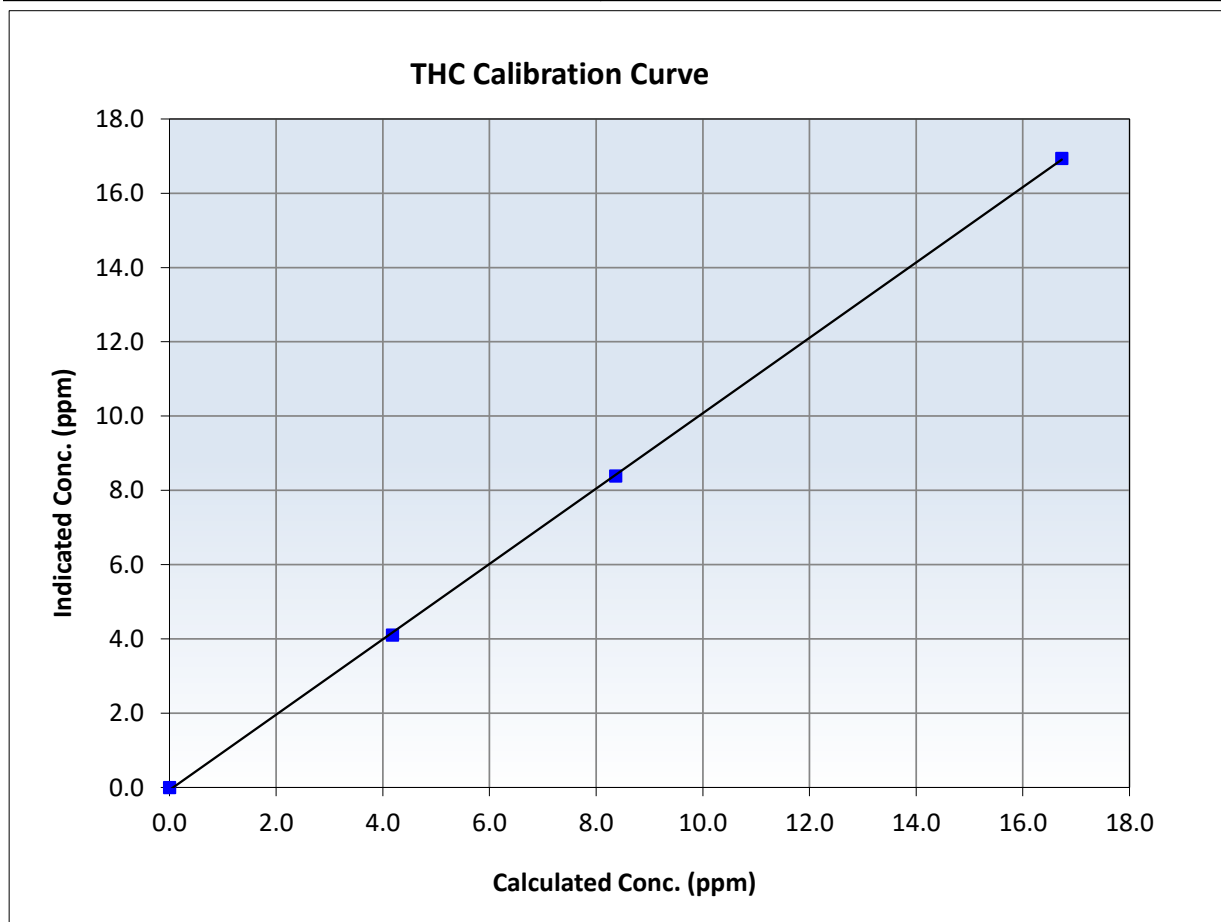
THC Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	September 1, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:14	End Time (MST):	16:26
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	0.999924	≥ 0.995
16.73	16.94	0.9877	Slope	1.014641	0.90 - 1.10
8.37	8.39	0.9972	Intercept	-0.069070	± 0.5
4.18	4.10	1.0195			





Wood Buffalo Environmental Association

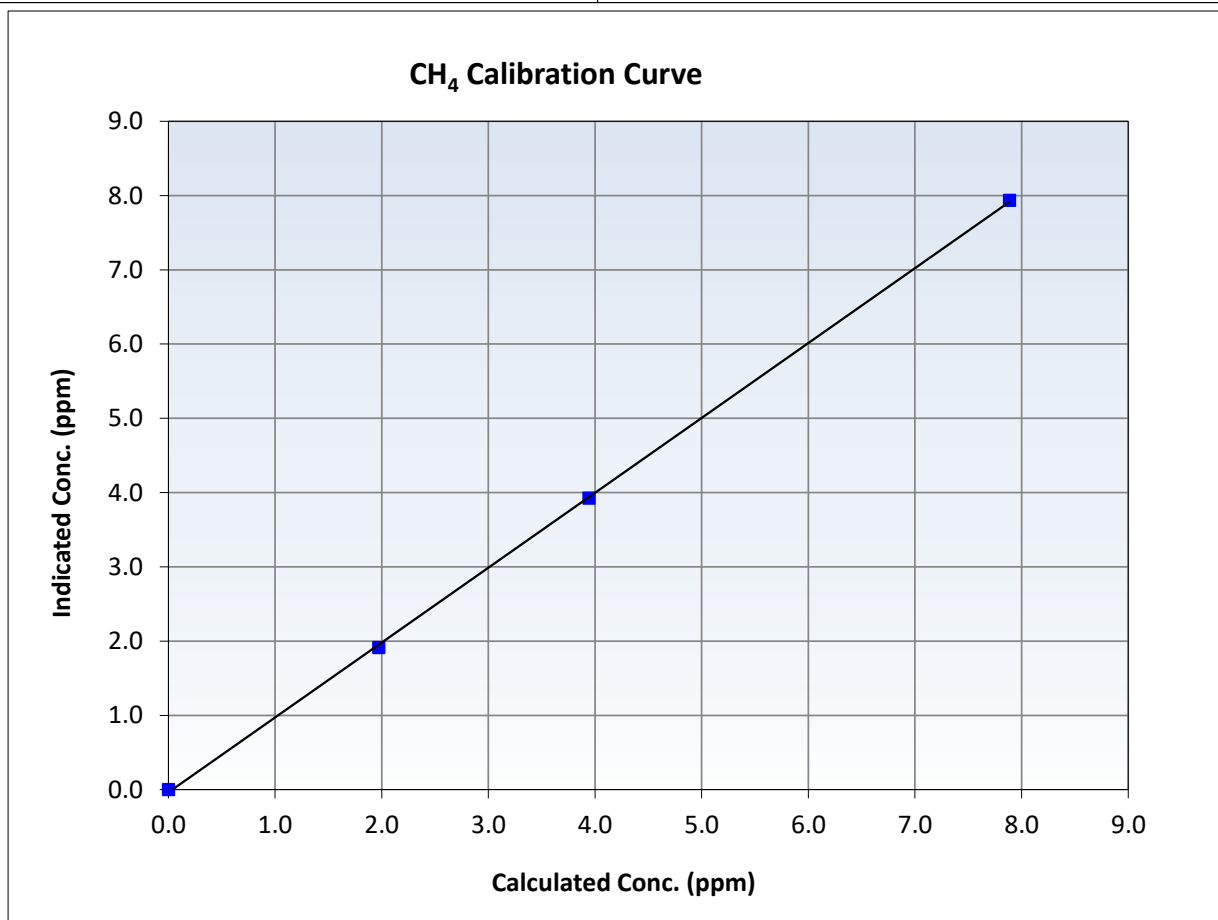
CH₄ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	September 1, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:14	End Time (MST):	16:26
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999901	<i>≥0.995</i>
7.89	7.94	0.9941	Slope	1.008423	<i>0.90 - 1.10</i>
3.94	3.93	1.0049	Intercept	-0.036926	<i>+/-0.5</i>
1.97	1.91	1.0309			





Wood Buffalo Environmental Association

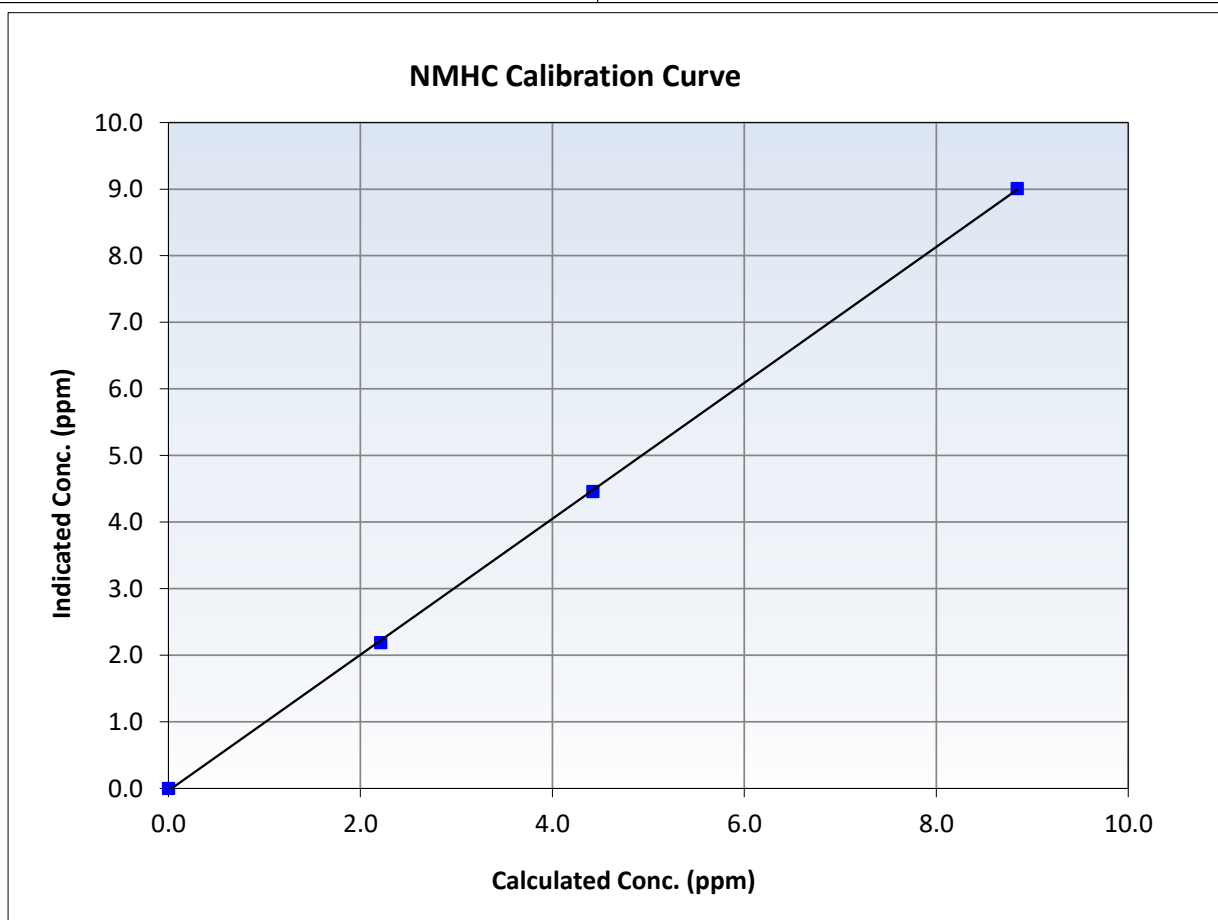
NMHC Calibration Summary

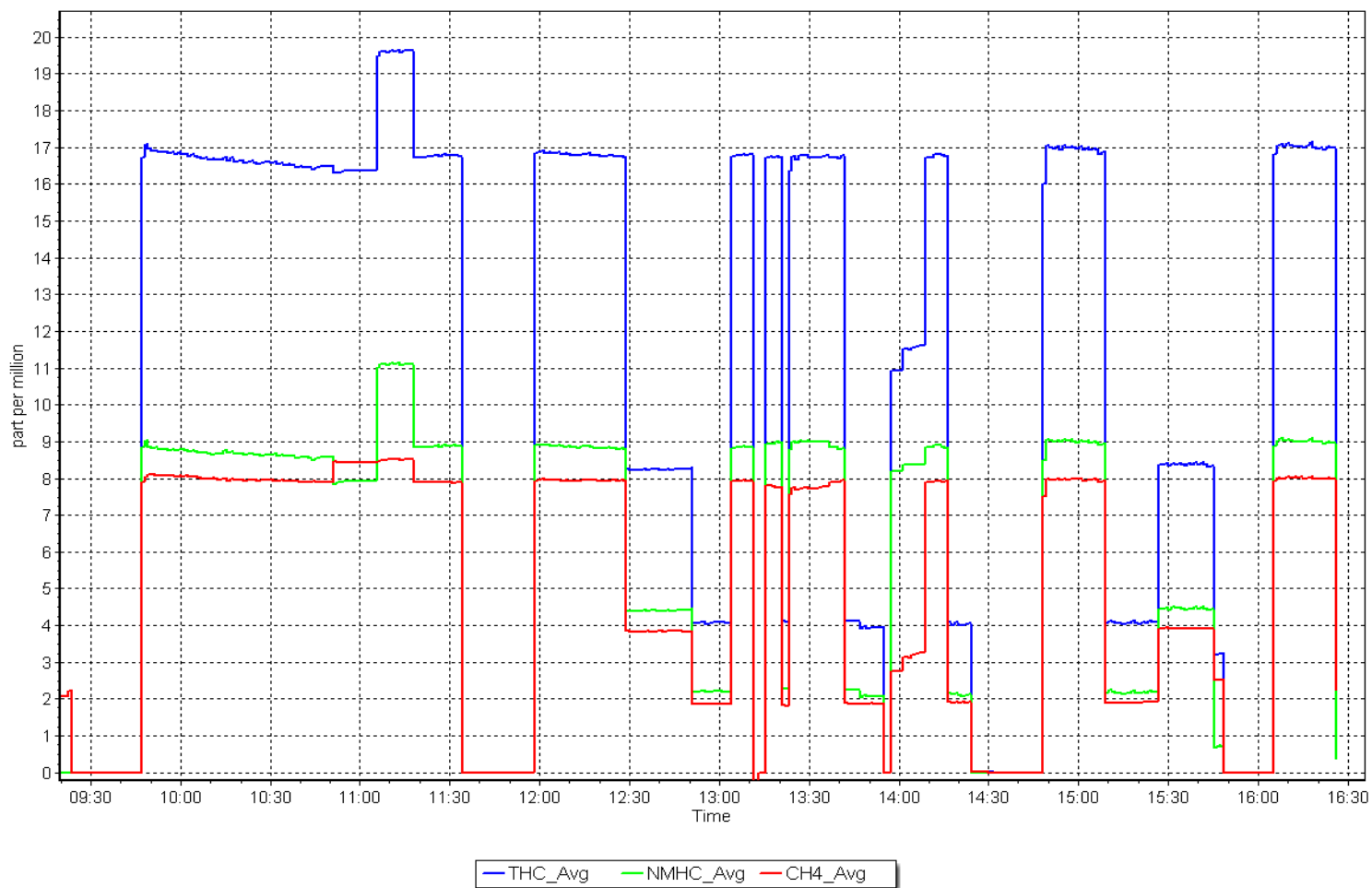
Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	September 1, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:14	End Time (MST):	16:26
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	0.999936	≥ 0.995
8.84	9.01	0.9815	Slope	1.020731	$0.90 - 1.10$
4.42	4.46	0.9910	Intercept	-0.033743	± 0.5
2.21	2.19	1.0096			







Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name:	Mildred Lake	Station number:	AMS 02
Calibration Date:	September 24, 2025	Last Cal Date:	September 8, 2025
Start time (MST):	9:03	End time (MST):	14:49
Reason:	Maintenance		

Calibration Standards

Gas Cert Reference:	EB0112903	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	503.1 ppm	CH ₄ Equiv Conc.	1067.1 ppm
C ₃ H ₈ Cal Gas Conc.	205.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH ₄ Conc.	503.1 ppm	CH ₄ Equiv Conc.	1067.1 ppm
Removed C ₃ H ₈ 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/CH ₄ Range:	0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	4.39E-04	4.77E-04	NMHC SP Ratio:	7.68E-05	7.77E-05
CH ₄ Retention time:	15.6	15.9	NMHC Peak Area:	115113	113819
Zero Chromatogram:	ON	ON	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4922	78.4	16.73	17.09	0.979
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.09	Prev response	16.91	*% 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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	
High point	4922	78.4	16.73	16.63	1.006
Mid point	4961	39.2	8.37	8.26	1.013
Low point	4980	19.6	4.18	4.11	1.018
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	16.73	16.63	1.006
Average Correction Factor					1.012

Notes: Calibrated due to baseline dips. Decreased carrier pressure. Adjusted zero and span.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4922	78.4	8.84	9.18	0.963
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.18	Prev response	8.99	*% change	2.0%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4922	78.4	8.84	8.78	1.007
Mid point	4961	39.2	4.42	4.38	1.010
Low point	4980	19.6	2.21	2.21	1.001
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	8.84	8.81	1.004
Average Correction Factor					1.006

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))
As found zero	5000	0.0	0.00	0.01	Limit = 0.90-1.10
As found High point	4922	78.4	7.89	7.91	0.998
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.90	Prev response	7.92	*% 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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4922	78.4	7.89	7.85	1.005
Mid point	4961	39.2	3.94	3.89	1.015
Low point	4980	19.6	1.97	1.90	1.038
As left zero	5000	0.0	0.00	0.00	----
As left span	4922	78.4	7.89	7.82	1.009
Average Correction Factor					1.019

Calibration Statistics

	Start	Finish
THC Cal Slope:	1.014641	0.994593
THC Cal Offset:	-0.069070	-0.031065
CH ₄ Cal Slope:	1.008423	0.997093
CH ₄ Cal Offset:	-0.036926	-0.032325
NMHC Cal Slope:	1.020731	0.992144
NMHC Cal Offset:	-0.033743	0.002860

Calibration Performed By: Braiden Boutillier



Wood Buffalo Environmental Association

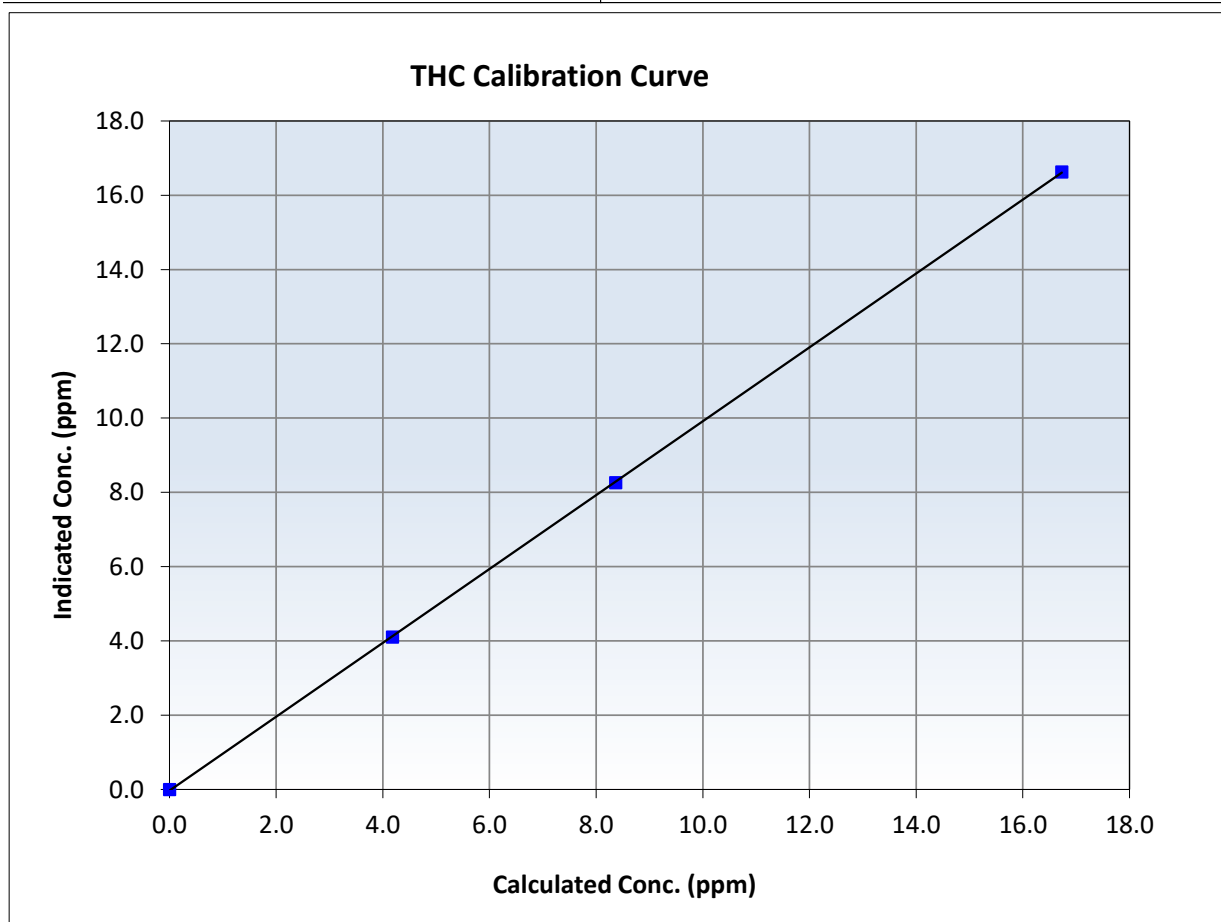
THC Calibration Summary

Station Information

Calibration Date:	September 24, 2025	Previous Calibration:	September 8, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:03	End Time (MST):	14:49
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	0.999982	≥ 0.995
16.73	16.63	1.0061	Slope	0.994593	0.90 - 1.10
8.37	8.26	1.0129	Intercept	-0.031065	± 0.5
4.18	4.11	1.0183			





Wood Buffalo Environmental Association

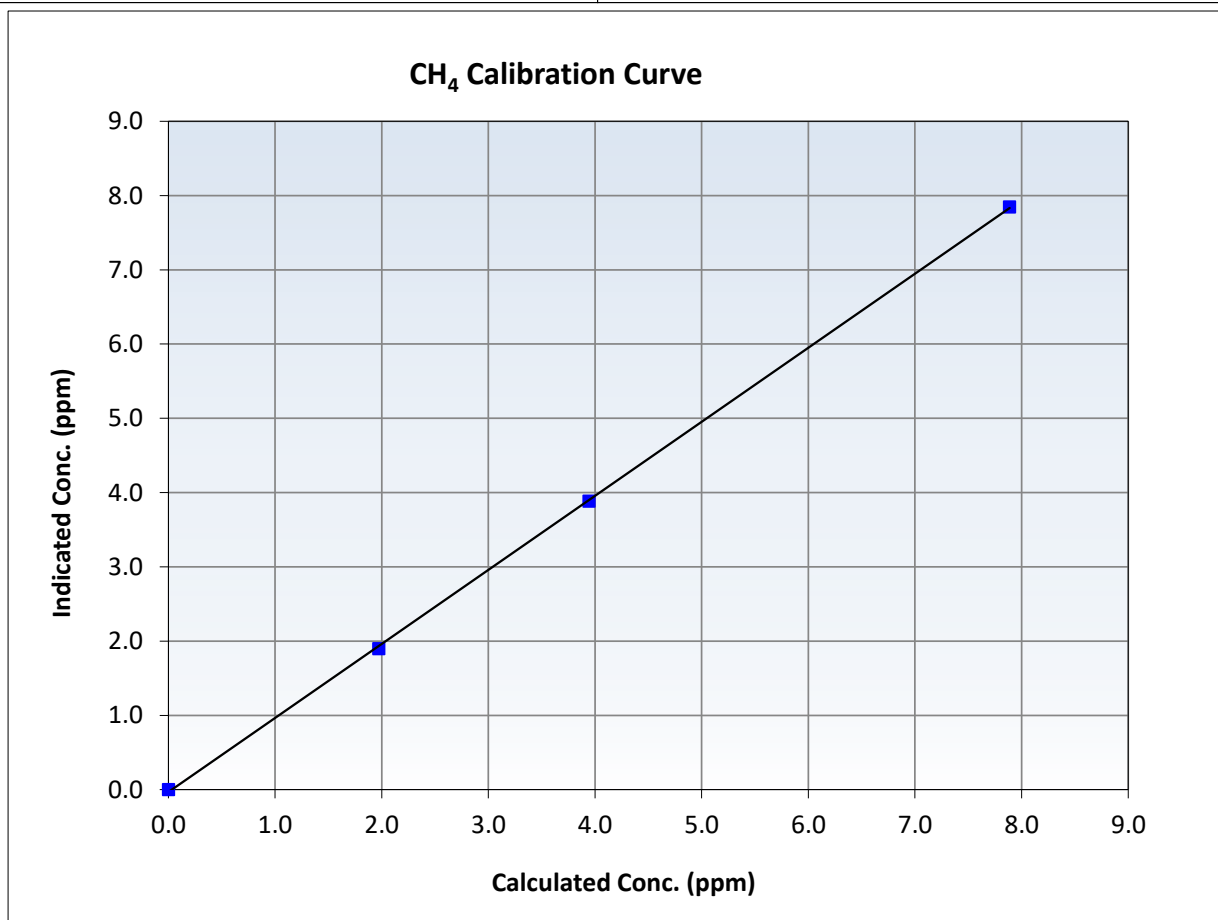
CH₄ Calibration Summary

Station Information

Calibration Date:	September 24, 2025	Previous Calibration:	September 8, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:03	End Time (MST):	14:49
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999922	<i>≥0.995</i>
7.89	7.85	1.0051	Slope	0.997093	<i>0.90 - 1.10</i>
3.94	3.89	1.0147	Intercept	-0.032325	<i>+/-0.5</i>
1.97	1.90	1.0380			





Wood Buffalo Environmental Association

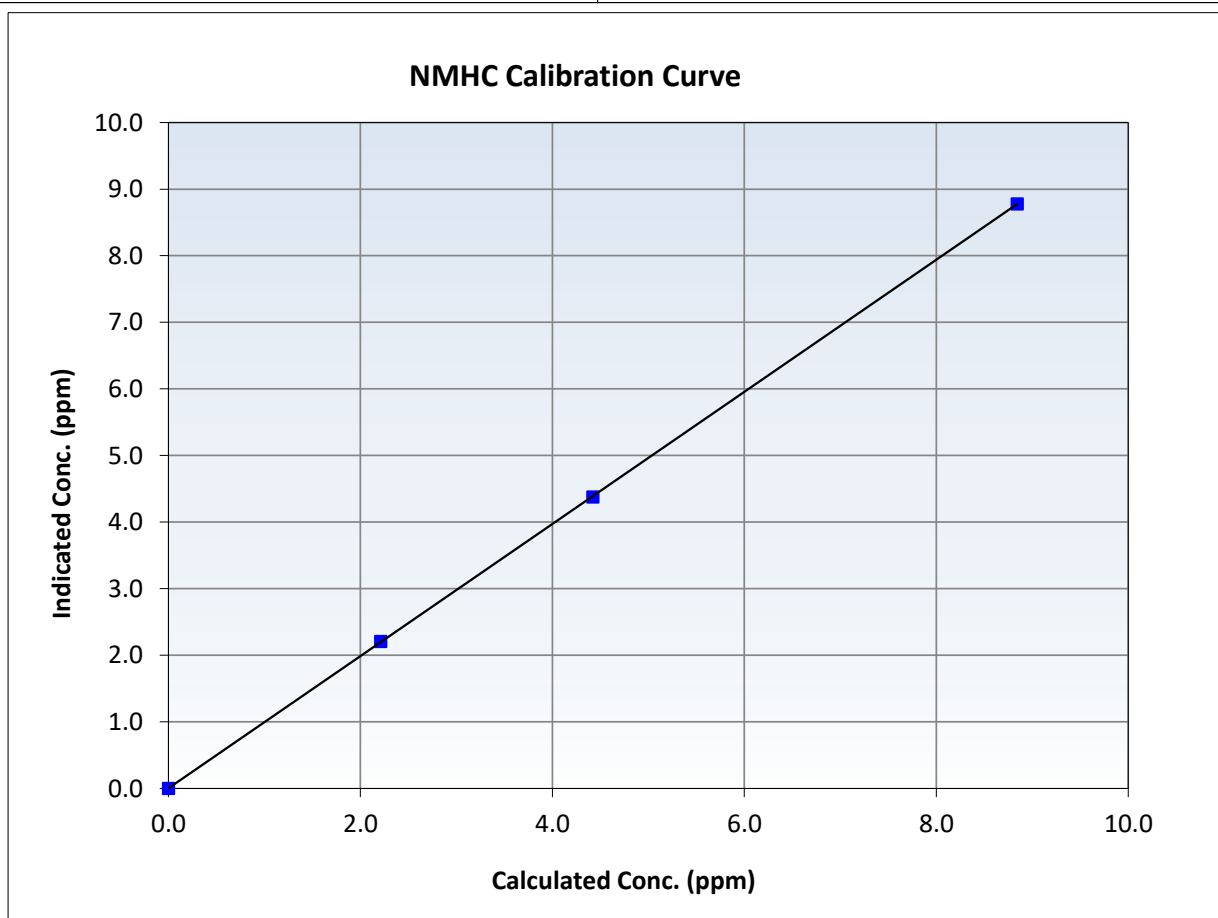
NMHC Calibration Summary

Station Information

Calibration Date:	September 24, 2025	Previous Calibration:	September 8, 2025
Station Name:	Mildred Lake	Station Number:	AMS 02
Start Time (MST):	9:03	End Time (MST):	14:49
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320040

Calibration Data

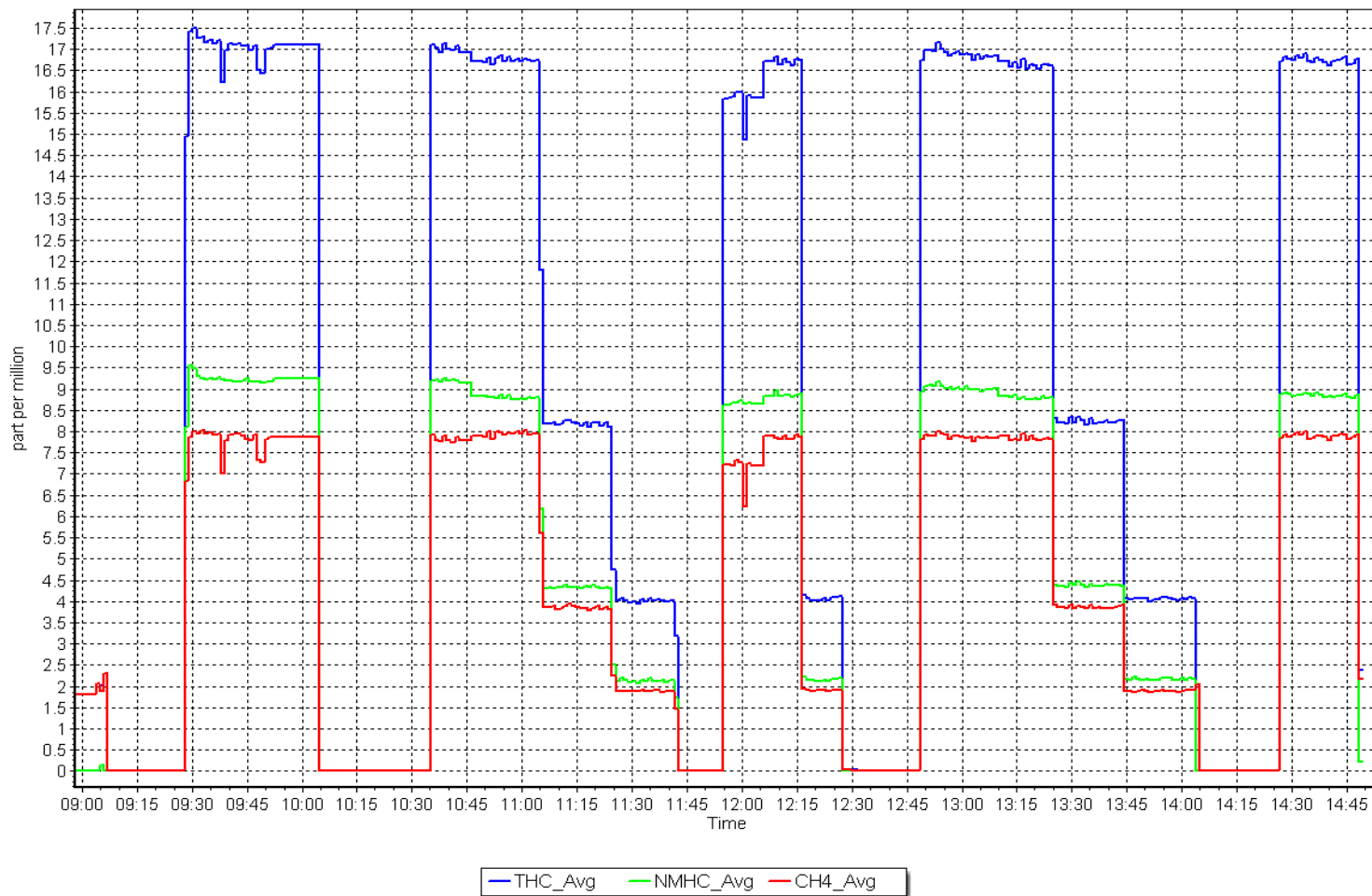
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999992	<i>≥0.995</i>
8.84	8.78	1.0072	Slope	0.992144	<i>0.90 - 1.10</i>
4.42	4.38	1.0103	Intercept	0.002860	<i>+/-0.5</i>
2.21	2.21	1.0009			



NMHC Calibration Plot

Date: September 24, 2025

Location: Mildred Lake





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS04 BUFFALO VIEWPOINT SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Buffalo Viewpoint
Calibration Date: September 8, 2025
Start time (MST): 6:00
Reason: Routine

Station number: AMS 04
Last Cal Date: August 7, 2025
End time (MST): 8:45

Calibration Standards

Cal Gas Concentration: 50.87 ppm
Cal Gas Cylinder #: CC446753
Removed Cal Gas Conc: 50.87 ppm
Removed Gas Cyl #:
Calibrator Model: Teledyne API T700
Zero Air Gen Model: Teledyne API T701

Cal Gas Exp Date: March 10, 2031
Rem Gas Exp Date:
Diff between cyl:
Serial Number: 3808
Serial Number: 362

Analyzer Information

Analyzer make: Thermo 43i
Analyzer Range: 0-1000ppb

Serial Number: JC1327300932

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002929	1.000929	Backgd or Offset:	27.5	27.5
Calibration intercept:	0.155268	0.454838	Coeff or Slope:	0.875	0.875

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4921	78.6	799.7	799.3	1.001
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	799.1	Previous response	802.2	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4921	78.6	799.7	800.7	0.999
Mid point	4961	39.3	399.8	401.2	0.997
Low point	4980	19.6	199.4	199.9	0.998
As left zero	5000	0.0	0.0	0.2	----
As left span	4921	78.6	799.7	802.6	0.996
Average Correction Factor:					0.998

Notes: No adjustments or maintenance done.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

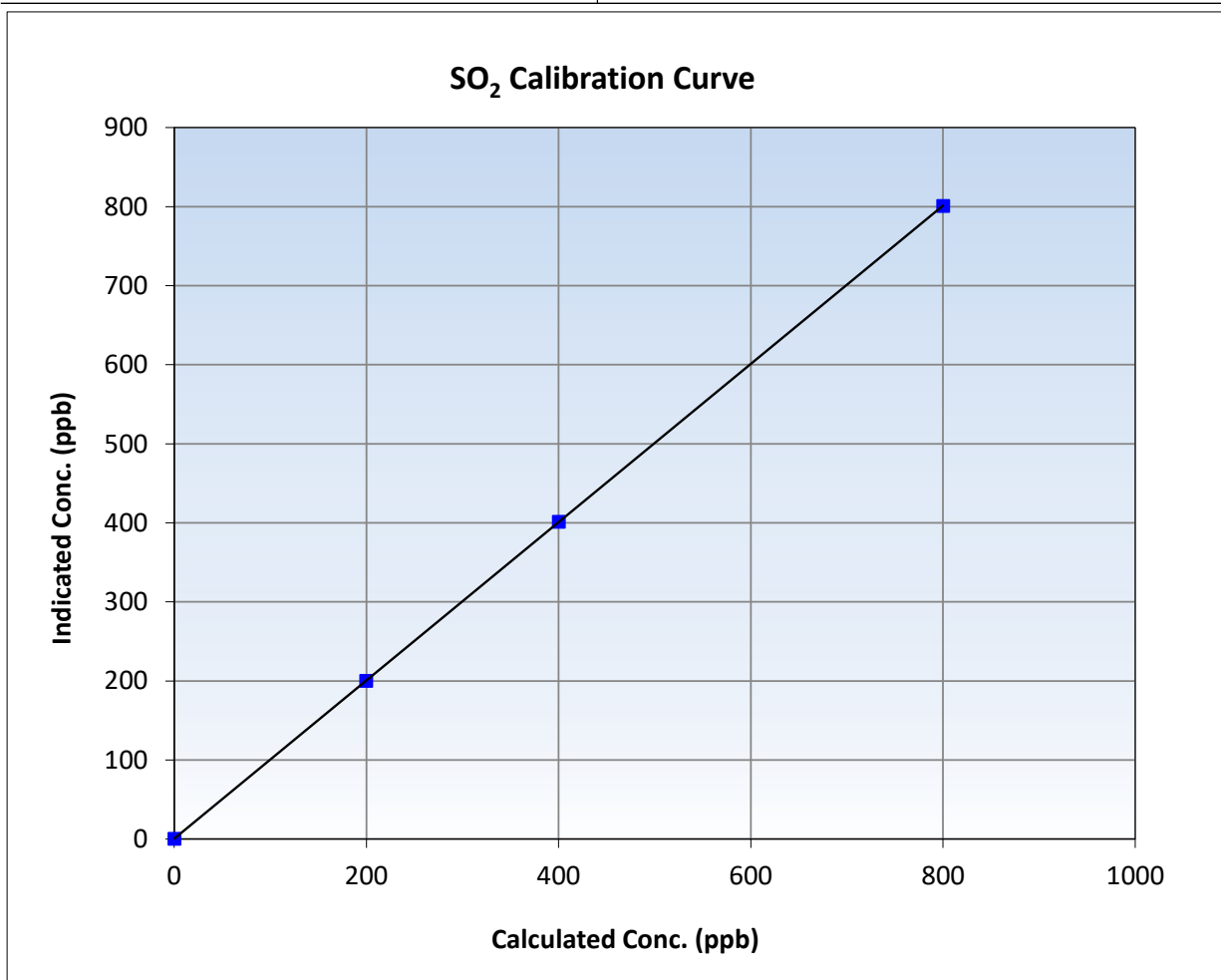
SO₂ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 7, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:00	End Time (MST):	8:45
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1327300932

Calibration Data

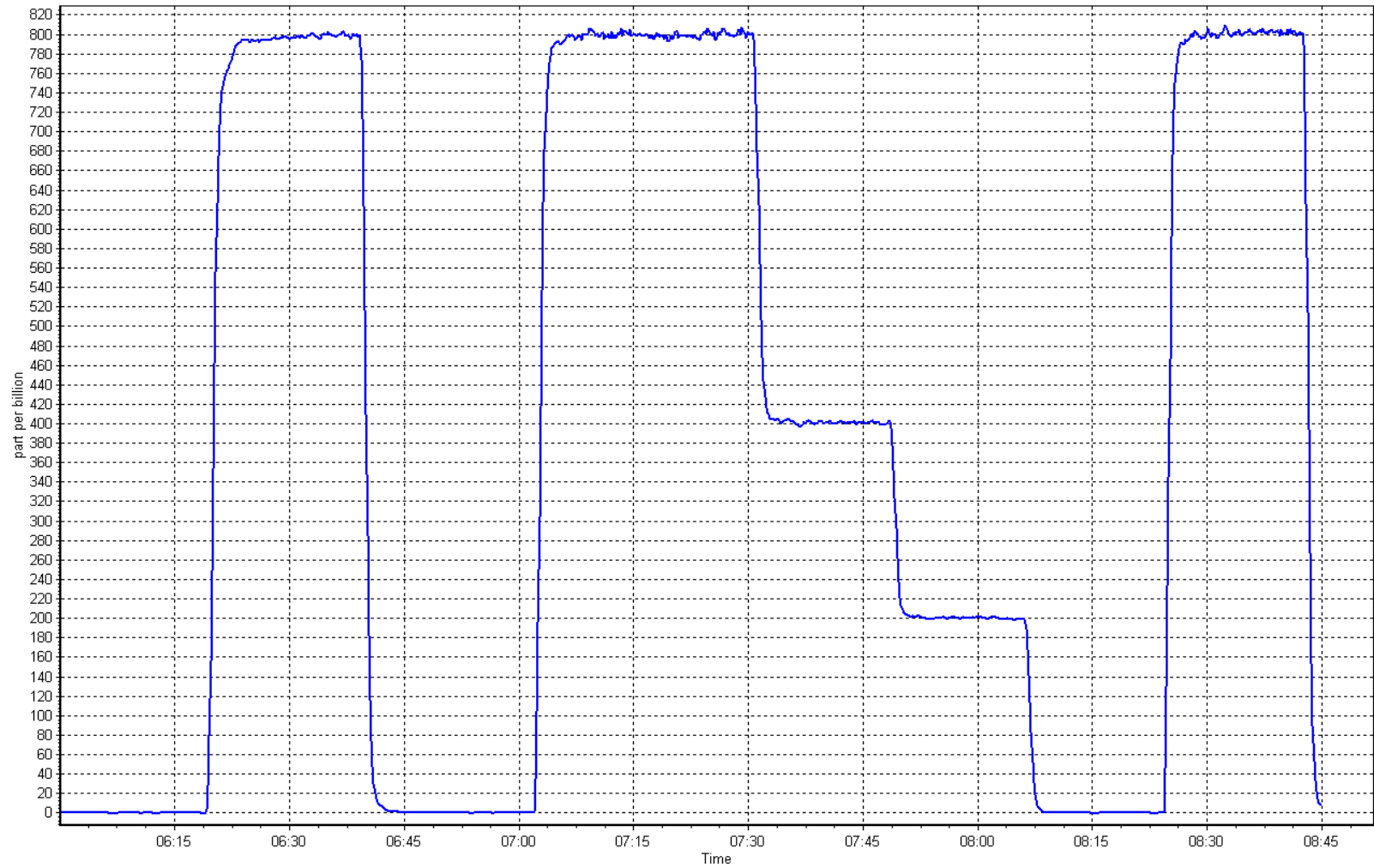
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999999	≥0.995
799.7	800.7	0.9988	Slope	1.000929	0.90 - 1.10
399.8	401.2	0.9965	Intercept	0.454838	+/-30
199.4	199.9	0.9976			



SO2 Calibration Plot

Date: September 8, 2025

Location: Buffalo Viewpoint





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: Buffalo Viewpoint
Calibration Date: September 3, 2025
Start time (MST): 6:09
Reason: Routine

Station number: AMS 04
Last Cal Date: August 15, 2025
End time (MST): 10:29

Calibration Standards

Cal Gas Concentration: 4.80 ppm
Cal Gas Cylinder #: DT0037528
Removed Cal Gas Conc: 4.80 ppm
Removed Gas Cyl #:
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701H

Cal Gas Exp Date: August 28, 2027
Rem Gas Exp Date:
Diff between cyl:
Serial Number: 3808
Serial Number: 362

Analyzer Information

Analyzer make: Thermo 43i-LTE
Converter make: Global
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1008841400
Converter serial #: 2022-200
Converter Temp: 325 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.996433	0.998433	Backgd or Offset:	1.86	1.86
Calibration intercept:	0.158230	0.138223	Coeff or Slope:	1.077	1.077

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4917	83.3	80.0	80.9	0.988
As found Mid point	4958	41.7	40.0	40.7	0.984
As found Low point	4979	20.8	20.0	20.3	0.984
New cylinder response					
Baseline Corr As found:	80.9	Prev response:	79.84	*% change:	1.3%
Baseline Corr 2nd AF pt:	40.7	AF Slope:	1.011581	AF Intercept:	0.078160
Baseline Corr 3rd AF pt:	20.3	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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4917	83.3	80.0	79.9	1.001
Mid point	4958	41.7	40.0	40.2	0.996
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	79.1	1.011
SO2 Scrubber Check	4920	80.0	800.0	0.0	----
Date of last scrubber change:	16-May-23		Ave Corr Factor		0.995
Date of last converter efficiency test:					

Notes: Sox scrubber checked after calibrator zero. No adjustments done.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

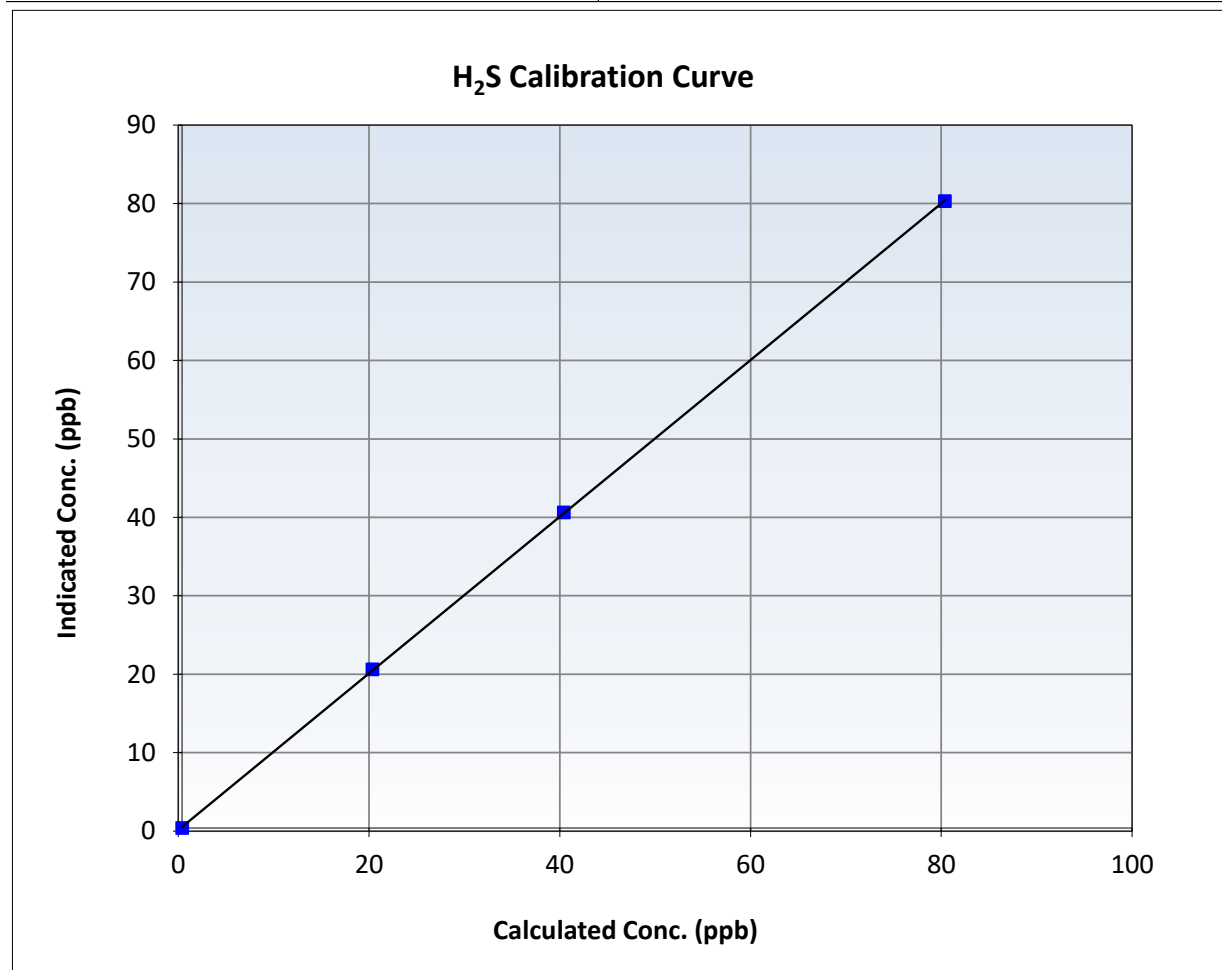
H₂S Calibration Summary

Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 15, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:09	End Time (MST):	10:29
Analyzer make:	Thermo 43i-LTE	Analyzer serial #:	1008841400

Calibration Data

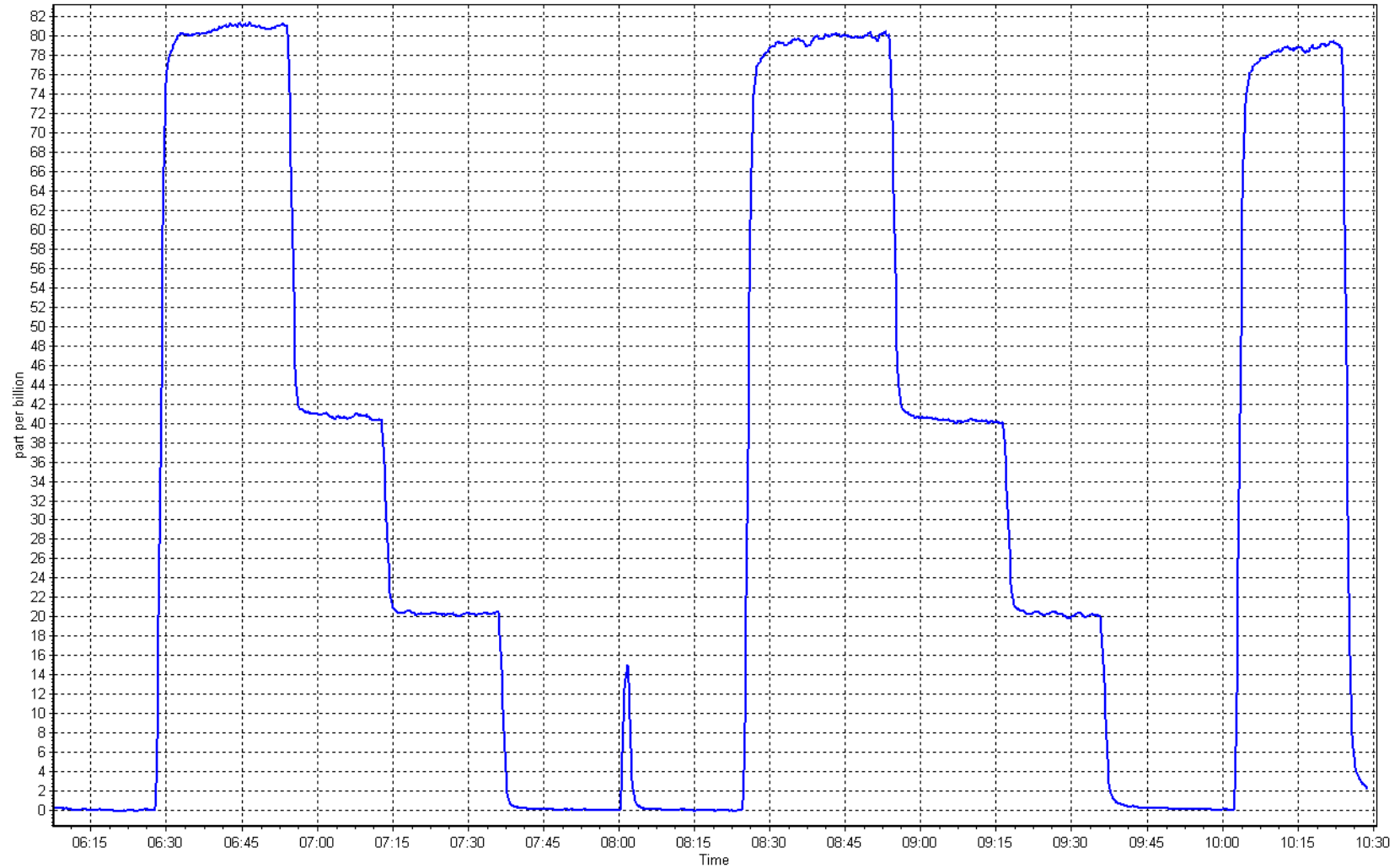
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999986	≥ 0.995
80.0	79.9	1.0008	Slope	0.998433	$0.90 - 1.10$
40.0	40.2	0.9959	Intercept	0.138223	± 3
20.0	20.2	0.9886			



H₂S Calibration Plot

Date: September 3, 2025

Location: Buffalo Viewpoint





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Buffalo Viewpoint
 Calibration Date: September 8, 2025
 Start time (MST): 6:00
 Reason: Routine

Station number: AMS 04
 Last Cal Date: August 7, 2025
 End time (MST): 8:44

Calibration Standards

Gas Cert Reference:	CC446753	Cal Gas Expiry Date:	March 10, 2031
CH ₄ Cal Gas Conc.	497.2 ppm	CH ₄ Equiv Conc.	1058.2 ppm
C ₃ H ₈ Cal Gas Conc.	204.0 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH ₄ Conc.	497.2 ppm	CH ₄ Equiv Conc.	1058.2 ppm
Removed C ₃ H ₈ 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
 THC Range: 0 - 20 ppm

Analyzer serial #: 1180320038
 NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	3.11E-04	3.35E-04	NMHC SP Ratio:	5.40E-04
CH ₄ Retention time:	15.4	15.4	NMHC Peak Area:	163306
Zero Chromatogram:	OFF	OFF	Flat Baseline:	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	16.64	15.57	1.069
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	15.57	Prev response	16.62	*% change	-6.7%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	16.64	16.65	0.999
Mid point	4961	39.3	8.32	8.26	1.007
Low point	4980	19.6	4.15	4.11	1.010
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	16.64	16.60	1.002
Average Correction Factor					1.005

Notes: CH₄ peak is quite a bit lower by 2000 counts. Counts have slightly lowered since last calibration. Span adjusted.



Wood Buffalo Environmental Association

THC / CH₄ / 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	8.82	8.30	1.062
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.30	Prev response	8.81	*% change	-6.1%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	8.82	8.82	1.000
Mid point	4961	39.3	4.41	4.40	1.002
Low point	4980	19.6	2.20	2.20	1.002
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.6	8.82	8.79	1.003
Average Correction Factor					1.001

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.6	7.82	7.27	1.075
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.27	Prev response	7.81	*% change	-7.4%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.6	7.82	7.82	1.000
Mid point	4961	39.3	3.91	3.86	1.013
Low point	4980	19.6	1.95	1.91	1.020
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

	<u>Start</u>	<u>Finish</u>
THC Cal Slope:	0.999289	1.001007
THC Cal Offset:	-0.006740	-0.029740
CH ₄ Cal Slope:	1.000415	1.001396
CH ₄ Cal Offset:	-0.013306	-0.025908
NMHC Cal Slope:	0.998083	1.000584
NMHC Cal Offset:	0.006366	-0.004032

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

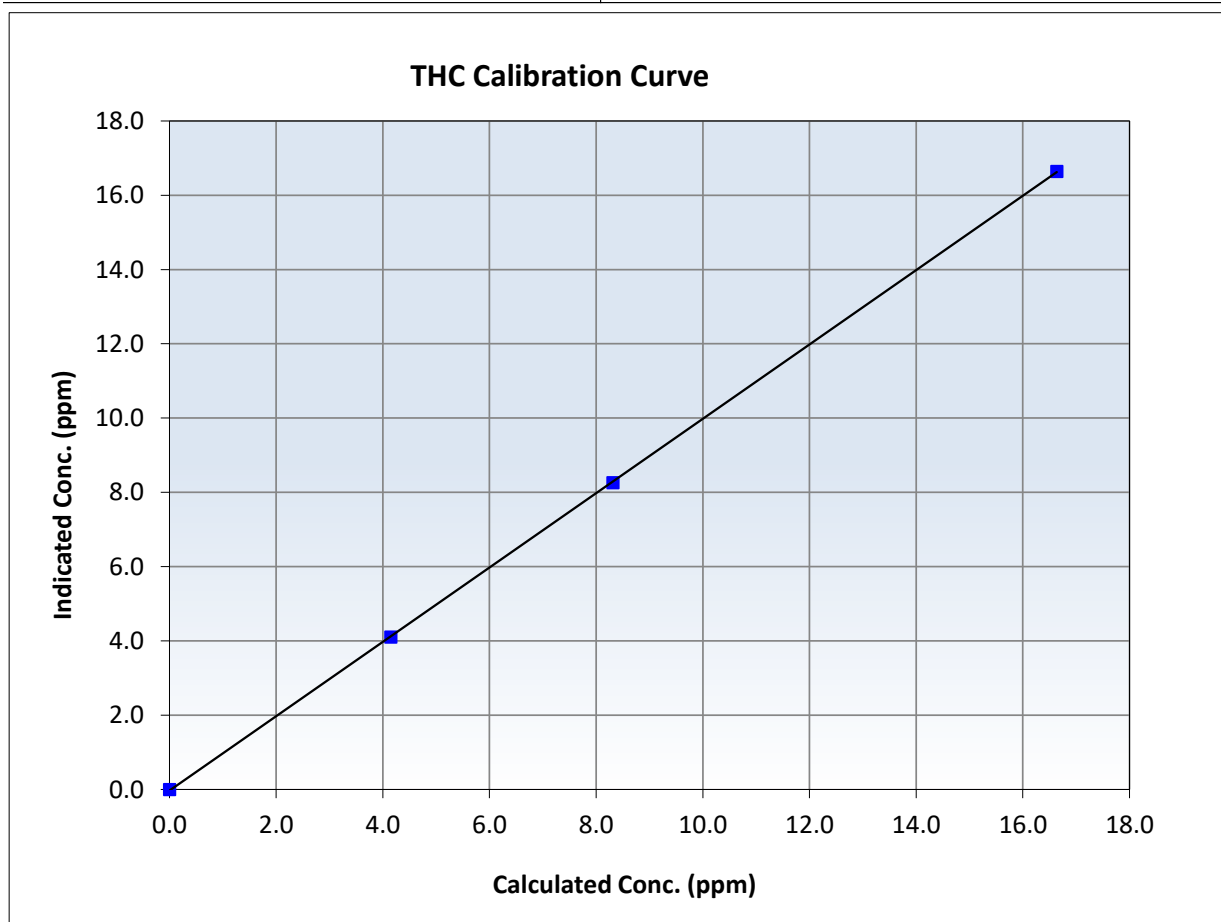
THC Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 7, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:00	End Time (MST):	8:44
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320038

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999981	<i>≥0.995</i>
16.64	16.65	0.9995	Slope	1.001007	<i>0.90 - 1.10</i>
8.32	8.26	1.0069	Intercept	-0.029740	<i>+/-0.5</i>
4.15	4.11	1.0101			





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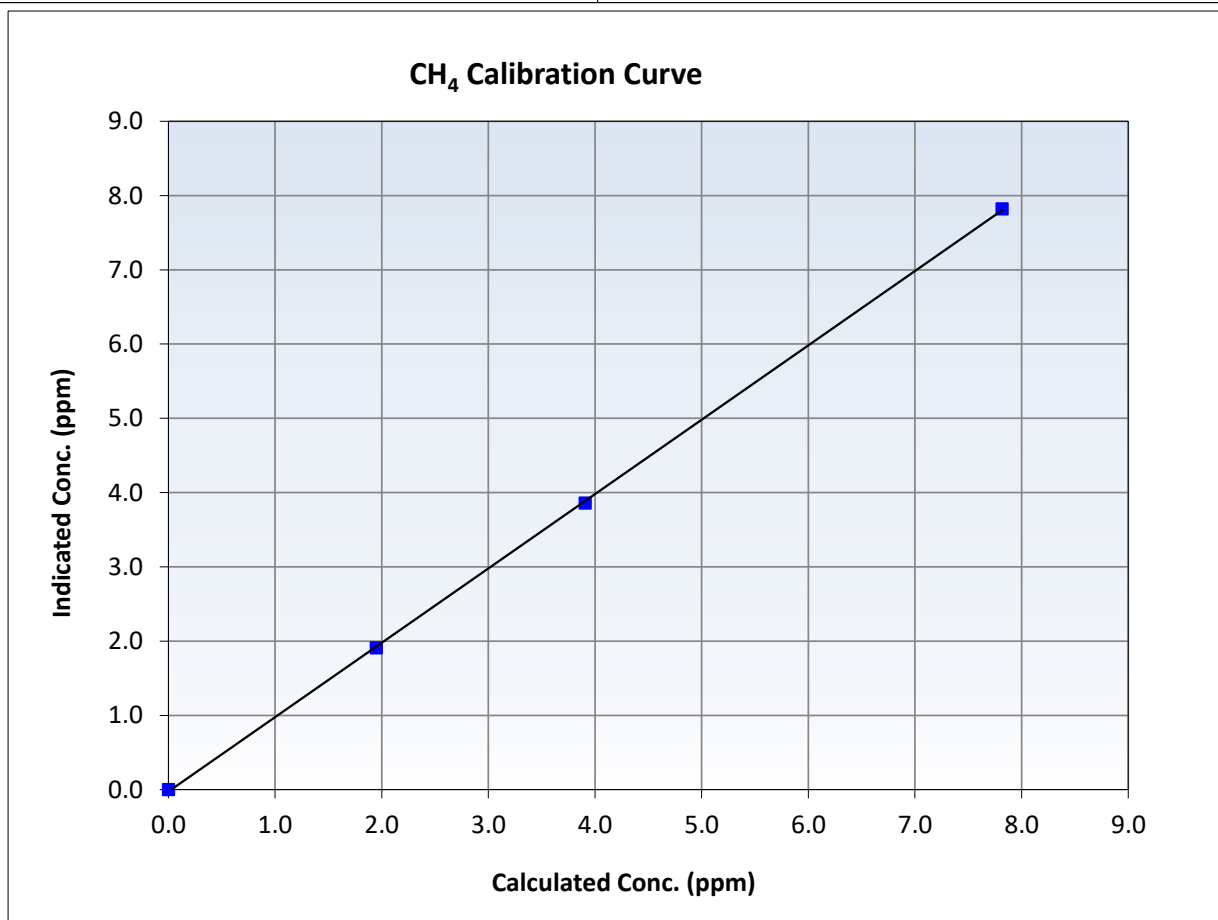
CH₄ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 7, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:00	End Time (MST):	8:44
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320038

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999938		≥ 0.995
7.82	7.82	0.9996	Slope	1.001396		0.90 - 1.10
3.91	3.86	1.0129	Intercept	-0.025908		± 0.5
1.95	1.91	1.0200				





Wood Buffalo Environmental Association

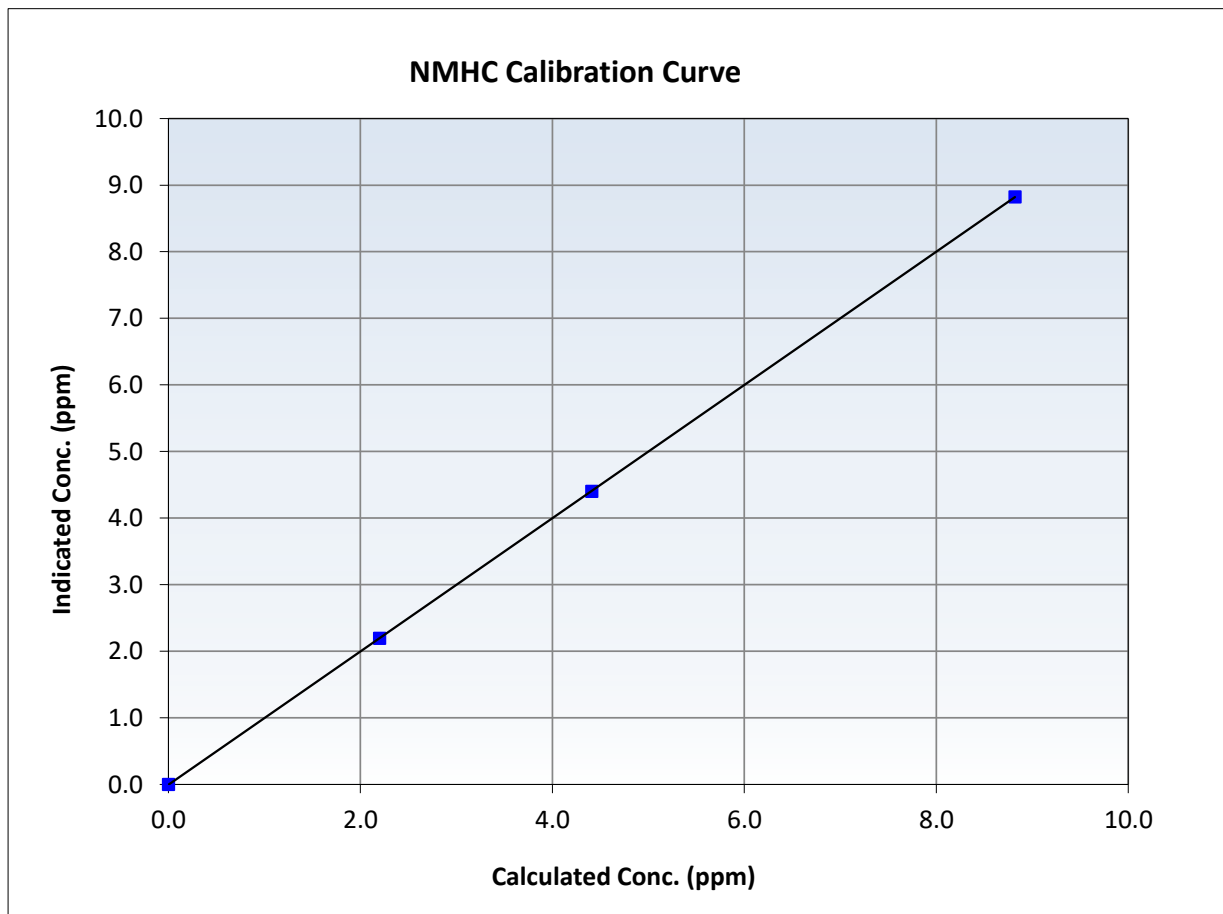
NMHC Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 7, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:00	End Time (MST):	8:44
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320038

Calibration Data

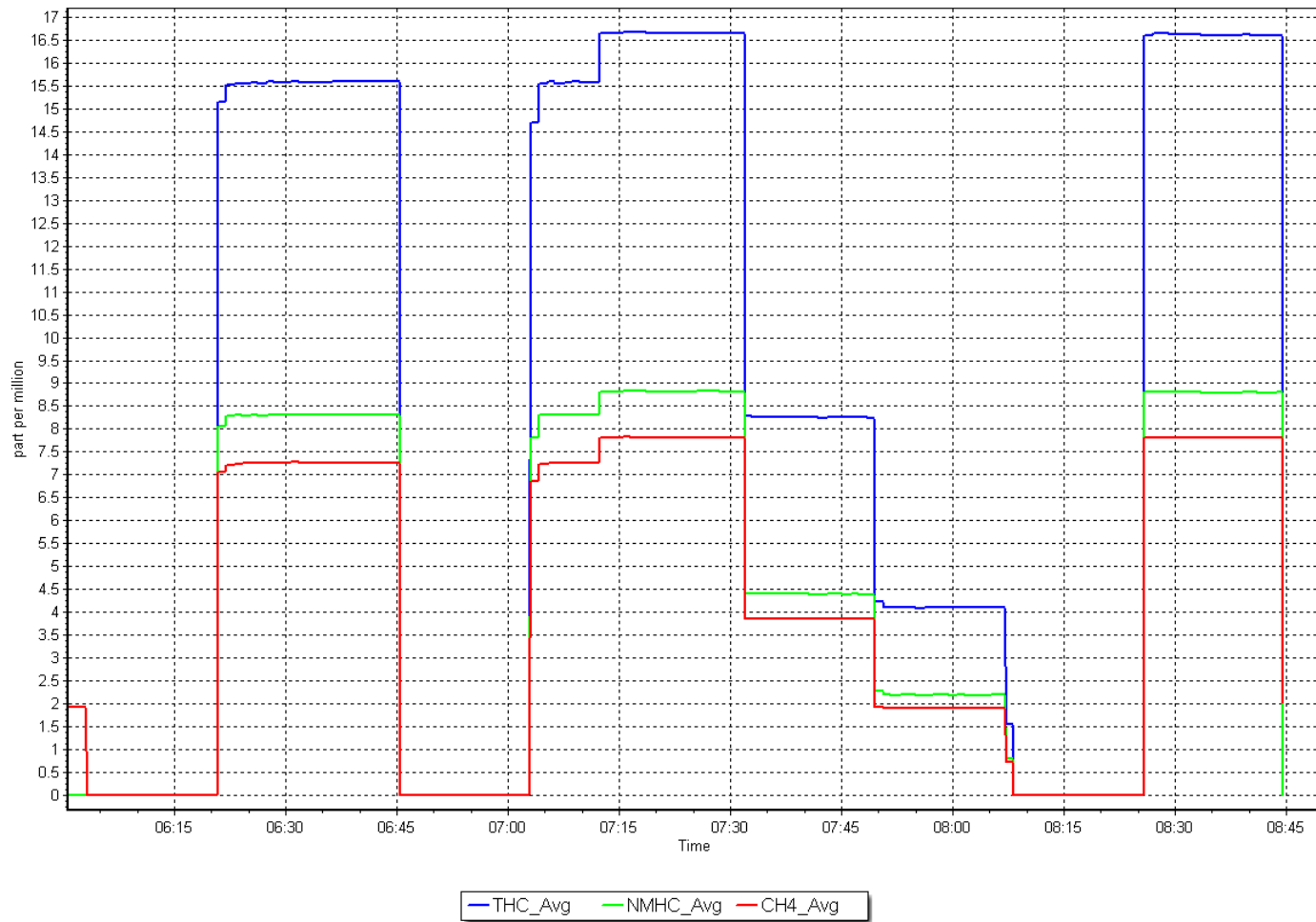
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999999	<i>≥0.995</i>
8.82	8.82	0.9995	Slope	1.000584	<i>0.90 - 1.10</i>
4.41	4.40	1.0016	Intercept	-0.004032	<i>+/-0.5</i>
2.20	2.20	1.0020			



NMHC Calibration Plot

Date: September 8, 2025

Location: Buffalo Viewpoint





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Buffalo Viewpoint
Station number: AMS 04
Calibration Date: September 24, 2025
Last Cal Date: August 20, 2025
Start time (MST): 6:15
End time (MST): 9:17
Reason: As Found

Calibration Standards

NO Gas Cylinder #: CC324979
NOX Cal Gas Conc: 48.90 ppm
Removed Cylinder #:
Removed Gas NOX Conc: 48.90 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: November 3, 2032
NO Cal Gas Conc: 48.80 ppm
Removed Gas Exp Date:
Removed Gas NO Conc: 48.80 ppm
NO gas Diff:
Serial Number: 3808
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.5	0.2	0.3	----	----
AF High point	4918	81.8	800.0	798.4	1.6	764.4	754.2	10.2	1.0473	1.0589
AF Mid point	4959	40.9	400.0	399.2	0.8	382.3	378.4	3.9	1.0477	1.0555
AF Low point	4980	20.4	199.5	199.1	0.4	191.2	188.4	2.8	1.0461	1.0579
New cyl resp										
Previous Response	NO _x = 800.8 ppb	NO = 798.2 ppb	* = > +/-5% change initiates investigation				*Percent Change		NO _x = -4.8%	
Baseline Corr 1st pt	NO _x = 763.9 ppb	NO = 754.0 ppb	<u>As Found Statistics</u>				*Percent Change		NO = -5.9%	
Baseline Corr 2nd pt	NO _x = 381.8 ppb	NO = 378.2 ppb	As found NO _x r ² : 1.000000				Nx SI: 0.954719		Nx Int: 0.558	
Baseline Corr 3rd pt	NO _x = 190.7 ppb	NO = 188.2 ppb	As found NO r ² : 0.999997				NO SI: 0.944483		NO Int: 0.515	
			As found NO ₂ r ² : 0.999916				NO2 SI: 1.004892		NO ₂ Int: 1.012	

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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
As Found GPT zero	----	----	0.0	0.3	----	----
As found high GPT point	753.9	386.8	368.7	371.8	0.9918	100.8%
As found mid GPT point	753.9	572.3	183.2	183.7	0.9975	100.3%
As found low GPT point	753.9	664.8	90.7	94.1	0.9643	103.7%



Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Teledyne API T200
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 721

Instrument Settings

	<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.491	1.491
NOX coeff or slope:	1.484	1.484
NO2 coeff or slope:	1.000	1.000

	<u>Start</u>	<u>Finish</u>
NO bkgnd or offset:	0.2	0.2
NOX bkgnd or offset:	-0.2	-0.2
Reaction cell Press:	4.5	4.5

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.998463	
NO _x Cal Offset:	2.027182	
NO Cal Slope:	0.999712	
NO Cal Offset:	0.005728	
NO ₂ Cal Slope:	0.990427	
NO ₂ Cal Offset:	0.844746	

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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
-----------	---------------------------	-----------------------------	---	--	---	--	---------------------------------------	--	---	--

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
-------------------	--	---------------------------------------	---	--	---	--

Cal zero
High GPT point
Mid GPT point
Low GPT point

Average Correction Factor

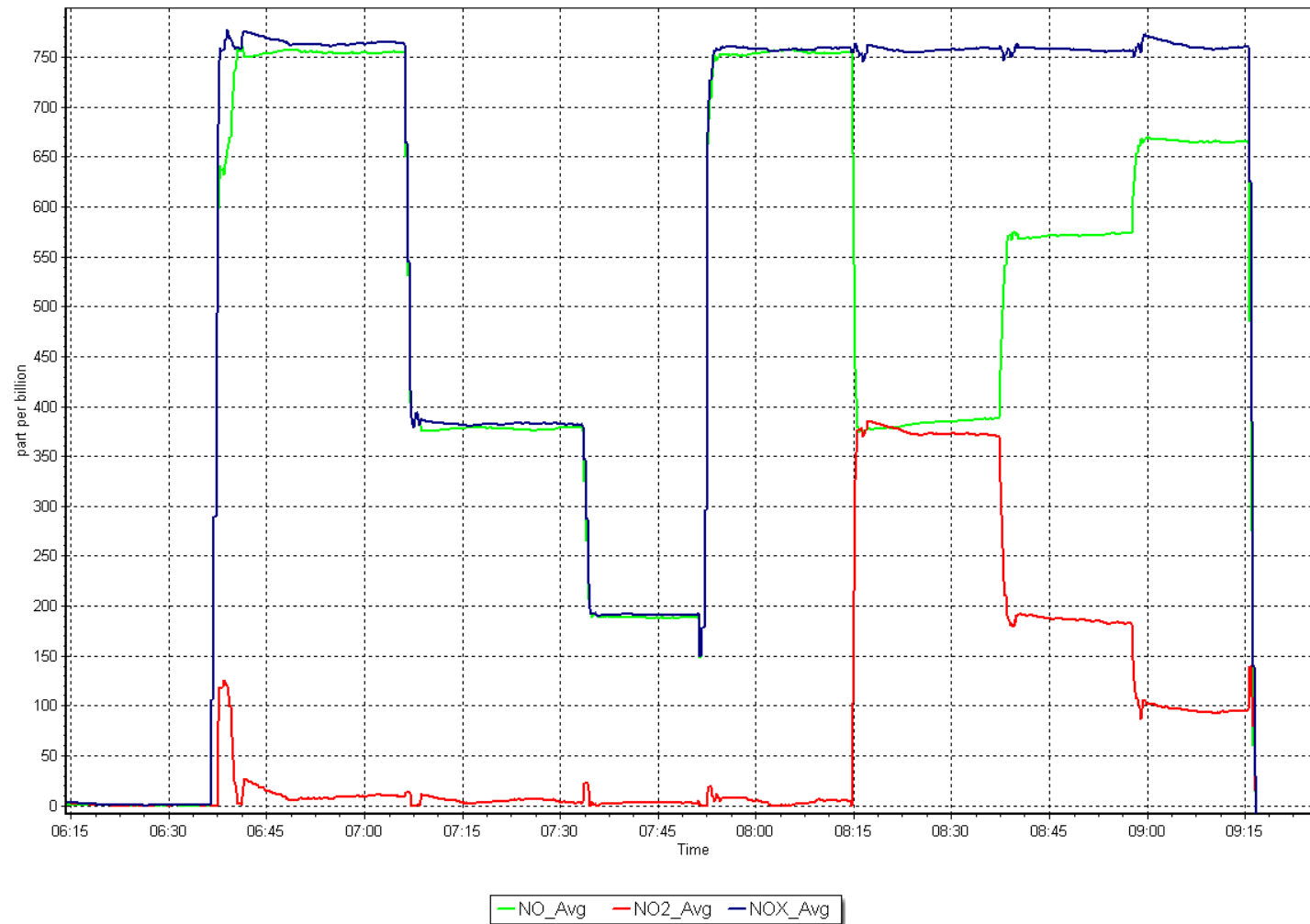
Notes: As Found to Clean Reaction Cell and Replace O3 Orifice Assembly.

Calibration Performed By: Melissa Lemay

NO_x Calibration Plot

Date: September 24, 2025

Location: Buffalo Viewpoint





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Buffalo Viewpoint
Station number: AMS 04
Calibration Date: September 25, 2025
Last Cal Date: August 20, 2025
Start time (MST): 6:17
End time (MST): 10:45
Reason: Routine

Calibration Standards

NO Gas Cylinder #: CC324979
NOX Cal Gas Conc: 48.90 ppm
Removed Cylinder #:
Removed Gas NOX Conc: 48.90 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: November 3, 2032
NO Cal Gas Conc: 48.80 ppm
Removed Gas Exp Date:
Removed Gas NO Conc: 48.80 ppm
NO gas Diff:
Serial Number: 3808
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
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	<u>As Found Statistics</u>		*Percent Change		NO =	NA
Baseline Corr 2nd pt	NO _x = NA	ppb	NO = NA	ppb	As found	NO _x r ² :	Nx SI:		Nx Int:	
Baseline Corr 3rd pt	NO _x = NA	ppb	NO = NA	ppb	As found	NO r ² :	NO SI:		NO Int:	
					As found	NO ₂ r ² :	NO2 SI:		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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Teledyne API T200
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 721

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.491	0.920	NO bkgnd or offset:	0.2	-9.8
NOX coeff or slope:	1.484	0.910	NOX bkgnd or offset:	-0.2	-9.7
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	4.7	4.7

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.998463	1.001578
NO _x Cal Offset:	2.027182	1.187429
NO Cal Slope:	0.999712	1.001914
NO Cal Offset:	0.005728	-0.113474
NO ₂ Cal Slope:	0.990427	0.993706
NO ₂ Cal Offset:	0.844746	-1.794650

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.0	0.1	----	----
High point	4918	81.8	800.0	798.4	1.6	801.7	799.7	2.0	0.9979	0.9984
Mid point	4959	40.9	400.0	399.2	0.8	403.1	400.3	2.8	0.9923	0.9972
Low point	4980	20.4	199.5	199.1	0.4	201.6	198.9	2.6	0.9896	1.0009
As left zero	5000	0.0	0.0	0.4	-0.4	0.4	0.4	-0.1	----	----
As left span	4918	81.8	800.0	409.6	800.0	791.0	409.6	381.4	1.0114	1.0000
Average Correction Factor									0.9933	0.9989

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.1	----	----
High GPT point	798.0	411.0	388.6	385.6	1.0079	99.2%
Mid GPT point	798.0	601.6	198.0	193.4	1.0240	97.7%
Low GPT point	798.0	698.4	101.2	97.3	1.0405	96.1%
Average Correction Factor					1.0241	97.7%

Notes: Calibration after Clean Reaction Cell and O3 Orifice Assembly replaced. Zero and Span adjusted.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

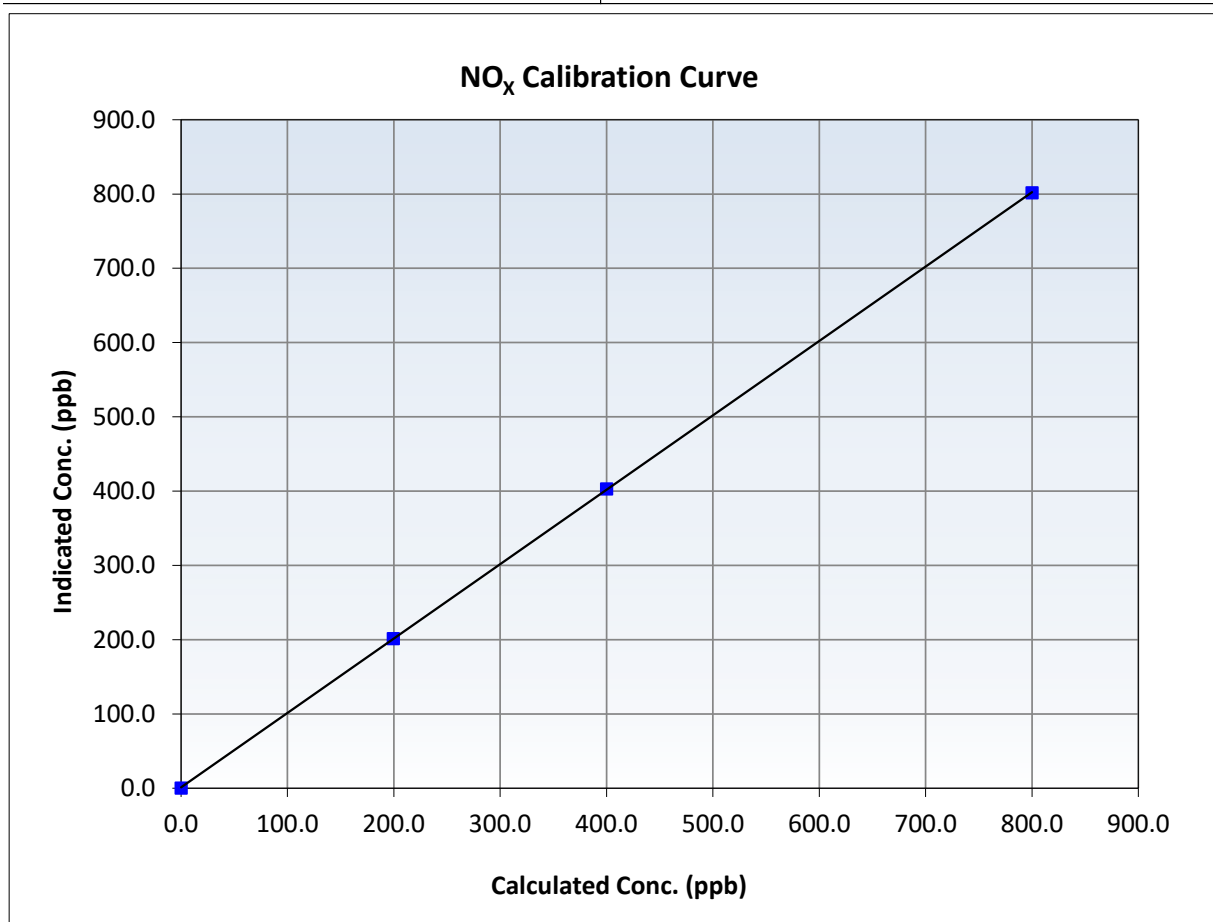
NO_x Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 20, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:17	End Time (MST):	10:45
Analyzer make:	Teledyne API T200	Analyzer serial #:	721

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999989	≥0.995
800.0	801.7	0.9979	Slope	1.001578	0.90 - 1.10
400.0	403.1	0.9923	Intercept	1.187429	+/-20
199.5	201.6	0.9896			





Wood Buffalo Environmental Association

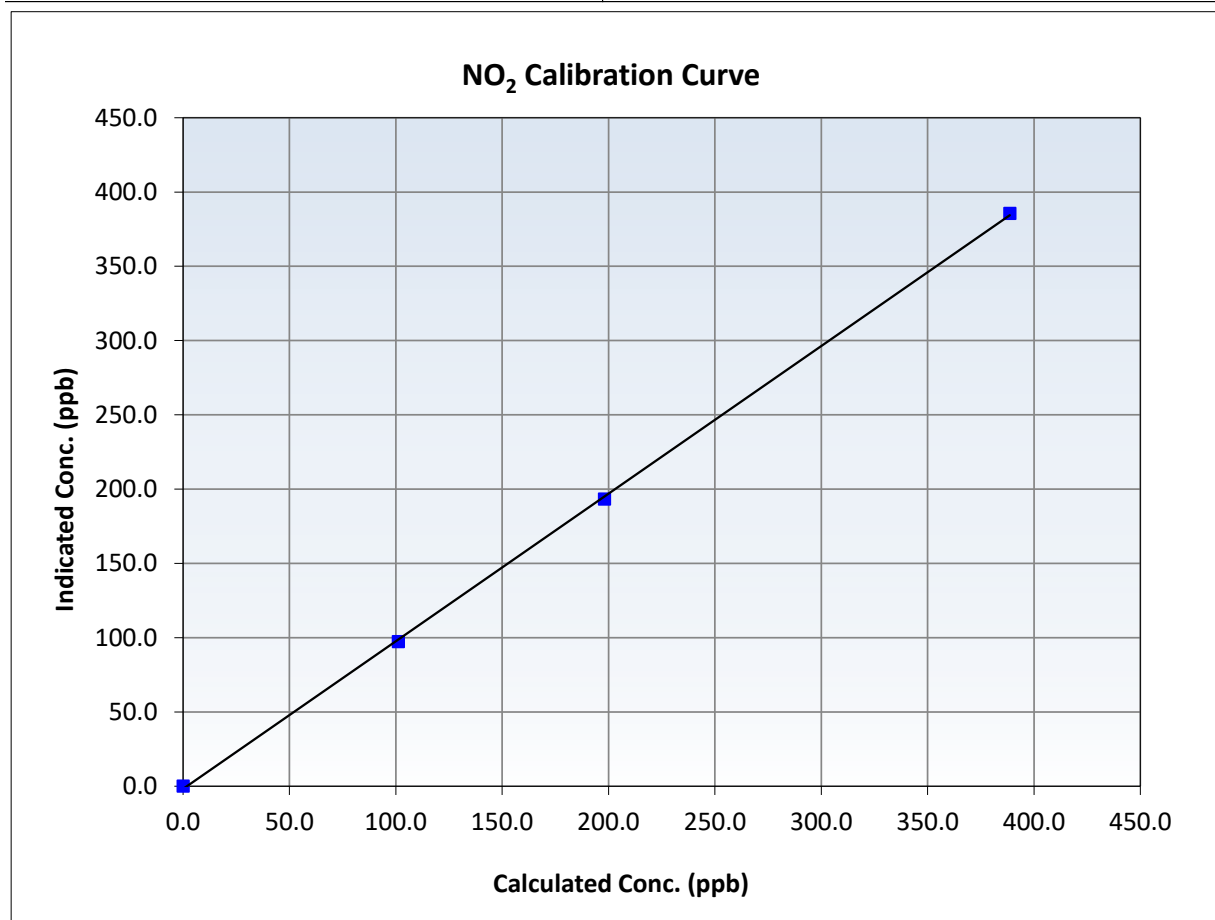
NO₂ Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 20, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:17	End Time (MST):	10:45
Analyzer make:	Teledyne API T200	Analyzer serial #:	721

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999879	≥ 0.995
388.6	385.6	1.0079	Slope	0.993706	$0.90 - 1.10$
198.0	193.4	1.0240	Intercept	-1.794650	± 20
101.2	97.3	1.0405			





Wood Buffalo Environmental Association

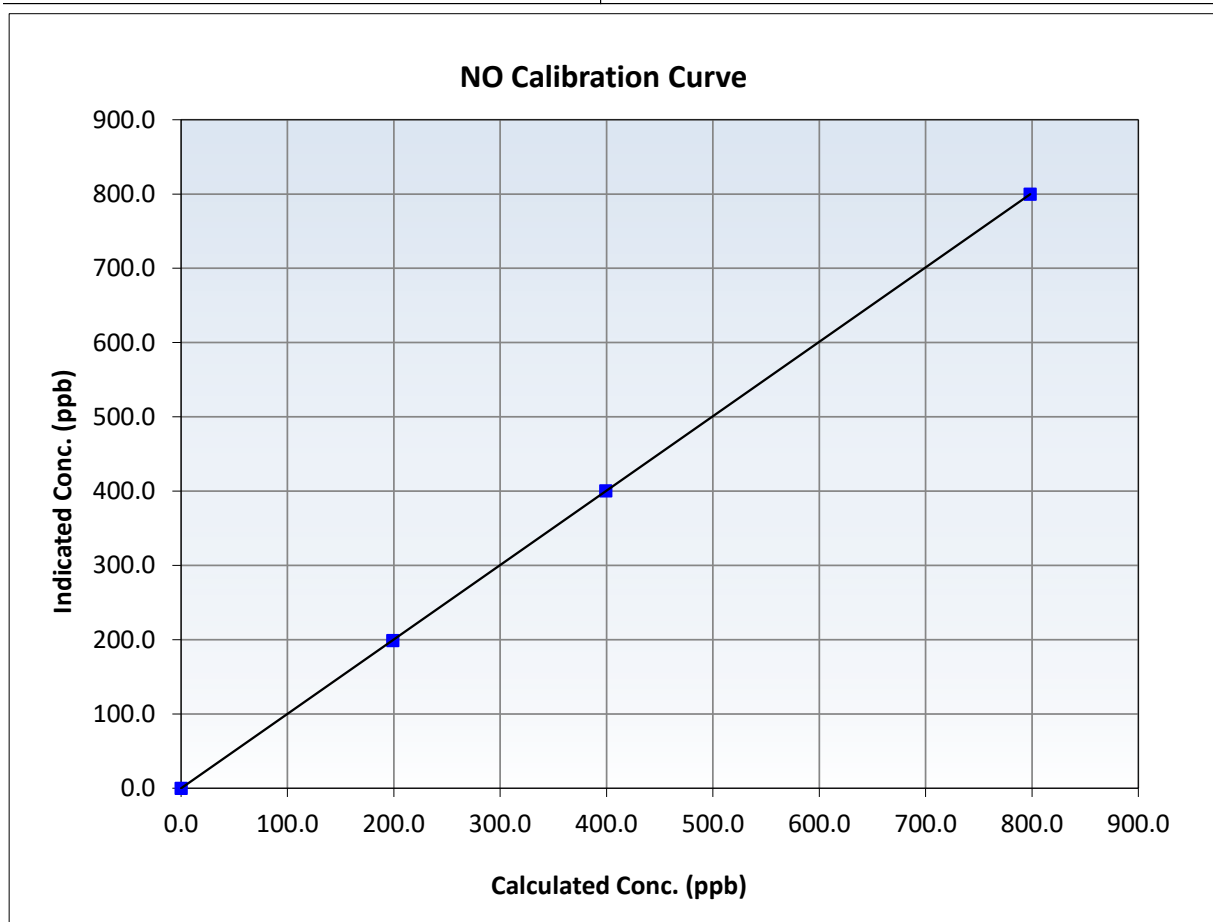
NO Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 20, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	6:17	End Time (MST):	10:45
Analyzer make:	Teledyne API T200	Analyzer serial #:	721

Calibration Data

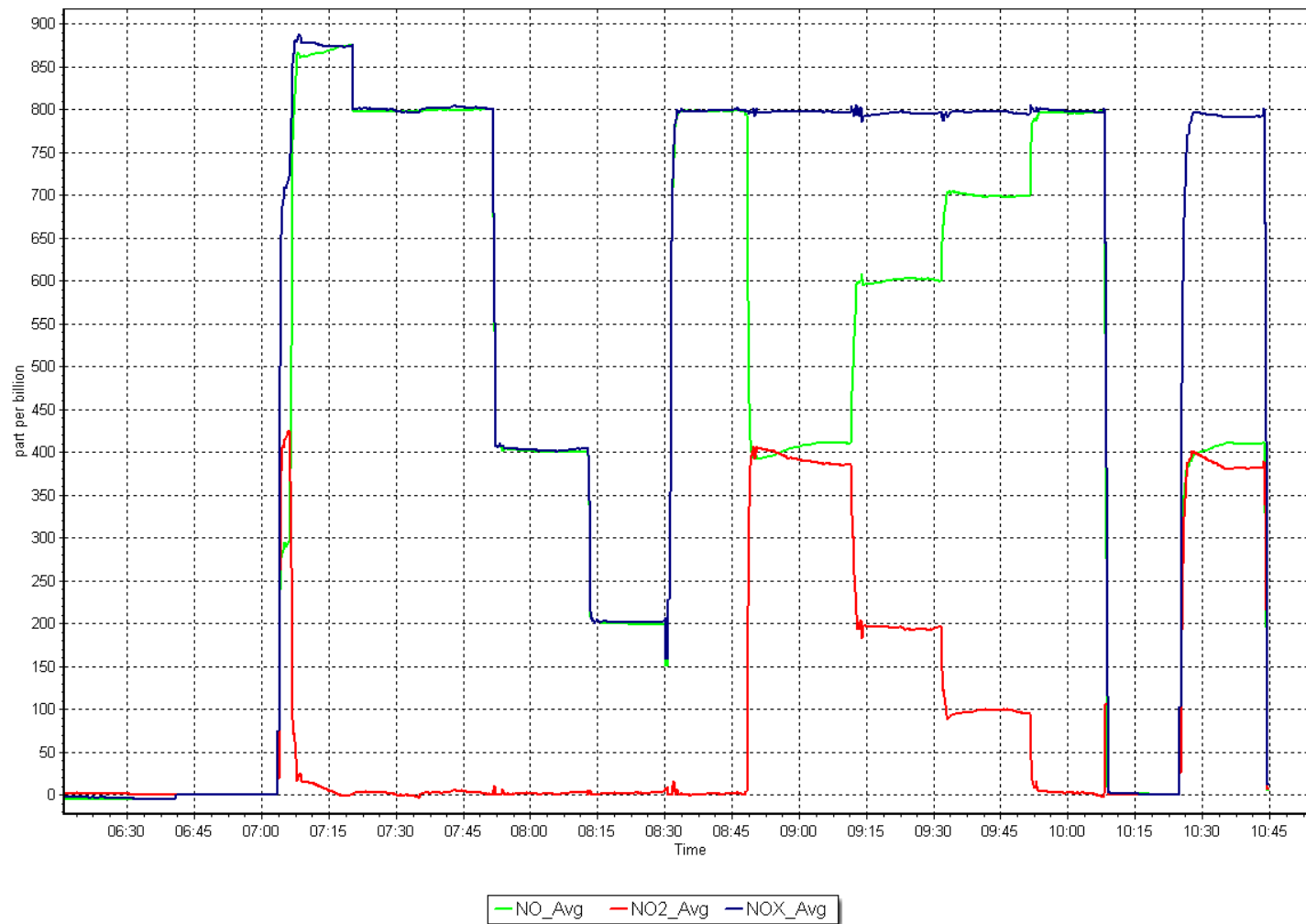
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	0.0	----	Correlation Coefficient	0.999999	≥ 0.995
798.4	799.7	0.9984	Slope	1.001914	0.90 - 1.10
399.2	400.3	0.9972	Intercept	-0.113474	+/-20
199.1	198.9	1.0009			



NO_x Calibration Plot

Date: September 25, 2025

Location: Buffalo Viewpoint





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Buffalo Viewpoint
Calibration Date: September 26, 2025
Start time (MST): 8:01
Reason: Routine

Station number: AMS 04
Last Cal Date: August 7, 2025
End time (MST): 10:43

Calibration Standards

O₃ generation mode: Photometer
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701

Serial Number: 3808
Serial Number: 362

Analyzer Information

Analyzer make: Teledyne API T400
Analyzer Range: 0 - 500 ppb

Analyzer serial #: 2961

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.001257	0.999114	Backgd or Offset:	-2.2	-1.0
Calibration intercept:	1.280000	0.880000	Coeff or Slope:	1.019	1.022

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.8	----
As found High point	5000	1015.7	400.0	399.1	1.004
As found Mid point					
As found Low point					
Baseline Corr As found:	398.3	Previous response	401.8	*% change	-0.9%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.9	----
High point	5000	1014.0	400.0	400.5	0.999
Mid point	5000	831.5	200.0	200.8	0.996
Low point	5000	719.0	100.0	100.7	0.993
As left zero	5000	0.0	0.0	0.0	----
As left span	5000	1014.6	400.0	402.3	0.994
Average Correction Factor					0.996

Notes: No maintenance done. Zero adjusted.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

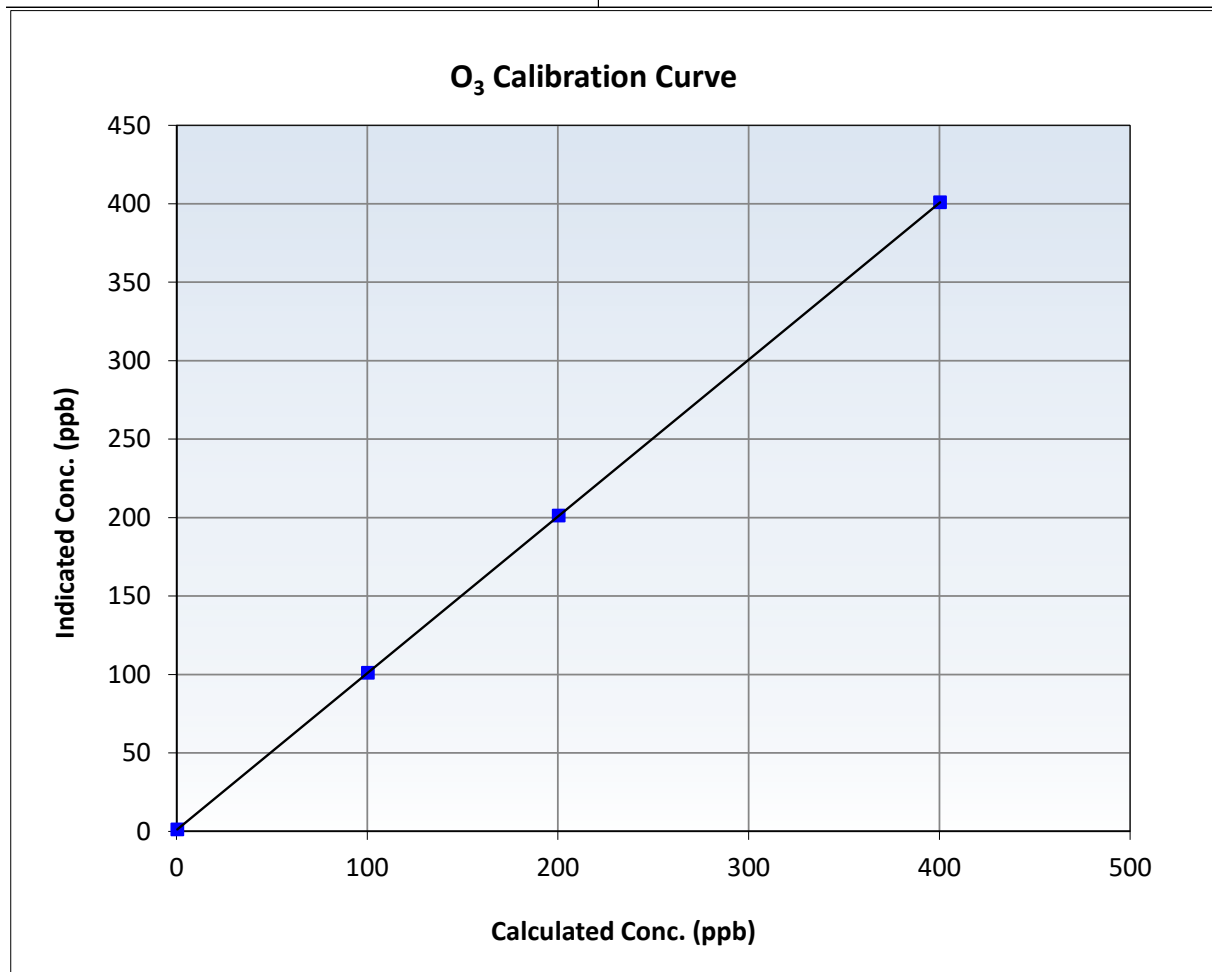
O₃ Calibration Summary

Station Information

Calibration Date:	September 26, 2025	Previous Calibration:	August 7, 2025
Station Name:	Buffalo Viewpoint	Station Number:	AMS 04
Start Time (MST):	8:01	End Time (MST):	10:43
Analyzer make:	Teledyne API T400	Analyzer serial #:	2961

Calibration Data

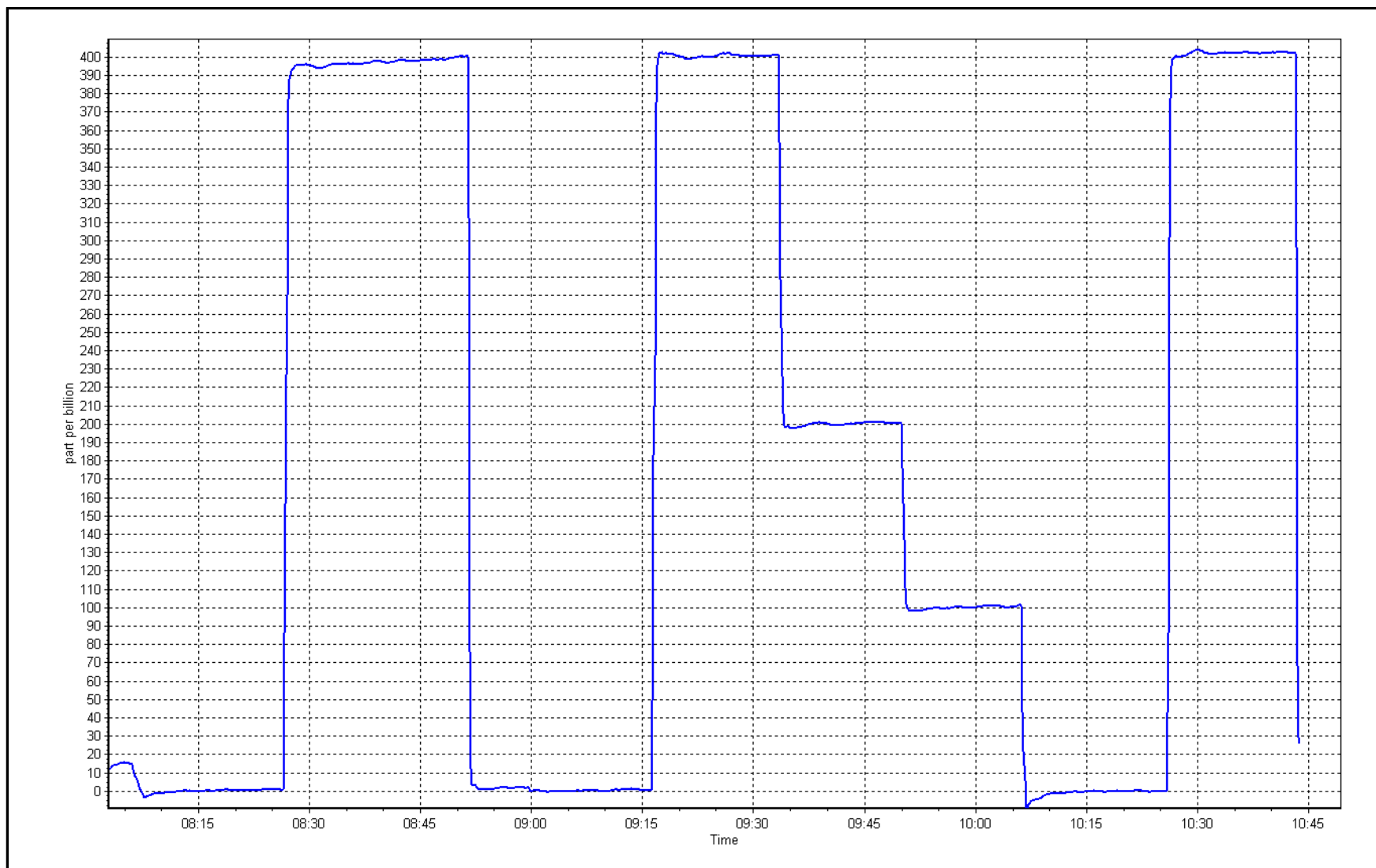
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.9	----	Correlation Coefficient	1.000000	≥ 0.995
400.0	400.5	0.9988	Slope	0.999114	$0.90 - 1.10$
200.0	200.8	0.9960	Intercept	0.880000	± 5
100.0	100.7	0.9930			



O₃ Calibration Plot

Date: September 26, 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: September 26, 2025 Last Cal Date: August 20, 2025
Start time (MST): 7:01 End time (MST): 8:02

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)	6.5	6.6	6.5	☐	+/- 2 °C
P (mmHg)	719.0	719.0	721.1	☐	+/- 10 mmHg
Flow (LPM)	4.97	5.07	4.97	☐	+/- 0.25 LPM
PW% (pump)	37	----	37	☐	>80%
Zero Verification	PM w/o HEPA: 77.0		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	9.9	10.7	10.7	☐	+/- 0.5

Date Optical Chamber Cleaned: September 26, 2025
Date Disposable Filter Changed: September 26, 2025

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

Annual Maintenance

Date Sample Tube Cleaned: September 26, 2025
Date RH/T Sensor Cleaned: September 26, 2025

No adjustments done.

Notes:

Calibration by: Melissa Lemay



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS05 MANNIX SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Mannix
Calibration Date: September 15, 2025
Start time (MST): 9:36
Reason: Routine

Station number: AMS 05
Last Cal Date: August 15, 2025
End time (MST): 13:05

Calibration Standards

Cal Gas Concentration: 50.06 ppm
Cal Gas Cylinder #: CC308040
Removed Cal Gas Conc: 50.06 ppm
Removed Gas Cyl #:
Calibrator Model: API T700
Zero Air Gen Model: API T701

Cal Gas Exp Date: October 22, 2032
Rem Gas Exp Date: October 22, 2032
Diff between cyl:
Serial Number: 5470
Serial Number: 361

Analyzer Information

Analyzer make: Thermo 43i
Analyzer Range: 1000 ppb

Serial Number: 1008841399

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002808	1.001595	Backgd or Offset:	10.1	10.1
Calibration intercept:	-0.757066	-0.657151	Coeff or Slope:	0.939	0.939

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4920	79.9	800.0	798.4	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	798.5	Previous response	801.5	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4920	79.9	800.0	800.8	0.999
Mid point	4960	40.0	400.5	400.7	0.999
Low point	4980	20.0	200.2	198.6	1.008
As left zero	5000	0.0	0.0	0.3	----
As left span	4920	79.9	800.0	800.6	0.999
Average Correction Factor:					1.002

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

Calibration Performed By: Max Farrell



Wood Buffalo Environmental Association

SO₂ Calibration Summary

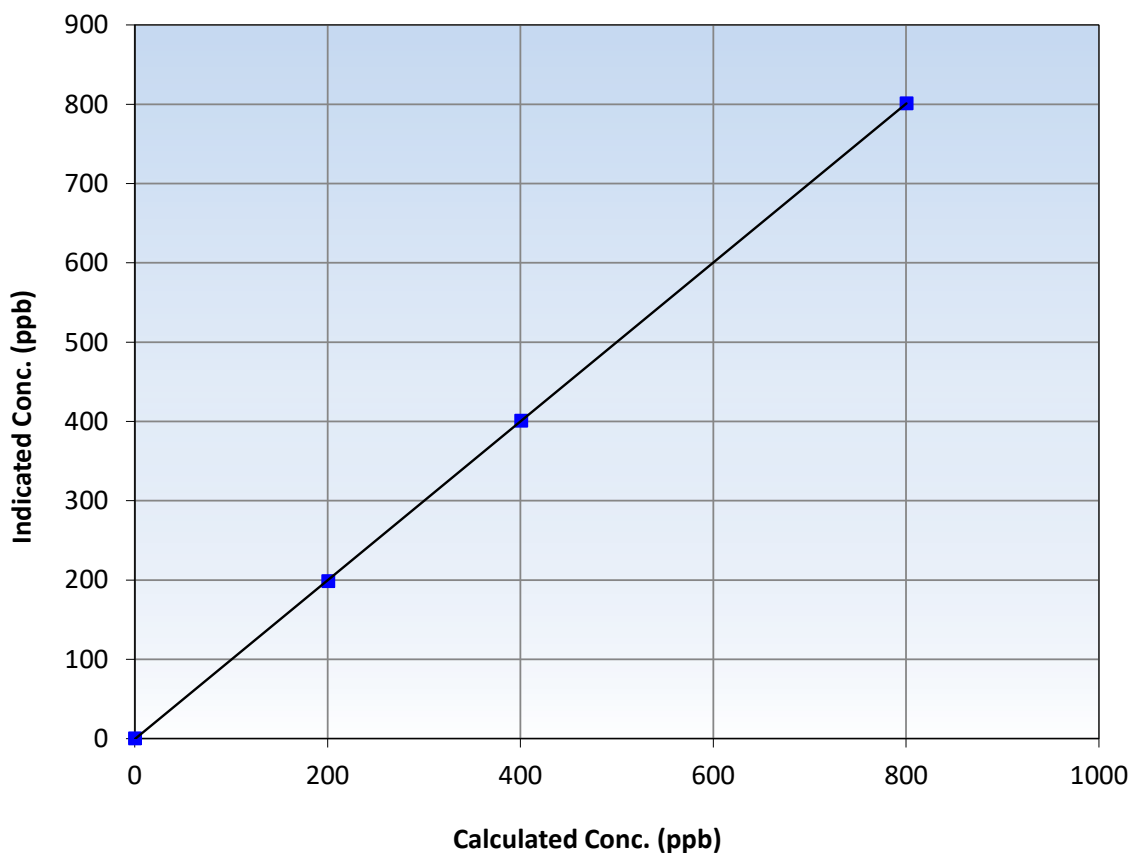
Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 15, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:36	End Time (MST):	13:05
Analyzer make:	Thermo 43i	Analyzer serial #:	1008841399

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999993	≥0.995
800.0	800.8	0.9990	Slope	1.001595	0.90 - 1.10
400.5	400.7	0.9995	Intercept	-0.657151	+/-30
200.2	198.6	1.0083			

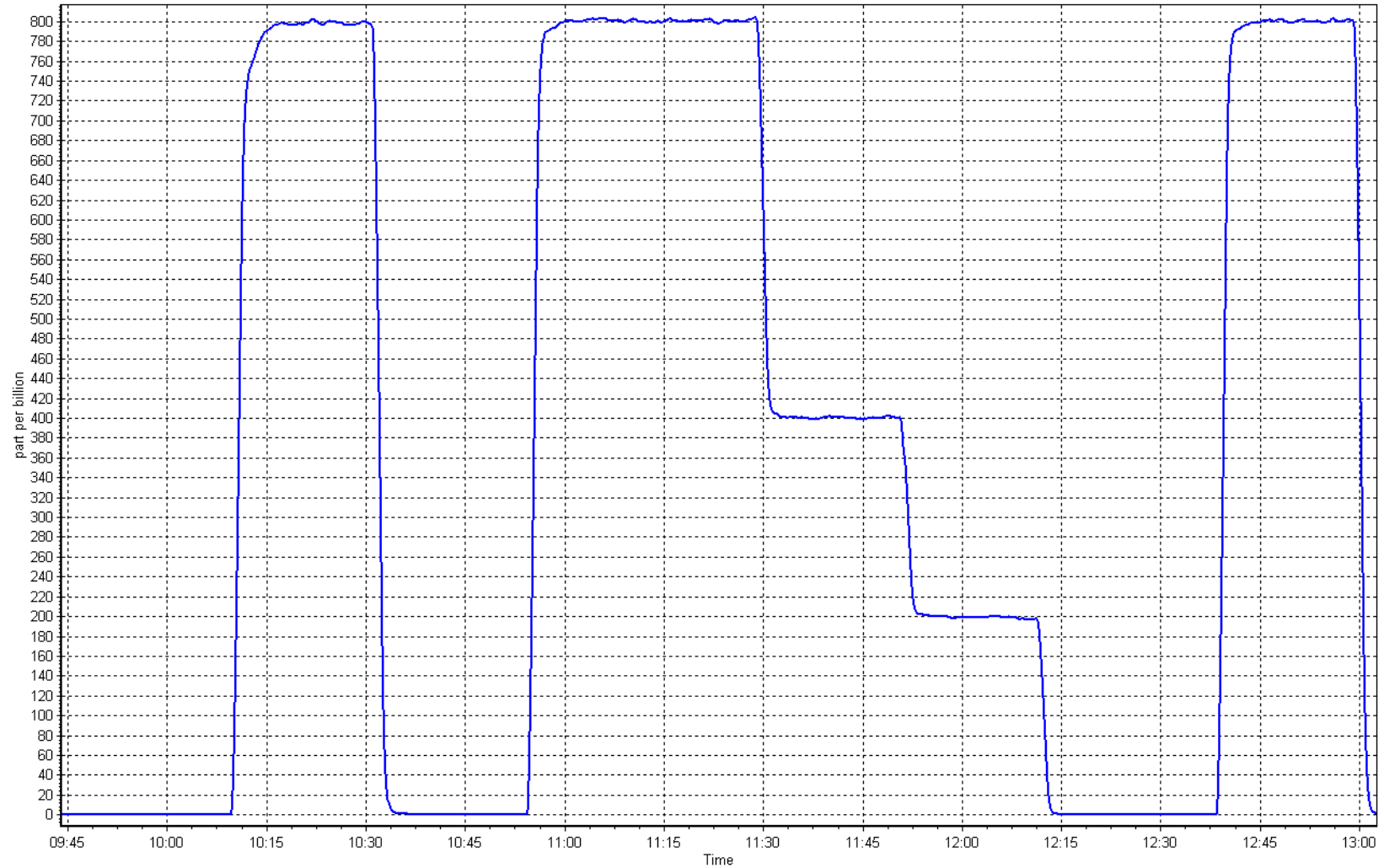
SO₂ Calibration Curve



SO2 Calibration Plot

Date: September 15, 2025

Location: Mannix





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: Mannix
Calibration Date: September 3, 2025
Start time (MST): 9:39
Reason: Routine

Station number: AMS 05
Last Cal Date: August 8, 2025
End time (MST): 14:05

Calibration Standards

Cal Gas Concentration: 4.96 ppm
Cal Gas Cylinder #: DT0037363
Removed Cal Gas Conc: 4.96 ppm
Removed Gas Cyl #: N/A
Calibrator Make/Model: API T700
ZAG Make/Model: API T701

Cal Gas Exp Date: November 15, 2026
Rem Gas Exp Date: N/A
Diff between cyl:
Serial Number: 5470
Serial Number: 361

Analyzer Information

Analyzer make: Thermo 43iQ
Converter make: Global
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1200326169
Converter serial #: 2022-225
Converter Temp: 325 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.006549	1.005691	Backgd or Offset:	1.25	1.25
Calibration intercept:	0.102219	0.082267	Coeff or Slope:	1.017	1.017

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.1	----
As found High point	4919	80.6	80.0	80.9	0.990
As found Mid point	4960	40.3	40.0	40.8	0.982
As found Low point	4980	20.2	20.0	20.1	1.002
New cylinder response					
Baseline Corr As found:	80.8	Prev response:	80.59	*% change:	0.3%
Baseline Corr 2nd AF pt:	40.7	AF Slope:	1.011981	AF Intercept:	0.062156
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999959	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4919	80.6	80.0	80.4	0.995
Mid point	4960	40.3	40.0	40.6	0.985
Low point	4980	20.2	20.0	20.0	1.002
As left zero	5000	0.0	0.0	0.3	----
As left span	4919	80.6	80.0	78.8	1.015
SO2 Scrubber Check	4920	80.3	803.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	0.994
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

H₂S Calibration Summary

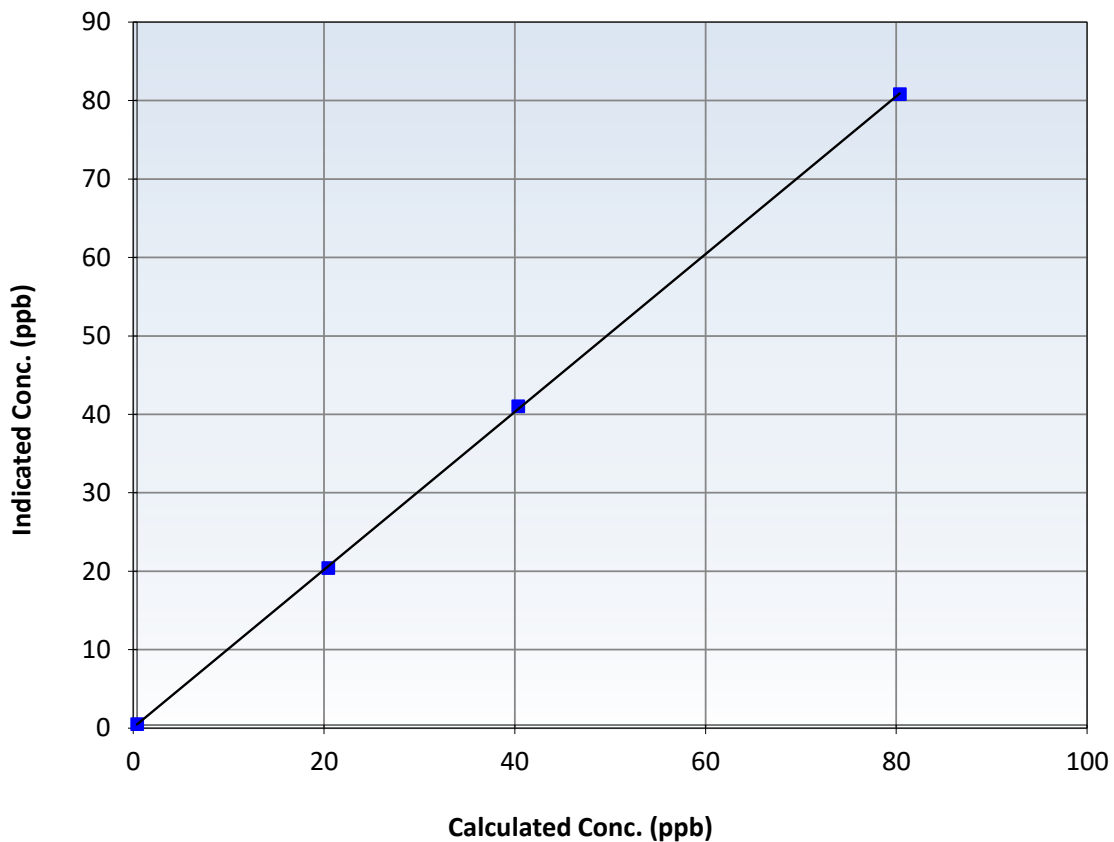
Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 8, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:39	End Time (MST):	14:05
Analyzer make:	Thermo 43iQ	Analyzer serial #:	1200326169

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999954	≥0.995
80.0	80.4	0.9945	Slope	1.005691	0.90 - 1.10
40.0	40.6	0.9846	Intercept	0.082267	+/-3
20.0	20.0	1.0019			

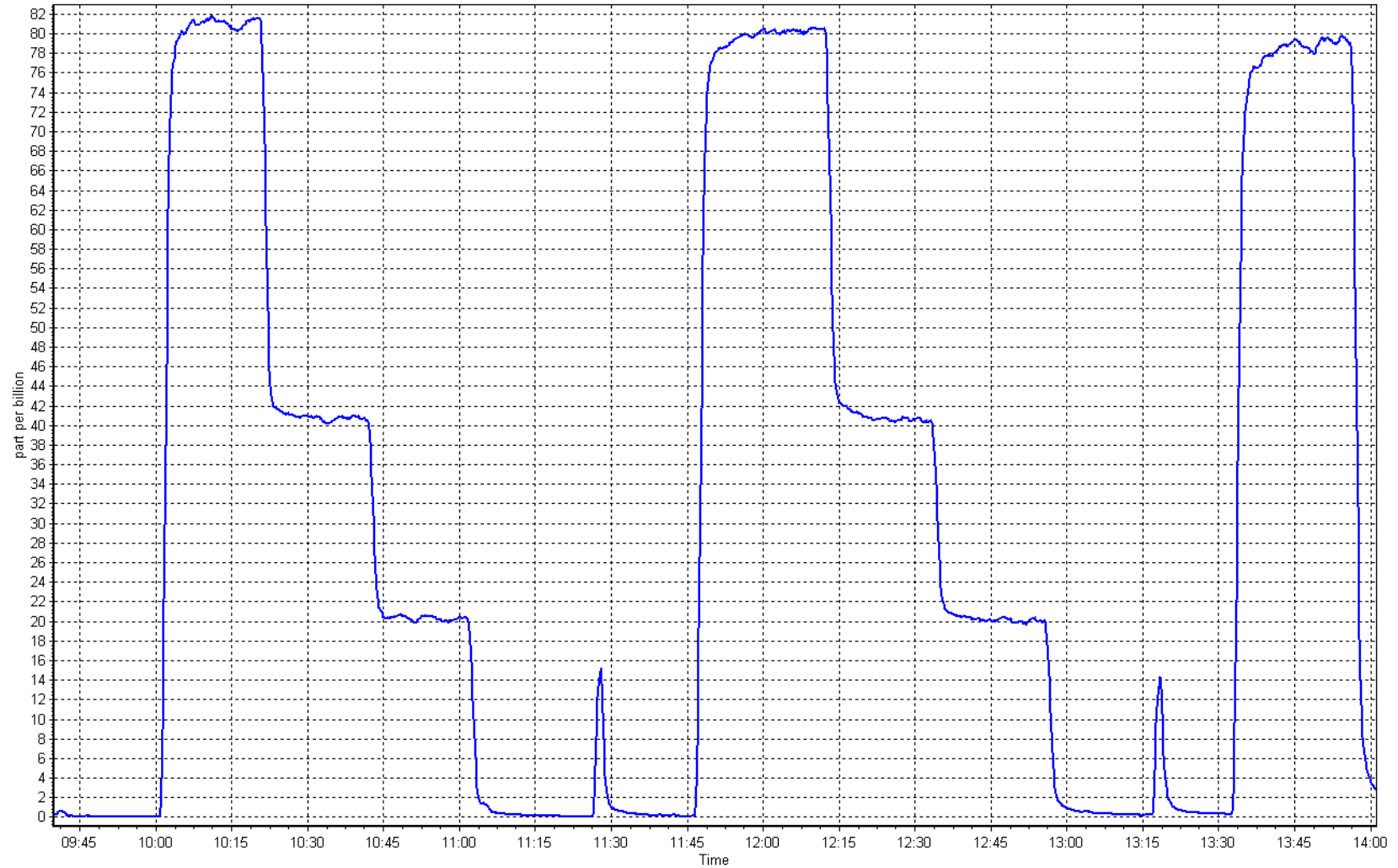
H₂S Calibration Curve



H₂S Calibration Plot

Date: September 3, 2025

Location: Mannix





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Mannix
Calibration Date: September 15, 2025
Start time (MST): 9:37
Reason: Routine

Station number: AMS 05
Last Cal Date: August 19, 2025
End time (MST): 13:05

Calibration Standards

Gas Cert Reference: CC308040
CH₄ Cal Gas Conc. 500.3 ppm
C₃H₈ Cal Gas Conc. 199.0 ppm
Removed Gas Cert:
Removed CH₄ Conc. 500.3 ppm
Removed C₃H₈ Conc. 199.0 ppm
Diff between cyl (CH₄):
Calibrator Model: API T700
Zero Air Gen model: API T701

Cal Gas Expiry Date: October 22, 2032
CH₄ Equiv Conc. 1047.6 ppm
Removed Gas Expiry:
CH₄ Equiv Conc. 1047.6 ppm
Diff between cyl (THC):
Diff between cyl (NM):
Serial Number: 5470
Serial Number: 361

Analyzer Information

Analyzer make: Thermo 55i
THC Range: 0 - 20 ppm

Analyzer serial #: 15005164381
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.73E-04	2.68E-04	NMHC SP Ratio:	5.04E-05	5.04E-05
CH ₄ Retention time:	13.7	13.9	NMHC Peak Area:	173521	173725
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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	16.74	16.87	0.992
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.87	Prev response	16.80	*% change	0.4%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.9	16.74	16.77	0.998
Mid point	4960	40.0	8.38	8.42	0.995
Low point	4980	20.0	4.19	4.21	0.996
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	16.74	16.78	0.998
Average Correction Factor					0.997

Notes:

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



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	8.75	8.75	1.000
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.75	Prev response	8.77	*% 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)
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.9	8.75	8.77	0.998
Mid point	4960	40.0	4.38	4.39	0.996
Low point	4980	20.0	2.19	2.20	0.996
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	8.75	8.76	0.999
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))
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	7.99	8.12	0.984
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.12	Prev response	8.03	*% change	1.1%
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)
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.9	7.99	8.00	0.999
Mid point	4960	40.0	4.00	4.02	0.995
Low point	4980	20.0	2.00	2.01	0.997
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	7.99	8.02	0.997
Average Correction Factor					0.997

Calibration Statistics

	Start	Finish
THC Cal Slope:	1.003078	1.001732
THC Cal Offset:	0.013251	0.007862
CH ₄ Cal Slope:	1.003642	1.000925
CH ₄ Cal Offset:	0.006617	0.005623
NMHC Cal Slope:	1.002079	1.002456
NMHC Cal Offset:	0.007235	0.002039

Calibration Performed By: Max Farrell



Wood Buffalo Environmental Association

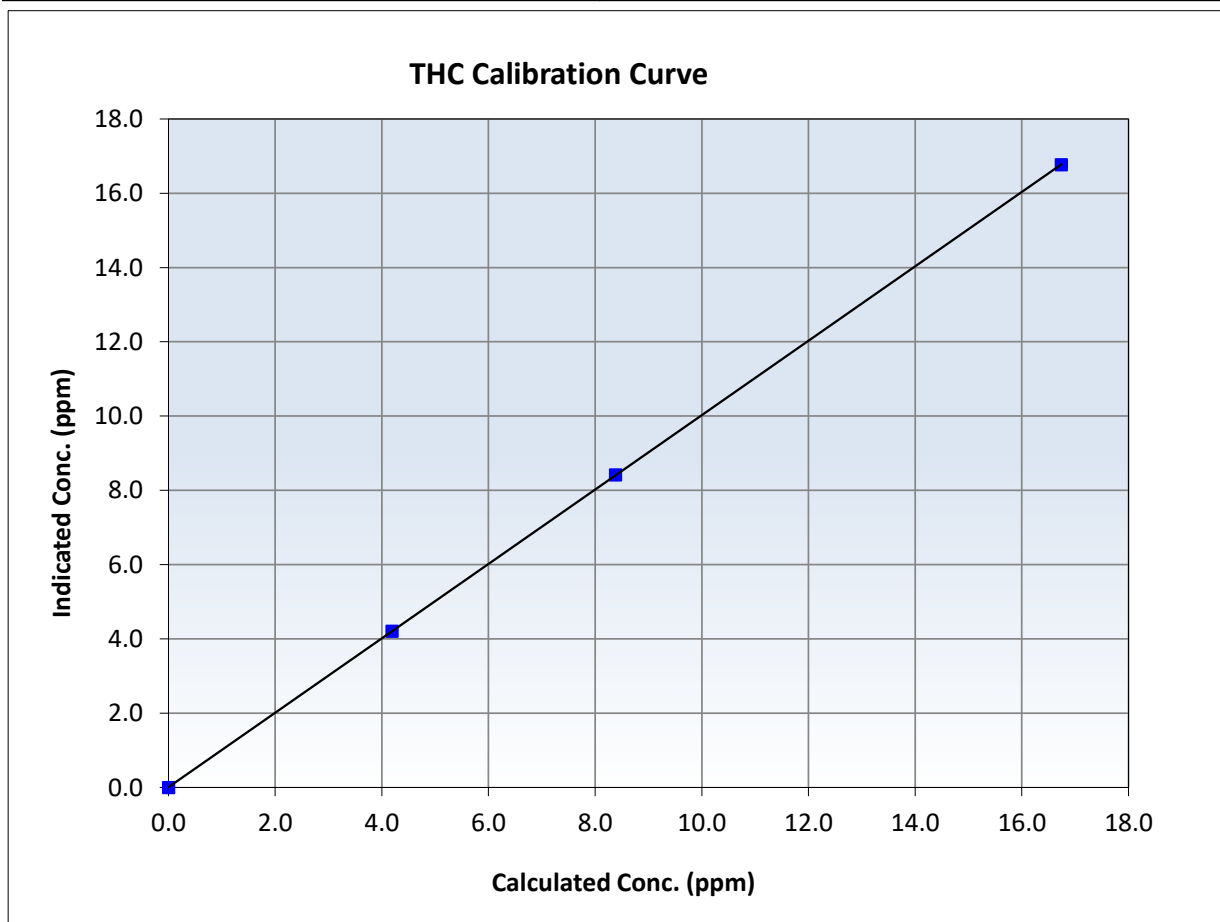
THC Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 19, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:37	End Time (MST):	13:05
Analyzer make:	Thermo 55i	Analyzer serial #:	15005164381

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999997	≥ 0.995
16.74	16.77	0.9983	Slope	1.001732	$0.90 - 1.10$
8.38	8.42	0.9954	Intercept	0.007862	± 0.5
4.19	4.21	0.9965			





Wood Buffalo Environmental Association

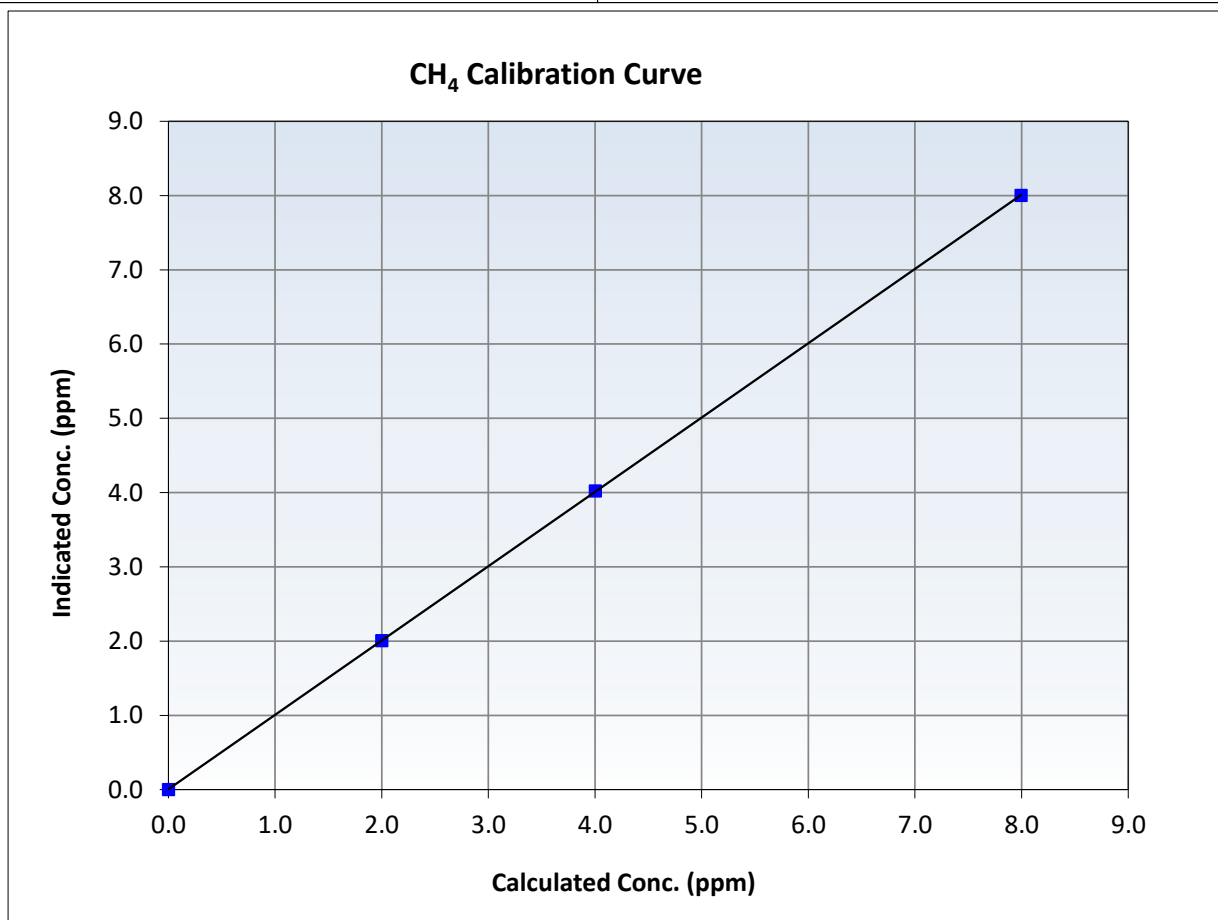
CH₄ Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 19, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:37	End Time (MST):	13:05
Analyzer make:	Thermo 55i	Analyzer serial #:	15005164381

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999994		≥ 0.995
7.99	8.00	0.9991	Slope	1.000925		0.90 - 1.10
4.00	4.02	0.9946	Intercept	0.005623		± 0.5
2.00	2.01	0.9966				





Wood Buffalo Environmental Association

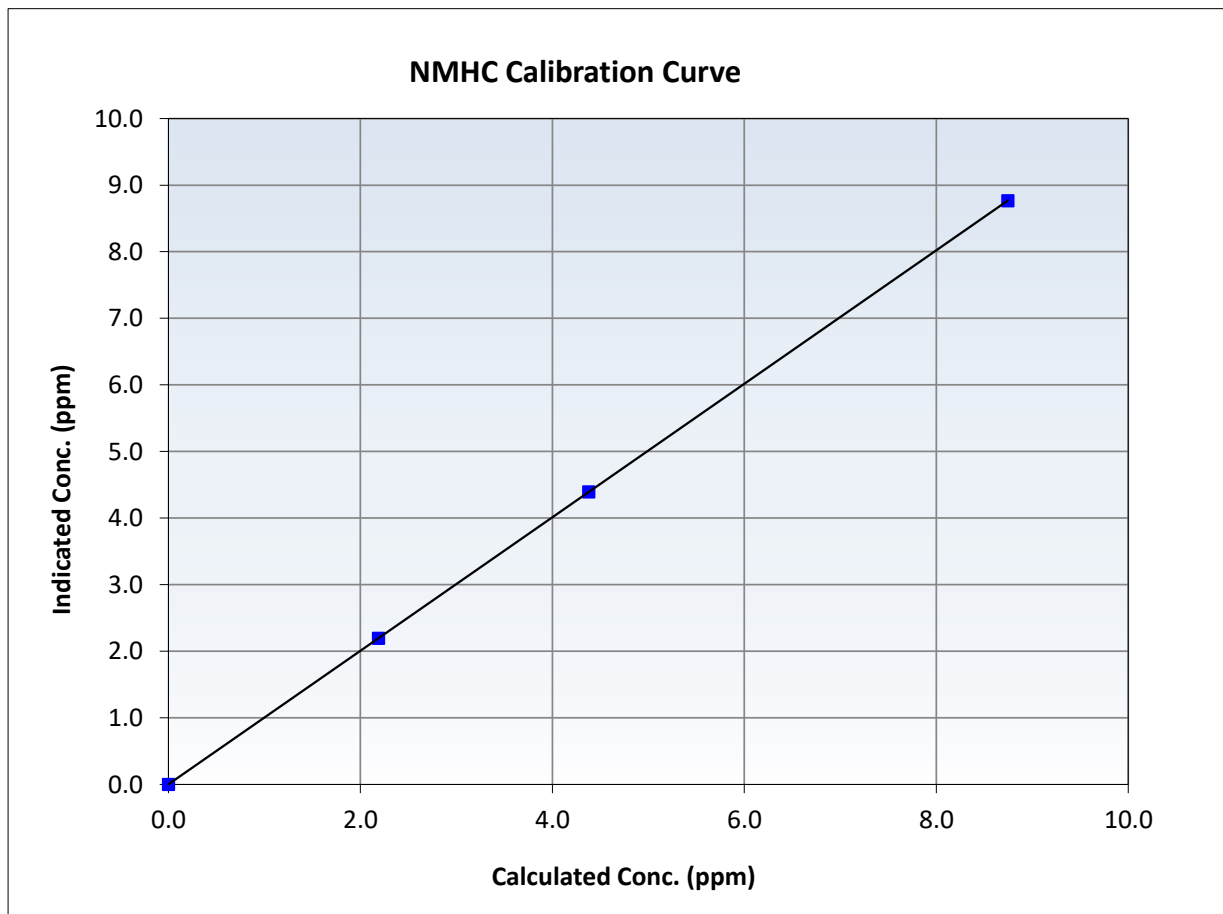
NMHC Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 19, 2025
Station Name:	Mannix	Station Number:	AMS 05
Start Time (MST):	9:37	End Time (MST):	13:05
Analyzer make:	Thermo 55i	Analyzer serial #:	15005164381

Calibration Data

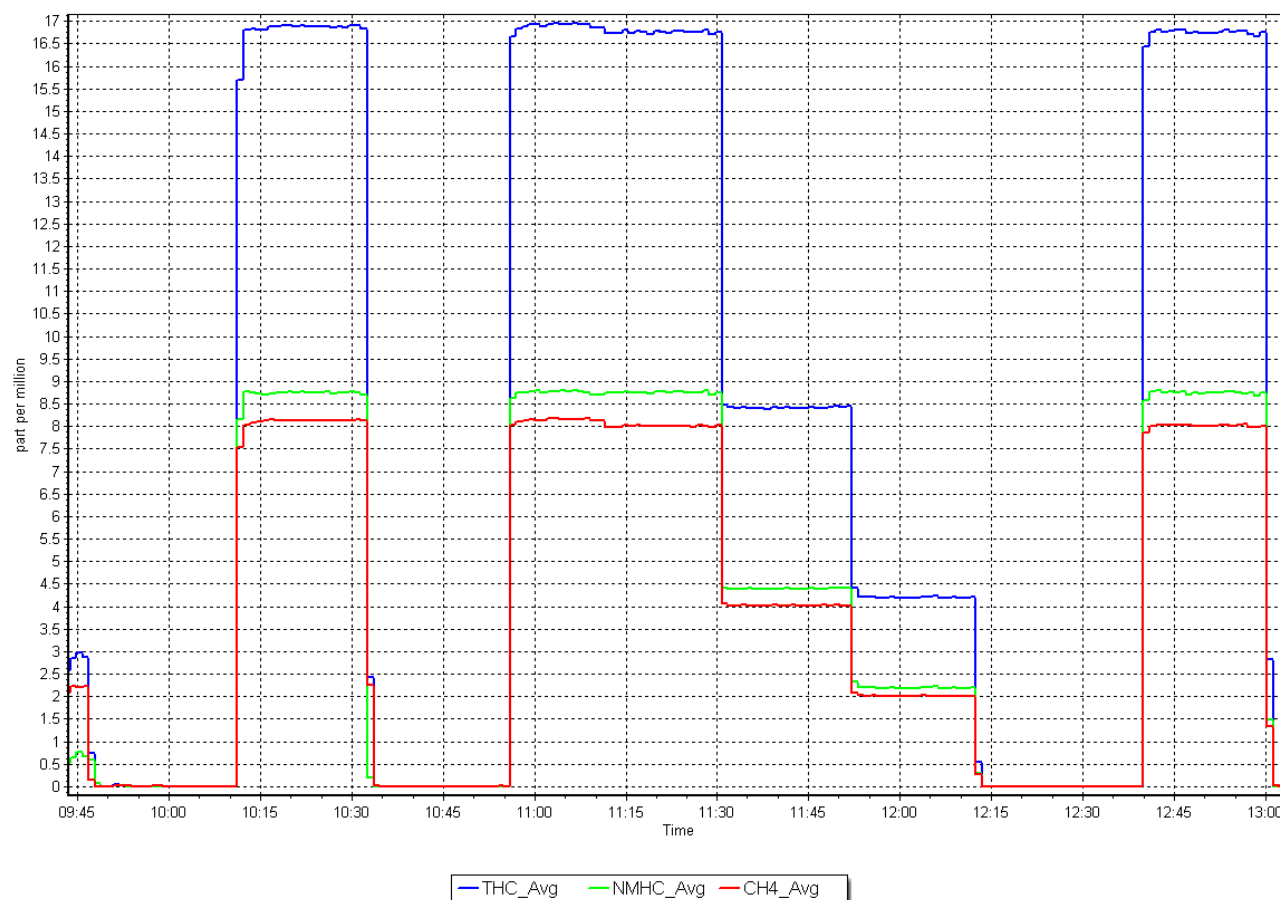
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	1.000000	<i>≥0.995</i>
8.75	8.77	0.9975	Slope	1.002456	<i>0.90 - 1.10</i>
4.38	4.39	0.9964	Intercept	0.002039	<i>+/-0.5</i>
2.19	2.20	0.9964			



NMHC Calibration Plot

Date: September 15, 2025

Location: Mannix





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Mannix
Calibration Date: September 23, 2025
Start time (MST): 12:13
Reason: Cylinder Change

Station number: AMS 05
Last Cal Date: September 15, 2025
End time (MST): 13:53

Calibration Standards

Gas Cert Reference: CC308040
CH₄ Cal Gas Conc. 500.3 ppm
C₃H₈ Cal Gas Conc. 199.0 ppm
Removed Gas Cert:
Removed CH₄ Conc. 500.3 ppm
Removed C₃H₈ Conc. 199.0 ppm
Diff between cyl (CH₄):
Calibrator Model: API T700
Zero Air Gen model: API T701

Cal Gas Expiry Date: October 22, 2032
CH₄ Equiv Conc. 1047.6 ppm
Removed Gas Expiry:
CH₄ Equiv Conc. 1047.6 ppm
Diff between cyl (THC):
Diff between cyl (NM):
Serial Number: 5470
Serial Number: 361

Analyzer Information

Analyzer make: Thermo 55i
THC Range: 0 - 20 ppm

Analyzer serial #: 15005164381
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.68E-04	2.68E-04	NMHC SP Ratio:	5.04E-05	5.04E-05
CH ₄ Retention time:	13.9	13.9	NMHC Peak Area:	173725	173725
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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	16.74	17.10	0.979
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.10	Prev response	16.78	*% change	1.9%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	16.74	17.14	0.977
Average Correction Factor					

Notes:

Changed the N2 cylinder after as founds.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	8.75	8.93	0.980
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.93	Prev response	8.77	*% 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)
Calibrator zero					----
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	8.75	8.96	0.976
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))
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.9	7.99	8.17	0.978
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.17	Prev response	8.01	*% 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)
Calibrator zero					----
High point					
Mid point					
Low point					
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.9	7.99	8.18	0.978
Average Correction Factor					

Calibration Statistics

	<u>Start</u>	
THC Cal Slope:	1.001732	
THC Cal Offset:	0.007862	
CH ₄ Cal Slope:	1.000925	
CH ₄ Cal Offset:	0.005623	
NMHC Cal Slope:	1.002456	
NMHC Cal Offset:	0.002039	

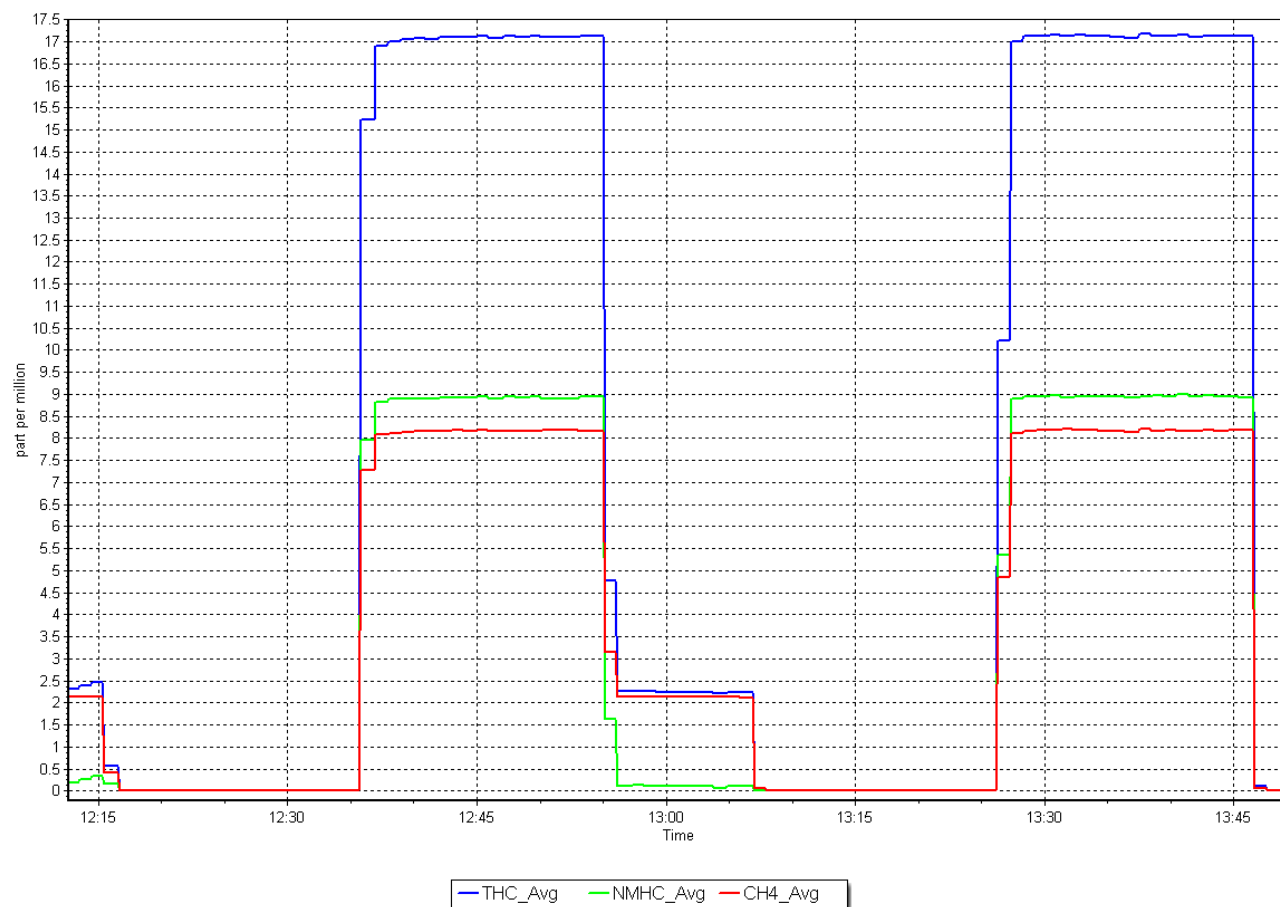
Finish

Calibration Performed By: Max Farrell

NMHC Calibration Plot

Date: September 23, 2025

Location: Mannix





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS06
PATRICIA MCINNES
SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Patricia McInnes Station number: AMS 06
Calibration Date: September 11, 2025 Last Cal Date: August 7, 2025
Start time (MST): 9:34 End time (MST): 14:05
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.993041	1.000135	Backgd or Offset:	18.2	18.2
Calibration intercept:	1.500586	1.019135	Coeff or Slope:	0.907	0.907

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4920.2	79.8	799.3	794.3	1.006
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	794.5	Previous response	795.2	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4920.2	79.8	799.3	799.9	0.999
Mid point	4960.1	39.9	399.6	401.2	0.996
Low point	4980	20.0	200.3	202.4	0.990
As left zero	5000	0.0	0.0	0.2	----
As left span	4919.7	80.3	804.3	798.3	1.007
Average Correction Factor:					0.995

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

Calibration Performed By: Max Farrell



Wood Buffalo Environmental Association

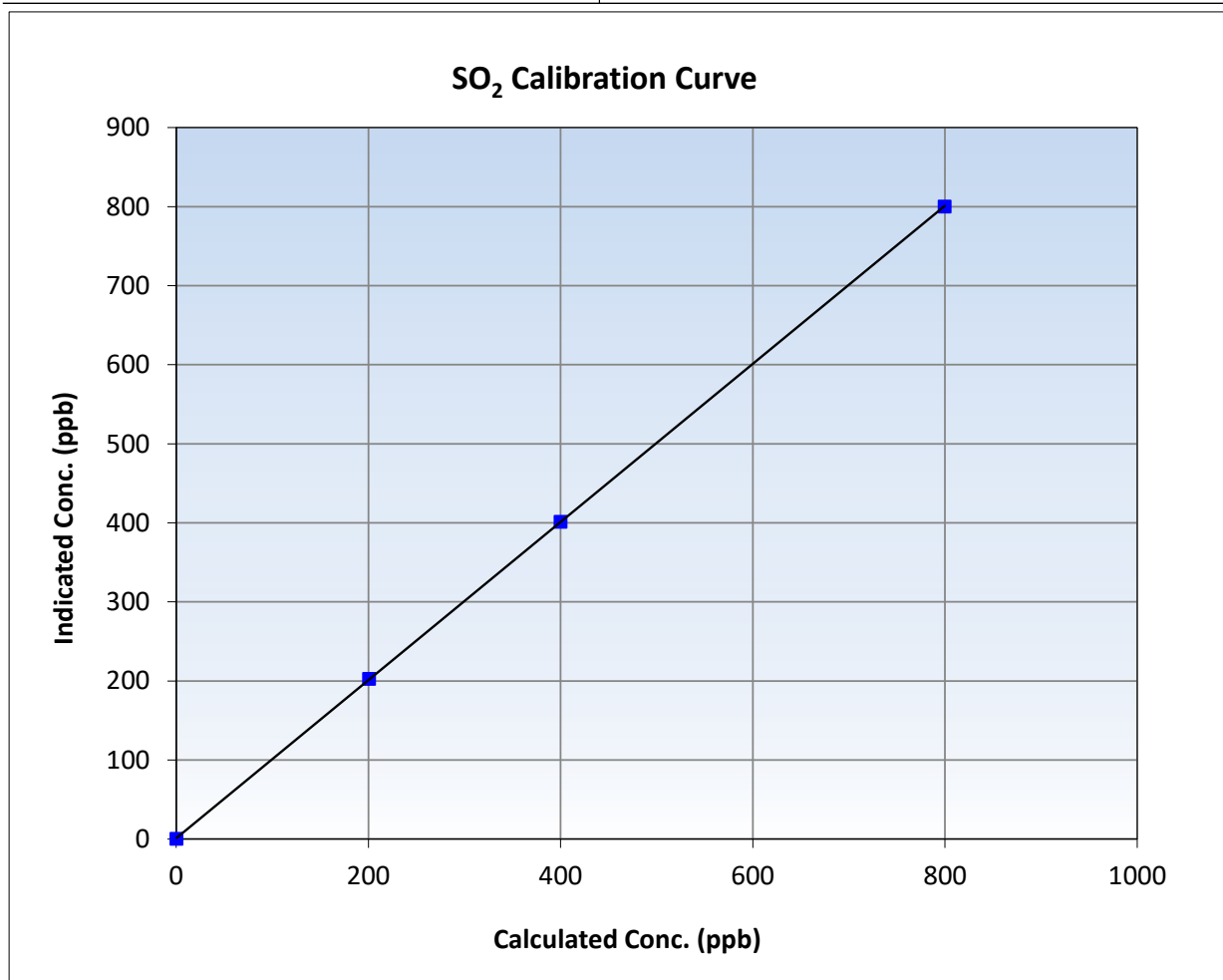
SO₂ Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 7, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:34	End Time (MST):	14:05
Analyzer make:	Thermo 43i	Analyzer serial #:	1160290013

Calibration Data

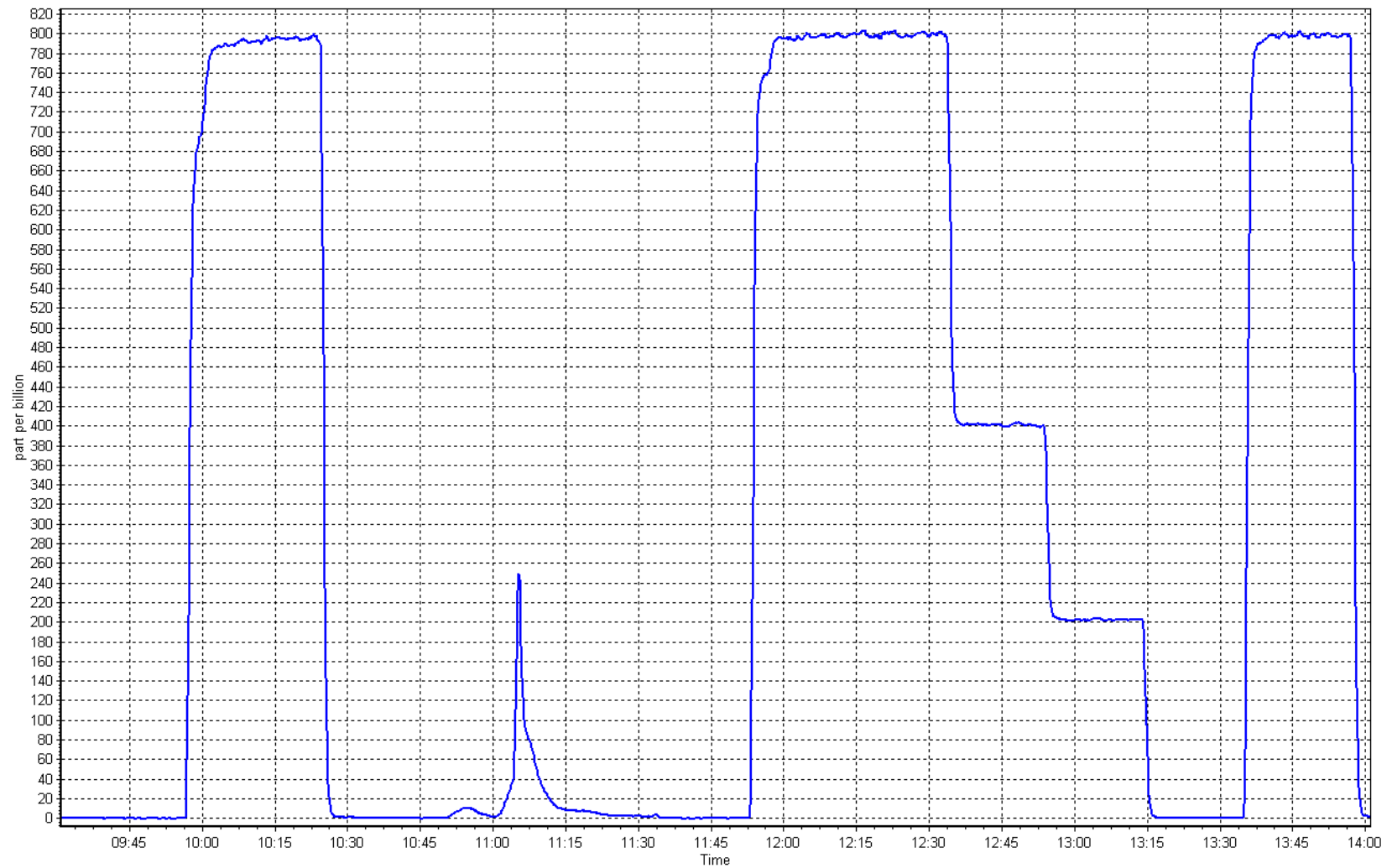
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999993	≥0.995
799.3	799.9	0.9992	Slope	1.000135	0.90 - 1.10
399.6	401.2	0.9961	Intercept	1.019135	+/-30
200.3	202.4	0.9897			



SO2 Calibration Plot

Date: September 11, 2025

Location: Patricia McInnes





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Patricia McInnes
Calibration Date: September 10, 2025
Start time (MST): 9:15
Reason: Routine

Station number: AMS 06
Last Cal Date: August 18, 2025
End time (MST): 14:23

Calibration Standards

Cal Gas Concentration: 4.760 ppm
Cal Gas Cylinder #: DT0014585
Removed Cal Gas Conc: 4.760 ppm
Removed Gas Cyl #:
Calibrator Make/Model: API T700
ZAG Make/Model: API T701

Cal Gas Exp Date: August 28, 2027
Rem Gas Exp Date:
Diff between cyl:
Serial Number: 3566
Serial Number: 4602

Analyzer Information

Analyzer make: Thermo 43i TLE
Converter make: CDN-101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1218153358
Converter serial #: 517
Converter Temp: 800 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.994969	0.993969	Backgd or Offset:	1.99	1.99
Calibration intercept:	0.240000	0.200000	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4916	84.0	80.0	79.1	1.014
As found Mid point	4958	42.0	40.0	40.3	0.997
As found Low point	4979	21.0	20.0	20.2	1.000
New cylinder response					
Baseline Corr As found:	78.9	Prev response:	79.81	*% change:	-1.1%
Baseline Corr 2nd AF pt:	40.1	AF Slope:	0.986395	AF Intercept:	0.440000
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999917	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4916	84.0	80.0	79.6	1.005
Mid point	4958	42.0	40.0	40.3	0.992
Low point	4979	21.0	20.0	19.7	1.015
As left zero	5000	0.0	0.0	0.4	----
As left span	4916	84.0	80.0	78.8	1.015
SO2 Scrubber Check				0.0	
Date of last scrubber change:	Monday, December 20, 2021			Ave Corr Factor	1.004
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

TRS Calibration Summary

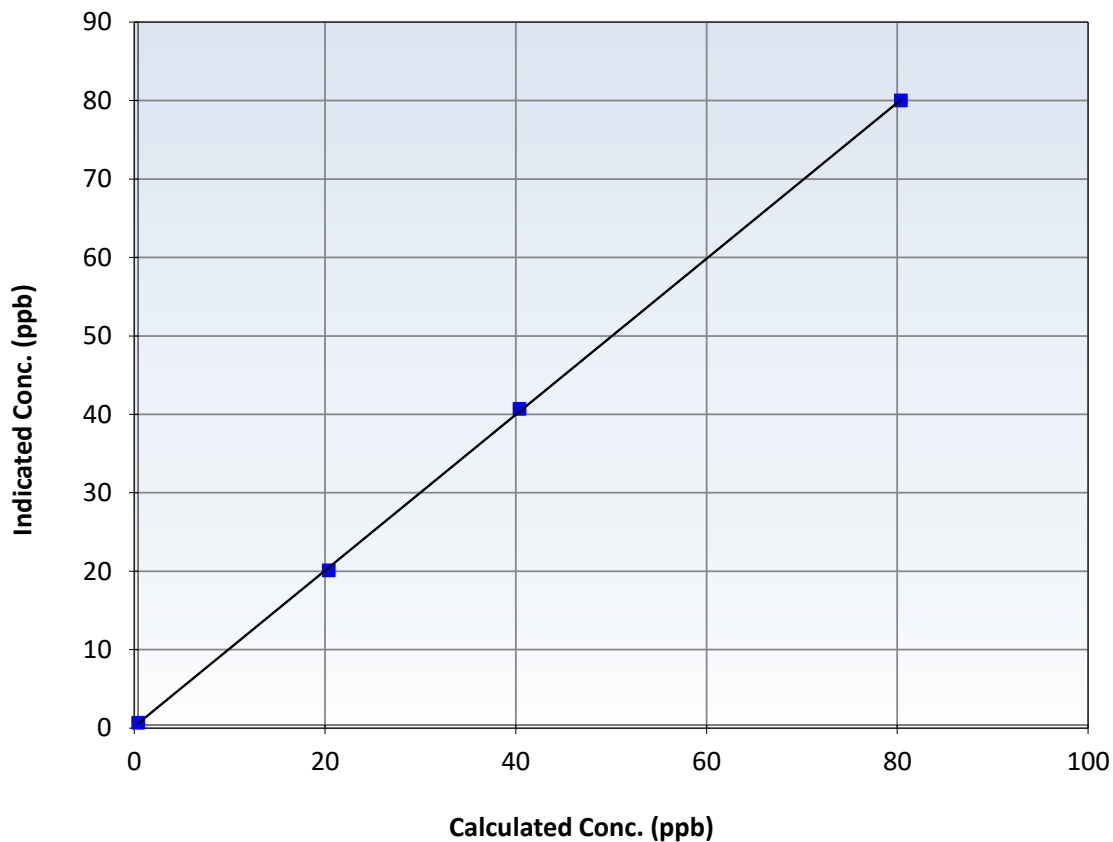
Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 18, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:15	End Time (MST):	14:23
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1218153358

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999918	≥ 0.995
80.0	79.6	1.0046	Slope	0.993969	$0.90 - 1.10$
40.0	40.3	0.9922	Intercept	0.200000	± 3
20.0	19.7	1.0148			

TRS Calibration Curve



TRS Calibration Plot

Date: September 10, 2025

Location: Patricia McInnes





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name:	Patricia McInnes	Station number:	AMS 06
Calibration Date:	September 11, 2025	Last Cal Date:	August 7, 2025
Start time (MST):	9:34	End time (MST):	14:05
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC255448	Cal Gas Expiry Date:	October 22, 2032
CH ₄ Cal Gas Conc.	501.4 ppm	CH ₄ Equiv Conc.	1049.5 ppm
C ₃ H ₈ Cal Gas Conc.	199.3 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH ₄ Conc.	501.4 ppm	CH ₄ Equiv Conc.	1049.5 ppm
Removed C ₃ H ₈ 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/CH ₄ Range:	0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.55E-04	2.61E-04	NMHC SP Ratio:	5.24E-05
CH ₄ Retention time:	14.4	14.4	NMHC Peak Area:	167574
Zero Chromatogram:	ON	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	16.75	16.55	1.012
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.55	Prev response	16.77	*% 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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	16.75	16.75	1.000
Mid point	4960	39.9	8.37	8.39	0.998
Low point	4980	20.0	4.20	4.22	0.996
As left zero	5000	0.0	0.00	0.05	----
As left span	4920	79.8	16.75	16.78	0.998
Average Correction Factor					0.998

Notes: Changed the inlet filter after as founds. Changed a faulty H2 cylinder pressure sensor and the cylinder. Adjusted the span.



Wood Buffalo Environmental Association

THC / CH₄ / 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	8.75	8.80	0.994
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.80	Prev response	8.80	*% change	0.0%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.75	8.76	0.999
Mid point	4960.1	39.9	4.37	4.41	0.991
Low point	4980	20.0	2.19	2.23	0.982
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	8.75	8.78	0.997
Average Correction Factor					0.991

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	8.00	7.75	1.033
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.75	Prev response	7.97	*% change	-2.9%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.00	7.99	1.001
Mid point	4960.1	39.9	4.00	3.98	1.006
Low point	4980	20.0	2.01	1.98	1.012
As left zero	5000	0.0	0.00	0.05	----
As left span	4920	79.8	8.00	8.00	1.001
Average Correction Factor					1.006

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
THC Cal Slope:	0.997848	0.999600
THC Cal Offset:	0.058195	0.010600
CH ₄ Cal Slope:	0.991595	0.999220
CH ₄ Cal Offset:	0.037407	-0.011799
NMHC Cal Slope:	1.003463	1.000182
NMHC Cal Offset:	0.021188	0.021998

Calibration Performed By: Max Farrell



Wood Buffalo Environmental Association

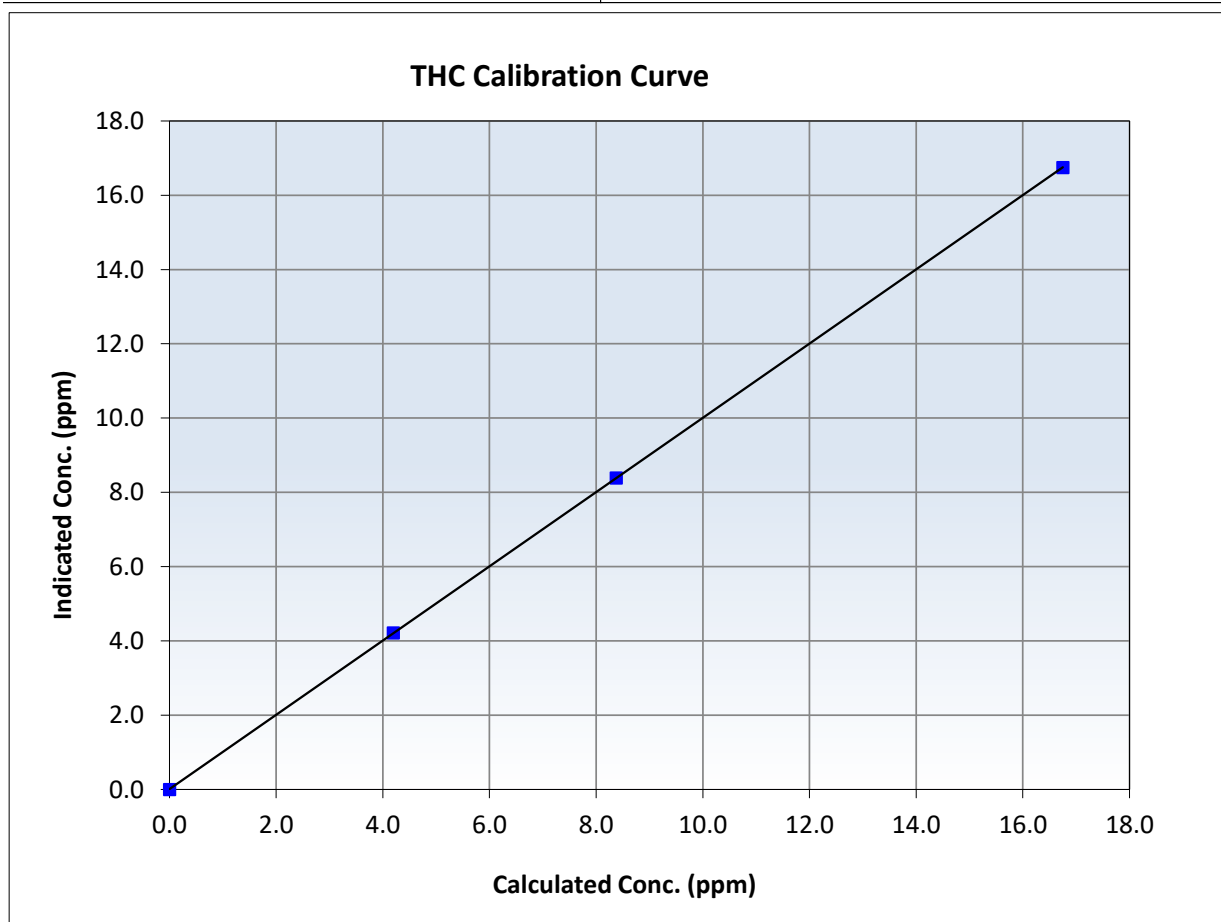
THC Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 7, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:34	End Time (MST):	14:05
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999998	≥ 0.995
16.75	16.75	1.0002	Slope	0.999600	$0.90 - 1.10$
8.37	8.39	0.9981	Intercept	0.010600	± 0.5
4.20	4.22	0.9959			





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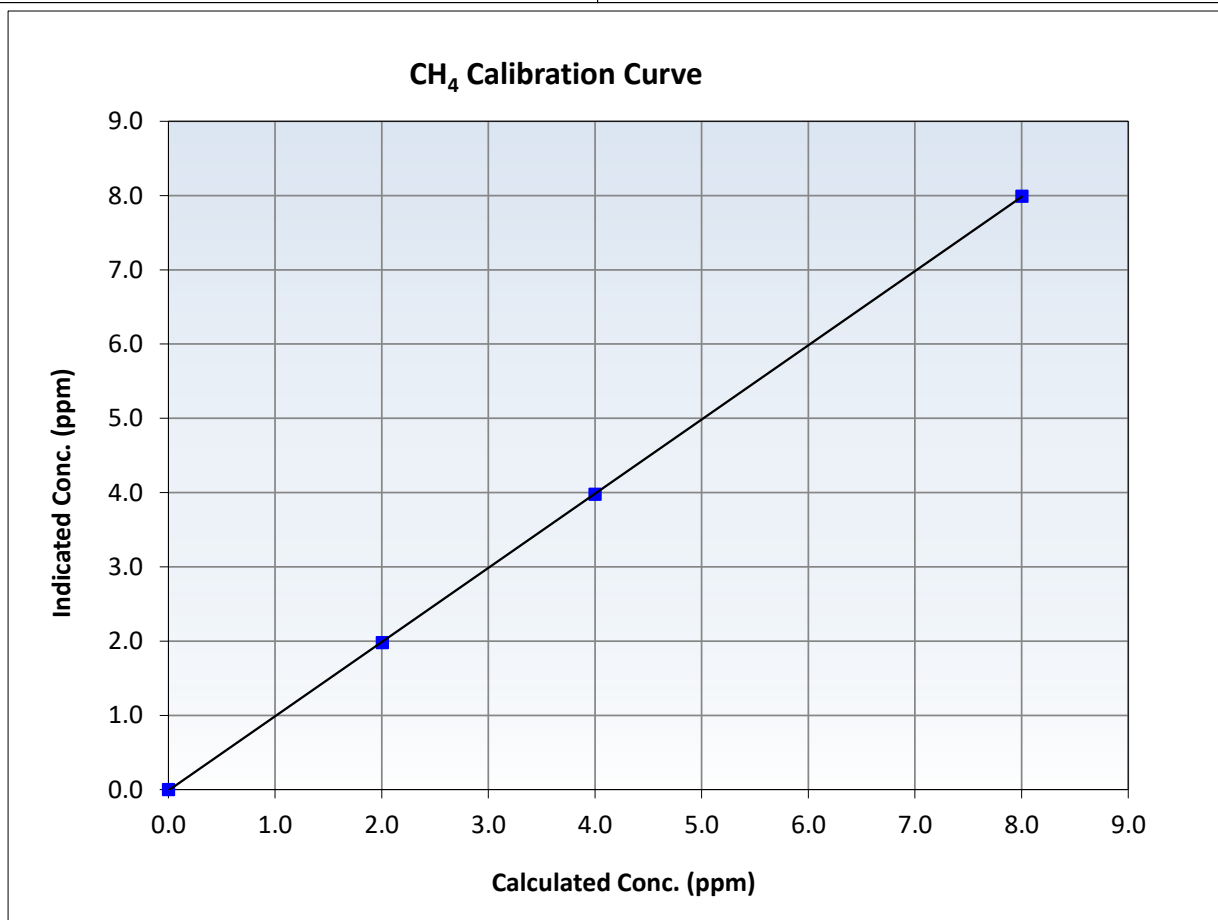
CH₄ Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 7, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:34	End Time (MST):	14:05
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999990	<i>≥0.995</i>
8.00	7.99	1.0014	Slope	0.999220	<i>0.90 - 1.10</i>
4.00	3.98	1.0058	Intercept	-0.011799	<i>+/-0.5</i>
2.01	1.98	1.0119			





Wood Buffalo Environmental Association

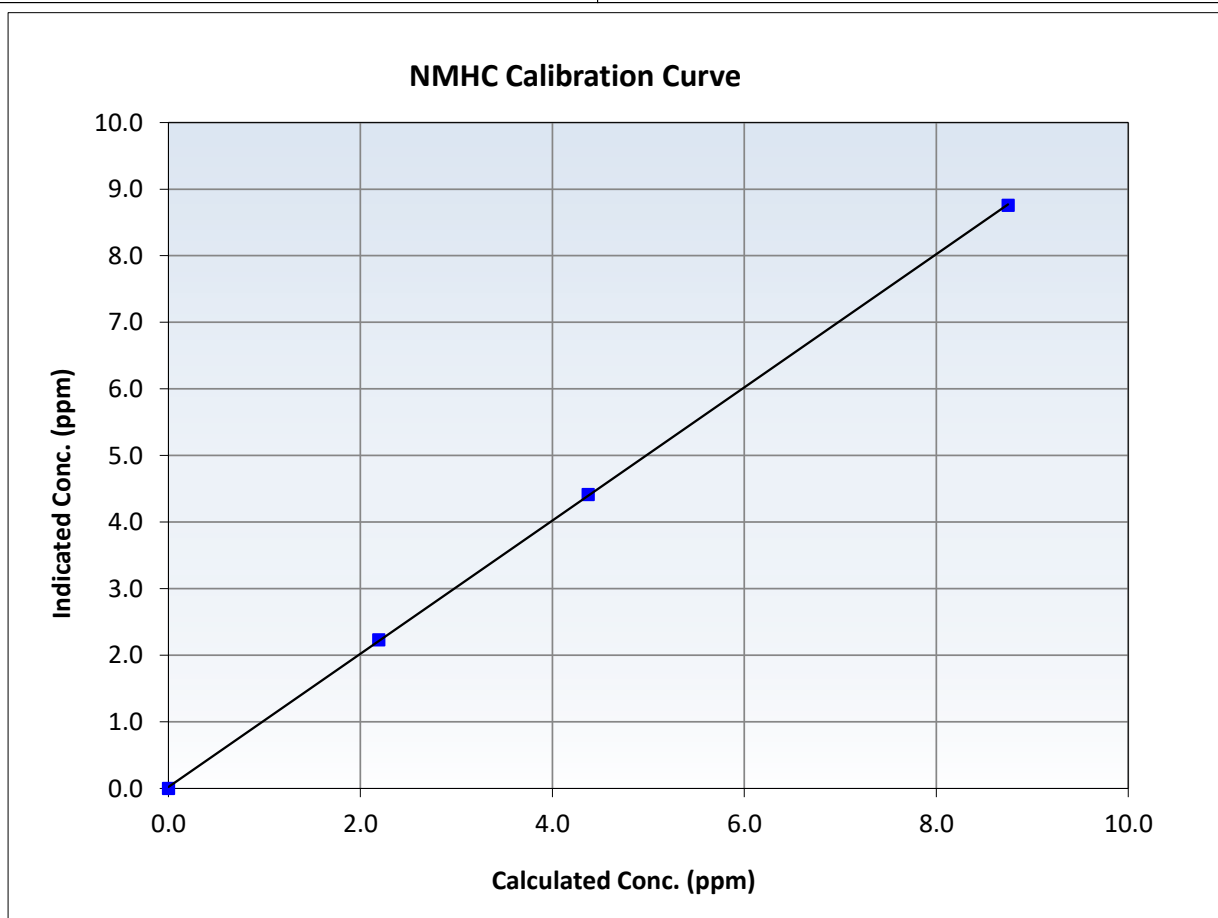
NMHC Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 7, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:34	End Time (MST):	14:05
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148494

Calibration Data

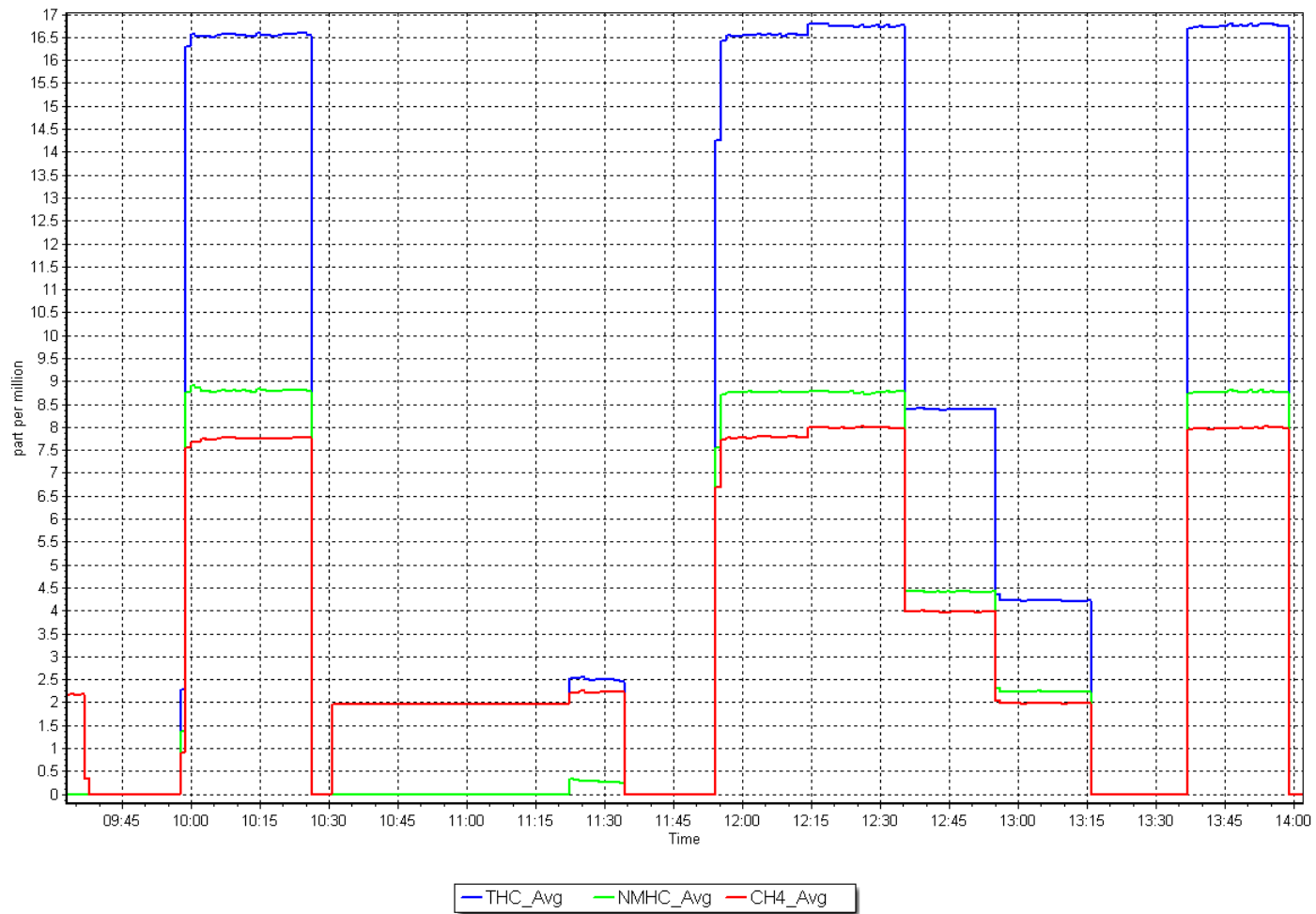
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999970	≥ 0.995
8.75	8.76	0.9988	Slope	1.000182	$0.90 - 1.10$
4.37	4.41	0.9911	Intercept	0.021998	± 0.5
2.19	2.23	0.9818			



NMHC Calibration Plot

Date: September 11, 2025

Location: Patricia McInnes





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Patricia McInnes
Station number: AMS 06
Calibration Date: September 4, 2025
Last Cal Date: August 5, 2025
Start time (MST): 9:00
End time (MST): 13:50
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0036234
NOX Cal Gas Conc: 62.2 ppm
Removed Cylinder #:
Removed Gas NOX Conc: 62.20 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: July 22, 2032
NO Cal Gas Conc: 61.90 ppm
Removed Gas Exp Date:
Removed Gas NO Conc: 61.90 ppm
NO gas Diff:
Serial Number: 3566
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	1.1	0.3	0.8	----	----
AF High point	4935	64.6	803.7	799.8	3.9	804.2	797.5	6.8	1.0007	1.0033
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO _x = 803.5 ppb	NO = 800.0 ppb	* = > +/-5% change initiates investigation		*Percent Change	NO _x = 0.0%
Baseline Corr 1st pt	NO _x = 803.1 ppb	NO = 797.2 ppb	<u>As Found Statistics</u>		*Percent Change	NO = -0.4%
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb	As found	NO _x r ² :	Nx SI:	Nx Int:
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb	As found	NO r ² :	NO SI:	NO Int:
			As found	NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1172750022

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.995945	0.993669
NO _x Cal Offset:	3.052425	3.252938
NO Cal Slope:	0.999684	0.997225
NO Cal Offset:	0.433246	0.493970
NO ₂ Cal Slope:	0.997280	0.996503
NO ₂ Cal Offset:	0.907412	-0.455577

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
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

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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	1.4	0.4	1.0	----	----
High point	4935	64.6	803.7	799.8	3.9	800.6	797.9	2.7	1.0039	1.0024
Mid point	4968	32.3	401.8	399.9	1.9	404.4	399.7	4.7	0.9935	1.0004
Low point	4984	16.2	201.5	200.5	1.0	204.7	200.3	4.5	0.9845	1.0012
As left zero	5000	0.0	0.0	0.0	0.0	0.9	0.3	0.6	----	----
As left span	4935	64.6	803.7	393.1	410.6	798.8	393.1	405.8	1.0061	1.0000
Average Correction Factor									0.9940	1.0013

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	1.0	----	----
High GPT point	797.4	390.6	410.7	409.6	1.0026	99.7%
Mid GPT point	797.4	597.7	203.6	201.4	1.0108	98.9%
Low GPT point	797.4	698.7	102.6	100.5	1.0207	98.0%
Average Correction Factor					1.0114	98.9%

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

Calibration Performed By: Max Farrell



Wood Buffalo Environmental Association

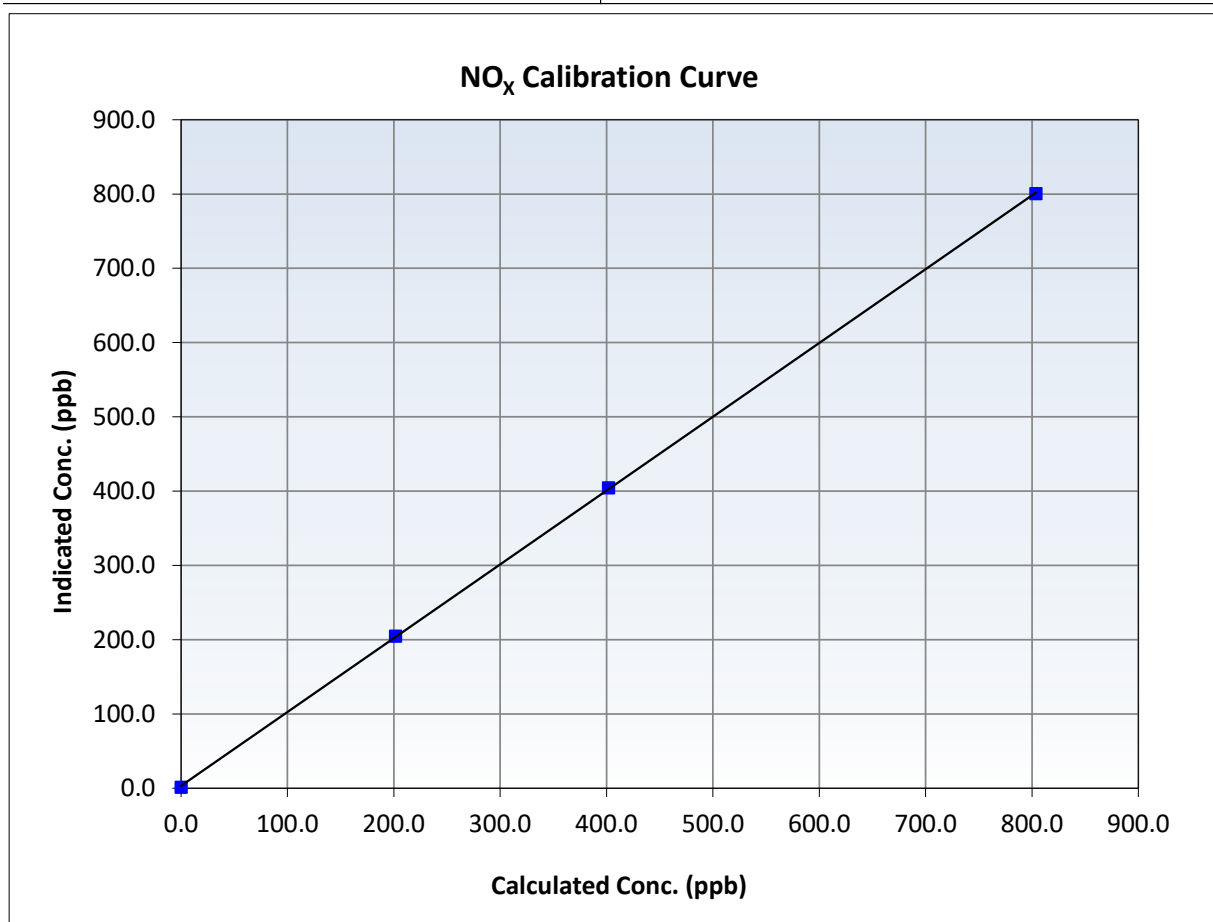
NO_x Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 5, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:00	End Time (MST):	13:50
Analyzer make:	Thermo 42i	Analyzer serial #:	1172750022

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	1.4	----	Correlation Coefficient	0.999971	≥0.995
803.7	800.6	1.0039	Slope	0.993669	0.90 - 1.10
401.8	404.4	0.9935	Intercept	3.252938	+/-20
201.5	204.7	0.9845			





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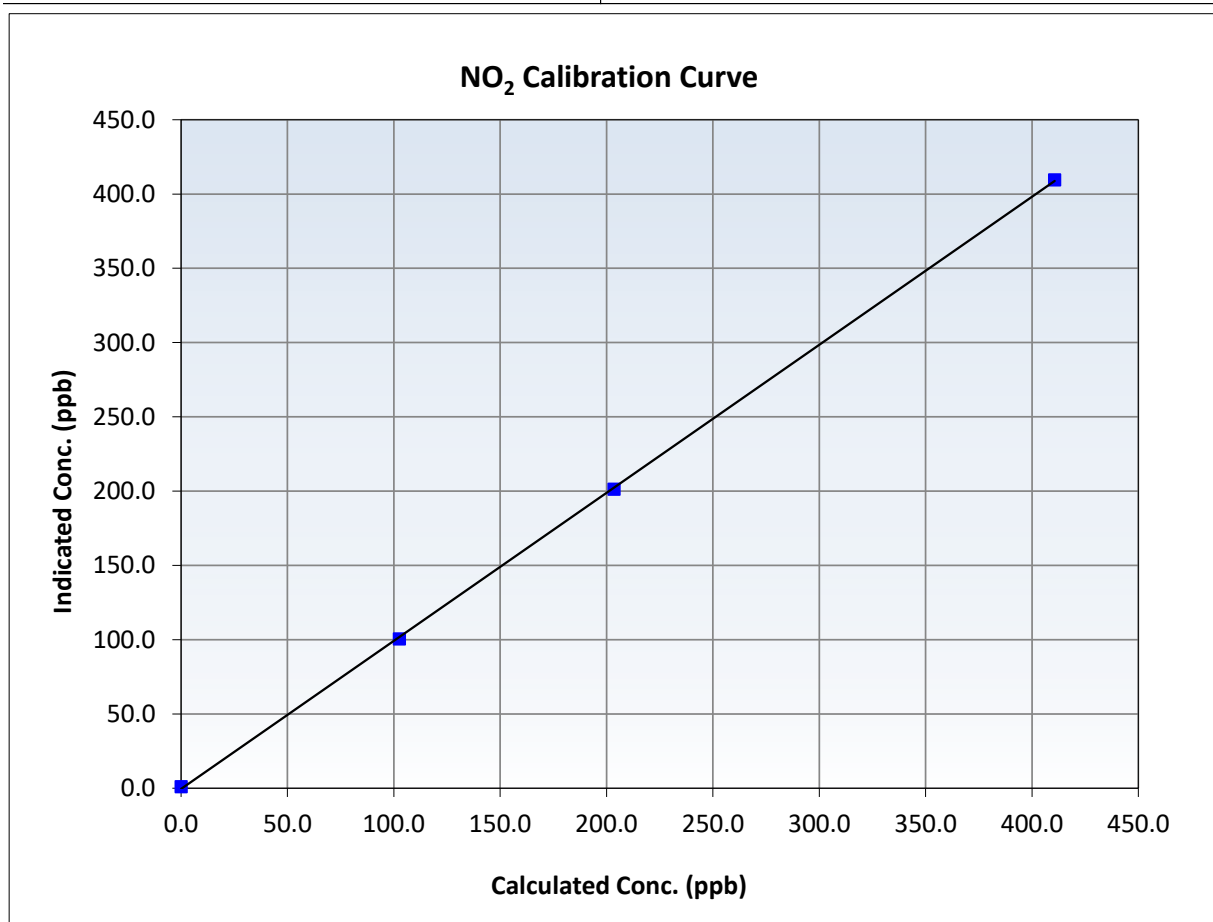
NO₂ Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 5, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:00	End Time (MST):	13:50
Analyzer make:	Thermo 42i	Analyzer serial #:	1172750022

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	1.0	----	Correlation Coefficient	0.999941	≥0.995
410.7	409.6	1.0026	Slope	0.996503	0.90 - 1.10
203.6	201.4	1.0108	Intercept	-0.455577	+/-20
102.6	100.5	1.0207			





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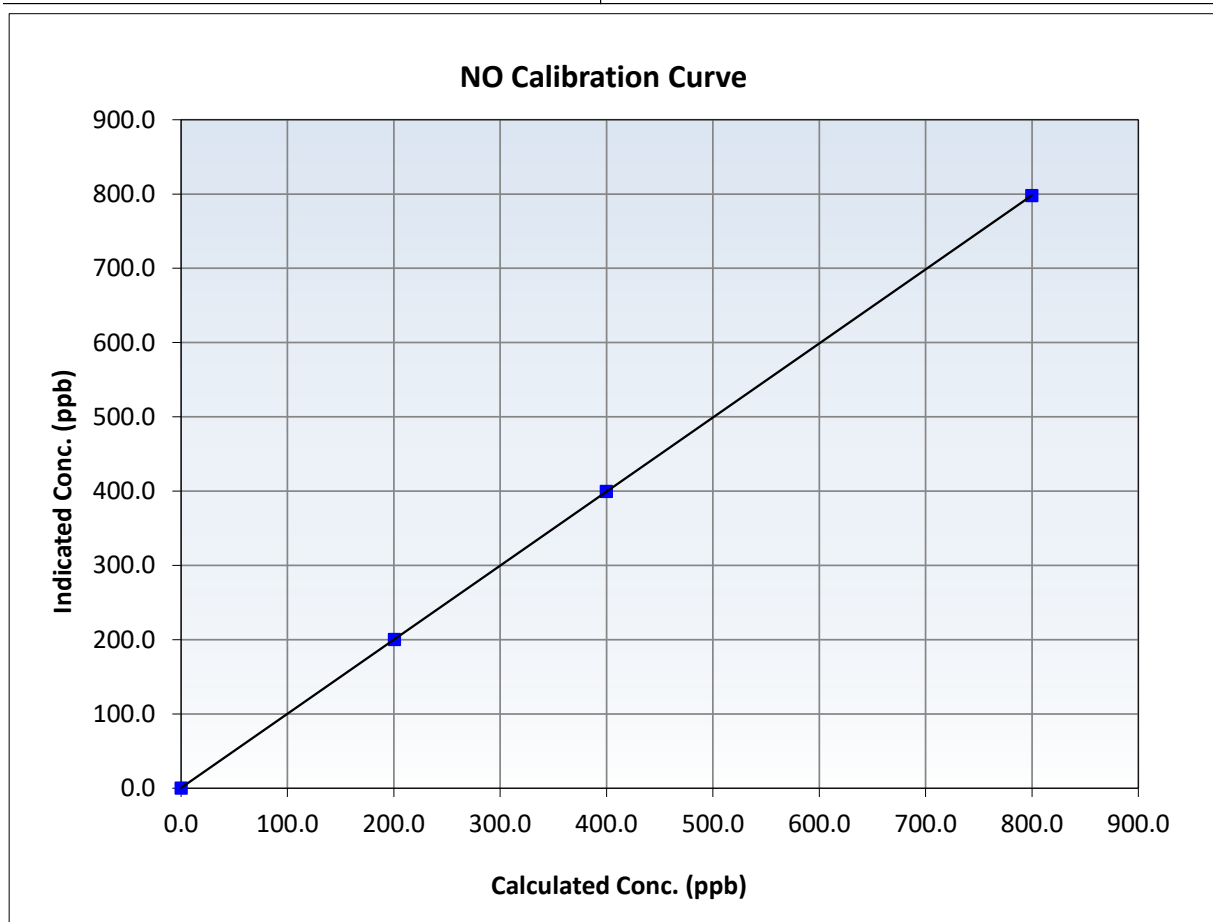
NO Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 5, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:00	End Time (MST):	13:50
Analyzer make:	Thermo 42i	Analyzer serial #:	1172750022

Calibration Data

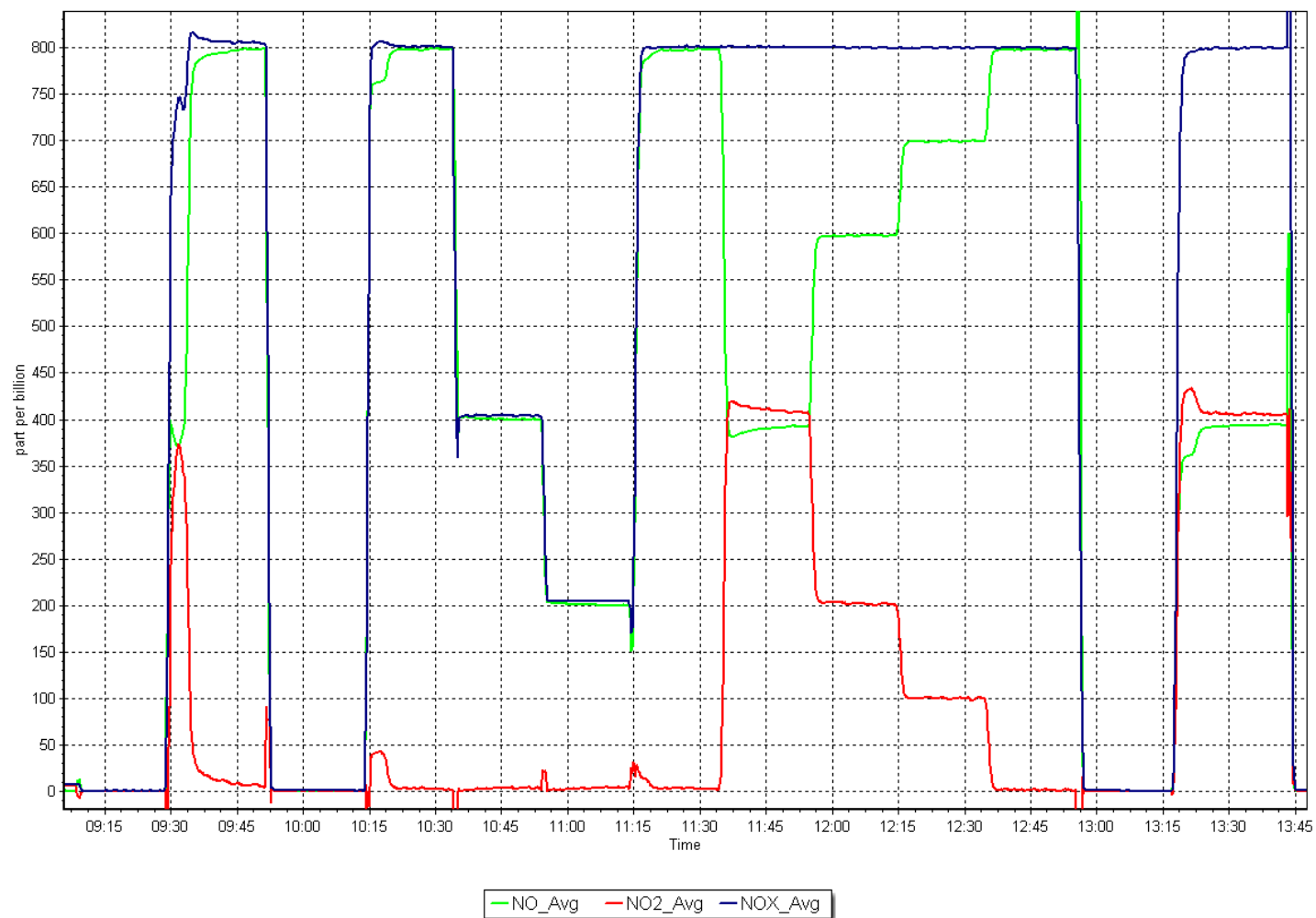
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.4	----	Correlation Coefficient	0.999999	≥ 0.995
799.8	797.9	1.0024	Slope	0.997225	$0.90 - 1.10$
399.9	399.7	1.0004	Intercept	0.493970	± 20
200.5	200.3	1.0012			



NO_x Calibration Plot

Date: September 4, 2025

Location: Patricia McInnes





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Patricia McInnes
Calibration Date: September 16, 2025
Start time (MST): 9:26
Reason: Routine

Station number: AMS 06
Last Cal Date: August 20, 2025
End time (MST): 12:45

Calibration Standards

O₃ generation mode: Photometer
Calibrator Make/Model: API T700
ZAG Make/Model: API T701

Serial Number: 3566
Serial Number: 4602

Analyzer Information

Analyzer make: Thermo 49i
Analyzer Range: 0 - 500 ppb

Analyzer serial #: 1300156234

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.005486	1.001800	Backgd or Offset:	-0.5	-0.5
Calibration intercept:	0.240000	-0.040000	Coeff or Slope:	1.020	1.020

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	800.0	0.0	-0.2	----
As found High point	5000	1031.0	400.0	400.5	0.998
As found Mid point					
As found Low point					
Baseline Corr As found:	400.7	Previous response	402.4	*% 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	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	800.0	0.0	0.0	----
High point	5000	1031.0	400.0	400.7	0.998
Mid point	5000	821.4	200.0	200.3	0.999
Low point	5000	699.5	100.0	100.1	0.999
As left zero	5000	800.0	0.0	0.3	----
As left span	5000	1031.0	400.0	402.4	0.994
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

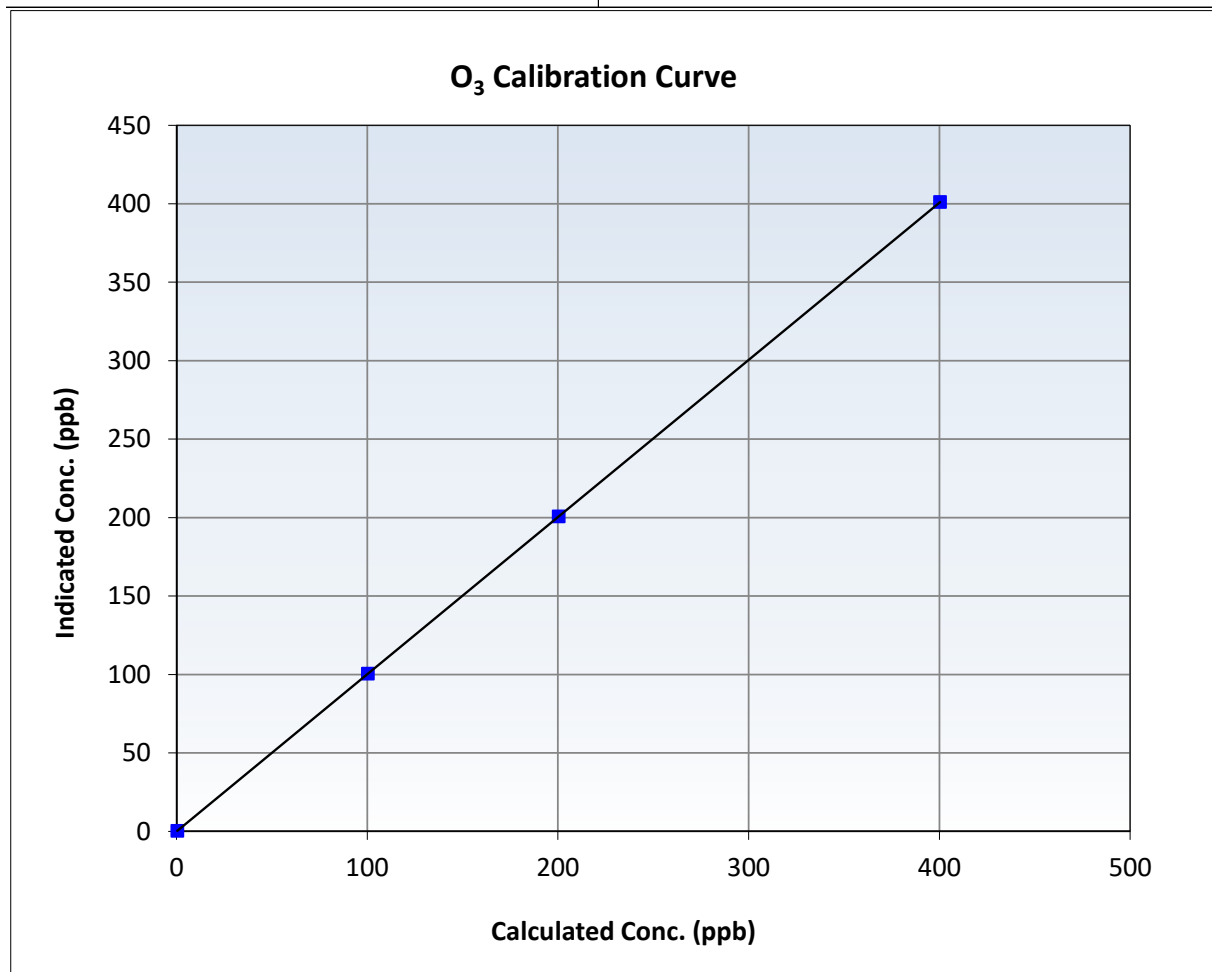
O₃ Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 20, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	9:26	End Time (MST):	12:45
Analyzer make:	Thermo 49i	Analyzer serial #:	1300156234

Calibration Data

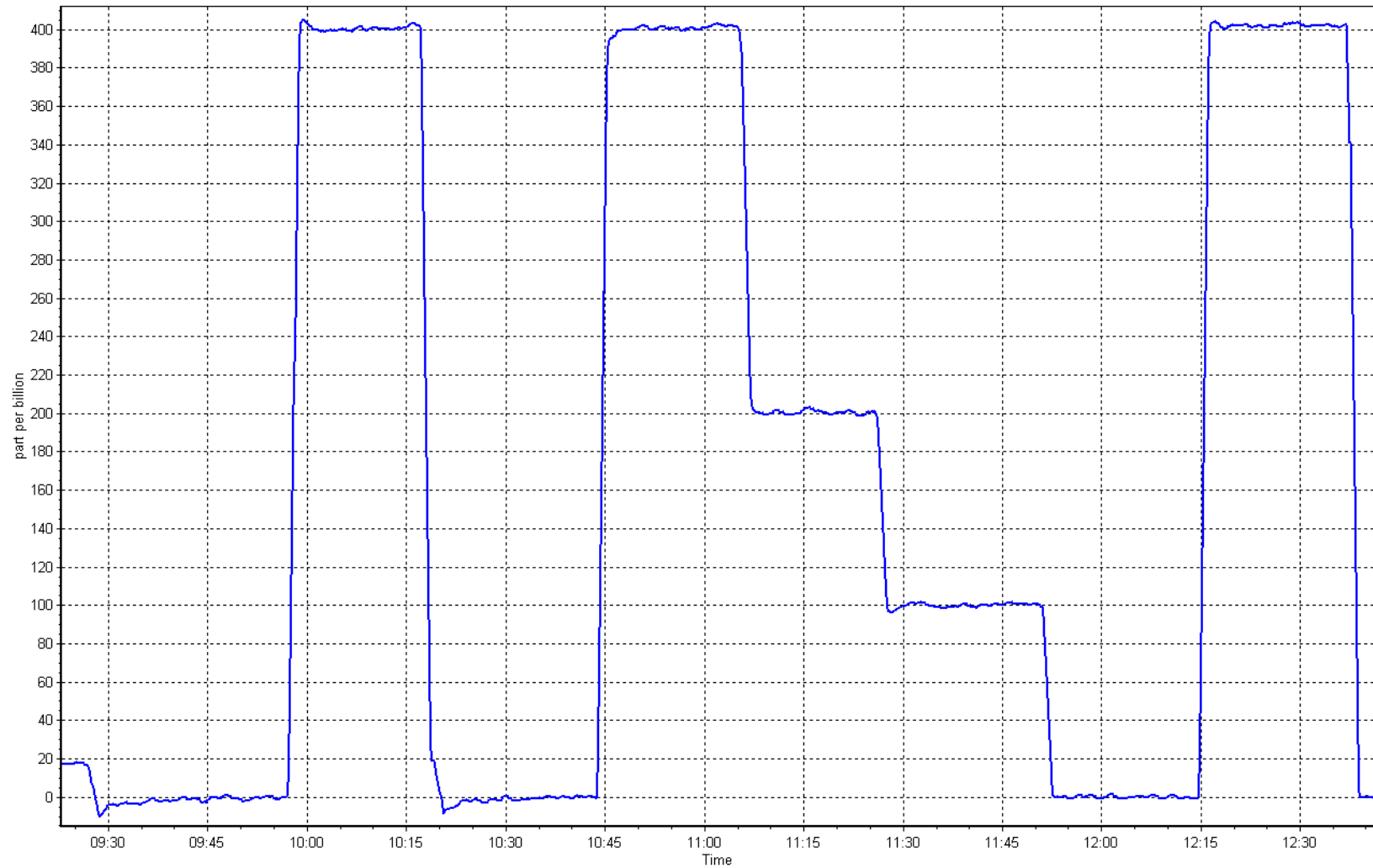
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	1.000000	≥0.995
400.0	400.7	0.9983	Slope	1.001800	0.90 - 1.10
200.0	200.3	0.9985	Intercept	-0.040000	+/- 5
100.0	100.1	0.9990			



O₃ Calibration Plot

Date: September 16, 2025

Location: Patricia McInnes





Wood Buffalo Environmental Association

T640 PM_{2.5} CALIBRATION

Version-01-2024

Station Information

Station Name: Patricia McInnes
Calibration Date: September 16, 2025
Start time (MST): 13:15
Station number: AMS 06
Last Cal Date: August 20, 2025
End time (MST): 14:22
Analyzer Make: API T640
Particulate Fraction: PM2.5
S/N: 1547
Flow Meter Make/Model: Alicat FP-25BT
Temp/RH standard: Alicat FP-25BT
S/N: 388755

Parameter	As found	Measured	As left	Adjusted	(Limits)
T (°C)	18.8	19.13	18.8	☐	+/- 2 °C
P (mmHg)	735.40	734.27	735.40	☐	+/- 10 mmHg
Flow (LPM)	4.97	4.92	4.97	☐	+/- 0.25 LPM
PW% (pump)	29	----	29	☐	>80%
Zero Verification	PM w/o HEPA: 11.7		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	11.9	11.9	10.8	☒	+/- 0.5

Date Optical Chamber Cleaned: September 16, 2025
Date Disposable Filter Changed: September 16, 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

Completed quarterly calibration. Adjusted the PMT Peak. Leak check passed.

Notes:

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:	September 18, 2025	Last Cal Date:	August 11, 2025
Start time (MST):	8:42	End time (MST):	13:06
NH3 Cal Date:	September 18, 2025	Last Cal Date:	August 11, 2025
Start time (MST):	13:10	End time (MST):	15:42
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
Removed NH3 Conc:	75.0	ppm	NH3 Cal Gas Expiry:	December 31, 2025
NH3 gas Diff:			Removed Cylinder #:	
Calibrator Model:	API T700		Removed cyl Expiry:	
ZAG make/model:	API T701		Serial Number:	3566
			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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coefficient:	1.033	1.033	Nt coefficient:	1.027	1.027
NOX coefficient:	1.028	1.028	NO bkgnd:	0.2	0.2
NO2 coefficient:	1.000	1.000	NOX bkgnd:	-0.1	-0.1
NH3 coefficient:	0.956	0.956	Nt bkgnd:	1.7	1.7

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.999415	1.002769
NO _x Cal Offset:	1.331845	1.651917
NO Cal Slope:	1.002786	1.007657
NO Cal Offset:	-0.127818	-1.307779
NO ₂ Cal Slope:	1.005445	0.997044
NO ₂ Cal Offset:	-0.213896	-0.069871
NH3 Cal Slope:	0.990721	0.995041
NH3 Cal Offset:	10.005283	6.993465
Nt Cal Slope:	0.995068	0.998870
Nt Cal Offset:	10.421320	7.386406



Wood Buffalo Environmental Association

NO_x - NO - NO₂ Calibration Report

NO_x / NO / Nt As Found Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	Baseline corr NO _x Correction factor (Cc/Ic) <i>Limit = 0.9 - 1.0</i>	Baseline corr NO Correction factor (Cc/Ic) <i>Limit = 0.9 - 1.0</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.3	-0.7	----	----
As found span	4935	64.6	803.7	799.8	803.7	808.9	797.2	807.3	0.9936	1.0033
AF GPT span										
new NO cyl rp										

Baseline Corr As Fd Nt = 808 ppb NO_x = 809.1 ppb NO = 797.5 ppb
 Previous Response Nt = 810.15 ppb NO_x = 804.5 ppb NO = 801.9 ppb

**NO_x Δ (NO to GPT response) =

* = > +/-2% difference initiates investigation

*Percent Change Nt(NO) = -0.3%

*Percent Change NO_x = 0.6%

*Percent Change NO = -0.6%

* = > +/-5% change initiates investigation

NO_x / NO / Nt Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated Nt concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated Nt concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Calibration zero	5000	0.0	0.0	0.0	0.0	0.3	-0.3	-0.2	----	----
High point	4935	64.6	803.7	799.8	803.7	806.0	805.0	811.0	0.9971	0.9936
Mid point	4968	32.3	401.8	399.9	401.8	407.9	401.5	406.7	0.9850	0.9959
Low point	4984	16.2	201.5	200.5	201.5	203.3	199.5	205.5	0.9912	1.0053
Average Correction Factor									0.9911	0.9982

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
As Found zero	----	----	0.0	0.2	----	----
Calibration zero	----	----	0.0	0.6	----	----
High GPT point (400 ppb O3)	799.9	388.5	415.3	414.2	1.0026	99.7%
Mid GPT point (200 ppb O3)	799.9	595.8	208.0	207.3	1.0033	99.7%
Low GPT point (100 ppb O3)	799.9	699.8	104.0	102.7	1.0124	98.8%
Average Correction Factor					1.0061	99.4%



Wood Buffalo Environmental Association NH₃ - 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 NH ₃ concentration (ppb) (Cc)	Indicated Nt concentration (ppb) (Ic)	Indicated NOX concentration (ppb) (Ic)	Indicated NH ₃ concentration (ppb) (Ic)	Baseline corr Nt Correction factor (Cc/(Ic-zero)) <i>Limit = 0.9 - 1.1</i>	Baseline corr NH ₃ Correction factor (Cc/(Ic-zero)) <i>Limit = 0.9 - 1.1</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.7	-0.2	-0.5	----	----
AF High point	3416	84.0	1799.0	0.0	1799.0	1799.6	7.1	1792.5	0.999	1.003
AF Mid point										
AF Low point										
new NH ₃ cyl rp										
Baseline Corr As Fd	Nt = 1800.3 ppb	NH ₃ = 1793.0 ppb							*Percent Change	Nt _(NH₃) = 0.0%
Previous Response	Nt = 1800.6 ppb	NH ₃ = 1792.4 ppb							*Percent Change	NH ₃ = 0.0%

* = > +/-5% change initiates investigation

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 NH ₃ concentration (ppb) (Cc)	Indicated Nt concentration (ppb) (Ic)	Indicated NOX concentration (ppb) (Ic)	Indicated NH ₃ concentration (ppb) (Ic)	Nt Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NH ₃ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Calibration zero	5000	0.0	0.0	0.0	0.0	-0.2	0.3	-0.4	----	----
High point	3416	84.0	1799.0	0.0	1799.0	1799.6	7.1	1792.5	1.000	1.004
Mid point	3453	46.7	1000.3	0.0	1000.3	1011.4	4.4	1006.9	0.989	0.993
Low point	3477	23.3	499.0	0.0	499.0	513.3	2.4	510.9	0.972	0.977
Average Correction Factor									0.9869	0.9912
NH ₃ Previous Converter Efficiency =	95.6 %									
NH ₃ Current Converter Efficiency =	95.6 %									

Notes:

Changed the inlet filter after as founds. No adjustment made.

Calibration Performed By:

Max Farrell



Wood Buffalo Environmental Association

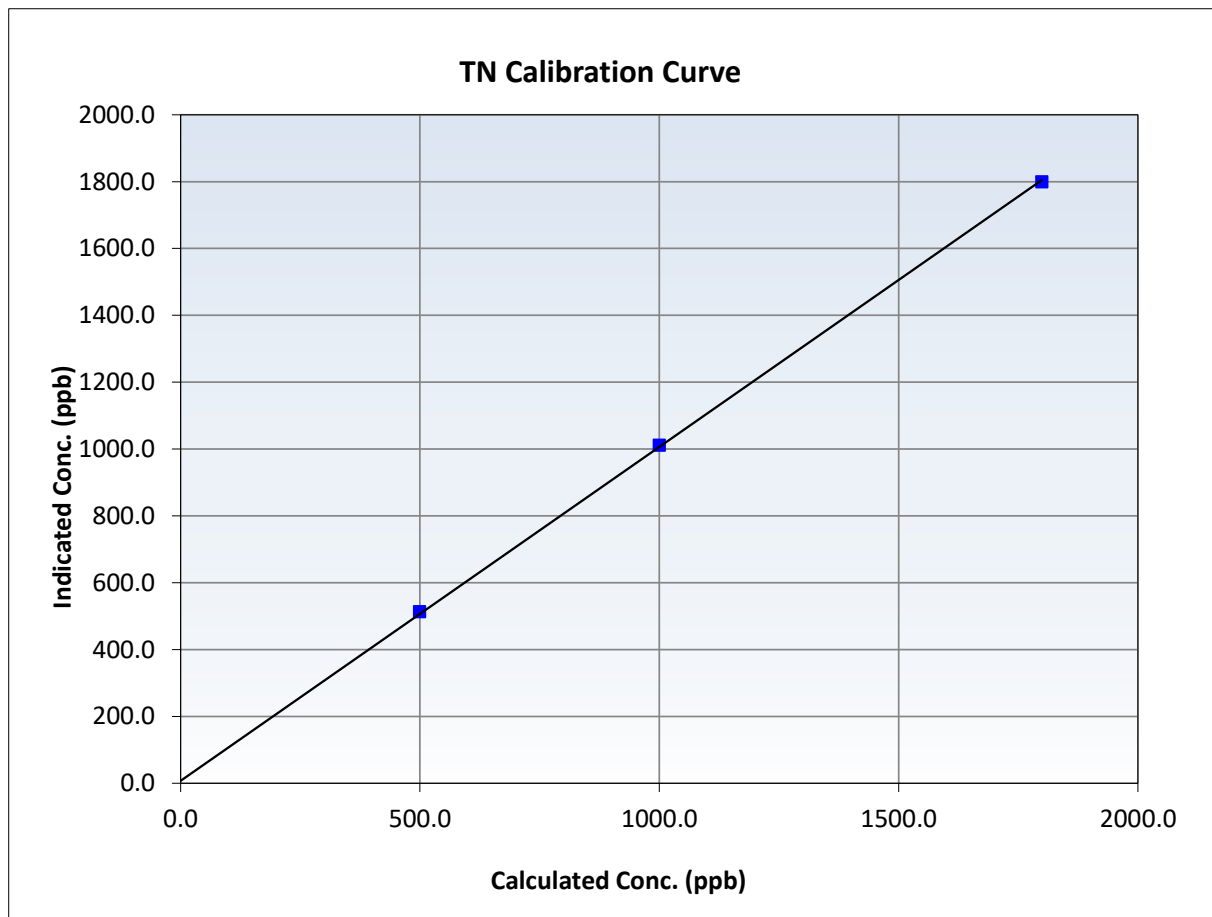
Nt Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 11, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:42	End Time (MST):	13:06
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999909	≥ 0.995
1799.0	1799.6	0.9997	Slope	0.998870	0.90 - 1.10
1000.3	1011.4	0.9890	Intercept	7.386406	+/-20
499.0	513.3	0.9721			





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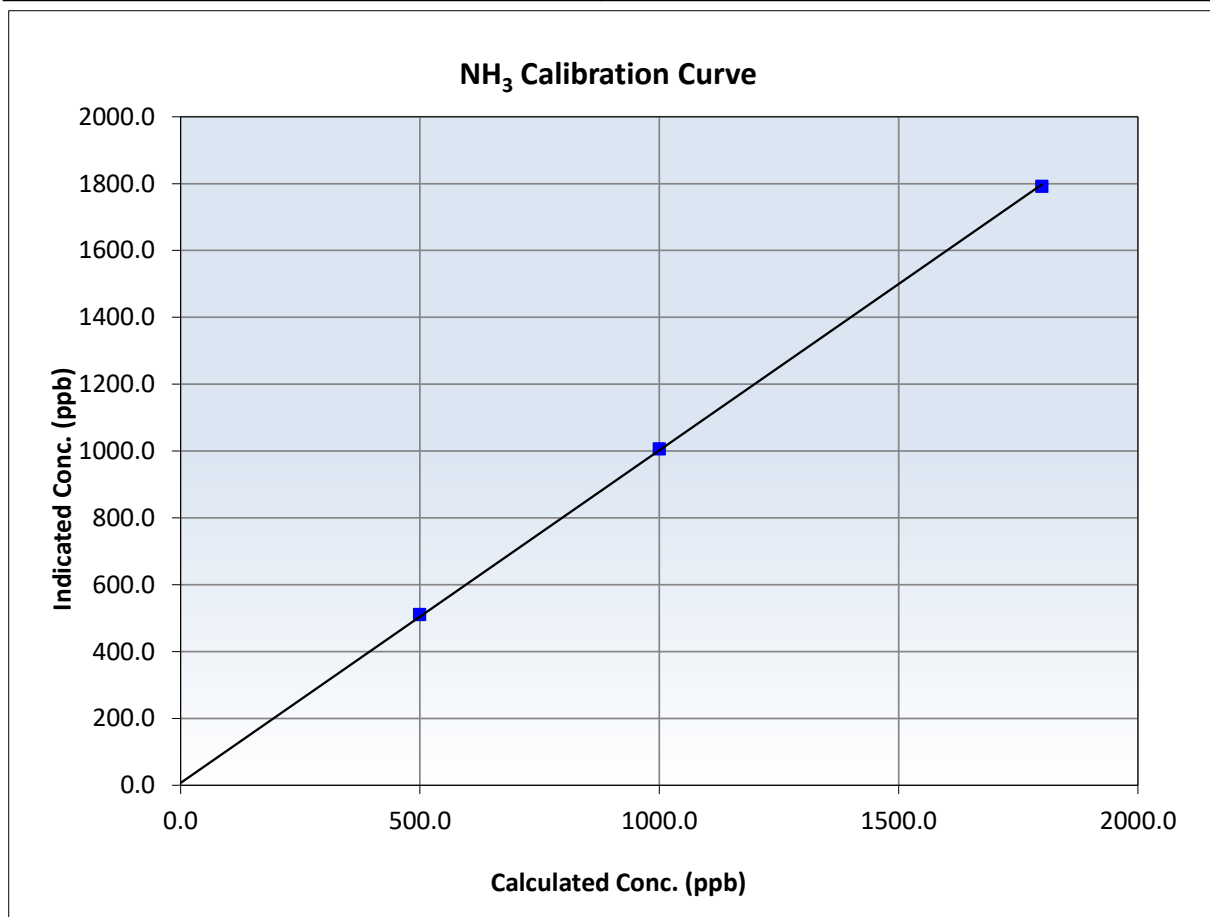
NH₃ Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 11, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:42	End Time (MST):	13:06
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.4	----	Correlation Coefficient	0.999913	≥ 0.995
1799.0	1792.5	1.0036	Slope	0.995041	$0.90 - 1.10$
1000.3	1006.9	0.9934	Intercept	6.993465	± 20
499.0	510.9	0.9767			





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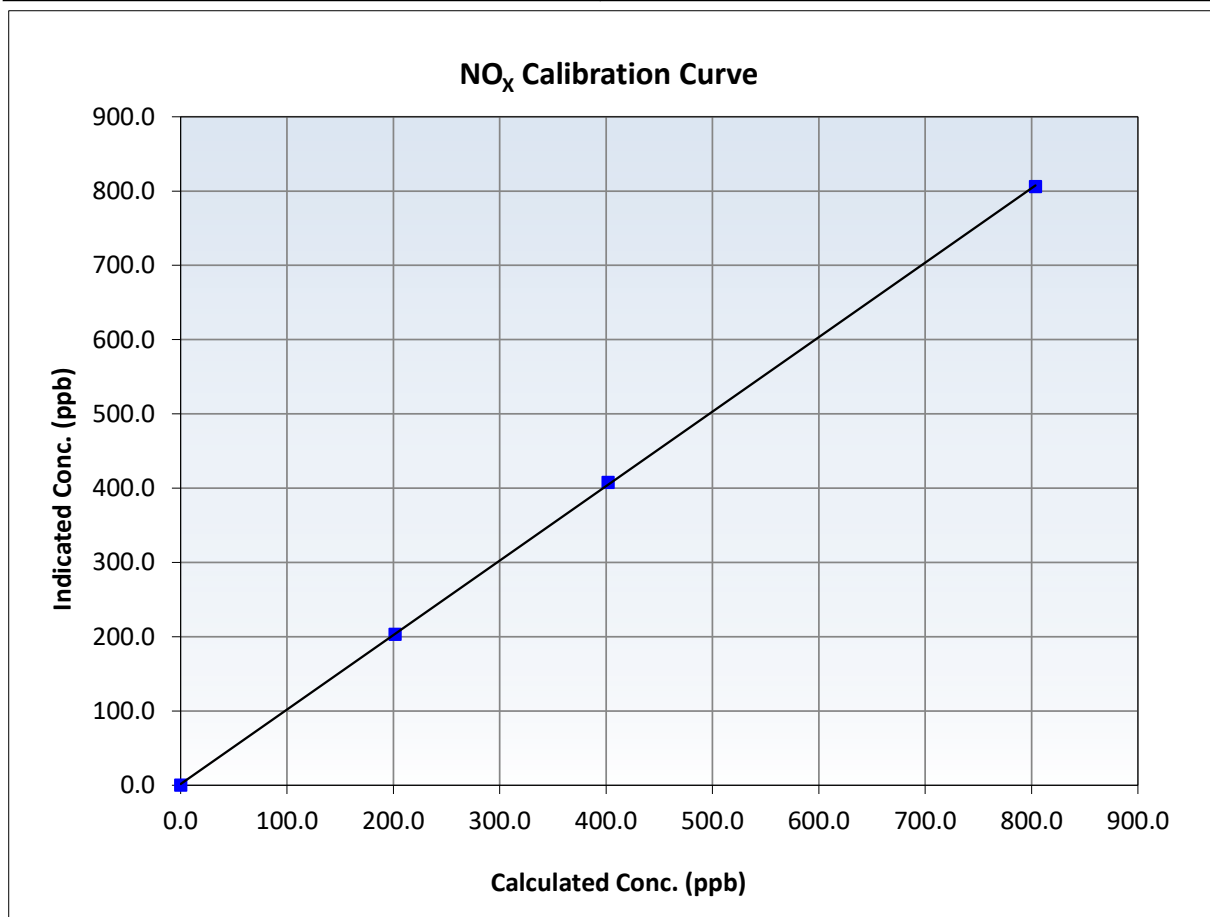
NO_x Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 11, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:42	End Time (MST):	13:06
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999956	≥0.995
803.7	806.0	0.9971	Slope	1.002769	0.90 - 1.10
401.8	407.9	0.9850	Intercept	1.651917	+/-20
201.5	203.3	0.9912			





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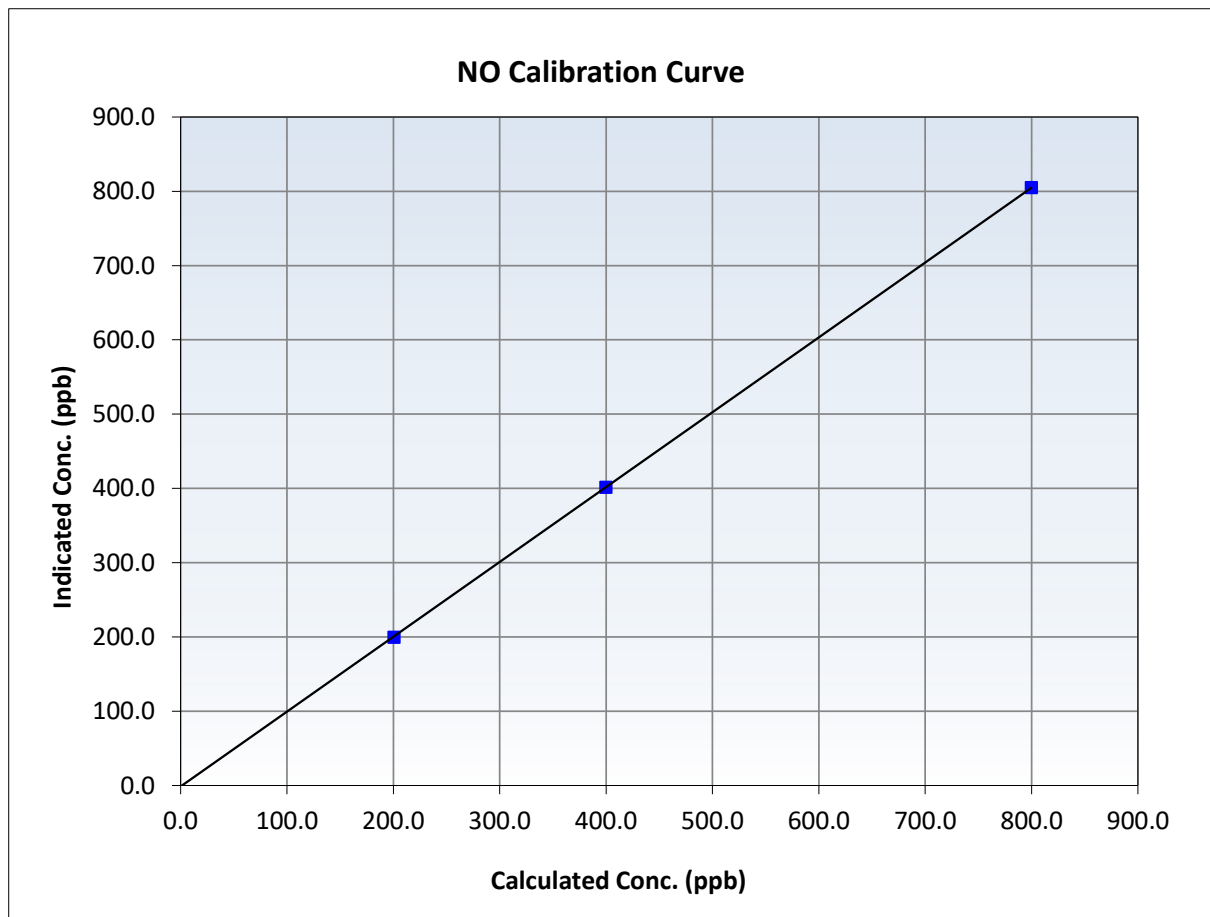
NO Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 11, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:42	End Time (MST):	13:06
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.3	----	Correlation Coefficient	0.999992	≥ 0.995
799.8	805.0	0.9936	Slope	1.007657	0.90 - 1.10
399.9	401.5	0.9959	Intercept	-1.307779	+/-20
200.5	199.5	1.0053			





Wood Buffalo Environmental Association

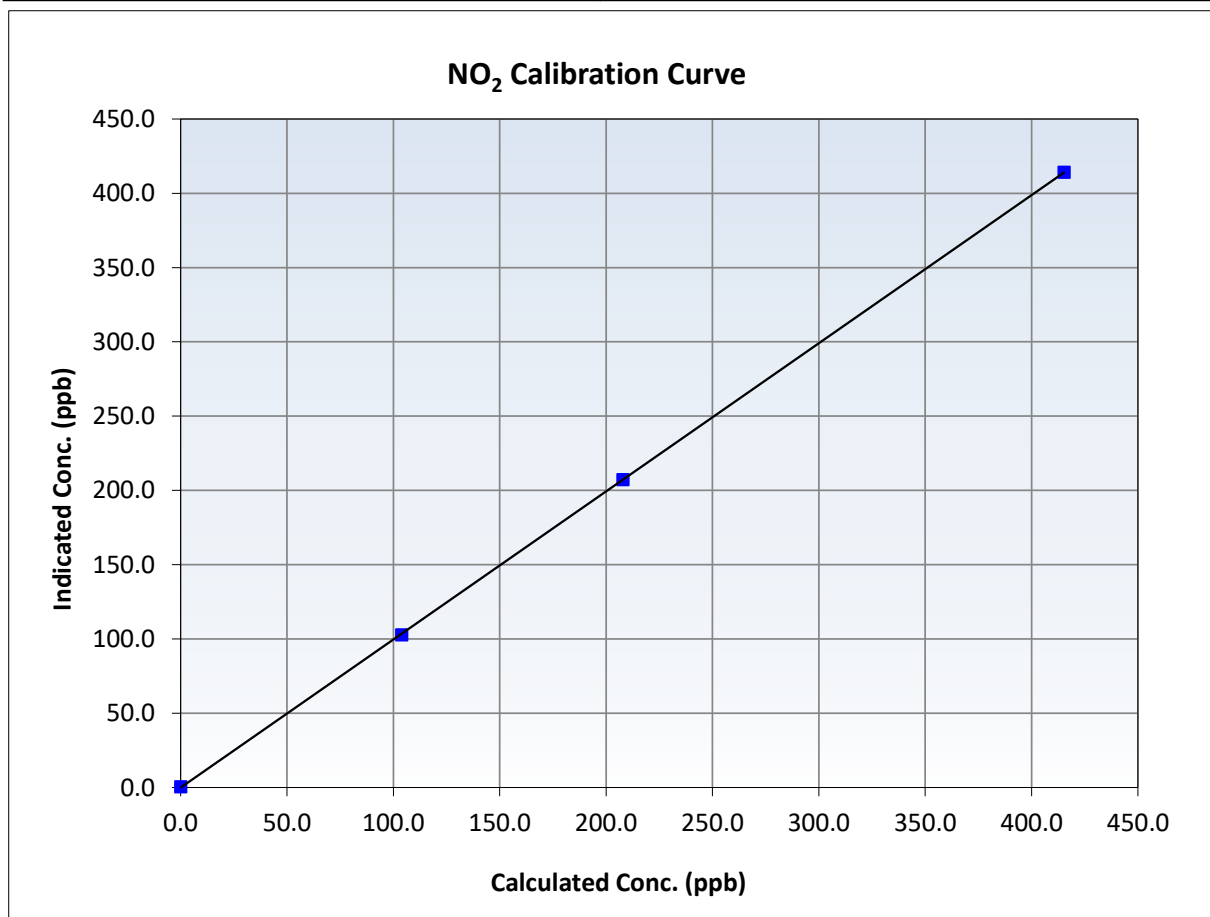
NO₂ Calibration Summary

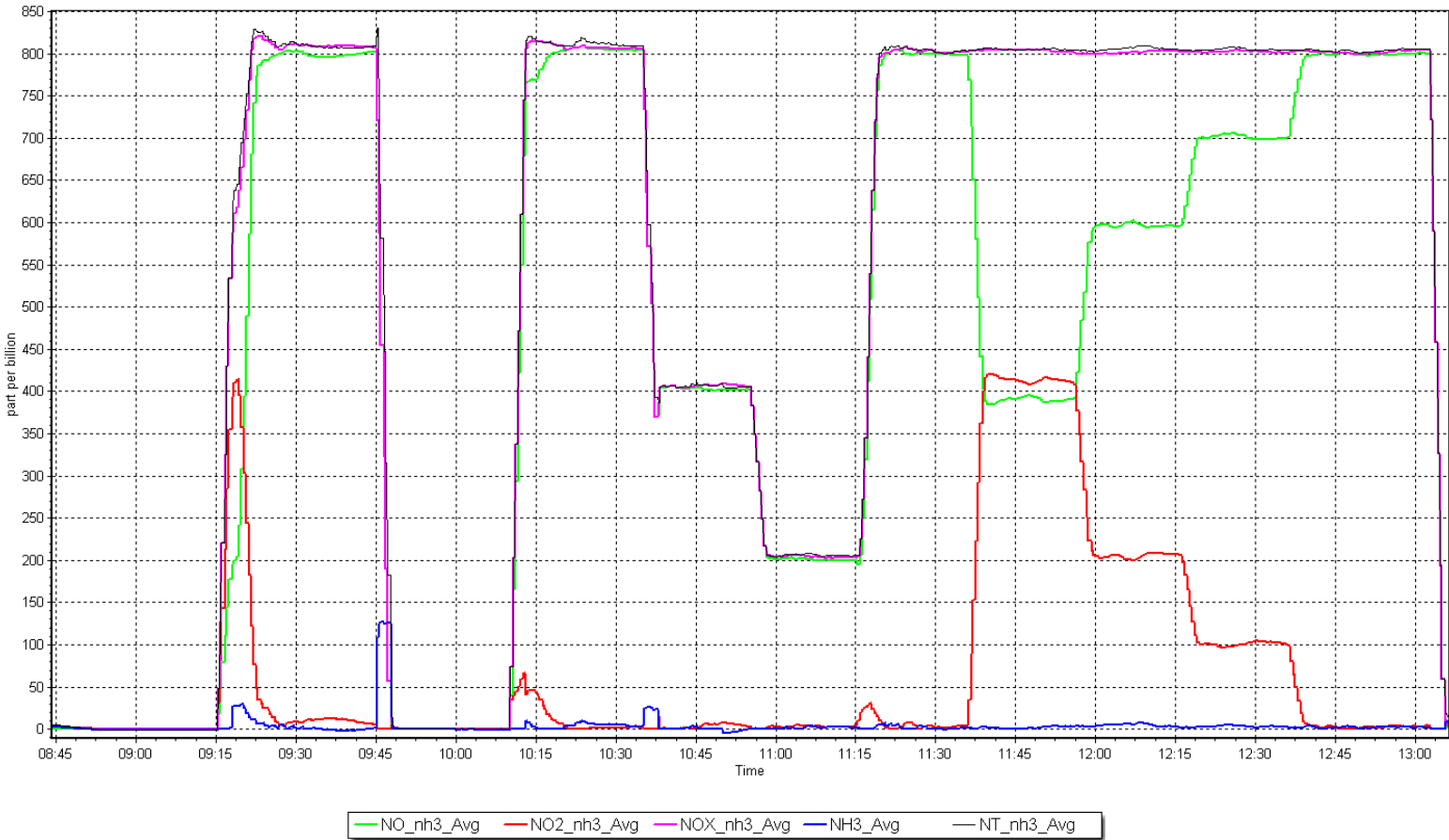
Station Information

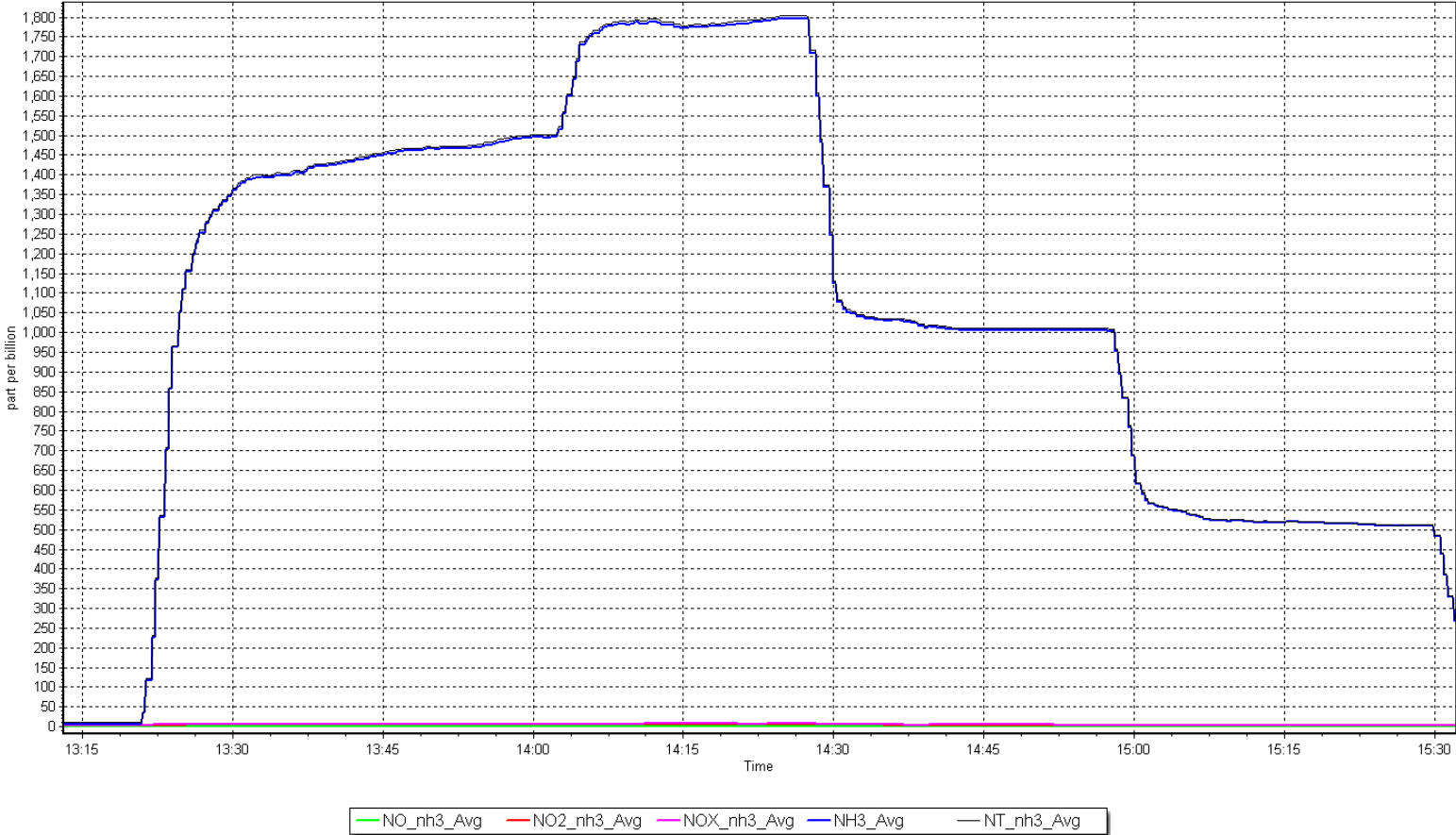
Calibration Date:	September 18, 2025	Previous Calibration:	August 11, 2025
Station Name:	Patricia McInnes	Station Number:	AMS 06
Start Time (MST):	8:42	End Time (MST):	13:06
Analyzer make:	API T201	Analyzer serial #:	215

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.6	----	Correlation Coefficient	0.999986	≥0.995
415.3	414.2	1.0026	Slope	0.997044	0.90 - 1.10
208.0	207.3	1.0033	Intercept	-0.069871	+/-20
104.0	102.7	1.0124			









WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS07 ATHABASCA VALLEY SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Athabasca Valley Station number: AMS07
Calibration Date: September 12, 2025 Last Cal Date: August 13, 2025
Start time (MST): 9:50 End time (MST): 14:05
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.006241	0.997873	Backgd or Offset:	2.73	2.57
Calibration intercept:	2.163644	2.964594	Coeff or Slope:	0.845	0.829

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4920	79.8	799.0	810.0	0.987
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	809.8	Previous response	806.1	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.5	----
High point	4920	79.8	799.0	798.2	1.001
Mid point	4960	39.9	399.5	405.3	0.986
Low point	4980	20.0	200.2	203.6	0.983
As left zero	5000	0.0	0.0	0.4	----
As left span	4920	79.8	799.0	807.6	0.989
Average Correction Factor:					0.990

Notes:

Span adjusted.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

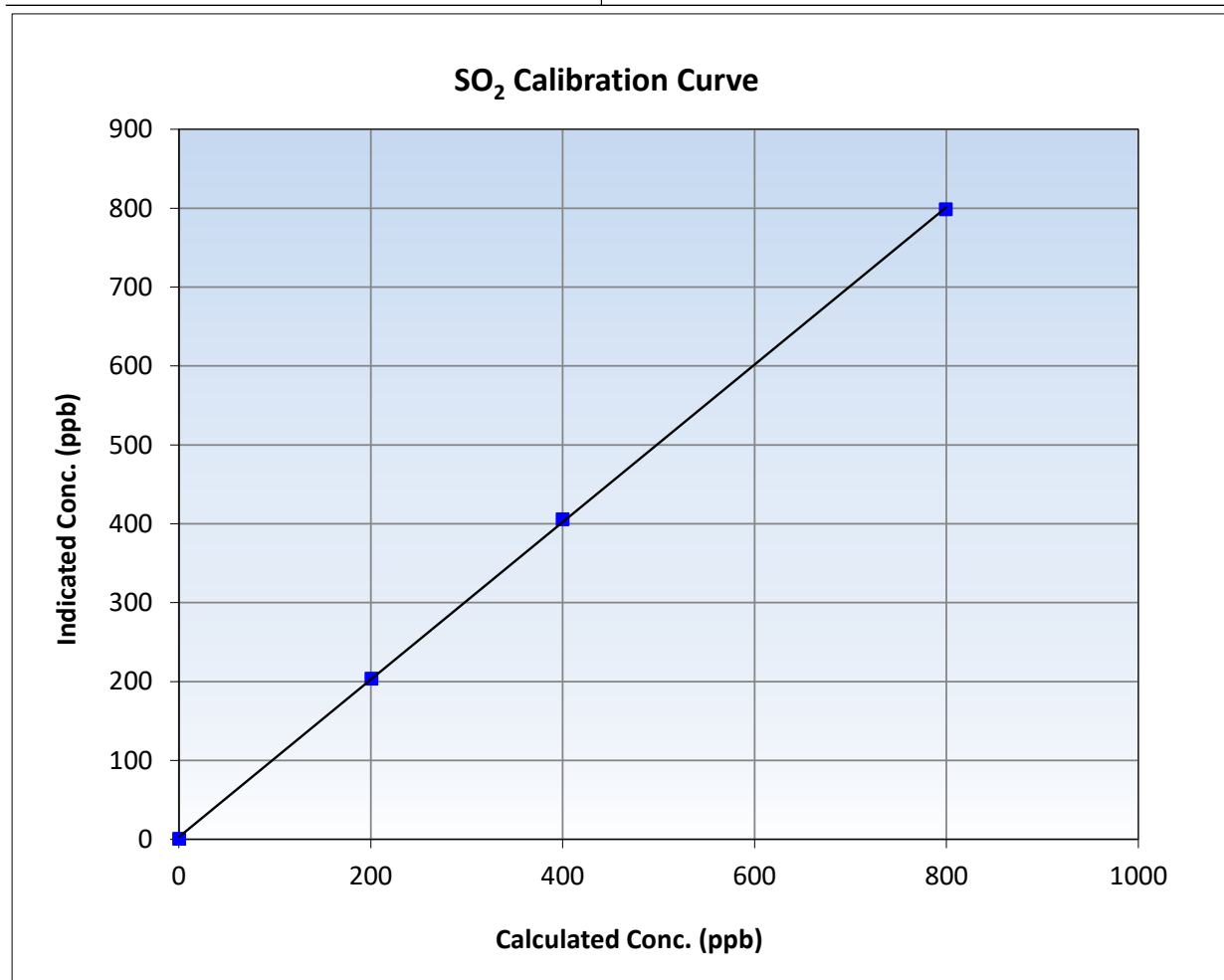
SO₂ Calibration Summary

Station Information

Calibration Date:	September 12, 2025	Previous Calibration:	August 13, 2025
Station Name:	Athabasca Valley	Station Number:	AMS07
Start Time (MST):	9:50	End Time (MST):	14:05
Analyzer make:	Thermo 43i-LTE	Analyzer serial #:	1507864683

Calibration Data

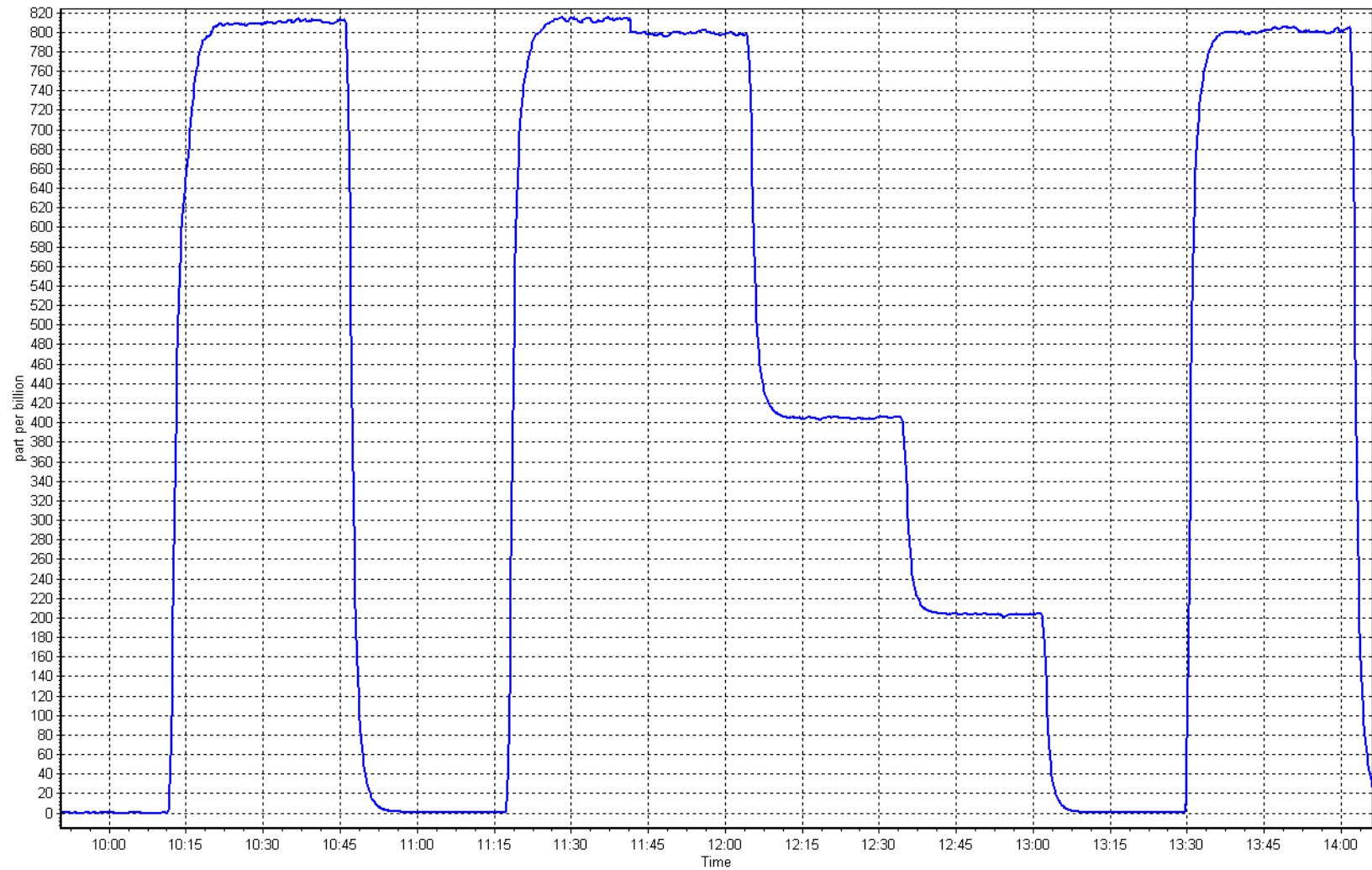
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.5	----	Correlation Coefficient	0.999929	≥0.995
799.0	798.2	1.0010	Slope	0.997873	0.90 - 1.10
399.5	405.3	0.9857	Intercept	2.964594	+/-30
200.2	203.6	0.9835			



SO2 Calibration Plot

Date: September 12, 2025

Location: Athabasca Valley





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Athabasca Valley Station number: AMS07
Calibration Date: September 10, 2025 Last Cal Date: August 8, 2025
Start time (MST): 9:54 End time (MST): 14:47
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	1.005546	1.012751	Backgd or Offset: 2.7	2.7
Calibration intercept:	0.137790	-0.062166	Coeff or Slope: 0.949	0.949

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4925	75.5	79.3	77.6	1.019
As found Mid point	4962	37.7	39.6	38.7	1.018
As found Low point	4981	18.9	19.8	19.0	1.034
New cylinder response					
Baseline Corr As found:	77.8	Prev response:	79.84	*% change:	-2.6%
Baseline Corr 2nd AF pt:	38.9	AF Slope:	0.982757	AF Intercept:	-0.302077
Baseline Corr 3rd AF pt:	19.2	AF Correlation:	0.999982	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4925	75.5	79.3	80.2	0.989
Mid point	4962	37.7	39.6	40.2	0.985
Low point	4981	18.9	19.9	20.0	0.993
As left zero	5000	0.0	0.0	0.0	----
As left span	4925	75.5	79.3	81.4	0.974
SO2 Scrubber Check	4920	79.2	792.1	-0.1	----
Date of last scrubber change:	8-Aug-25		Ave Corr Factor		0.989
Date of last converter efficiency test:	Friday, April 22, 2022				

Notes: Scrubber changed out. No adjustments done.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

TRS Calibration Summary

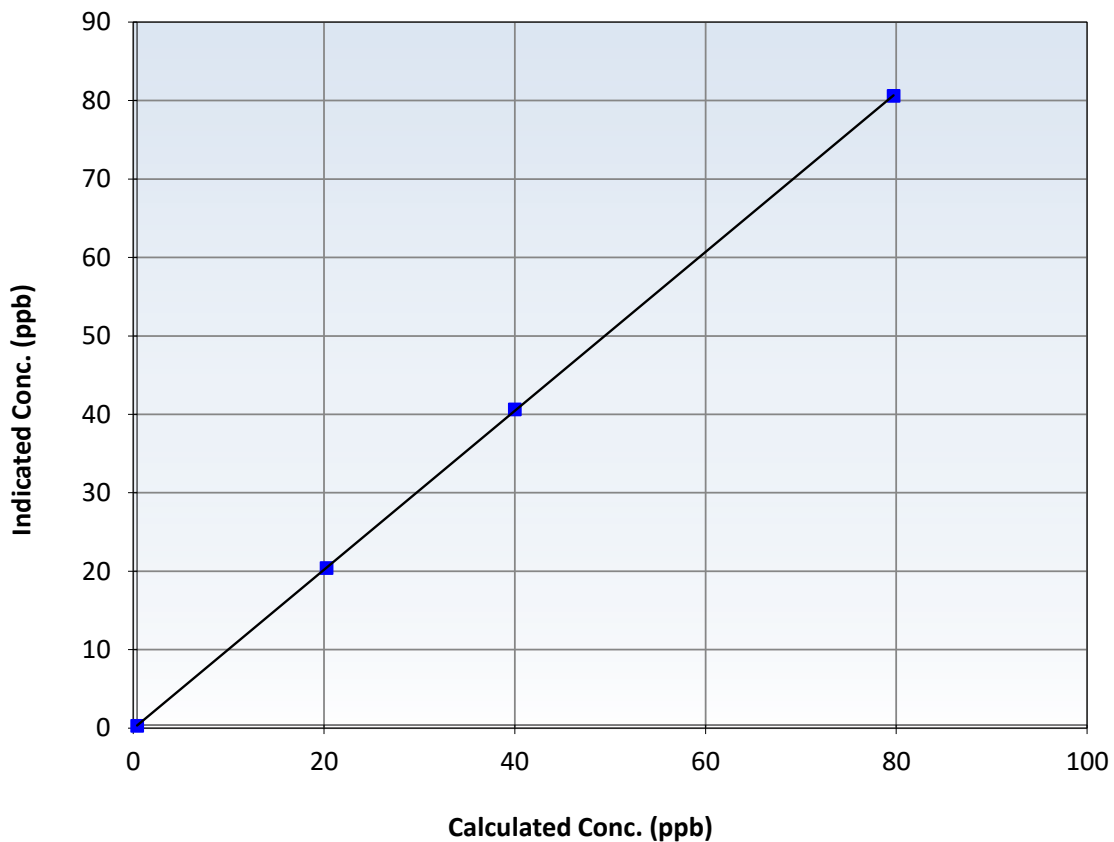
Station Information

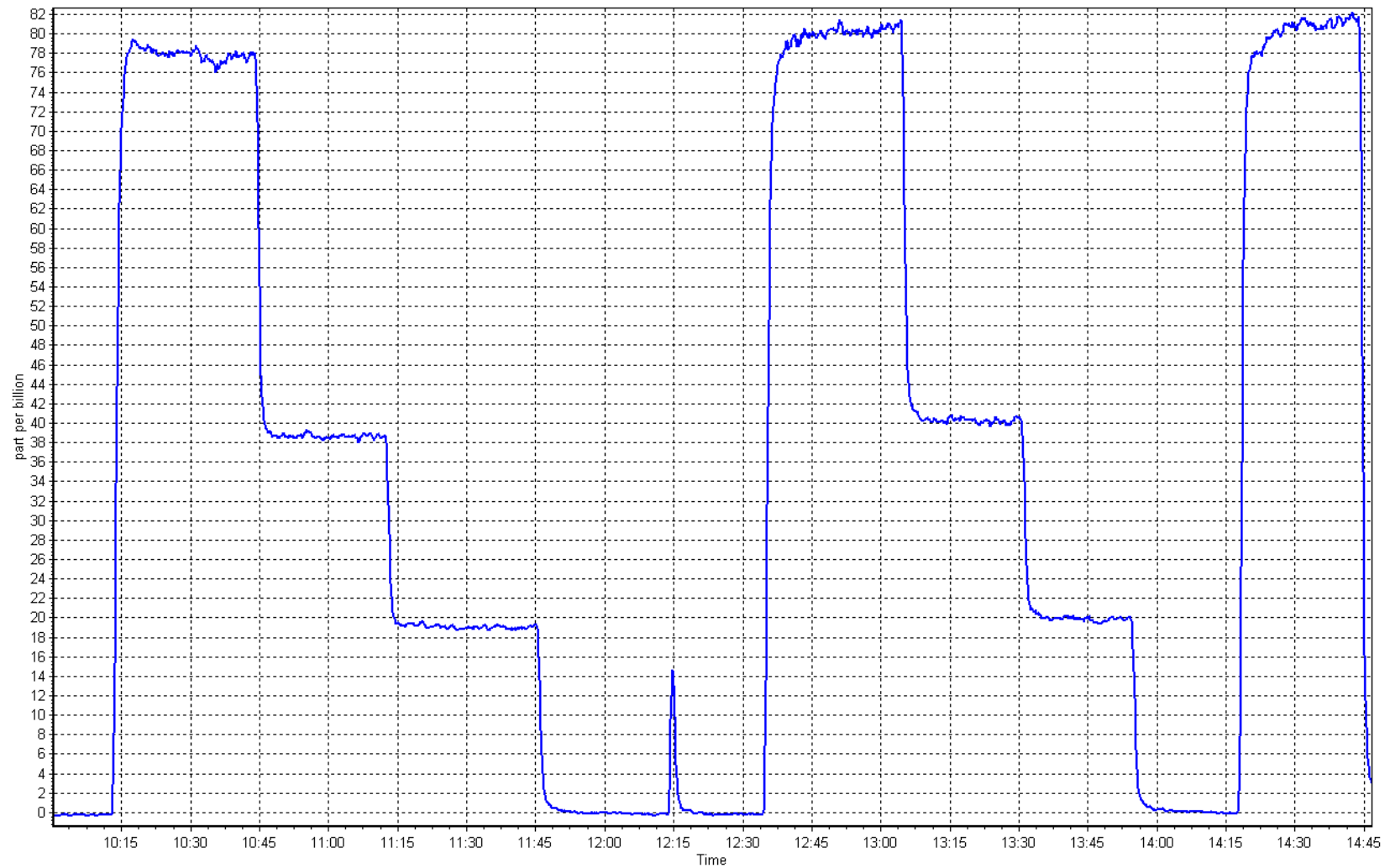
Calibration Date:	September 10, 2025	Previous Calibration:	August 8, 2025
Station Name:	Athabasca Valley	Station Number:	AMS07
Start Time (MST):	9:54	End Time (MST):	14:47
Analyzer make:	Thermo 43i LTE	Analyzer serial #:	1180540018

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999992	≥ 0.995
79.3	80.2	0.9889	Slope	1.012751	$0.90 - 1.10$
39.6	40.2	0.9853	Intercept	-0.062166	± 3
19.9	20.0	0.9928			

TRS Calibration Curve







Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Athabasca Valley
Calibration Date: September 12, 2025
Start time (MST): 9:50
Reason: Routine

Station number: AMS 07
Last Cal Date: August 13, 2025
End time (MST): 14:05

Calibration Standards

Gas Cert Reference: CC320556
CH₄ Cal Gas Conc. 496.0 ppm
C₃H₈ Cal Gas Conc. 205.0 ppm
Removed Gas Cert: NA
Removed CH₄ Conc. 496.0 ppm
Removed C₃H₈ Conc. 205.0 ppm
Diff between cyl (CH₄):
Calibrator Model: Teledyne API T700
Zero Air Gen model: Teledyne API T701H

Cal Gas Expiry Date: Monday, March 10, 2031
CH₄ Equiv Conc. 1059.8 ppm
Removed Gas Expiry: NA
CH₄ Equiv Conc. 1059.8 ppm
Diff between cyl (THC):
Diff between cyl (NM):
Serial Number: 3805
Serial Number: 198

Analyzer Information

Analyzer make: Thermo 55i
THC Range: 0 - 20 ppm

Analyzer serial #: 1331259520
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.72E-04	2.72E-04	NMHC SP Ratio:	5.19E-05
CH ₄ Retention time:	14.4	14.4	NMHC Peak Area:	173304
Zero Chromatogram:	OFF	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)) <i>Limit = 0.90-1.10</i>
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	16.91	16.96	0.997
Mid point	4960	39.9	8.46	8.50	0.995
Low point	4980	20.0	4.24	4.30	0.985
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	16.91	16.99	0.996
Average Correction Factor					0.992

Notes: No asfound done due to N2 cylinder running out. N2 swapped out. Sample inlet filter changed out.
No adjustments needed.



Wood Buffalo Environmental Association

THC / CH₄ / 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)) <i>Limit = 0.90-1.10</i>
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	9.00	9.04	0.995
Mid point	4960	39.9	4.50	4.55	0.989
Low point	4980	20.0	2.26	2.31	0.977
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	9.00	9.05	0.994
Average Correction Factor					0.987

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)) <i>Limit = 0.90-1.10</i>
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	7.92	7.92	1.000
Mid point	4960	39.9	3.96	3.95	1.001
Low point	4980	20.0	1.98	1.99	0.995
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	7.92	7.94	0.997
Average Correction Factor					0.999

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
THC Cal Slope:	0.999593	1.001796
THC Cal Offset:	0.024451	0.025640
CH ₄ Cal Slope:	1.000947	0.999605
CH ₄ Cal Offset:	0.000060	0.002461
NMHC Cal Slope:	0.998782	1.003432
NMHC Cal Offset:	0.024391	0.023580

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

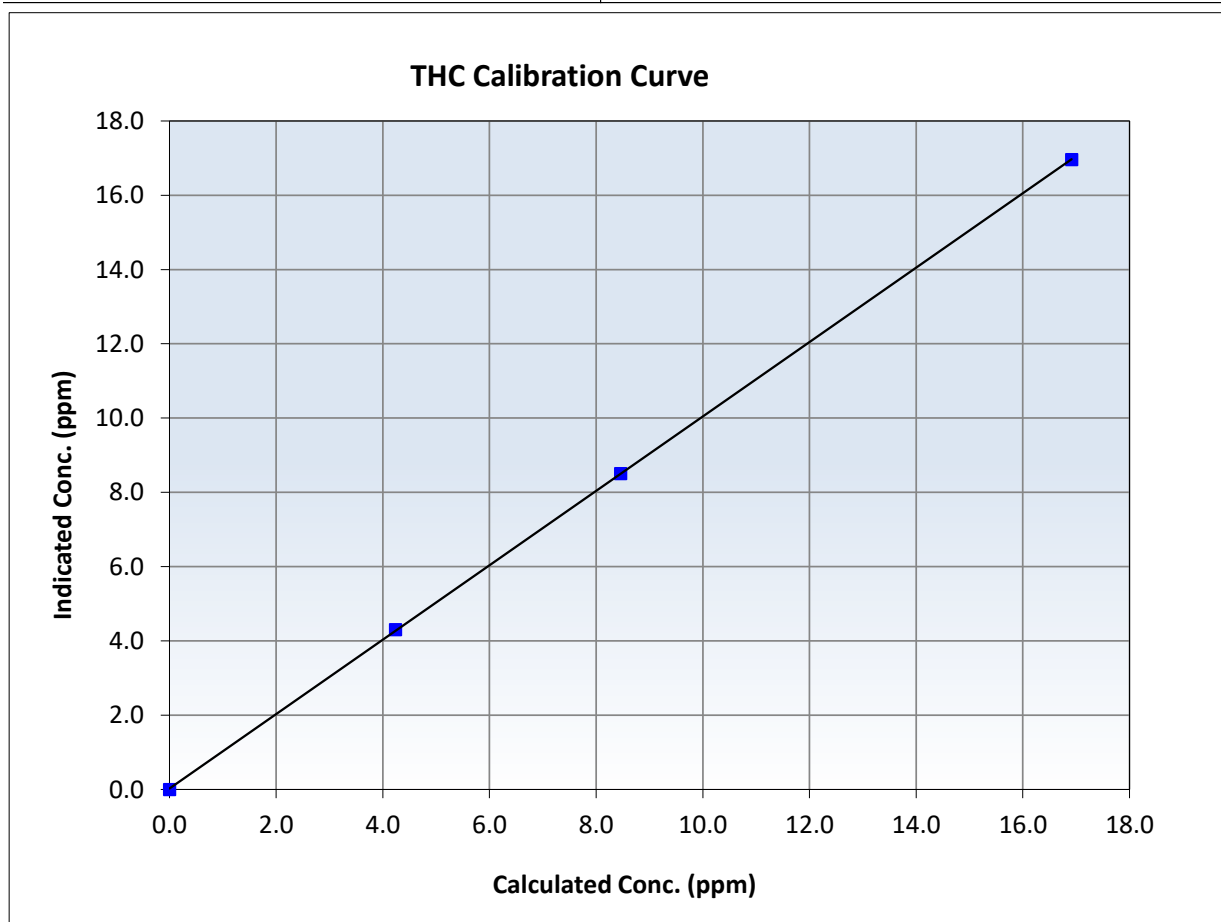
THC Calibration Summary

Station Information

Calibration Date:	September 12, 2025	Previous Calibration:	August 13, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:50	End Time (MST):	14:05
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259520

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999989	≥ 0.995
16.91	16.96	0.9973	Slope	1.001796	$0.90 - 1.10$
8.46	8.50	0.9946	Intercept	0.025640	± 0.5
4.24	4.30	0.9851			





Wood Buffalo Environmental Association

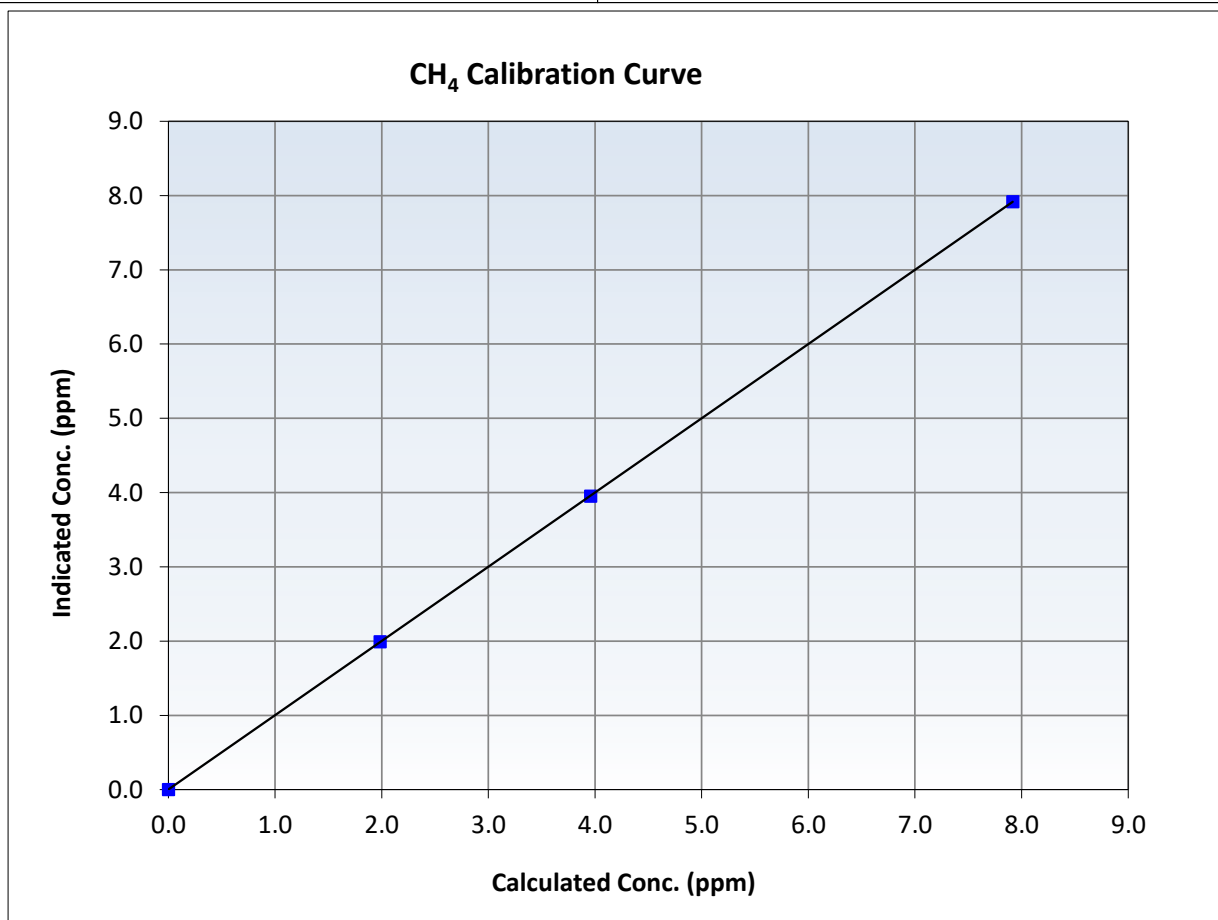
CH₄ Calibration Summary

Station Information

Calibration Date:	September 12, 2025	Previous Calibration:	August 13, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:50	End Time (MST):	14:05
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	0.999997	≥ 0.995
7.92	7.92	0.9999	Slope	0.999605	$0.90 - 1.10$
3.96	3.95	1.0013	Intercept	0.002461	± 0.5
1.98	1.99	0.9955			





Wood Buffalo Environmental Association

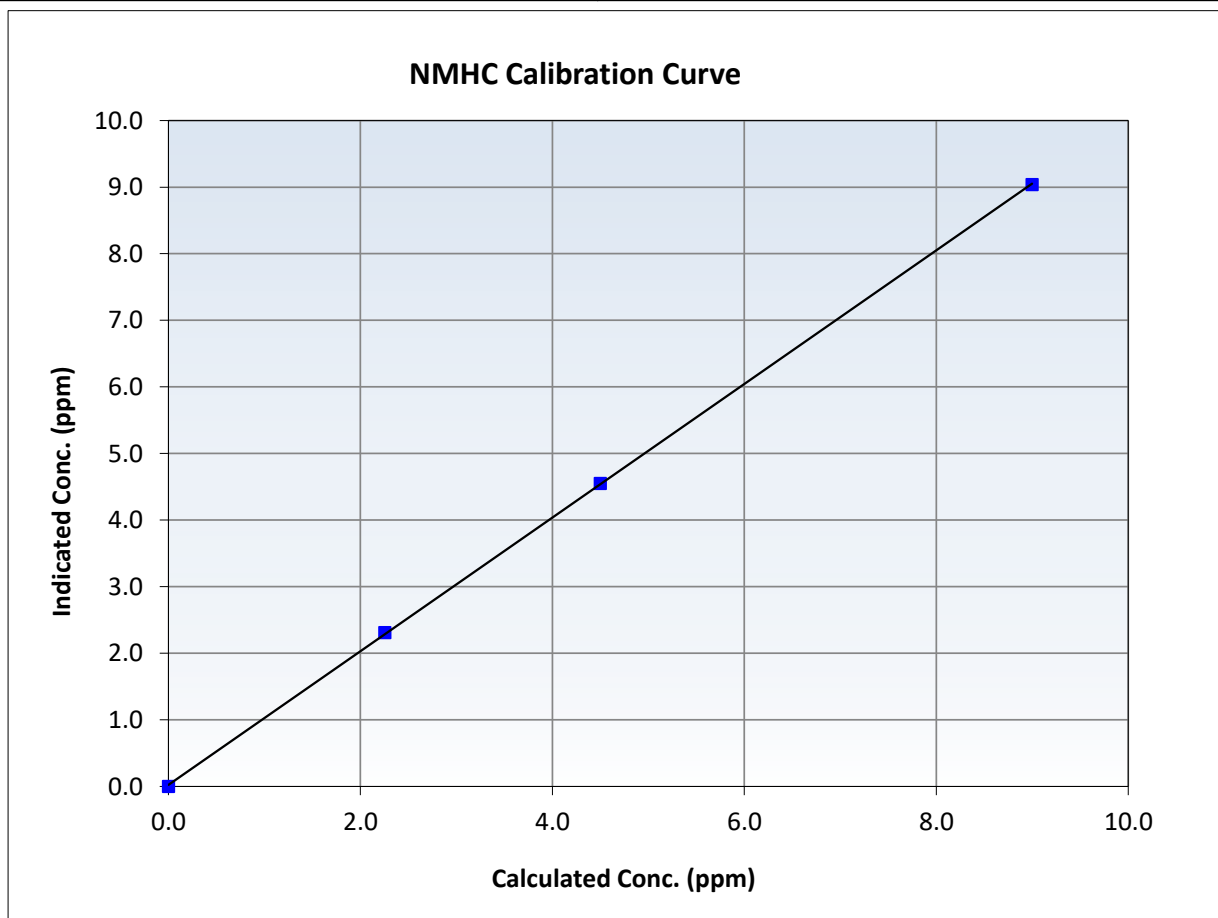
NMHC Calibration Summary

Station Information

Calibration Date:	September 12, 2025	Previous Calibration:	August 13, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:50	End Time (MST):	14:05
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259520

Calibration Data

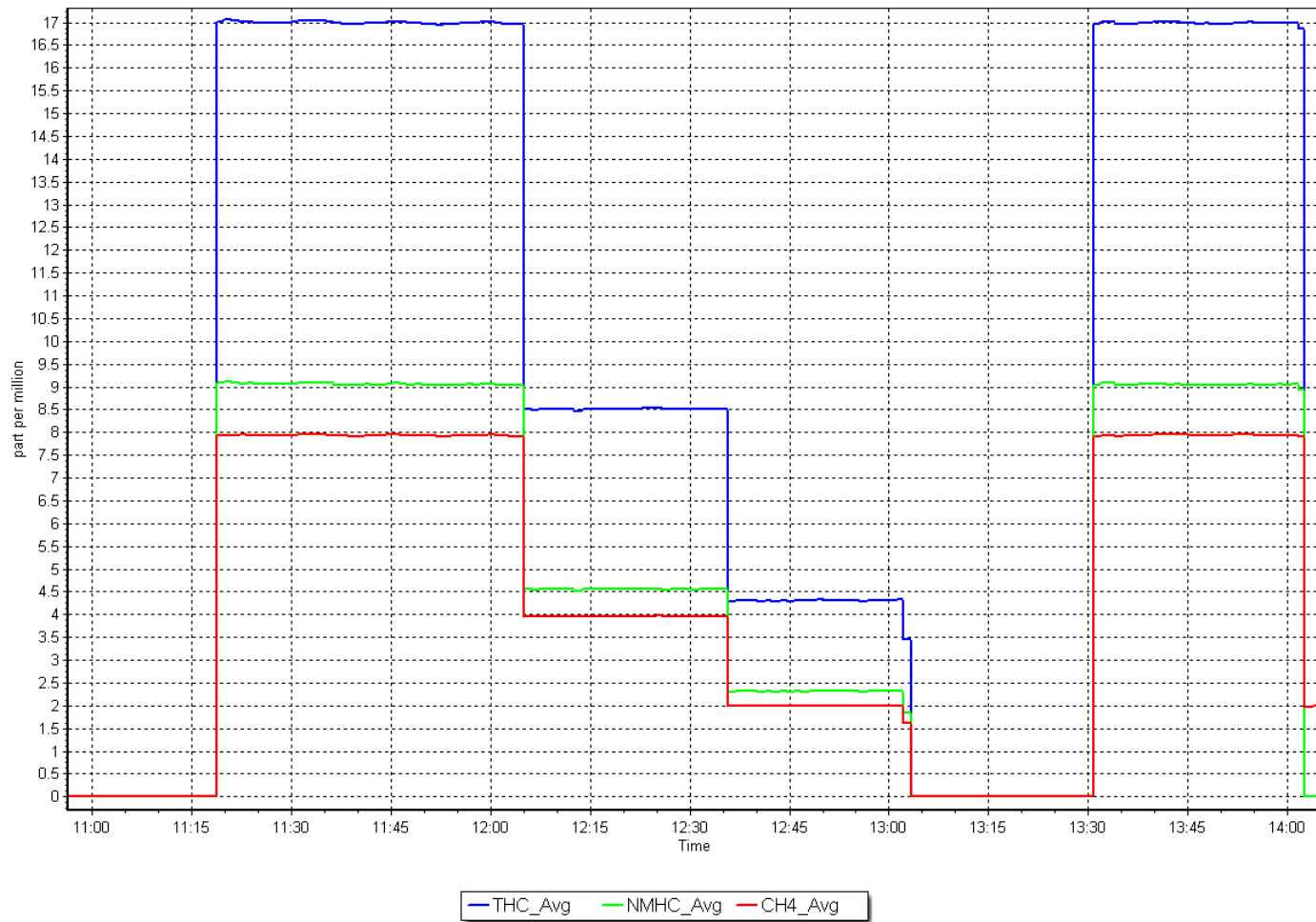
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.00	0.00	----	Correlation Coefficient	0.999969	≥ 0.995
9.00	9.04	0.9953	Slope	1.003432	$0.90 - 1.10$
4.50	4.55	0.9885	Intercept	0.023580	± 0.5
2.26	2.31	0.9766			



NMHC Calibration Plot

Date: September 12, 2025

Location: Athabasca Valley





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Athabasca Valley
Station number: AMS 07
Calibration Date: September 9, 2025
Last Cal Date: August 6, 2025
Start time (MST): 9:29
End time (MST): 14:20
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0033919
NOX Cal Gas Conc: 60.10 ppm
Removed Cylinder #: N/A
Removed Gas NOX Conc: 60.10 ppm
NOX gas Diff:
Calibrator Model: API T700
ZAG make/model: API T701H
Cal Gas Expiry Date: January 9, 2032
NO Cal Gas Conc: 59.90 ppm
Removed Gas Exp Date: N/A
Removed Gas NO Conc: 59.90 ppm
NO gas Diff:
Serial Number: 3805
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.1	0.0	0.1	----	----
AF High point	4933	66.8	803.0	800.3	2.7	805.0	799.6	5.1	0.9976	1.0009
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO _x = 803.4 ppb	NO = 801.3 ppb	* = > +/-5% change initiates investigation		*Percent Change	NO _x = 0.2%
Baseline Corr 1st pt	NO _x = 804.9 ppb	NO = 799.6 ppb	<u>As Found Statistics</u>		*Percent Change	NO = -0.2%
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb	As found	NO _x r ² :	Nx SI:	Nx Int:
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb	As found	NO r ² :	NO SI:	NO Int:
			As found	NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1160120024

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.917	0.917	NO bkgnd or offset:	6.4	6.4
NOX coeff or slope:	1.003	1.002	NOX bkgnd or offset:	6.6	6.6
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	184.2	185.1

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.998023	0.997995
NO _x Cal Offset:	2.011928	1.871926
NO Cal Slope:	0.999428	0.999699
NO Cal Offset:	1.511942	1.591942
NO ₂ Cal Slope:	1.001788	0.999879
NO ₂ Cal Offset:	0.606111	0.292038

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.2	0.1	0.1	----	----
High point	4933	66.8	803.0	800.3	2.7	802.1	800.6	1.5	1.0011	0.9996
Mid point	4966	33.4	401.5	400.2	1.3	404.3	403.3	1.0	0.9931	0.9923
Low point	4983	16.7	200.7	200.1	0.7	203.3	202.5	0.8	0.9874	0.9880
As left zero	5000	0.0	0.0	0.0	0.0	0.1	0.1	0.1	----	----
As left span	4933	66.8	803.0	398.1	404.9	802.8	398.1	404.6	1.0002	1.0000
Average Correction Factor									0.9939	0.9933

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.1	----	----
High GPT point	796.8	398.1	401.4	401.5	0.9997	100.0%
Mid GPT point	796.8	601.3	198.2	198.6	0.9978	100.2%
Low GPT point	796.8	699.7	99.8	100.2	0.9957	100.4%
Average Correction Factor					0.9978	100.2%

Notes:

Span adjusted.

Calibration Performed By:

Aswin Sasi Kumar



Wood Buffalo Environmental Association

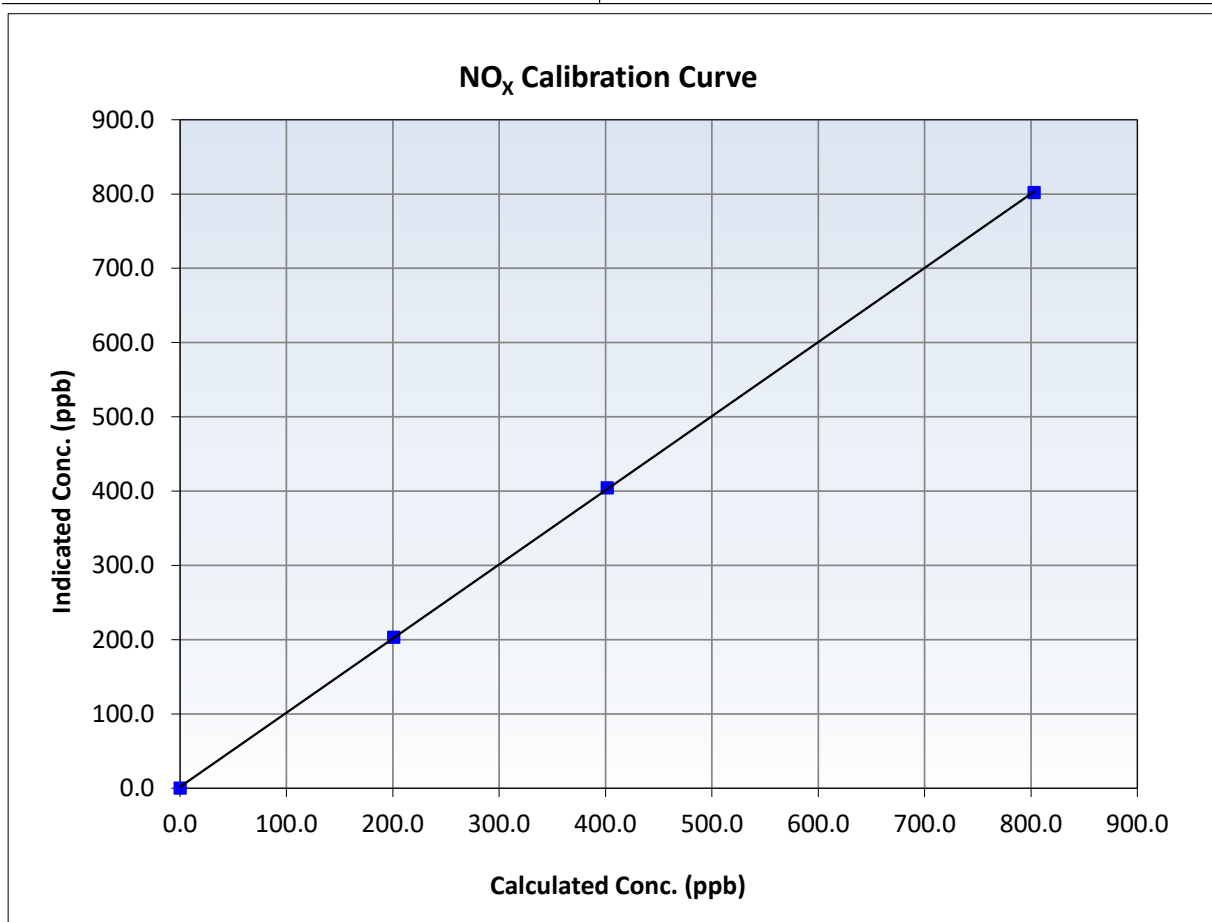
NO_x Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 6, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:29	End Time (MST):	14:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1160120024

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999977	≥0.995
803.0	802.1	1.0011	Slope	0.997995	0.90 - 1.10
401.5	404.3	0.9931	Intercept	1.871926	+/-20
200.7	203.3	0.9874			





Wood Buffalo Environmental Association

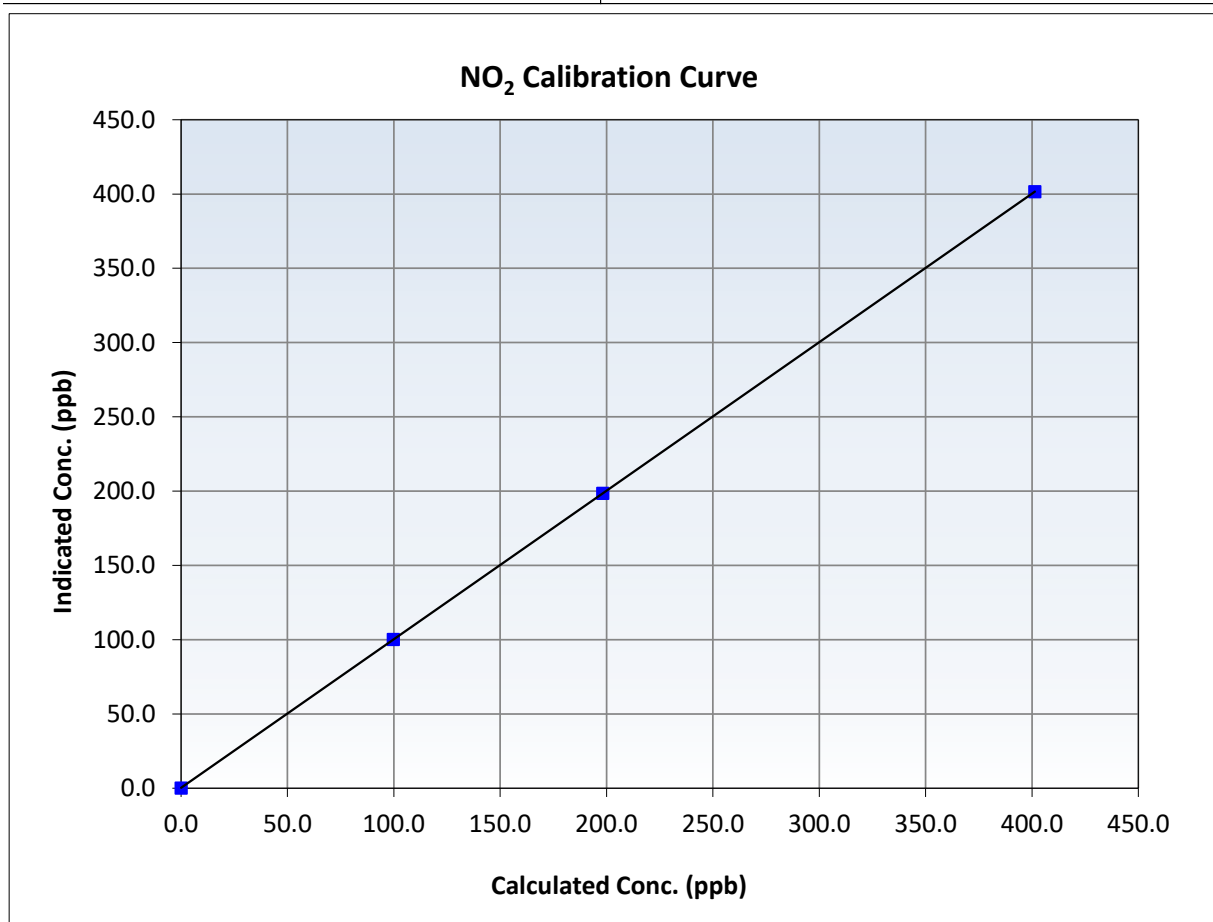
NO₂ Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 6, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:29	End Time (MST):	14:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1160120024

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999999	≥0.995
401.4	401.5	0.9997	Slope	0.999879	0.90 - 1.10
198.2	198.6	0.9978	Intercept	0.292038	+/-20
99.8	100.2	0.9957			





Wood Buffalo Environmental Association

NO Calibration Summary

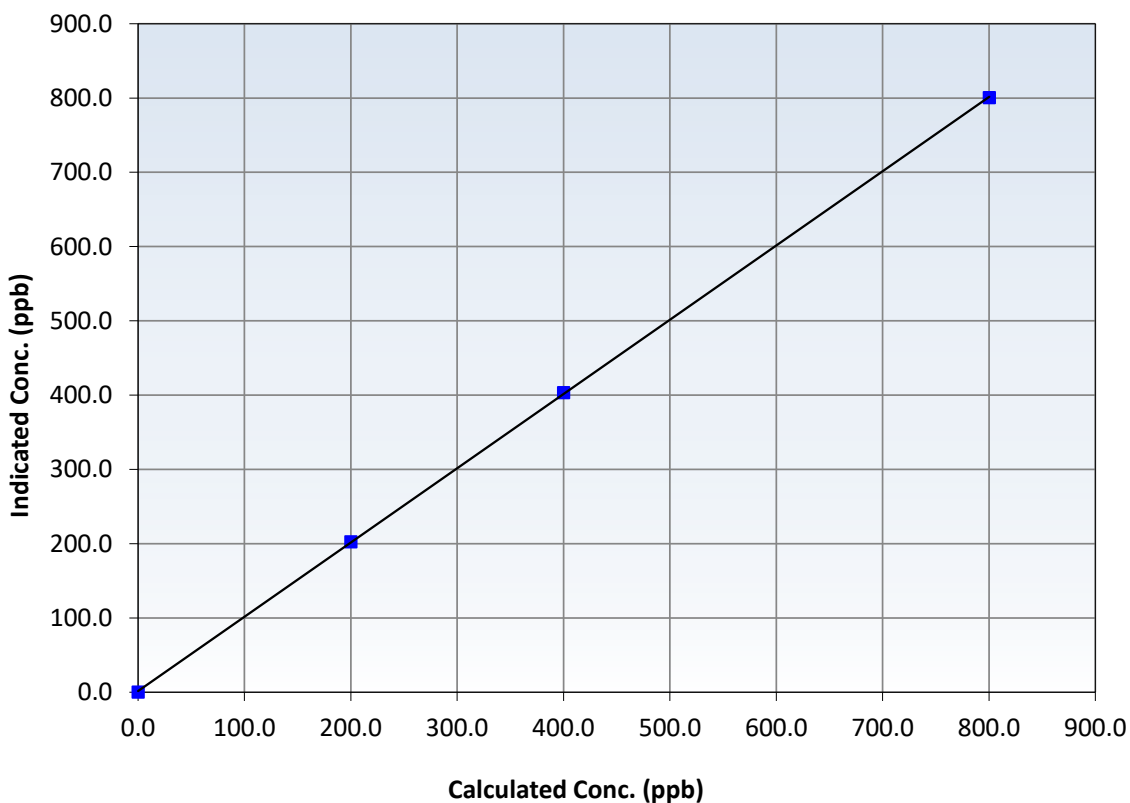
Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 6, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	9:29	End Time (MST):	14:20
Analyzer make:	Thermo 42i	Analyzer serial #:	1160120024

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999980	≥ 0.995
800.3	800.6	0.9996	Slope	0.999699	$0.90 - 1.10$
400.2	403.3	0.9923	Intercept	1.591942	± 20
200.1	202.5	0.9880			

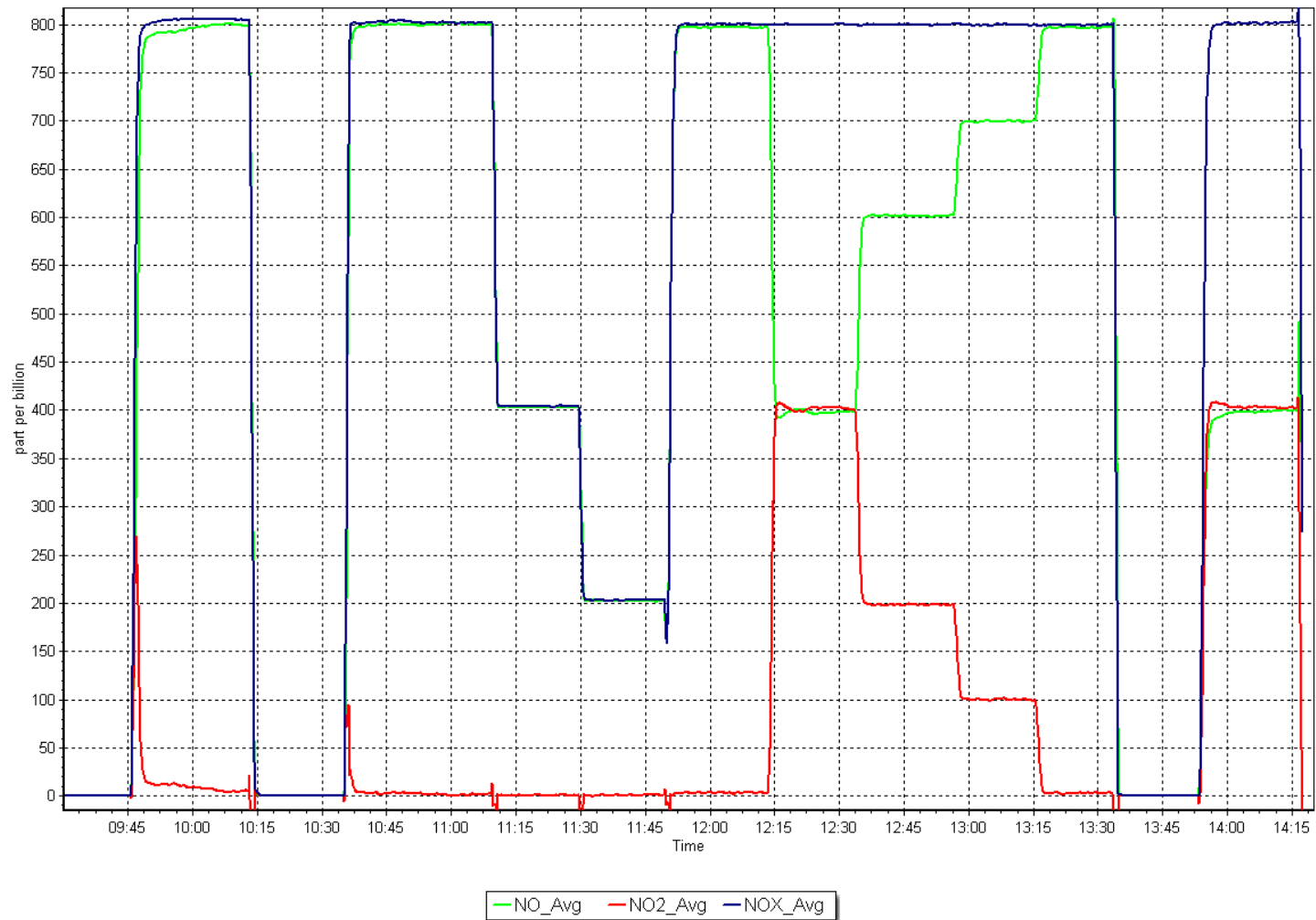
NO Calibration Curve



NO_x Calibration Plot

Date: September 9, 2025

Location: Athabasca Valley





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Athabasca Valley Station number: AMS07
Calibration Date: September 19, 2025 Last Cal Date: August 5, 2025
Start time (MST): 9:37 End time (MST): 13:34
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002829	1.002600	Backgd or Offset:	-1.8	-1.8
Calibration intercept:	0.980000	1.120000	Coeff or Slope:	1.556	1.556

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	NA	0.0	-0.6	----
As found High point	5000	1725.3	400.0	401.1	0.996
As found Mid point					
As found Low point					
Baseline Corr As found:	401.7	Previous response	402.1	*% 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	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	NA	0.0	0.2	----
High point	5000	1705.1	400.0	401.5	0.996
Mid point	5000	1172.8	200.0	202.7	0.987
Low point	5000	921.2	100.0	101.9	0.981
As left zero	5000	NA	0.0	0.0	----
As left span	5000	1582.6	400.0	404.7	0.988
Average Correction Factor					0.988

Notes: No adjustments made.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

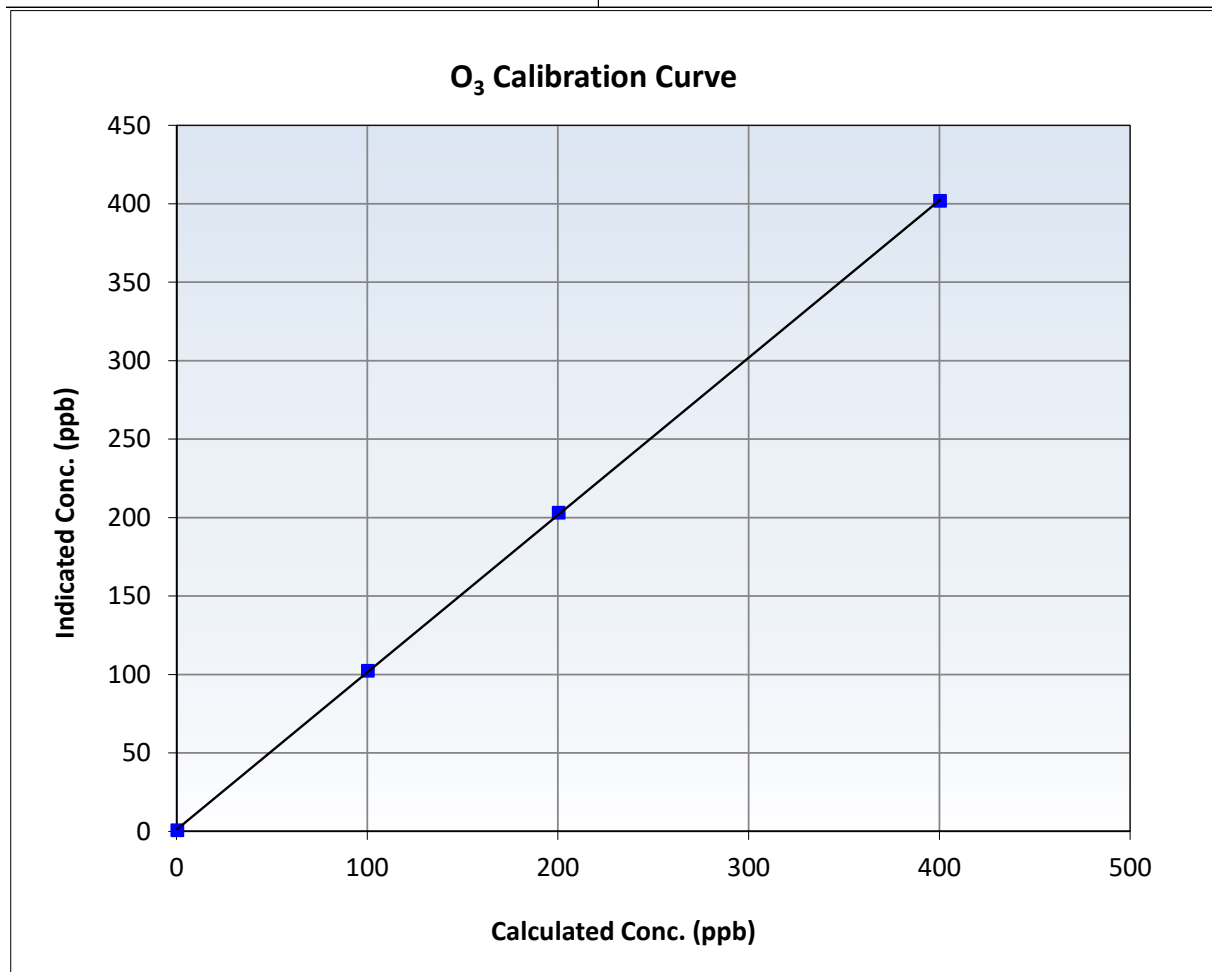
O₃ Calibration Summary

Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 5, 2025
Station Name:	Athabasca Valley	Station Number:	AMS07
Start Time (MST):	9:37	End Time (MST):	13:34
Analyzer make:	Thermo 49i	Analyzer serial #:	1152220023

Calibration Data

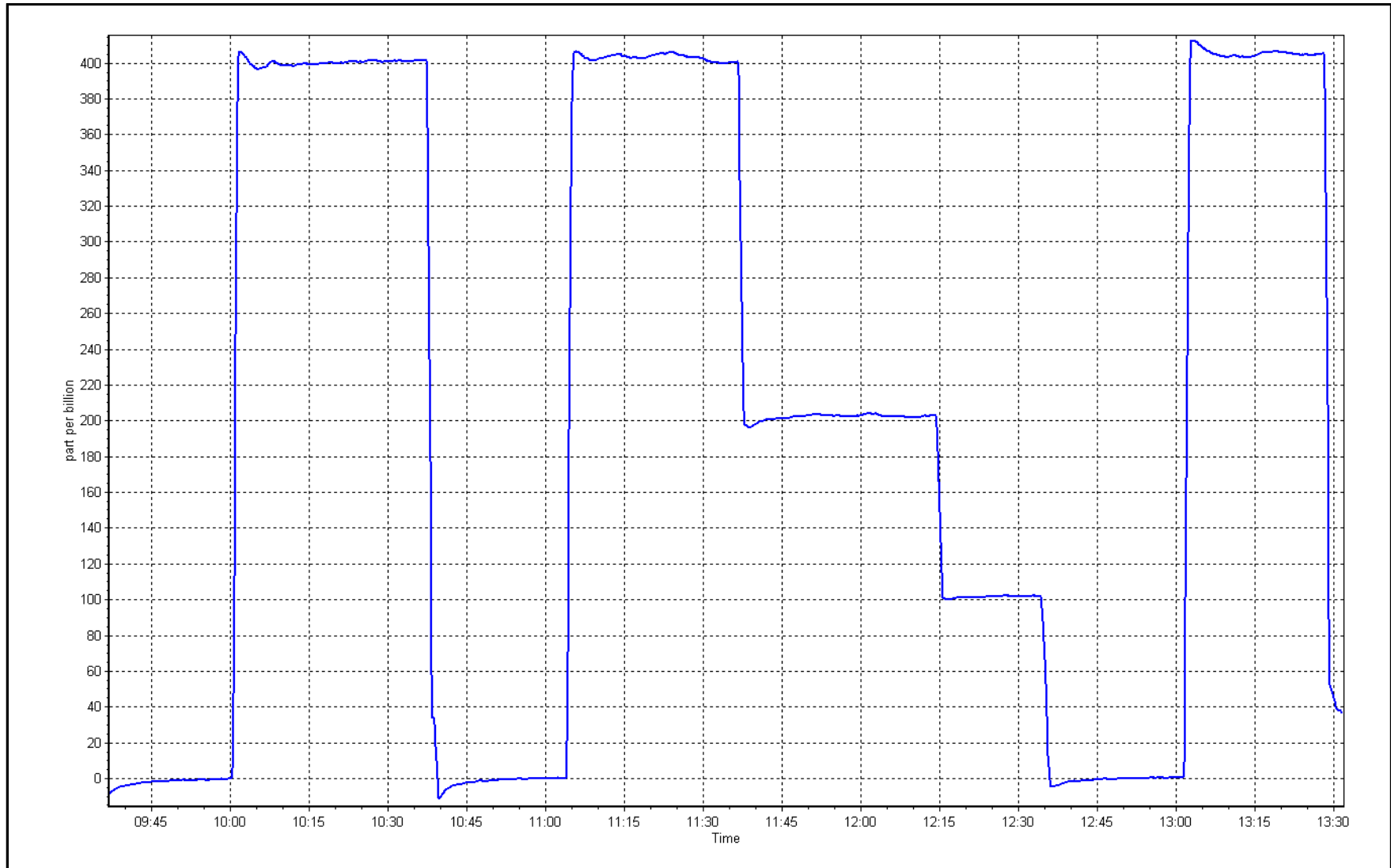
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999970	≥ 0.995
400.0	401.5	0.9963	Slope	1.002600	$0.90 - 1.10$
200.0	202.7	0.9867	Intercept	1.120000	± 5
100.0	101.9	0.9814			



O₃ Calibration Plot

Date: September 19, 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: September 19, 2025 Last Cal Date: August 15, 2025
Start time (MST): 11:58 End time (MST): 13:35

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 (°C)	22.7	21.7	22.7	☐	+/- 2 °C
P (mmHg)	736.5	735.8	736.5	☐	+/- 10 mmHg
Flow (LPM)	5.06	4.95	5.06	☐	+/- 0.25 LPM
PW% (pump)	31	----	31	☐	>80%
Zero Verification	PM w/o HEPA: 4.1		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				☐	+/- 0.5

Date Optical Chamber Cleaned: August 15, 2025
Date Disposable Filter Changed: August 15, 2025

Post- maintenance Zero Verification: PM w/ HEPA: <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.

Calibration by: Aswin Sasi Kumar



Wood Buffalo Environmental Association

CO Calibration Report

Station Information

Station Name: Athabasca Valley Station number: AMS 07
Calibration Date: September 5, 2025 Last Cal Date: August 15, 2025
Start time (MST): 10:45 End time (MST): 14:03
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	0.996385	0.995870	Backgd or Offset:	5.731
Calibration intercept:	0.173966	0.227985	Coeff or Slope:	1.074

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.1	----
As found High point	4932	67.8	40.0	40.0	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	39.95	Prev response:	40.07	*% 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	

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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4932	67.8	40.0	40.0	1.001
Mid point	4966	33.9	20.0	20.3	0.985
Low point	4983	16.9	10.0	10.3	0.972
As left zero	5000	0.0	0.0	0.1	----
As left span	4932	67.8	40.0	40.0	1.002

Average Correction Factor 0.986

Notes: No adjustments made.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

CO Calibration Summary

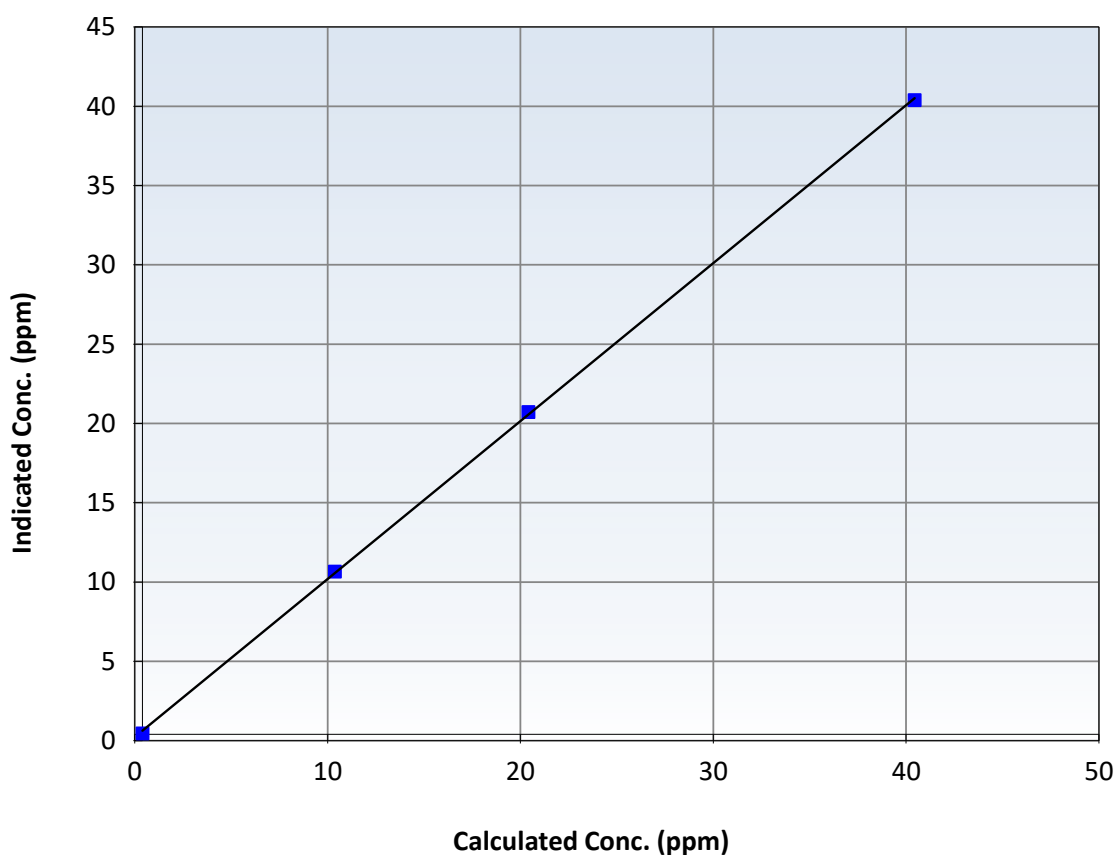
Station Information

Calibration Date:	September 5, 2025	Previous Calibration:	August 15, 2025
Station Name:	Athabasca Valley	Station Number:	AMS 07
Start Time (MST):	10:45	End Time (MST):	14:03
Analyzer make:	Thermo 48i-TLE	Analyzer serial #:	1408761381

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999916	≥ 0.995
40.0	40.0	1.0011	Slope	0.995870	$0.90 - 1.10$
20.0	20.3	0.9848	Intercept	0.227985	± 1.5
10.0	10.3	0.9719			

CO Calibration Curve



CO Calibration Plot

Date: September 5, 2025

Location: Athabasca Valley





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS08 FORT CHIPEWYAN SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Fort Chipewyan Station number: AMS 08
Calibration Date: September 16, 2025 Last Cal Date: August 11, 2025
Start time (MST): 11:42 End time (MST): 14:19
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.000432	1.003816	Backgd or Offset:	1.9	1.9
Calibration intercept:	0.215512	-0.145224	Coeff or Slope:	1.029	1.029

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4920	80.3	800.4	802.3	0.998
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	802.3	Previous response	800.9	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4920	80.3	800.4	803.0	0.997
Mid point	4960	40.2	400.7	403.4	0.993
Low point	4980	20.1	200.4	199.5	1.004
As left zero	5000	0.0	0.0	0.2	----
As left span	4920	80.3	800.4	802.4	0.997
Average Correction Factor:					0.998

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

Calibration Performed By: Matthew Courtoreille



Wood Buffalo Environmental Association

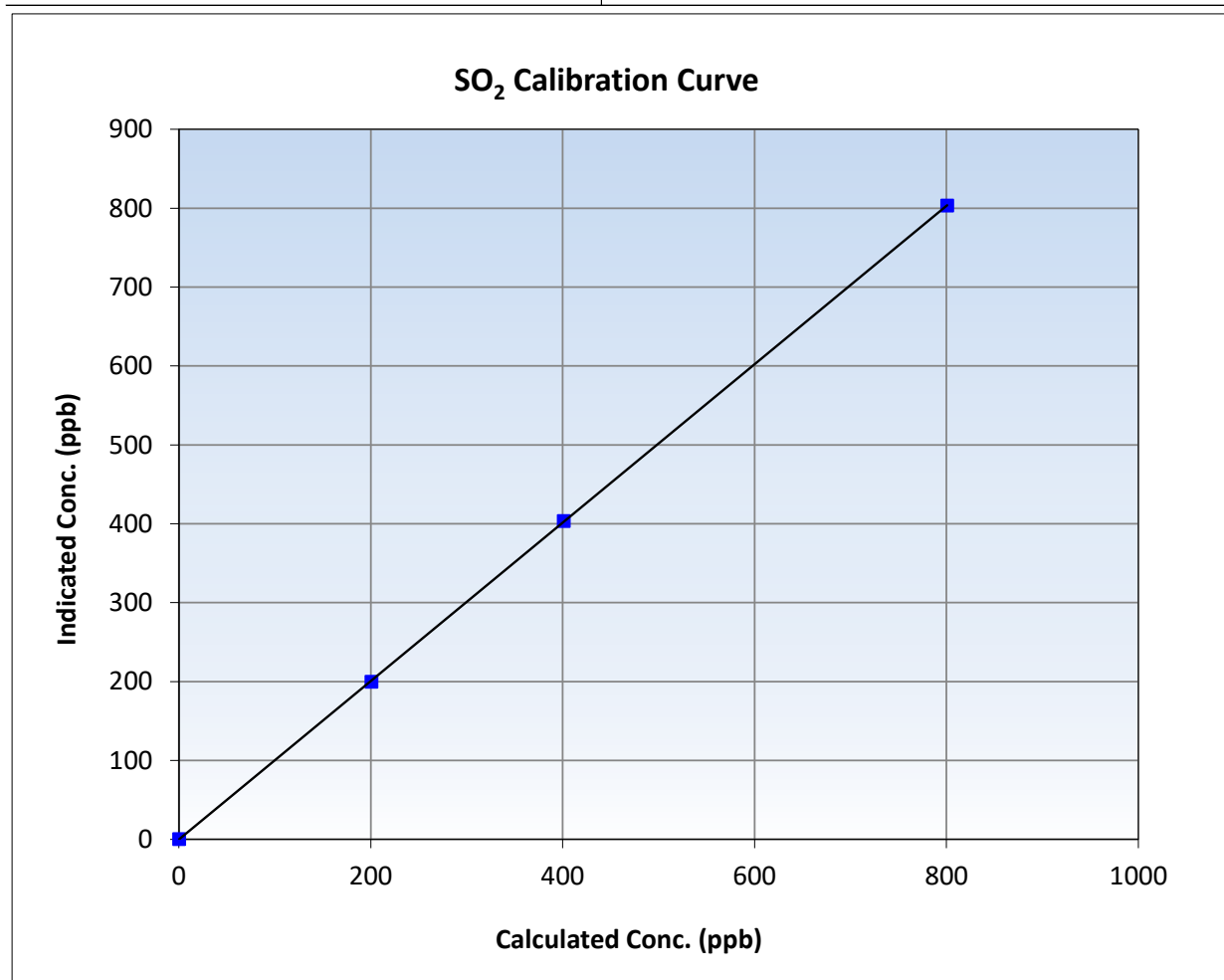
SO₂ Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 11, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	11:42	End Time (MST):	14:19
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1236656116

Calibration Data

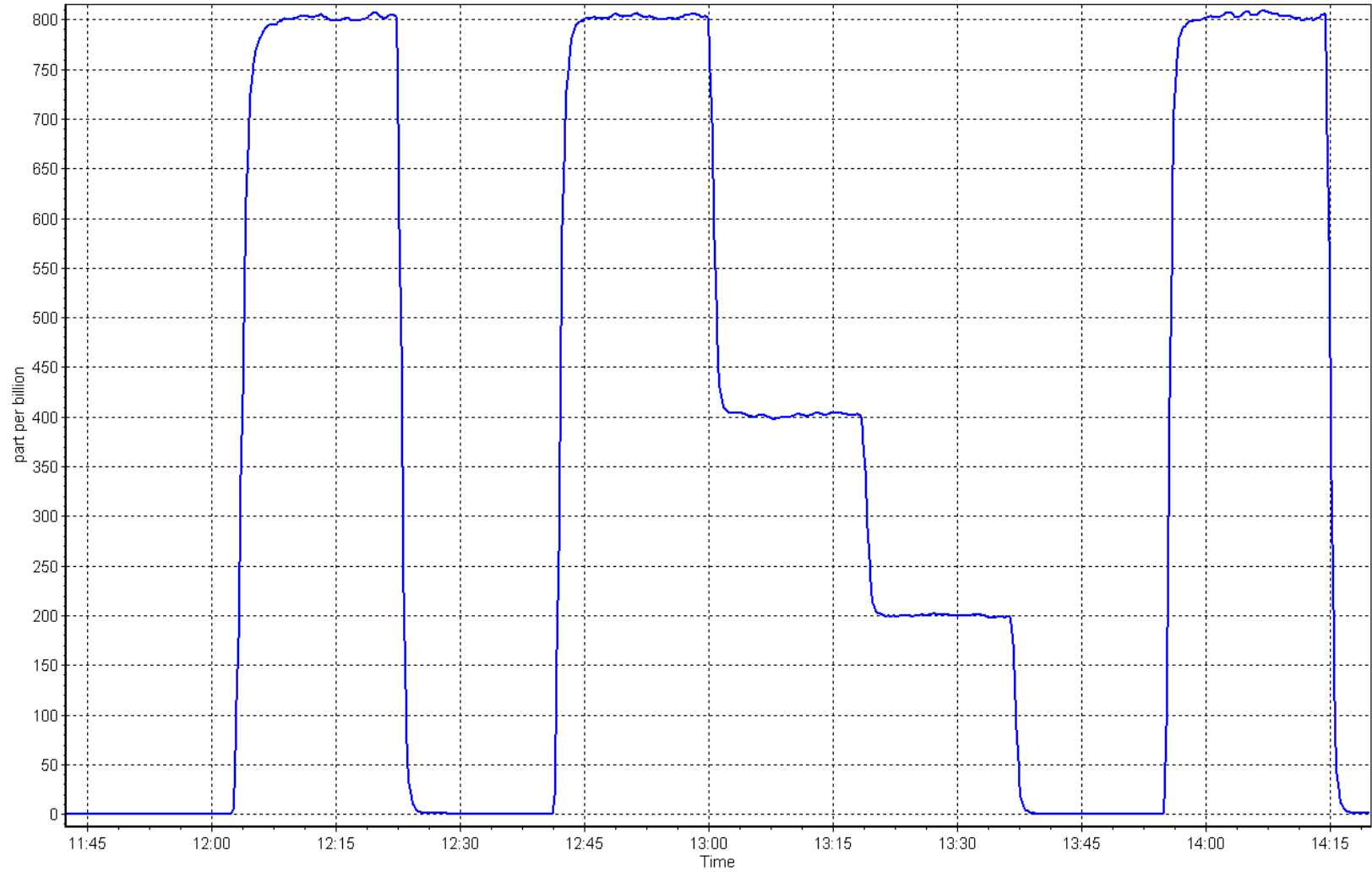
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999988	≥0.995
800.4	803.0	0.9967	Slope	1.003816	0.90 - 1.10
400.7	403.4	0.9933	Intercept	-0.145224	+/-30
200.4	199.5	1.0043			



SO2 Calibration Plot

Date: September 16, 2025

Location: Fort Chipewyan





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Fort Chipewyan Station number: AMS 08
Calibration Date: September 15, 2025 Last Cal Date: August 13, 2025
Start time (MST): 10:17 End time (MST): 3:36 PM
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.004105	1.001244	Backgd or Offset:	2.8	2.8
Calibration intercept:	0.061852	0.061962	Coeff or Slope:	1.144	1.158

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4917	82.6	80.0	79.5	1.006
As found Mid point	4959	41.3	40.0	39.8	1.004
As found Low point	4979	20.7	20.0	19.5	1.028
New cylinder response					
Baseline Corr As found:	79.5	Prev response:	80.35	*% change:	-1.1%
Baseline Corr 2nd AF pt:	39.8	AF Slope:	0.996095	AF Intercept:	-0.157858
Baseline Corr 3rd AF pt:	19.5	AF Correlation:	0.999961	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4917	82.6	80.0	80.1	0.998
Mid point	4959	41.3	40.0	40.2	0.994
Low point	4979	20.7	20.0	20.0	1.002
As left zero	5000	0.0	0.0	0.3	----
As left span	4917	82.6	80.0	78.6	1.017
SO2 Scrubber Check	4920	80.3	803.0	0.1	----
Date of last scrubber change:	May 15, 2025		Ave Corr Factor		0.998
Date of last converter efficiency test:					

Notes: Changed filter after as founds. As founds was low might of failed but waited 45 min on span.
Scrubber check went ok. Adjusted span high point.

Calibration Performed By: Matthew Courtoreille



Wood Buffalo Environmental Association

TRS Calibration Summary

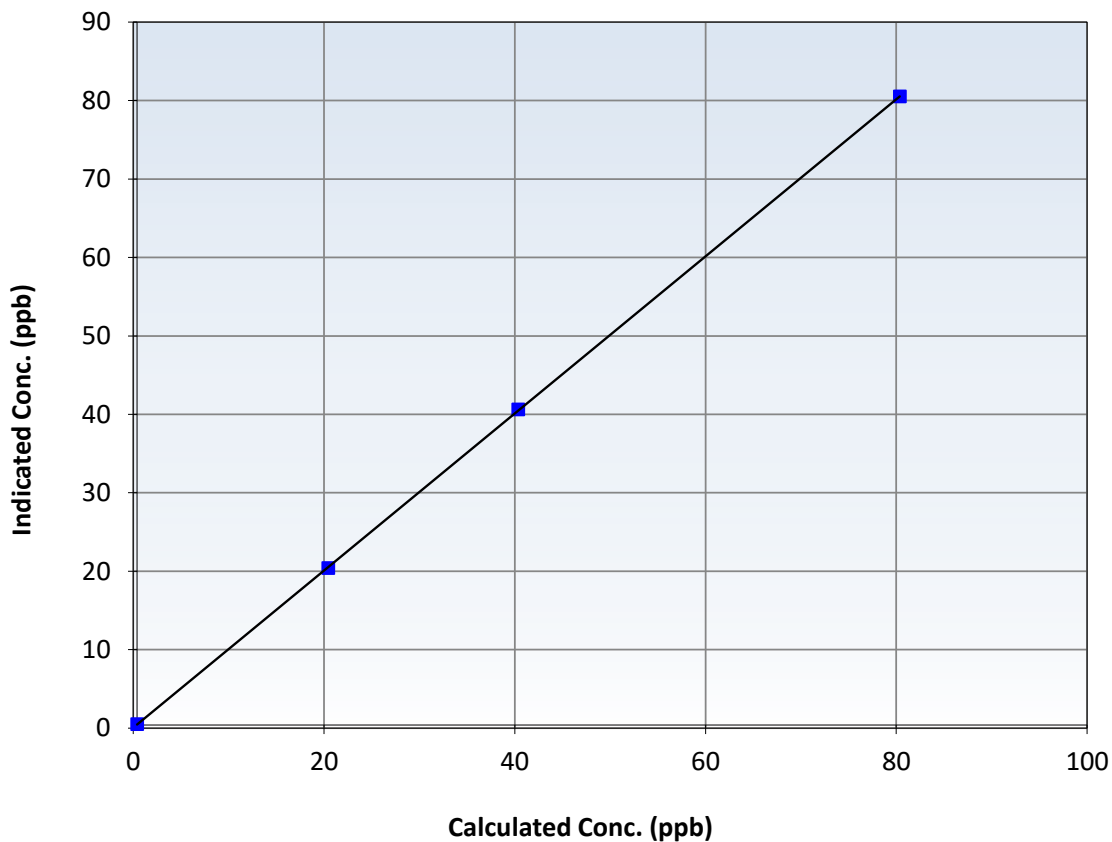
Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 13, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	10:17	End Time (MST):	15:36
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1218153461

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999991		≥ 0.995
80.0	80.1	0.9983	Slope	1.001244		$0.90 - 1.10$
40.0	40.2	0.9944	Intercept	0.061962		± 3
20.0	20.0	1.0019				

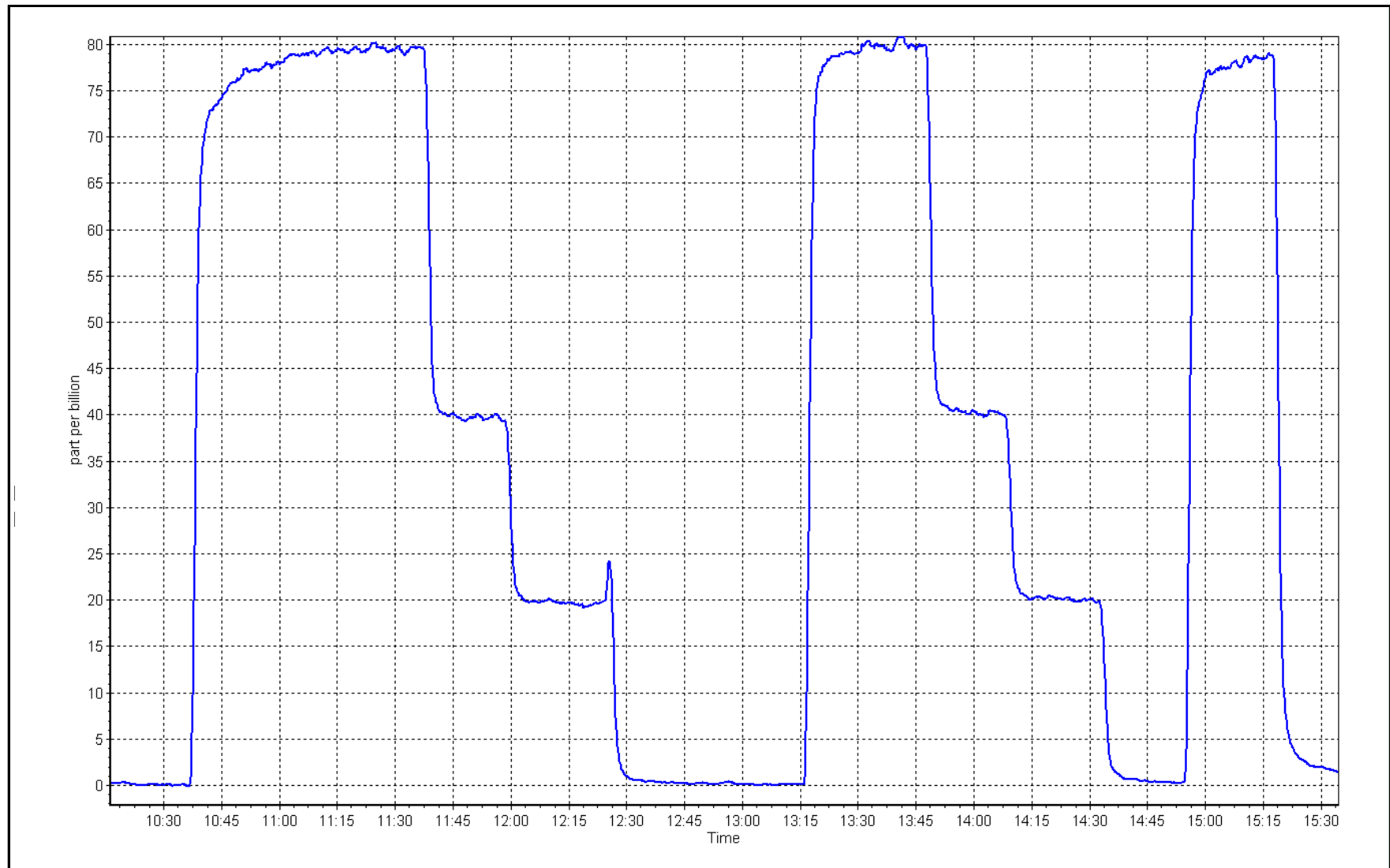
TRS Calibration Curve



TRS Calibration Plot

Date: September 15, 2025

Location: Fort Chipewyan





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Fort Chipewyan
Station number: AMS 08
Calibration Date: September 17, 2025
Last Cal Date: August 12, 2025
Start time (MST): 8:01
End time (MST): 15:04
Reason: Routine

Calibration Standards

NO Gas Cylinder #: CC358100
NOX Cal Gas Conc: 60.10 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 60.10 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701H
Cal Gas Expiry Date: January 5, 2032
NO Cal Gas Conc: 60.00 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 60.00 ppm
NO gas Diff:
Serial Number: 3810
Serial Number: 197

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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.9	-0.2	-0.7	----	----
AF High point	4933	66.7	801.8	800.4	1.3	816.5	812.0	4.5	0.9809	0.9855
AF Mid point										
AF Low point										
New cyl resp										

Previous Response NO_x = 803.2 ppb NO = 797.9 ppb
Baseline Corr 1st pt NO_x = 817.4 ppb NO = 812.2 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 = 1.7%

*Percent Change NO = 1.8%

As Found Statistics

As found NO_x r²:
As found NO r²:
As found NO₂ r²:
Nx SI:
NO SI:
NO₂ SI:
Nx Int:
NO Int:
NO₂ 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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 12124313137

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.002628	1.003197
NO _x Cal Offset:	-0.686176	-0.885527
NO Cal Slope:	0.998516	1.000955
NO Cal Offset:	-1.386384	-1.065293
NO ₂ Cal Slope:	1.007867	1.008496
NO ₂ Cal Offset:	0.616971	0.885220

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.758	0.743	NO bkgnd or offset:	0.8	0.8
NOX coeff or slope:	0.998	0.998	NOX bkgnd or offset:	1.6	1.7
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	149.3	149.3

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	-0.8	-0.1	-0.7	----	----
High point	4933	66.7	801.8	800.4	1.3	803.5	800.5	2.8	0.9979	0.9999
Mid point	4967	33.3	400.2	399.6	0.7	400.6	398.8	1.9	0.9991	1.0019
Low point	4983	16.7	200.7	200.4	0.3	200.4	198.3	2.1	1.0017	1.0106
As left zero	5000	0.0	0.0	0.0	0.0	-0.8	-0.1	-0.7	----	----
As left span	4933	66.7	801.8	388.4	413.4	800.4	388.4	412.0	1.0017	1.0000
Average Correction Factor									0.9995	1.0042

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	-0.7	----	----
High GPT point	798.5	385.4	414.4	417.9	0.9917	100.8%
Mid GPT point	798.5	595.1	204.7	208.6	0.9815	101.9%
Low GPT point	798.5	694.3	105.5	108.6	0.9718	102.9%
Average Correction Factor					0.9816	101.9%

Notes: Performed span adjustment; used second GPT reference point to account for drift.

Calibration Performed By: Matthew Courtoreille



Wood Buffalo Environmental Association

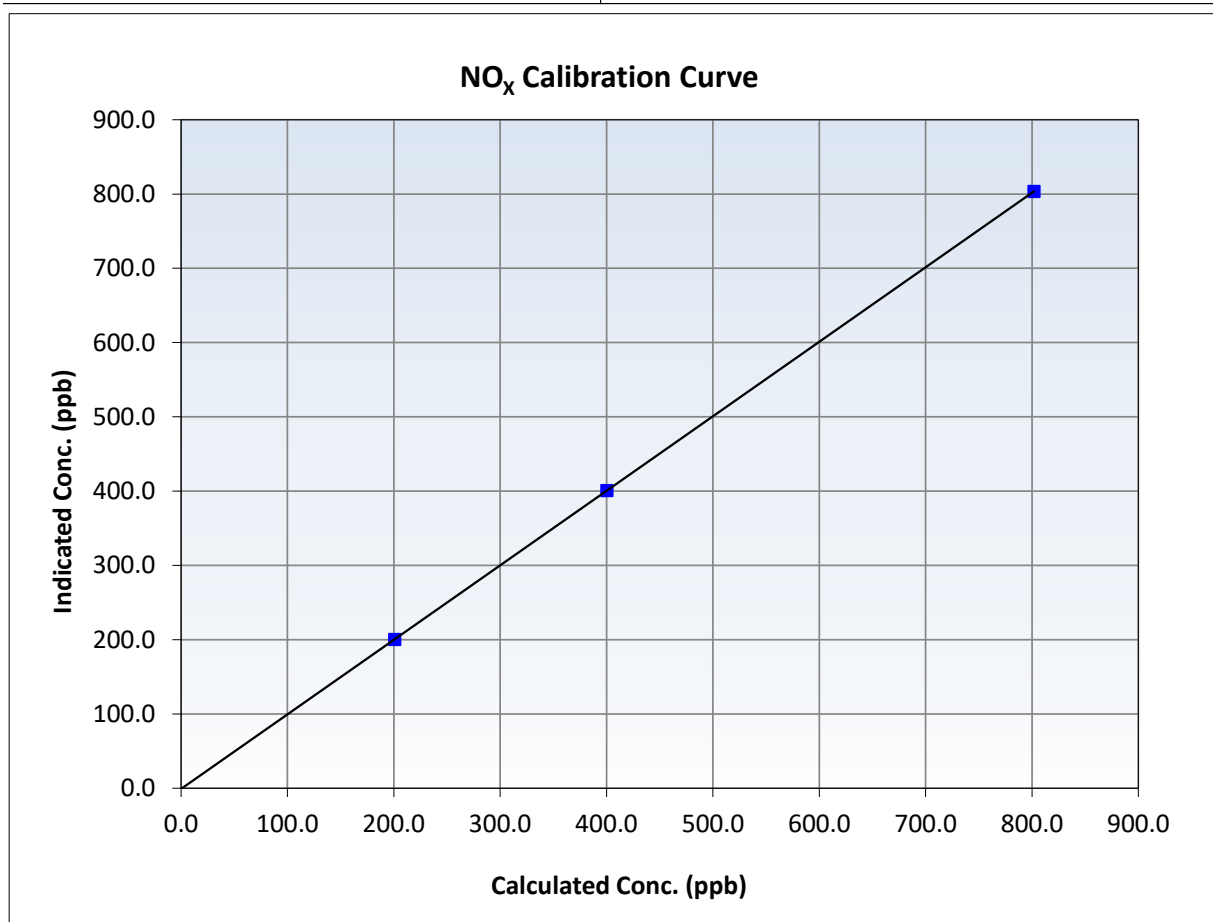
NO_x Calibration Summary

Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 12, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	8:01	End Time (MST):	15:04
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12124313137

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.8	----	Correlation Coefficient	1.000000	≥0.995
801.8	803.5	0.9979	Slope	1.003197	0.90 - 1.10
400.2	400.6	0.9991	Intercept	-0.885527	+/-20
200.7	200.4	1.0017			





Wood Buffalo Environmental Association

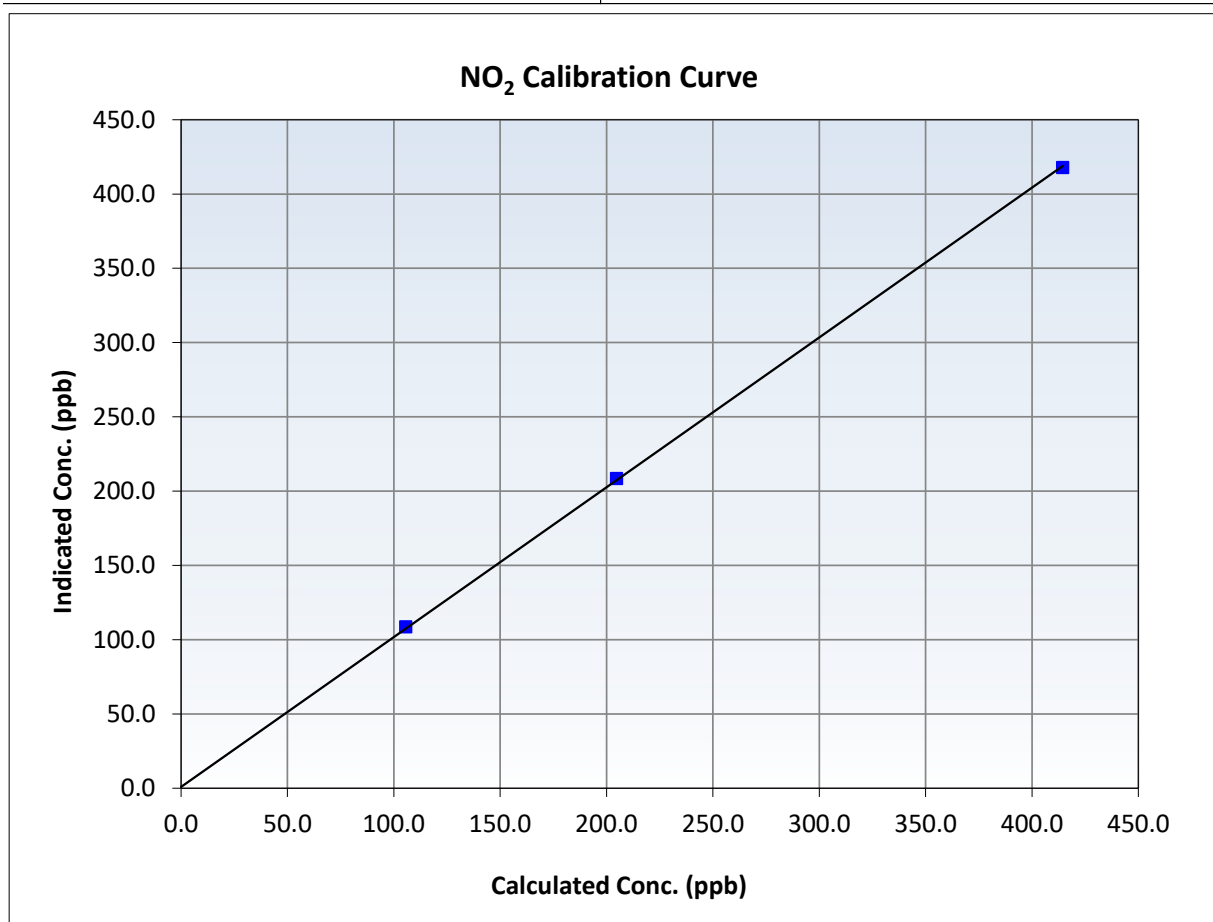
NO₂ Calibration Summary

Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 12, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	8:01	End Time (MST):	15:04
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12124313137

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.7	----	Correlation Coefficient	0.999931	≥0.995
414.4	417.9	0.9917	Slope	1.008496	0.90 - 1.10
204.7	208.6	0.9815	Intercept	0.885220	+/-20
105.5	108.6	0.9718			





Wood Buffalo Environmental Association

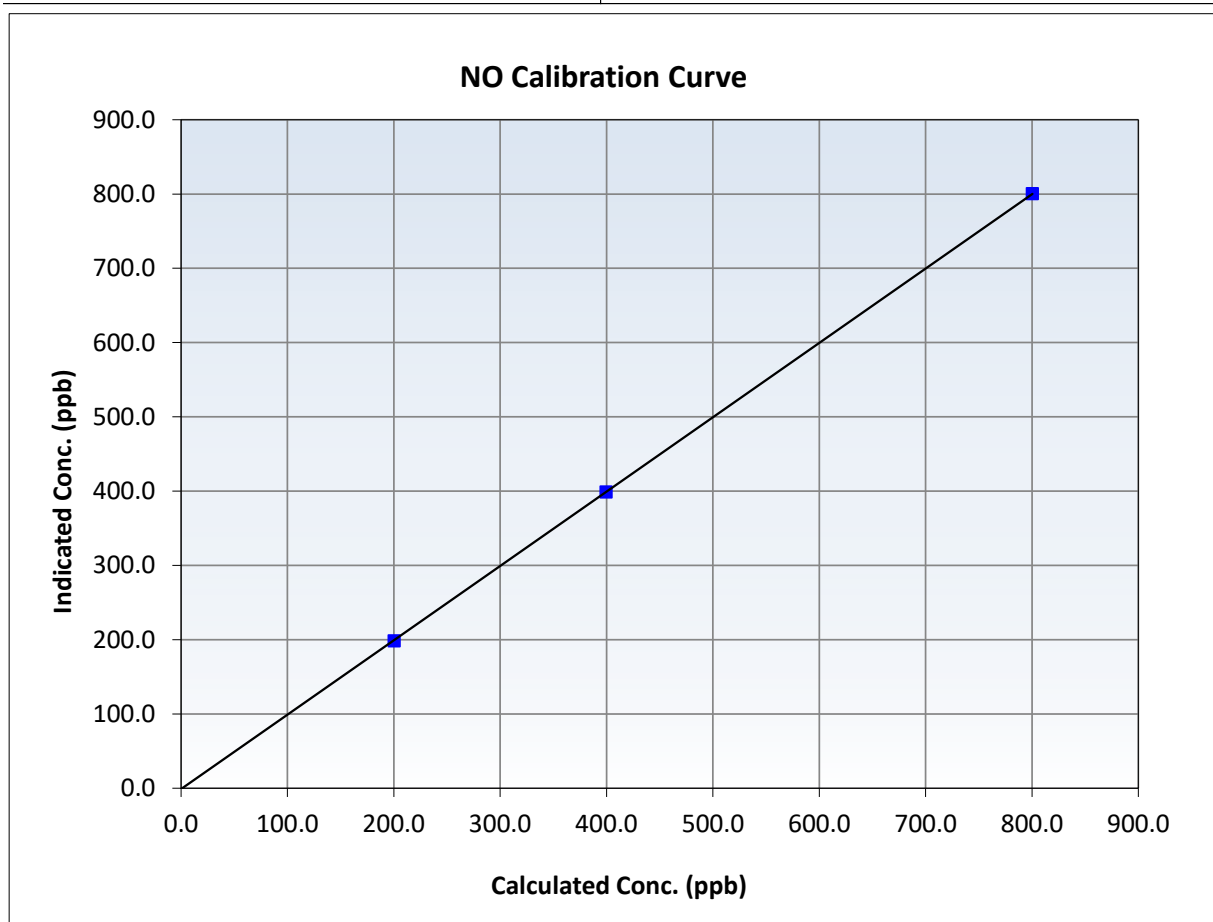
NO Calibration Summary

Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 12, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	8:01	End Time (MST):	15:04
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12124313137

Calibration Data

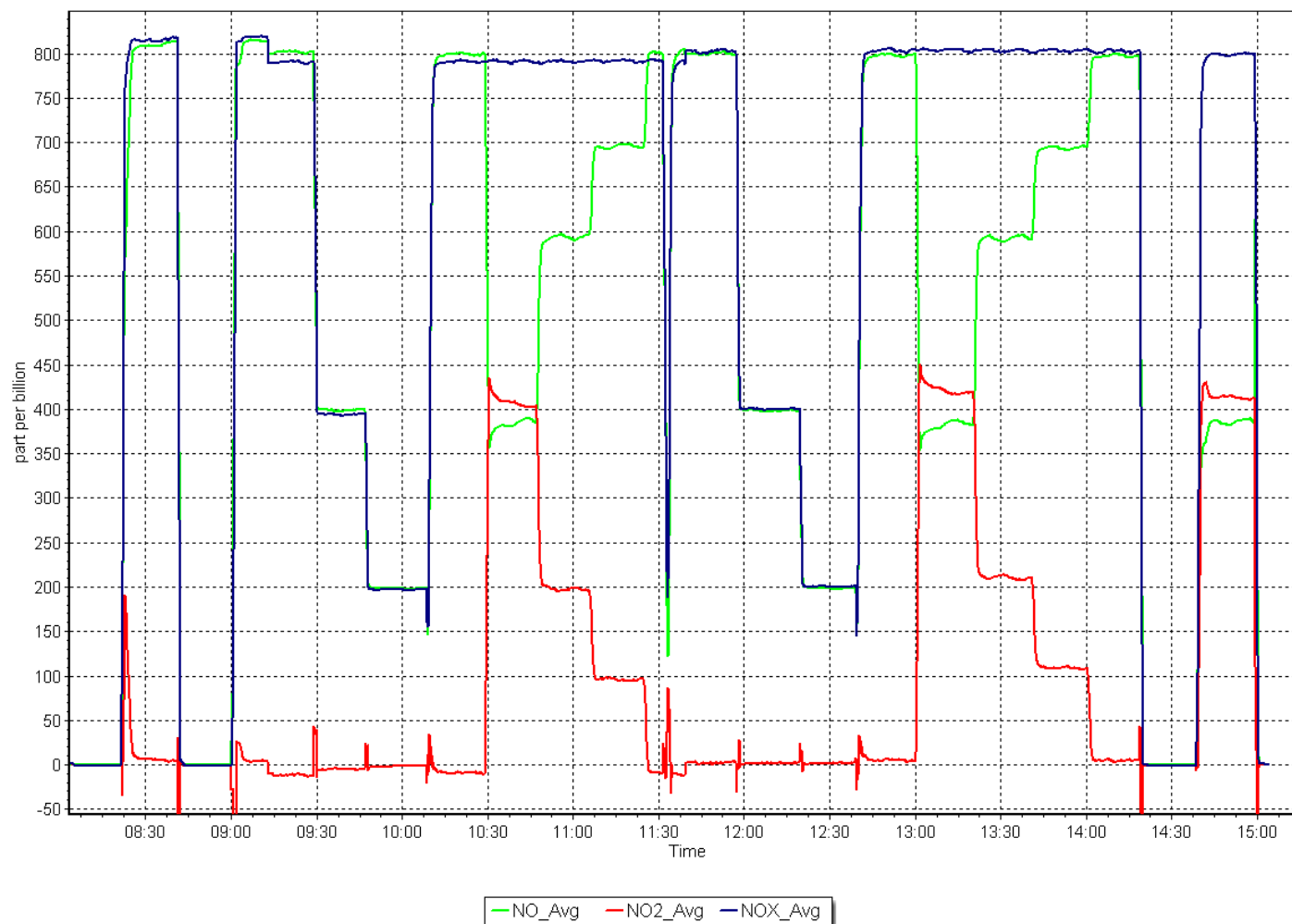
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999993	≥ 0.995
800.4	800.5	0.9999	Slope	1.000955	$0.90 - 1.10$
399.6	398.8	1.0019	Intercept	-1.065293	± 20
200.4	198.3	1.0106			



NO_x Calibration Plot

Date: September 17, 2025

Location: Fort Chipewyan





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Fort Chipewyan
Calibration Date: September 16, 2025
Start time (MST): 8:38
Reason: Routine

Station number: AMS 08
Last Cal Date: August 5, 2025
End time (MST): 11:35

Calibration Standards

O₃ generation mode: Photometer
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701

Serial Number: 3810
Serial Number: 135

Analyzer Information

Analyzer make: Thermo 49i
Analyzer Range: 0 - 500 ppb

Analyzer serial #: 1152220026

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.013743	0.997800	Backgd or Offset:	-0.3	-2.6
Calibration intercept:	-0.280000	1.060000	Coeff or Slope:	1.029	0.995

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-2.2	----
As found High point	5000	968.7	400.0	411.3	0.967
As found Mid point					
As found Low point					
Baseline Corr As found:	413.5	Previous response	405.2	*% change	2.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O₃ 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- AFzero)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	1.3	----
High point	5000	968.7	400.0	400.2	1.000
Mid point	5000	820.5	200.0	200.8	0.996
Low point	5000	720.0	100.0	100.4	0.996
As left zero	5000	0.0	0.0	0.6	----
As left span	5000	968.7	400.0	401.5	0.996
Average Correction Factor					0.997

Notes: Changed Filter after as founds. Adjustments made to Zero and then span high point.

Calibration Performed By: Matthew Courtoreille



Wood Buffalo Environmental Association

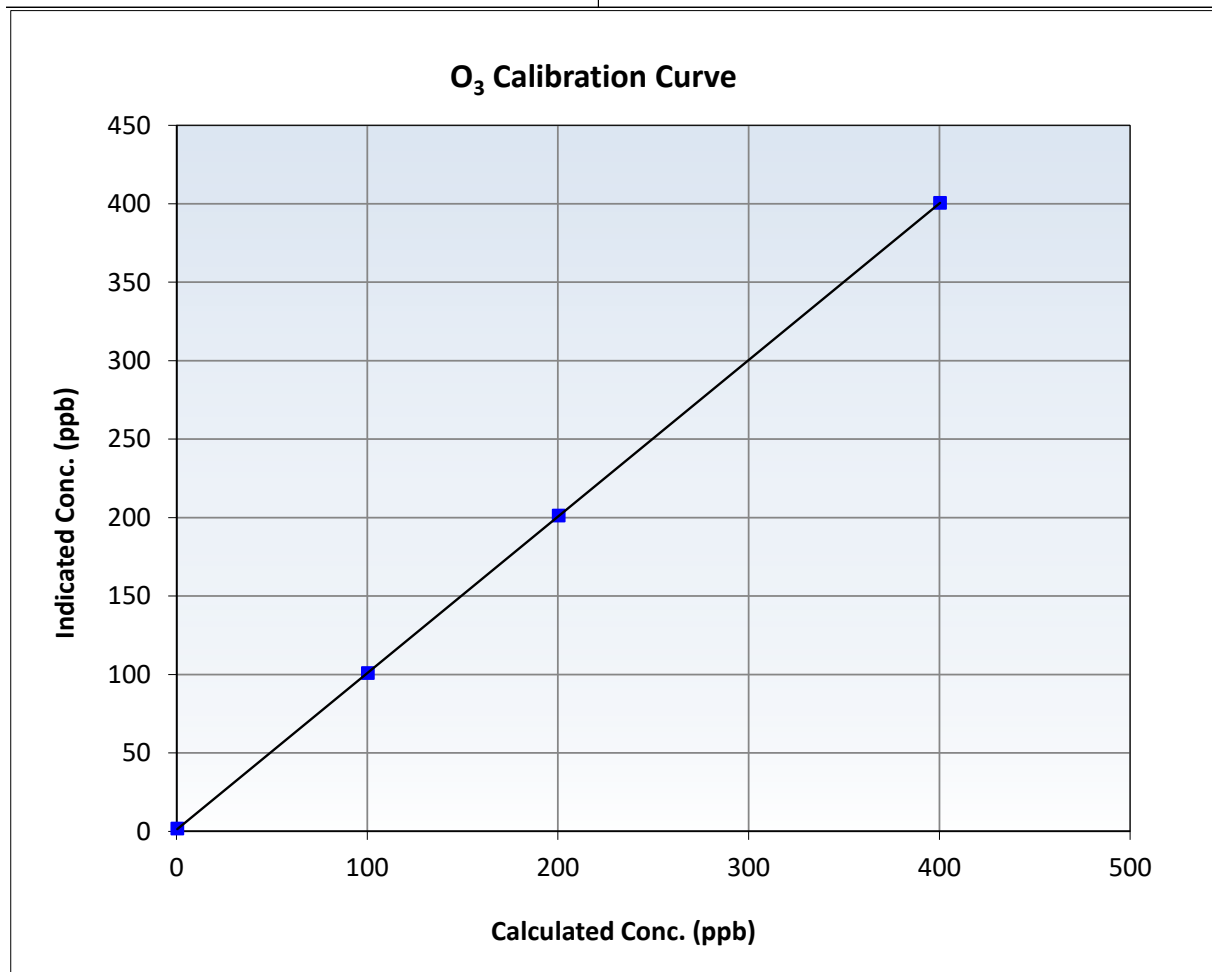
O₃ Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 5, 2025
Station Name:	Fort Chipewyan	Station Number:	AMS 08
Start Time (MST):	8:38	End Time (MST):	11:35
Analyzer make:	Thermo 49i	Analyzer serial #:	1152220026

Calibration Data

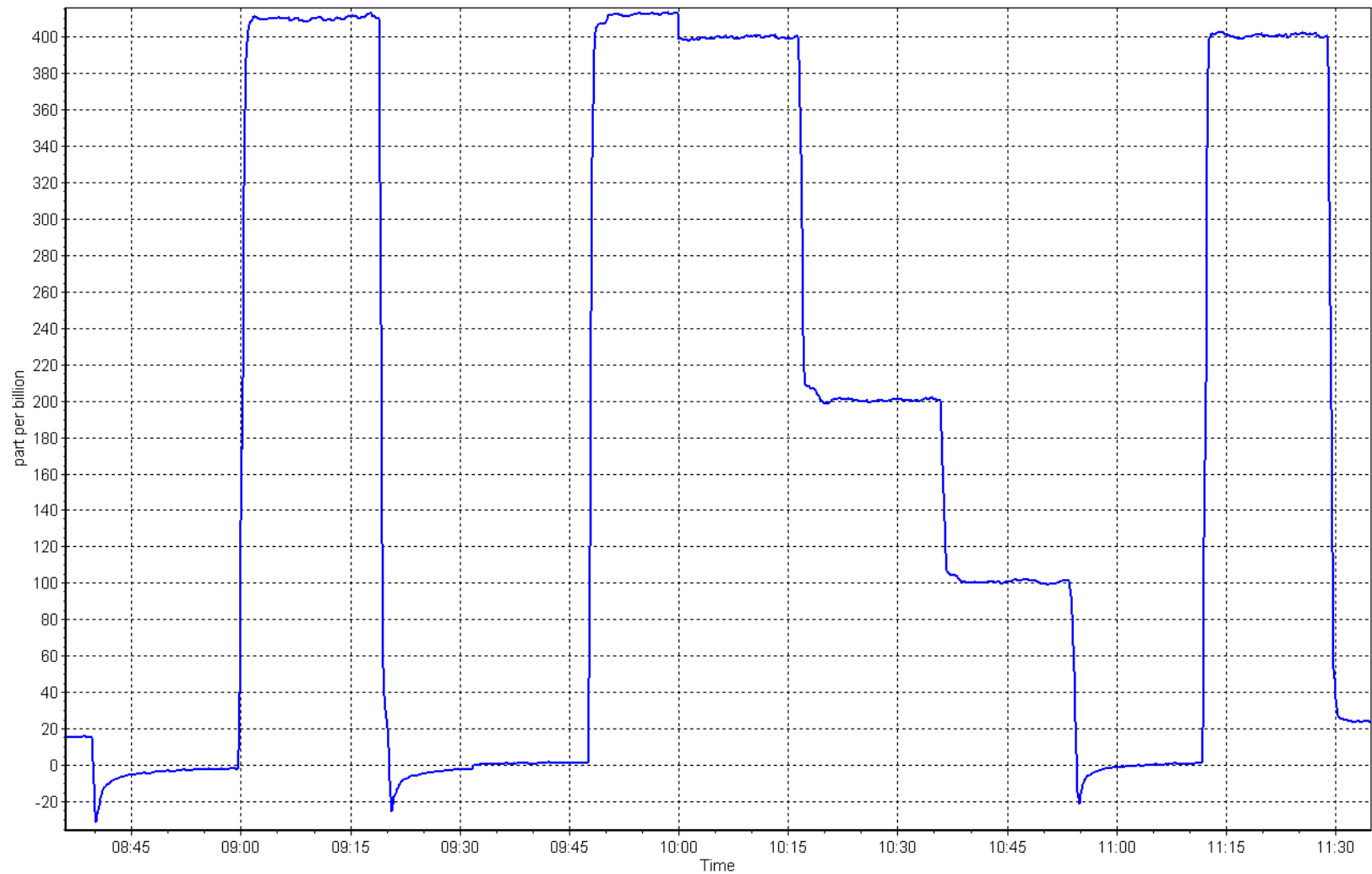
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	1.3	----	Correlation Coefficient	0.999997	≥0.995
400.0	400.2	0.9995	Slope	0.997800	0.90 - 1.10
200.0	200.8	0.9960	Intercept	1.060000	+/- 5
100.0	100.4	0.9960			



O₃ Calibration Plot

Date: September 16, 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: September 23, 2025 Last Cal Date: August 19, 2025
Start time (MST): 12:43 End time (MST): 13:51

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 (°C)	18.0	18.18	18.0	☐	+/- 2 °C
P (mmHg)	733.3	735.96	733.3	☐	+/- 10 mmHg
Flow (LPM)	4.96	4.98	4.96	☐	+/- 0.25 LPM
PW% (pump)	30%		30%	☐	>80%
Zero Verification	PM w/o HEPA: 0.70		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: 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: August 19, 2025
Date Disposable Filter Changed: August 19, 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:

calibration went well. No adjustments made.

Calibration by: Matthew Courtoreille



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS09 BARGE LANDING SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Barge Landing Station number: AMS 09
Calibration Date: September 15, 2025 Last Cal Date: August 8, 2025
Start time (MST): 9:16 End time (MST): 12:09
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.999070	1.000887	Backgd or Offset:	11.1	11.1
Calibration intercept:	-0.237815	0.001592	Coeff or Slope:	0.979	0.985

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.1	----
As found High point	4921	79.1	799.8	791.8	1.010
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	791.7	Previous response	798.9	*% change	-0.9%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4921	79.1	799.8	800.7	0.999
Mid point	4961	39.5	399.4	399.6	0.999
Low point	4980	19.8	200.2	200.1	1.001
As left zero	5000	0.0	0.0	0.3	----
As left span	4921	79.1	799.8	800.7	0.999
Average Correction Factor:					1.000

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

Calibration Performed By: Sean Bala



Wood Buffalo Environmental Association

SO₂ Calibration Summary

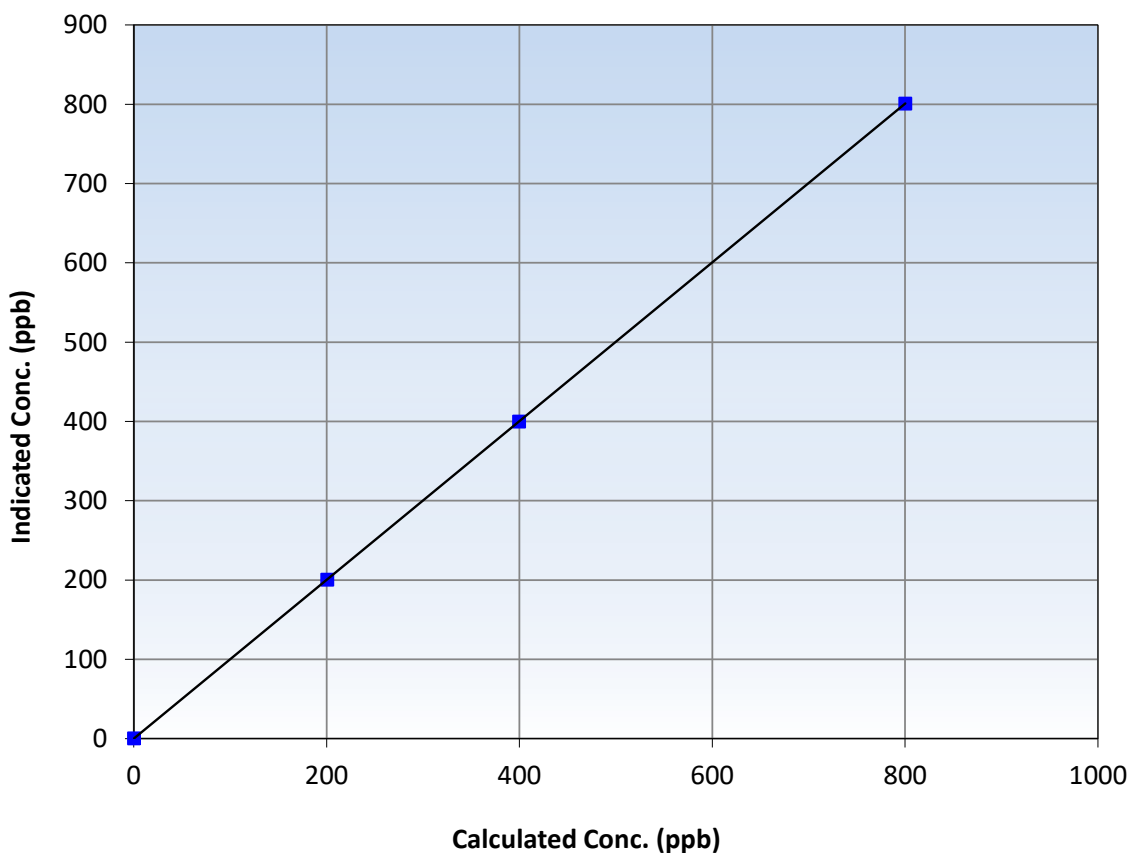
Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 8, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:16	End Time (MST):	12:09
Analyzer make:	Thermo 43i	Analyzer serial #:	1118148498

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999999	≥0.995
799.8	800.7	0.9989	Slope	1.000887	0.90 - 1.10
399.4	399.6	0.9995	Intercept	0.001592	+/-30
200.2	200.1	1.0006			

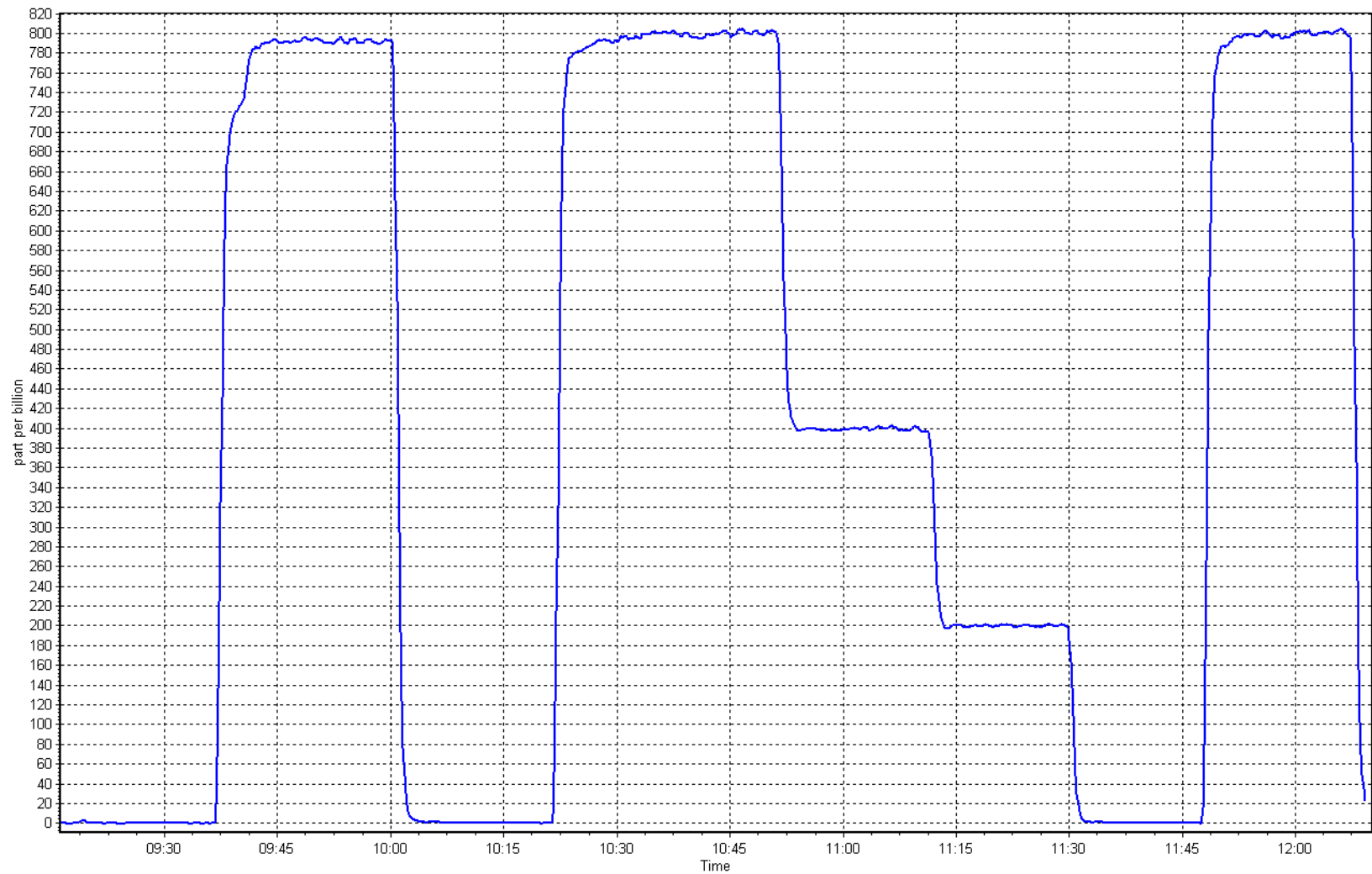
SO₂ Calibration Curve



SO2 Calibration Plot

Date: September 15, 2025

Location: Barge Landing





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Barge Landing
Calibration Date: September 3, 2025
Start time (MST): 8:58
Reason: Routine

Station number: AMS 09
Last Cal Date: August 6, 2025
End time (MST): 13:42

Calibration Standards

Cal Gas Concentration: 5.17 ppm
Cal Gas Cylinder #: CC511415
Removed Cal Gas Conc: 5.17 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: API T700
ZAG Make/Model: API T701

Cal Gas Exp Date: August 22, 2026
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 3812
Serial Number: 5613

Analyzer Information

Analyzer make: Thermo 43iQ-TLE
Converter make: CDN-101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1203169744
Converter serial #: 519
Converter Temp: 830 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.003262	0.998261	Backgd or Offset:	1.880	2.070
Calibration intercept:	-0.020546	-0.220501	Coeff or Slope:	0.724	0.798

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4923	77.4	80.0	74.2	1.076
As found Mid point	4961	38.7	40.0	36.3	1.097
As found Low point	4981	19.3	20.0	18.1	1.091
New cylinder response					
Baseline Corr As found:	74.4	Prev response:	80.28	*% change:	-7.9%
Baseline Corr 2nd AF pt:	36.5	AF Slope:	0.929601	AF Intercept:	-0.441944
Baseline Corr 3rd AF pt:	18.3	AF Correlation:	0.999890	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4923	77.4	80.0	79.9	1.002
Mid point	4961	38.7	40.0	39.2	1.021
Low point	4981	19.3	20.0	19.9	1.003
As left zero	5000	0.0	0.0	0.4	----
As left span	4923	77.4	80.0	78.2	1.024
SO2 Scrubber Check	4920	80.2	802.0	0.0	----
Date of last scrubber change:	8-Jul-25		Ave Corr Factor		1.009
Date of last converter efficiency test:					

Notes: Changed inlet filter after as founds. Scrubber check passed and done after calibrator zero. Adjusted span only.

Calibration Performed By: Sean Bala



Wood Buffalo Environmental Association

TRS Calibration Summary

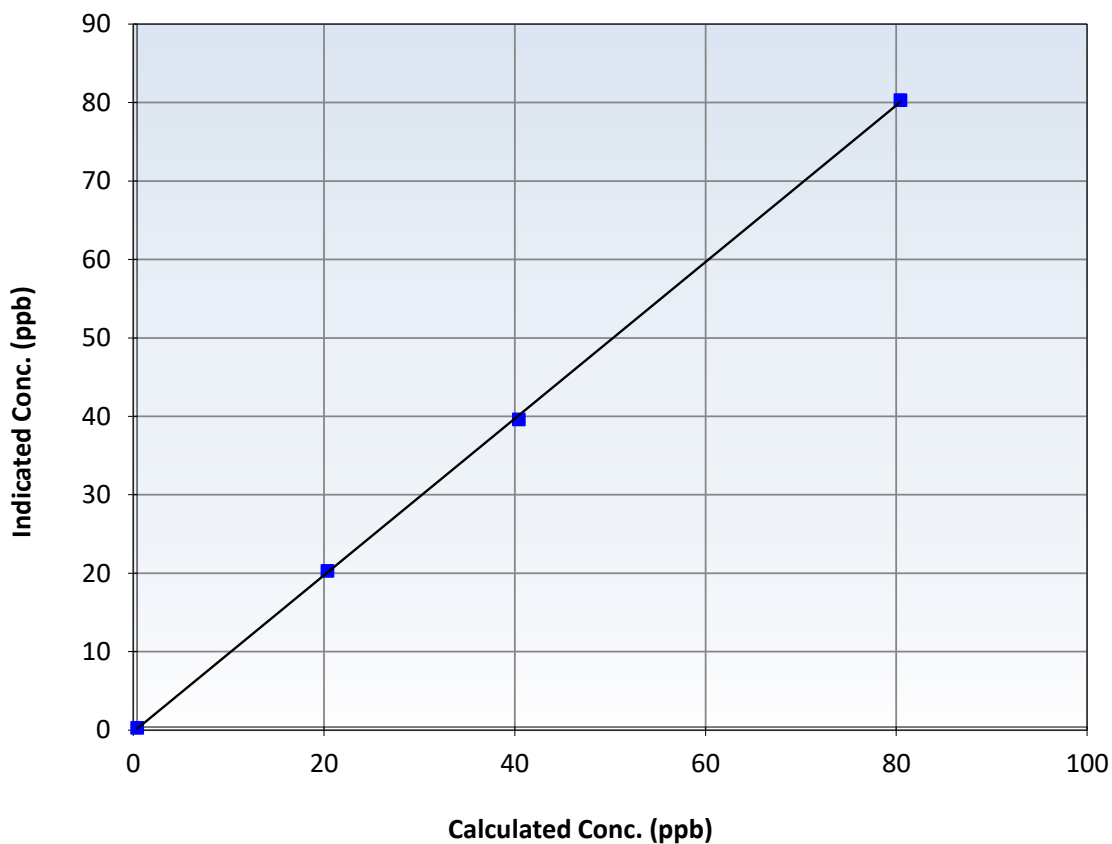
Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 6, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	8:58	End Time (MST):	13:42
Analyzer make:	Thermo 43iQ-TLE	Analyzer serial #:	1203169744

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999889	≥ 0.995
80.0	79.9	1.0018	Slope	0.998261	$0.90 - 1.10$
40.0	39.2	1.0211	Intercept	-0.220501	± 3
20.0	19.9	1.0030			

TRS Calibration Curve







Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name:	Barge Landing	Station number:	AMS 09
Calibration Date:	September 15, 2025	Last Cal Date:	August 8, 2025
Start time (MST):	9:16	End time (MST):	12:09
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC705748	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	505.6 ppm	CH ₄ Equiv Conc.	1068.8 ppm
C ₃ H ₈ Cal Gas Conc.	204.8 ppm		
Removed Gas Cert:	CC151285	Removed Gas Expiry:	January 5, 2025
Removed CH ₄ Conc.	505.6 ppm	CH ₄ Equiv Conc.	1068.8 ppm
Removed C ₃ H ₈ 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/CH ₄ Range:	0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.21E-04	2.24E-04	NMHC SP Ratio:	4.86E+05
CH ₄ Retention time:	14.4	14.4	NMHC Peak Area:	183313
Zero Chromatogram:	OFF	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	16.91	16.33	1.035
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.33	Prev response	16.88	*% change	-3.3%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	16.91	16.94	0.998
Mid point	4961	39.5	8.44	8.42	1.003
Low point	4980	19.8	4.23	4.17	1.016
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	16.91	16.98	0.996
Average Correction Factor					1.006

Notes:

Adjusted span only.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4921	79.1	8.91	8.44	1.056
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.44	Prev response	8.88	*% change	-5.3%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4921	79.1	8.91	8.94	0.996
Mid point	4961	39.5	4.45	4.46	0.998
Low point	4980	19.8	2.23	2.20	1.013
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	8.91	8.98	0.992
Average Correction Factor					1.002

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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4921	79.1	8.00	7.90	1.013
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.90	Prev response	8.00	*% 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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4921	79.1	8.00	8.00	1.000
Mid point	4961	39.5	3.99	3.96	1.009
Low point	4980	19.8	2.00	1.97	1.019
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	8.00	8.00	1.000
Average Correction Factor					1.009

Calibration Statistics

	Start	Finish
THC Cal Slope:	1.000206	1.002991
THC Cal Offset:	-0.035369	-0.037963
CH ₄ Cal Slope:	1.002474	1.001017
CH ₄ Cal Offset:	-0.022789	-0.022190
NMHC Cal Slope:	0.998183	1.004994
NMHC Cal Offset:	-0.012380	-0.016174

Calibration Performed By: Sean Bala



Wood Buffalo Environmental Association

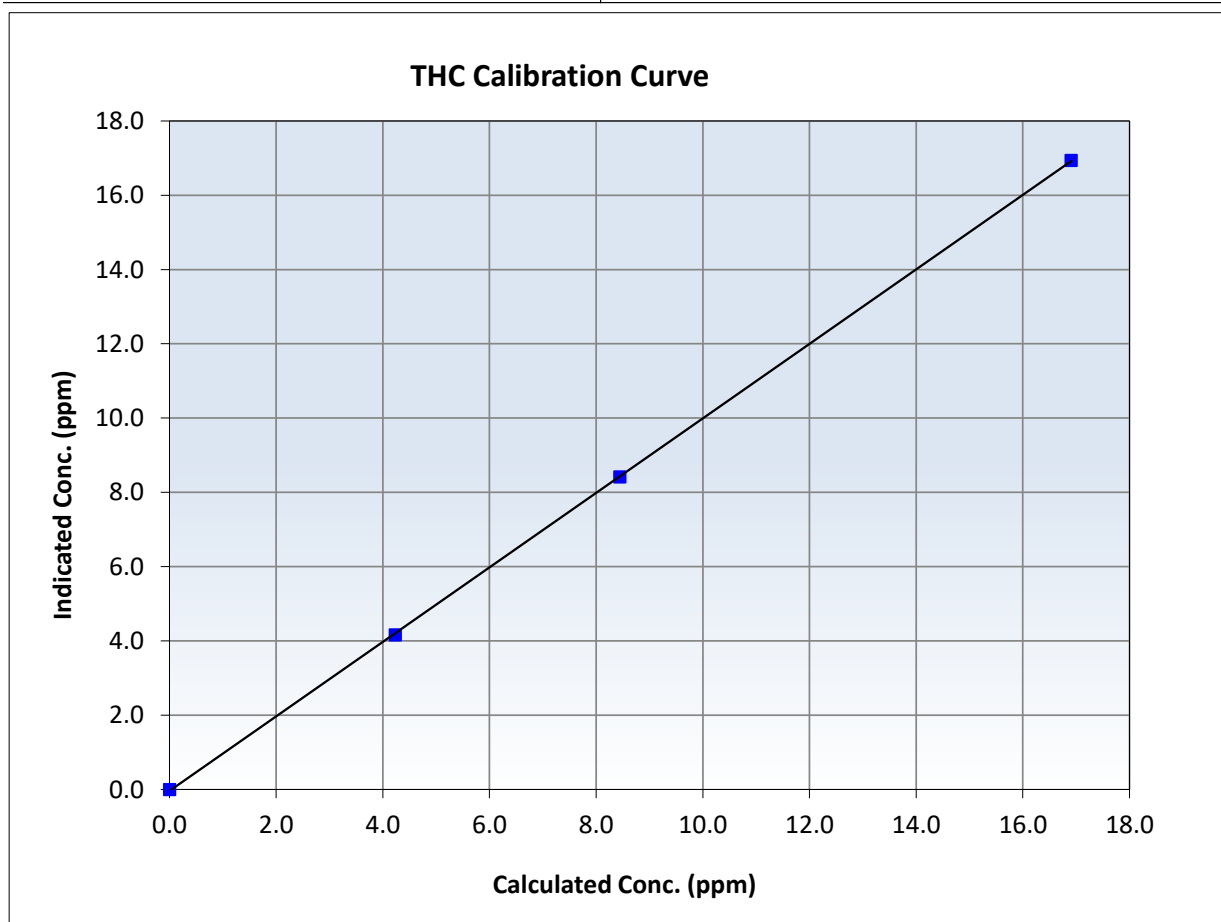
THC Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 8, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:16	End Time (MST):	12:09
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585650

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999977	≥ 0.995
16.91	16.94	0.9982	Slope	1.002991	$0.90 - 1.10$
8.44	8.42	1.0032	Intercept	-0.037963	± 0.5
4.23	4.17	1.0160			





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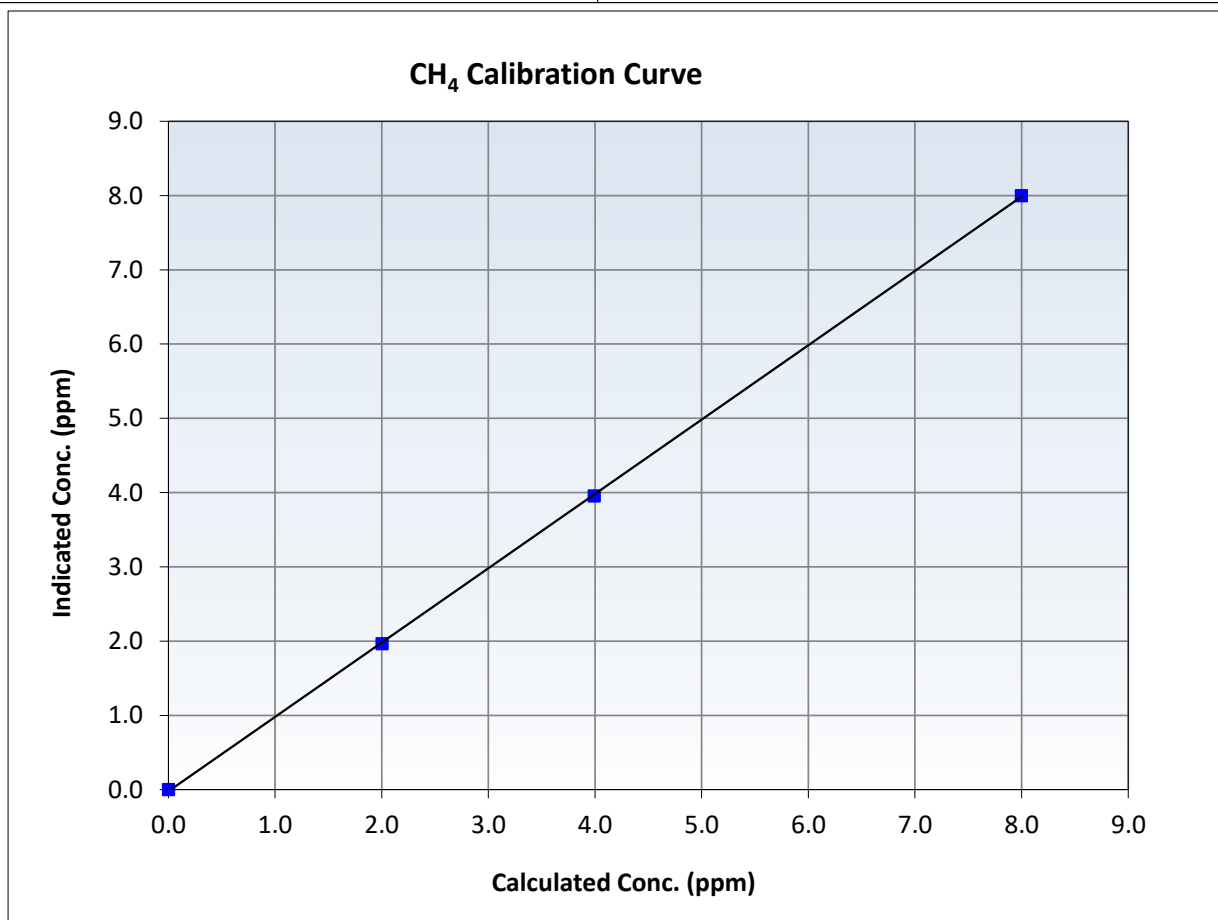
CH₄ Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 8, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:16	End Time (MST):	12:09
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585650

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999962		≥ 0.995
8.00	8.00	1.0001	Slope	1.001017		0.90 - 1.10
3.99	3.96	1.0093	Intercept	-0.022190		± 0.5
2.00	1.97	1.0190				





Wood Buffalo Environmental Association

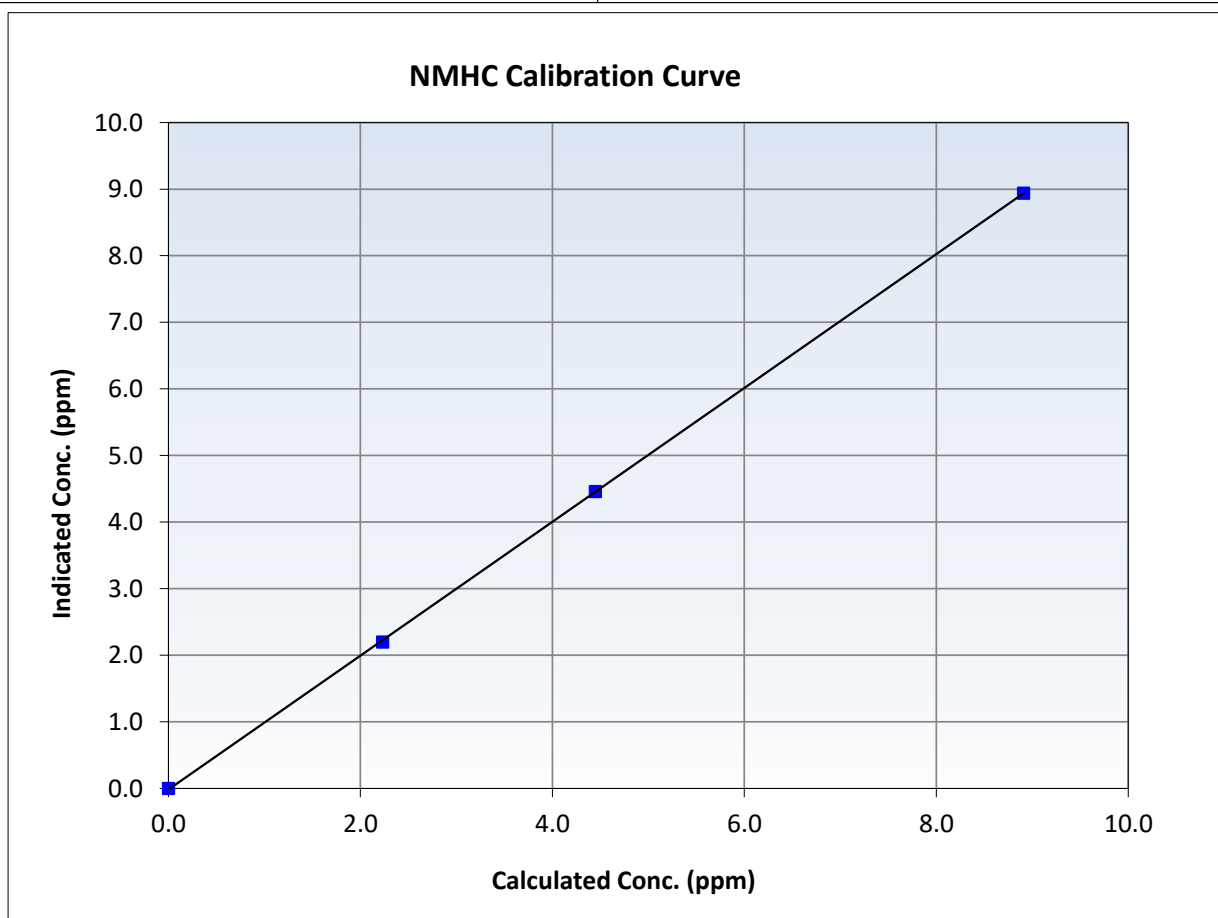
NMHC Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 8, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	9:16	End Time (MST):	12:09
Analyzer make:	Thermo 55i	Analyzer serial #:	1193585650

Calibration Data

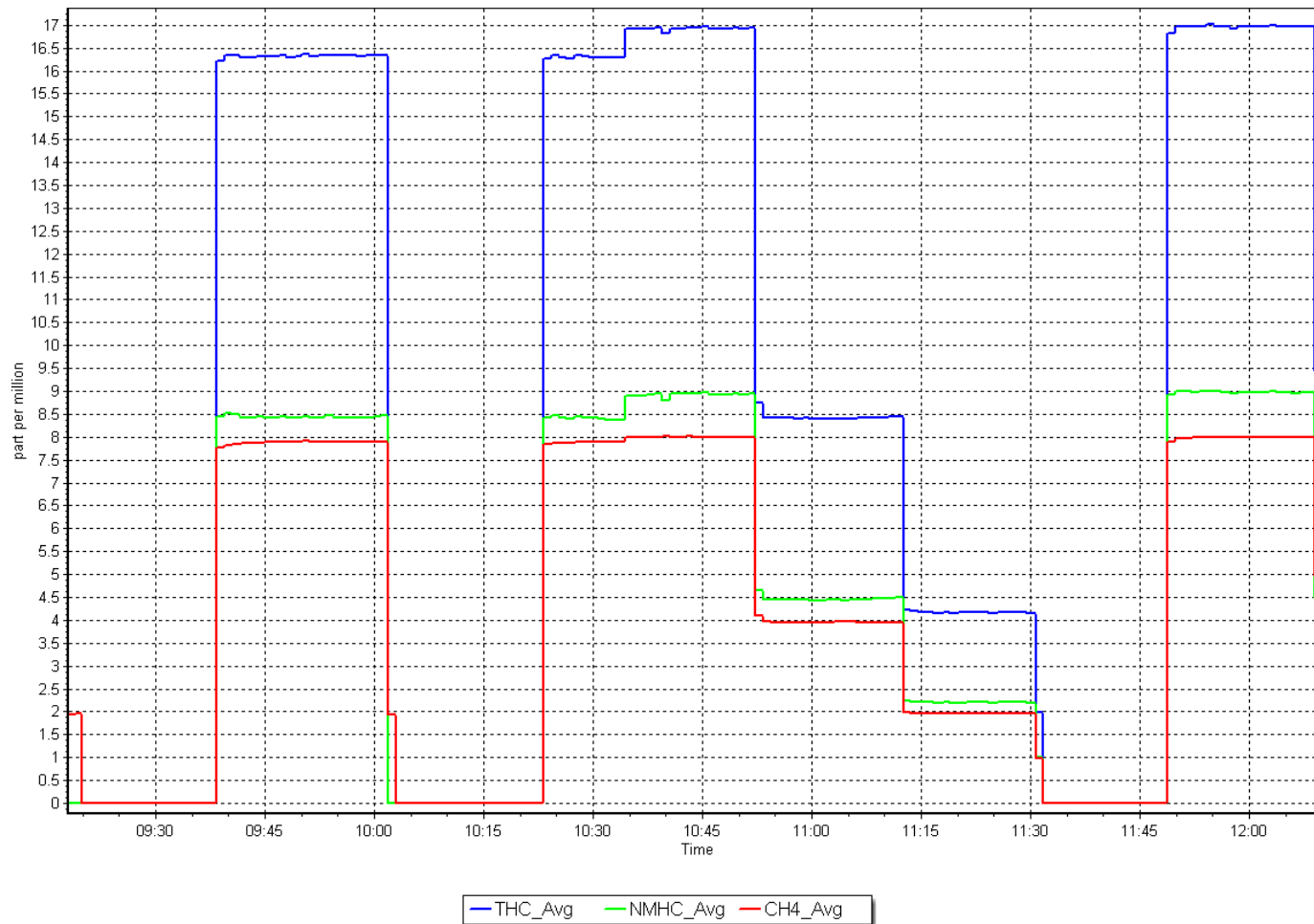
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999980	<i>≥0.995</i>
8.91	8.94	0.9964	Slope	1.004994	<i>0.90 - 1.10</i>
4.45	4.46	0.9977	Intercept	-0.016174	<i>+/-0.5</i>
2.23	2.20	1.0133			



NMHC Calibration Plot

Date: September 15, 2025

Location: Barge Landing





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1426262593

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.001636	1.001255
NO _x Cal Offset:	1.098997	0.758641
NO Cal Slope:	1.002963	1.002550
NO Cal Offset:	-0.303006	-0.383252
NO ₂ Cal Slope:	1.002343	1.000667
NO ₂ Cal Offset:	0.742483	-0.442357

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
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:	175.9	176.2

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.1	0.1	----	----
High point	4915	85.3	808.3	800.7	7.5	809.8	802.7	7.2	0.9981	0.9976
Mid point	4957	42.6	403.7	400.0	3.7	405.0	400.2	4.8	0.9968	0.9994
Low point	4979	21.3	201.8	200.0	1.9	203.7	199.7	4.0	0.9908	1.0013
As left zero	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	----	----
As left span	4915	85.3	808.3	415.4	392.9	810.4	415.4	395.1	0.9974	1.0000
Average Correction Factor									0.9952	0.9994

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.1	----	----
High GPT point	797.9	417.6	387.8	387.9	0.9998	100.0%
Mid GPT point	797.9	614.2	191.2	190.6	1.0032	99.7%
Low GPT point	797.9	706.9	98.5	97.6	1.0093	99.1%
Average Correction Factor					1.0041	99.6%

Notes:

Inlet filter changed after as founds. No adjustment.

Calibration Performed By:

Sean Bala



Wood Buffalo Environmental Association

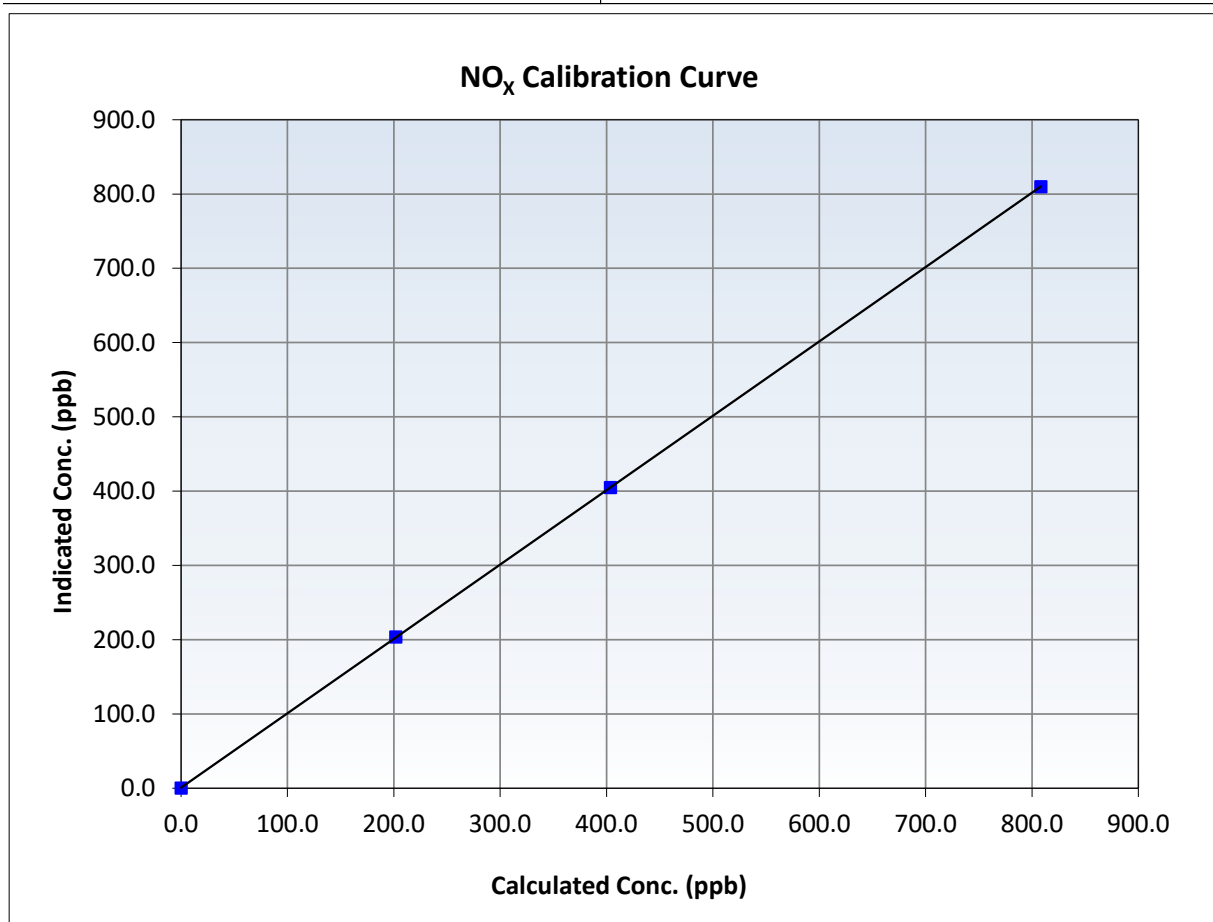
NO_x Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 13, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	8:47	End Time (MST):	13:06
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262593

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999997	≥0.995
808.3	809.8	0.9981	Slope	1.001255	0.90 - 1.10
403.7	405.0	0.9968	Intercept	0.758641	+/-20
201.8	203.7	0.9908			





Wood Buffalo Environmental Association

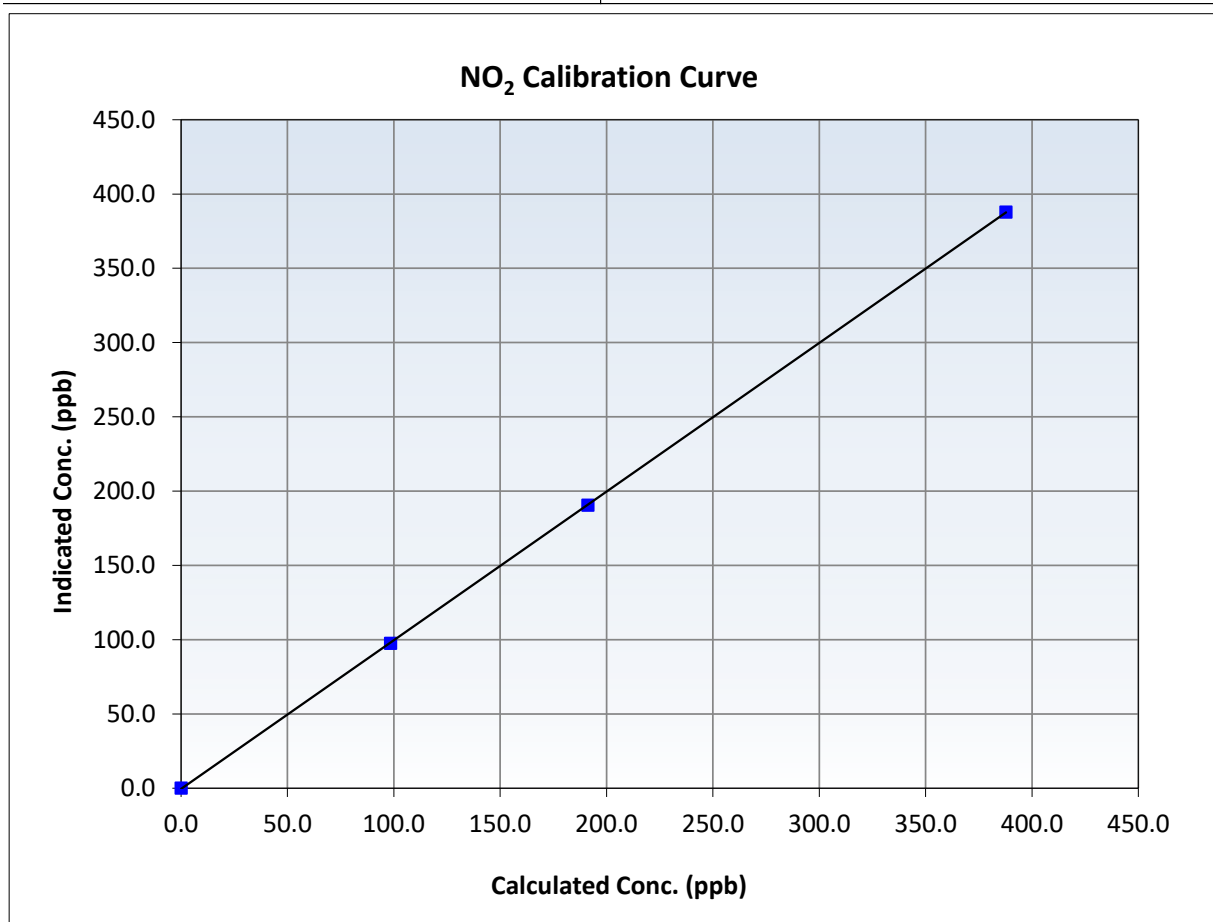
NO₂ Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 13, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	8:47	End Time (MST):	13:06
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262593

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999991	≥ 0.995
387.8	387.9	0.9998	Slope	1.000667	$0.90 - 1.10$
191.2	190.6	1.0032	Intercept	-0.442357	± 20
98.5	97.6	1.0093			





Wood Buffalo Environmental Association

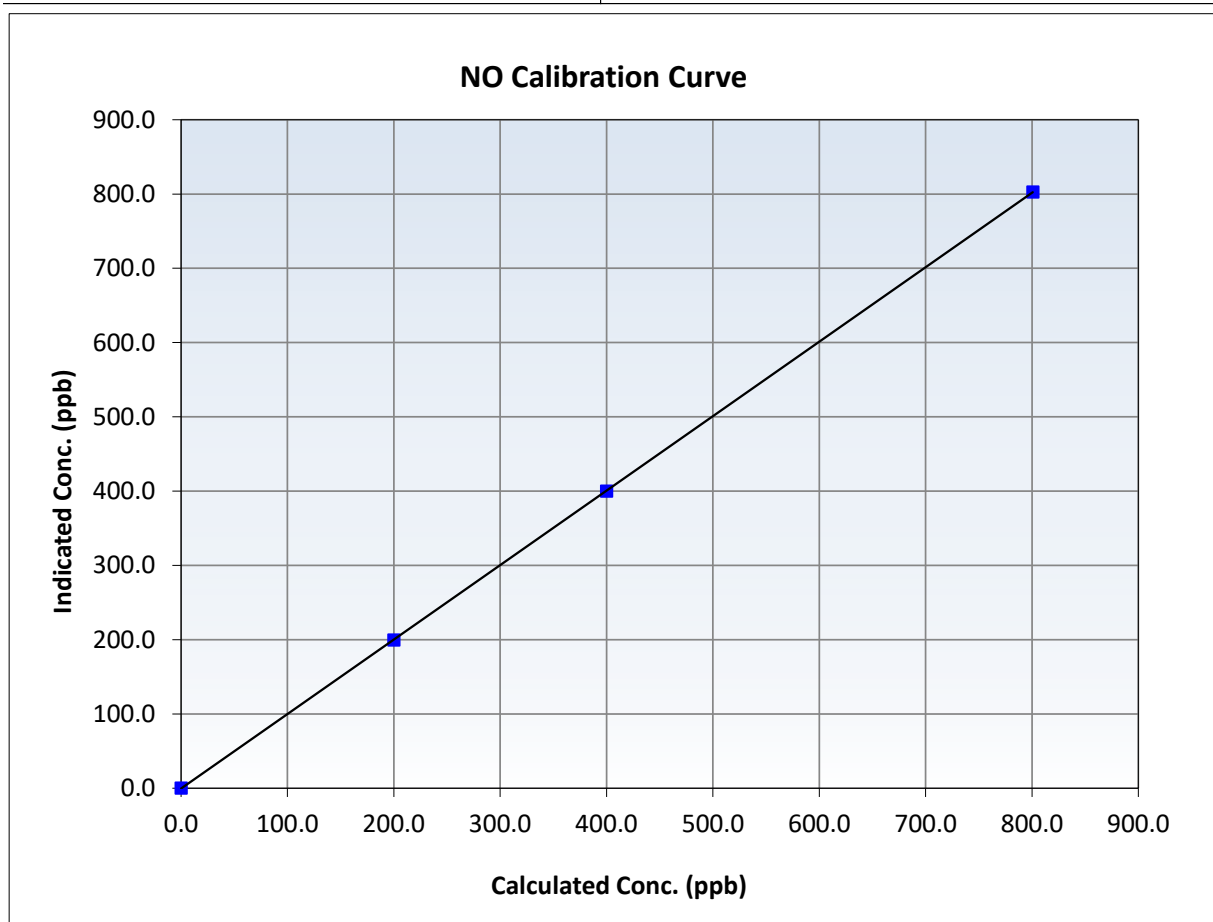
NO Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 13, 2025
Station Name:	Barge Landing	Station Number:	AMS 09
Start Time (MST):	8:47	End Time (MST):	13:06
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262593

Calibration Data

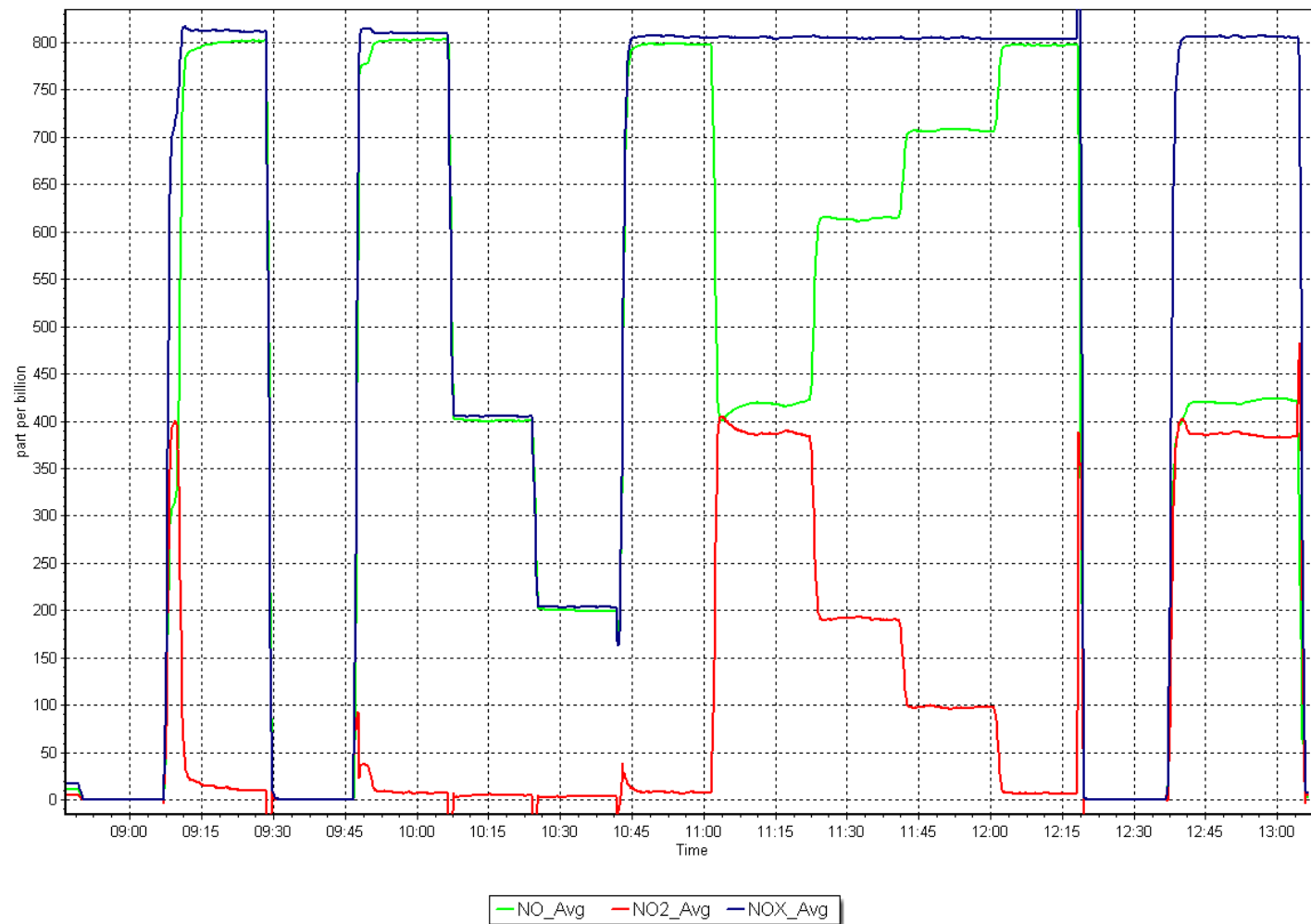
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999998	≥ 0.995
800.7	802.7	0.9976	Slope	1.002550	$0.90 - 1.10$
400.0	400.2	0.9994	Intercept	-0.383252	± 20
200.0	199.7	1.0013			



NO_x Calibration Plot

Date: September 9, 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: September 15, 2025 Last Cal Date: August 28, 2025
Start time (MST): 11:53 End time (MST): 12:04

Analyzer Make: API T640 S/N: 2237
Particulate Fraction: PM2.5

Flow Meter Make/Model: Alicat FP-25 S/N: 388746
Temp/RH standard: Alicat FP-25 S/N: 388746

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	(Limits)
T (°C)	23.30	23.93	23.30	☐	+/- 2 °C
P (mmHg)	733.50	732.43	733.50	☐	+/- 10 mmHg
Flow (LPM)	4.99	5.00	4.99	☐	+/- 0.25 LPM
PW% (pump)	29	----	29	☐	>80%
Zero Verification	PM w/o HEPA: 36.50		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				☐	+/- 0.5

Date Optical Chamber Cleaned: July 22, 2025
Date Disposable Filter Changed: July 22, 2025

Post- maintenance Zero Verification: PM w/ HEPA: <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 SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Lower Camp Station number: AMS 11
Calibration Date: September 2, 2025 Last Cal Date: August 7, 2025
Start time (MST): 10:21 End time (MST): 16:33
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.011163	0.996537	Backgd or Offset:	17.3	18.2
Calibration intercept:	0.995597	-0.159945	Coeff or Slope:	1.068	1.045

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	1.6	----
As found High point	4932	82.2	799.2	812.6	0.985
As found Mid point	4971	41.2	400.7	404.7	0.994
As found Low point	4996	20.6	200.2	204.3	0.988
New cylinder response					
Baseline Corr As found:	811.0	Previous response	809.1	*% change	0.2%
Baseline Corr 2nd AF pt:	403.1	AF Slope:	1.014466	AF Intercept:	0.714605
Baseline Corr 3rd AF pt:	202.7	AF Correlation:	0.999976	* = > +/-5% change initiates investigation	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4932	82.2	799.2	796.8	1.003
Mid point	4971	41.2	400.7	398.0	1.007
Low point	4996	20.6	200.2	199.5	1.003
As left zero	5000	0.0	0.0	0.5	----
As left span	4932	82.2	799.2	796.6	1.003
Average Correction Factor:					1.004

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

Calibration Performed By: Mohammed Kashif



Wood Buffalo Environmental Association

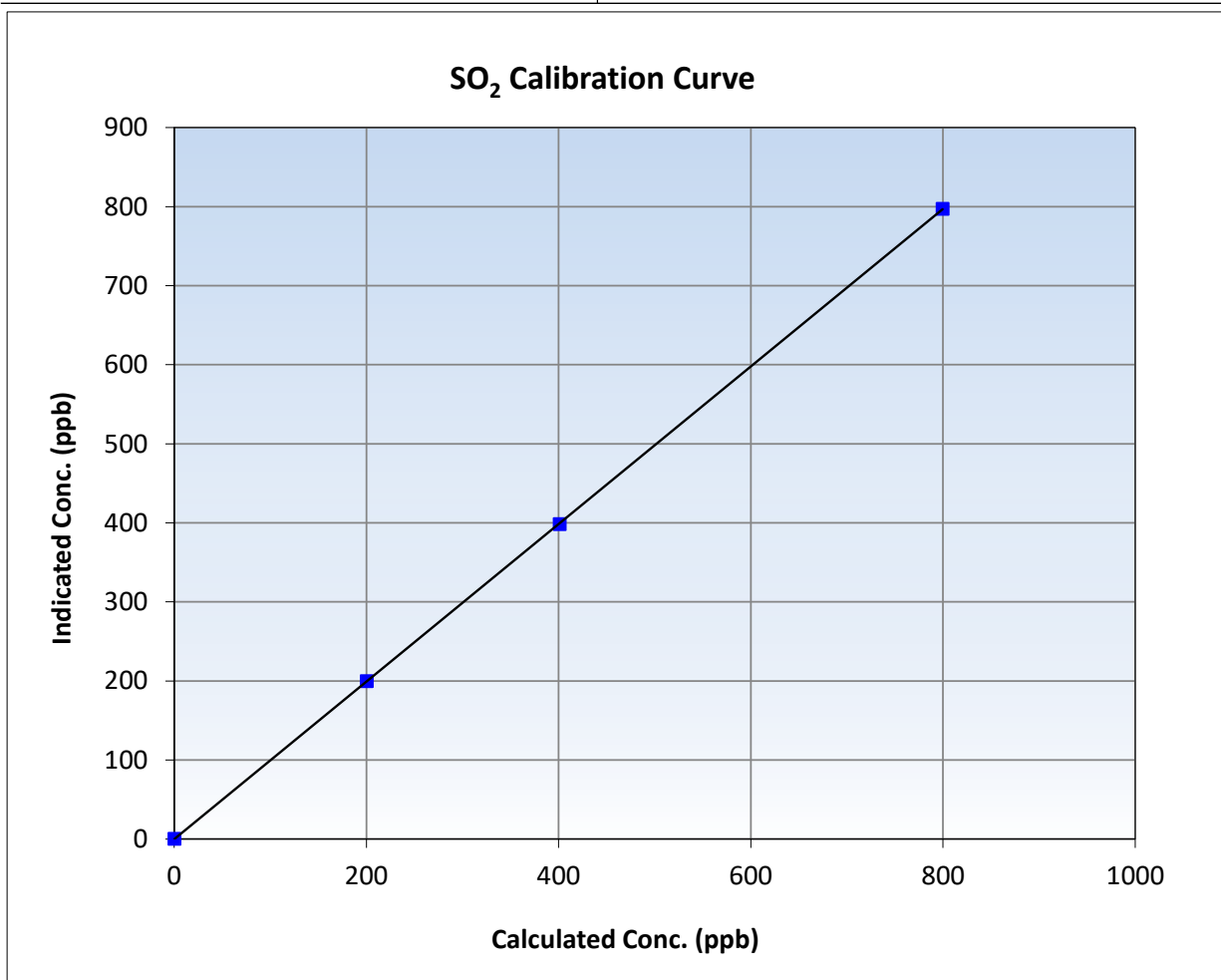
SO₂ Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	August 7, 2025
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	10:21	End Time (MST):	16:33
Analyzer make:	Thermo 43i	Analyzer serial #:	100841398

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999994	≥0.995
799.2	796.8	1.0030	Slope	0.996537	0.90 - 1.10
400.7	398.0	1.0068	Intercept	-0.159945	+/-30
200.2	199.5	1.0034			



SO2 Calibration Plot

Date: September 2, 2025

Location: Lower Camp





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: Lower Camp Station number: AMS 11
Calibration Date: September 23, 2025 Last Cal Date: August 29, 2025
Start time (MST): 10:01 End time (MST): 14:32
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	1.022022	1.004138	Backgd or Offset:	2.5
Calibration intercept:	0.147975	0.148573	Coeff or Slope:	0.808

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4923	82.8	79.9	81.2	0.983
As found Mid point	4967	41.5	40.0	40.6	0.983
As found Low point	4999	20.8	20.0	20.4	0.976
New cylinder response					
Baseline Corr As found:	81.3	Prev response:	81.80	*% change:	-0.6%
Baseline Corr 2nd AF pt:	40.7	AF Slope:	1.017011	AF Intercept:	-0.051719
Baseline Corr 3rd AF pt:	20.5	AF Correlation:	0.999996	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4923	82.8	79.9	80.3	0.995
Mid point	4967	41.5	40.0	40.4	0.991
Low point	4999	20.8	20.0	20.4	0.981
As left zero	5000	0.0	0.0	0.1	----
As left span	4923	82.8	79.9	79.8	1.001
SO2 Scrubber Check	4932	82.2	819.7	0.1	----
Date of last scrubber change:				Ave Corr Factor	0.989
Date of last converter efficiency test:					

Notes: Changed sample inlet filter after as founds. Ran scrubber check after calibrator zero and it passed.
No adjustments made.

Calibration Performed By: Mohammed Kashif



Wood Buffalo Environmental Association

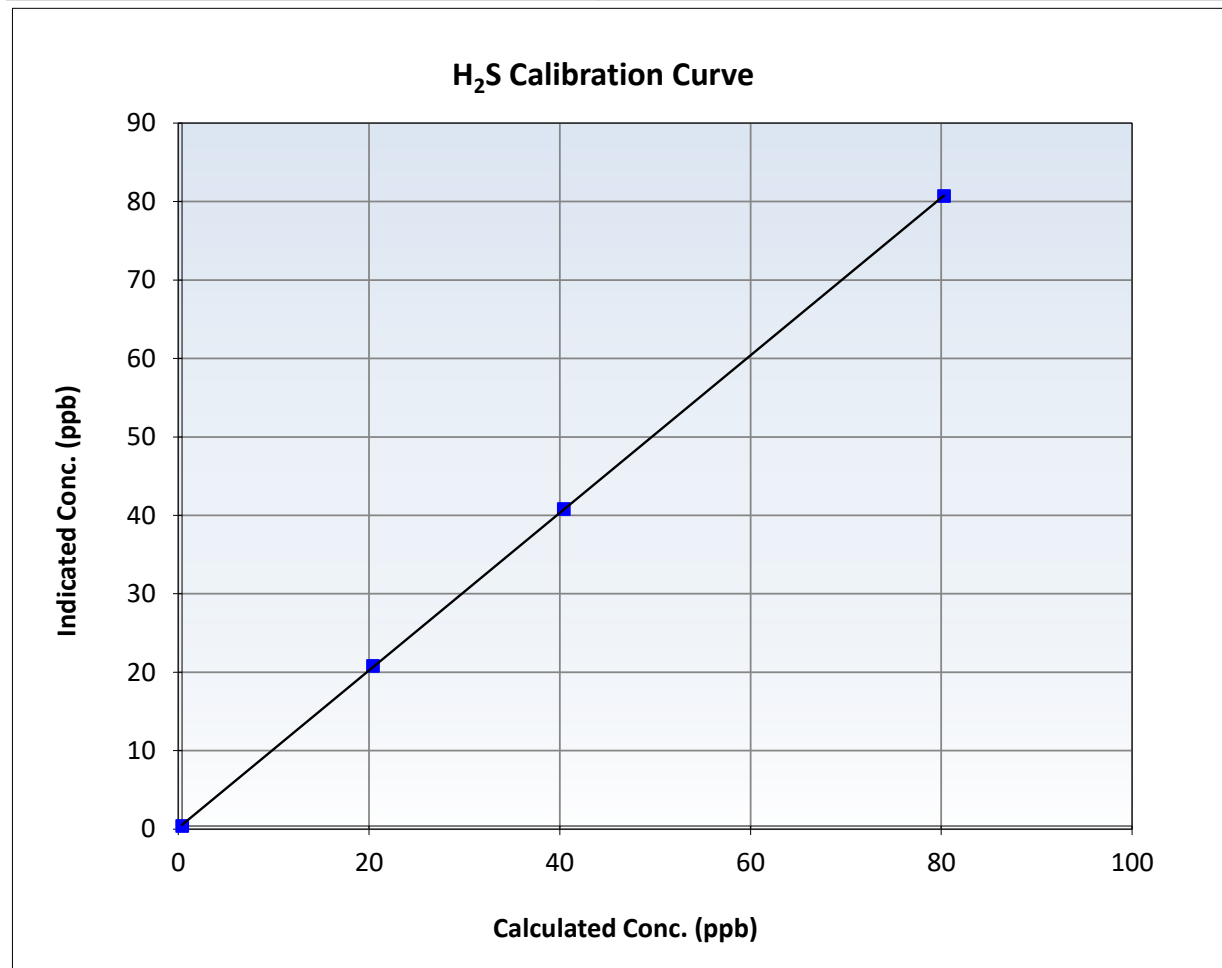
H₂S Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	August 29, 2025
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	10:01	End Time (MST):	14:32
Analyzer make:	Thermo 43iQ	Analyzer serial #:	1203169745

Calibration Data

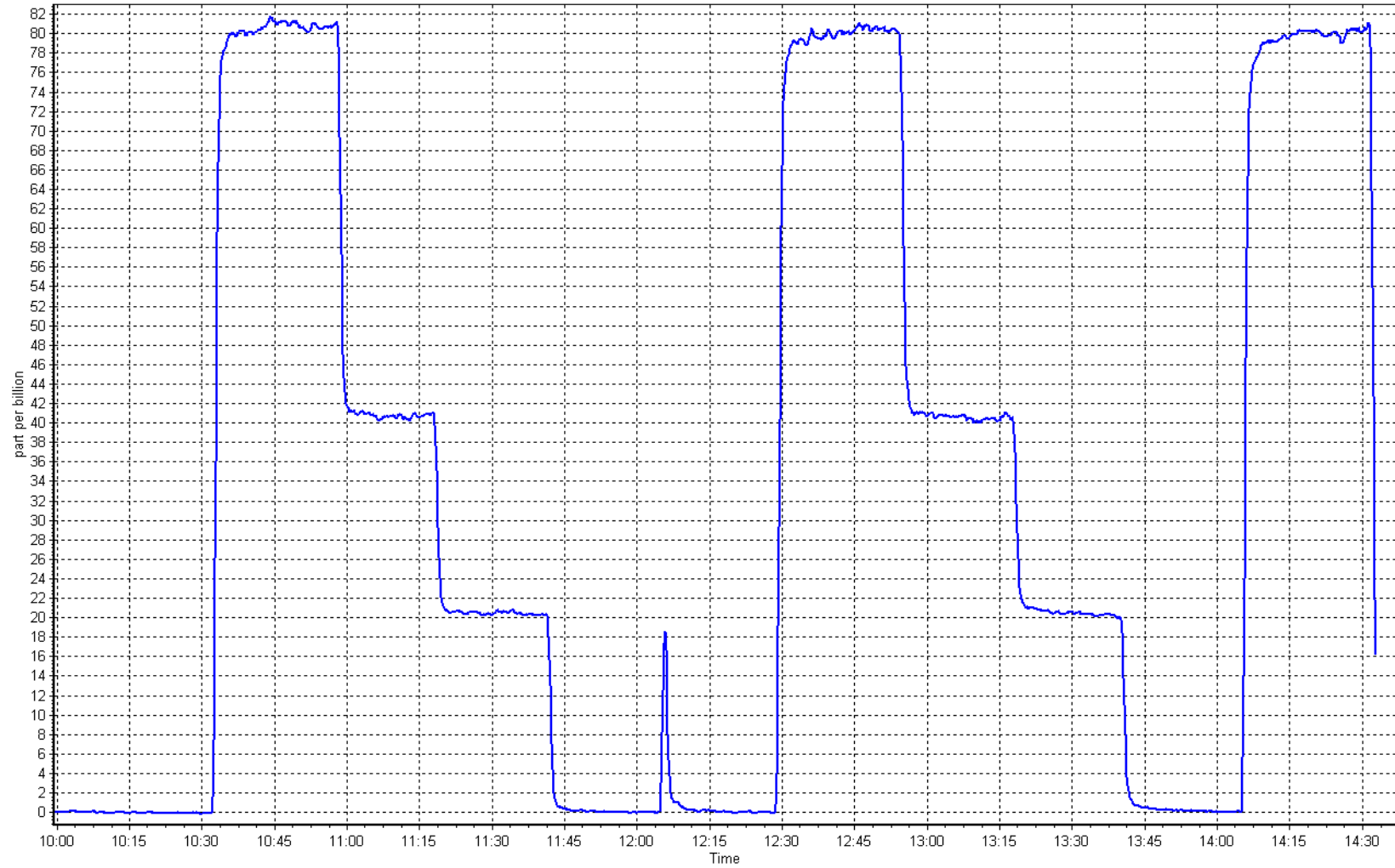
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999984		≥0.995
79.9	80.3	0.9949	Slope	1.004138		0.90 - 1.10
40.0	40.4	0.9906	Intercept	0.148573		+/-3
20.0	20.4	0.9811				



H₂S Calibration Plot

Date: September 23, 2025

Location: Lower Camp





Wood Buffalo Environmental Association

THC / CH4 / NMHC Calibration Report

Station Information

Station Name: Lower Camp
Calibration Date: September 2, 2025
Start time (MST): 10:21
Reason: Removal

Station number: AMS 11
Last Cal Date: August 7, 2025
End time (MST): 12:51

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 (CH4):		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
THC Range: 0 - 20 ppm

Analyzer serial #: 12227620776
NMHC/CH4 Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH4 SP Ratio:	4.07E-04	NA	NMHC SP Ratio:	8.38E-05	NA
CH4 Retention time:	15.8	NA	NMHC Peak Area:	111034	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.01	----
As found High point	4932	82.2	17.57	17.32	1.015
As found Mid point	4971	41.2	8.81	8.61	1.025
As found Low point	4996	20.6	4.40	4.31	1.024
New cylinder response					
Baseline Corr AF:	17.31	Prev response	17.47	*% change	-0.9%
Baseline Corr 2nd AF:	8.60	AF Slope:	0.985389	AF Intercept:	-0.021626
Baseline Corr 3rd AF:	4.30	AF Correlation:	0.999972	* = > +/-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)) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

Notes: Removal calibration. No alarms were detected during the investigation. Diagnostics were consistent, and the chromatograms showed no significant discrepancies.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4932	82.2	9.30	9.41	0.988
As found Mid point	4971	41.2	4.66	4.67	0.999
As found Low point	4996	20.6	2.33	2.32	1.005
New cylinder response					
Baseline Corr AF:	9.41	Prev response	9.23	*% change	1.9%
Baseline Corr 2nd AF:	4.67	AF Slope:	1.012645	AF Intercept:	-0.025867
Baseline Corr 3rd AF:	2.32	AF Correlation:	0.999957	* = > +/-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))
As found zero	5000	0.0	0.00	0.01	Limit = 0.90-1.10
As found High point	4932	82.2	8.28	7.91	1.047
As found Mid point	4971	41.2	4.15	3.94	1.055
As found Low point	4996	20.6	2.07	1.99	1.046
New cylinder response					
Baseline Corr AF:	7.90	Prev response	8.24	*% change	-4.2%
Baseline Corr 2nd AF:	3.93	AF Slope:	0.954524	AF Intercept:	0.004641
Baseline Corr 3rd AF:	1.98	AF Correlation:	0.999980	* = > +/-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:	0.994387	NA
THC Cal Offset:	-0.005371	NA
CH ₄ Cal Slope:	0.994555	NA
CH ₄ Cal Offset:	0.005053	NA
NMHC Cal Slope:	0.994226	NA
NMHC Cal Offset:	-0.010624	NA

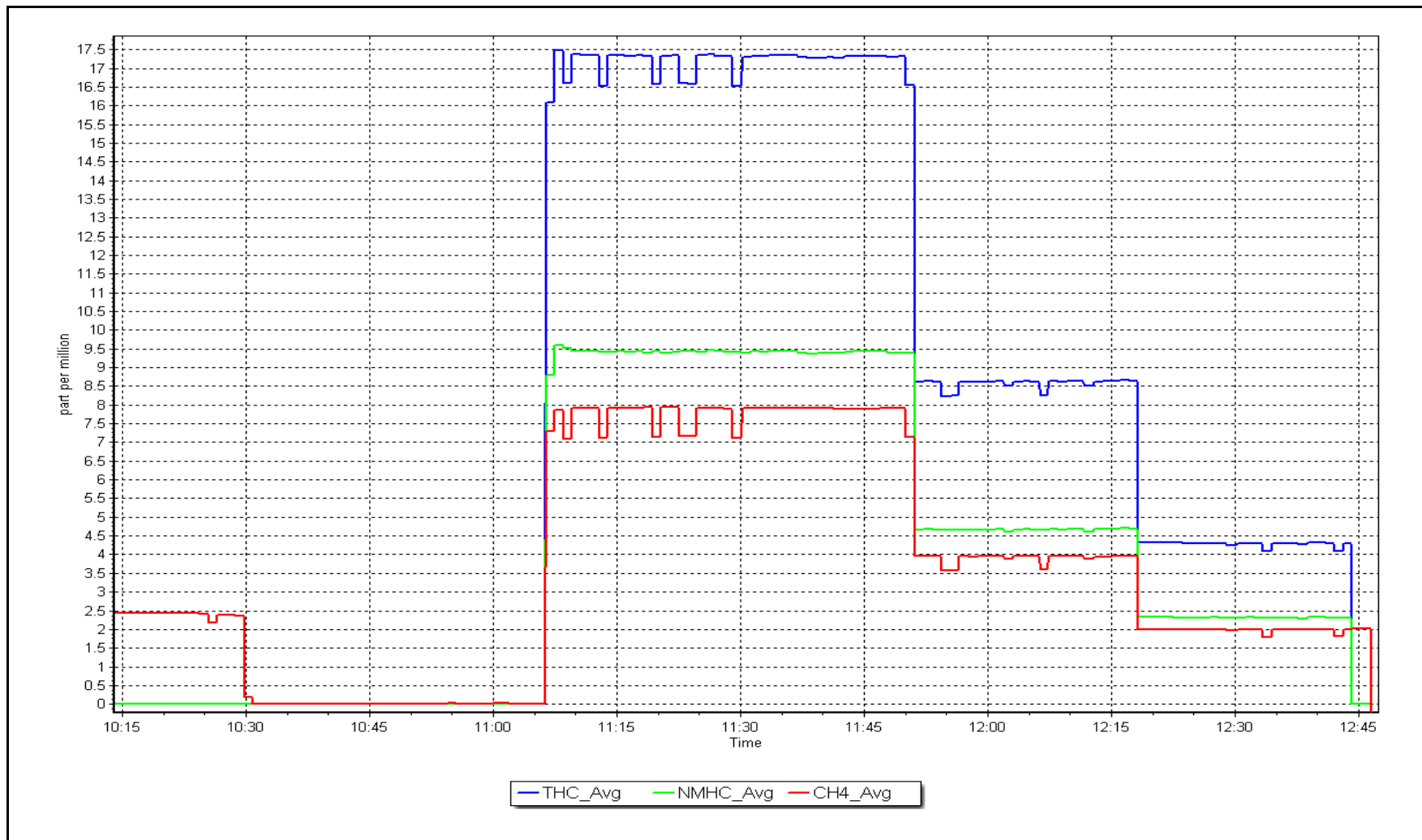
Calibration Performed By:

Mohammed Kashif

NMHC Calibration Plot

Date: September 2, 2025

Location: Lower Camp





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Lower Camp
Calibration Date: September 2, 2025
Start time (MST): 13:56
Reason: Install

Station number: AMS 11
Last Cal Date: NA
End time (MST): 18:49

Calibration Standards

Gas Cert Reference:	CC741503	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	504.8 ppm	CH ₄ Equiv Conc.	1071.9 ppm
C ₃ H ₈ Cal Gas Conc.	206.2 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH ₄ Conc.	504.8 ppm	CH ₄ Equiv Conc.	1071.9 ppm
Removed C ₃ H ₈ 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
THC Range: 0 - 20 ppm

Analyzer serial #: 1118148495
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	NA	2.65E-04	NMHC SP Ratio:	NA	4.62E-05
CH ₄ Retention time:	NA	14.8	NMHC Peak Area:	NA	201460
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)) <i>Limit = 0.90-1.10</i>
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4932	82.2	17.57	17.61	0.998
Mid point	4971	41.2	8.81	8.75	1.006
Low point	4996	20.6	4.40	4.35	1.011
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	17.57	17.77	0.989
				Average Correction Factor	1.005

Notes:

Install calibration. Change sample inlet filter and NMHC window timing was adjusted at 16:15 MST.
Adjusted zero and span.



Wood Buffalo Environmental Association

THC / CH₄ / 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)) <i>Limit = 0.90-1.10</i>
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4932	82.2	9.30	9.35	0.994
Mid point	4971	41.2	4.66	4.63	1.008
Low point	4996	20.6	2.33	2.26	1.029
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	9.30	9.48	0.981
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)) <i>Limit = 0.90-1.10</i>
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4932	82.2	8.28	8.26	1.002
Mid point	4971	41.2	4.15	4.13	1.005
Low point	4996	20.6	2.07	2.09	0.991
As left zero	5000	0.0	0.00	0.00	----
As left span	4932	82.2	8.28	8.29	0.998
Average Correction Factor					1.000

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
THC Cal Slope:	NA	1.002581
THC Cal Offset:	NA	-0.037176
CH ₄ Cal Slope:	NA	0.996443
CH ₄ Cal Offset:	NA	0.007460
NMHC Cal Slope:	NA	1.008057
NMHC Cal Offset:	NA	-0.044437

Calibration Performed By:

Mohammed Kashif



Wood Buffalo Environmental Association

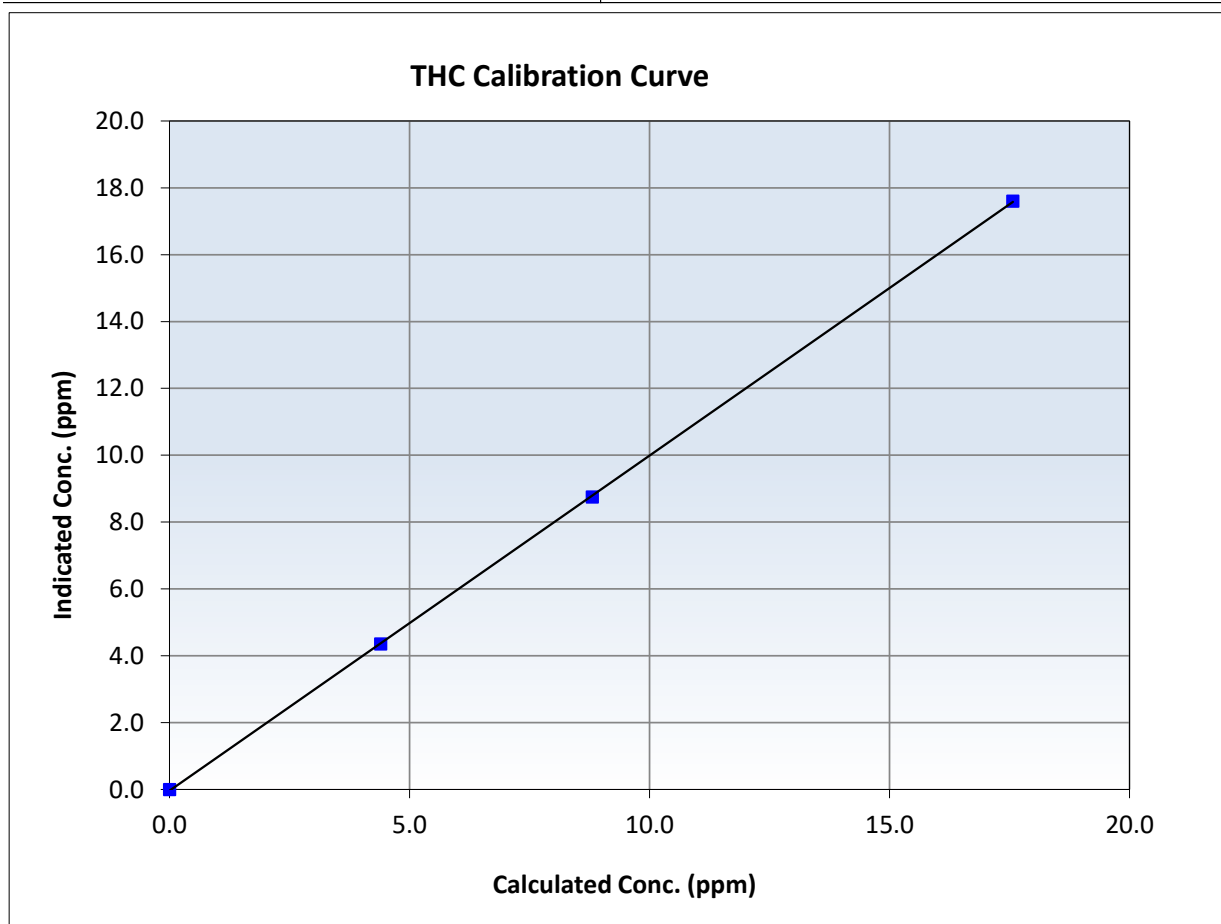
THC Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	NA
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	13:56	End Time (MST):	18:49
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148495

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999975		<i>≥0.995</i>
17.57	17.61	0.9980	Slope	1.002581		<i>0.90 - 1.10</i>
8.81	8.75	1.0065	Intercept	-0.037176		<i>+/-0.5</i>
4.40	4.35	1.0109				





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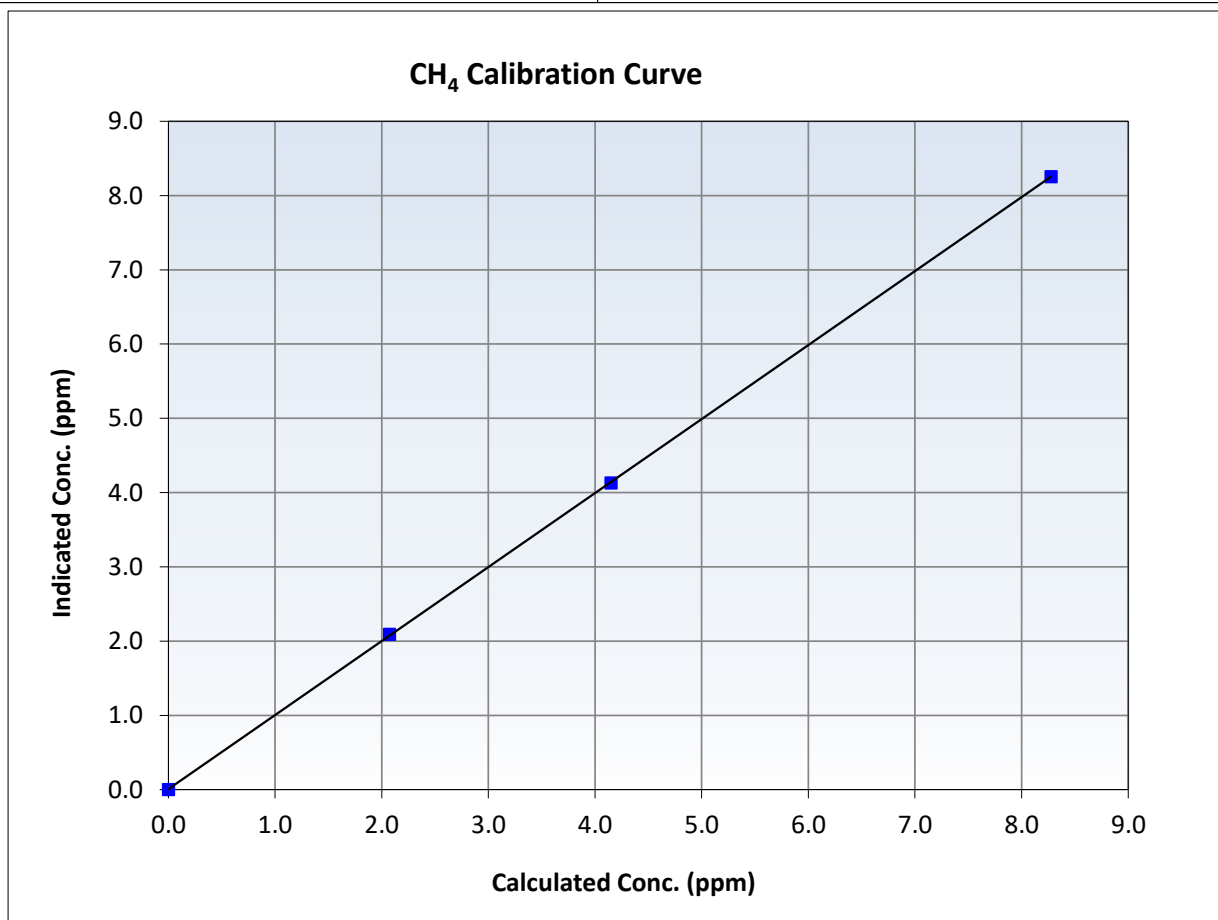
CH₄ Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	NA
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	13:56	End Time (MST):	18:49
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148495

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999986	<i>≥0.995</i>
8.28	8.26	1.0025	Slope	0.996443	<i>0.90 - 1.10</i>
4.15	4.13	1.0047	Intercept	0.007460	<i>+/-0.5</i>
2.07	2.09	0.9913			





Wood Buffalo Environmental Association

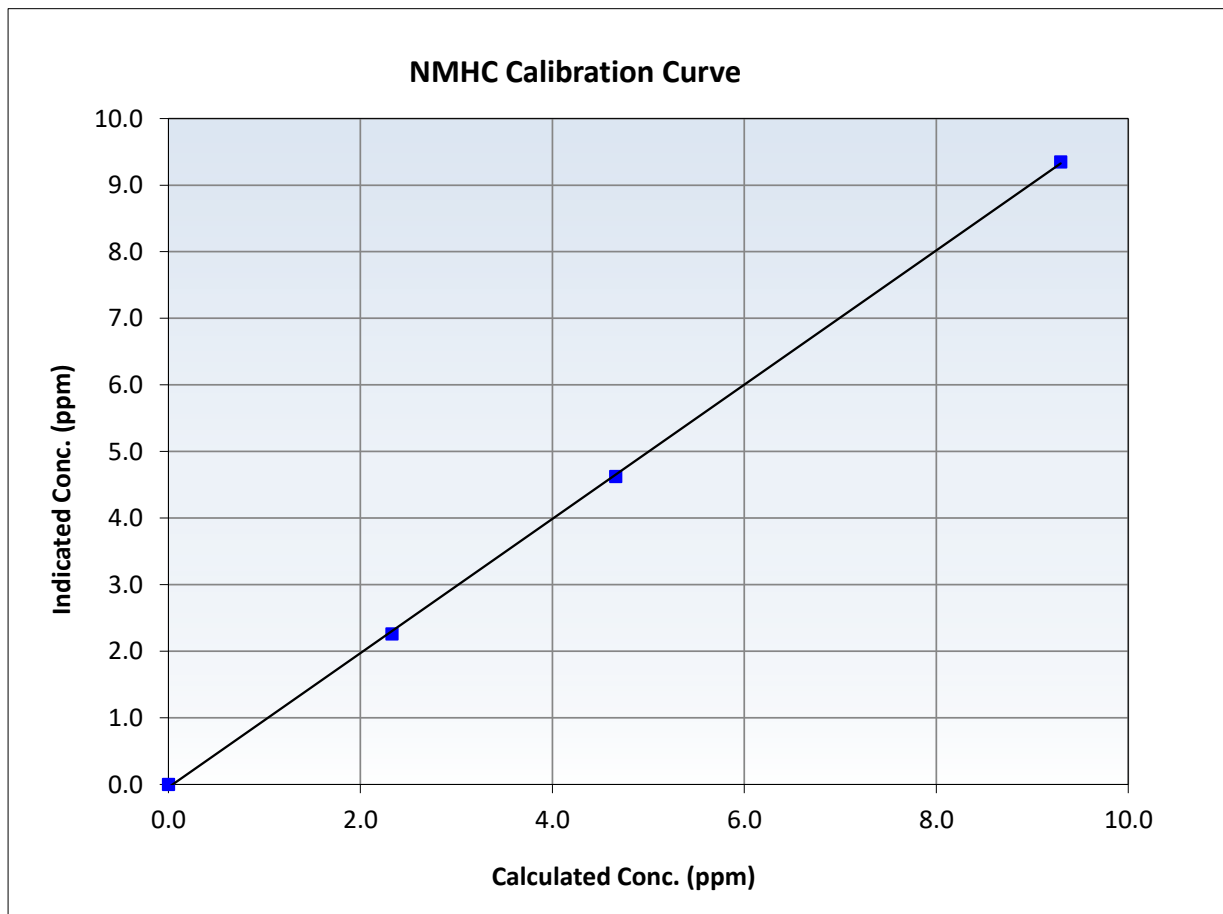
NMHC Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	NA
Station Name:	Lower Camp	Station Number:	AMS 11
Start Time (MST):	13:56	End Time (MST):	18:49
Analyzer make:	Thermo 55i	Analyzer serial #:	1118148495

Calibration Data

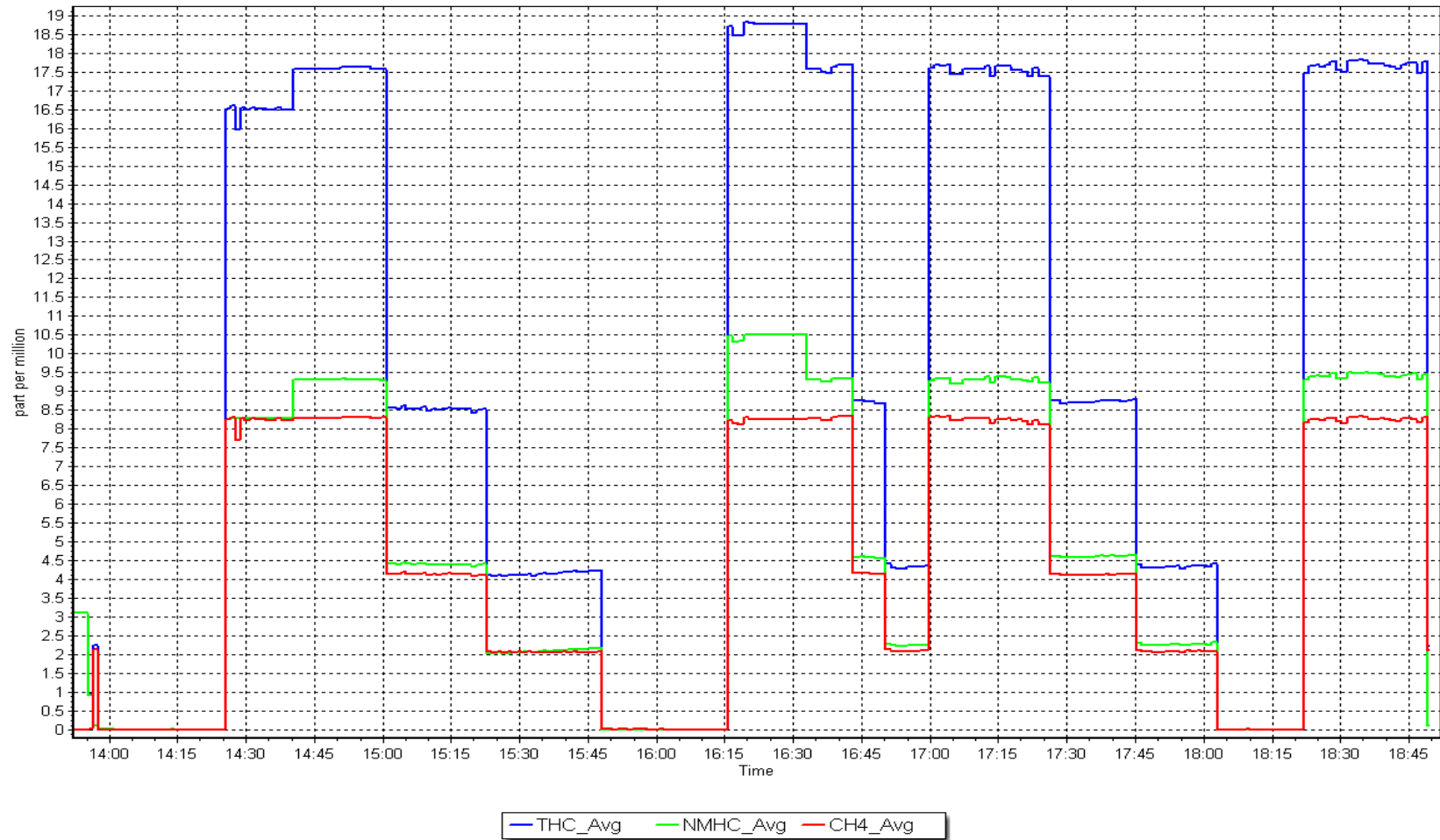
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			Limits
0.00	0.00	----	Correlation Coefficient	0.999895		≥ 0.995
9.30	9.35	0.9941	Slope	1.008057		$0.90 - 1.10$
4.66	4.63	1.0078	Intercept	-0.044437		± 0.5
2.33	2.26	1.0290				



NMHC Calibration Plot

Date: September 2, 2025

Location: Lower Camp





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS13 FORT MCKAY SOUTH SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Fort McKay South Station number: AMS 13
Calibration Date: September 10, 2025 Last Cal Date: August 11, 2025
Start time (MST): 9:46 End time (MST): 12:48
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.003904	1.007647	Backgd or Offset:	108.0	111.3
Calibration intercept:	-2.554573	-2.914135	Coeff or Slope:	0.662	0.662

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.7	----
As found High point	4921	79.1	799.7	804.1	0.995
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	803.4	Previous response	800.3	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.4	----
High point	4921	79.1	799.7	804.0	0.995
Mid point	4960	39.5	399.4	398.7	1.002
Low point	4980	19.8	200.2	196.0	1.021
As left zero	5000	0.0	0.0	-0.4	----
As left span	4921	79.1	799.7	804.7	0.994

Average Correction Factor: 1.006

Notes: Adjusted zero.

Calibration Performed By: Sean Bala



Wood Buffalo Environmental Association

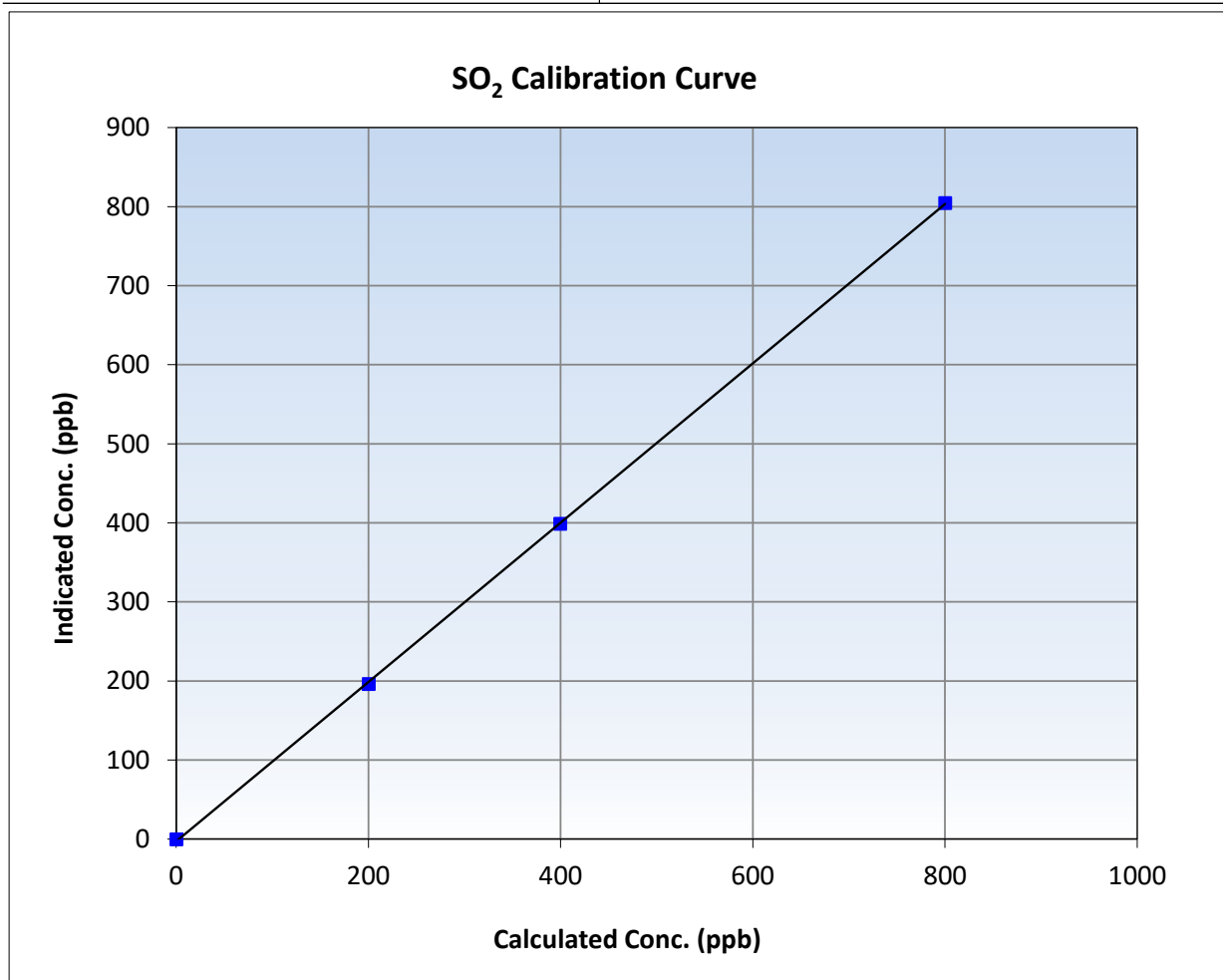
SO₂ Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 11, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:46	End Time (MST):	12:48
Analyzer make:	Teledyne API T100	Analyzer serial #:	599

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.4	----	Correlation Coefficient	0.999955	≥0.995
799.7	804.0	0.9946	Slope	1.007647	0.90 - 1.10
399.4	398.7	1.0017	Intercept	-2.914135	+/-30
200.2	196.0	1.0214			



SO2 Calibration Plot

Date: September 10, 2025

Location: Fort McKay South





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Fort McKay South
Calibration Date: September 4, 2025
Start time (MST): 8:48
Reason: Routine

Station number: AMS 13
Last Cal Date: August 7, 2025
End time (MST): 12:35

Calibration Standards

Cal Gas Concentration: 4.88 ppm
Cal Gas Cylinder #: CC500241
Removed Cal Gas Conc: 4.88 ppm
Removed Gas Cyl #: CC500241
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701

Cal Gas Exp Date: September 5, 2027
Rem Gas Exp Date:
Diff between cyl:
Serial Number: 2657
Serial Number: 1118

Analyzer Information

Analyzer make: Thermo 43i TLE
Converter make: CDN-101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1180540017
Converter serial #: 521
Converter Temp: 800 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002687	1.008570	Backgd or Offset:	3.36	3.36
Calibration intercept:	-0.138408	-0.018403	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4918	81.6	79.6	79.2	1.008
As found Mid point	4959	40.8	39.8	39.7	1.008
As found Low point	4980	20.4	19.9	19.8	1.016
New cylinder response					
Baseline Corr As found:	79.0	Prev response:	79.72	*% change:	-0.9%
Baseline Corr 2nd AF pt:	39.5	AF Slope:	0.992499	AF Intercept:	0.141578
Baseline Corr 3rd AF pt:	19.6	AF Correlation:	0.999996	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4918	81.6	79.6	80.4	0.991
Mid point	4959	40.8	39.8	40.1	0.993
Low point	4980	20.4	19.9	19.8	1.005
As left zero	5000	0.0	0.0	0.2	----
As left span	4918	81.6	79.6	80.8	0.986
SO2 Scrubber Check	4921	79.1	791.0	0.1	----
Date of last scrubber change:	7-Aug-25		Ave Corr Factor		0.996
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

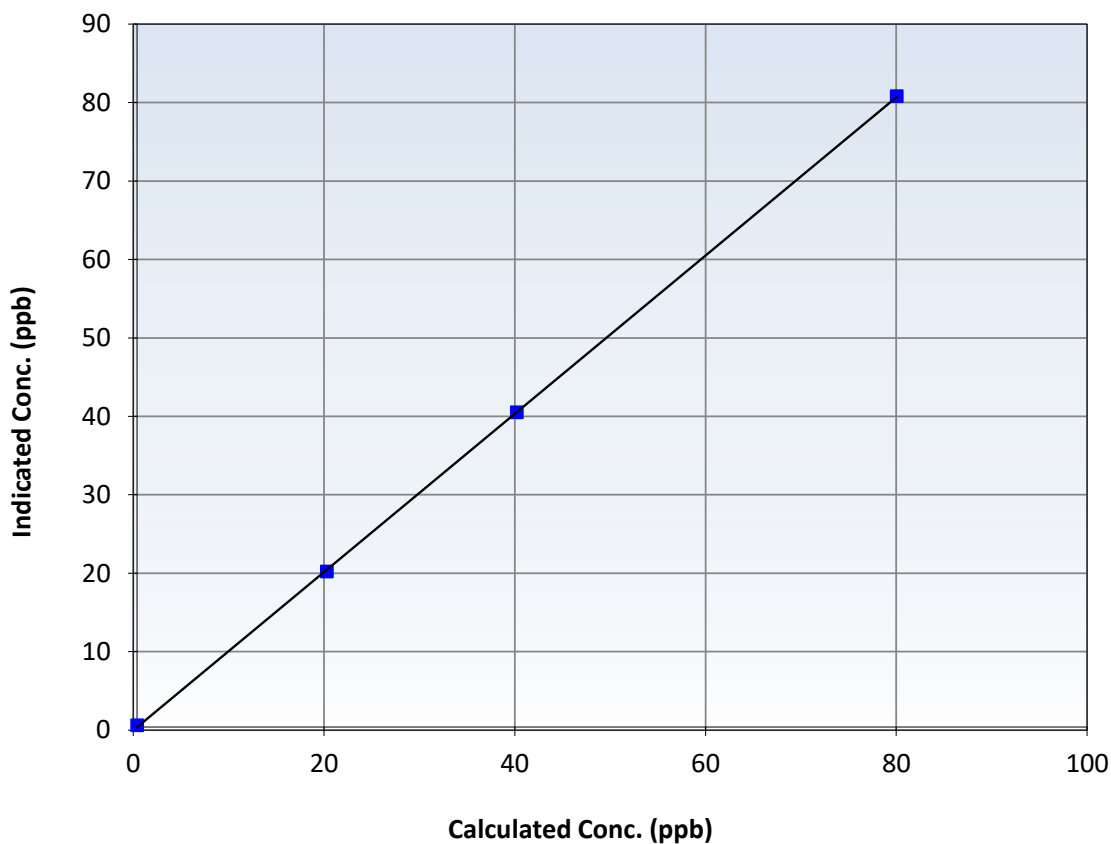
Station Information

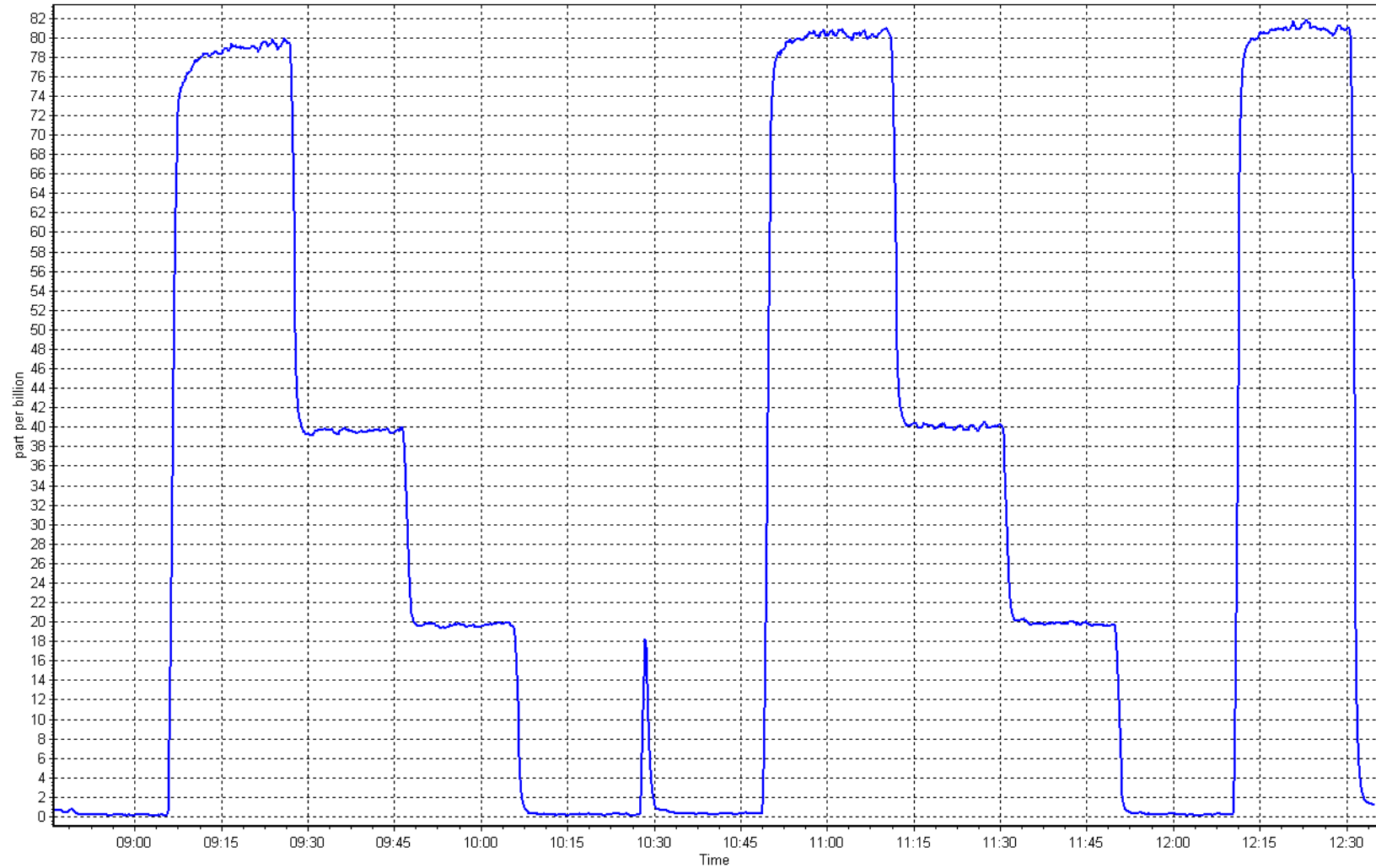
Calibration Date:	September 4, 2025	Previous Calibration:	August 7, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	8:48	End Time (MST):	12:35
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1180540017

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999964		≥ 0.995
79.6	80.4	0.9906	Slope	1.008570		0.90 - 1.10
39.8	40.1	0.9931	Intercept	-0.018403		+/-3
19.9	19.8	1.0055				

TRS Calibration Curve







Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Fort McKay South
Calibration Date: September 10, 2025
Start time (MST): 9:46
Reason: Routine

Station number: AMS 13
Last Cal Date: August 11, 2025
End time (MST): 12:48

Calibration Standards

Gas Cert Reference: CC260812
CH₄ Cal Gas Conc. 503.6 ppm
C₃H₈ Cal Gas Conc. 208.7 ppm
Removed Gas Cert: NA
Removed CH₄ Conc. 503.6 ppm
Removed C₃H₈ Conc. 208.7 ppm
Diff between cyl (CH₄):
Calibrator Model: Teledyne API T750
Zero Air Gen model: Teledyne API 751H

Cal Gas Expiry Date: Friday, December 29, 2028
CH₄ Equiv Conc. 1077.5 ppm
Removed Gas Expiry:
CH₄ Equiv Conc. 1077.5 ppm
Diff between cyl (THC):
Diff between cyl (NM):
Serial Number: 281
Serial Number: 321

Analyzer Information

Analyzer make: Thermo 55i
THC Range: 0 - 20 ppm

Analyzer serial #: 1181490018
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	3.01E-04	3.04E-04	NMHC SP Ratio:	4.60E-05
CH ₄ Retention time:	16.20	16.20	NMHC Peak Area:	197285
Zero Chromatogram:	ON	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	17.05	16.89	1.009
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.89	Prev response	17.07	*% 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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	17.05	17.03	1.001
Mid point	4960	39.5	8.51	8.46	1.006
Low point	4980	19.8	4.27	4.19	1.018
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	17.05	17.08	0.998
Average Correction Factor					1.008

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



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	9.08	9.10	0.998
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.10	Prev response	9.07	*% 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)
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	9.08	9.07	1.001
Mid point	4960	39.5	4.53	4.52	1.004
Low point	4980	19.8	2.27	2.24	1.015
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	9.08	9.09	0.998
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))
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.1	7.97	7.79	1.022
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.79	Prev response	8.00	*% change	-2.7%
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)
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.1	7.97	7.97	1.000
Mid point	4960	39.5	3.98	3.94	1.009
Low point	4980	19.8	1.99	1.95	1.022
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.1	7.97	7.98	0.998
Average Correction Factor					1.010

Calibration Statistics

	Start	Finish
THC Cal Slope:	1.003594	1.000317
THC Cal Offset:	-0.037696	-0.037504
CH ₄ Cal Slope:	1.006842	1.001350
CH ₄ Cal Offset:	-0.021335	-0.023945
NMHC Cal Slope:	1.000972	0.999738
NMHC Cal Offset:	-0.016761	-0.014359

Calibration Performed By: Sean Bala



Wood Buffalo Environmental Association

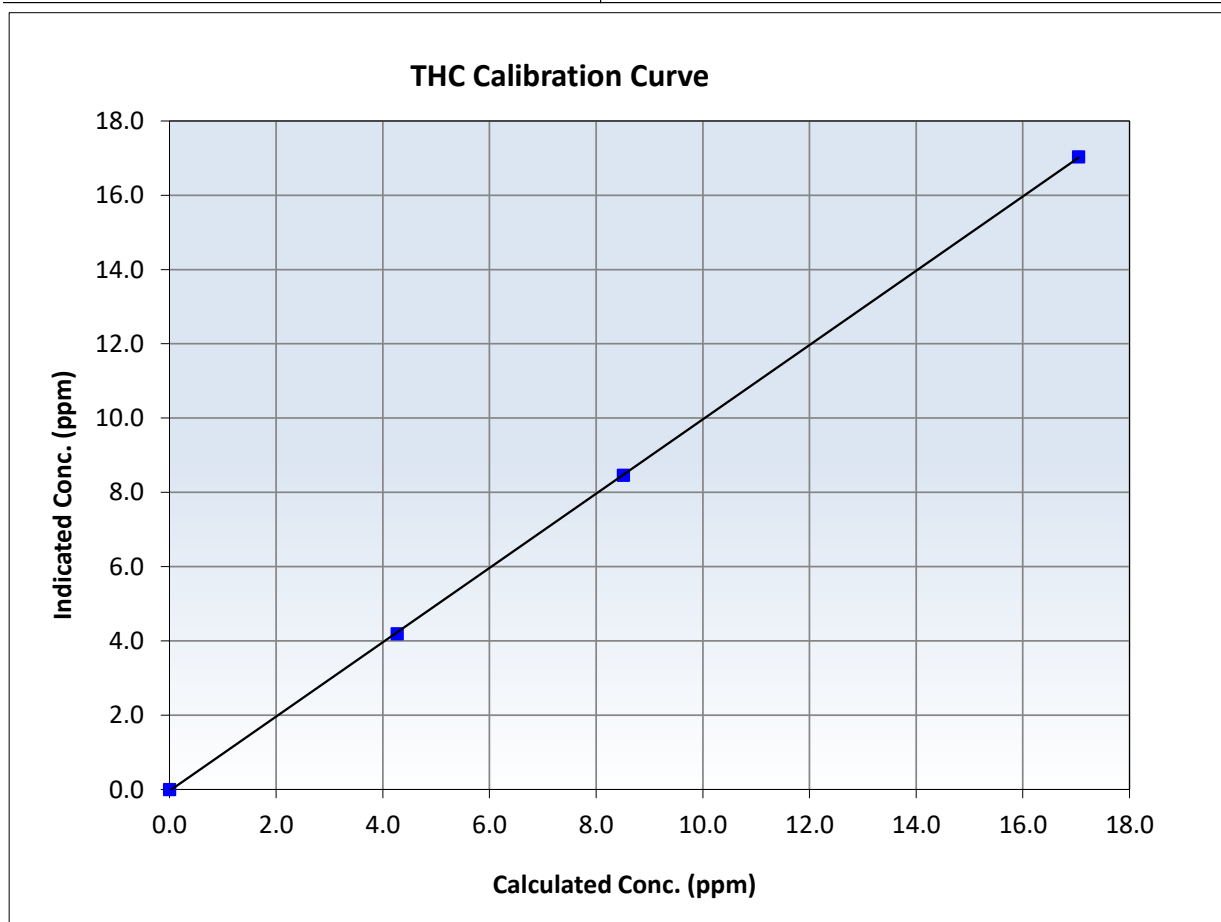
THC Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 11, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:46	End Time (MST):	12:48
Analyzer make:	Thermo 55i	Analyzer serial #:	1181490018

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999978		≥ 0.995
17.05	17.03	1.0008	Slope	1.000317		0.90 - 1.10
8.51	8.46	1.0061	Intercept	-0.037504		± 0.5
4.27	4.19	1.0179				





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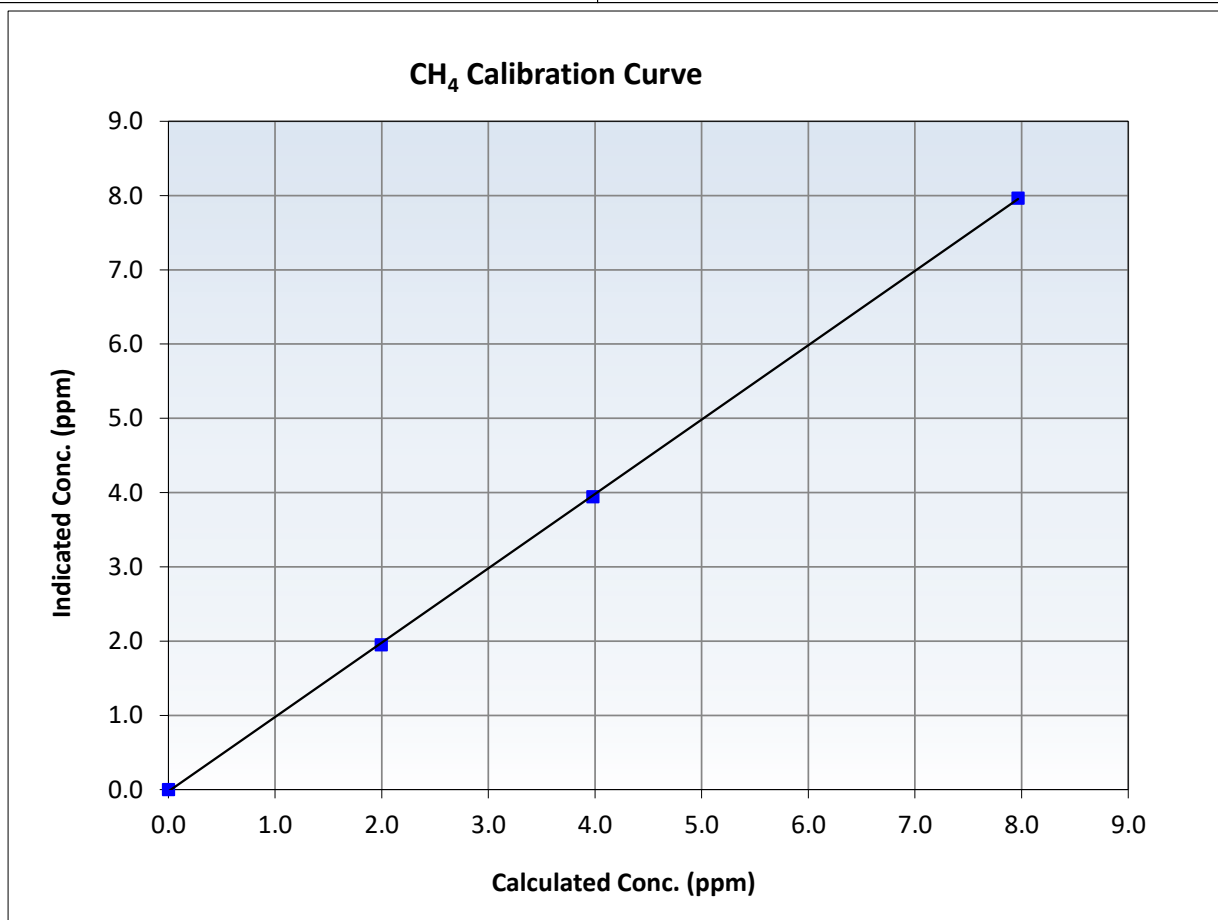
CH₄ Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 11, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:46	End Time (MST):	12:48
Analyzer make:	Thermo 55i	Analyzer serial #:	1181490018

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999958	<i>≥0.995</i>
7.97	7.97	1.0000	Slope	1.001350	<i>0.90 - 1.10</i>
3.98	3.94	1.0088	Intercept	-0.023945	<i>+/-0.5</i>
1.99	1.95	1.0217			





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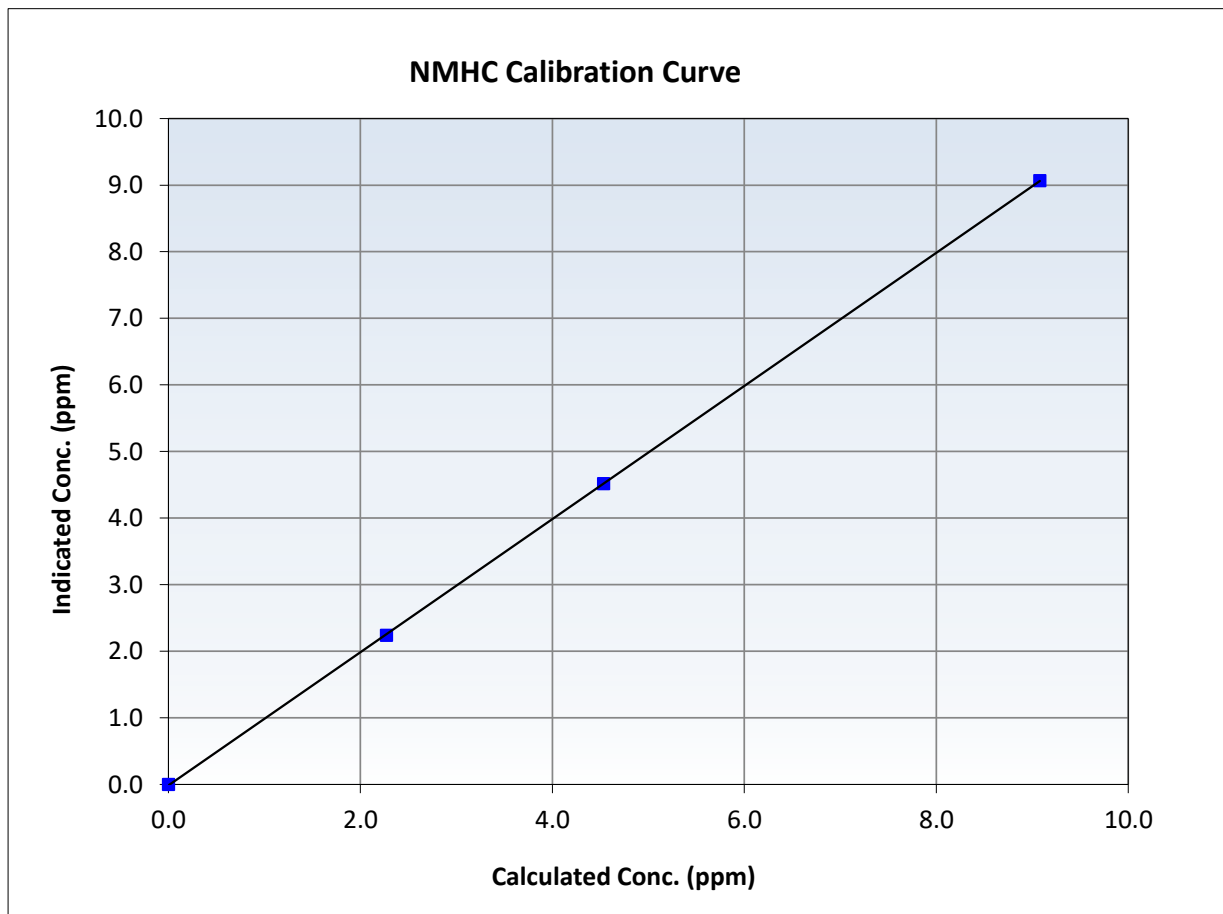
NMHC Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 11, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:46	End Time (MST):	12:48
Analyzer make:	Thermo 55i	Analyzer serial #:	1181490018

Calibration Data

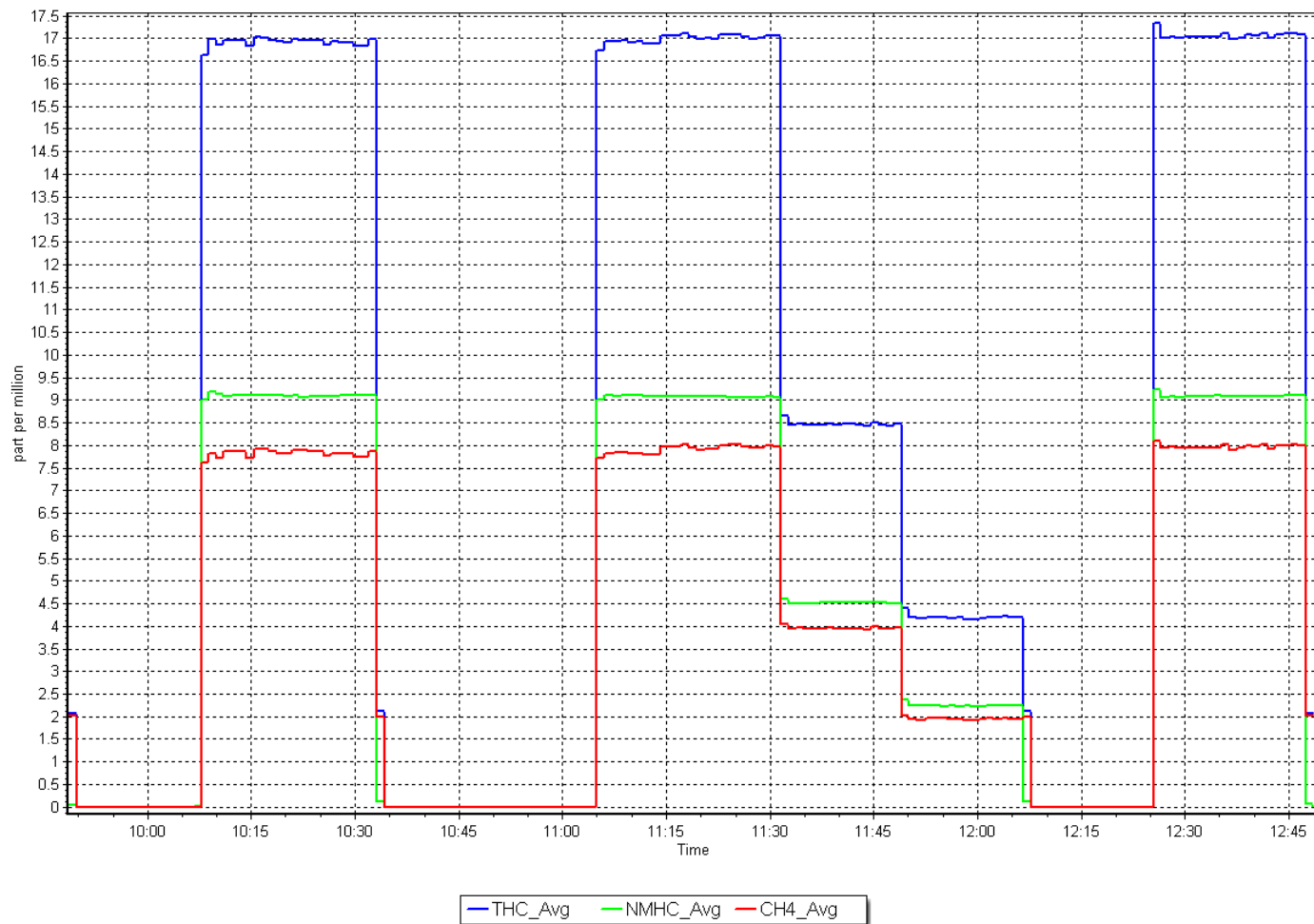
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999988	<i>≥0.995</i>
9.08	9.07	1.0012	Slope	0.999738	<i>0.90 - 1.10</i>
4.53	4.52	1.0039	Intercept	-0.014359	<i>+/-0.5</i>
2.27	2.24	1.0147			



NMHC Calibration Plot

Date: September 10, 2025

Location: Fort McKay South





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Fort McKay South
Station number: AMS 13
Calibration Date: September 16, 2025
Last Cal Date: August 12, 2025
Start time (MST): 9:23
End time (MST): 12:34
Reason: Routine

Calibration Standards

NO Gas Cylinder #: T2UP1RP
NOX Cal Gas Conc: 48.25 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 48.25 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne APIT701
Cal Gas Expiry Date: November 17, 2026
NO Cal Gas Conc: 47.88 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 47.88 ppm
NO gas Diff:
Serial Number: 2657
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.0	0.2	-0.3	----	----
AF High point	4917	83.5	805.7	799.5	6.2	808.0	797.5	10.6	0.9971	1.0028
AF Mid point										
AF Low point										
New cyl resp										
Previous Response	NO _x = 804.6 ppb		NO = 797.3 ppb		* = > +/-5% change initiates investigation			*Percent Change	NO _x =	0.4%
Baseline Corr 1st pt	NO _x = 808.0 ppb		NO = 797.3 ppb		<u>As Found Statistics</u>			*Percent Change	NO =	0.0%
Baseline Corr 2nd pt	NO _x = NA ppb		NO = NA ppb		As found	NO _x r ² :		Nx SI:	Nx Int:	
Baseline Corr 3rd pt	NO _x = NA ppb		NO = NA ppb		As found	NO r ² :		NO SI:	NO Int:	
					As found	NO ₂ r ² :		NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 12300522720

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.001547	1.000638
NO _x Cal Offset:	-2.312935	-2.392513
NO Cal Slope:	1.001907	1.000263
NO Cal Offset:	-3.730394	-3.529920
NO ₂ Cal Slope:	0.994379	0.994574
NO ₂ Cal Offset:	-0.423762	1.025657

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.127	1.127	NO bkgnd or offset:	3.1	3.1
NOX coeff or slope:	1.002	1.002	NOX bkgnd or offset:	3.4	3.4
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	146.2	151.9

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.3	-0.2	----	----
High point	4917	83.5	805.7	799.5	6.2	805.3	798.5	6.7	1.0005	1.0013
Mid point	4958	41.8	403.4	400.3	3.1	399.3	393.8	5.5	1.0102	1.0165
Low point	4979	20.9	201.7	200.1	1.5	197.4	193.6	3.8	1.0217	1.0338
As left zero	5000	0.0	0.0	0.0	0.0	0.1	0.2	-0.2	----	----
As left span	4917	83.5	805.7	403.4	402.3	797.3	403.4	393.8	1.0105	1.0000
Average Correction Factor									1.0108	1.0172

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	-0.2	----	----
High GPT point	795.5	402.7	399.0	397.1	1.0047	99.5%
Mid GPT point	795.5	597.8	203.9	204.7	0.9960	100.4%
Low GPT point	795.5	697.3	104.4	105.9	0.9856	101.5%
Average Correction Factor					0.9954	100.5%

Notes:

No adjustments.

Calibration Performed By:

Sean Bala



Wood Buffalo Environmental Association

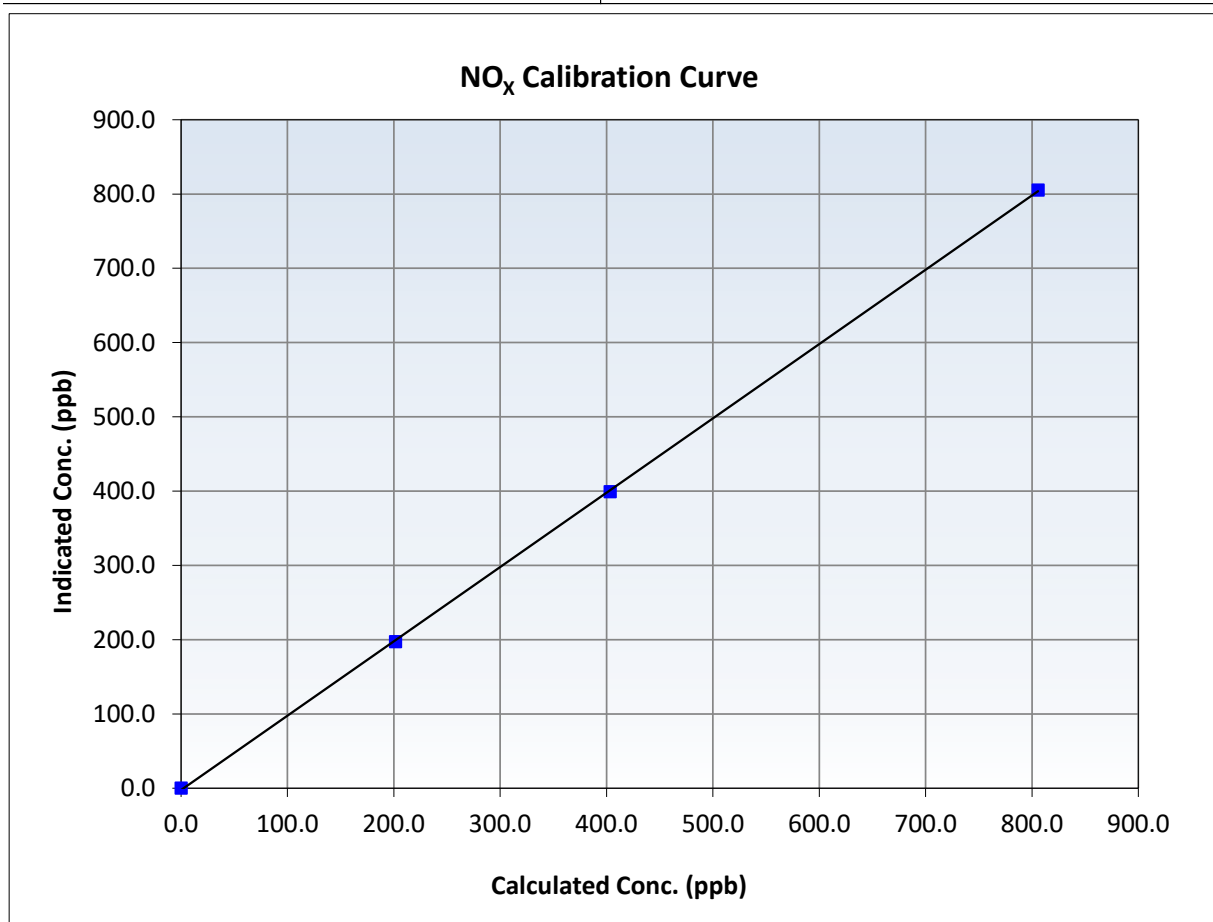
NO_x Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 12, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:23	End Time (MST):	12:34
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999954	≥0.995
805.7	805.3	1.0005	Slope	1.000638	0.90 - 1.10
403.4	399.3	1.0102	Intercept	-2.392513	+/-20
201.7	197.4	1.0217			





Wood Buffalo Environmental Association

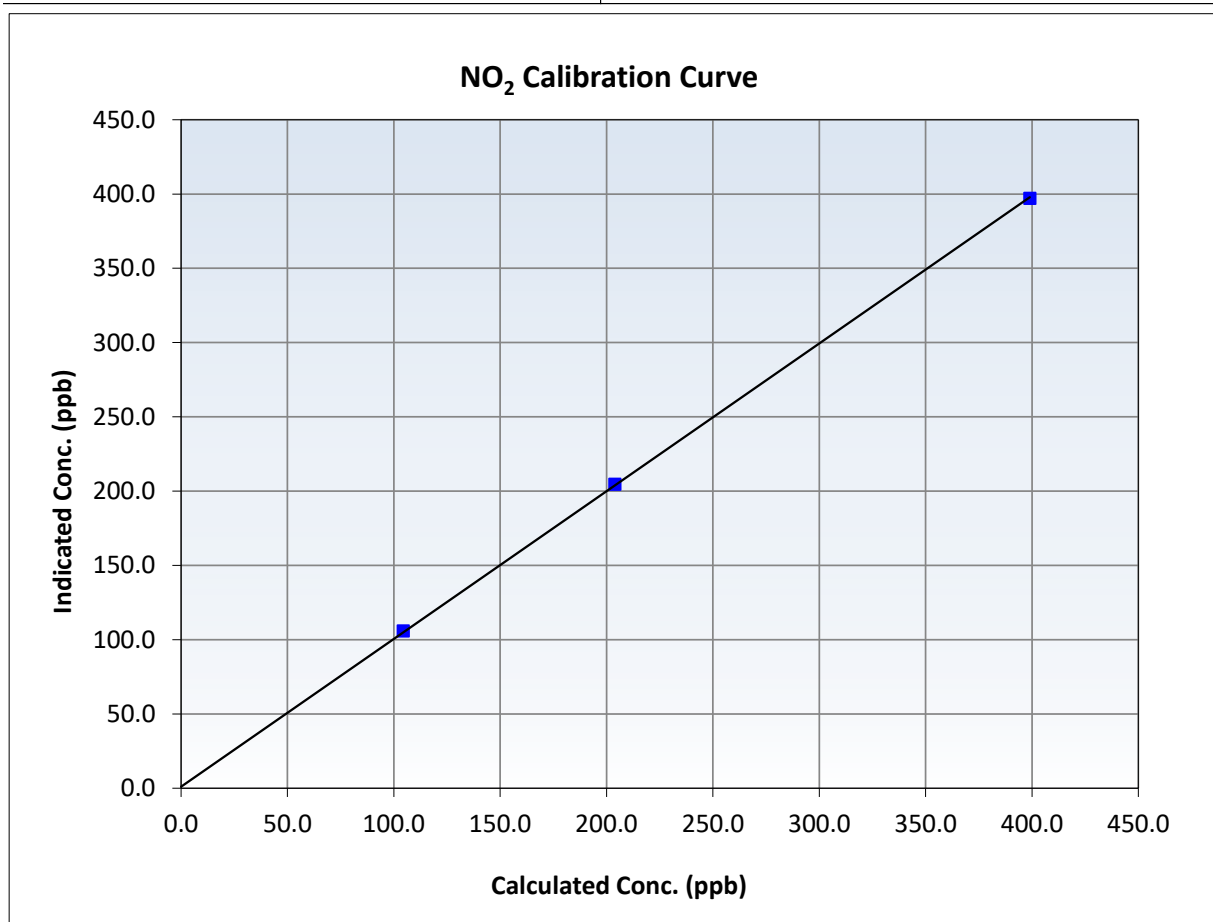
NO₂ Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 12, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:23	End Time (MST):	12:34
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999953	≥0.995
399.0	397.1	1.0047	Slope	0.994574	0.90 - 1.10
203.9	204.7	0.9960	Intercept	1.025657	+/-20
104.4	105.9	0.9856			





Wood Buffalo Environmental Association

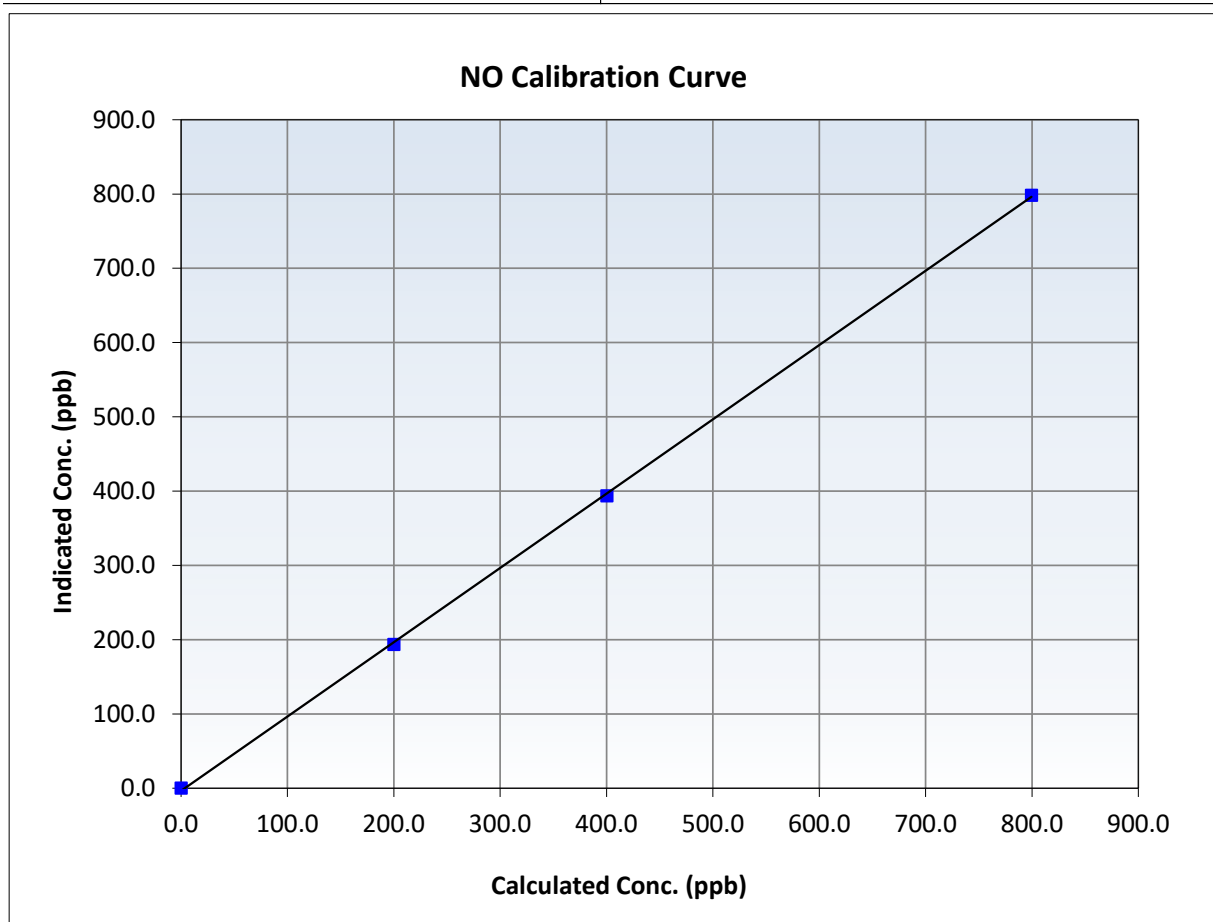
NO Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 12, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:23	End Time (MST):	12:34
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

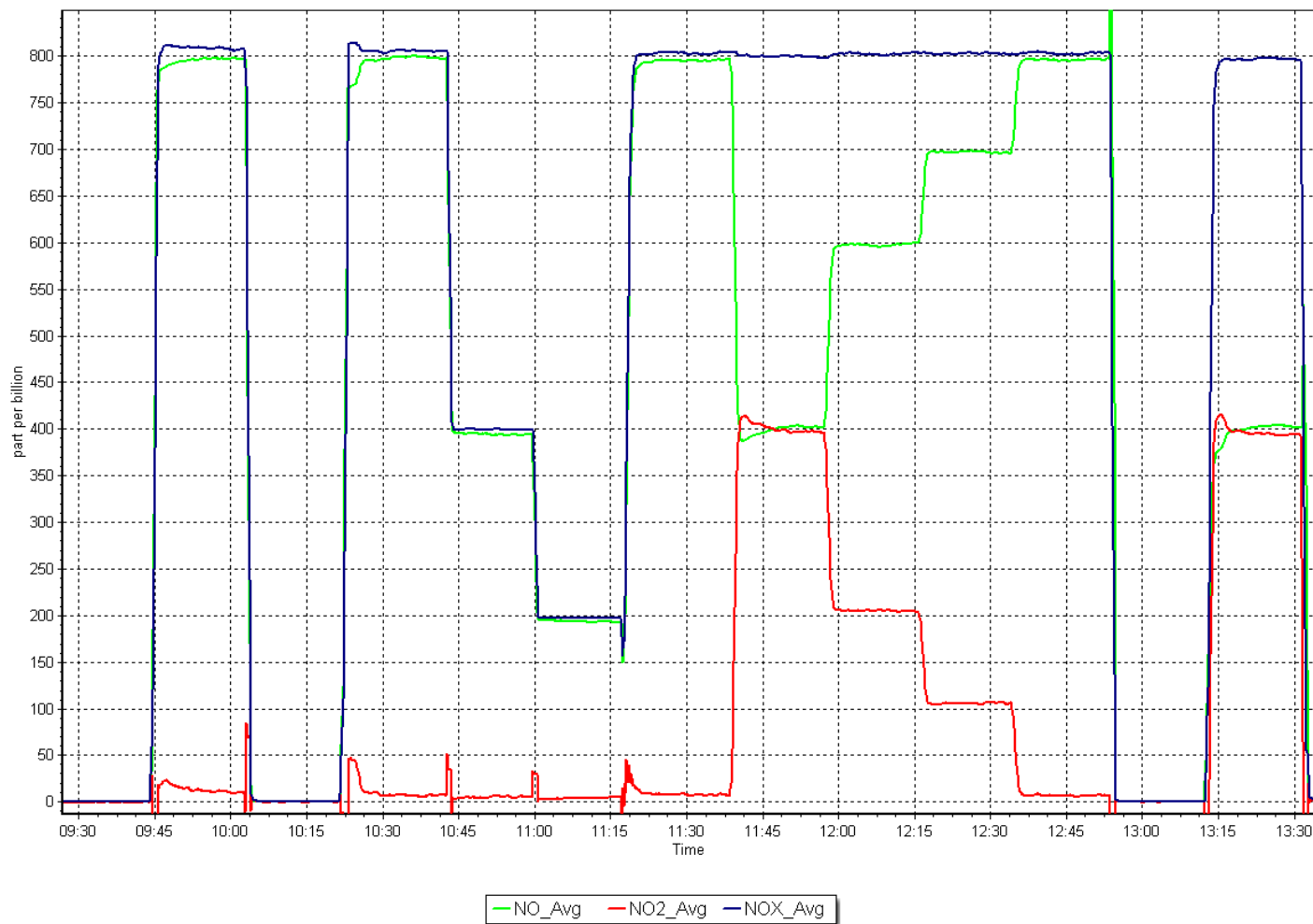
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999889	≥ 0.995
799.5	798.5	1.0013	Slope	1.000263	0.90 - 1.10
400.3	393.8	1.0165	Intercept	-3.529920	+/-20
200.1	193.6	1.0338			



NO_x Calibration Plot

Date: September 16, 2025

Location: Fort McKay South





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Fort McKay South
Station number: AMS 13
Calibration Date: September 22, 2025
Last Cal Date: September 16, 2025
Start time (MST): 9:20
End time (MST): 12:07
Reason: As Found

Calibration Standards

NO Gas Cylinder #: T2UP1RP
NOX Cal Gas Conc: 48.25 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 48.25 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne APIT701
Cal Gas Expiry Date: November 17, 2026
NO Cal Gas Conc: 47.88 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 47.88 ppm
NO gas Diff:
Serial Number: 2657
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.4	0.2	-0.6	----	----
AF High point	4917	83.5	805.7	799.5	6.2	718.3	708.9	9.4	1.1210	1.1281
AF Mid point	4958	41.8	403.4	400.3	3.1	351.4	344.8	6.6	1.1466	1.1616
AF Low point	4979	20.9	201.7	200.1	1.5	171.3	166.9	4.4	1.1747	1.2006

New cyl resp

Previous Response	NO _x = 803.8 ppb	NO = 796.2 ppb	* = > +/-5% change initiates investigation		*Percent Change	NO _x = -11.8%
Baseline Corr 1st pt	NO _x = 718.7 ppb	NO = 708.7 ppb	<u>As Found Statistics</u>		*Percent Change	NO = -12.3%
Baseline Corr 2nd pt	NO _x = 351.8 ppb	NO = 344.6 ppb	As found	NO _x r ² : 0.999775	Nx SI: 0.894372	Nx Int: -5.288
Baseline Corr 3rd pt	NO _x = 171.7 ppb	NO = 166.7 ppb	As found	NO r ² : 0.999616	NO SI: 0.889530	NO Int: -6.125
			As found	NO ₂ r ² : 0.999968	NO2 SI: 1.001018	NO ₂ Int: 0.351

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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
As Found GPT zero	----	----	0.0	-0.6	----	----
As found high GPT point	709.2	349.0	366.4	366.6	0.9994	100.1%
As found mid GPT point	709.2	528.9	186.5	187.5	0.9946	100.5%
As found low GPT point	709.2	618.4	97.0	98.4	0.9856	101.5%



Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 12300522720

Instrument Settings

	<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.127	
NOX coeff or slope:	1.002	
NO2 coeff or slope:	1.000	

	<u>Start</u>	<u>Finish</u>
NO bkgnd or offset:	3.1	
NOX bkgnd or offset:	3.4	
Reaction cell Press:	151.9	

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.000638	
NO _x Cal Offset:	-2.392513	
NO Cal Slope:	1.000263	
NO Cal Offset:	-3.529920	
NO ₂ Cal Slope:	0.994574	
NO ₂ Cal Offset:	1.025657	

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
-----------	---------------------------	-----------------------------	---	--	---	--	---------------------------------------	--	---	--

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 NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
-------------------	--	---------------------------------------	---	--	---	--

Cal zero
High GPT point
Mid GPT point
Low GPT point

Average Correction Factor

Notes:

Pump was changed.

Calibration Performed By:

Sean Bala

NO_x Calibration Plot

Date: September 22, 2025

Location: Fort McKay South





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Fort McKay South
Station number: AMS 13
Calibration Date: September 23, 2025
Last Cal Date: September 22, 2025
Start time (MST): 8:34
End time (MST): 12:19
Reason: Maintenance

Calibration Standards

NO Gas Cylinder #: T2UP1RP
NOX Cal Gas Conc: 48.25 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 48.25 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne APIT701
Cal Gas Expiry Date: November 17, 2026
NO Cal Gas Conc: 47.88 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 47.88 ppm
NO gas Diff:
Serial Number: 2657
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
-----------	------------------------------	--------------------------------	---	--	---	--	---	--	--	---

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	<u>As Found Statistics</u>		*Percent Change	NO = NA
Baseline Corr 2nd pt	NO _x = NA	ppb	NO = NA	ppb	As found	NO _x r ² :	Nx SI:	Nx Int:
Baseline Corr 3rd pt	NO _x = NA	ppb	NO = NA	ppb	As found	NO r ² :	NO SI:	NO Int:
					As found	NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
-------------------	---	--	--	---	--	--

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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 12300522720

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	NA	1.001033
NO _x Cal Offset:	NA	-3.631831
NO Cal Slope:	NA	1.004878
NO Cal Offset:	NA	-4.970210
NO ₂ Cal Slope:	NA	0.982117
NO ₂ Cal Offset:	NA	-1.008395

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	NA	1.144	NO bkgnd or offset:	NA	3.1
NOX coeff or slope:	NA	0.997	NOX bkgnd or offset:	NA	3.4
NO2 coeff or slope:	NA	1.000	Reaction cell Press:	NA	145.5

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.2	-0.1	----	----
High point	4917	83.5	805.7	799.5	6.2	805.1	801.4	3.6	1.0007	0.9976
Mid point	4958	41.8	403.4	400.3	3.1	397.3	393.6	3.7	1.0153	1.0170
Low point	4979	20.9	201.7	200.1	1.5	195.2	191.7	3.6	1.0332	1.0440
As left zero	5000	0.0	0.0	0.0	0.0	0.1	0.3	-0.2	----	----
As left span	4917	83.5	805.7	401.0	404.7	796.1	401.0	395.1	1.0121	1.0000
Average Correction Factor									1.0164	1.0196

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	800.3	399.4	407.1	399.1	1.0200	98.0%
Mid GPT point	800.3	599.0	207.5	202.8	1.0231	97.7%
Low GPT point	800.3	699.6	106.9	102.7	1.0407	96.1%
Average Correction Factor					1.0279	97.3%

Notes:

Adjusted span only.

Calibration Performed By:

Sean Bala



Wood Buffalo Environmental Association

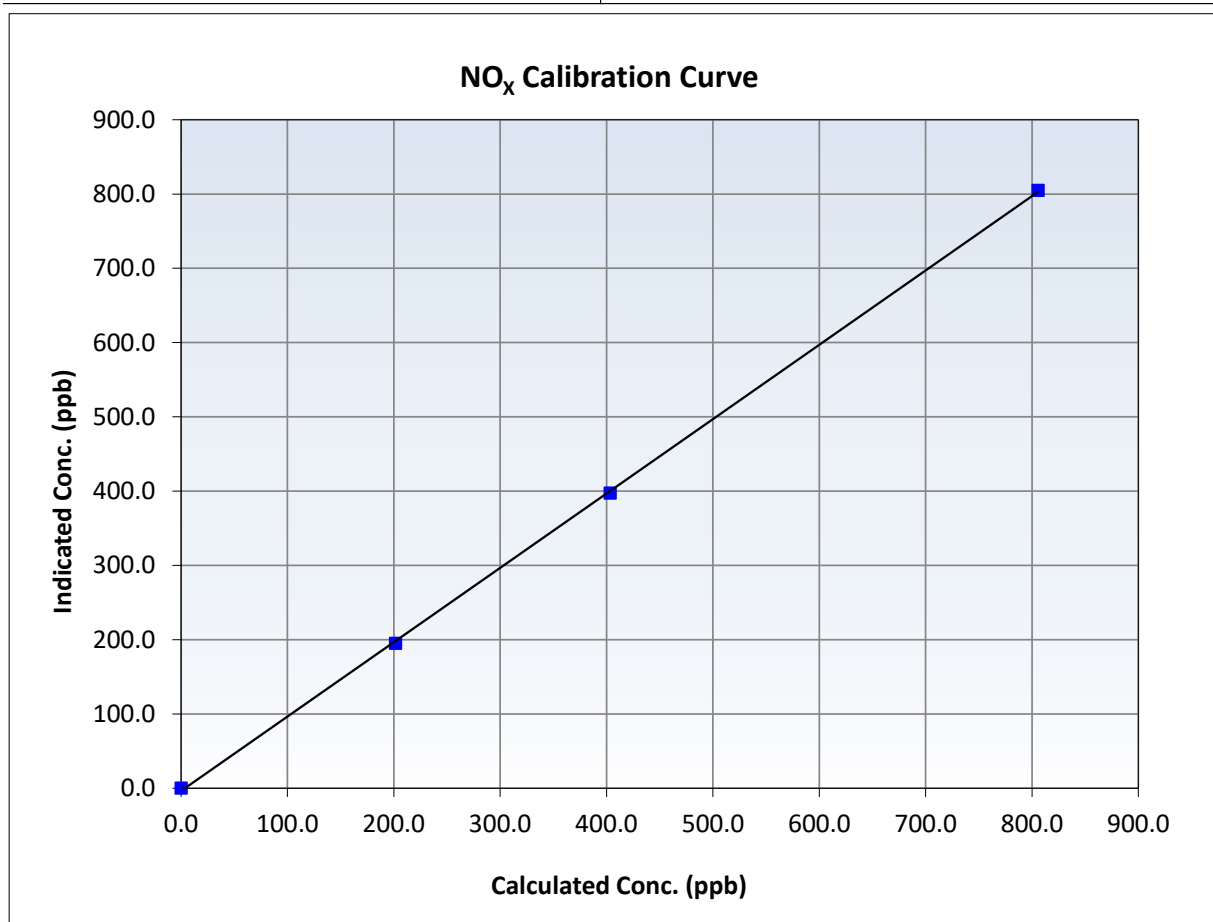
NO_x Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	September 22, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	8:34	End Time (MST):	12:19
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999898	≥0.995
805.7	805.1	1.0007	Slope	1.001033	0.90 - 1.10
403.4	397.3	1.0153	Intercept	-3.631831	+/-20
201.7	195.2	1.0332			





Wood Buffalo Environmental Association

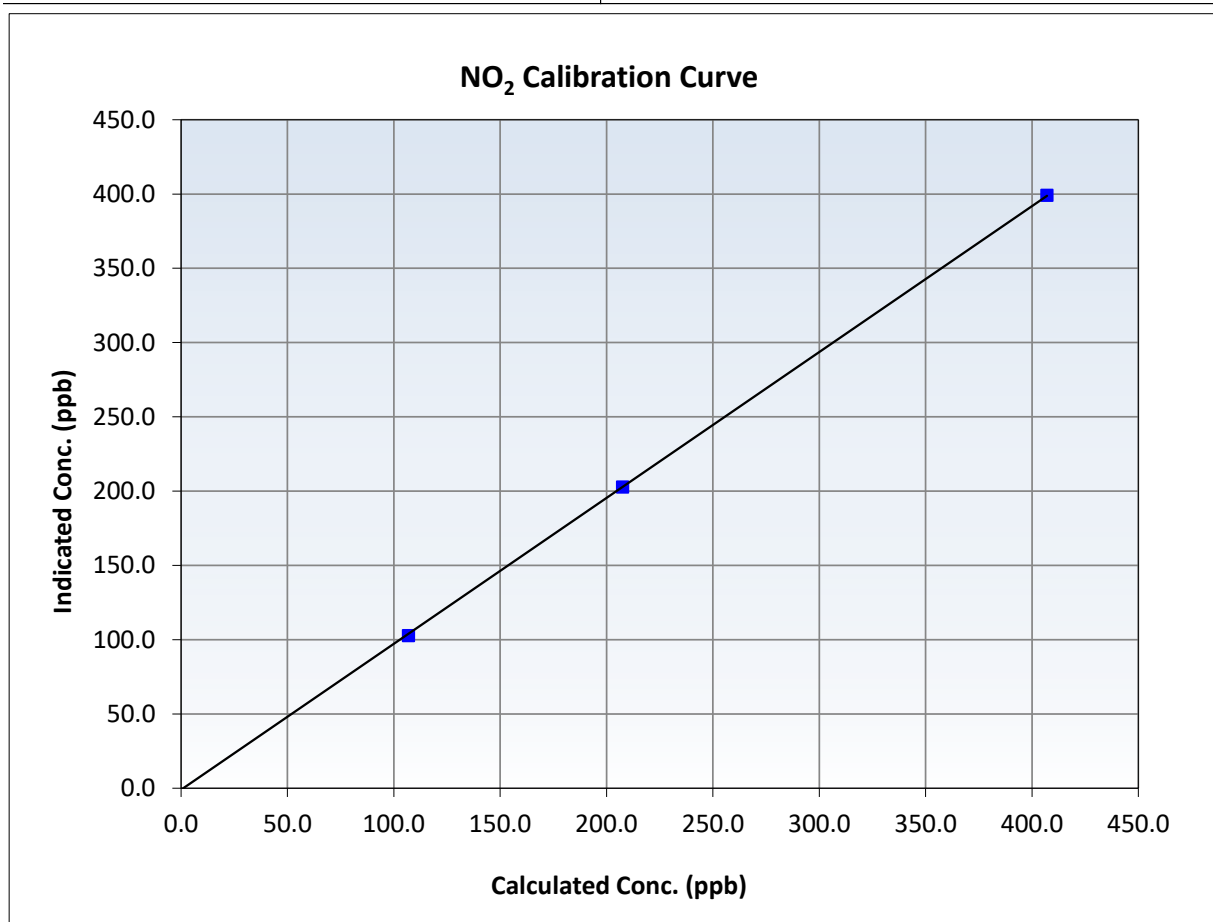
NO₂ Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	September 22, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	8:34	End Time (MST):	12:19
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	-0.1	----	Correlation Coefficient	0.999971	≥0.995
407.1	399.1	1.0200	Slope	0.982117	0.90 - 1.10
207.5	202.8	1.0231	Intercept	-1.008395	+/-20
106.9	102.7	1.0407			





Wood Buffalo Environmental Association

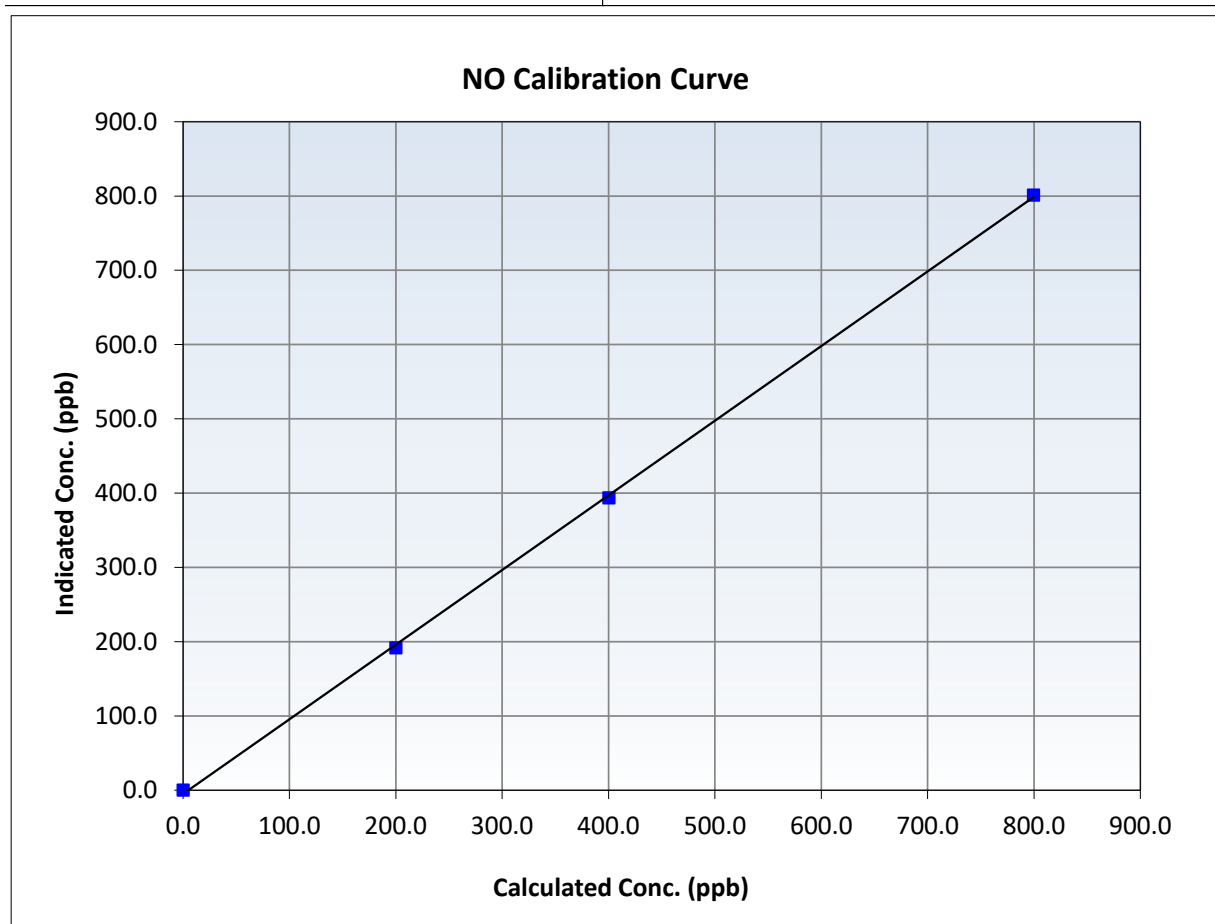
NO Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	September 22, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	8:34	End Time (MST):	12:19
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12300522720

Calibration Data

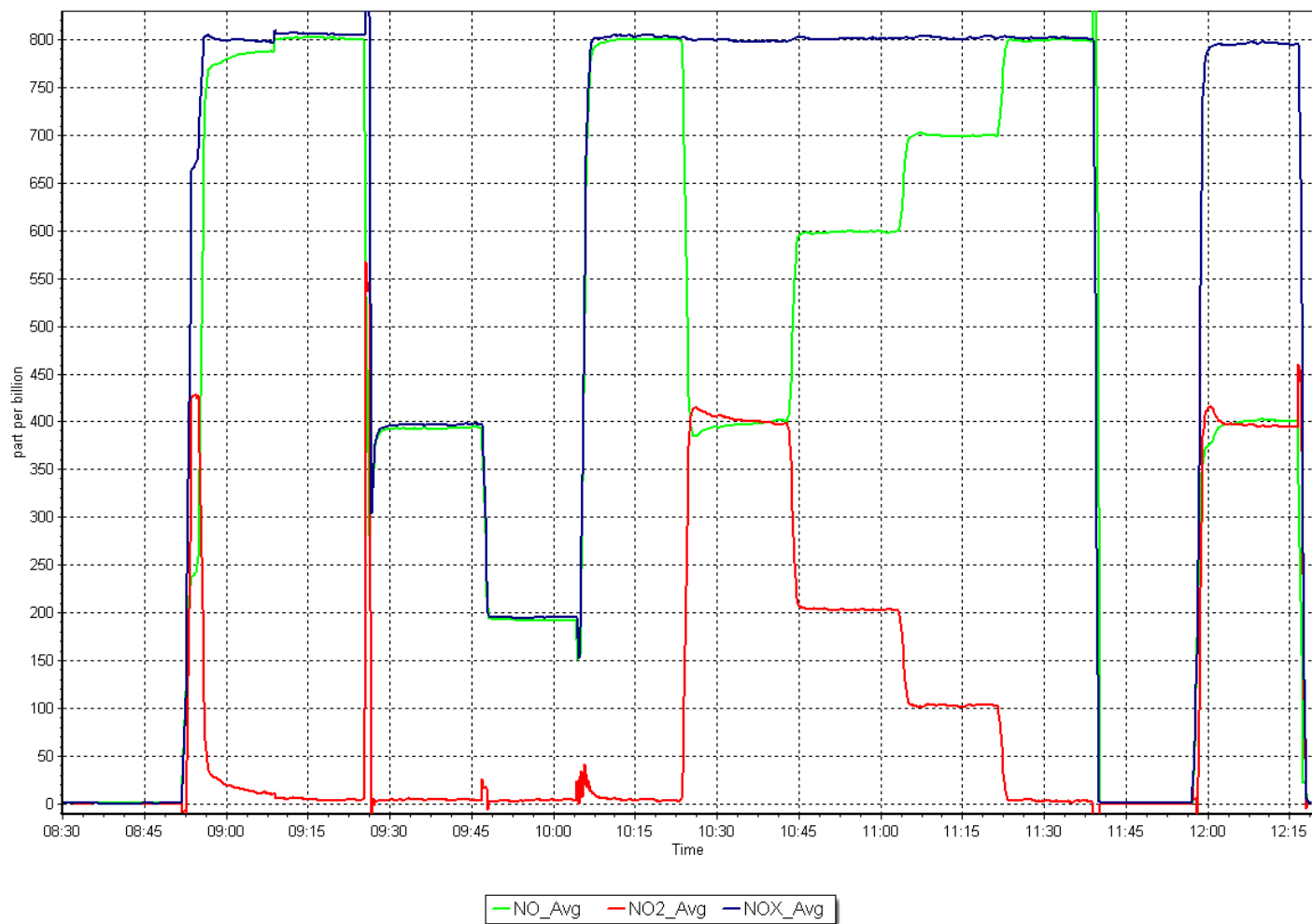
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999805	≥ 0.995
799.5	801.4	0.9976	Slope	1.004878	$0.90 - 1.10$
400.3	393.6	1.0170	Intercept	-4.970210	± 20
200.1	191.7	1.0440			



NO_x Calibration Plot

Date: September 23, 2025

Location: Fort McKay South





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Fort McKay South
Calibration Date: September 2, 2025
Start time (MST): 9:18
Reason: Routine

Station number: AMS 13
Last Cal Date: August 5, 2025
End time (MST): 12:16

Calibration Standards

O₃ generation mode: Photometer
Calibrator Make/Model: Teledyne API T750
ZAG Make/Model: Teledyne API 751H

Serial Number: 281
Serial Number: 321

Analyzer Information

Analyzer make: Teledyne API T400
Analyzer Range: 0 - 500 ppb

Analyzer serial #: 7413

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.007657	1.001257	Backgd or Offset:	-2.0	-3.6
Calibration intercept:	0.860000	1.680000	Coeff or Slope:	1.043	1.030

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	800.0	0.0	-2.0	----
As found High point	5000	966.7	400.0	403.0	0.988
As found Mid point					
As found Low point					
Baseline Corr As found:	405.0	Previous response	403.9	*% 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	

O₃ 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- AFzero)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	800.0	0.0	0.6	----
High point	5000	970.7	400.0	401.5	0.996
Mid point	5000	792.7	200.0	202.9	0.986
Low point	5000	677.1	100.0	102.6	0.975
As left zero	5000	800.0	0.0	0.8	----
As left span	5000	970.7	400.0	404.1	0.990
Average Correction Factor					0.986

Notes: Sample inlet filter was changed after as founds. Adjusted zero and span.

Calibration Performed By: Sean Bala



Wood Buffalo Environmental Association

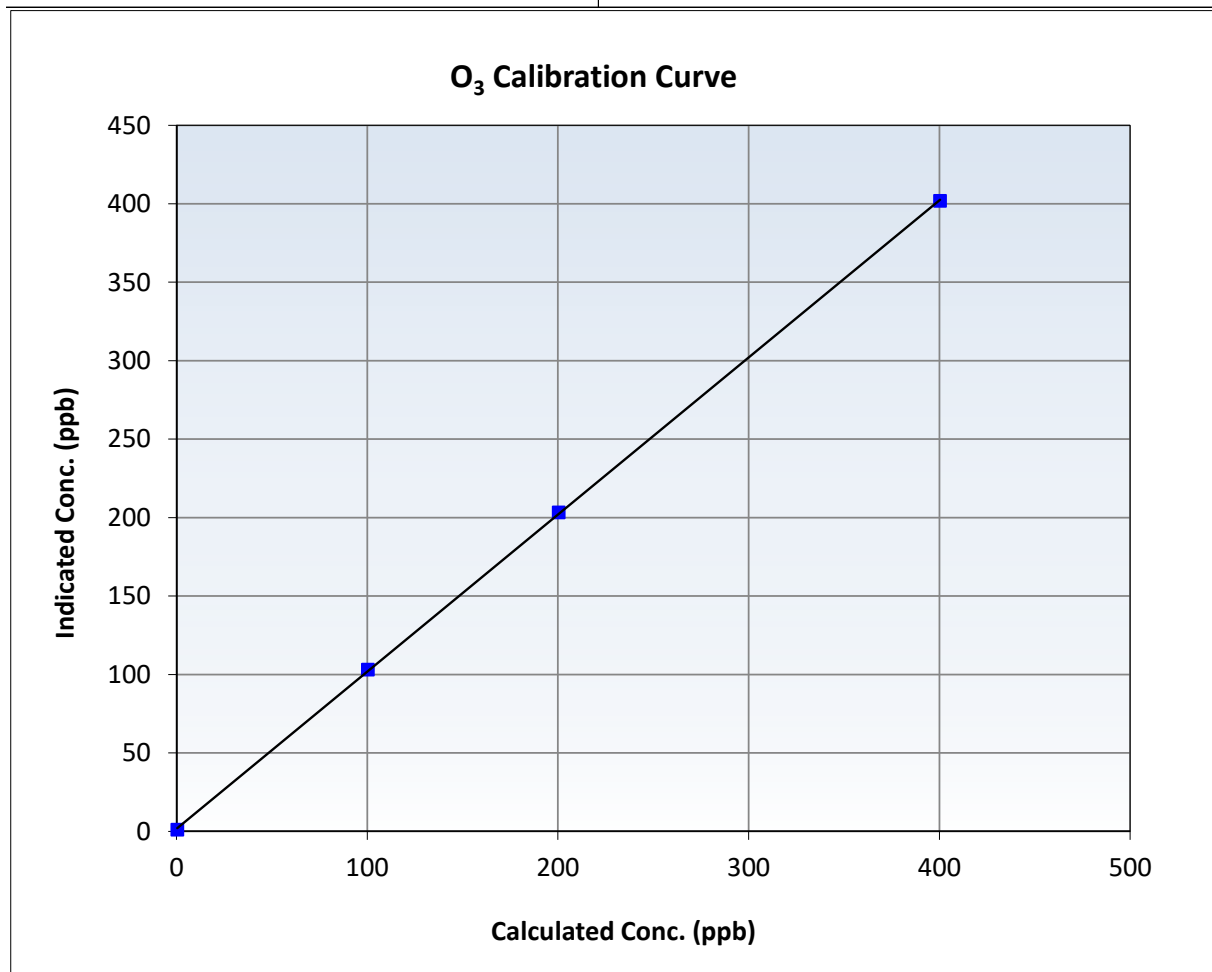
O₃ Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	August 5, 2025
Station Name:	Fort McKay South	Station Number:	AMS 13
Start Time (MST):	9:18	End Time (MST):	12:16
Analyzer make:	Teledyne API T400	Analyzer serial #:	7413

Calibration Data

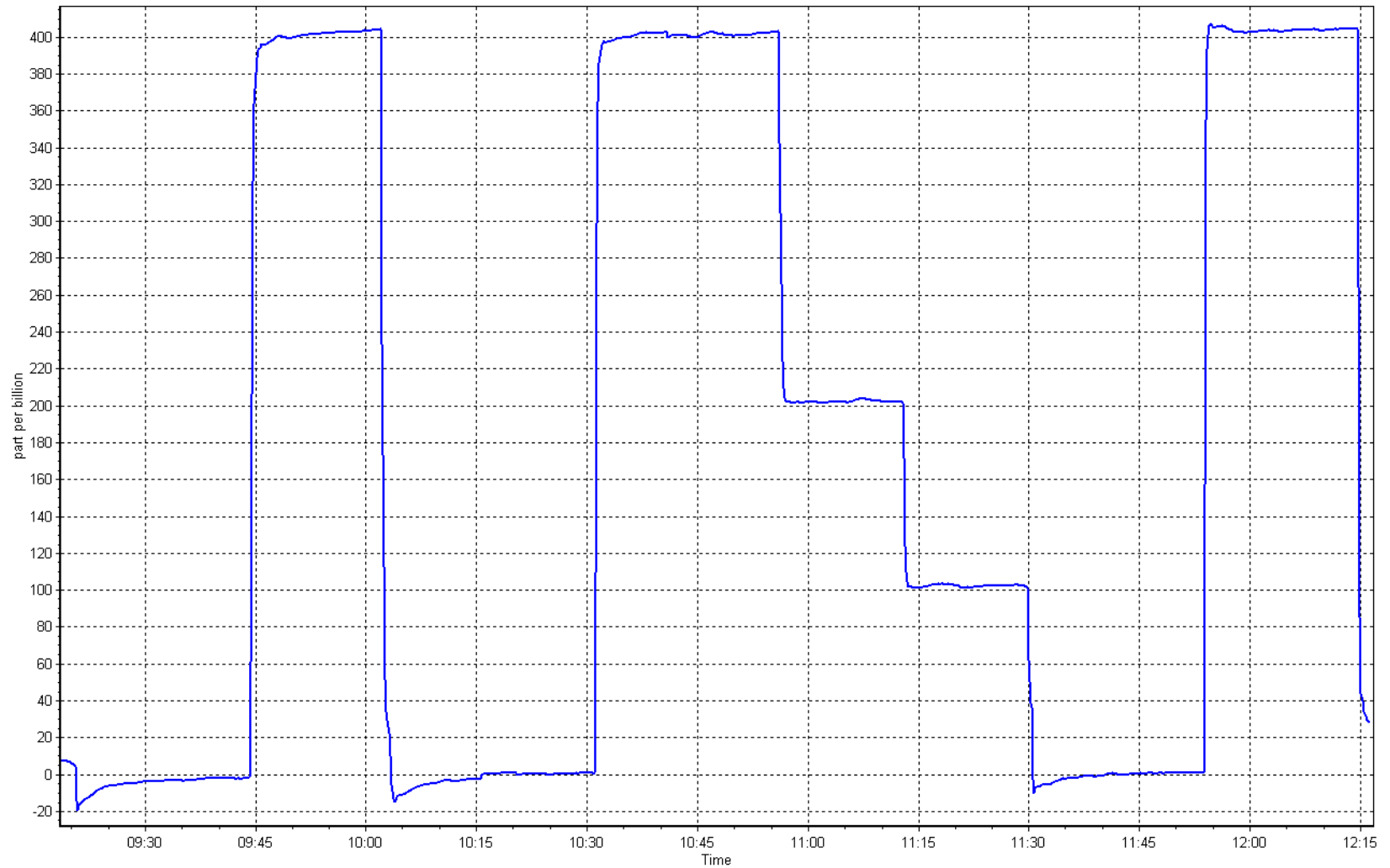
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.6	----	Correlation Coefficient	0.999964	≥ 0.995
400.0	401.5	0.9963	Slope	1.001257	$0.90 - 1.10$
200.0	202.9	0.9857	Intercept	1.680000	± 5
100.0	102.6	0.9747			



O₃ Calibration Plot

Date: September 2, 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: September 23, 2025 Last Cal Date: August 15, 2025
Start time (MST): 10:04 End time (MST): 10:49

Analyzer Make: Teledyne API T640 S/N: 1335
Particulate Fraction: PM2.5

Flow Meter Make/Model: Alicat FP-25 S/N: 388746
Temp/RH standard: Alicat FP-25 S/N: 388746

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	(Limits)
T (°C)	17.4	17.27	17.4	☐	+/- 2 °C
P (mmHg)	732.1	734.31	732.1	☐	+/- 10 mmHg
Flow (LPM)	5.08	5.04	5.08	☐	+/- 0.25 LPM
PMW% (pump)	41	----	41	☐	>80%
Zero Verification	PM w/o HEPA: _____	5.0	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	11.0	13.0	11.0	☒	+/- 0.5

Date Optical Chamber Cleaned: September 23, 2025
Date Disposable Filter Changed: September 23, 2025

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

Annual Maintenance

Date Sample Tube Cleaned: June 2, 2025
Date RH/T Sensor Cleaned: June 2, 2025

Notes: PMT peak test adjusted.

Calibration by: Sean Bala



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

**AMS14
ANZAC
SEPTEMBER 2025**

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Anzac Station number: AMS 14
Calibration Date: September 8, 2025 Last Cal Date: August 11, 2025
Start time (MST): 10:03 End time (MST): 13:20
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.013906	1.013794	Backgd or Offset:	25.4	25.5
Calibration intercept:	-0.360886	-1.021986	Coeff or Slope:	1.111	1.111

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4937	79.6	798.4	807.9	0.988
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	808.1	Previous response	809.2	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4937	79.6	798.4	809.3	0.987
Mid point	4977	39.7	398.2	401.1	0.993
Low point	4992	19.7	197.8	199.2	0.993
As left zero	5000	0.0	0.0	0.1	----
As left span	4937	79.6	798.4	810.1	0.986
Average Correction Factor:					0.991

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

Calibration Performed By: Mohammed Kashif



Wood Buffalo Environmental Association

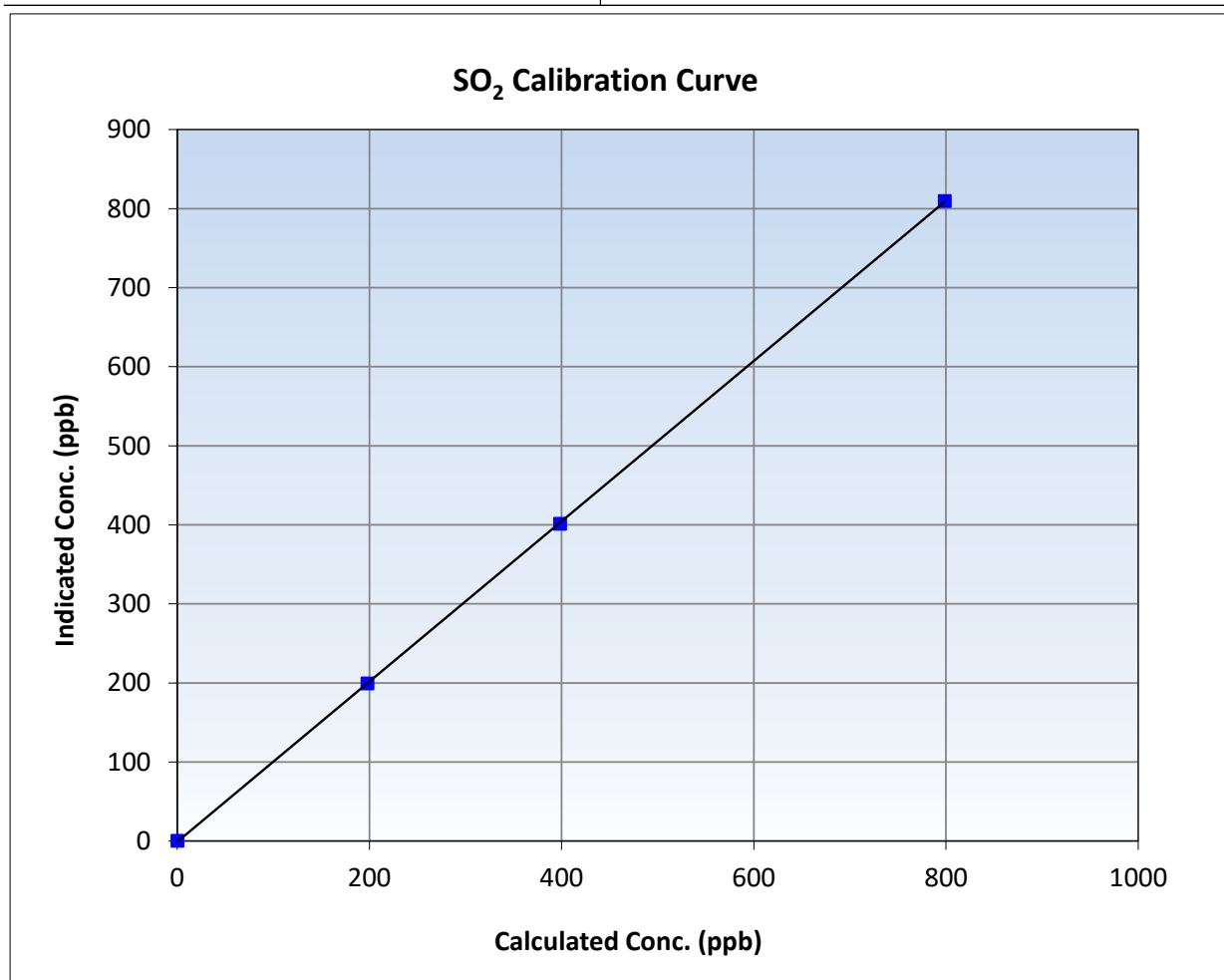
SO₂ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 11, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:03	End Time (MST):	13:20
Analyzer make:	Thermo 43i	Analyzer serial #:	0710321322

Calibration Data

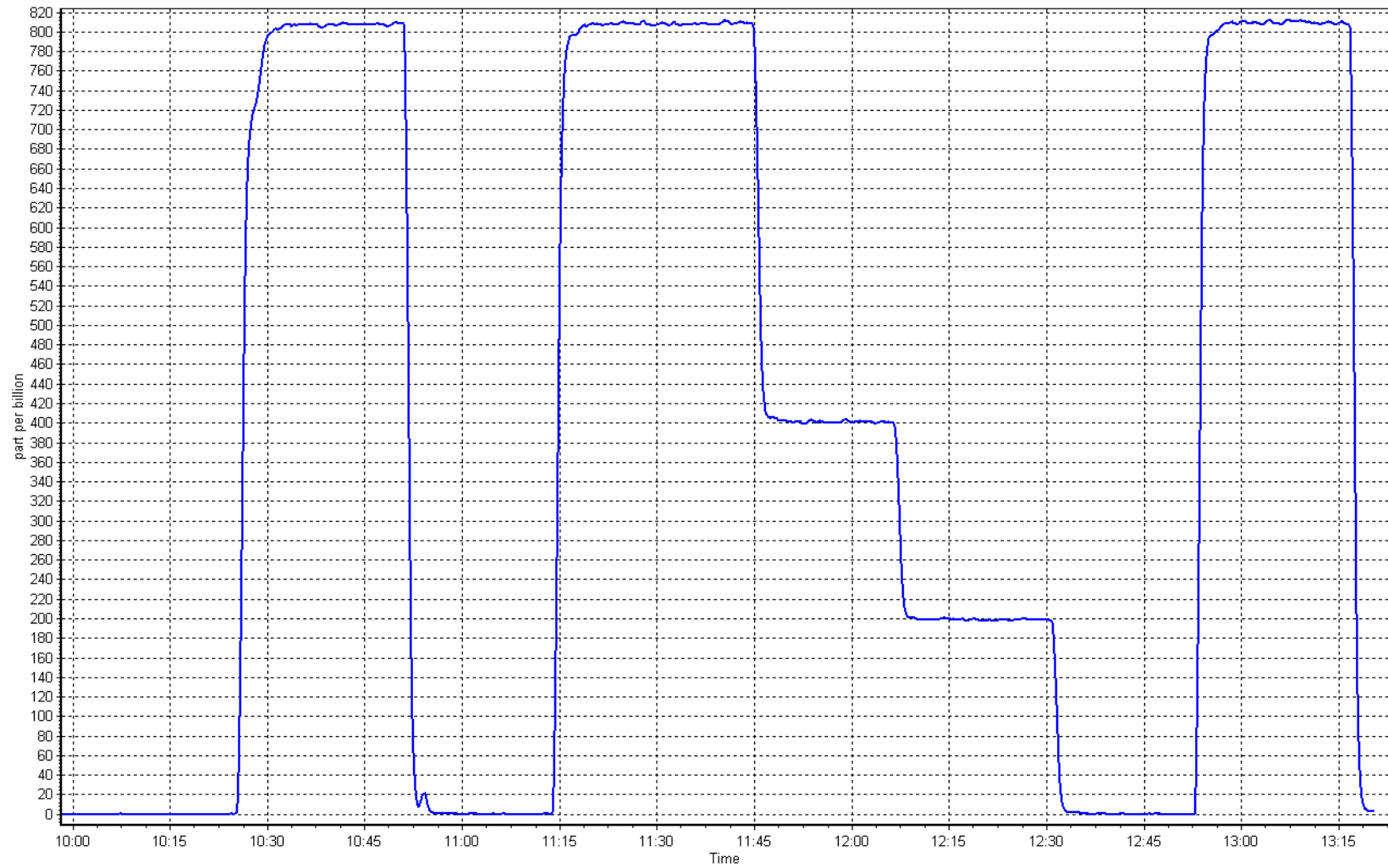
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999988	≥0.995
798.4	809.3	0.9866	Slope	1.013794	0.90 - 1.10
398.2	401.1	0.9928	Intercept	-1.021986	+/-30
197.8	199.2	0.9930			



SO2 Calibration Plot

Date: September 8, 2025

Location: Anzac





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Anzac Station number: AMS 14
Calibration Date: September 15, 2025 Last Cal Date: August 8, 2025
Start time (MST): 9:30 End time (MST): 12:15
Reason: As Found

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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.021026		Backgd or Offset:	2.4	
Calibration intercept:	-0.364152		Coeff or Slope:	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4938	77.9	80.0	85.3	0.935
As found Mid point	4973	38.9	40.0	42.2	0.943
As found Low point	4997	19.4	19.9	20.1	0.981
New cylinder response					
Baseline Corr As found:	85.5	Prev response:	81.30	*% change:	4.9%
Baseline Corr 2nd AF pt:	42.4	AF Slope:	1.072770	AF Intercept:	-0.662410
Baseline Corr 3rd AF pt:	20.3	AF Correlation:	0.999850	* = > +/-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- AFzero)) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					
SO2 Scrubber Check					
Date of last scrubber change:	28-May-25			Ave Corr Factor	
Date of last converter efficiency test:					

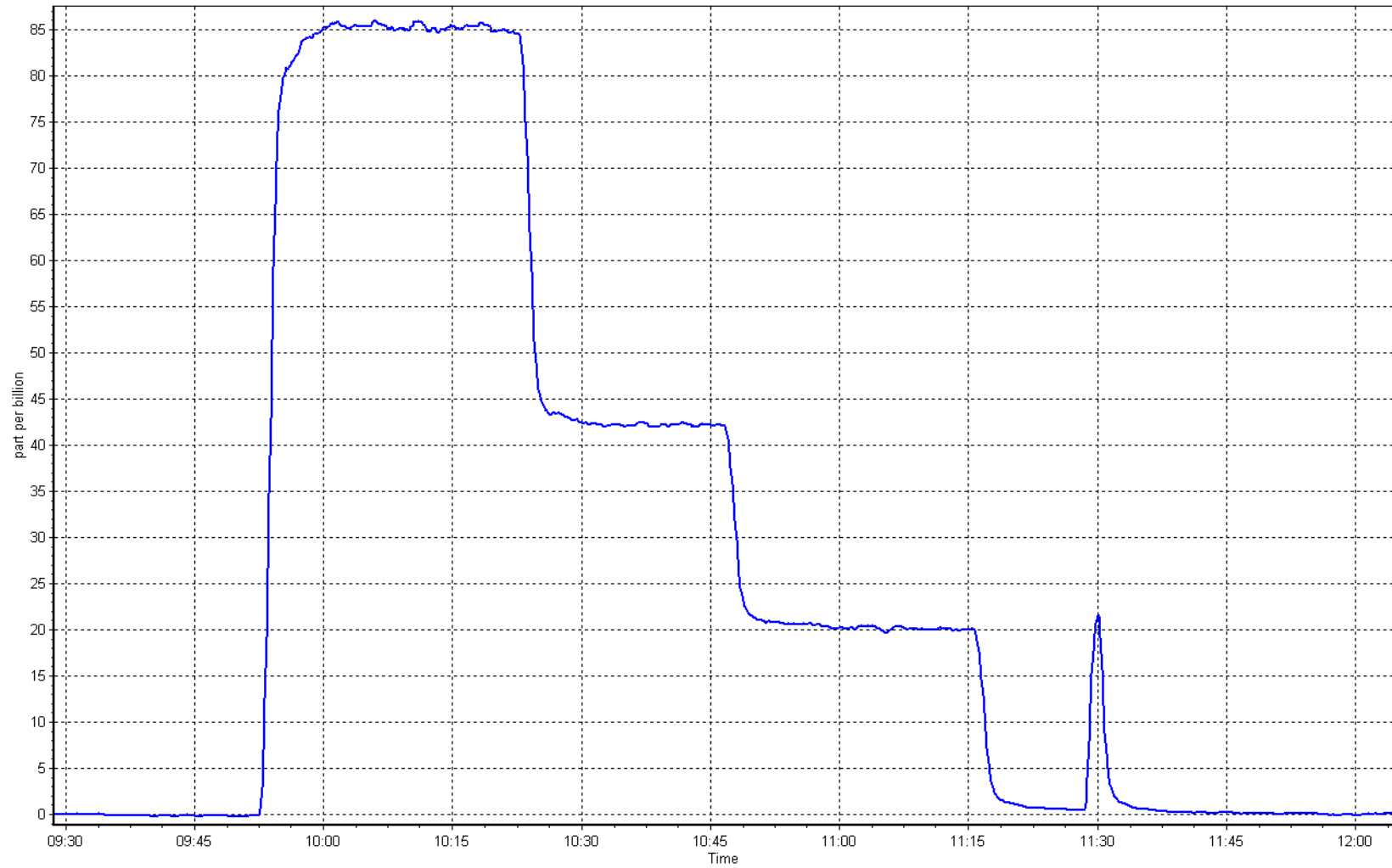
Notes: Performed as founds only.

Calibration Performed By: Mohammed Kashif

TRS Calibration Plot

Date: September 15, 2025

Location: Anzac





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Anzac Station number: AMS 14
Calibration Date: September 16, 2025 Last Cal Date: September 15, 2025
Start time (MST): 8:45 End time (MST): 15:58
Reason: Maintenance

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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	1.021026	0.999877	Backgd or Offset:	2.4
Calibration intercept:	-0.364152	-0.224935	Coeff or Slope:	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)) <i>Limit = 0.90-1.10</i>
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-AFzero)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4938	77.9	80.0	79.9	1.001
Mid point	4973	38.9	40.0	39.6	1.009
Low point	4997	19.4	19.9	19.2	1.037
As left zero	5000	0.0	0.0	0.2	----
As left span	4938	77.9	80.0	78.3	1.021
SO2 Scrubber Check	4937	79.6	793.4	-0.1	----
Date of last scrubber change:	28-May-25		Ave Corr Factor		1.016
Date of last converter efficiency test:	September 16, 2025		103.4% efficiency		

Notes: Performed a converter efficiency test. Adjusted span only.

Calibration Performed By: Mohammed Kashif



Wood Buffalo Environmental Association

TRS Calibration Summary

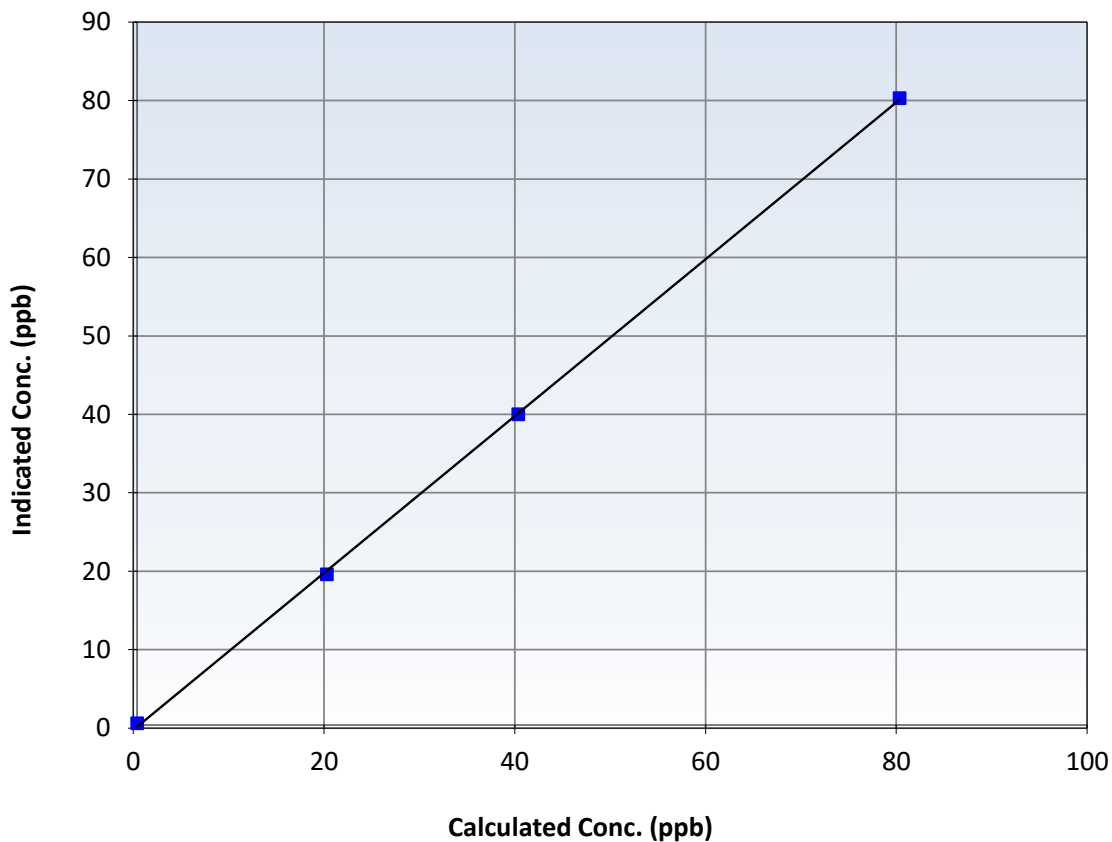
Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	September 15, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	8:45	End Time (MST):	15:58
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1218153582

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999868	≥ 0.995
80.0	79.9	1.0006	Slope	0.999877	$0.90 - 1.10$
40.0	39.6	1.0090	Intercept	-0.224935	± 3
19.9	19.2	1.0369			

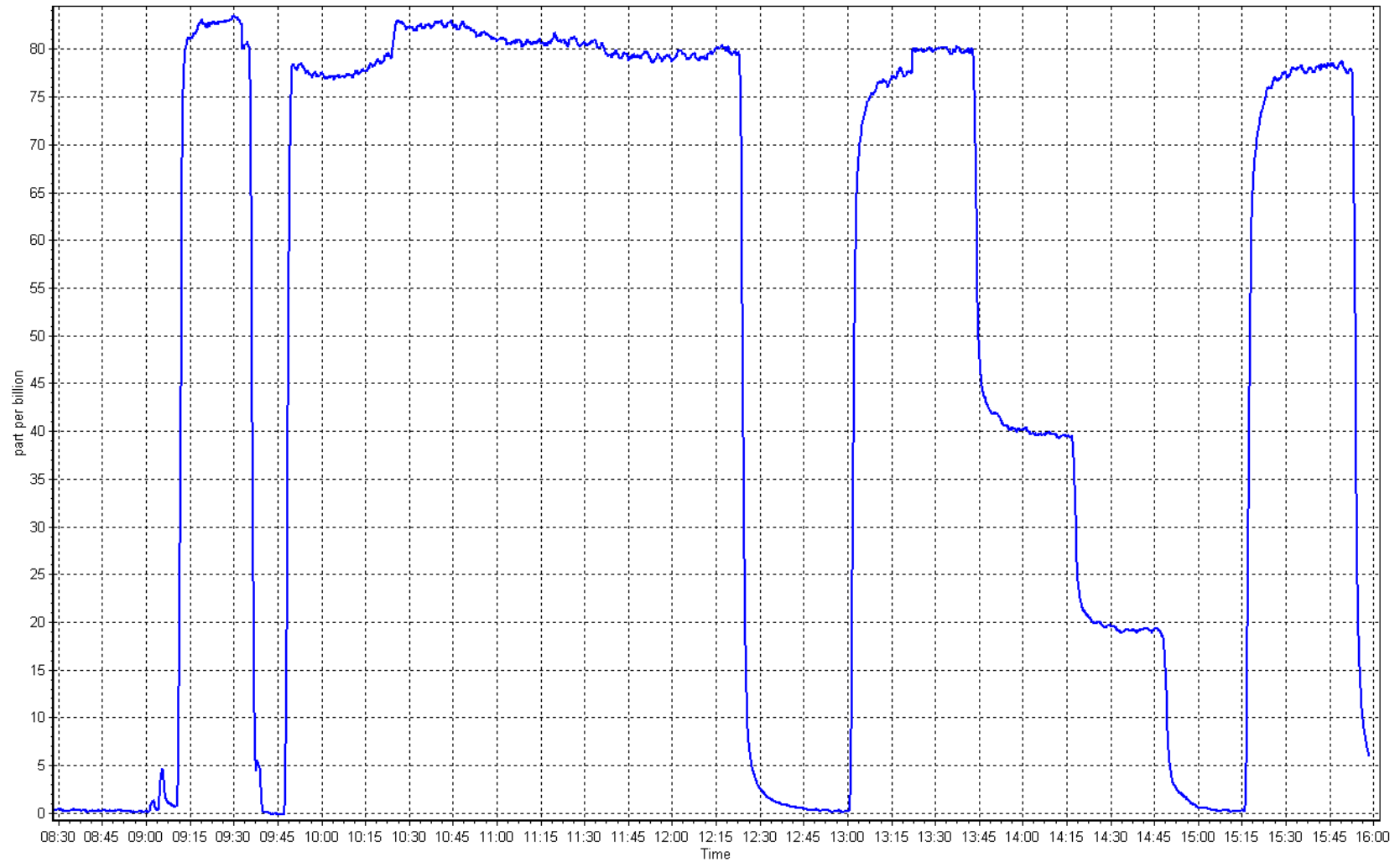
TRS Calibration Curve



TRS Calibration Plot

Date: September 16, 2025

Location: Anzac





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Anzac Station number: AMS 14
Calibration Date: September 25, 2025 Last Cal Date: September 16, 2025
Start time (MST): 10:30 End time (MST): 13:35
Reason: Maintenance

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 #: 631
Analyzer Range: 0 - 100 ppb Converter Temp: 800 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.999877	1.001176	Backgd or Offset:	2.38	2.25
Calibration intercept:	-0.224935	0.001442	Coeff or Slope:	1.016	0.957

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)) <i>Limit = 0.90-1.10</i>
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4922	77.7	80.0	80.1	0.999
Mid point	4961	38.9	40.1	40.1	0.999
Low point	4981	19.4	20.0	20.0	0.999
As left zero	5000	0.0	0.0	0.3	----
As left span	4922	77.7	80.0	79.5	1.006
SO2 Scrubber Check	4921	79.5	794.9	0.3	----
Date of last scrubber change:	28-May-25		Ave Corr Factor		0.999
Date of last converter efficiency test:	September 16, 2025		103.4% efficiency		

Notes: No as founds due to failed converter, pump and converter replaced prior to calibration. SOX scrubber relocated outside of converter in rack, SOX scrubber texted post zero, no issue.

Calibration Performed By: Kelly Baragar



Wood Buffalo Environmental Association

TRS Calibration Summary

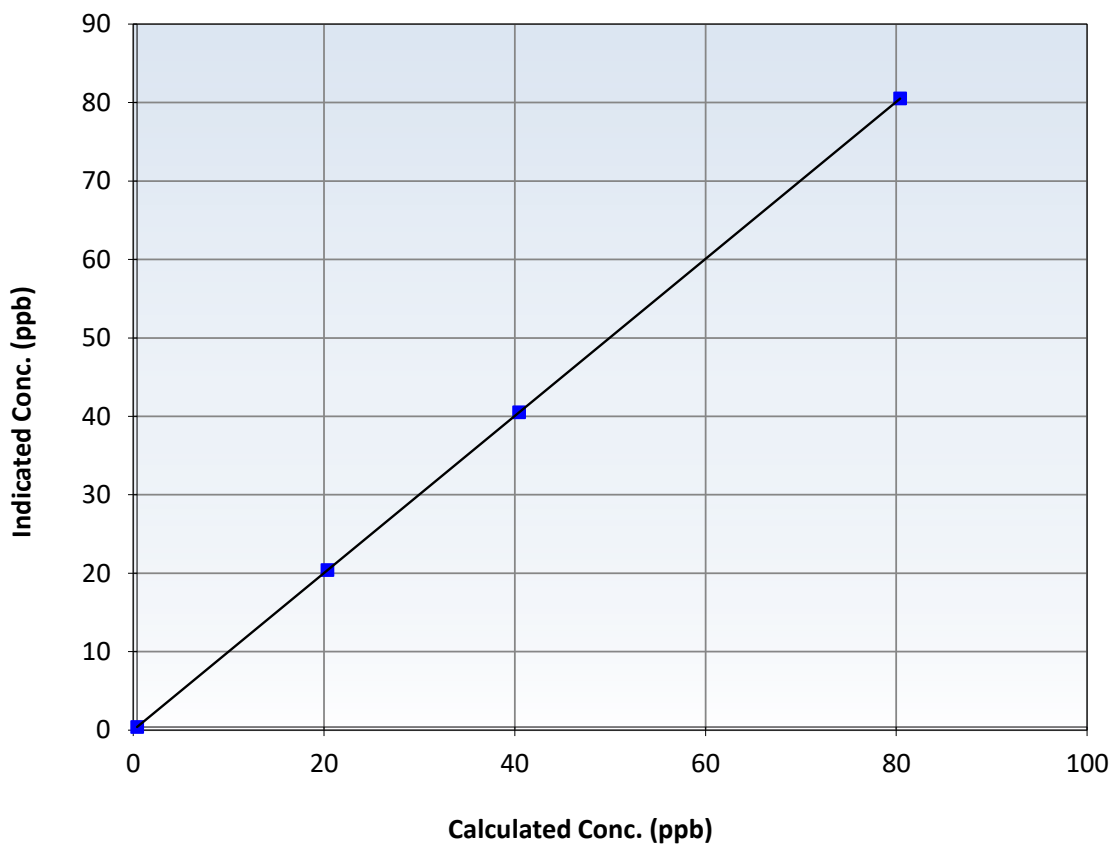
Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	September 16, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:30	End Time (MST):	13:35
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1218153582

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	1.000000		≥ 0.995
80.0	80.1	0.9988	Slope	1.001176		$0.90 - 1.10$
40.1	40.1	0.9988	Intercept	0.001442		± 3
20.0	20.0	0.9986				

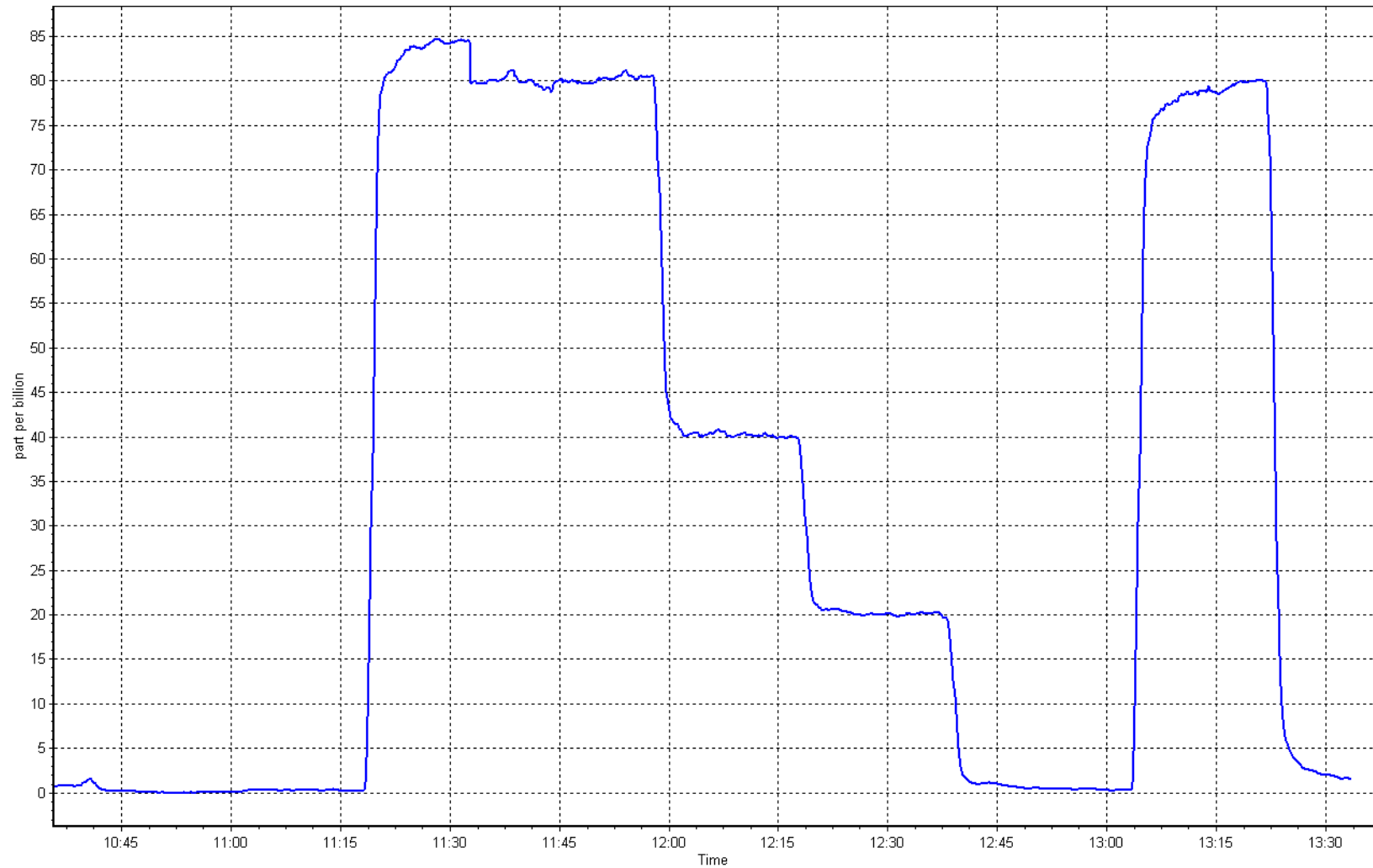
TRS Calibration Curve



TRS Calibration Plot

Date: September 25, 2025

Location: Anzac





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Anzac
Calibration Date: September 8, 2025
Start time (MST): 10:03
Reason: Routine

Station number: AMS 14
Last Cal Date: August 11, 2025
End time (MST): 13:20

Calibration Standards

Gas Cert Reference:	CC462030	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	505.3 ppm	CH ₄ Equiv Conc.	1068.8 ppm
C ₃ H ₈ Cal Gas Conc.	204.9 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH ₄ Conc.	505.3 ppm	CH ₄ Equiv Conc.	1068.8 ppm
Removed C ₃ H ₈ 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
THC Range: 0 - 20 ppm

Analyzer serial #: 1331259521
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.99E-04	2.99E-04	NMHC SP Ratio:	5.88E-05
CH ₄ Retention time:	15.1	15.1	NMHC Peak Area:	152010
Zero Chromatogram:	OFF	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4937	79.6	16.96	17.01	0.997
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.01	Prev response	16.89	*% change	0.7%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4937	79.6	16.96	16.95	1.001
Mid point	4977	39.7	8.46	8.27	1.023
Low point	4992	19.7	4.20	4.09	1.027
As left zero	5000	0.0	0.00	0.00	----
As left span	4937	79.6	16.96	16.96	1.000
Average Correction Factor					1.000

Notes:

Changed the sample inlet filter after as founds. No adjustments made.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4937	79.6	8.94	9.01	0.992
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.01	Prev response	8.92	*% change	1.0%
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	4937	79.6	8.94	8.97	0.997
Mid point	4977	39.7	4.46	4.40	1.013
Low point	4992	19.7	2.21	2.19	1.013
As left zero	5000	0.0	0.00	0.00	----
As left span	4937	79.6	8.94	8.98	0.996
Average Correction Factor					1.008

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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4937	79.6	8.02	8.00	1.003
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.00	Prev response	7.97	*% change	0.3%
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	4937	79.6	8.02	7.98	1.005
Mid point	4977	39.7	4.00	3.87	1.034
Low point	4992	19.7	1.99	1.90	1.045
As left zero	5000	0.0	0.00	0.00	----
As left span	4937	79.6	8.02	7.98	1.005
Average Correction Factor					1.028

Calibration Statistics

	Start	Finish
THC Cal Slope:	1.001157	1.000314
THC Cal Offset:	-0.083460	-0.080469
CH ₄ Cal Slope:	1.001048	0.996730
CH ₄ Cal Offset:	-0.055598	-0.052231
NMHC Cal Slope:	1.000833	1.003798
NMHC Cal Offset:	-0.026464	-0.029037

Calibration Performed By: Mohammed Kashif



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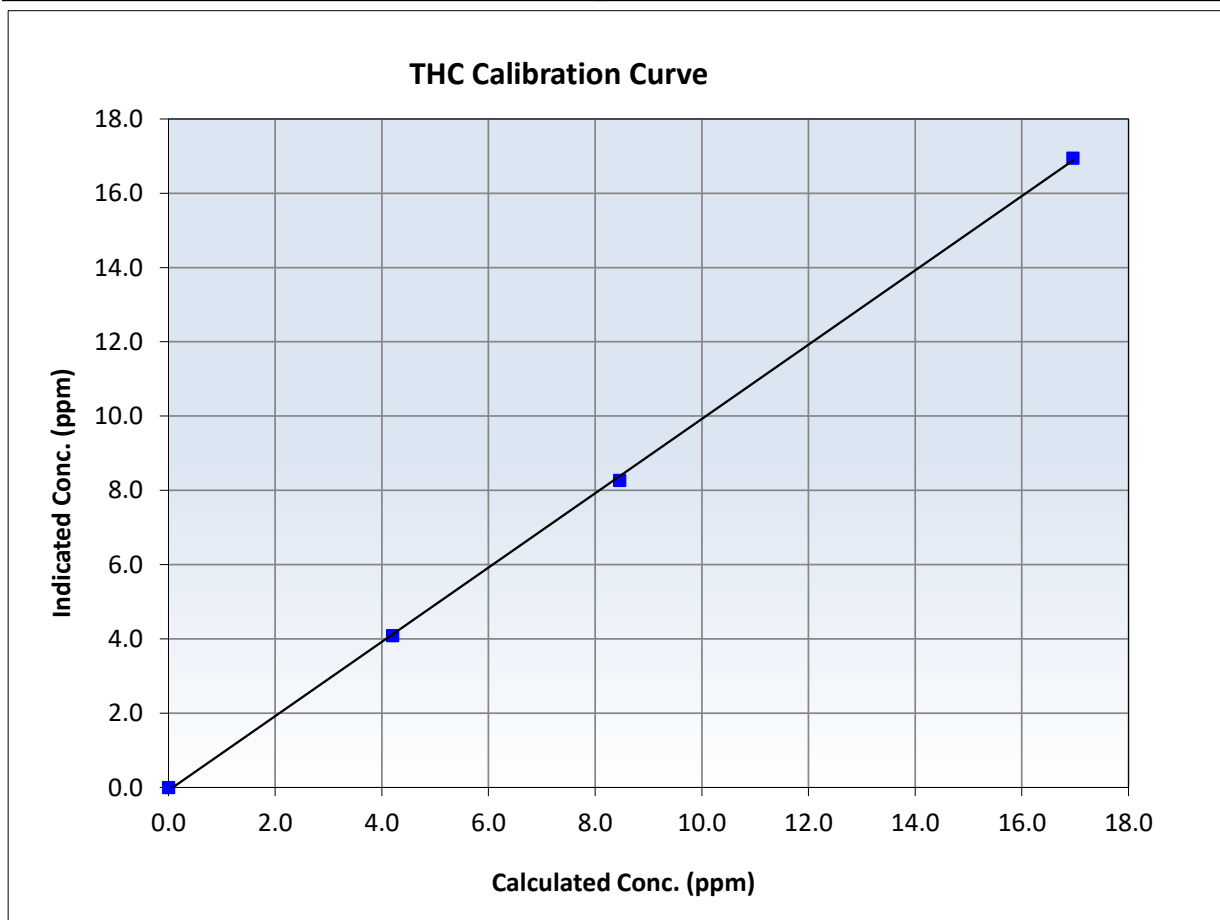
THC Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 11, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:03	End Time (MST):	13:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259521

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999848	≥ 0.995
16.96	16.95	1.0007	Slope	1.000314	$0.90 - 1.10$
8.46	8.27	1.0228	Intercept	-0.080469	± 0.5
4.20	4.09	1.0274			





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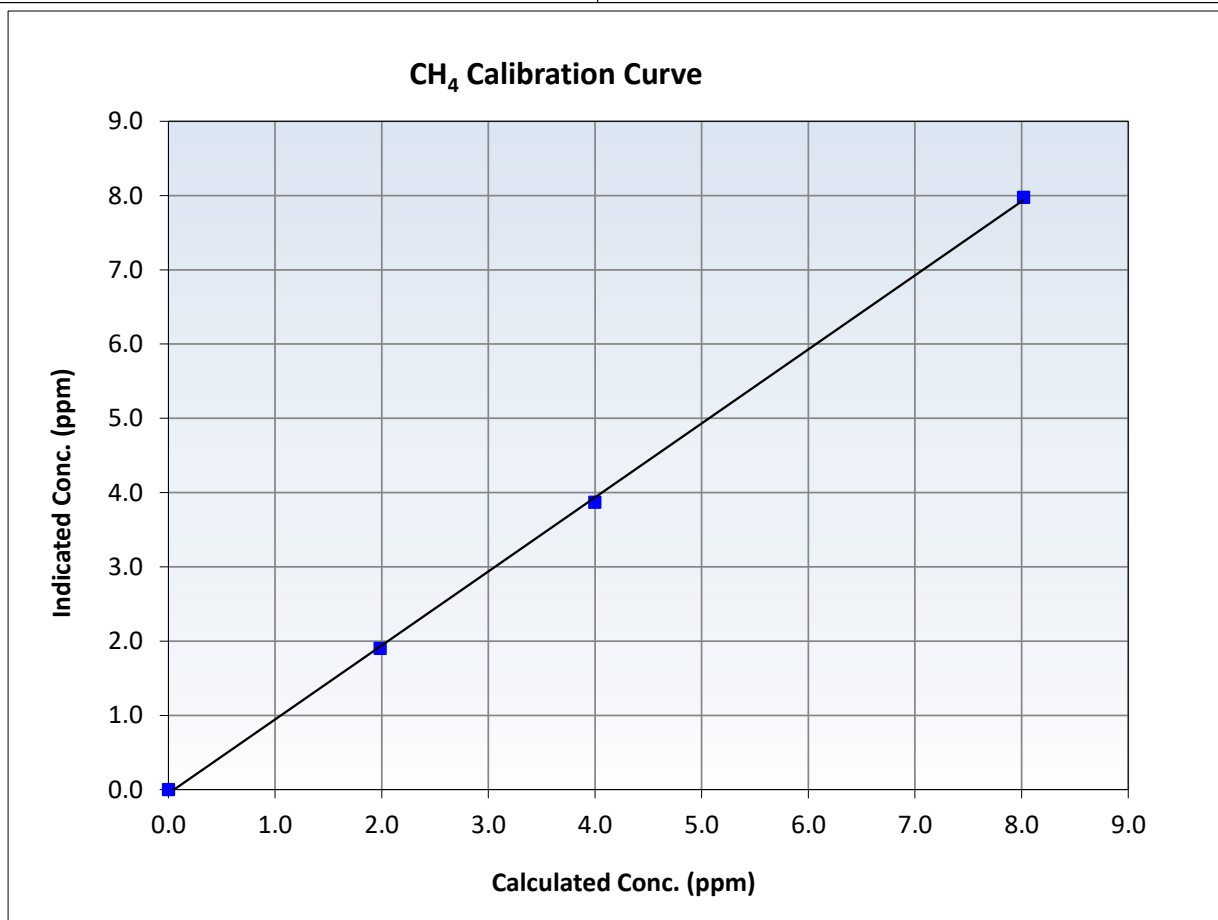
CH₄ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 11, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:03	End Time (MST):	13:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259521

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999740	<i>≥0.995</i>
8.02	7.98	1.0050	Slope	0.996730	<i>0.90 - 1.10</i>
4.00	3.87	1.0335	Intercept	-0.052231	<i>+/-0.5</i>
1.99	1.90	1.0448			





Wood Buffalo Environmental Association

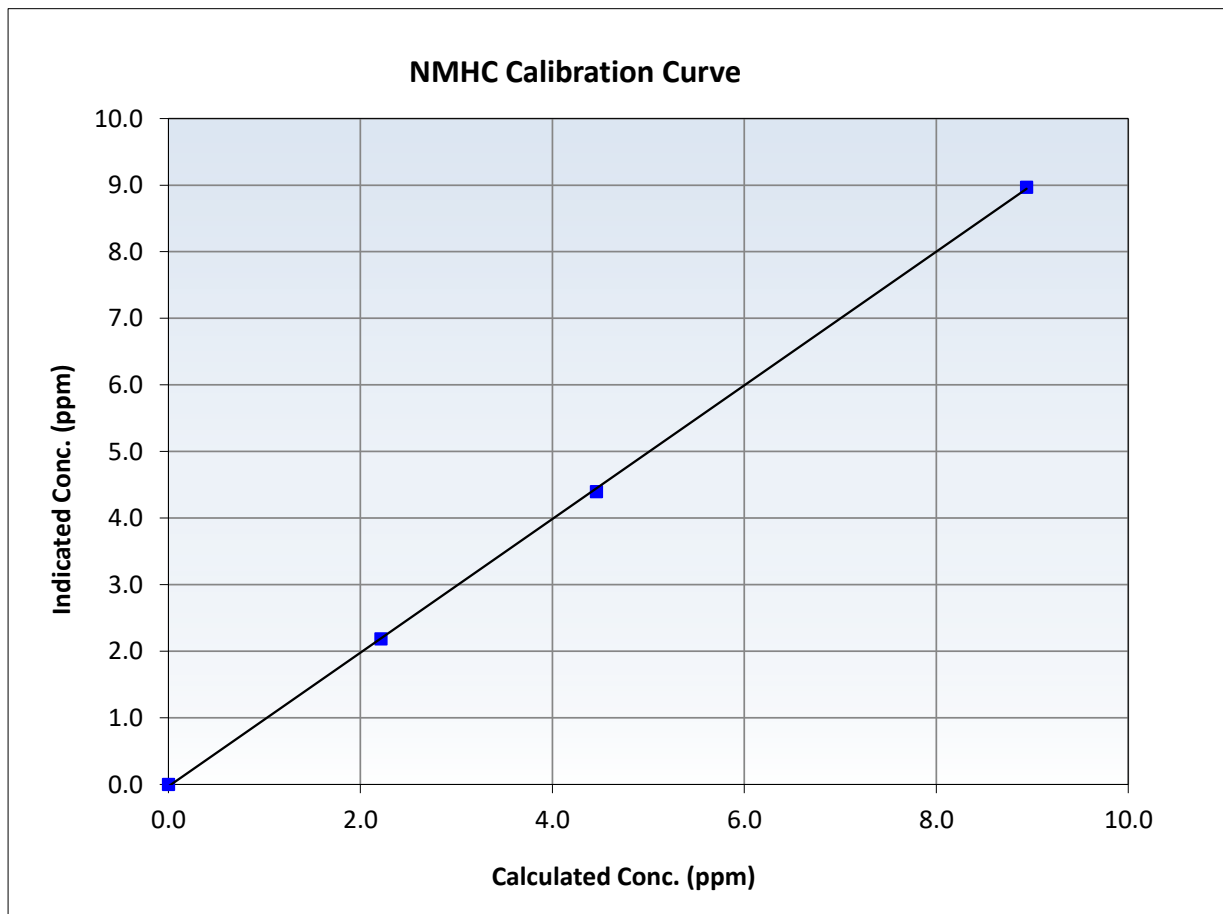
NMHC Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 11, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	10:03	End Time (MST):	13:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1331259521

Calibration Data

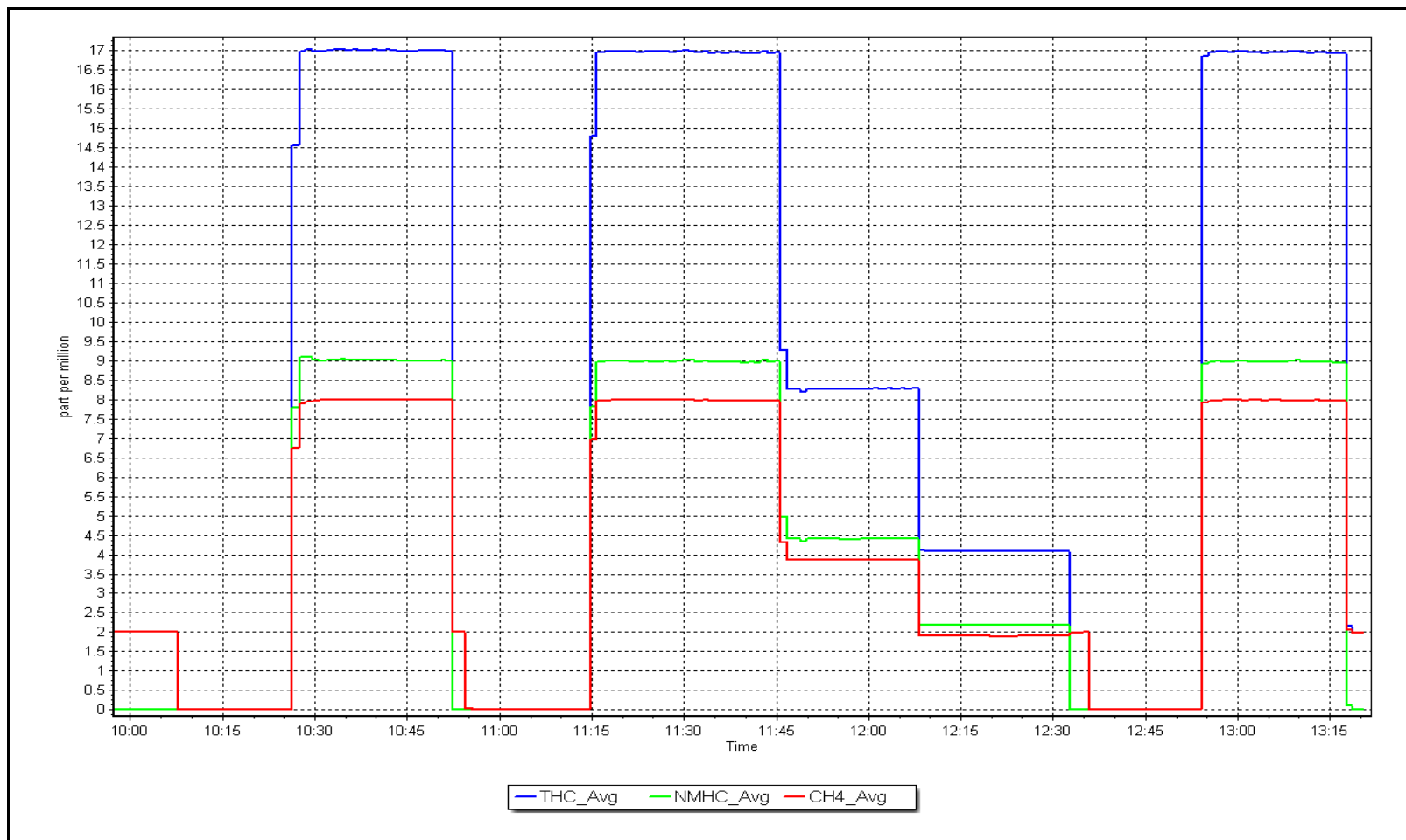
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999915	<i>≥0.995</i>
8.94	8.97	0.9966	Slope	1.003798	<i>0.90 - 1.10</i>
4.46	4.40	1.0134	Intercept	-0.029037	<i>+/-0.5</i>
2.21	2.19	1.0128			



NMHC Calibration Plot

Date: September 8, 2025

Location: Anzac





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Anzac
Station number: AMS 14
Calibration Date: September 10, 2025
Last Cal Date: August 13, 2025
Start time (MST): 9:55
End time (MST): 14:50
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0037092
NOX Cal Gas Conc: 60.7 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 60.70 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T700H
Cal Gas Expiry Date: May 16, 2031
NO Cal Gas Conc: 60.40 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 60.40 ppm
NO gas Diff:
Serial Number: 3060
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.2	0.0	0.3	----	----
AF High point	4934	66.3	804.8	800.9	4.0	806.9	801.0	5.9	0.9977	0.9998
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO _x = 802.0 ppb	NO = 799.1 ppb	* = > +/-5% change initiates investigation		*Percent Change	NO _x = 0.6%
Baseline Corr 1st pt	NO _x = 806.7 ppb	NO = 801.0 ppb	<u>As Found Statistics</u>		*Percent Change	NO = 0.2%
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb	As found	NO _x r ² :	Nx SI:	Nx Int:
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb	As found	NO r ² :	NO SI:	NO Int:
			As found	NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1152430008

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
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:	156.9	157.5

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.996946	0.998607
NO _x Cal Offset:	-0.330214	-0.289967
NO Cal Slope:	1.000439	1.003538
NO Cal Offset:	-2.069380	-2.329840
NO ₂ Cal Slope:	0.996096	0.994357
NO ₂ Cal Offset:	-0.734384	-1.018568

Dilution Calibration Data

Set Point	Dilution flow rate (scm)	Source gas flow rate (scm)	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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.4	0.1	0.3	----	----
High point	4934	66.3	804.8	800.9	4.0	803.5	802.4	1.2	1.0017	0.9981
Mid point	4985	33.2	401.6	399.6	2.0	401.2	398.0	3.3	1.0010	1.0040
Low point	5004	16.7	201.9	200.9	1.0	200.1	196.5	3.6	1.0090	1.0224
As left zero	5000	0.0	0.0	0.0	0.0	0.4	0.1	0.3	----	----
As left span	4934	66.3	804.8	419.6	385.2	802.5	419.6	382.9	1.0029	1.0000
Average Correction Factor									1.0039	1.0082

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.3	----	----
High GPT point	798.6	413.1	389.5	386.9	1.0067	99.3%
Mid GPT point	798.6	608.2	194.4	191.7	1.0140	98.6%
Low GPT point	798.6	702.6	100.0	97.0	1.0307	97.0%
Average Correction Factor					1.0171	98.3%

Notes:

Sample inlet filter changed after as founds. No adjustments made.

Calibration Performed By:

Mohammed Kashif



Wood Buffalo Environmental Association

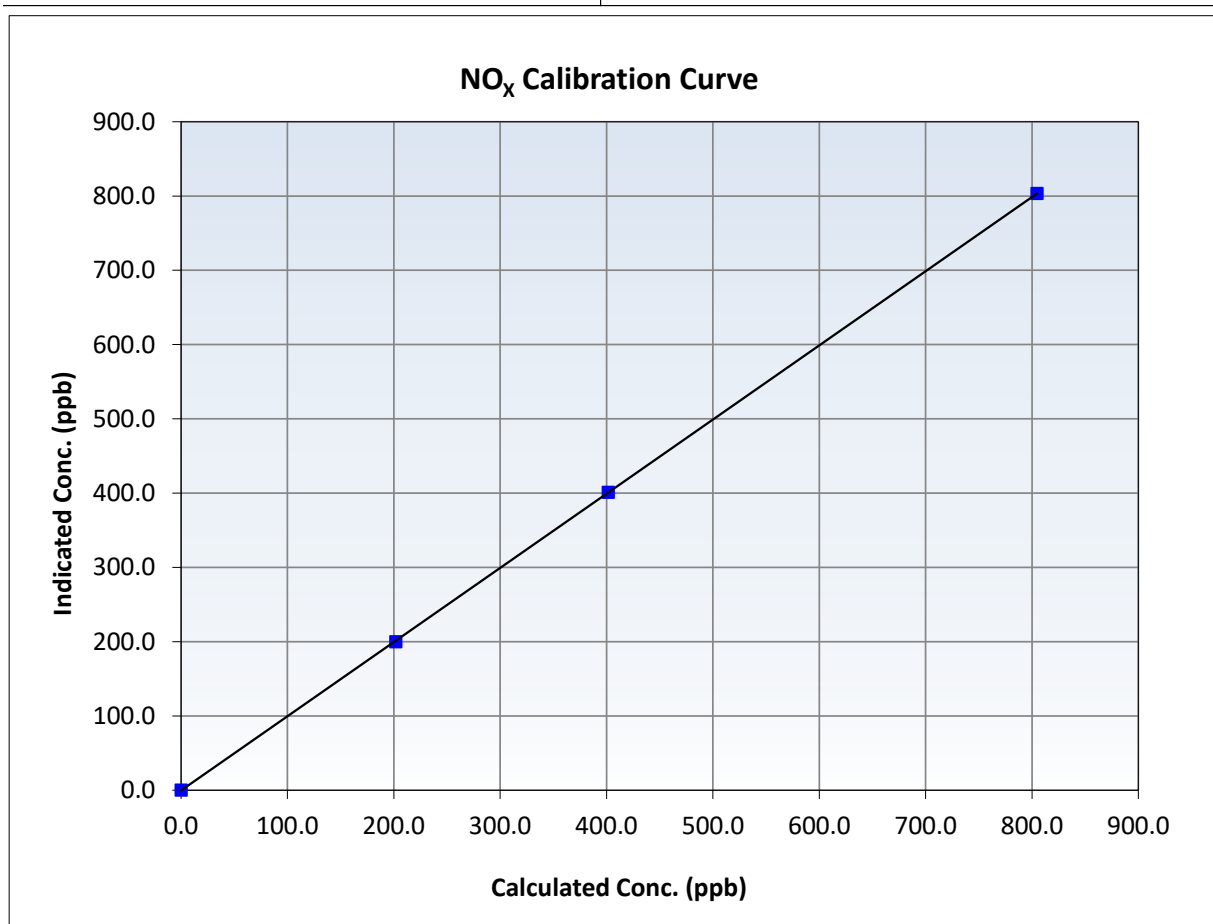
NO_x Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 13, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	9:55	End Time (MST):	14:50
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430008

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.4	----	Correlation Coefficient	0.999994	≥0.995
804.8	803.5	1.0017	Slope	0.998607	0.90 - 1.10
401.6	401.2	1.0010	Intercept	-0.289967	+/-20
201.9	200.1	1.0090			





Wood Buffalo Environmental Association

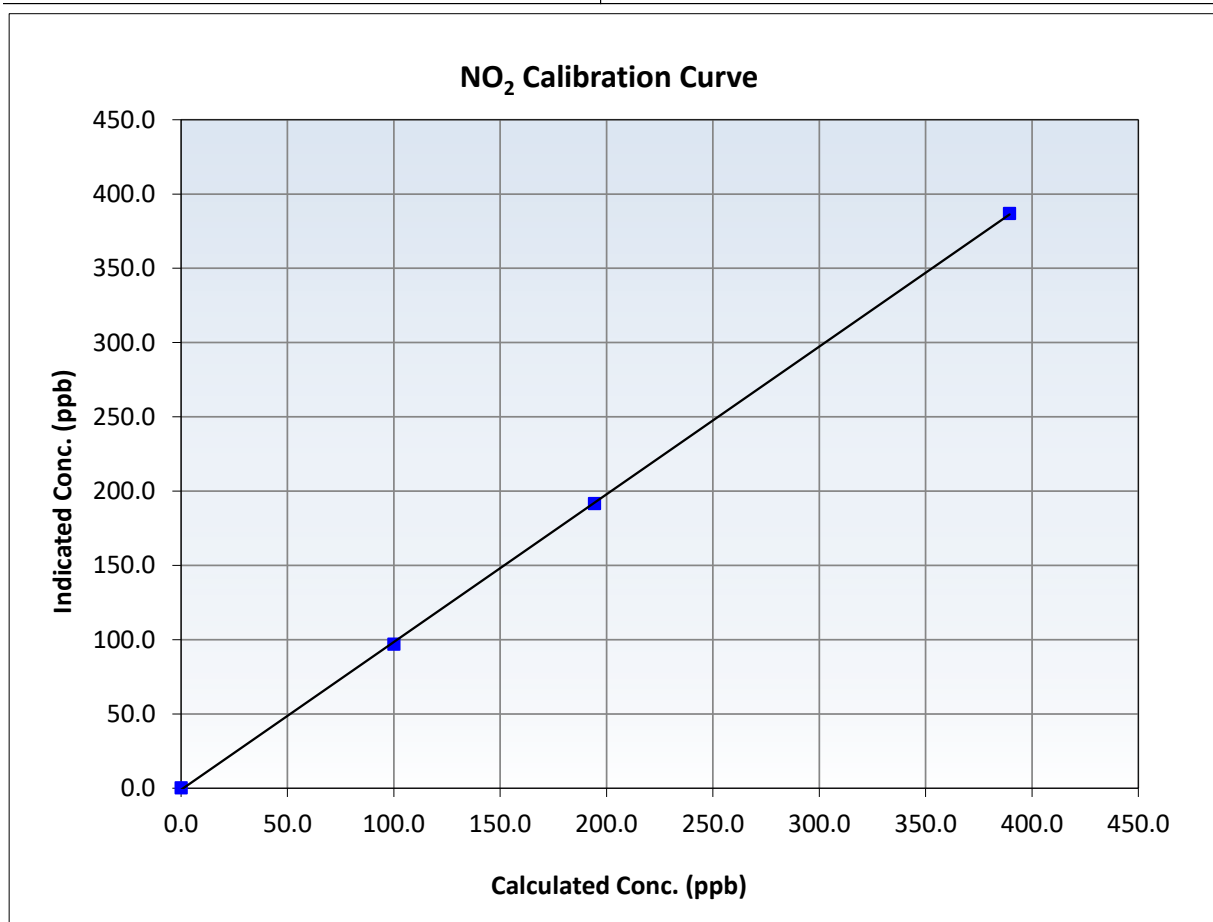
NO₂ Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 13, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	9:55	End Time (MST):	14:50
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430008

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999946	≥0.995
389.5	386.9	1.0067	Slope	0.994357	0.90 - 1.10
194.4	191.7	1.0140	Intercept	-1.018568	+/-20
100.0	97.0	1.0307			





Wood Buffalo Environmental Association

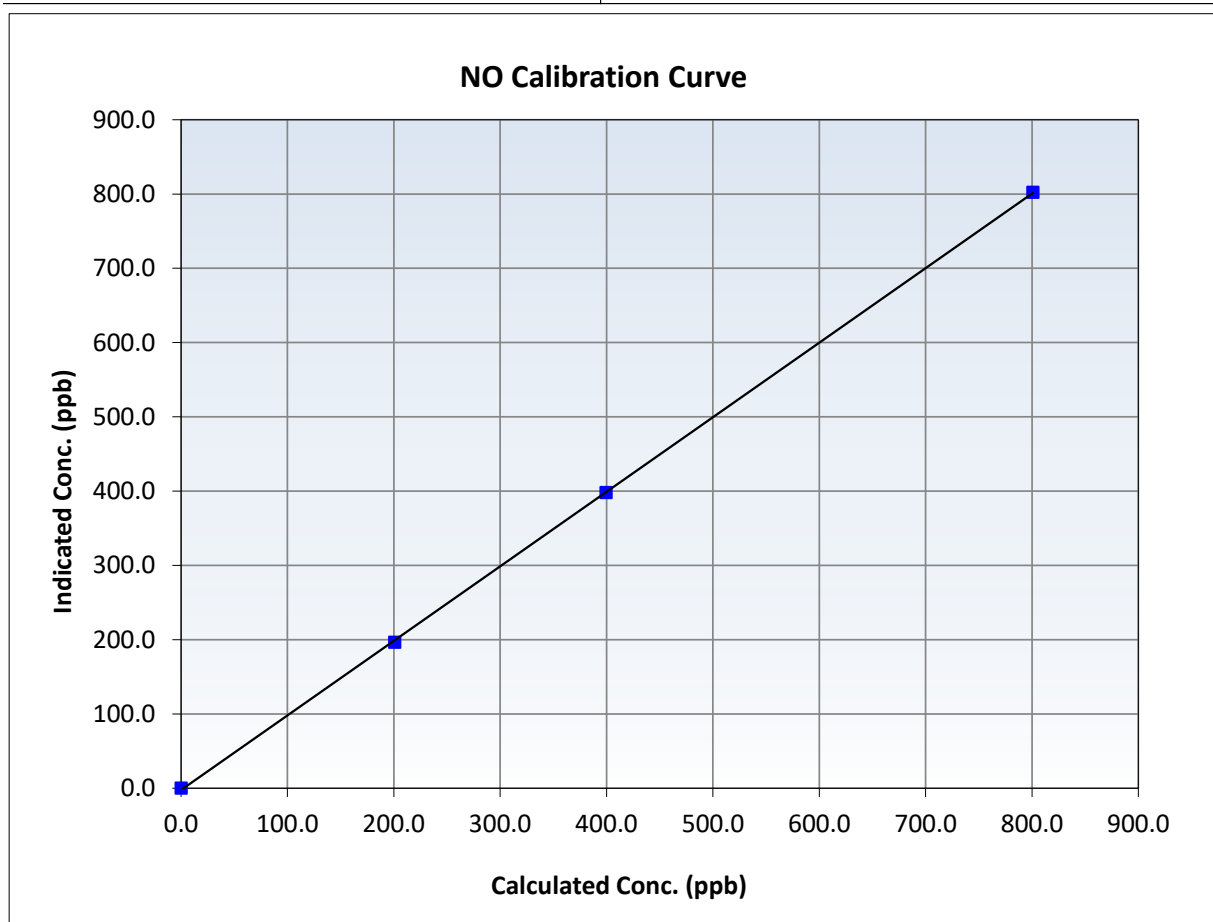
NO Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 13, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	9:55	End Time (MST):	14:50
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430008

Calibration Data

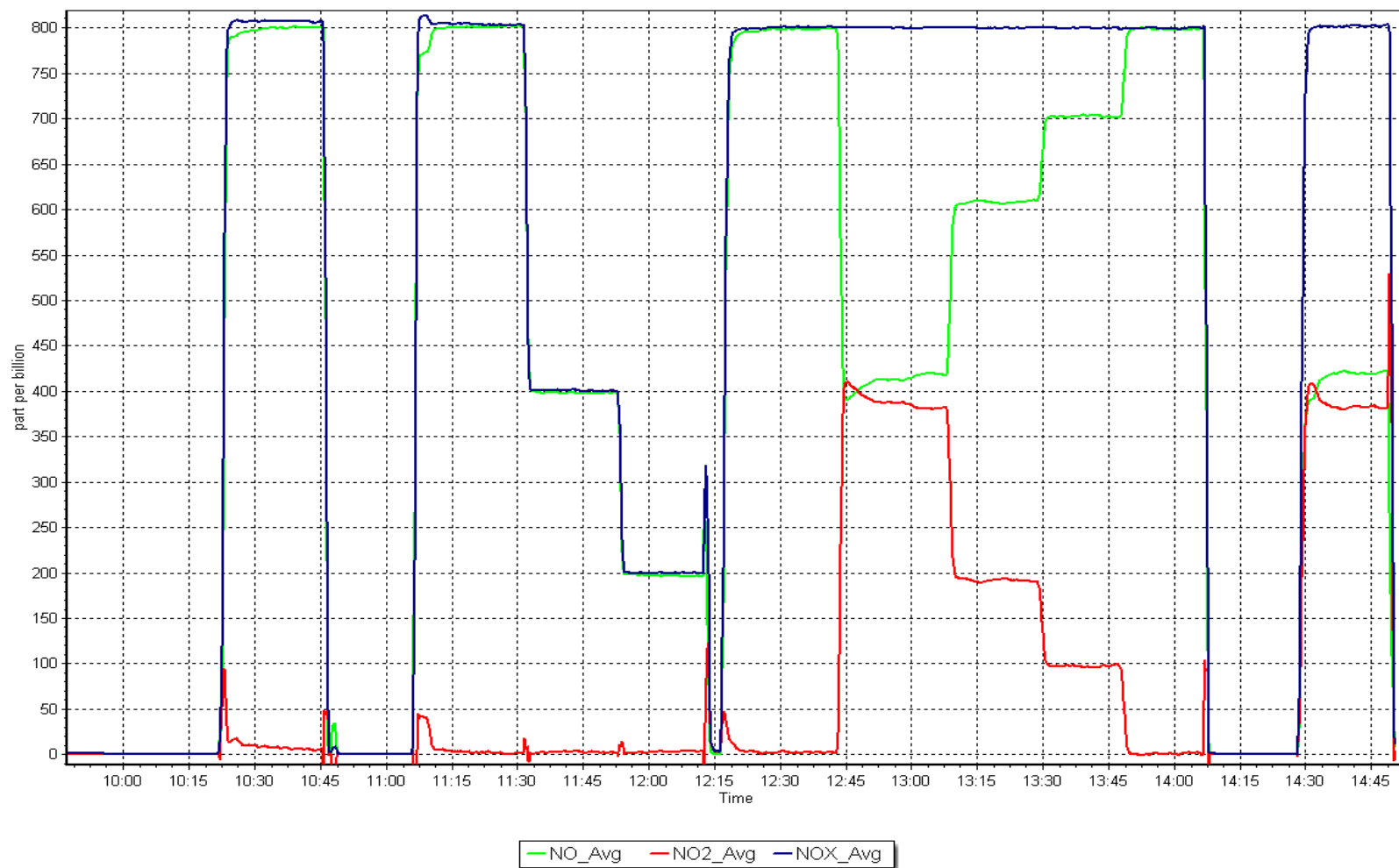
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999957	≥ 0.995
800.9	802.4	0.9981	Slope	1.003538	$0.90 - 1.10$
399.6	398.0	1.0040	Intercept	-2.329840	± 20
200.9	196.5	1.0224			



NO_x Calibration Plot

Date: September 10, 2025

Location: Anzac





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Anzac
Calibration Date: September 3, 2025
Start time (MST): 11:02
Reason: Routine

Station number: AMS 14
Last Cal Date: August 5, 2025
End time (MST): 14:19

Calibration Standards

O₃ generation mode: Photometer
Calibrator Make/Model: API T700
ZAG Make/Model: API 701H

Serial Number: 3060
Serial Number: 357

Analyzer Information

Analyzer make: Thermo 49i
Analyzer Range: 0 - 500 ppb

Analyzer serial #: 1426262595

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002257	1.001743	Backgd or Offset:	1.6	1.6
Calibration intercept:	0.380000	0.020000	Coeff or Slope:	1.712	1.712

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.7	----
As found High point	5000	935.9	400.0	401.6	0.998
As found Mid point					
As found Low point					
Baseline Corr As found:	400.9	Previous response	401.3	*% 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	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	5000	935.9	400.0	400.6	0.999
Mid point	5000	817.5	200.0	200.9	0.996
Low point	5000	722.8	100.0	99.6	1.004
As left zero	5000	0.0	0.0	0.1	----
As left span	5000	935.9	400.0	404.4	0.989
Average Correction Factor					0.999

Notes: Sample inlet filter changed after asfound. No adjustments made.

Calibration Performed By: Mohammed Kashif



Wood Buffalo Environmental Association

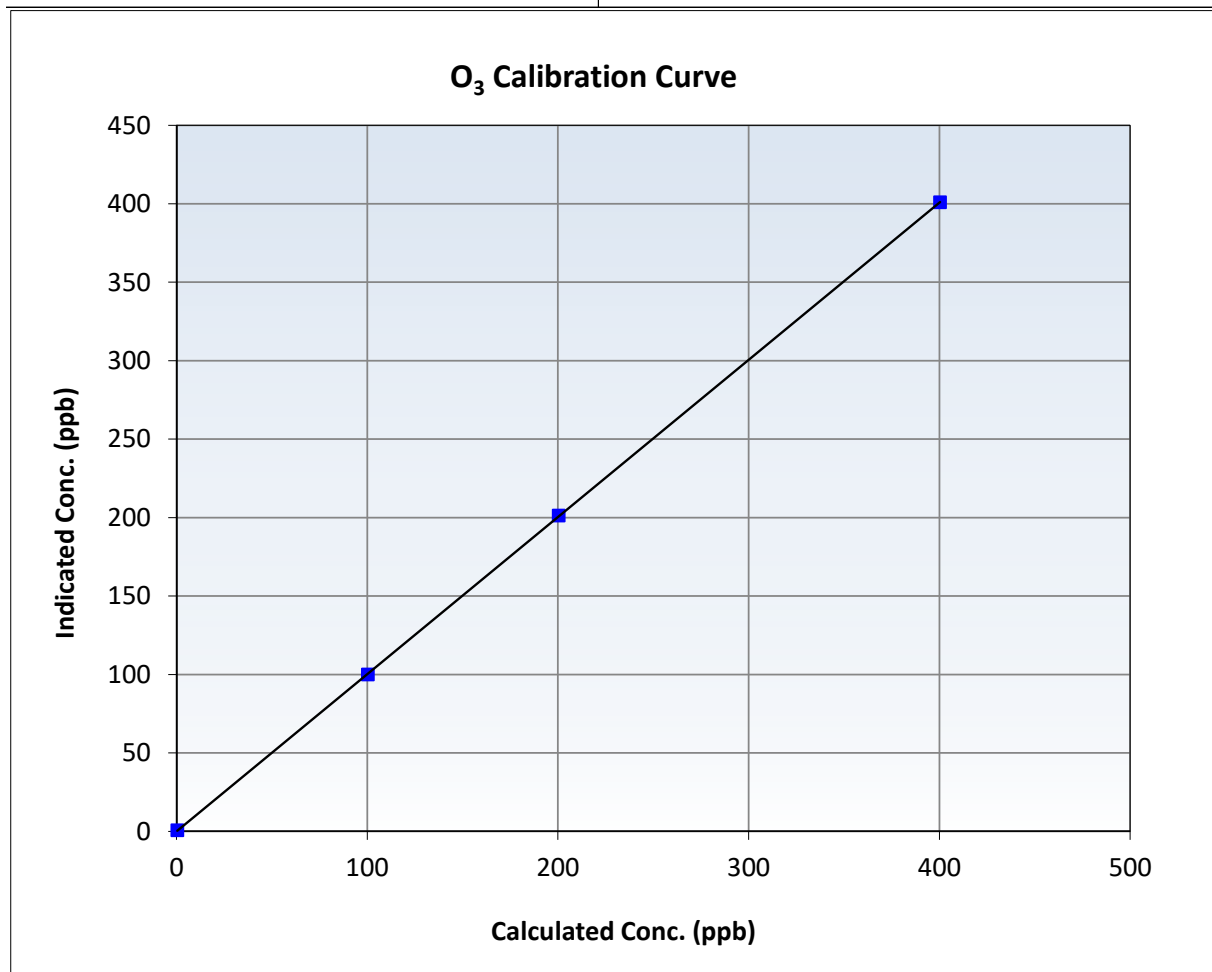
O₃ Calibration Summary

Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 5, 2025
Station Name:	Anzac	Station Number:	AMS 14
Start Time (MST):	11:02	End Time (MST):	14:19
Analyzer make:	Thermo 49i	Analyzer serial #:	1426262595

Calibration Data

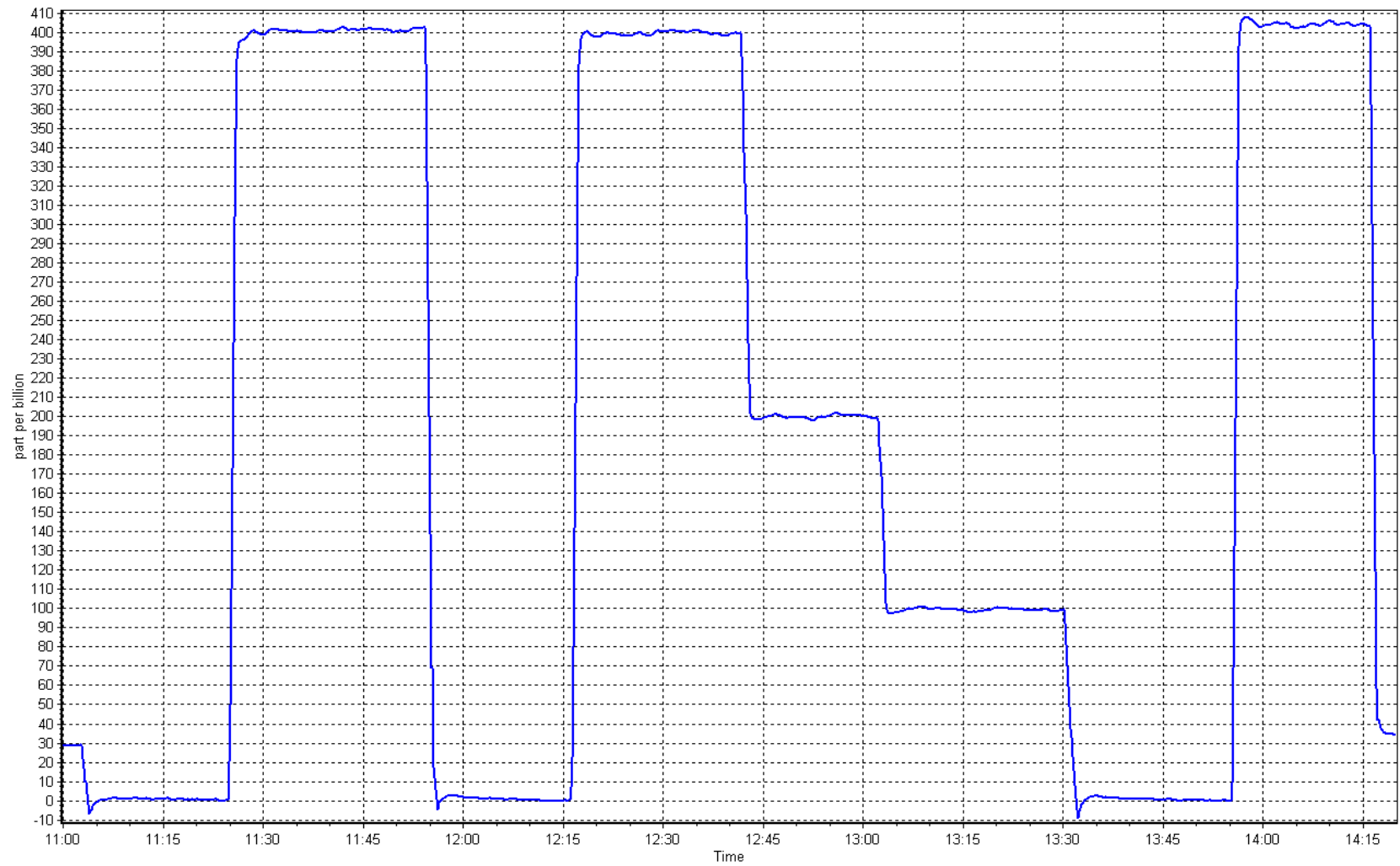
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999992	≥ 0.995
400.0	400.6	0.9985	Slope	1.001743	$0.90 - 1.10$
200.0	200.9	0.9955	Intercept	0.020000	± 5
100.0	99.6	1.0040			



O₃ Calibration Plot

Date: September 3, 2025

Location: Anzac





Wood Buffalo Environmental Association

T640 PM_{2.5} CALIBRATION

Version-01-2024

Station Information

Station Name: Anzac
Calibration Date: September 16, 2025
Start time (MST): 15:47
Station number: AMS 14
Last Cal Date: August 26, 2025
End time (MST): 16:03
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 (°C)	20.8	20.35	20.8	☐	+/- 2 °C
P (mmHg)	721.9	723.08	721.9	☐	+/- 10 mmHg
Flow (LPM)	4.990	4.934	4.990	☐	+/- 0.25 LPM
PW% (pump)	36	-----	36	☐	>80%
Zero Verification	PM w/o HEPA: 10.9		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: Expiry Date:
Lot No.:

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

Date Optical Chamber Cleaned: August 26, 2025
Date Disposable Filter Changed: August 26, 2025

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

Annual Maintenance

Date Sample Tube Cleaned: August 26, 2025
Date RH/T Sensor Cleaned: August 26, 2025

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
SEPTEMBER 2025**

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Wapasu
Calibration Date: September 15, 2025
Start time (MST): 10:14
Reason: Routine

Station number: AMS17
Last Cal Date: August 7, 2025
End time (MST): 13:29

Calibration Standards

Cal Gas Concentration: 50.73 ppm
Cal Gas Cylinder #: CC366420
Removed Cal Gas Conc: 50.38 ppm
Removed Gas Cyl #: ALM066507
Calibrator Model: Teledyne API T700
Zero Air Gen Model: Teledyne API 701H

Cal Gas Exp Date: October 9, 2032
Rem Gas Exp Date: January 12, 2029
Diff between cyl: -1.2%
Serial Number: 2449
Serial Number: 1238

Analyzer Information

Analyzer make: Thermo 43i
Analyzer Range: 0 - 1000 ppb

Serial Number: 1218153459

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.000569	0.999724	Backgd or Offset:	14.0	14.2
Calibration intercept:	-1.580101	-1.009539	Coeff or Slope:	1.109	1.133

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.3	----
As found High point	4921	79.4	800.0	794.3	1.008
As found Mid point					
As found Low point					
New cylinder response	4921	78.9	800.5	785.6	1.019
Baseline Corr As found:	794.0	Previous response	798.8	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.5	----
High point	4921	78.9	800.5	800.6	1.000
Mid point	4960	39.4	399.8	396.3	1.009
Low point	4980	19.7	199.9	198.4	1.008
As left zero	5000	0.0	0.0	0.4	----
As left span	4921	78.9	800.5	803.2	0.997
Average Correction Factor:					1.005

Notes: Cal gas cylinder changed out. Span adjusted.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

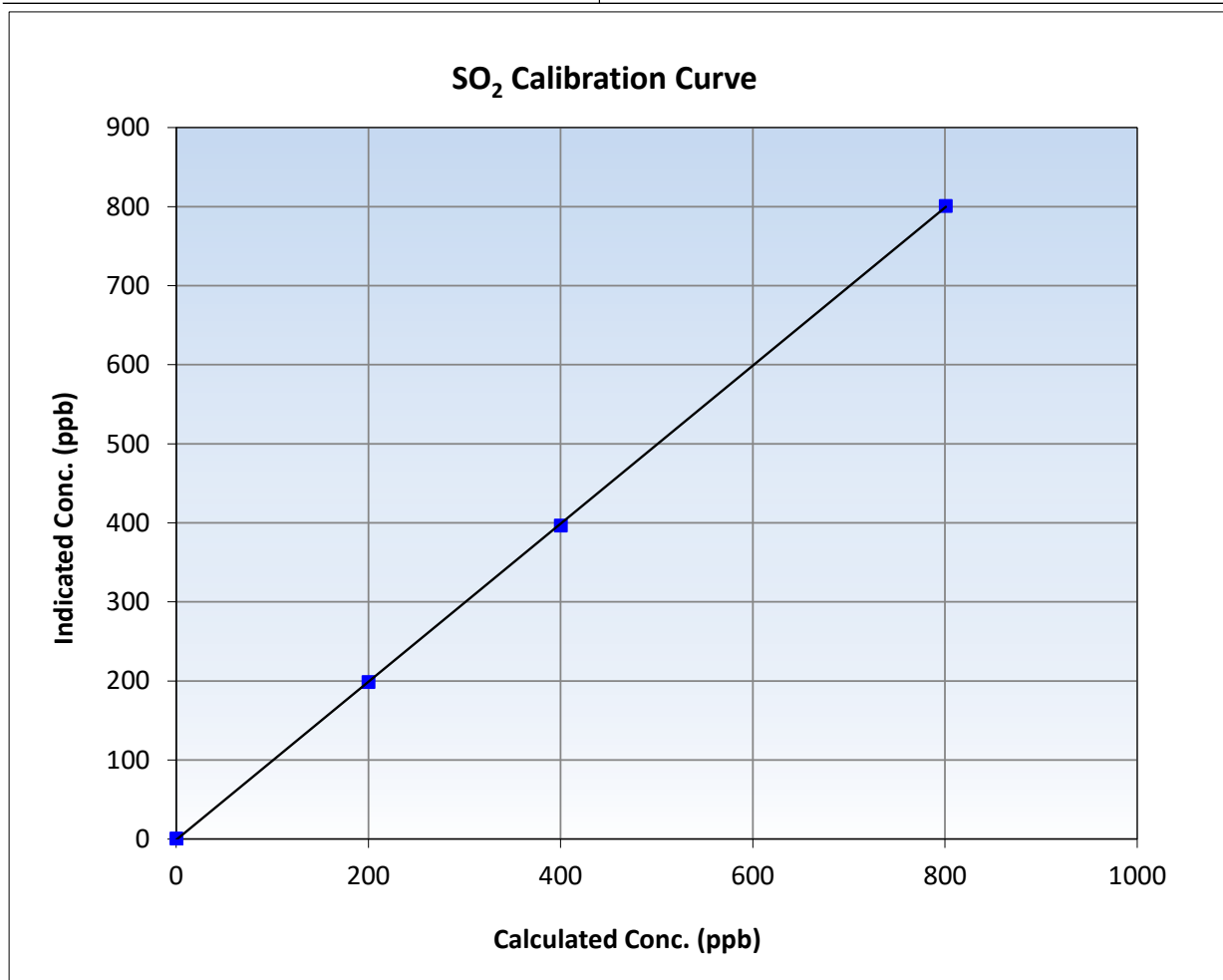
SO₂ Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 7, 2025
Station Name:	Wapasu	Station Number:	AMS17
Start Time (MST):	10:14	End Time (MST):	13:29
Analyzer make:	Thermo 43i	Analyzer serial #:	1218153459

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.5	----	Correlation Coefficient	0.999972	≥0.995
800.5	800.6	0.9999	Slope	0.999724	0.90 - 1.10
399.8	396.3	1.0088	Intercept	-1.009539	+/-30
199.9	198.4	1.0075			



SO2 Calibration Plot

Date: September 15, 2025

Location: Wapasu





Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Wapasu Station number: AMS17
Calibration Date: September 16, 2025 Last Cal Date: September 15, 2025
Start time (MST): 11:15 End time (MST): 12:25
Reason: Cylinder Change

Calibration Standards

Cal Gas Concentration: 50.12 ppm Cal Gas Exp Date: April 9, 2033
Cal Gas Cylinder #: CC422255
Removed Cal Gas Conc: 50.73 ppm Rem Gas Exp Date: October 9, 2032
Removed Gas Cyl #: CC366420 Diff between cyl: #VALUE!
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.999724		Backgd or Offset:	14.2	
Calibration intercept:	-1.009539		Coeff or Slope:	1.133	

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point					
As found Mid point					
As found Low point					
New cylinder response	4920	79.8	799.9	798.6	1.002
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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor:

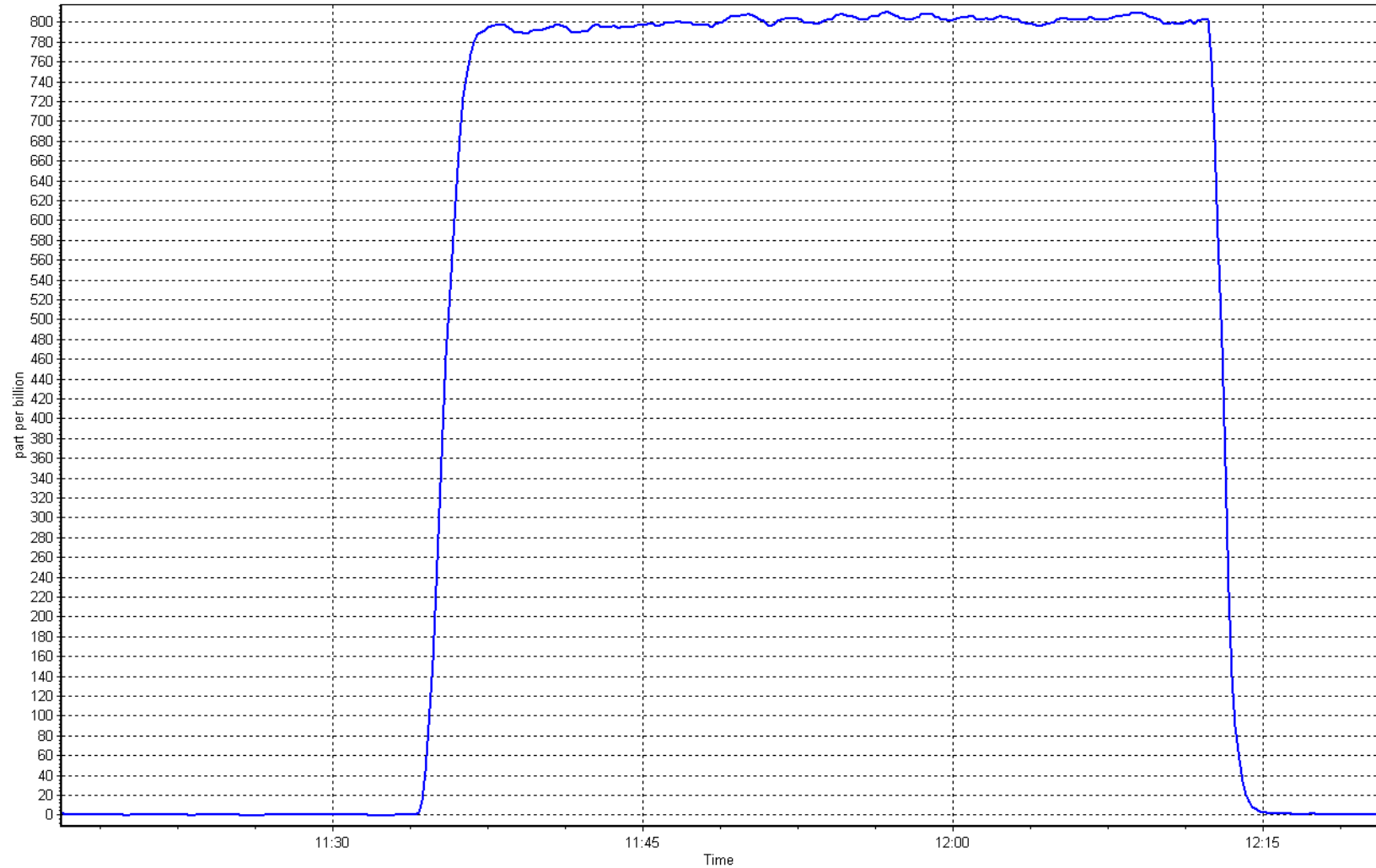
Notes: Cal gas cylinder emptied out due to a leak. Cal gas cylinder changed out.

Calibration Performed By: Aswin Sasi Kumar

SO2 Calibration Plot

Date: September 16, 2025

Location: Wapasu





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: Wapasu
Calibration Date: September 24, 2025
Start time (MST): 10:45
Reason: Routine

Station number: AMS 17
Last Cal Date: August 18, 2025
End time (MST): 14:59

Calibration Standards

Cal Gas Concentration: 4.77 ppm
Cal Gas Cylinder #: DT20029267
Removed Cal Gas Conc: 4.77 ppm
Removed Gas Cyl #:
Calibrator Make/Model: API T700
ZAG Make/Model: API T701H

Cal Gas Exp Date: August 28, 2027
Rem Gas Exp Date:
Diff between cyl:
Serial Number: 2449
Serial Number: 359

Analyzer Information

Analyzer make: Thermo 450i
Converter make: CD Nova
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1218153583
Converter serial #: N/A
Converter Temp: 340 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.999216	1.001068	Backgd or Offset:	13.1	13.1
Calibration intercept:	-0.059938	0.000213	Coeff or Slope:	1.099	1.099

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.5	----
As found High point	4921	83.9	80.0	82.0	0.981
As found Mid point	4961	41.9	39.9	40.7	0.994
As found Low point	4980	21.0	20.0	20.5	1.001
New cylinder response					
Baseline Corr As found:	81.5	Prev response:	79.84	*% change:	2.0%
Baseline Corr 2nd AF pt:	40.2	AF Slope:	1.020272	AF Intercept:	0.230346
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999940	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4916	83.9	80.0	80.2	0.998
Mid point	4958	41.9	40.0	40.0	0.999
Low point	4979	21.0	20.0	19.8	1.012
As left zero	5000	0.0	0.0	0.6	----
As left span	4916	83.9	80.0	77.5	1.033
SO ₂ Scrubber Check	4921	79.4	793.9	0.3	----
Date of last scrubber change:		N/A		Ave Corr Factor	1.003
Date of last converter efficiency test:		N/A			

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

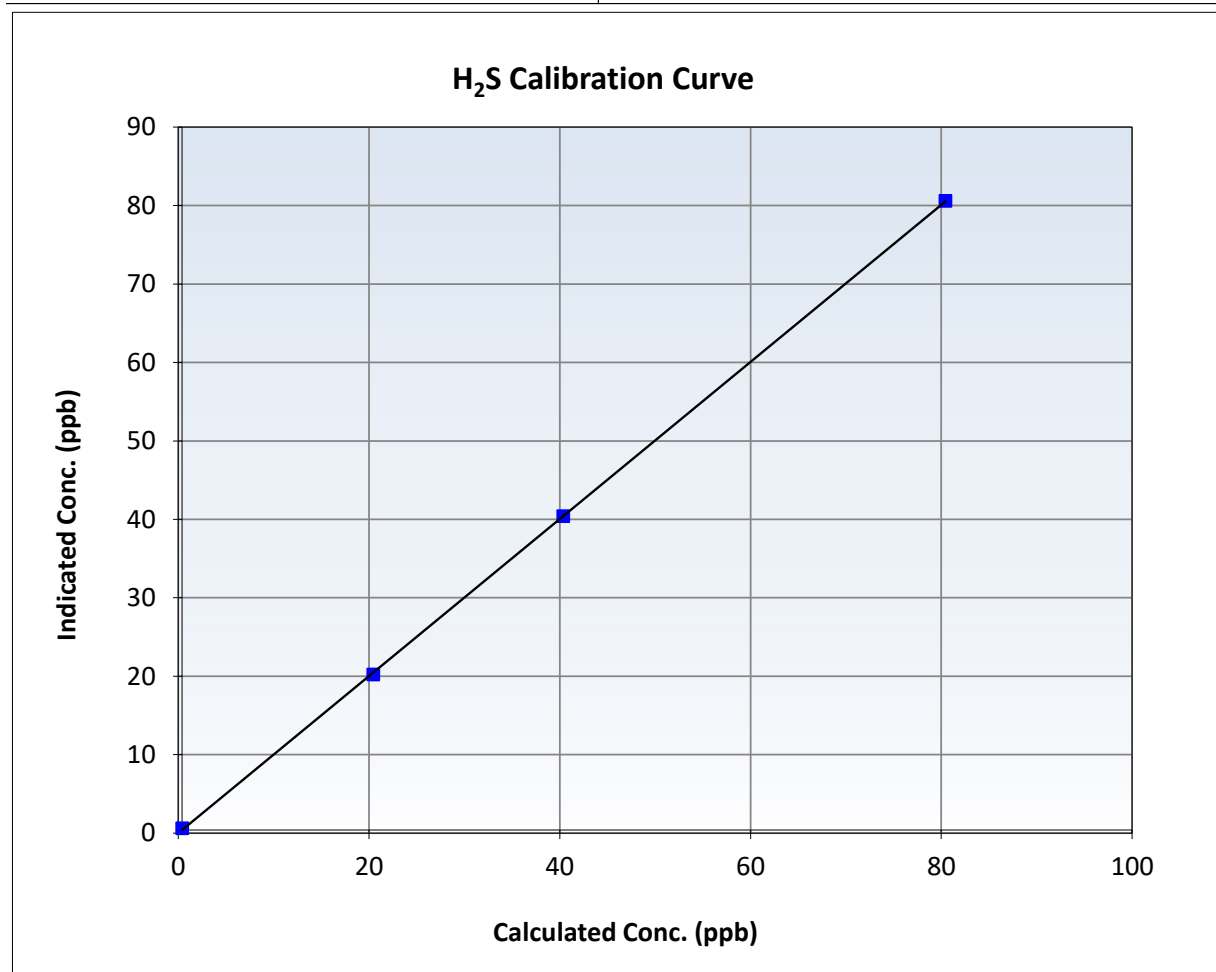
H₂S Calibration Summary

Station Information

Calibration Date:	September 24, 2025	Previous Calibration:	August 18, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	10:45	End Time (MST):	14:59
Analyzer make:	Thermo 450i	Analyzer serial #:	1218153583

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999968	≥ 0.995
80.0	80.2	0.9980	Slope	1.001068	$0.90 - 1.10$
40.0	40.0	0.9993	Intercept	0.000213	± 3
20.0	19.8	1.0118			



H₂S Calibration Plot

Date: September 24, 2025

Location: Wapasu





Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name: Wapasu Station number: AMS17
Calibration Gas Date: September 9, 2025 Last Cal Date: August 7, 2025
Start time (MST): 9:58 End time (MST): 14:34
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	0.991855	0.996977	Background:	3.330
Calibration intercept:	-0.056771	-0.086557	Coefficient:	4.703

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	-0.05	----
As found High point	4921	79.4	17.09	15.42	1.104
As found Mid point	4960	39.7	8.55	7.55	1.124
As found Low point	4980	19.8	4.26	3.74	1.124
New cylinder response					
Baseline Corr As found:	15.48	Previous response	16.89	*% change	-9.2%
Baseline Corr 2nd AF pt:	7.61	AF Slope:	0.906045	AF Intercept:	-0.108105
Baseline Corr 3rd AF pt:	3.79	AF Correlation:	0.999905	* = > +/-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	4921	79.4	17.09	16.99	1.006
Mid point	4960	39.7	8.55	8.38	1.020
Low point	4980	19.8	4.26	4.14	1.029
As left zero	5000	0.0	0.00	-0.06	----
As left span	4921	79.4	17.09	16.95	1.009
Average Correction Factor					1.018

Notes: Changed the pump after as founds. Adjusted zero and span.

Calibration Performed By: Max Farrell



Wood Buffalo Environmental Association

THC Calibration Summary

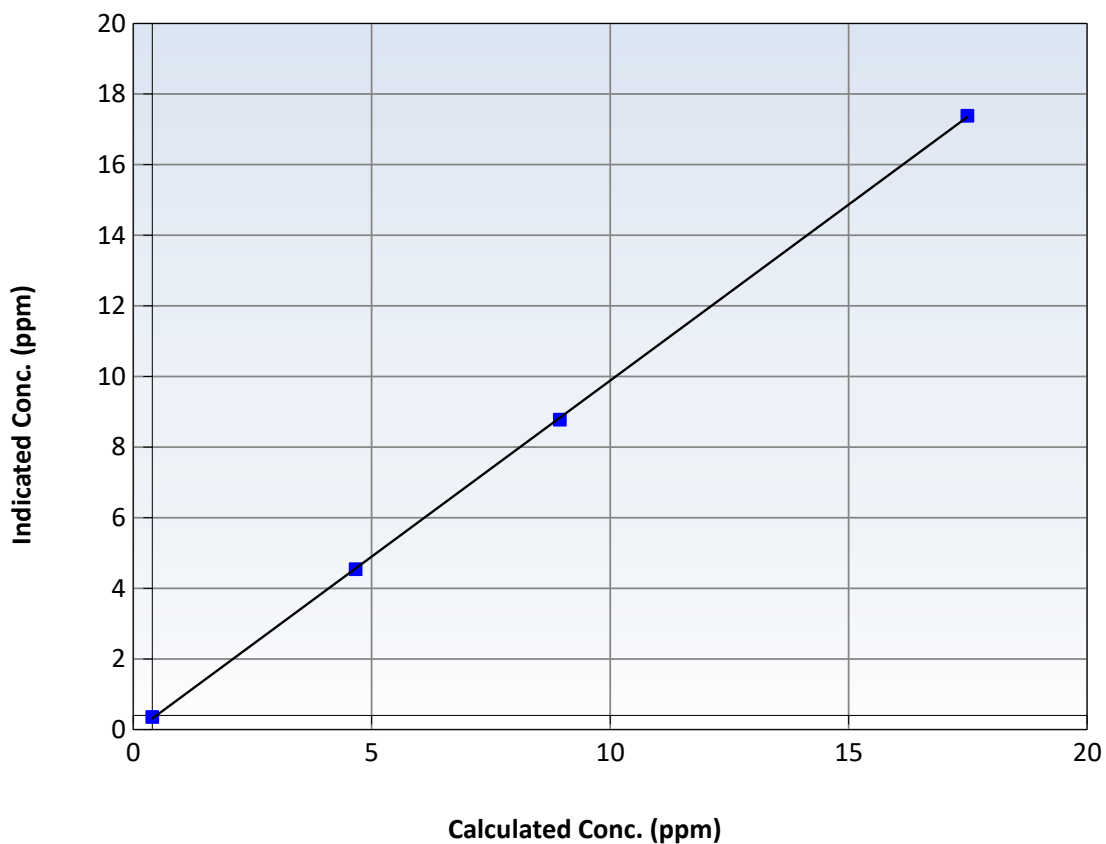
Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 7, 2025
Station Name:	Wapasu	Station Number:	AMS17
Start Time (MST):	9:58	End Time (MST):	14:34
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1218153352

Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	-0.04	----	Correlation Coefficient	0.999960	≥ 0.995
17.09	16.99	1.0062	Slope	0.996977	$0.90 - 1.10$
8.55	8.38	1.0200	Intercept	-0.086557	± 1.5
4.26	4.14	1.0288			

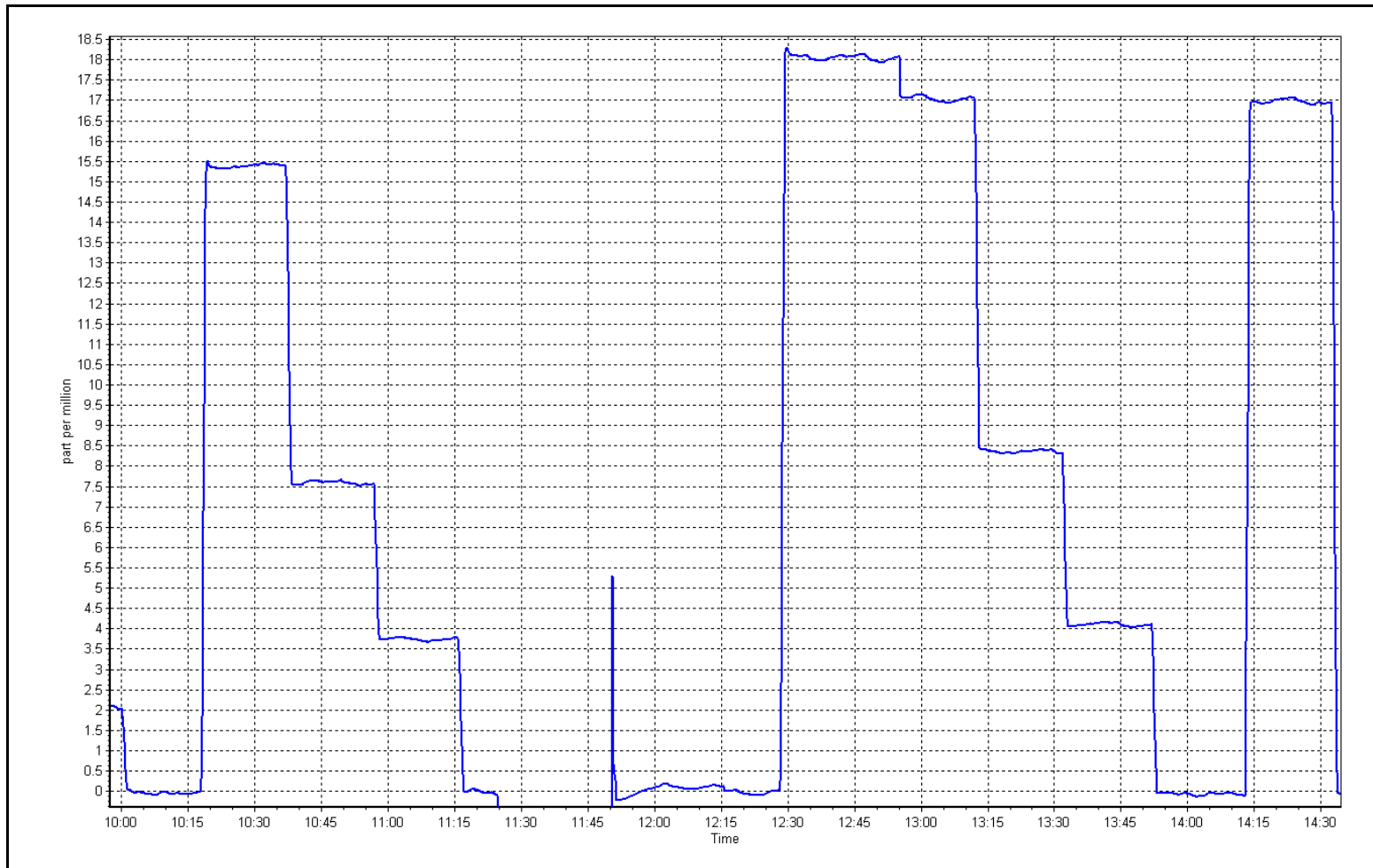
THC Calibration Curve



THC Calibration Plot

Date: September 9, 2025

Location: Wapasu





Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name: Wapasu
Calibration Date: September 15, 2025
Start time (MST): 10:14
Reason: Cylinder Change
Station number: AMS17
Last Cal Date: September 9, 2025
End time (MST): 11:43

Calibration Standards

Gas Cert Reference: CC366420
CH4 Cal Gas Conc. 502.8 ppm
C3H8 Cal Gas Conc. 204.2 ppm
Removed Gas Cert: ALM066507
Removed CH4 Conc. 503.5 ppm
Removed C3H8 Conc. 208.3 ppm
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API 701H
Cal Gas Expiry Date: October 9, 2032
CH4 Equiv Conc. 1064.4 ppm
Removed Gas Expiry: January 12, 2029
CH4 Equiv Conc. 1076.3 ppm
Diff between cyl: 1.5%
Serial Number: 2449
Serial Number: 1238

Analyzer Information

Analyzer make: Thermo 51i-LT
Analyzer Range: 0 - 20 ppm
Analyzer serial #: 1218153352

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.996977		Background:	3.280	
Calibration intercept:	-0.086557		Coefficient:	4.477	

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	-0.12	----
As found High point	4921	79.4	17.09	16.94	1.002
As found Mid point					
As found Low point					
New cylinder response	4921	78.9	16.80	16.90	0.994
Baseline Corr As found:	17.06	Previous response	16.95	*% 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	

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) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

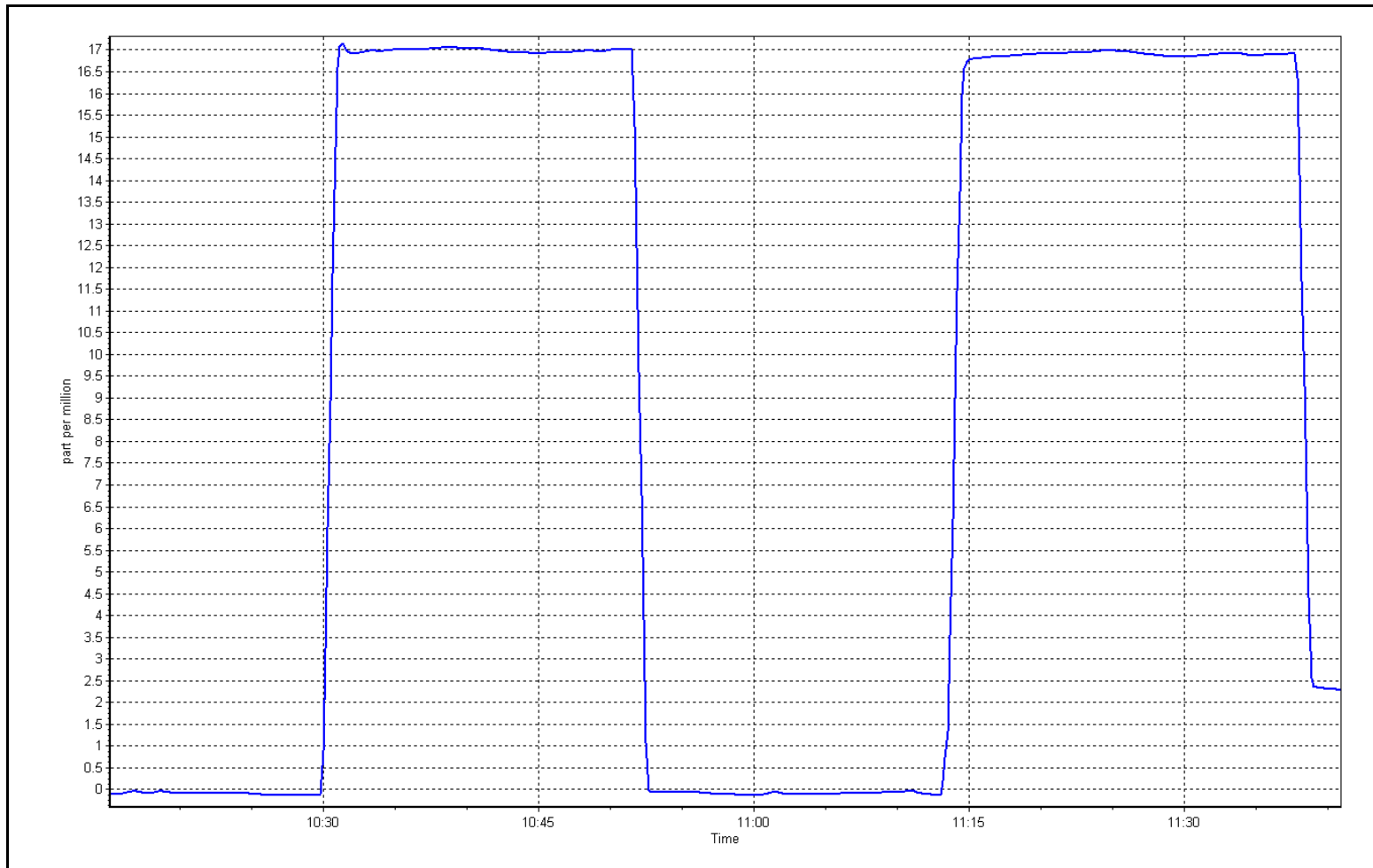
Notes: Changed out calibration gas cylinder.

Calibration Performed By: Aswin Sasi Kumar

THC Calibration Plot

Date: September 15, 2025

Location: Wapasu





Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name: Wapasu
Calibration Date: September 16, 2025
Start time (MST): 11:15
Reason: Cylinder Change
Station number: AMS17
Last Cal Date: September 15, 2025
End time (MST): 12:25

Calibration Standards

Gas Cert Reference: CC422255
CH4 Cal Gas Conc. 499.6 ppm
C3H8 Cal Gas Conc. 203.4 ppm
Removed Gas Cert: CC366420
Removed CH4 Conc. 502.8 ppm
Removed C3H8 Conc. 204.2 ppm
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API 701H
Cal Gas Expiry Date: April 9, 2033
CH4 Equiv Conc. 1059.0 ppm
Removed Gas Expiry: October 9, 2032
CH4 Equiv Conc. 1064.4 ppm
Diff between cyl: #VALUE!
Serial Number: 2449
Serial Number: 1238

Analyzer Information

Analyzer make: Thermo 51i-LT
Analyzer Range: 0 - 20 ppm
Analyzer serial #: 1218153352

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	0.996977		Background:	3.280
Calibration intercept:	-0.086557		Coefficient:	4.477

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	-0.06	----
As found High point					
As found Mid point					
As found Low point					
New cylinder response	4920	79.8	16.90	17.27	0.979
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) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

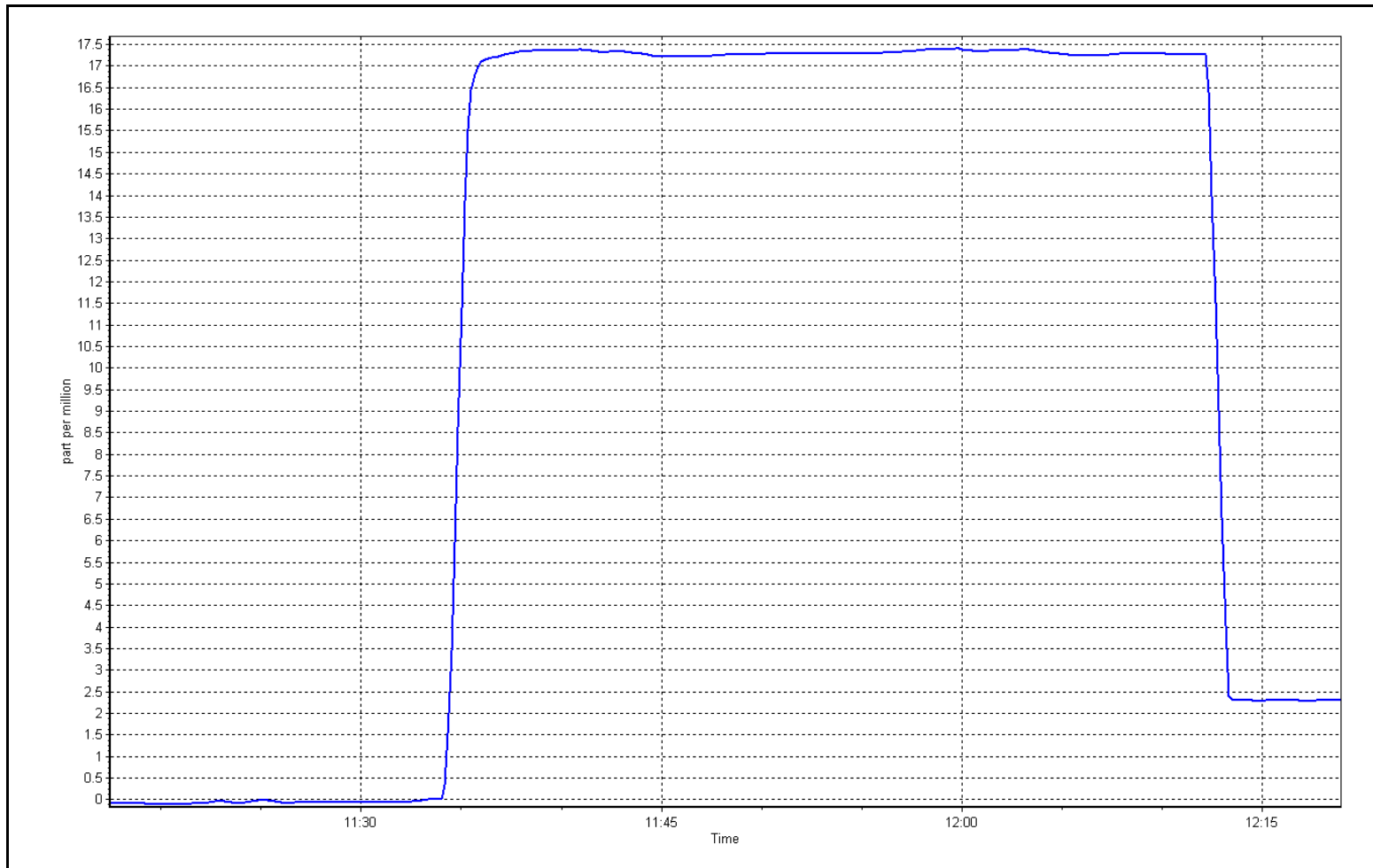
Notes: Changed out calibration gas cylinder.

Calibration Performed By: Aswin Sasi Kumar

THC Calibration Plot

Date: September 16, 2025

Location: Wapasu





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Wapasu
Station number: AMS 17
Calibration Date: September 25, 2025
Last Cal Date: August 21, 2025
Start time (MST): 8:13
End time (MST): 13:48
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0045177
NOX Cal Gas Conc: 61.30 ppm
Removed Cylinder #: T375YK8
Removed Gas NOX Conc: 49.11 ppm
NOX gas Diff: -1.6%
Calibrator Model: API T700
ZAG make/model: API T701H
Cal Gas Expiry Date: July 19, 2032
NO Cal Gas Conc: 61.00 ppm
Removed Gas Exp Date: April 13, 2025
Removed Gas NO Conc: 48.07 ppm
NO gas Diff: -1.1%
Serial Number: 2449
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	----	----
AF High point	4917	83.2	817.2	799.9	17.3	825.8	806.7	19.0	0.9895	0.9914
AF Mid point										
AF Low point										
New cyl resp	4934	65.6	804.3	800.4	3.9	799.8	798.5	1.5	0.9739	0.9920
Previous Response	NO _x = 816.8 ppb		NO = 800.7 ppb			* = > +/-5% change initiates investigation		*Percent Change	NO _x = 1.1%	
Baseline Corr 1st pt	NO _x = 825.9 ppb		NO = 806.8 ppb			<u>As Found Statistics</u>		*Percent Change	NO = 0.8%	
Baseline Corr 2nd pt	NO _x = NA ppb		NO = NA ppb			As found	NO _x r ² :	Nx SI:	Nx Int:	
Baseline Corr 3rd pt	NO _x = NA ppb		NO = NA ppb			As found	NO r ² :	NO SI:	NO Int:	
						As found	NO ₂ r ² :	NO ₂ SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo Scientific 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1218153460

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.827	0.827	NO bkgnd or offset:	2.8	2.8
NOX coeff or slope:	0.994	0.994	NOX bkgnd or offset:	3.1	3.1
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	191.0	191.0

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.999760	1.000474
NO _x Cal Offset:	-0.160000	-1.180012
NO Cal Slope:	1.001859	1.002753
NO Cal Offset:	-0.700000	-2.580010
NO ₂ Cal Slope:	0.999437	0.997456
NO ₂ Cal Offset:	-0.305167	-0.113201

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.2	0.1	0.1	----	----
High point	4934	65.6	804.3	800.4	3.9	804.4	801.5	3.0	0.9999	0.9986
Mid point	4967	32.8	402.1	400.2	2.0	399.9	396.9	3.0	1.0056	1.0083
Low point	4983	16.4	201.1	200.1	1.0	199.0	195.7	3.2	1.0105	1.0225
As left zero	5000	0.0	0.0	0.0	0.0	0.2	0.0	0.2	----	----
As left span	4934	65.6	804.3	397.8	406.5	803.6	397.8	405.8	1.0009	1.0000
Average Correction Factor									1.0053	1.0098

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.1	----	----
High GPT point	799.6	397.7	405.8	404.9	1.0023	99.8%
Mid GPT point	799.6	602.4	201.1	200.3	1.0042	99.6%
Low GPT point	799.6	602.4	201.1	200.3	1.0042	99.6%
Average Correction Factor					1.0036	99.6%

Notes:

Calibration gas cylinder changed out. Span adjusted.

Calibration Performed By:

Aswin Sasi Kumar



Wood Buffalo Environmental Association

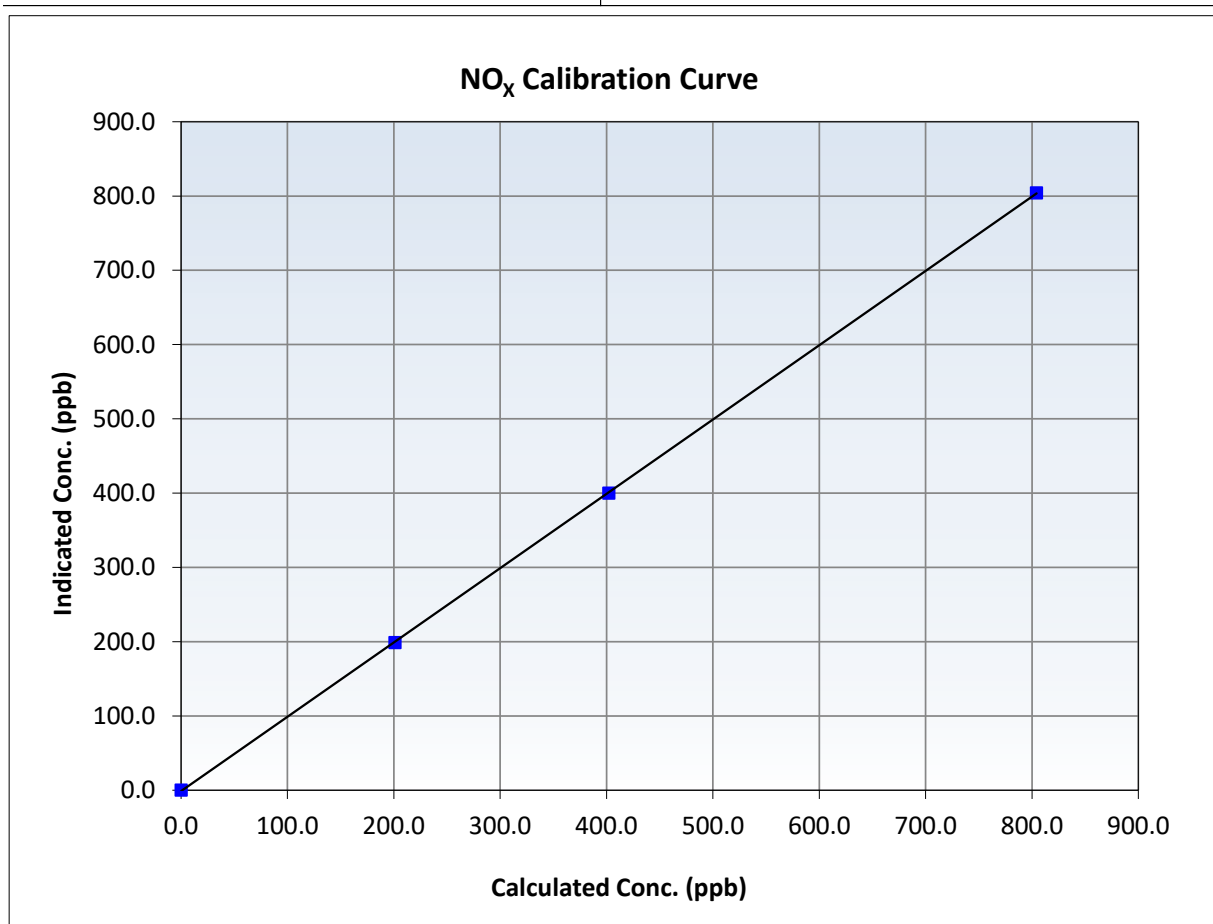
NO_x Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 21, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	8:13	End Time (MST):	13:48
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1218153460

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999985	≥0.995
804.3	804.4	0.9999	Slope	1.000474	0.90 - 1.10
402.1	399.9	1.0056	Intercept	-1.180012	+/-20
201.1	199.0	1.0105			





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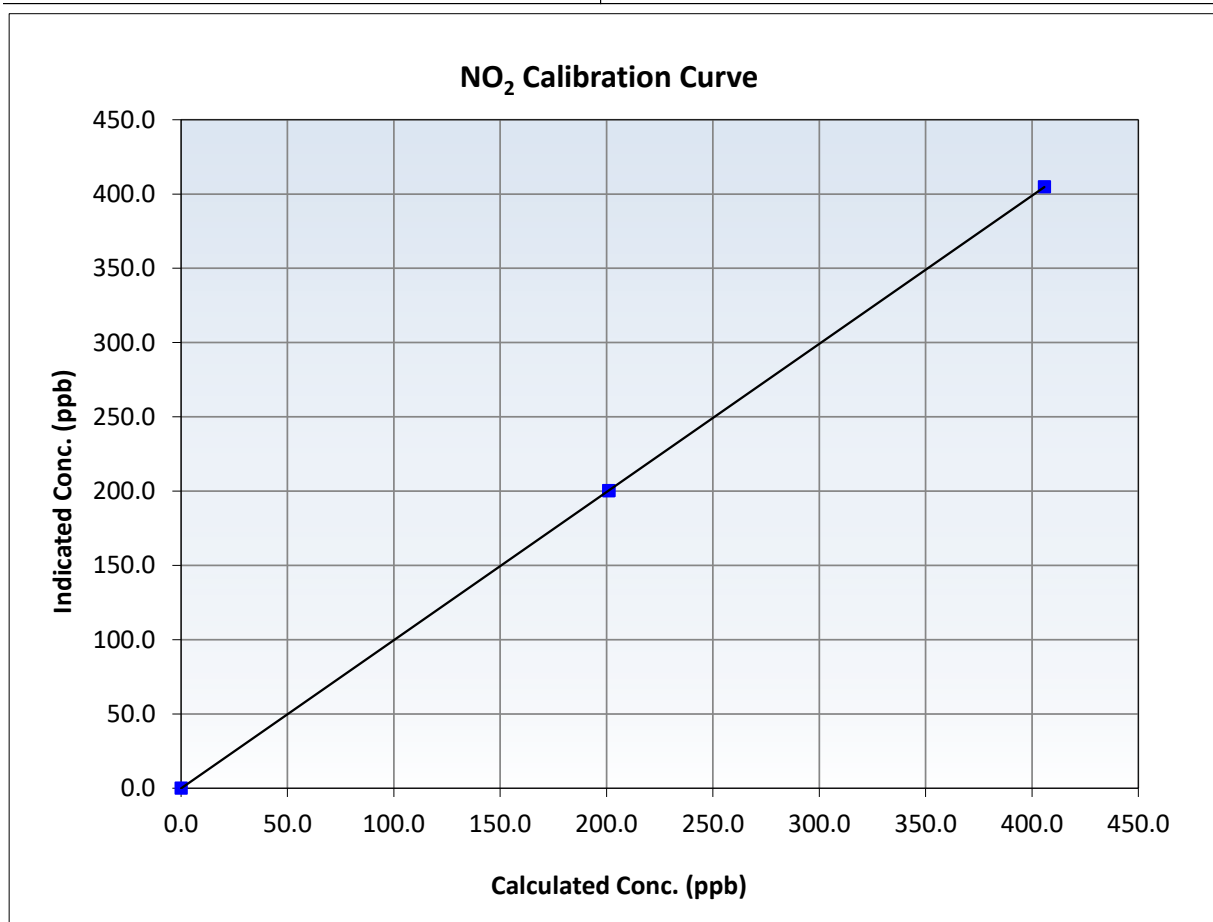
NO₂ Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 21, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	8:13	End Time (MST):	13:48
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1218153460

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999998	≥0.995
405.8	404.9	1.0023	Slope	0.997456	0.90 - 1.10
201.1	200.3	1.0042	Intercept	-0.113201	+/-20
201.1	200.3	1.0042			





Wood Buffalo Environmental Association

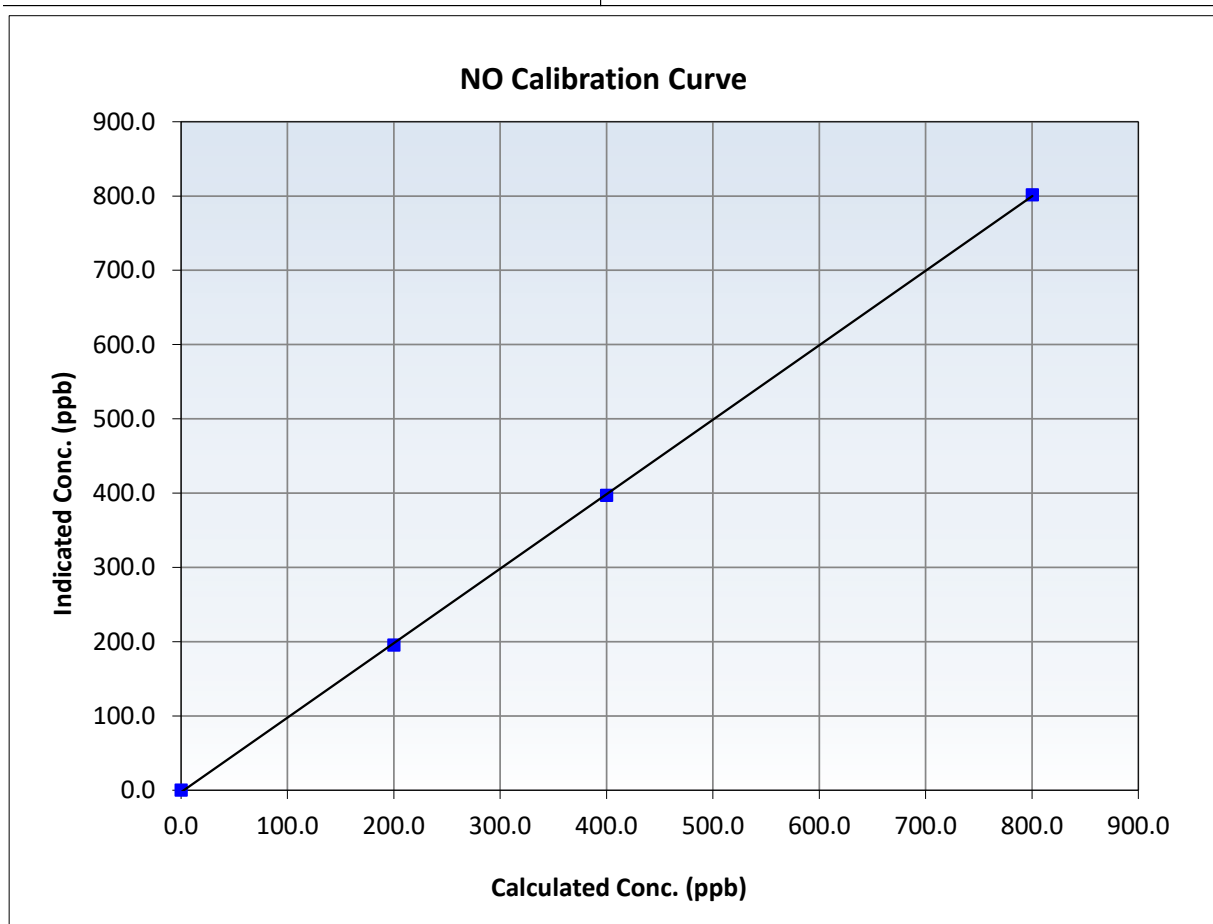
NO Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 21, 2025
Station Name:	Wapasu	Station Number:	AMS 17
Start Time (MST):	8:13	End Time (MST):	13:48
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1218153460

Calibration Data

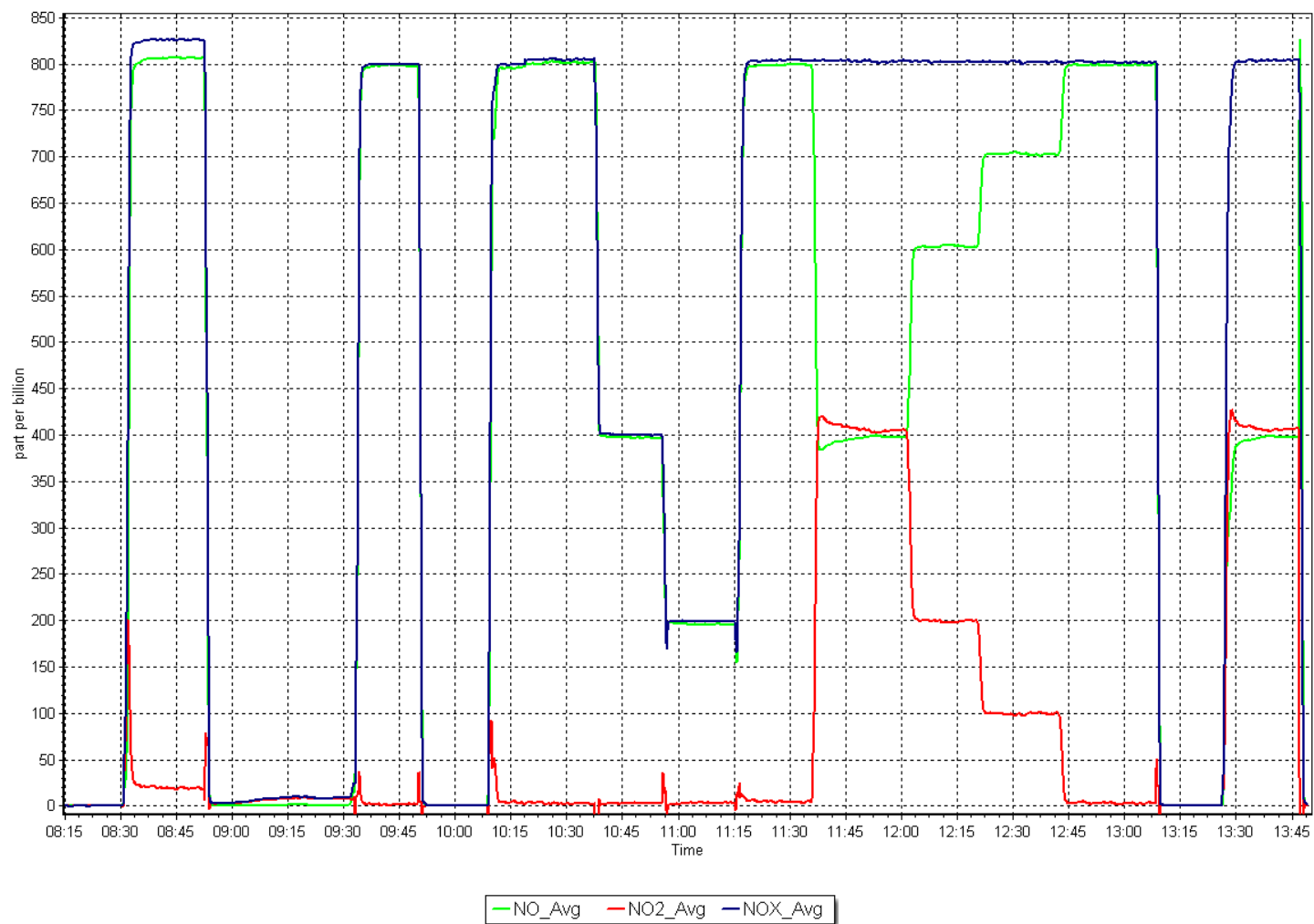
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999948	≥ 0.995
800.4	801.5	0.9986	Slope	1.002753	$0.90 - 1.10$
400.2	396.9	1.0083	Intercept	-2.580010	± 20
200.1	195.7	1.0225			



NO_x Calibration Plot

Date: September 25, 2025

Location: Wapasu





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Wapasu Station number: AMS17
Calibration Date: September 3, 2025 Last Cal Date: August 12, 2025
Start time (MST): 10:10 End time (MST):
Reason: Removal

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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.000914		Backgd or Offset:	1.3	
Calibration intercept:	-0.860000		Coeff or Slope:	1.025	

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.3	----
As found High point	5000	1104.7	400.0	400.3	0.999
As found Mid point	5000	917.3	200.0	200.3	0.997
As found Low point	5000	797.9	100.0	99.1	1.006
Baseline Corr As found:	400.6	Previous response	399.5	*% change	0.3%
Baseline Corr 2nd AF pt:	200.6	AF Slope:	1.002229	AF Intercept:	-0.540000
Baseline Corr 3rd AF pt:	99.4	AF Correlation:	0.999994	* = > +/-5% change initiates investigation	

O₃ 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- AFzero)) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					

Average Correction Factor

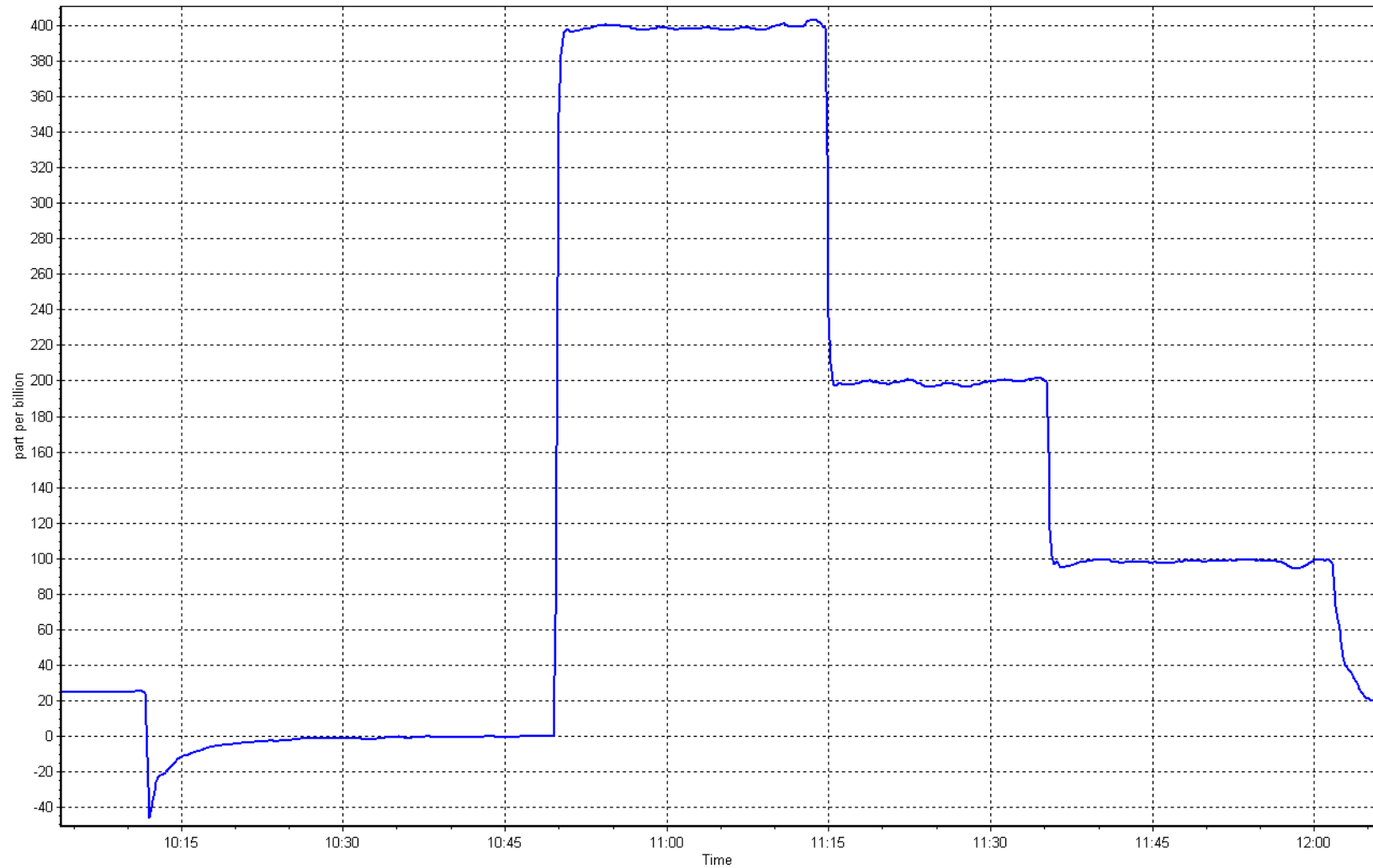
Notes: Removal calibration.

Calibration Performed By: Aswin Sasi Kumar

O₃ Calibration Plot

Date: September 3, 2025

Location: Wapasu





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Wapasu
Calibration Date: September 4, 2025
Start time (MST): 10:30
Reason: Install
Station number: AMS17
Last Cal Date: N/A
End time (MST): 13:02

Calibration Standards

O₃ generation mode: Photometer
Calibrator Make/Model: API T700
ZAG Make/Model: API T701H
Serial Number: 2449
Serial Number: 359

Analyzer Information

Analyzer make: Thermo Scientific 49i
Analyzer Range: 0 - 500 ppb
Analyzer serial #: 1501663734

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	N/A	1.003629	Backgd or Offset:	N/A	0.1
Calibration intercept:	N/A	-1.260000	Coeff or Slope:	N/A	1.043

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero					
As found High point					
As found Mid point					
As found Low point					
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	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.5	----
High point	5000	1104.7	400.0	400.4	0.999
Mid point	5000	917.3	200.0	199.6	1.002
Low point	5000	797.9	100.0	98.0	1.020
As left zero	5000	0.0	0.0	-0.2	----
As left span	5000	1104.7	400.0	407.0	0.983
Average Correction Factor					1.007

Notes: Install calibration. Span adjusted.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

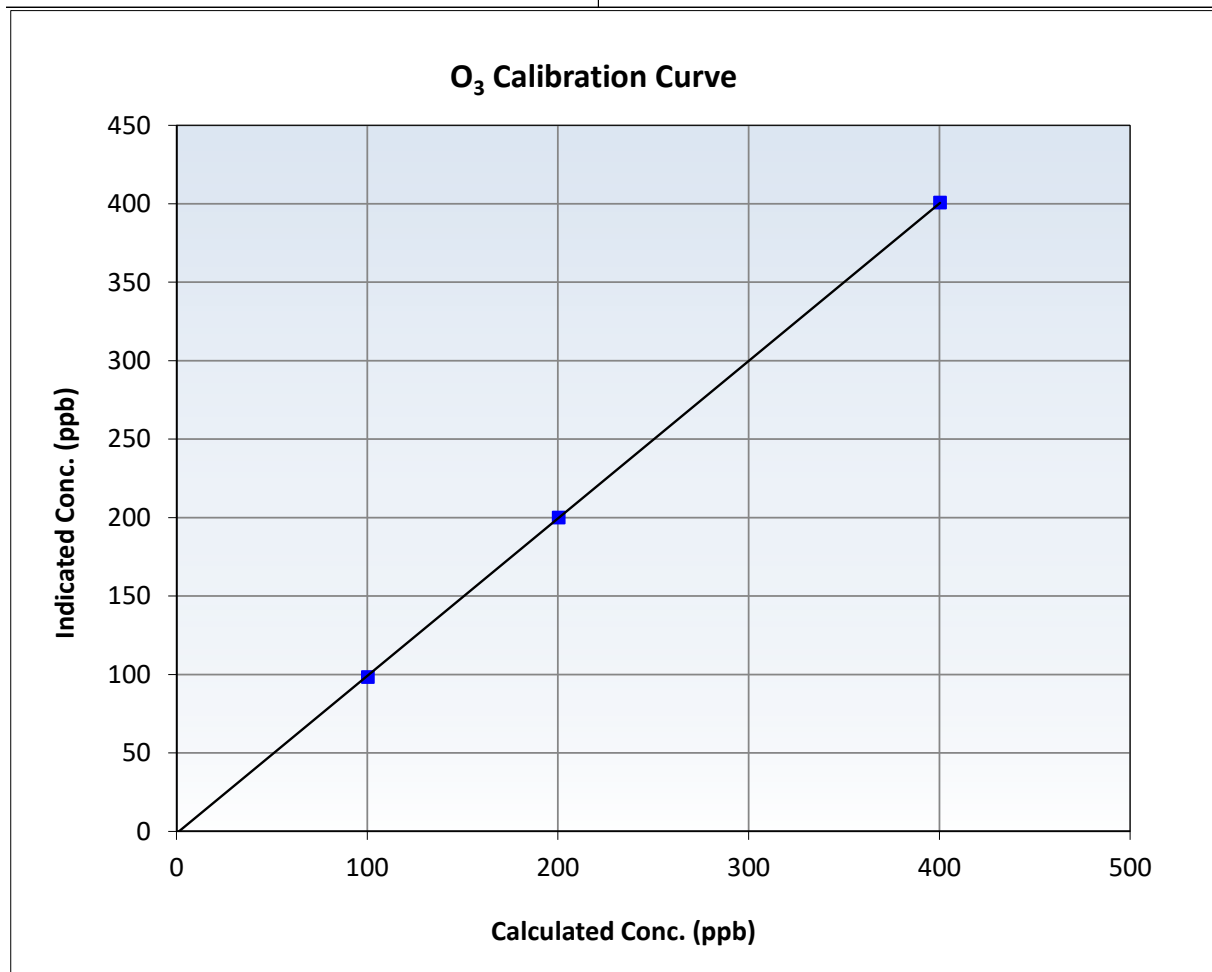
O₃ Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	N/A
Station Name:	Wapasu	Station Number:	AMS17
Start Time (MST):	10:30	End Time (MST):	13:02
Analyzer make:	Thermo Scientific 49i	Analyzer serial #:	1501663734

Calibration Data

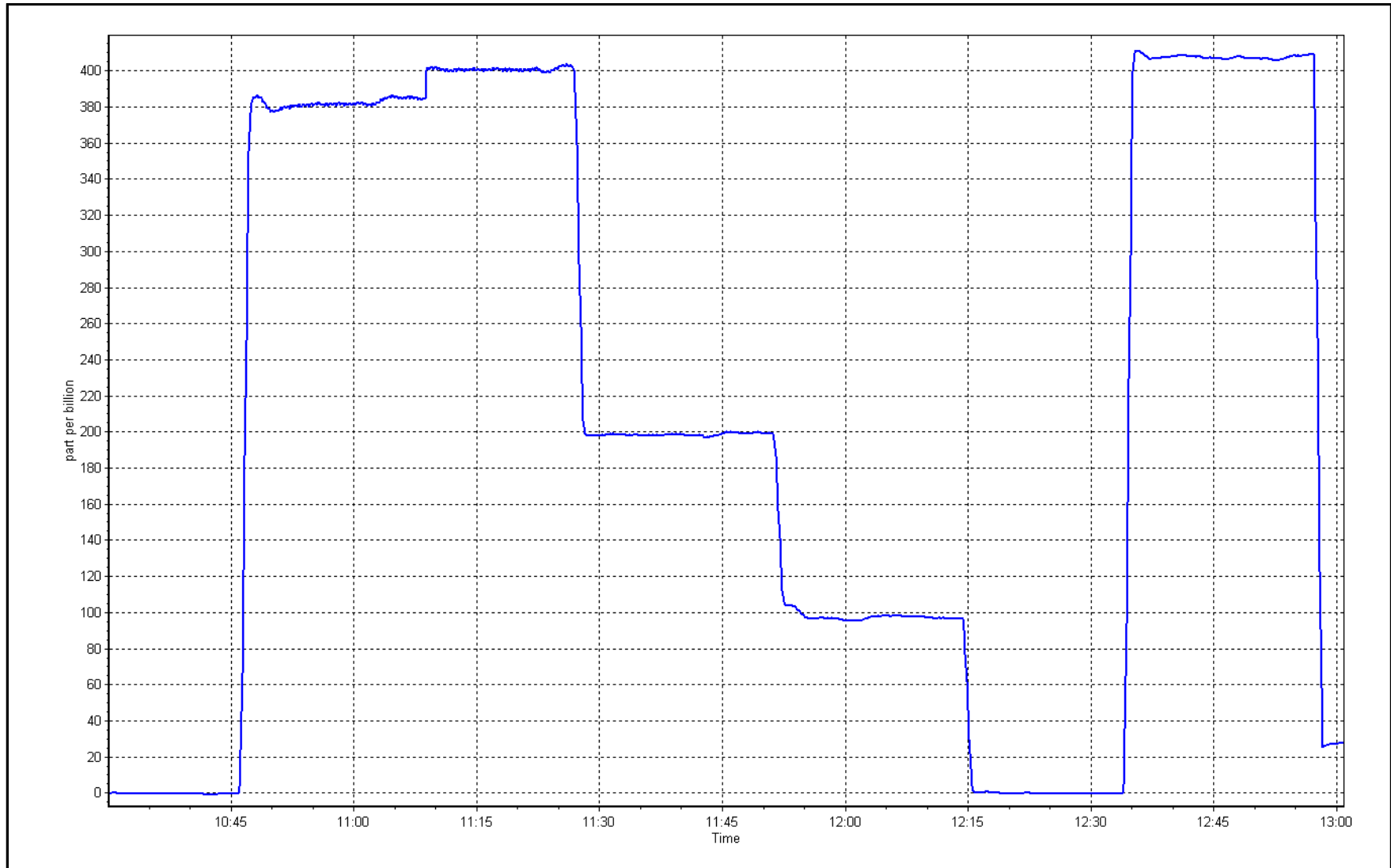
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.5	----	Correlation Coefficient	0.999979	≥0.995
400.0	400.4	0.9990	Slope	1.003629	0.90 - 1.10
200.0	199.6	1.0020	Intercept	-1.260000	+/- 5
100.0	98.0	1.0204			



O₃ Calibration Plot

Date: September 4, 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: September 25, 2025 Last Cal Date: August 21, 2025
Start time (MST): 11:50 End time (MST): 13:46

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 (°C)	15.00	14.60	15.00	☐	+/- 2 °C
P (mmHg)	711.70	712.30	711.70	☐	+/- 10 mmHg
Flow (LPM)	5.00	5.07	5.00	☐	+/- 0.25 LPM
PW% (pump)	34	----	34	☐	>80%
Zero Verification	PM w/o HEPA: 7.5		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 6, 2024
Lot No.: 100128-050-042

Parameter	As found	Post maintenance	As left	Adjusted	(Limits)
PMT Peak Test	10.70		10.70	☐	+/- 0.5

Date Optical Chamber Cleaned: September 25, 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:

Quarterly calibration completed. No adjustments made.

Calibration by: Aswin Sasi Kumar



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS18 STONY MOUNTAIN SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Stony Mountain Station number: AMS 18
Calibration Date: September 18, 2025 Last Cal Date: August 22, 2025
Start time (MST): 11:04 End time (MST): 14:20
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.009874	1.008031	Backgd or Offset:	25.9	25.9
Calibration intercept:	-3.868238	-3.345346	Coeff or Slope:	0.816	0.816

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4921	78.1	800.2	804.7	0.994
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	804.7	Previous response	804.2	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4921	78.1	800.2	804.1	0.995
Mid point	4960	39.1	400.6	401.6	0.998
Low point	4980	20.0	204.9	197.8	1.036
As left zero	5000	0.0	0.0	-0.3	----
As left span	4921	78.1	800.2	802.6	0.997
Average Correction Factor:					1.009

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

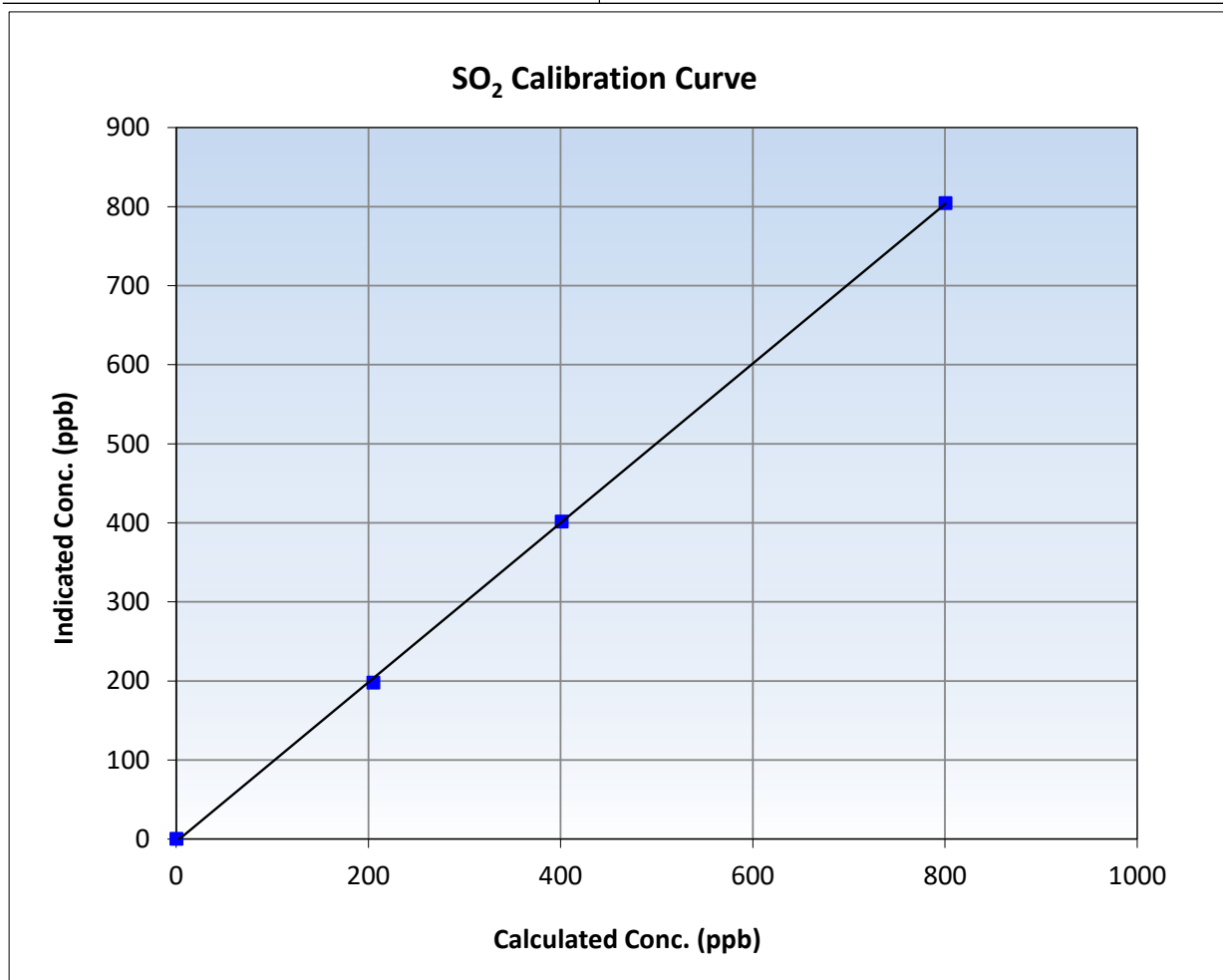
SO₂ Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 22, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:04	End Time (MST):	14:20
Analyzer make:	Thermo 43i	Analyzer serial #:	JC1501301453

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999879	≥0.995
800.2	804.1	0.9952	Slope	1.008031	0.90 - 1.10
400.6	401.6	0.9975	Intercept	-3.345346	+/-30
204.9	197.8	1.0358			



SO2 Calibration Plot

Date: September 18, 2025

Location: Stony Mountain





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Stony Mountain Station number: AMS18
Calibration Date: September 17, 2025 Last Cal Date: August 26, 2025
Start time (MST): 10:20 End time (MST): 15:04
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	1.010650	1.010081	Backgd or Offset:	2.94
Calibration intercept:	-0.219074	-0.099139	Coeff or Slope:	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.1	----
As found High point	4917	82.3	80.0	83.5	0.959
As found Mid point	4958	41.2	40.1	41.6	0.965
As found Low point	4979	20.6	20.0	20.5	0.982
New cylinder response					
Baseline Corr As found:	83.4	Prev response:	80.64	*% change:	3.3%
Baseline Corr 2nd AF pt:	41.5	AF Slope:	1.044081	AF Intercept:	-0.139865
Baseline Corr 3rd AF pt:	20.4	AF Correlation:	0.999962	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4917	82.3	80.0	80.9	0.989
Mid point	4958	41.2	40.1	40.2	0.996
Low point	4979	20.6	20.0	19.7	1.016
As left zero	5000	0.0	0.0	0.3	----
As left span	4917	82.3	80.0	79.5	1.006
SO2 Scrubber Check	4923	77.1	771.0	-0.1	----
Date of last scrubber change:	17-Dec-21		Ave Corr Factor		1.001
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

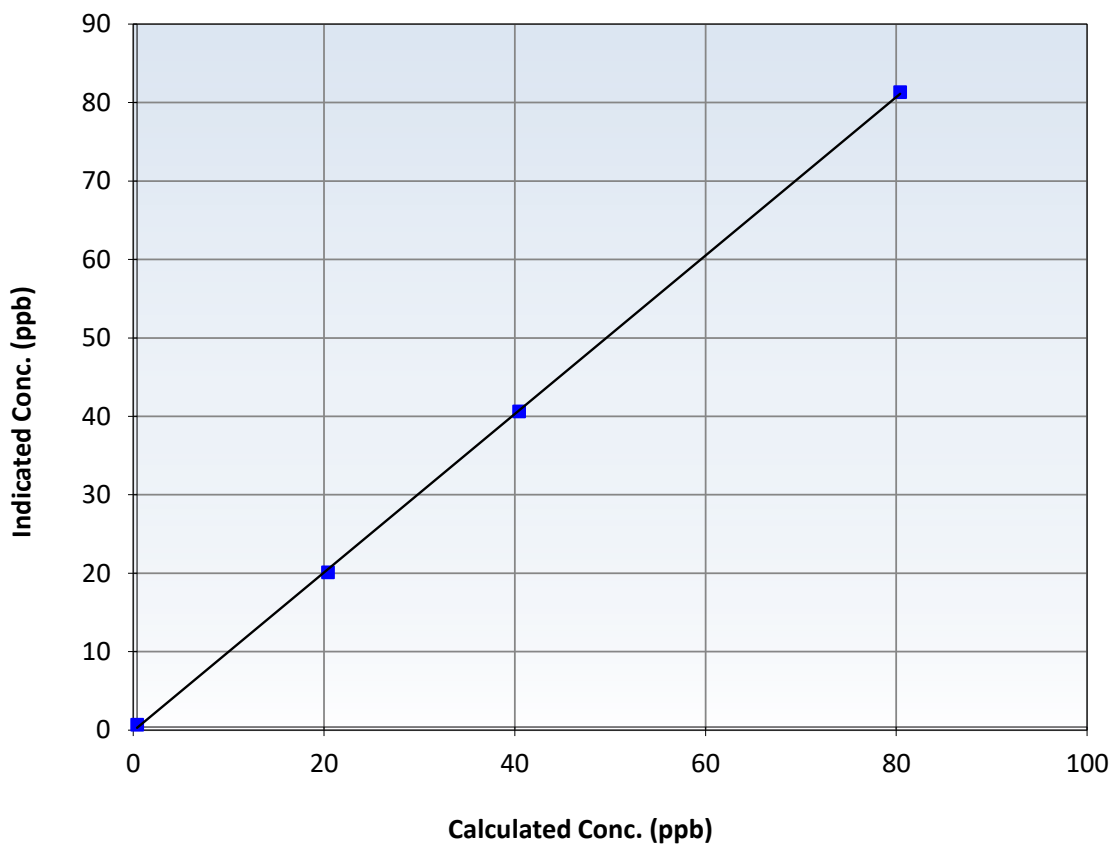
Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 26, 2025
Station Name:	Stony Mountain	Station Number:	AMS18
Start Time (MST):	10:20	End Time (MST):	15:04
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1218153359

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999888	≥ 0.995
80.0	80.9	0.9890	Slope	1.010081	$0.90 - 1.10$
40.1	40.2	0.9963	Intercept	-0.099139	± 3
20.0	19.7	1.0165			

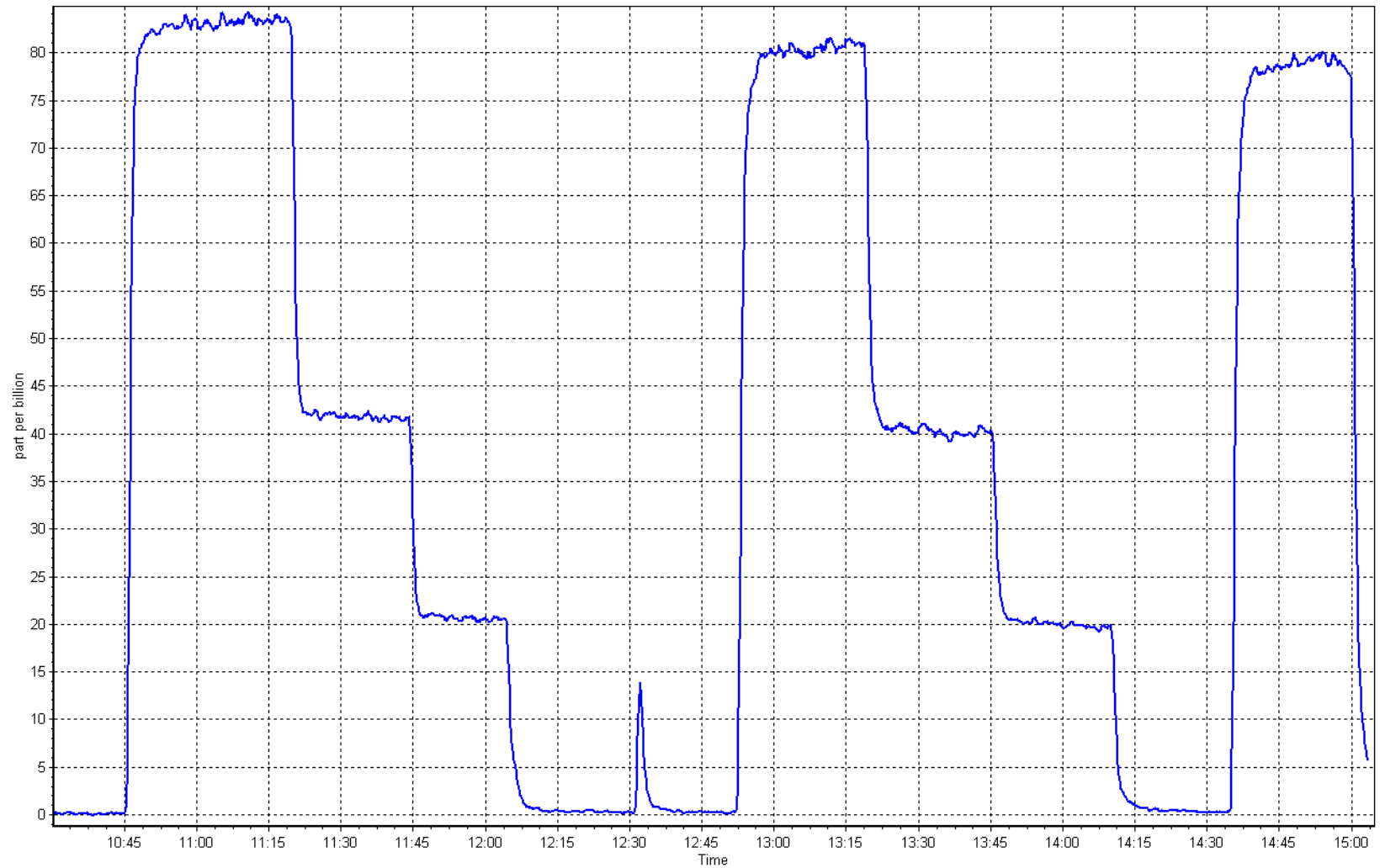
TRS Calibration Curve



TRS Calibration Plot

Date: September 17, 2025

Location: Stony Mountain





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Stony Mountain Station number: AMS 18
Calibration Date: September 18, 2025 Last Cal Date: August 22, 2025
Start time (MST): 11:04 End time (MST): 14:20
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 (CH₄): Diff between cyl (NMHC):
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>	
CH ₄ SP Ratio:	2.60E-04	2.65E-04	NMHC SP Ratio:	4.74E-05	4.88E-05
CH ₄ Retention time:	14.8	14.8	NMHC Peak Area:	188504	183174
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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.01	----
As found High point	4921	78.1	16.82	15.83	1.063
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	15.82	Prev response	16.75	*% change	-5.8%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	78.1	16.82	16.78	1.002
Mid point	4960	39.1	8.42	8.41	1.001
Low point	4980	20.0	4.31	4.17	1.032
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.1	16.82	16.90	0.995
Average Correction Factor					1.012

Notes: H2 cylinder changed out after as founds. Span adjusted.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4921	78.1	8.93	8.32	1.074
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.32	Prev response	8.88	*% change	-6.7%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4921	78.1	8.93	8.90	1.003
Mid point	4960	39.1	4.47	4.47	0.999
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	8.99	0.994
Average Correction Factor					1.011

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))
As found zero	5000	0.0	0.00	0.01	Limit = 0.90-1.10
As found High point	4921	78.1	7.89	7.51	1.051
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.50	Prev response	7.87	*% change	-4.8%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4921	78.1	7.89	7.88	1.001
Mid point	4960	39.1	3.95	3.94	1.003
Low point	4980	20.0	2.02	1.96	1.032
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	78.1	7.89	7.91	0.997
Average Correction Factor					1.012

Calibration Statistics

	Start	Finish
THC Cal Slope:	0.998377	1.000104
THC Cal Offset:	-0.047047	-0.044554
CH ₄ Cal Slope:	0.999429	1.001469
CH ₄ Cal Offset:	-0.018418	-0.023484
NMHC Cal Slope:	0.997231	0.999092
NMHC Cal Offset:	-0.028024	-0.021076

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

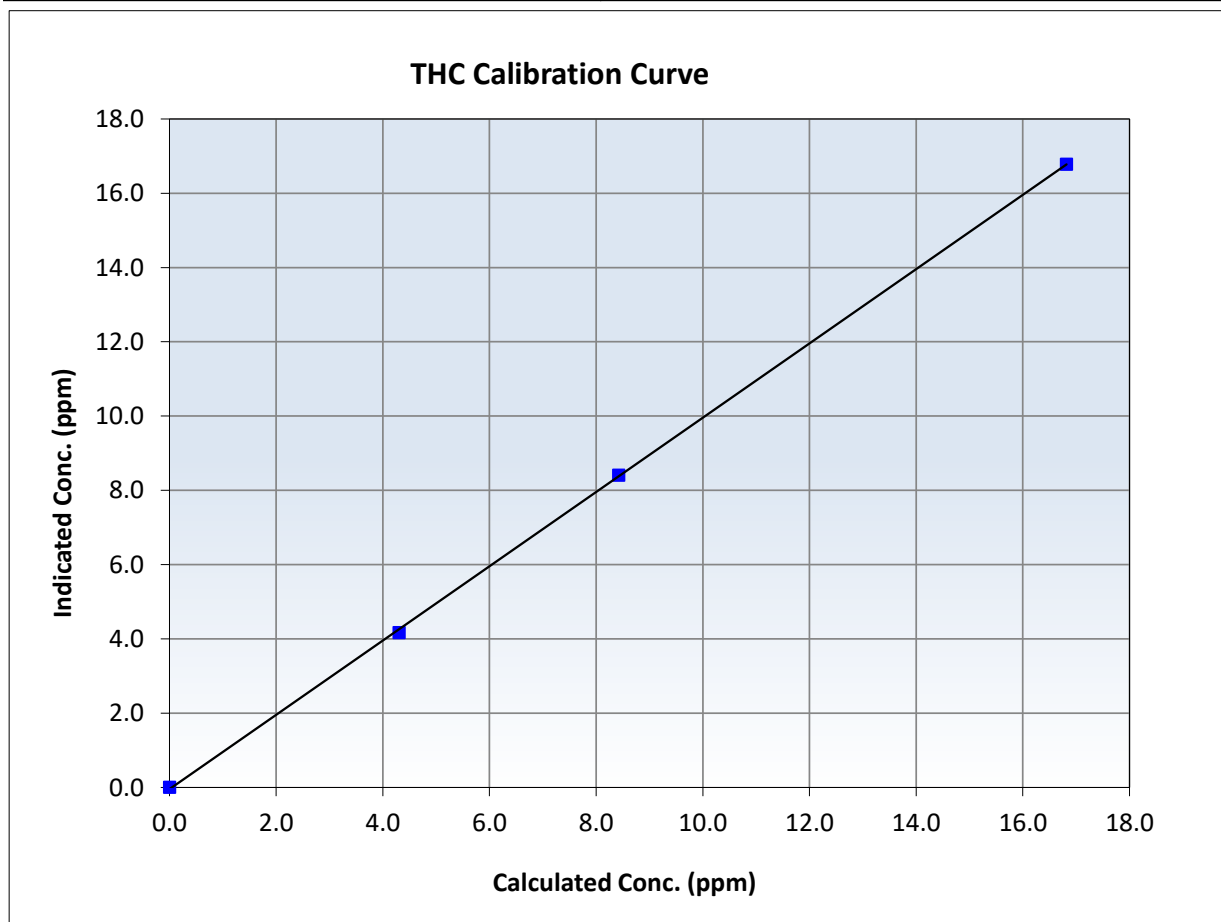
THC Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 22, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:04	End Time (MST):	14:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999924	<i>≥0.995</i>
16.82	16.78	1.0023	Slope	1.000104	<i>0.90 - 1.10</i>
8.42	8.41	1.0009	Intercept	-0.044554	<i>+/-0.5</i>
4.31	4.17	1.0320			





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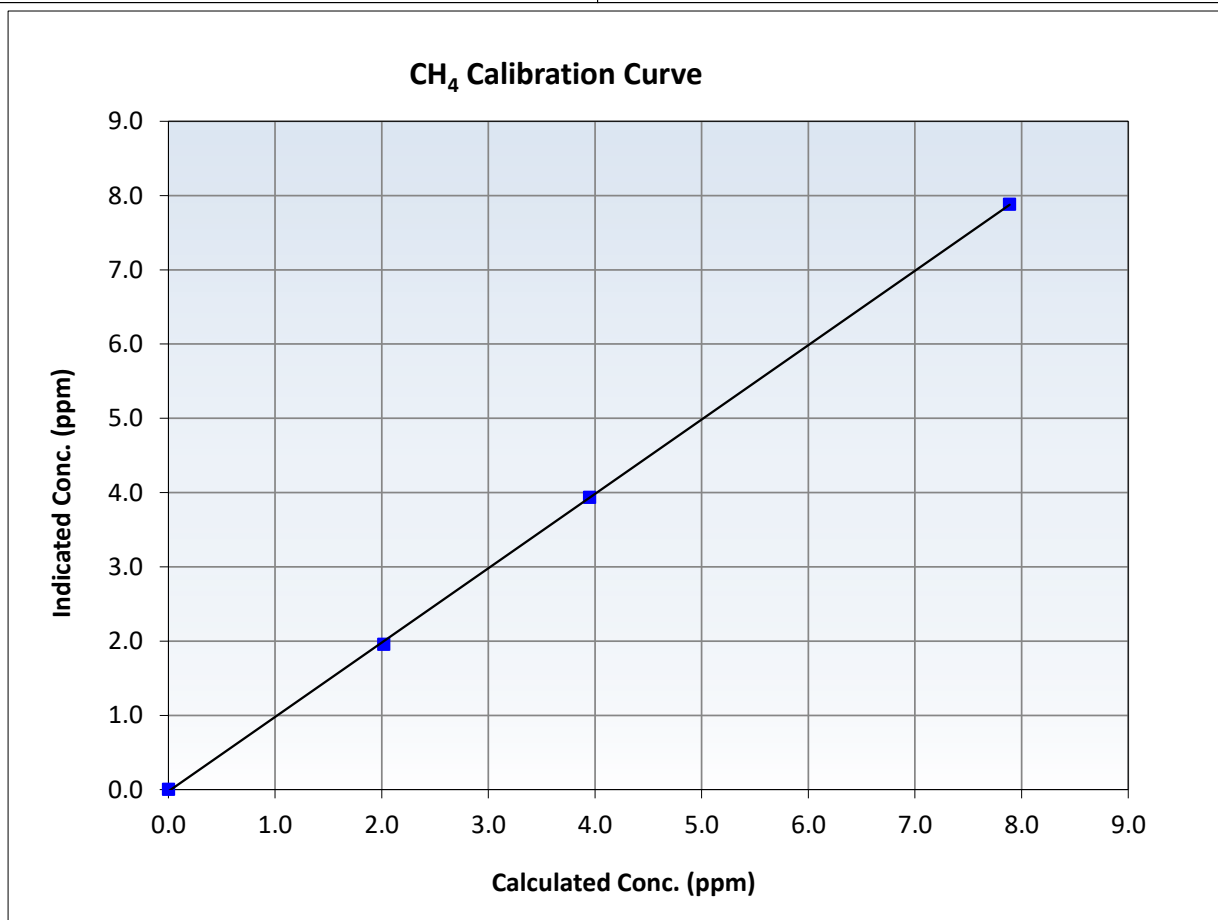
CH₄ Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 22, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:04	End Time (MST):	14:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999923	<i>≥0.995</i>
7.89	7.88	1.0006	Slope	1.001469	<i>0.90 - 1.10</i>
3.95	3.94	1.0025	Intercept	-0.023484	<i>+/-0.5</i>
2.02	1.96	1.0320			





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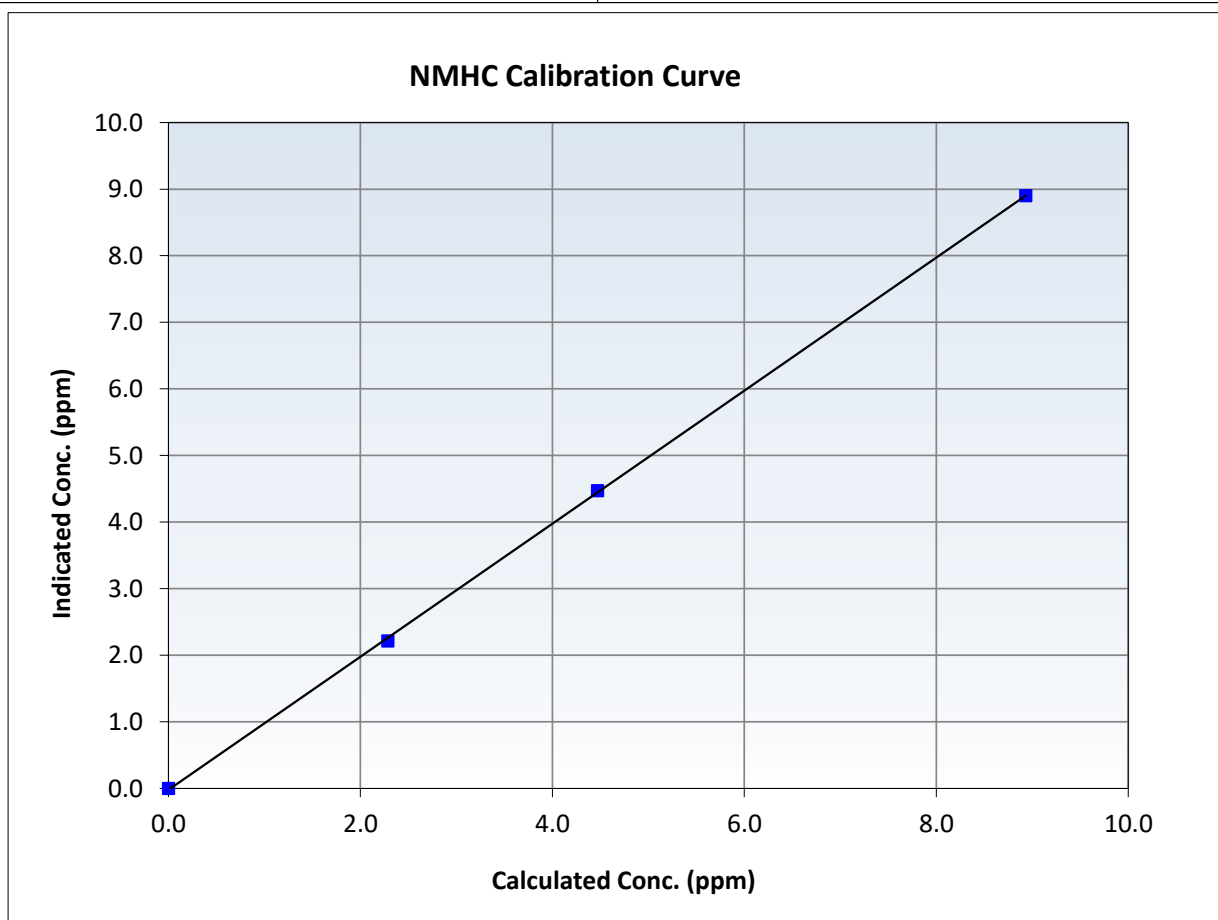
NMHC Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 22, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:04	End Time (MST):	14:20
Analyzer make:	Thermo 55i	Analyzer serial #:	1170050130

Calibration Data

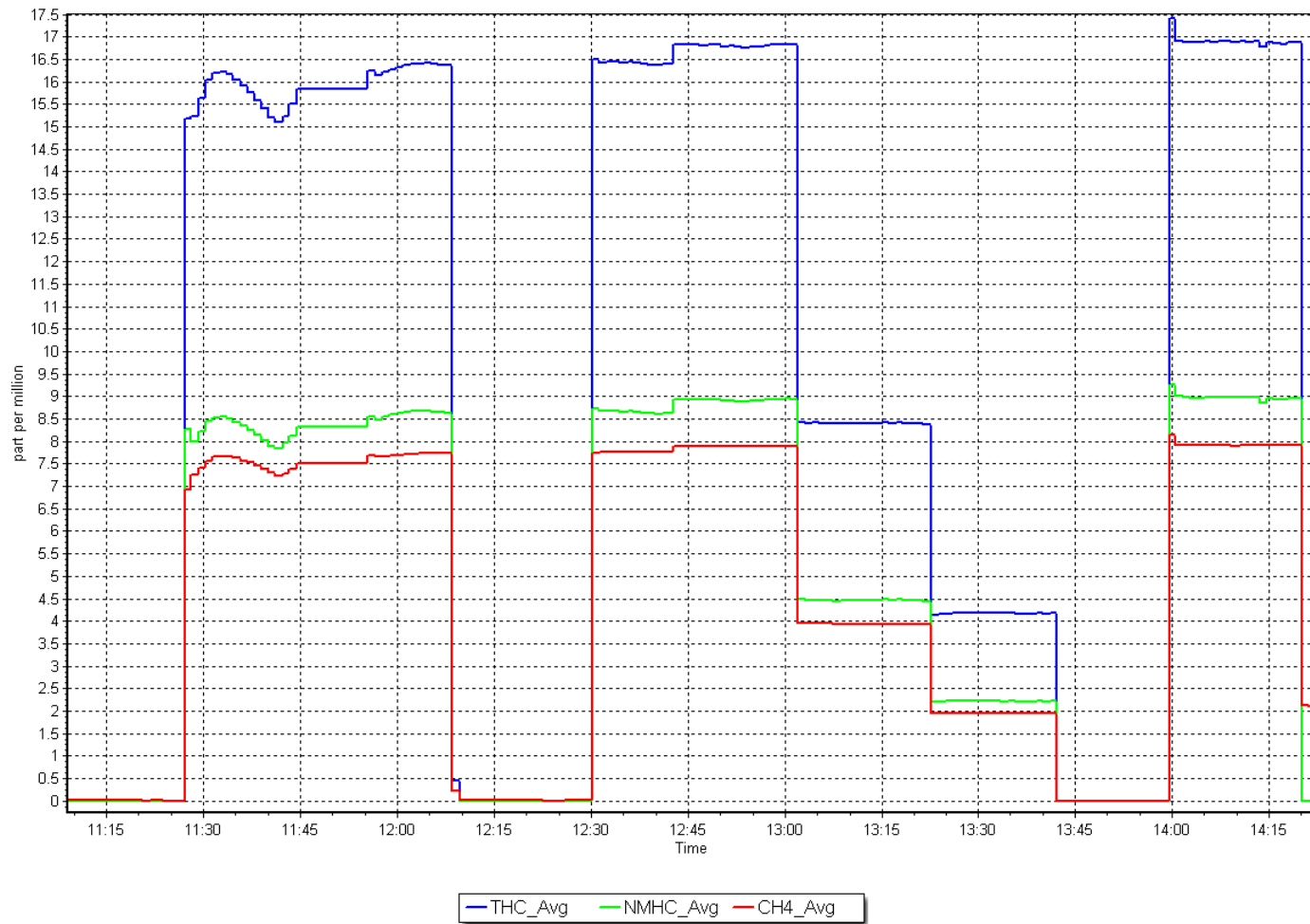
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999922	<i>≥0.995</i>
8.93	8.90	1.0035	Slope	0.999092	<i>0.90 - 1.10</i>
4.47	4.47	0.9995	Intercept	-0.021076	<i>+/-0.5</i>
2.29	2.22	1.0315			



NMHC Calibration Plot

Date: September 18, 2025

Location: Stony Mountain





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Stony Mountain
Station number: AMS 18
Calibration Date: September 22, 2025
Last Cal Date: August 28, 2025
Start time (MST): 9:50
End time (MST): 14:57
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0045516
NOX Cal Gas Conc: 60.30 ppm
Removed Cylinder #: N/A
Removed Gas NOX Conc: 60.30 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API 701
Cal Gas Expiry Date: November 17, 2026
NO Cal Gas Conc: 60.10 ppm
Removed Gas Exp Date: N/A
Removed Gas NO Conc: 60.10 ppm
NO gas Diff:
Serial Number: 2658
Serial Number: 4890

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO _x Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	----	----
AF High point	4933	66.6	803.3	800.6	2.7	798.6	794.6	4.0	1.0058	1.0075
AF Mid point										
AF Low point										
New cyl resp										
Previous Respo 4933	NO _x = 803.3 ppb	NO = 799.7 ppb	* = > +/-5% change initiates investigation			*Percent Change	NO _x = -0.6%			
Baseline Corr 1st pt	NO _x = 798.6 ppb	NO = 794.6 ppb	<u>As Found Statistics</u>			*Percent Change	NO = -0.6%			
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb	As found NO _x r ² :			Nx SI:	Nx Int:			
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb	As found NO r ² :			NO SI:	NO Int:			
			As found NO ₂ r ² :			NO ₂ SI:	NO ₂ Int:			

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO ₂ Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo Scientific 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1501663731

Instrument Settings

	<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.055	1.060
NOX coeff or slope:	0.999	0.999
NO2 coeff or slope:	1.000	1.000

	<u>Start</u>	<u>Finish</u>
NO bkgnd or offset:	10.4	10.4
NOX bkgnd or offset:	10.5	10.5
Reaction cell Press:	223.7	220.7

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.002366	0.998994
NO _x Cal Offset:	-1.867714	-0.608232
NO Cal Slope:	1.002607	1.000822
NO Cal Offset:	-3.009365	-1.809363
NO ₂ Cal Slope:	0.994431	1.000029
NO ₂ Cal Offset:	-0.179039	1.371521

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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.1	0.1	----	----
High point	4933	66.6	803.3	800.6	2.7	802.2	800.4	1.8	1.0013	1.0002
Mid point	4967	33.3	401.6	400.2	1.3	400.2	397.8	2.4	1.0034	1.0061
Low point	4983	16.6	200.2	199.5	0.7	198.7	196.0	2.7	1.0076	1.0181
As left zero	5000	0.0	0.0	0.0	0.0	0.1	0.0	0.1	----	----
As left span	4933	66.6	803.3	388.8	414.5	808.6	388.8	419.8	0.9934	1.0000
Average Correction Factor									1.0041	1.0082

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.1	----	----
High GPT point	800.3	385.1	417.9	418.6	0.9982	100.2%
Mid GPT point	800.3	599.7	203.3	205.4	0.9896	101.1%
Low GPT point	800.3	702.5	100.5	103.0	0.9754	102.5%
Average Correction Factor					0.9877	101.3%

Notes:

Span adjusted.

Calibration Performed By:

Aswin Sasi Kumar



Wood Buffalo Environmental Association

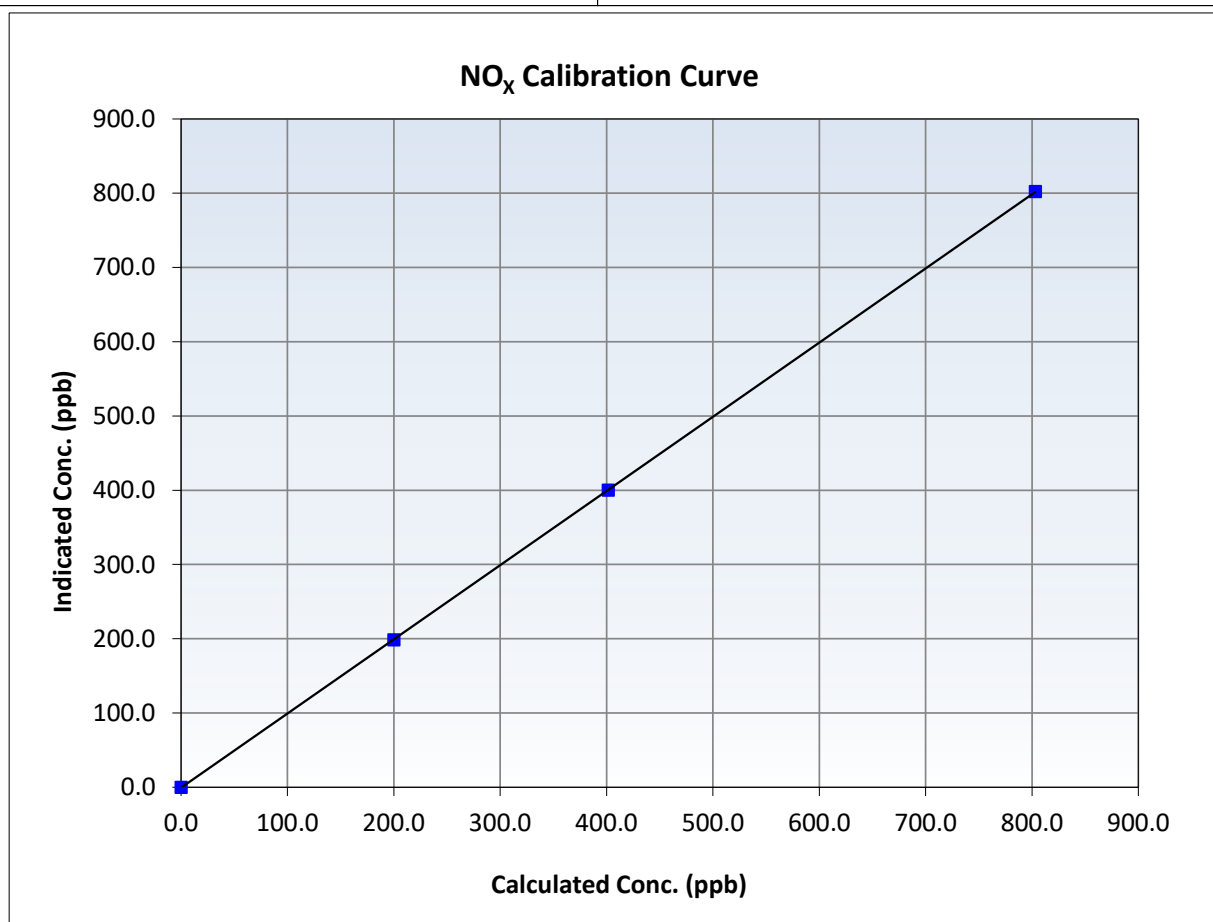
NO_x Calibration Summary

Station Information

Calibration Date:	September 22, 2025	Previous Calibration:	August 28, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	9:50	End Time (MST):	14:57
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1501663731

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999996	≥0.995
803.3	802.2	1.0013	Slope	0.998994	0.90 - 1.10
401.6	400.2	1.0034	Intercept	-0.608232	+/-20
200.2	198.7	1.0076			





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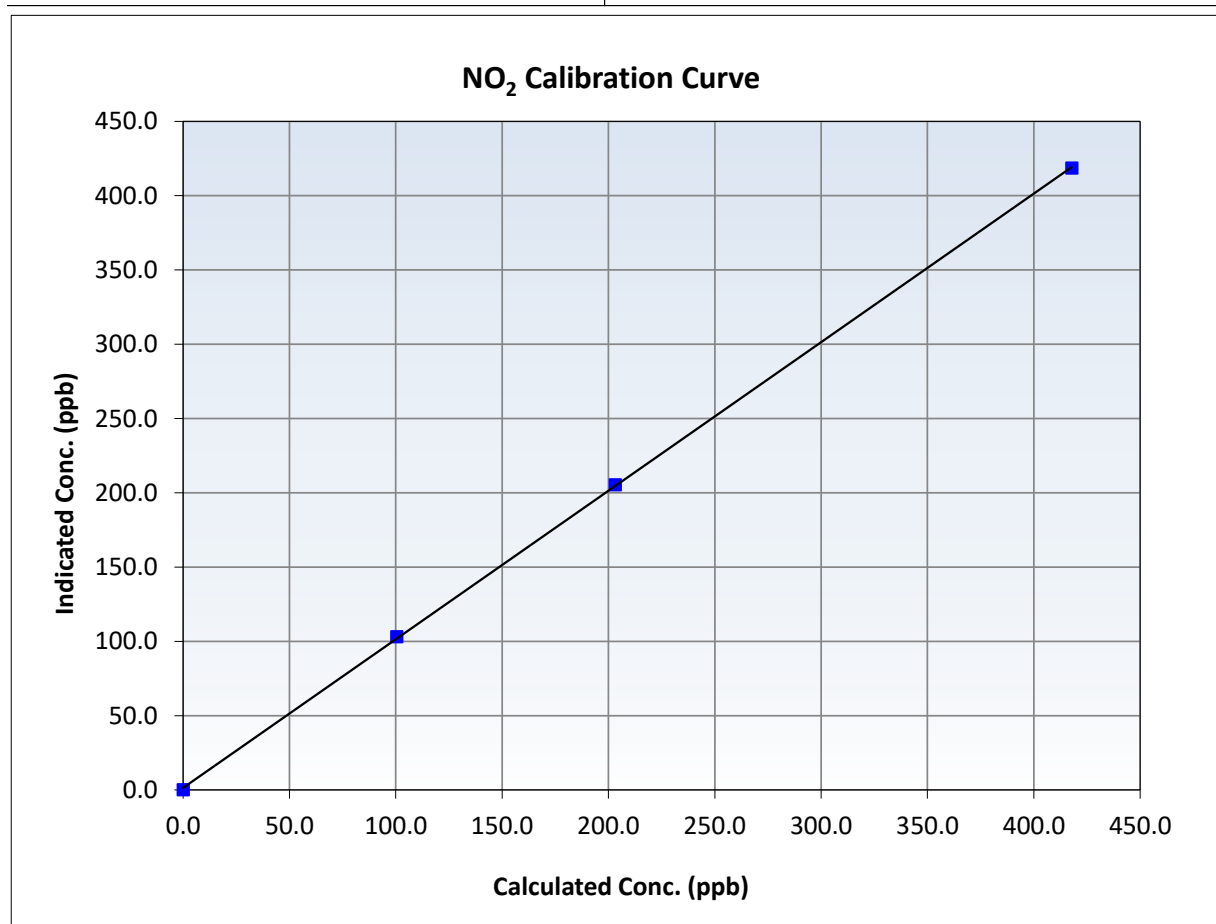
NO₂ Calibration Summary

Station Information

Calibration Date:	September 22, 2025	Previous Calibration:	August 28, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	9:50	End Time (MST):	14:57
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1501663731

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999959	≥0.995
417.9	418.6	0.9982	Slope	1.000029	0.90 - 1.10
203.3	205.4	0.9896	Intercept	1.371521	+/-20
100.5	103.0	0.9754			





Wood Buffalo Environmental Association

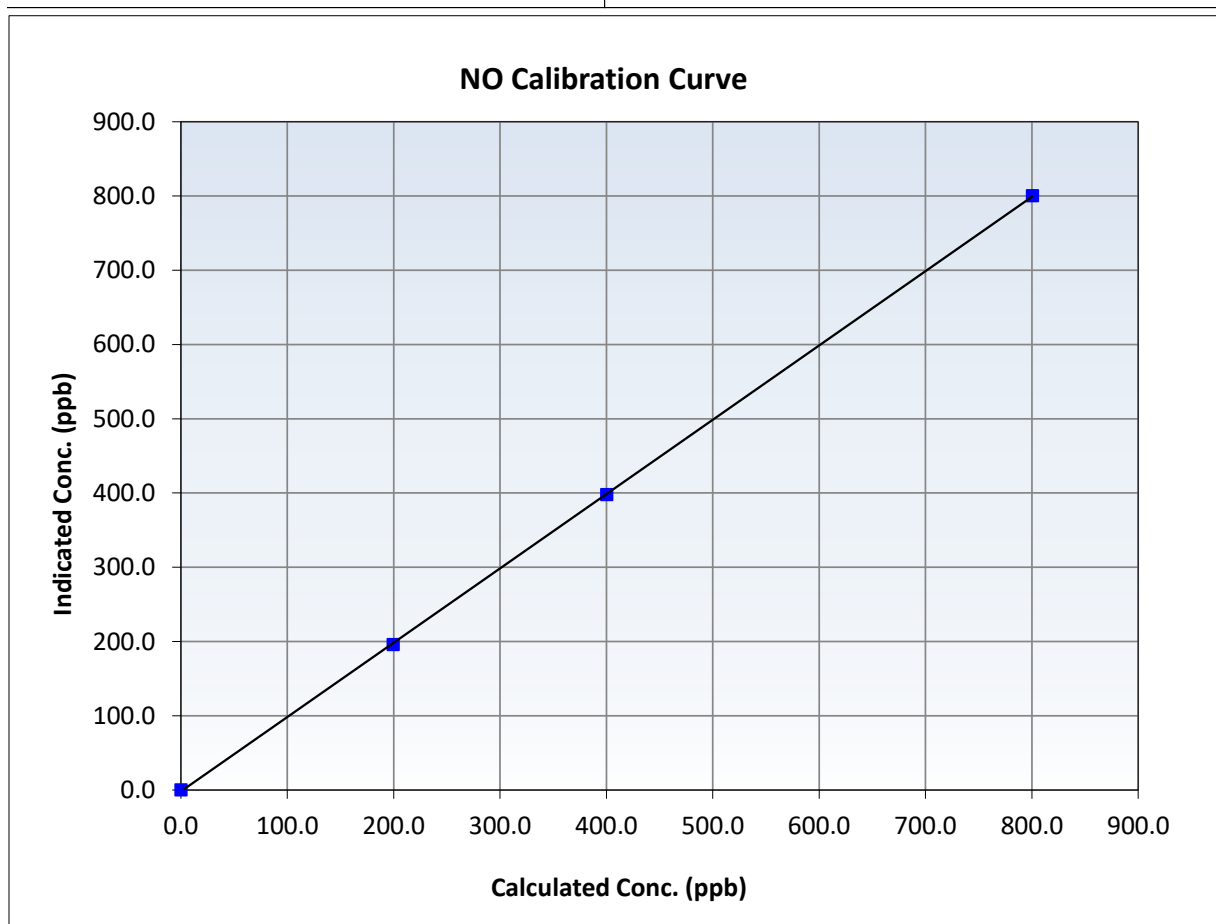
NO Calibration Summary

Station Information

Calibration Date:	September 22, 2025	Previous Calibration:	August 28, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	9:50	End Time (MST):	14:57
Analyzer make:	Thermo Scientific 42i	Analyzer serial #:	1501663731

Calibration Data

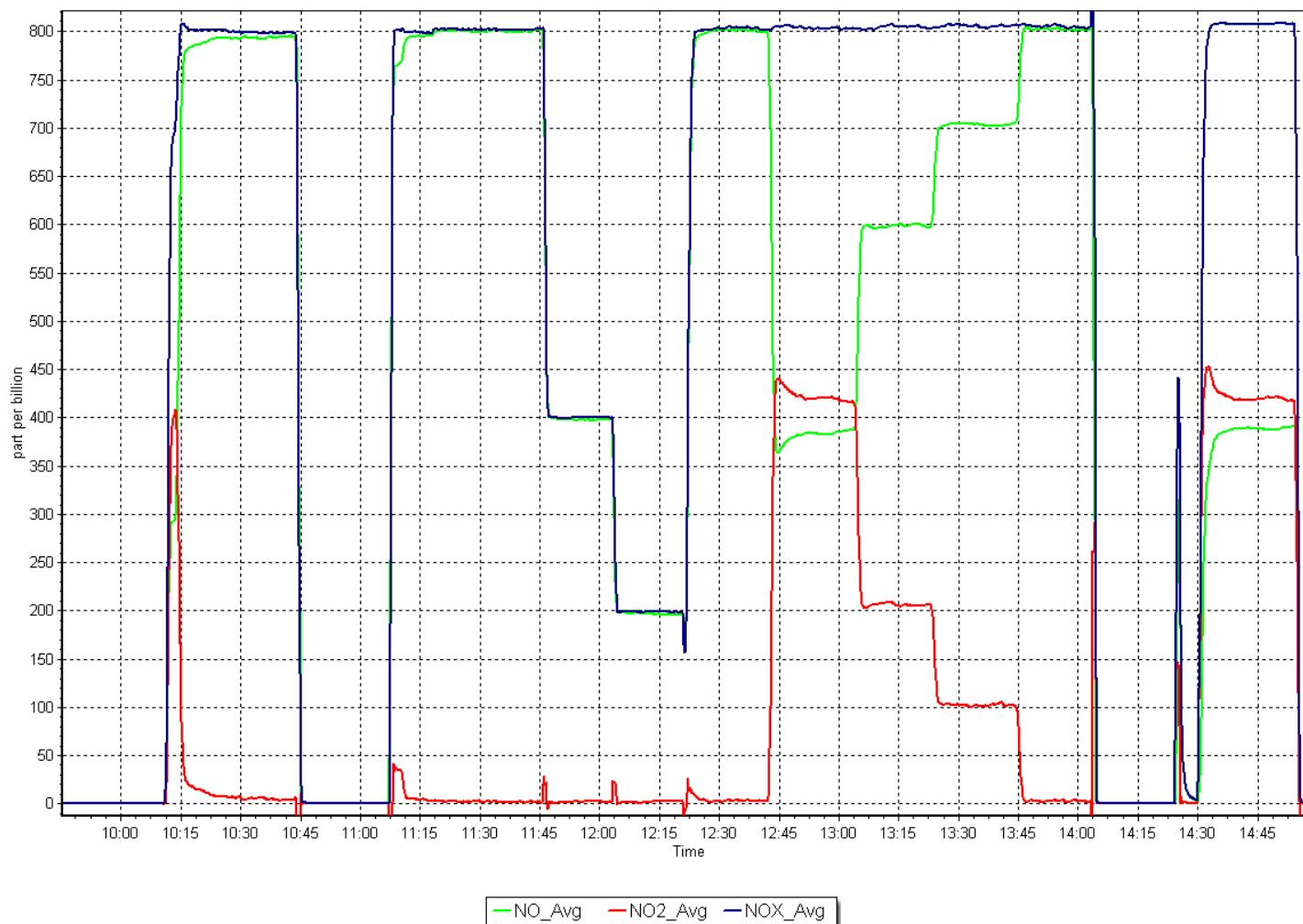
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999974	≥ 0.995
800.6	800.4	1.0002	Slope	1.000822	$0.90 - 1.10$
400.2	397.8	1.0061	Intercept	-1.809363	± 20
199.5	196.0	1.0181			



NO_x Calibration Plot

Date: September 22, 2025

Location: Stony Mountain





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Stony Mountain Station number: AMS 18
Calibration Date: September 11, 2025 Last Cal Date: August 20, 2025
Start time (MST): 11:12 End time (MST): 14:26
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.009229	1.003086	Backgd or Offset:	2.3	2.3
Calibration intercept:	0.360000	0.460000	Coeff or Slope:	0.991	0.991

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	NA	0.0	0.4	----
As found High point	4888	1138.1	400.0	402.6	0.995
As found Mid point					
As found Low point					
Baseline Corr As found:	402.2	Previous response	404.1	*% 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	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	NA	0.0	-0.1	----
High point	4888	1138.1	400.0	401.2	0.997
Mid point	4888	884.5	200.0	202.0	0.990
Low point	4888	741.4	100.0	100.9	0.991
As left zero	5000	NA	0.0	0.8	----
As left span	4812	1097.9	400.0	404.5	0.989
Average Correction Factor					0.993

Notes: No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

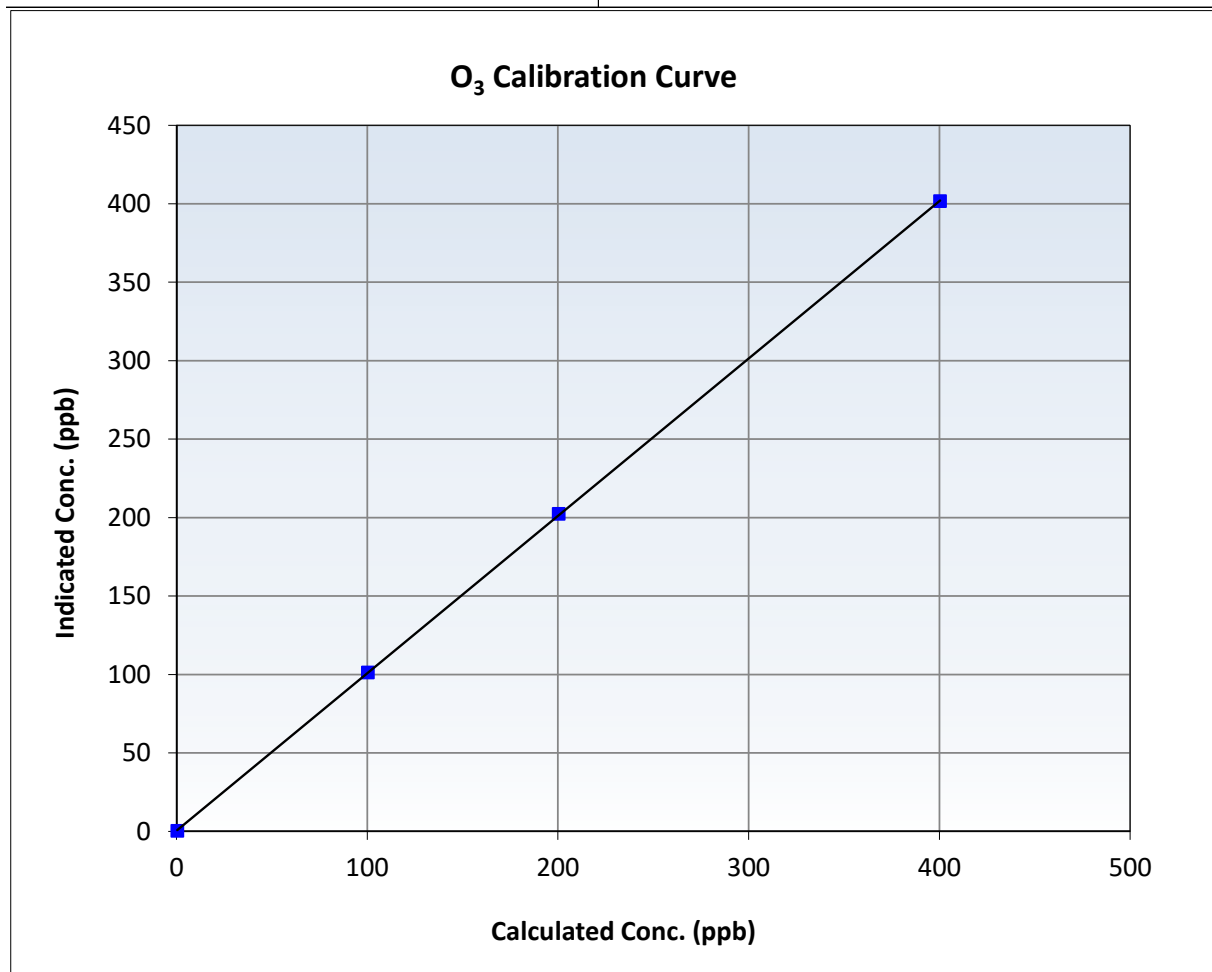
O₃ Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 20, 2025
Station Name:	Stony Mountain	Station Number:	AMS 18
Start Time (MST):	11:12	End Time (MST):	14:26
Analyzer make:	API T400	Analyzer serial #:	825

Calibration Data

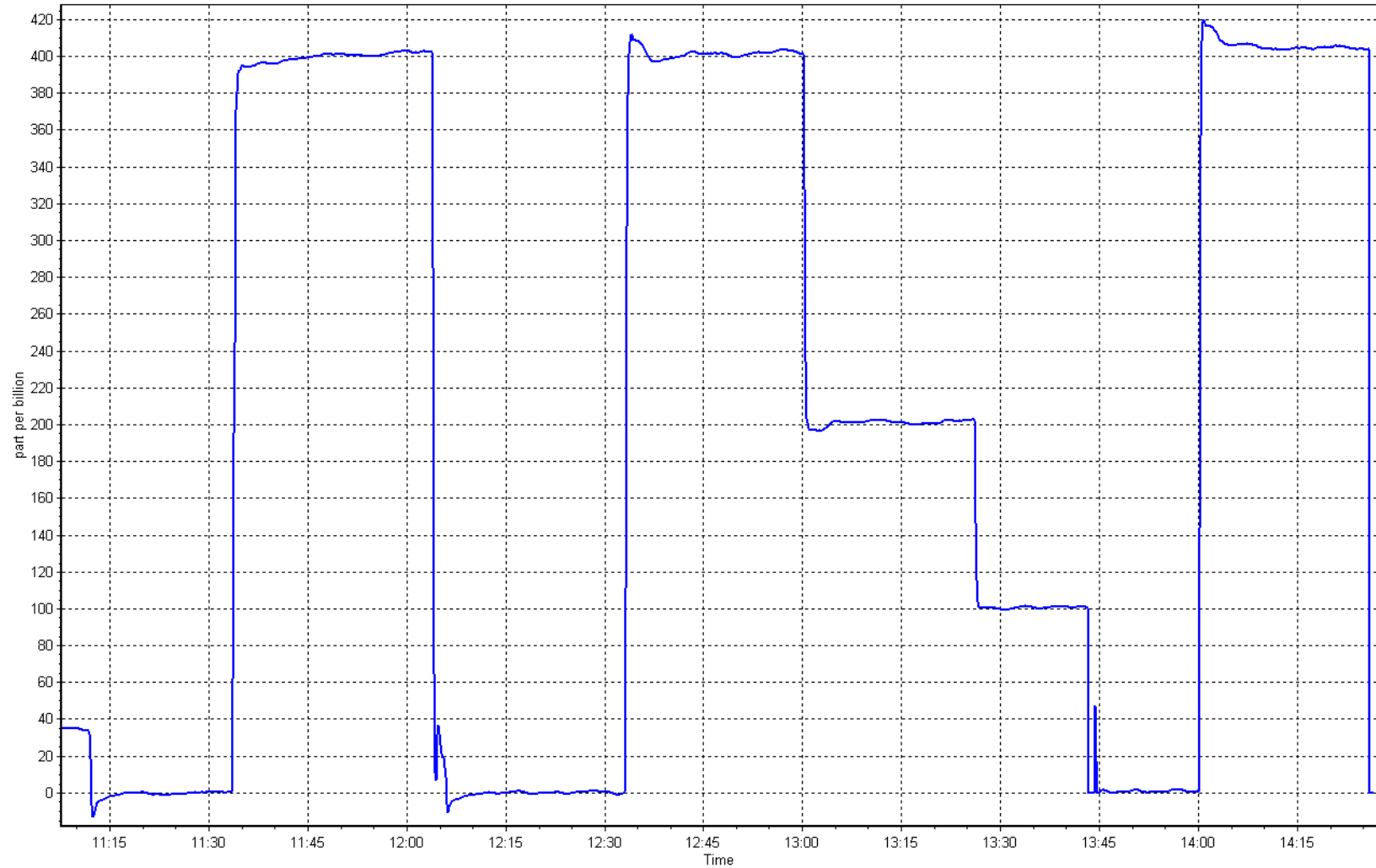
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999984	≥0.995
400.0	401.2	0.9970	Slope	1.003086	0.90 - 1.10
200.0	202.0	0.9901	Intercept	0.460000	+/- 5
100.0	100.9	0.9911			



O₃ Calibration Plot

Date: September 11, 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: September 22, 2025 Last Cal Date: August 28, 2025
Start time (MST): 10:34 End time (MST): N/A

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)	17.2	15.6		☐	+/- 2 °C
P (mmHg)	699.8	699.72		☐	+/- 10 mmHg
Flow (LPM)	4.99	4.99		☐	+/- 0.25 LPM
PW% (pump)	32	----		☐	>80%
Zero Verification	PM w/o HEPA: 1.0		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: August 28, 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: August 28, 2025
Date RH/T Sensor Cleaned: August 28, 2025

Notes: Instrument showing RH fault. Removing instrument for further maintenance back at the shop.

Calibration by: Aswin Sasi Kumar



Wood Buffalo Environmental Association

T640 PM_{2.5} CALIBRATION

Version-01-2024

Station Information

Station Name: Stony Mountain Station number: AMS 18
Calibration Date: September 22, 2025 Last Cal Date: N/A
Start time (MST): 13:50 End time (MST): 14:52

Analyzer Make: API T640 S/N: 306
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)	19.9	18.6	19.9	☐	+/- 2 °C
P (mmHg)	697.3	699.85	697.3	☐	+/- 10 mmHg
Flow (LPM)	4.99	4.77	5.00	☒	+/- 0.25 LPM
PW% (pump)	38	----	38	☐	>80%
Zero Verification	PM w/o HEPA: 2.7		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	11.0		11.0	☐	+/- 0.5

Date Optical Chamber Cleaned: _____
Date Disposable Filter Changed: _____

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

Annual Maintenance

Date Sample Tube Cleaned: August 28, 2025
Date RH/T Sensor Cleaned: August 28, 2025

Notes: Install calibration. Flow adjusted.

Calibration by: Aswin Sasi Kumar



Wood Buffalo Environmental Association

T640 PM_{2.5} CALIBRATION

Version-01-2024

Station Information

Station Name: Stony Mountain Station number: AMS 18
Calibration Date: September 23, 2025 Last Cal Date: September 22, 2025
Start time (MST): 11:26 End time (MST): N/A

Analyzer Make: API T640 S/N: 306
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)	20.8	19.6		☐	+/- 2 °C
P (mmHg)	699.5	699.85		☐	+/- 10 mmHg
Flow (LPM)	5.02	4.99		☐	+/- 0.25 LPM
PW% (pump)	38	----	38	☐	>80%
Zero Verification	PM w/o HEPA: _____		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: _____
Date Disposable Filter Changed: _____

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

Annual Maintenance

Date Sample Tube Cleaned: September 23, 2025
Date RH/T Sensor Cleaned: September 23, 2025

Notes: Signal from instrument looks to be inconsistent with nearby sites. Removal calibration performed.

Calibration by: Aswin Sasi Kumar



Wood Buffalo Environmental Association

T640 PM_{2.5} CALIBRATION

Version-01-2024

Station Information

Station Name: Stony Mountain Station number: AMS 18
Calibration Date: September 23, 2025 Last Cal Date: N/A
Start time (MST): 13:15 End time (MST): 13:58

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)	21	20.2	21	☐	+/- 2 °C
P (mmHg)	702.3	699.72	702.3	☐	+/- 10 mmHg
Flow (LPM)	5.00	4.99	5.00	☐	+/- 0.25 LPM
PW% (pump)	32	----		☐	>80%
Zero Verification	PM w/o HEPA: 1.0		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: August 28, 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: September 23, 2025
Date RH/T Sensor Cleaned: September 23, 2025

Notes: Install calibration. Flow, pressure and temp checked. Leak check passed.

Calibration by: Aswin Sasi Kumar



Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Version-10-2022

Station Information

Station Name: Stony Mountain Station Number: AMS 18
Calibration Date: September 24, 2025 Prev Cal Date: November 13, 2024
Start Time (MST): 11:45 End Time (MST): 12:00
Tower Height (m): 20.0 Reason: Removal

Wind Speed Information

Sensor make/model: Met One 010C Serial Number: Y18364
WS Calibrator: RM Young 053-120 Serial Number: NA

Shaft RPM	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
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%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999999	≥ 0.9995
Calculated slope		0.999615	$0.90 - 1.10$
Calculated intercept		-0.025296	± 2

Wind Direction Information

Sensor make/model: Met One 020C-1 Serial Number: C21021
As Found Declination (deg east of True North): 14 As Left Declination (deg east of True North): 14
Solar noon time (MST): NA Calc Declination*: 14 Degrees
Deadband calc: 1.6 degrees (*Limit 4 deg*) * - calculated declination as per NOAA website

Physical Direction (Degrees) (Cv)	Indicated Direction (Degrees) (Iv)	% Error (based on 357° FS) <i>Limit = +/- 1.0%</i>
0	0.0	---
90	88.4	-0.4%
180	177.1	-0.8%
270	268.7	-0.4%
355	355.4	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999956	≥ 0.9995
Calculated slope		0.998787	$0.90 - 1.10$
Calculated intercept		1.287257	± 4

Notes: WS and WD sensor replaced.

Calibration Performed By: Devin Russell/Ryan Power



Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Version-10-2022

Station Information

Station Name: Stony Mountain Station Number: AMS 18
Calibration Date: September 24, 2025 Prev Cal Date: NA
Start Time (MST): 10:50 End Time (MST): 11:45
Tower Height (m): 20.0 Reason: Install

Wind Speed Information

Sensor make/model: Met One 010C Serial Number: A3111
WS Calibrator: RM Young 053-120 Serial Number: B22309

Shaft RPM	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
0	0.0	0.0	---
200	20.2	20.3	0.4%
400	39.4	39.4	0.1%
600	58.6	58.7	0.2%
800	77.8	77.8	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999999	≥ 0.9995
Calculated slope		0.998843	$0.90 - 1.10$
Calculated intercept		-0.025014	± 2

Wind Direction Information

Sensor make/model: Met One 020C-1 Serial Number: D14060
As Found Declination (deg east of True North): 14 As Left Declination (deg east of True North): 14
Solar noon time (MST): NA Calc Declination*: 14 Degrees
Deadband calc: -1.3 degrees (*Limit 4 deg*) * - calculated declination as per NOAA website

Physical Direction (Degrees) (Cv)	Indicated Direction (Degrees) (Iv)	% Error (based on 357° FS) <i>Limit = +/- 1.0%</i>
0	0.7	---
90	88.3	-0.5%
180	179.1	-0.3%
270	271.5	0.4%
356	359.0	0.8%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999950	≥ 0.9995
Calculated slope		0.991235	$0.90 - 1.10$
Calculated intercept		1.065230	± 4

Notes: WS and WD sensor installed. Declination verified to true north marker.

Calibration Performed By: Devin Russell/Ryan Power



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS19 FIREBAG SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Firebag Station number: AMS 19
Calibration Date: September 15, 2025 Last Cal Date: July 18, 2025
Start time (MST): 10:14 End time (MST): 13:24
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.001504	1.002290	Backgd or Offset:	11.8	11.9
Calibration intercept:	1.220000	0.620000	Coeff or Slope:	1.030	1.030

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	4999	0.0	0.0	-0.5	----
As found High point	4922	78.4	799.2	801.0	0.997
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	801.5	Previous response	801.6	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	4999	0.0	0.0	-0.1	----
High point	4922	78.4	799.2	801.0	0.998
Mid point	4961	39.2	399.6	402.4	0.993
Low point	4980	19.6	199.8	201.0	0.994
As left zero	4999	0.0	0.0	-0.2	----
As left span	4922	78.4	799.2	803.0	0.995
Average Correction Factor:					0.995

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

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

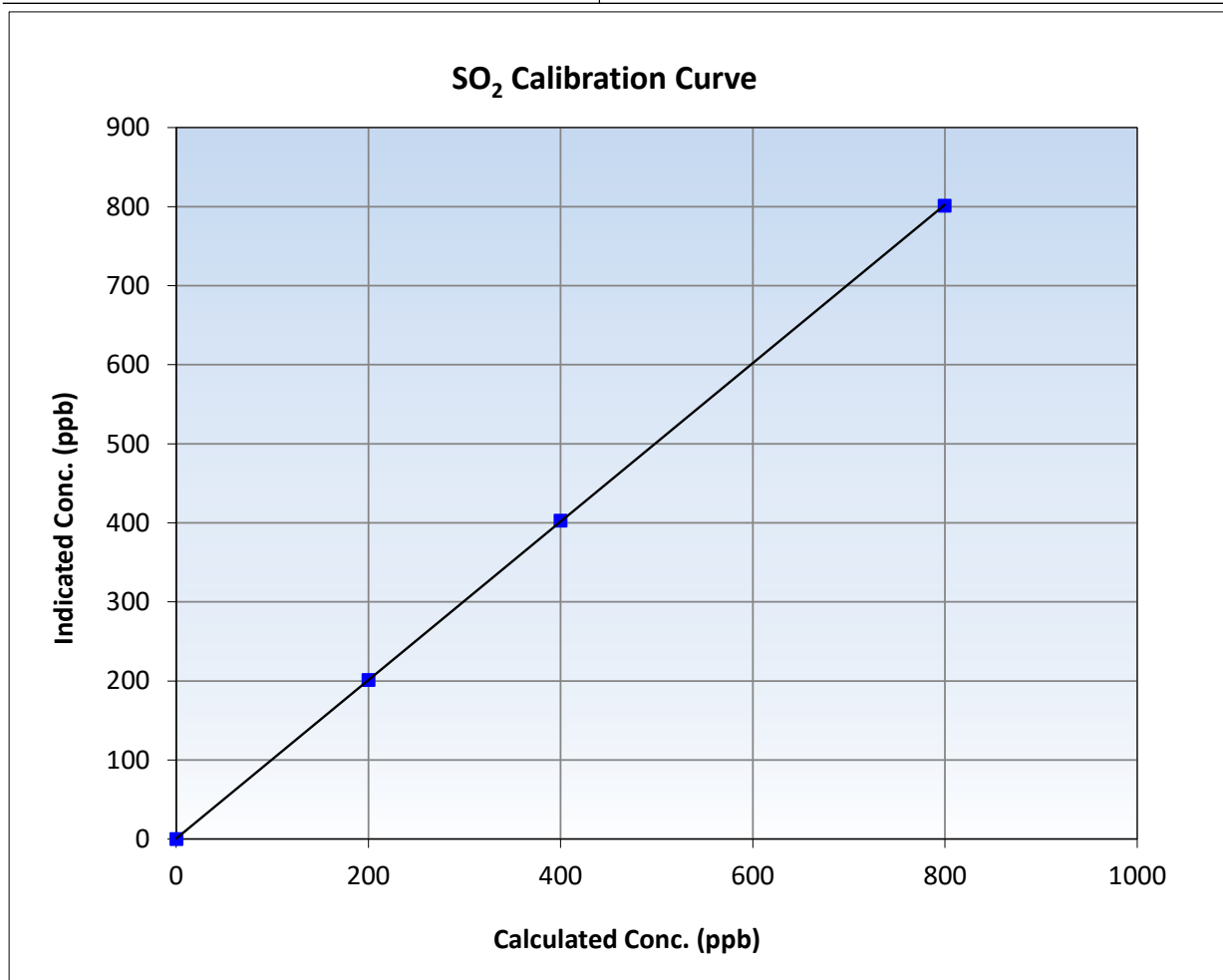
SO₂ Calibration Summary

Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	July 18, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	10:14	End Time (MST):	13:24
Analyzer make:	Thermo 43i	Analyzer serial #:	1410661308

Calibration Data

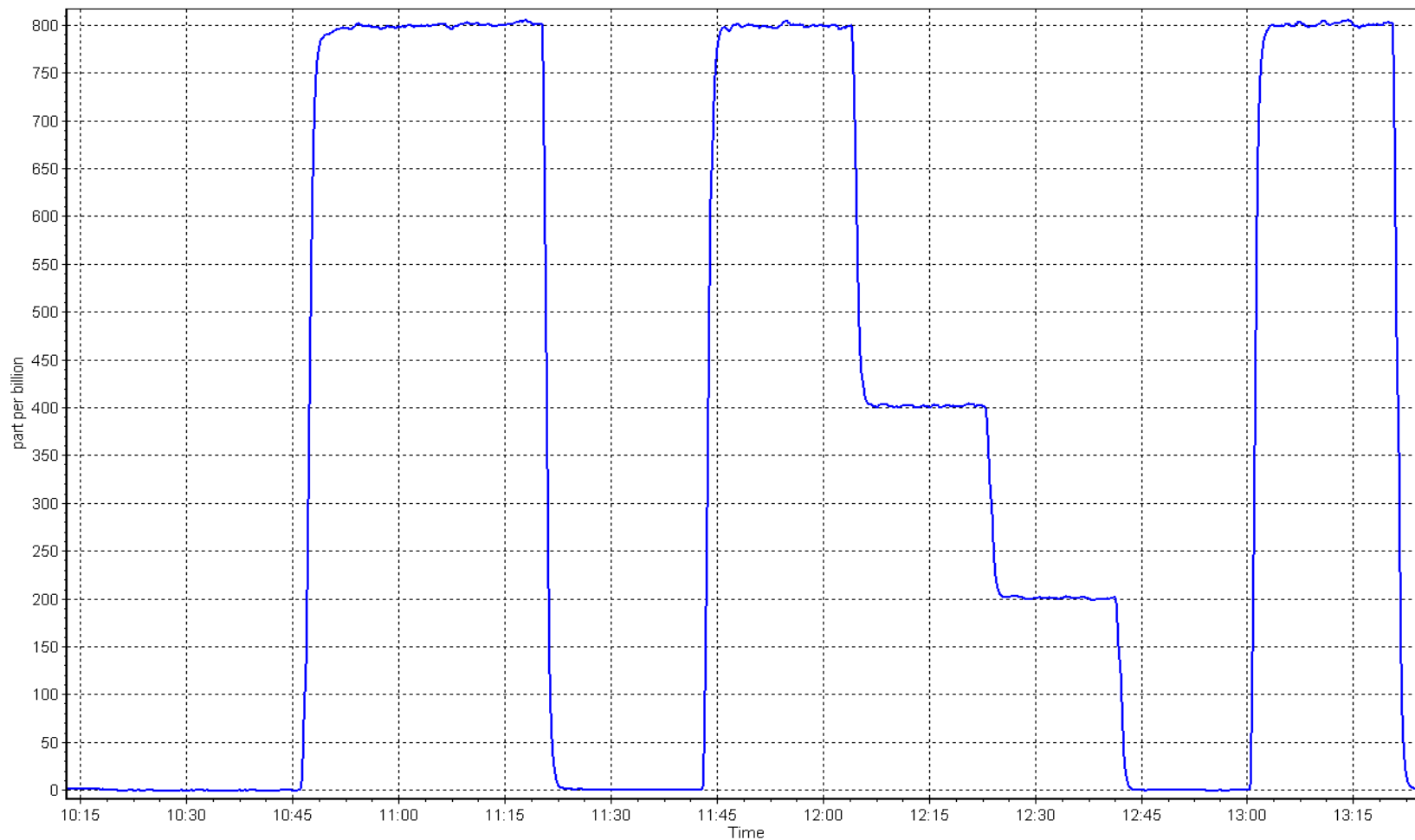
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999993	≥0.995
799.2	801.0	0.9978	Slope	1.002290	0.90 - 1.10
399.6	402.4	0.9931	Intercept	0.620000	+/-30
199.8	201.0	0.9940			



SO2 Calibration Plot

Date: September 15, 2025

Location: Firebag





Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name: Firebag Station number: AMS 19
Calibration Date: September 10, 2025 Last Cal Date: August 27, 2025
Start time (MST): 10:21 End time (MST): 16:23
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	1.009192	1.001333	Backgd or Offset:	2.79
Calibration intercept:	-0.240000	0.060000	Coeff or Slope:	1.173

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4924	75.6	80.0	80.0	0.996
As found Mid point	4962	37.8	40.0	39.8	0.997
As found Low point	4981	18.9	20.0	19.7	1.000
New cylinder response					
Baseline Corr As found:	80.3	Prev response:	80.48	*% change:	-0.2%
Baseline Corr 2nd AF pt:	40.1	AF Slope:	1.004191	AF Intercept:	-0.340000
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999999	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4924	75.6	80.0	80.1	0.999
Mid point	4962	37.8	40.0	40.2	0.995
Low point	4981	18.9	20.0	20.1	0.995
As left zero	5000	0.0	0.0	0.1	----
As left span	4924	75.6	80.0	78.2	1.023
SO2 Scrubber Check				0.0	
Date of last scrubber change:		18-Jan-23		Ave Corr Factor	0.996
Date of last converter efficiency test:		November 26, 2024		106.2% efficiency	

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

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

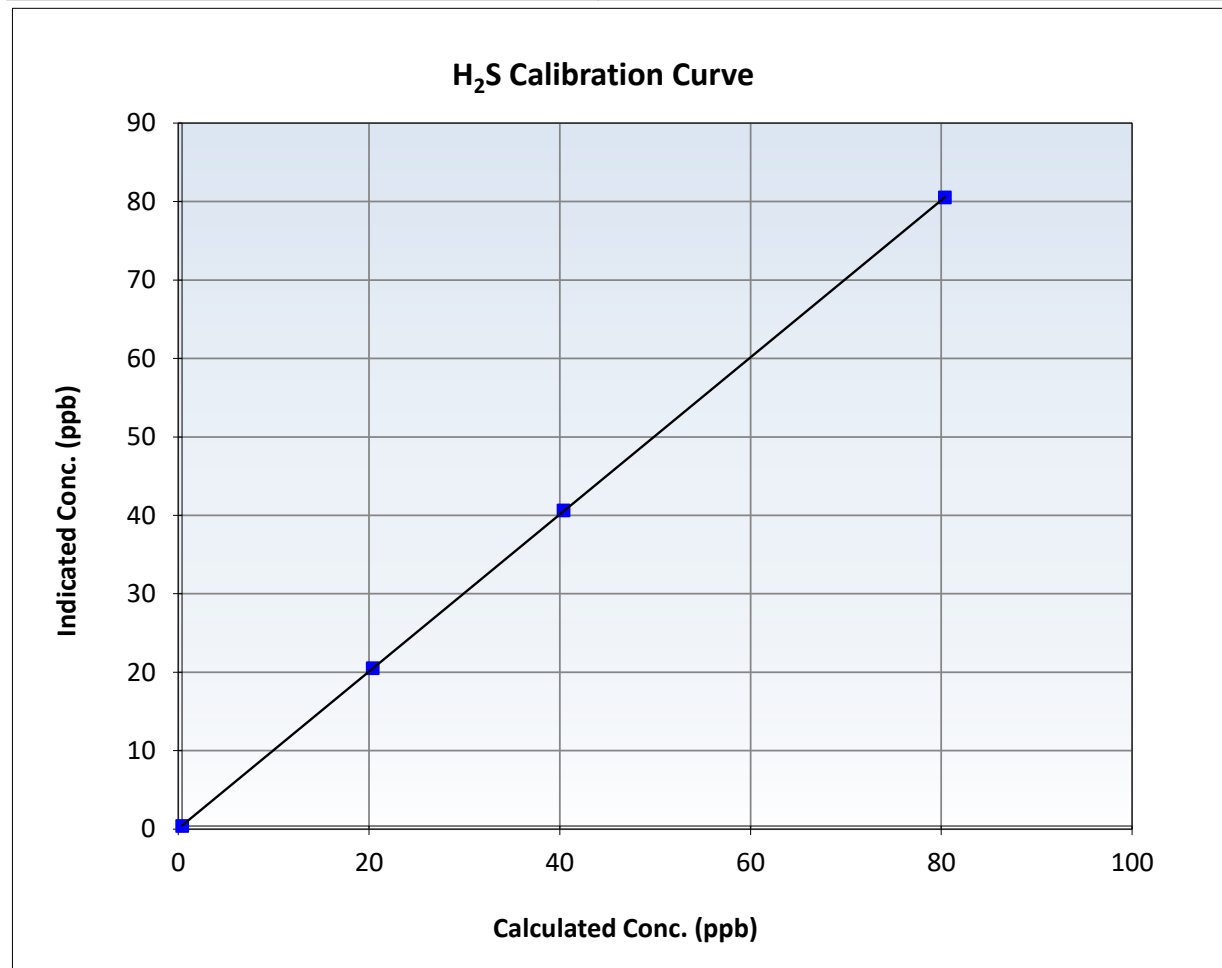
H2S Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 27, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	10:21	End Time (MST):	16:23
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1151680032

Calibration Data

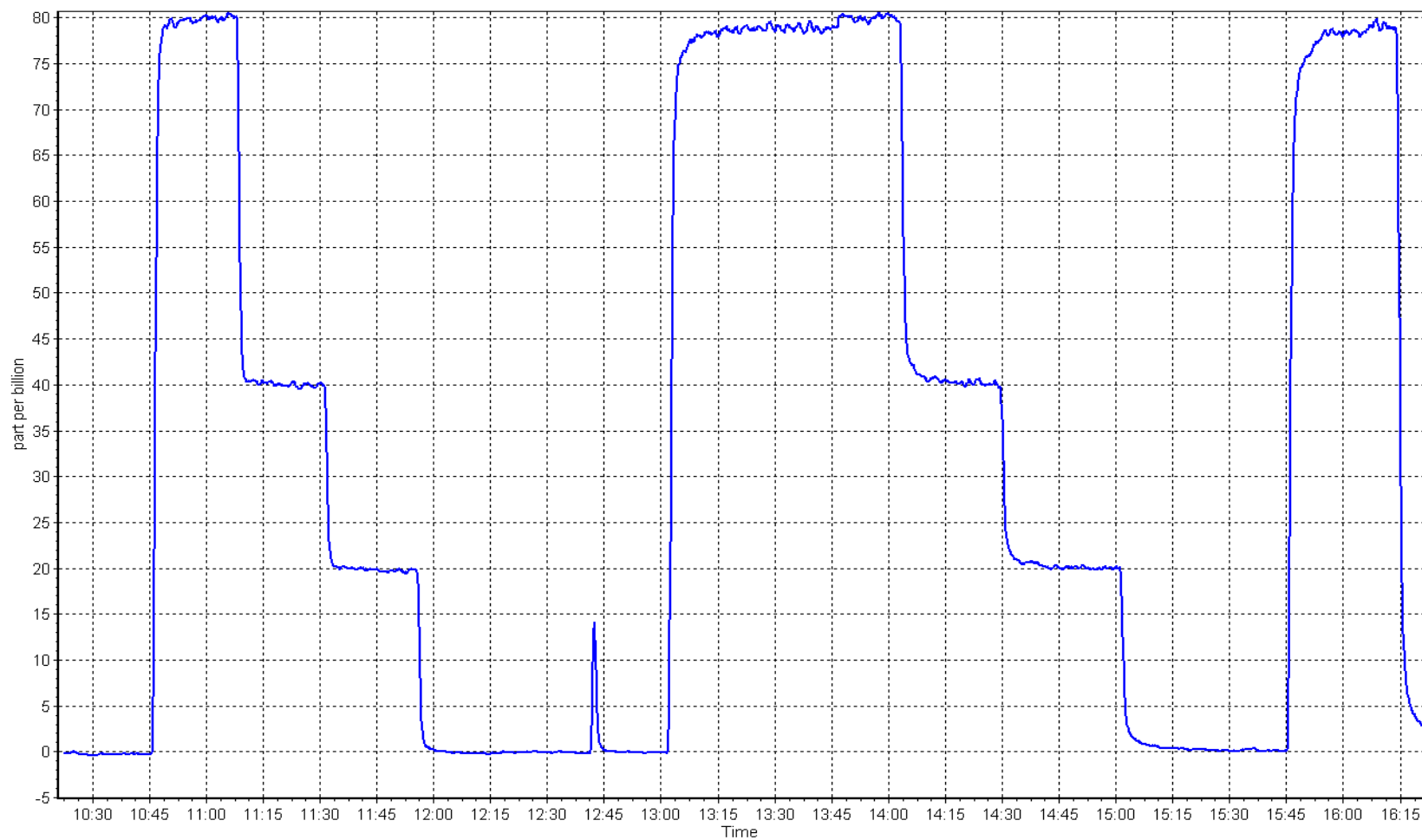
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999996	≥ 0.995
80.0	80.1	0.9986	Slope	1.001333	$0.90 - 1.10$
40.0	40.2	0.9948	Intercept	0.060000	± 3
20.0	20.1	0.9948			



H2S Calibration Plot

Date: September 10, 2025

Location: Firebag





Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name: Firebag Station number: AMS 19
Calibration Date: September 15, 2025 Last Cal Date: August 26, 2025
Start time (MST): 10:14 End time (MST): 13:24
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	0.997478	0.994254	Background: 2.30	2.30
Calibration intercept:	-0.061734	-0.025133	Coefficient: 3.841	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)) <i>Limit = 0.90-1.10</i>
As found zero	4999	0.0	0.00	-0.05	----
As found High point	4922	78.4	16.73	16.64	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	16.69	Previous response	16.63	*% 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	

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) <i>Limit = 0.95-1.05</i>
Calibrator zero	4999	0.0	0.00	0.01	----
High point	4922	78.4	16.73	16.64	1.005
Mid point	4961	39.2	8.36	8.23	1.016
Low point	4980	19.6	4.18	4.13	1.013
As left zero	4999	0.0	0.00	-0.06	----
As left span	4922	78.4	16.73	16.69	1.002
Average Correction Factor					1.012

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

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

THC Calibration Summary

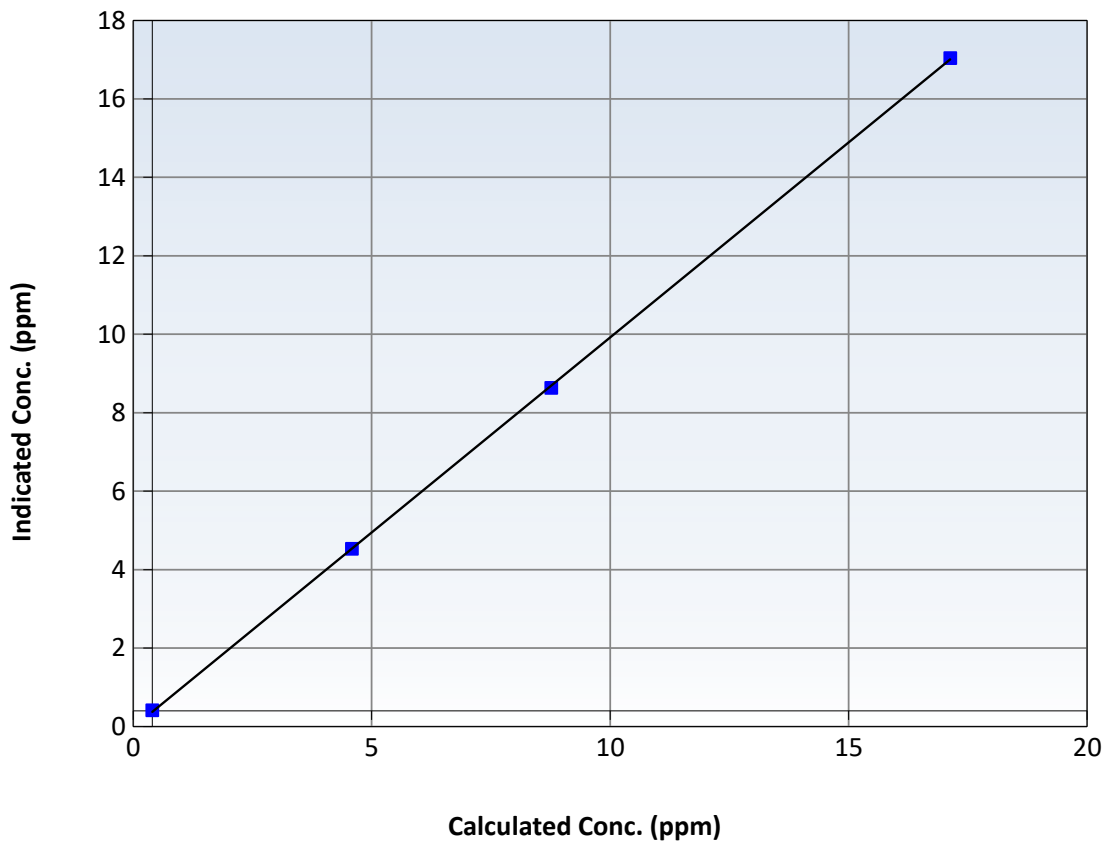
Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	August 26, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	10:14	End Time (MST):	13:24
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1336160089

Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.01	----	Correlation Coefficient	0.999960	≥ 0.995
16.73	16.64	1.0054	Slope	0.994254	$0.90 - 1.10$
8.36	8.23	1.0164	Intercept	-0.025133	± 1.5
4.18	4.13	1.0130			

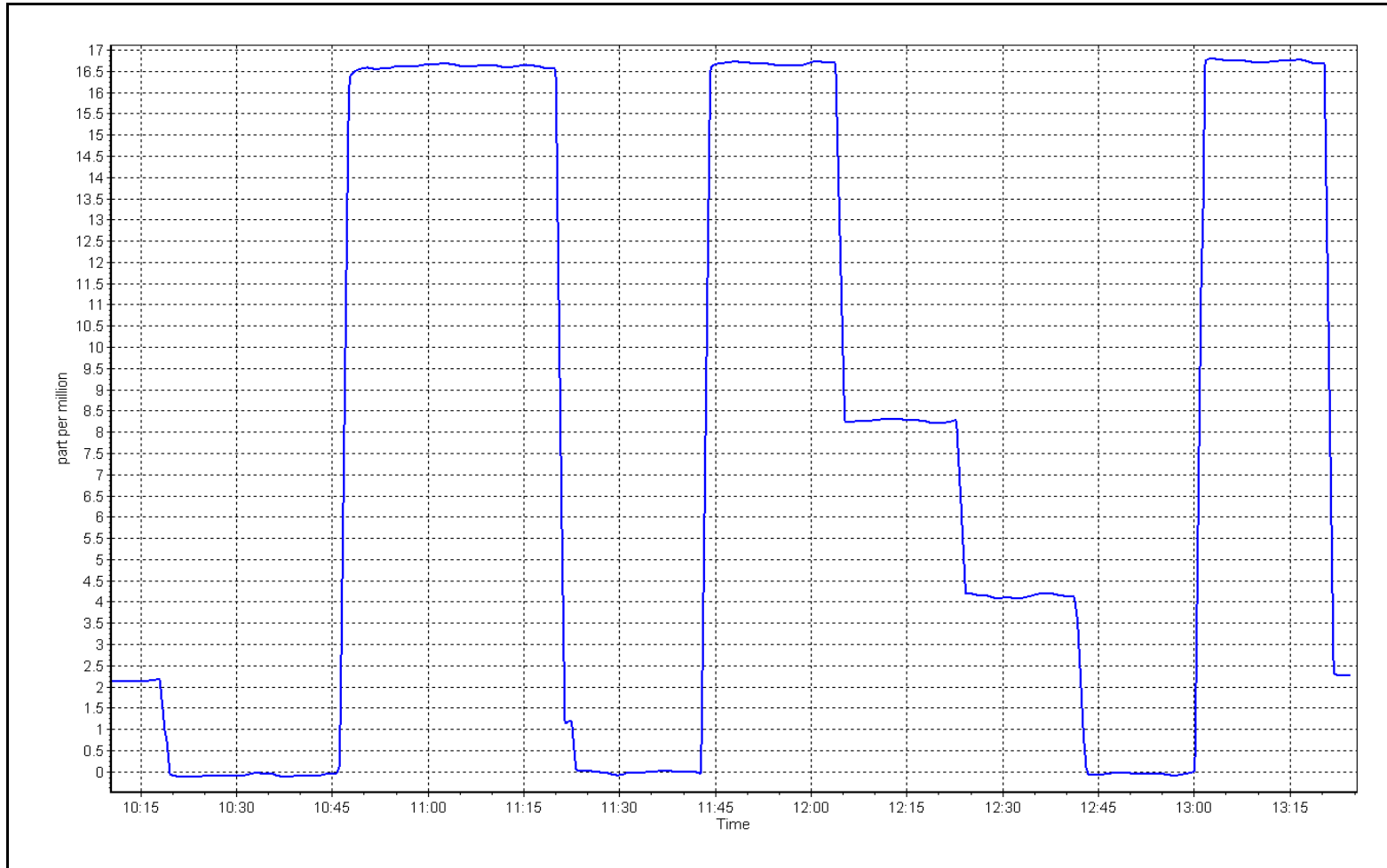
THC Calibration Curve



THC Calibration Plot

Date: September 15, 2025

Location: Firebag





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Firebag
Station number: AMS 19
Calibration Date: September 11, 2025
Last Cal Date: August 20, 2025
Start time (MST): 9:59
End time (MST): 14:54
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0044018
NOX Cal Gas Conc: 48.90 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 48.90 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701H
Cal Gas Expiry Date: November 3, 2031
NO Cal Gas Conc: 48.70 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 48.70 ppm
NO gas Diff:
Serial Number: 1607
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.5	0.2	0.3	----	----
AF High point	4918	82.1	802.9	799.7	3.3	804.0	801.0	3.0	0.9993	0.9986
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO _x = 802.7 ppb	NO = 800.0 ppb	* = > +/-5% change initiates investigation	*Percent Change	NO _x = 0.1%
Baseline Corr 1st pt	NO _x = 803.5 ppb	NO = 800.8 ppb	<u>As Found Statistics</u>	*Percent Change	NO = 0.1%
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb	As found NO _x r ² :	Nx SI:	Nx Int:
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb	As found NO r ² :	NO SI:	NO Int:
			As found NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
As Found GPT zero						
As found high GPT point						
As found mid GPT point						
As found low GPT point						



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NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1410661309

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.997576	0.997377
NO _x Cal Offset:	1.680035	2.000035
NO Cal Slope:	0.999029	1.001331
NO Cal Offset:	1.080160	0.899770
NO ₂ Cal Slope:	0.999333	0.996512
NO ₂ Cal Offset:	-0.218941	-0.039712

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
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:	166.4	165.1

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.3	-0.1	0.4	----	----
High point	4918	82.1	802.9	799.7	3.3	802.0	801.0	1.5	1.0012	0.9983
Mid point	4959	41.1	402.0	400.3	1.6	403.7	402.6	1.1	0.9957	0.9943
Low point	4980	20.5	200.5	199.7	0.8	203.7	201.6	2.1	0.9842	0.9904
As left zero	5000	0	0.0	0.0	0.0	0.1	-0.1	0.2	----	----
As left span	4918	82.1	802.9	366.8	436.1	804.0	366.8	436.9	0.9987	1.0000
Average Correction Factor									0.9937	0.9944

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.4	----	----
High GPT point	799.3	392.3	410.3	409.1	1.0029	99.7%
Mid GPT point	799.3	598.1	204.5	203.3	1.0058	99.4%
Low GPT point	799.3	702.6	100.0	99.3	1.0069	99.3%
Average Correction Factor					1.0052	99.5%

Notes:

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

Calibration Performed By:

Braiden Boutilier



Wood Buffalo Environmental Association

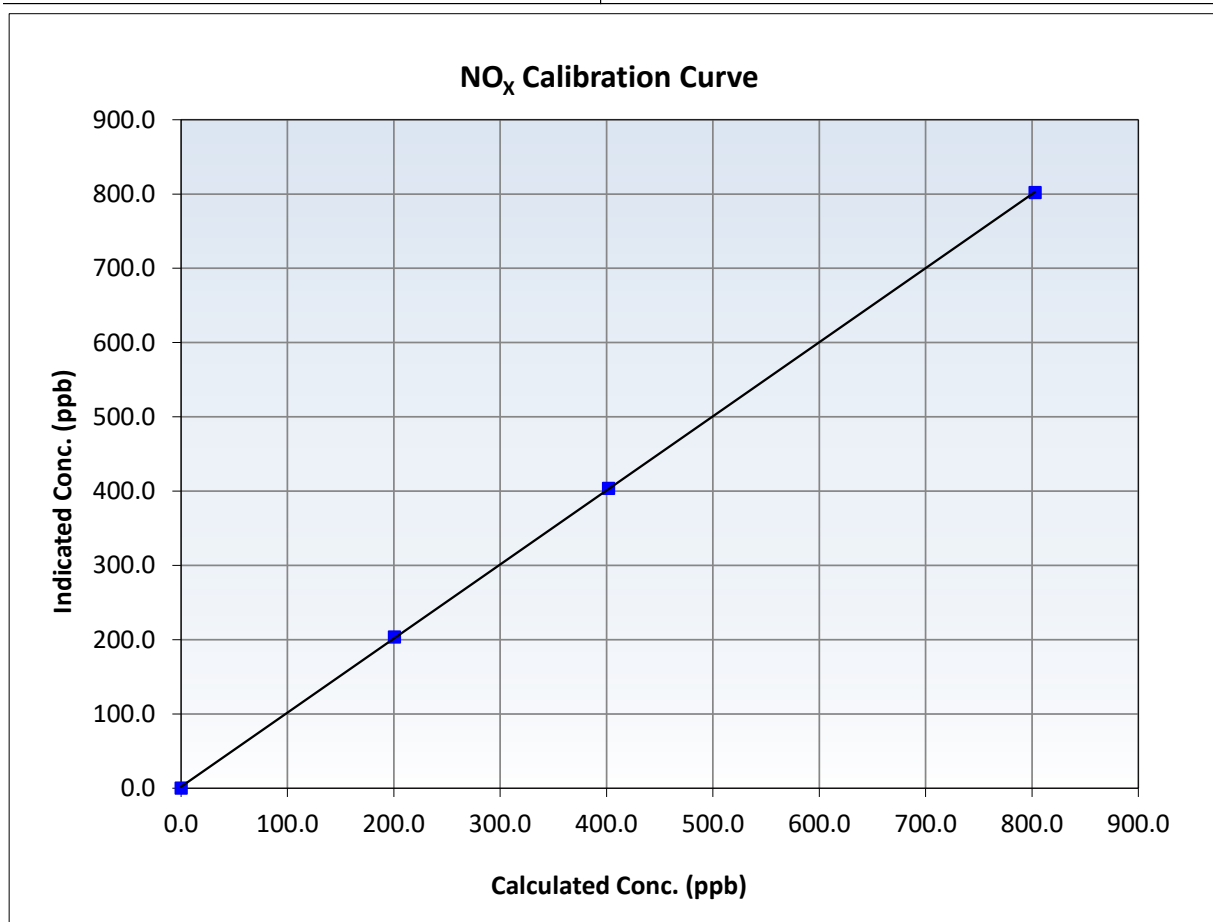
NO_x Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 20, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	9:59	End Time (MST):	14:54
Analyzer make:	Thermo 42i	Analyzer serial #:	1410661309

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999979	≥0.995
802.9	802.0	1.0012	Slope	0.997377	0.90 - 1.10
402.0	403.7	0.9957	Intercept	2.000035	+/-20
200.5	203.7	0.9842			





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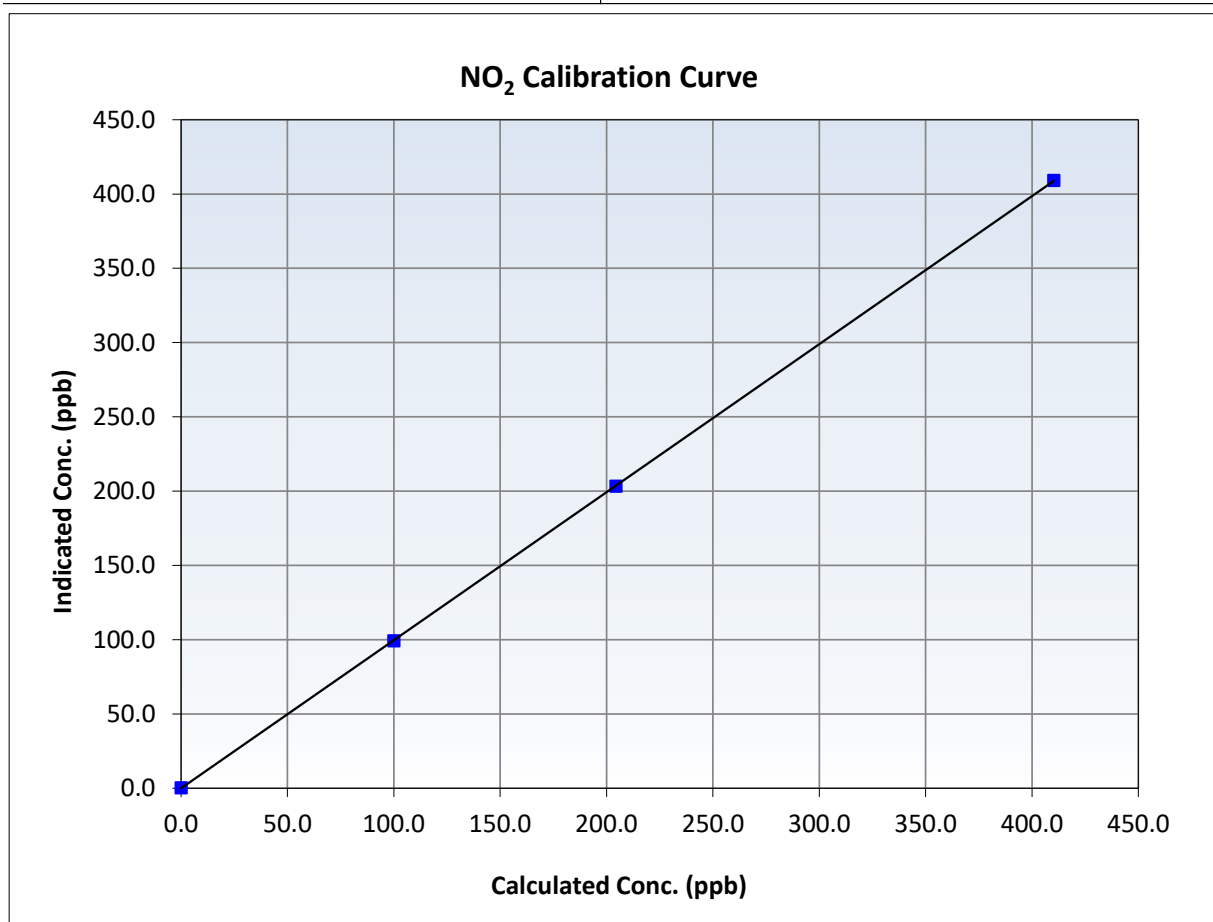
NO₂ Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 20, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	9:59	End Time (MST):	14:54
Analyzer make:	Thermo 42i	Analyzer serial #:	1410661309

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.4	----	Correlation Coefficient	0.999994	≥0.995
410.3	409.1	1.0029	Slope	0.996512	0.90 - 1.10
204.5	203.3	1.0058	Intercept	-0.039712	+/-20
100.0	99.3	1.0069			





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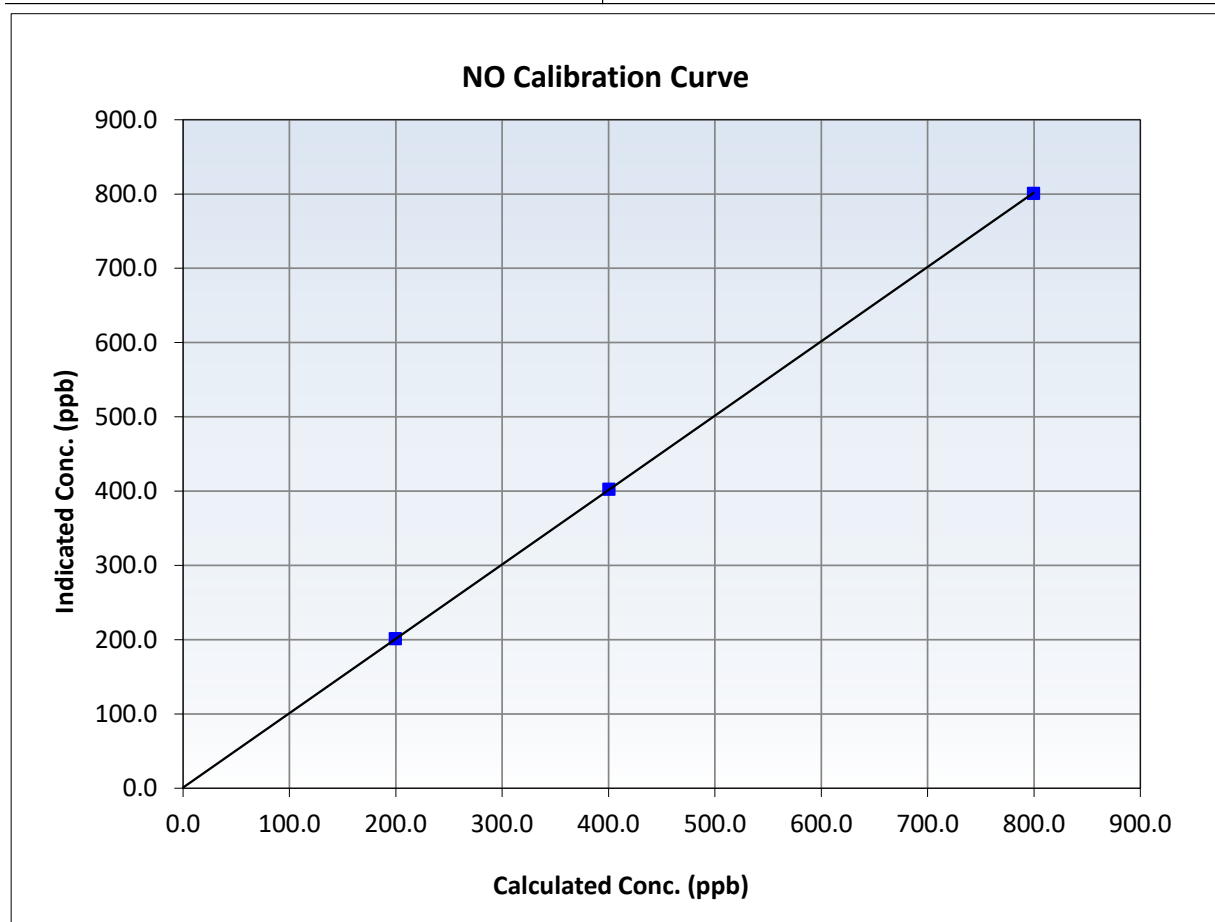
NO Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 20, 2025
Station Name:	Firebag	Station Number:	AMS 19
Start Time (MST):	9:59	End Time (MST):	14:54
Analyzer make:	Thermo 42i	Analyzer serial #:	1410661309

Calibration Data

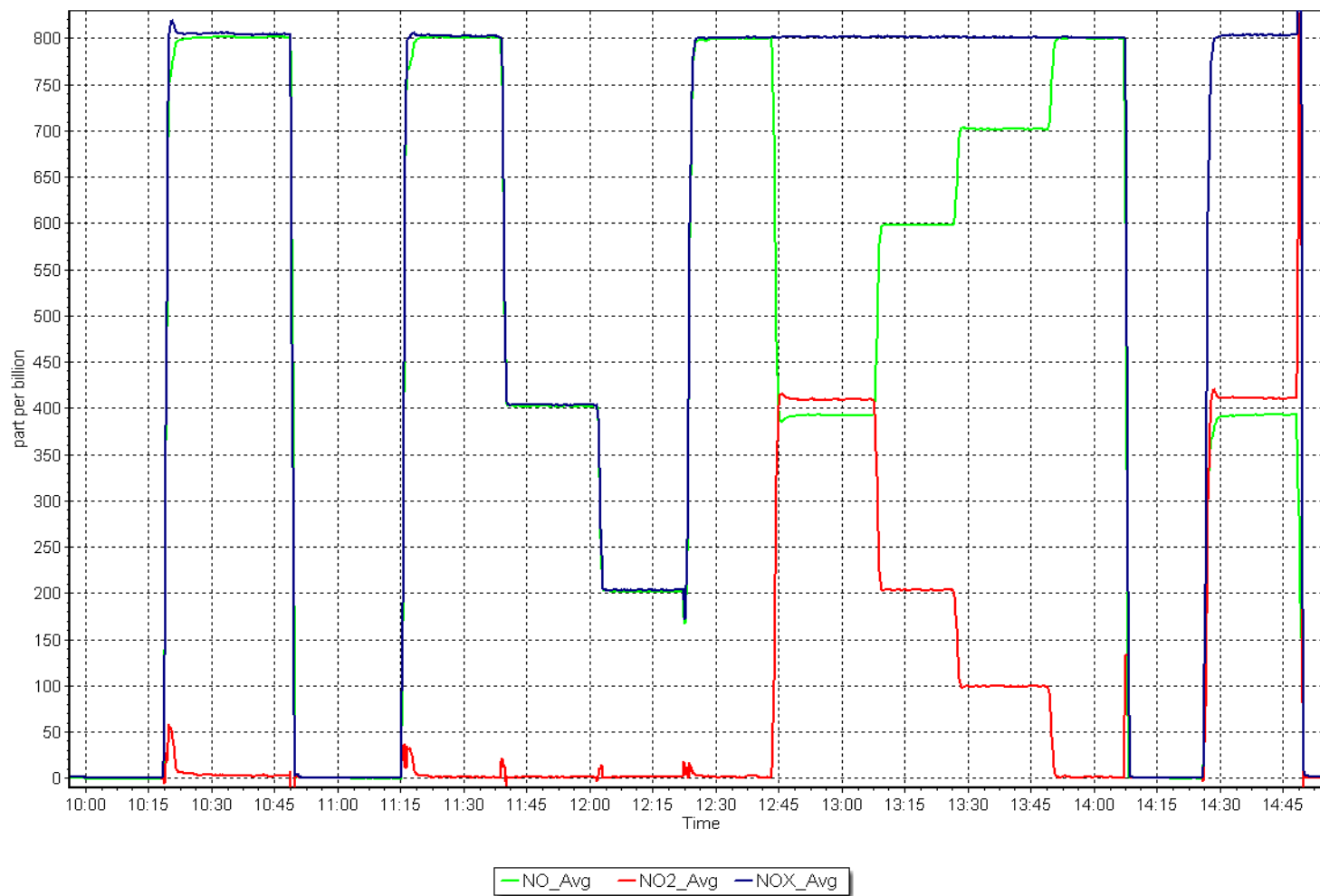
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999992	≥ 0.995
799.7	801.0	0.9983	Slope	1.001331	$0.90 - 1.10$
400.3	402.6	0.9943	Intercept	0.899770	± 20
199.7	201.6	0.9904			



NO_x Calibration Plot

Date: September 11, 2025

Location: Firebag





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS20 MACKAY RIVER AUGUST 2025

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

September 26, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: MacKay River Station number: AMS 20
Calibration Date: September 5, 2025 Last Cal Date: August 13, 2025
Start time (MST): 6:14 End time (MST): 8:46
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.004702	0.999303	Backgd or Offset:	19.4	19.2
Calibration intercept:	0.344588	0.183886	Coeff or Slope:	0.931	0.923

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4919	81.4	800.1	805.9	0.993
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	805.7	Previous response	804.2	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.6	----
High point	4919	81.4	800.1	800.3	1.000
Mid point	4959	40.7	400.1	398.7	1.004
Low point	4980	20.3	199.5	199.9	0.998
As left zero	5000	0.0	0.0	0.4	----
As left span	4919	81.4	800.1	799.8	1.000
Average Correction Factor:					1.000

Notes: No Maintenance done. Span adjusted.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

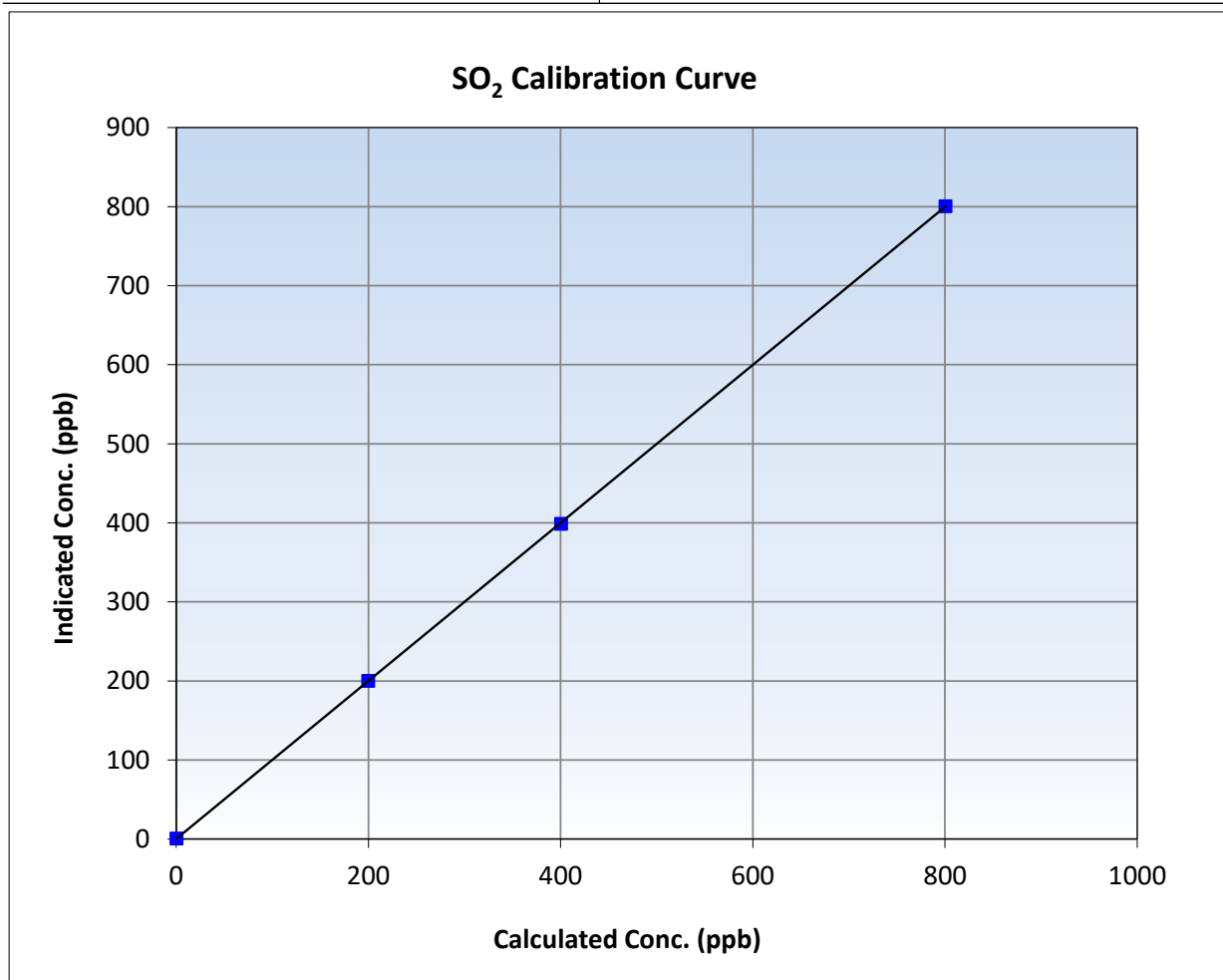
SO₂ Calibration Summary

Station Information

Calibration Date:	September 5, 2025	Previous Calibration:	August 13, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	6:14	End Time (MST):	8:46
Analyzer make:	Thermo 43i	Analyzer serial #:	1501301450

Calibration Data

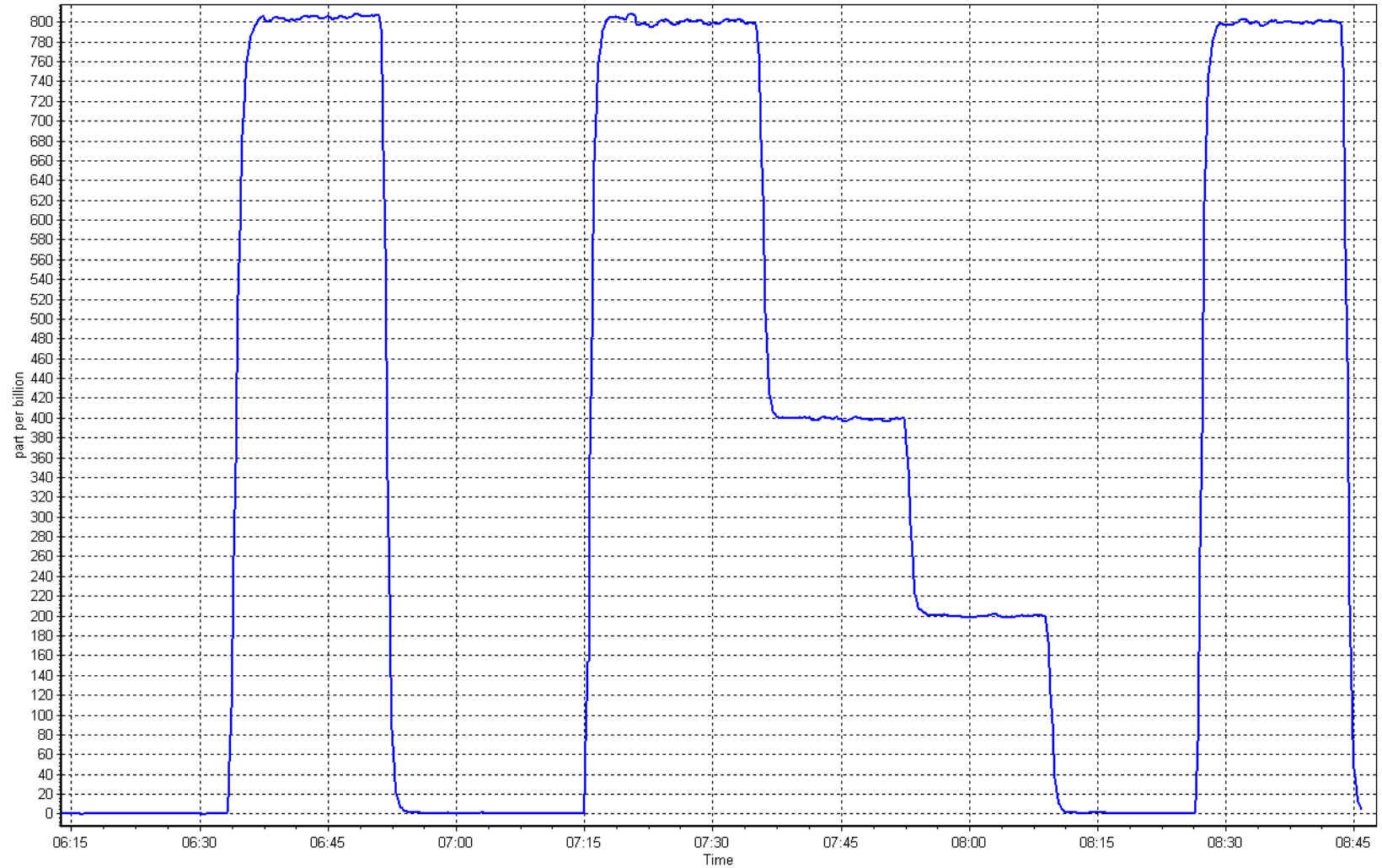
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.6	----	Correlation Coefficient	0.999993	≥0.995
800.1	800.3	0.9997	Slope	0.999303	0.90 - 1.10
400.1	398.7	1.0035	Intercept	0.183886	+/-30
199.5	199.9	0.9982			



SO2 Calibration Plot

Date: September 5, 2025

Location: MacKay River





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: MacKay River Station number: AMS 20
Calibration Date: September 4, 2025 Last Cal Date: August 12, 2025
Start time (MST): 7:06 End time (MST): 10:59
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	0.999023	1.002025	Backgd or Offset:	3.77
Calibration intercept:	0.039478	-0.040503	Coeff or Slope:	1.071

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4922	78.1	80.0	80.9	0.986
As found Mid point	4961	39.0	39.9	40.4	0.984
As found Low point	4980	19.5	20.0	20.1	0.984
New cylinder response					
Baseline Corr As found:	81.1	Prev response:	79.93	*% change:	1.4%
Baseline Corr 2nd AF pt:	40.6	AF Slope:	1.014030	AF Intercept:	-0.160332
Baseline Corr 3rd AF pt:	20.3	AF Correlation:	0.999998	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4922	78.1	80.0	80.0	1.000
Mid point	4961	39.0	39.9	40.2	0.993
Low point	4980	19.5	20.0	19.9	1.004
As left zero	5000	0.0	0.0	0.2	----
As left span	4922	78.1	80.0	79.0	1.012
SO ₂ Scrubber Check	4982	81.3	802.8	0.0	----
Date of last scrubber change:	25-May-23		Ave Corr Factor		0.999
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

H₂S Calibration Summary

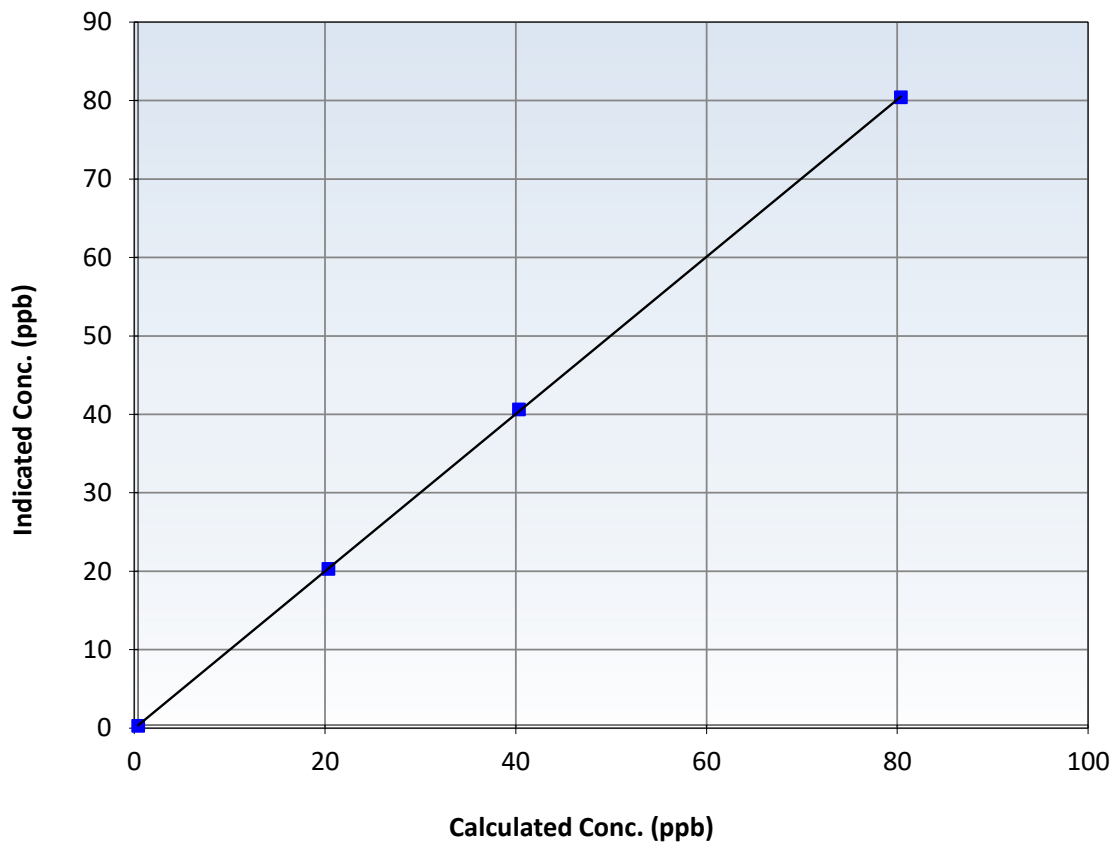
Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 12, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	7:06	End Time (MST):	10:59
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1236656117

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999981	≥ 0.995
80.0	80.0	0.9997	Slope	1.002025	$0.90 - 1.10$
39.9	40.2	0.9934	Intercept	-0.040503	± 3
20.0	19.9	1.0035			

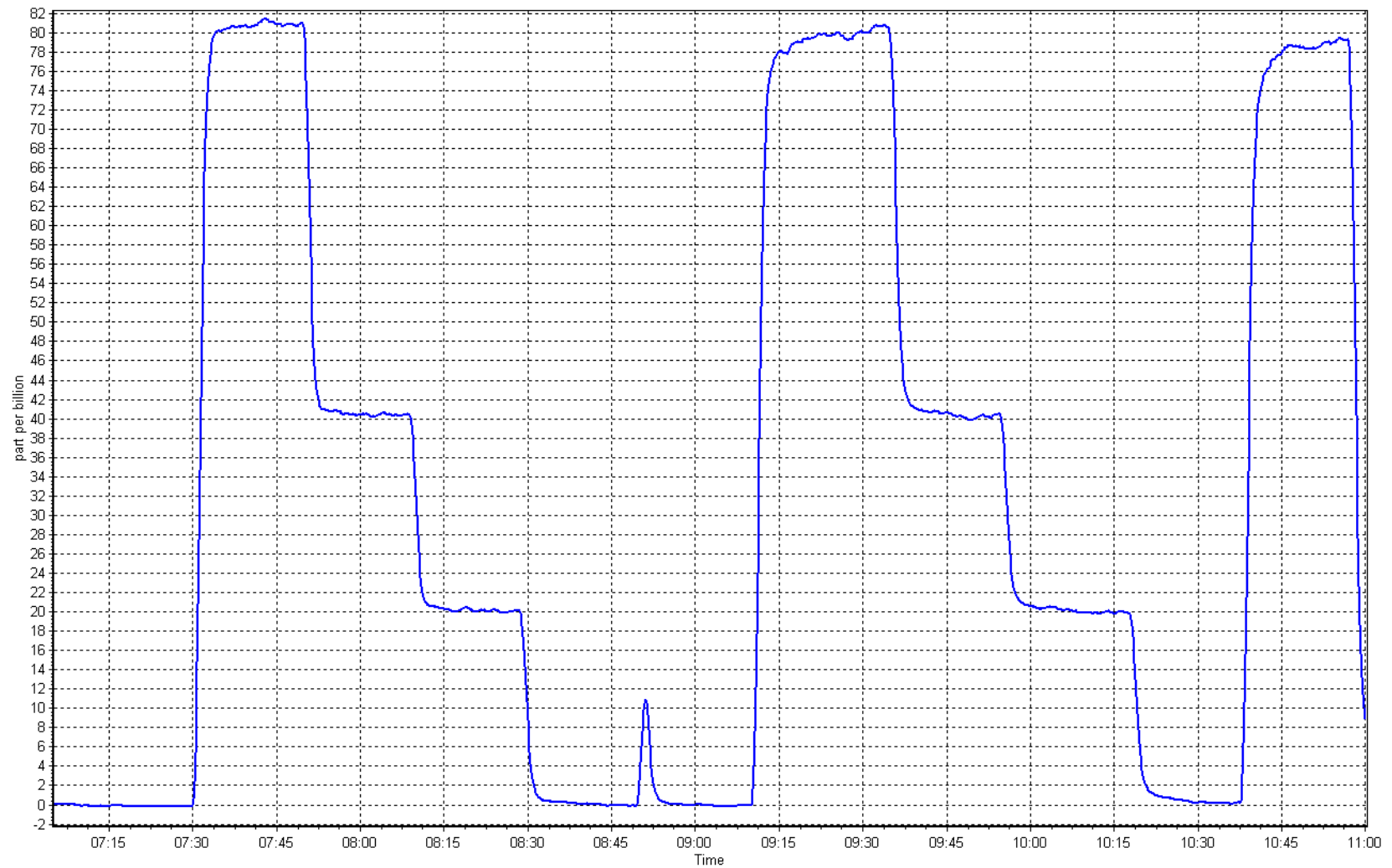
H₂S Calibration Curve



H₂S Calibration Plot

Date: September 4, 2025

Location: MacKay River





Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name: MacKay River Station number: AMS 20
Calibration Date: September 5, 2025 Last Cal Date: August 13, 2025
Start time (MST): 6:14 End time (MST): 8:45
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.998102	1.001159	Background:	2.790	2.930
Calibration intercept:	-0.008596	-0.101189	Coefficient:	4.934	4.900

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.17	----
As found High point	4919	81.4	17.46	17.78	0.991
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	17.62	Previous response	17.42	*% 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	

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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	-0.08	----
High point	4919	81.4	17.46	17.40	1.004
Mid point	4959	40.7	8.73	8.61	1.014
Low point	4980	20.3	4.35	4.25	1.026
As left zero	5000	0.0	0.00	-0.17	----
As left span	4919	81.4	17.46	17.43	1.002
Average Correction Factor					1.014

Notes: No Maintenance done. Zero and Span adjusted.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

THC Calibration Summary

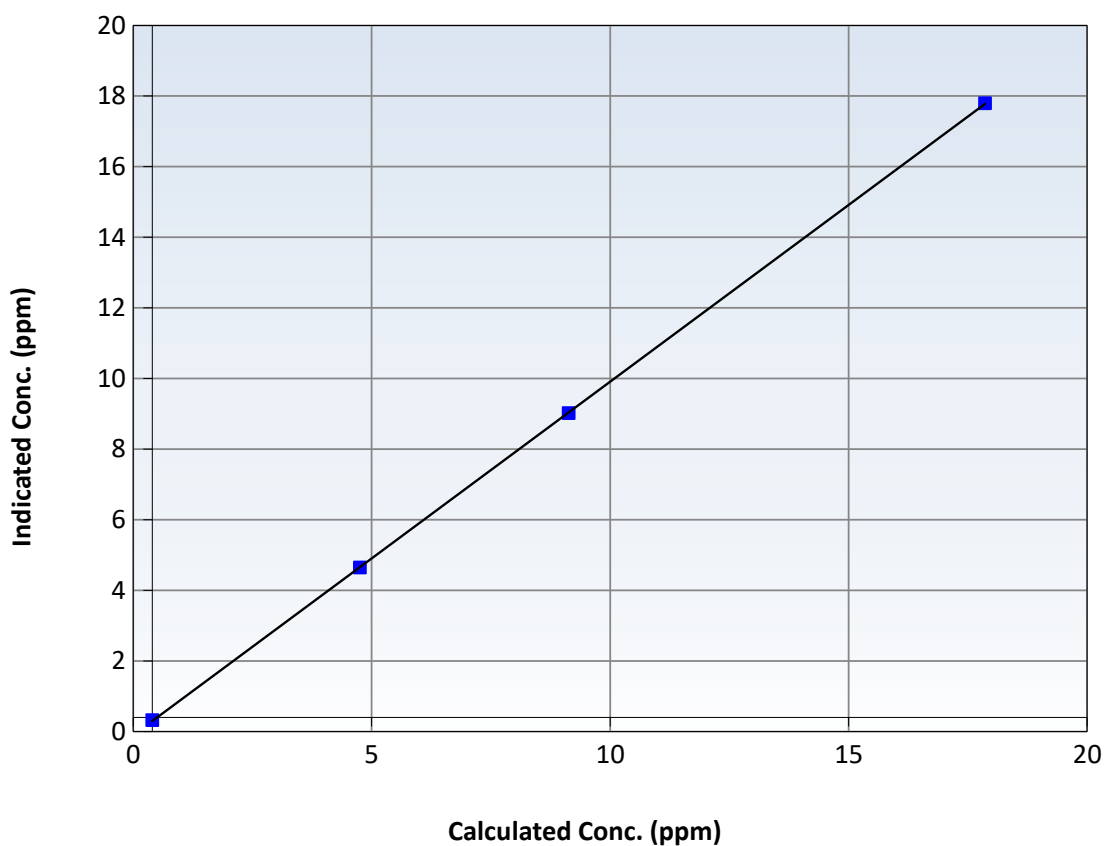
Station Information

Calibration Date:	September 5, 2025	Previous Calibration:	August 13, 2025
Station Name:	MacKay River	Station Number:	AMS 20
Start Time (MST):	6:14	End Time (MST):	8:45
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1501663727

Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	-0.08	----	Correlation Coefficient	0.999990	≥ 0.995
17.46	17.40	1.0037	Slope	1.001159	$0.90 - 1.10$
8.73	8.61	1.0137	Intercept	-0.101189	± 1.5
4.35	4.25	1.0256			

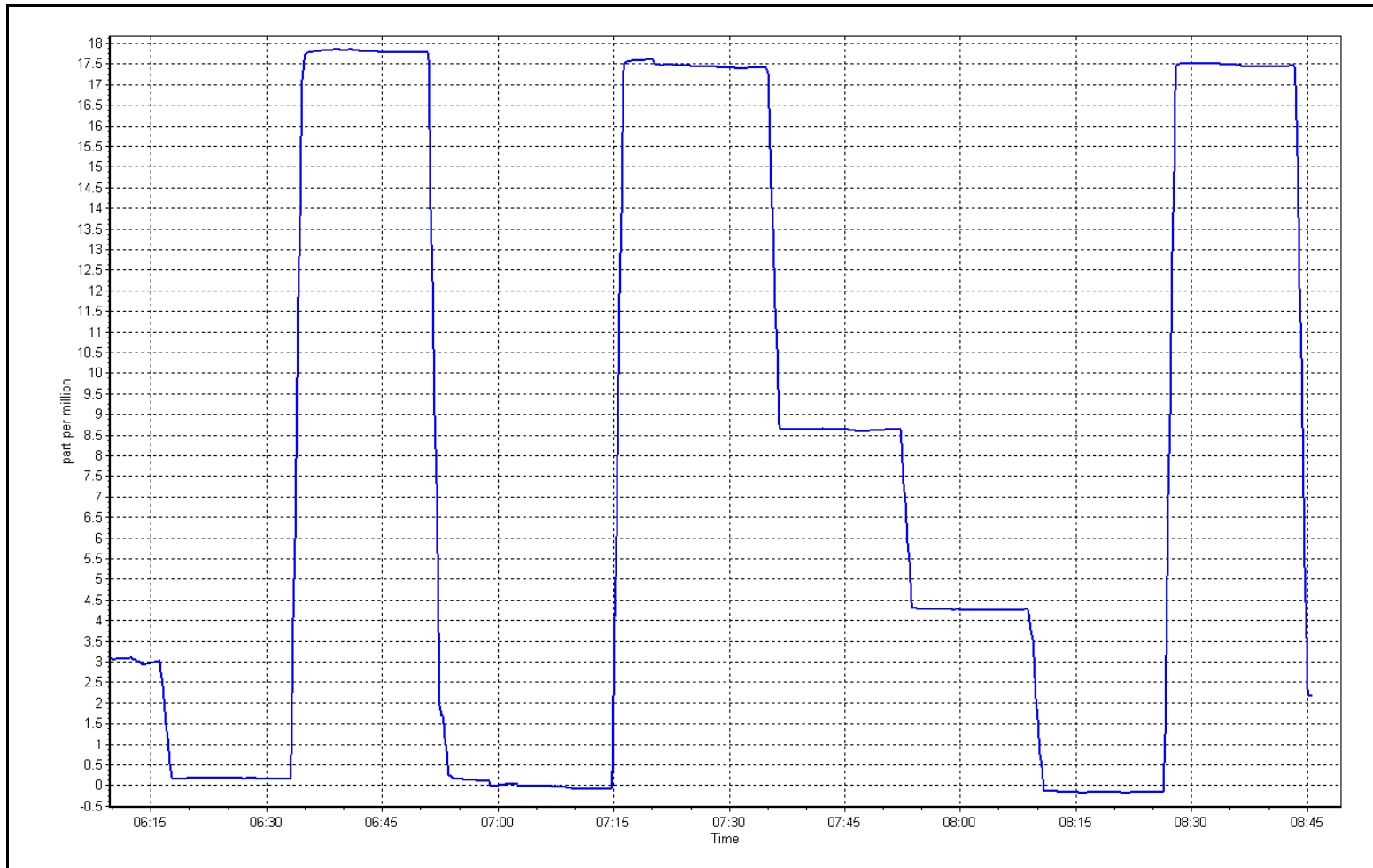
THC Calibration Curve



THC Calibration Plot

Date: September 5, 2025

Location: MacKay River





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1505164379

Calibration Statistics

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.016	1.016	NO bkgnd or offset:	2.8	2.8	NO _x Cal Slope:	1.001839	1.000283
NOX coeff or slope:	1.000	1.000	NOX bkgnd or offset:	3.0	3.0	NO _x Cal Offset:	1.212321	1.332750
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	162.4	162.4	NO Cal Slope:	1.006927	1.005655
						NO Cal Offset:	-0.727479	-0.607201
						NO ₂ Cal Slope:	0.996173	0.997997
						NO ₂ Cal Offset:	-1.115878	-1.292479

Instrument Settings

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.7	0.5	0.2	----	----
High point	4935	64.6	801.1	799.8	1.3	802.1	804.1	-1.8	0.9988	0.9947
Mid point	4968	32.3	400.5	399.9	0.6	403.0	401.5	1.5	0.9938	0.9959
Low point	4984	16.2	200.9	200.5	0.3	202.4	199.6	2.7	0.9925	1.0047
As left zero	5000	0.0	0.0	0.0	0.0	0.7	0.6	0.2	----	----
As left span	4935	64.6	801.1	405.3	395.8	800.8	405.3	395.5	1.0004	1.0000
Average Correction Factor									0.9950	0.9984

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.2	----	----
High GPT point	800.1	404.9	396.5	395.1	1.0035	99.6%
Mid GPT point	800.1	599.5	201.9	199.7	1.0110	98.9%
Low GPT point	800.1	697.7	103.7	100.5	1.0318	96.9%
Average Correction Factor					1.0154	98.5%

Notes: No adjustments or maintenance done.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

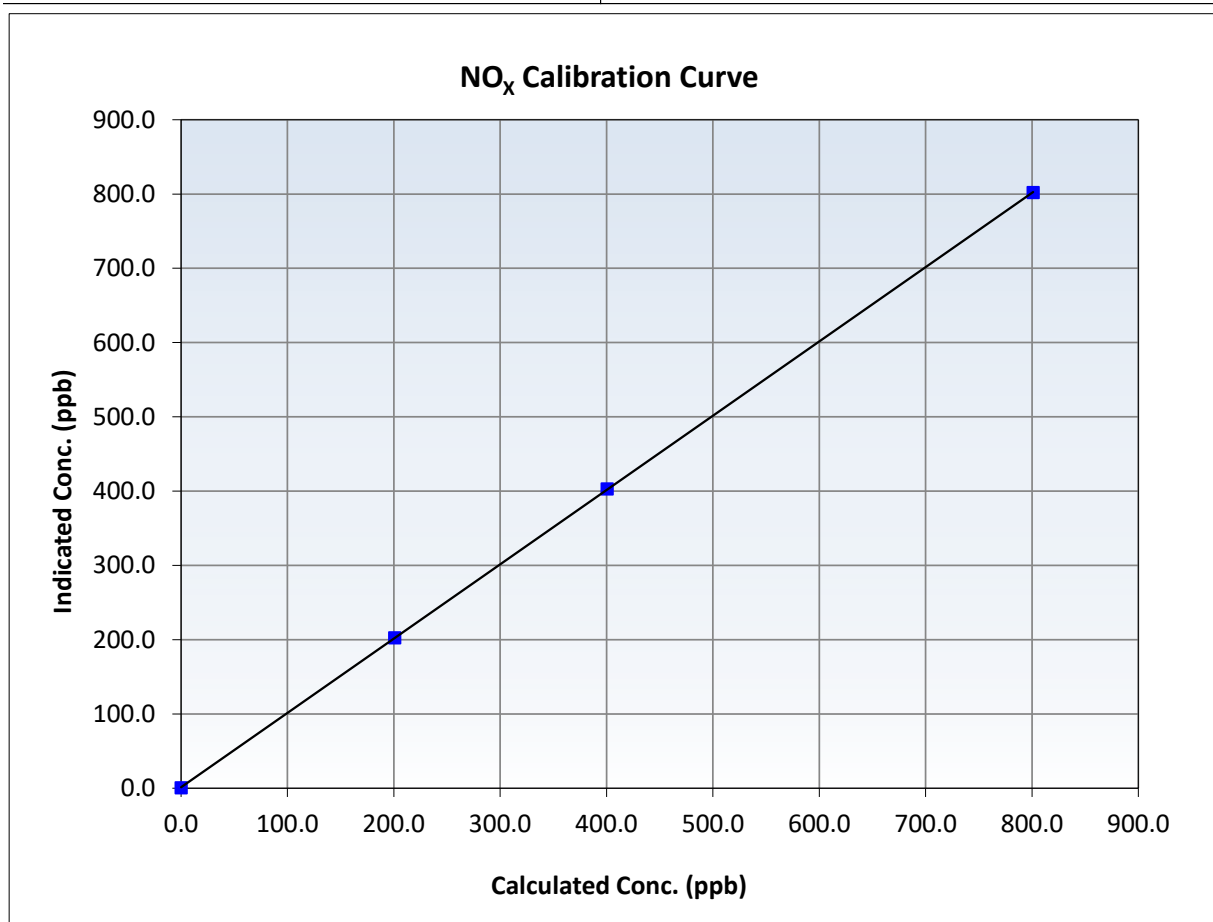
NO_x Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	August 6, 2025
Station Name:	Mackay River	Station Number:	AMS 20
Start Time (MST):	7:15	End Time (MST):	11:23
Analyzer make:	Thermo 42i		1505164379

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.7	----	Correlation Coefficient	0.999995	≥0.995
801.1	802.1	0.9988	Slope	1.000283	0.90 - 1.10
400.5	403.0	0.9938	Intercept	1.332750	+/-20
200.9	202.4	0.9925			





Wood Buffalo Environmental Association

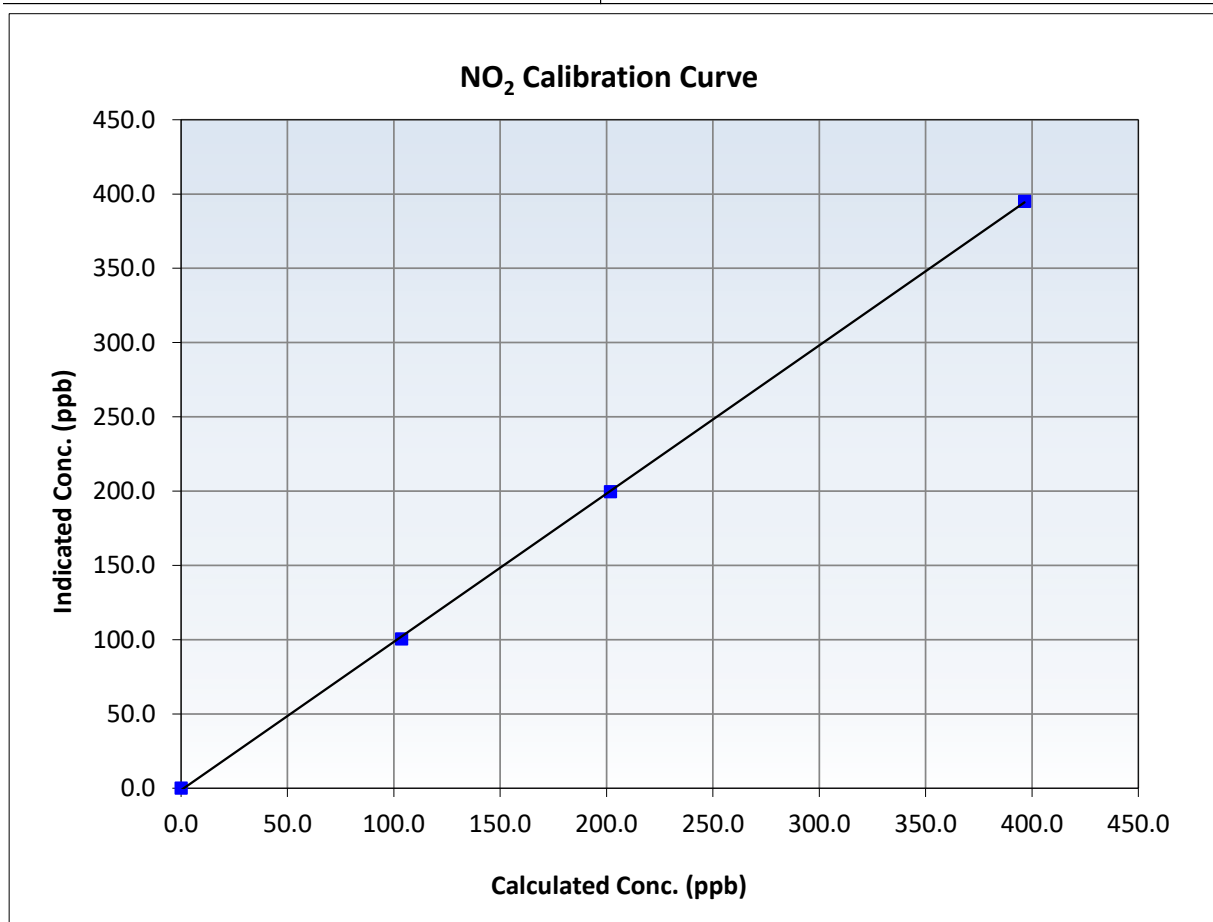
NO₂ Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	August 6, 2025
Station Name:	Mackay River	Station Number:	AMS 20
Start Time (MST):	7:15	End Time (MST):	11:23
Analyzer make:	Thermo 42i		1505164379

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999932	≥0.995
396.5	395.1	1.0035	Slope	0.997997	0.90 - 1.10
201.9	199.7	1.0110	Intercept	-1.292479	+/-20
103.7	100.5	1.0318			





Wood Buffalo Environmental Association

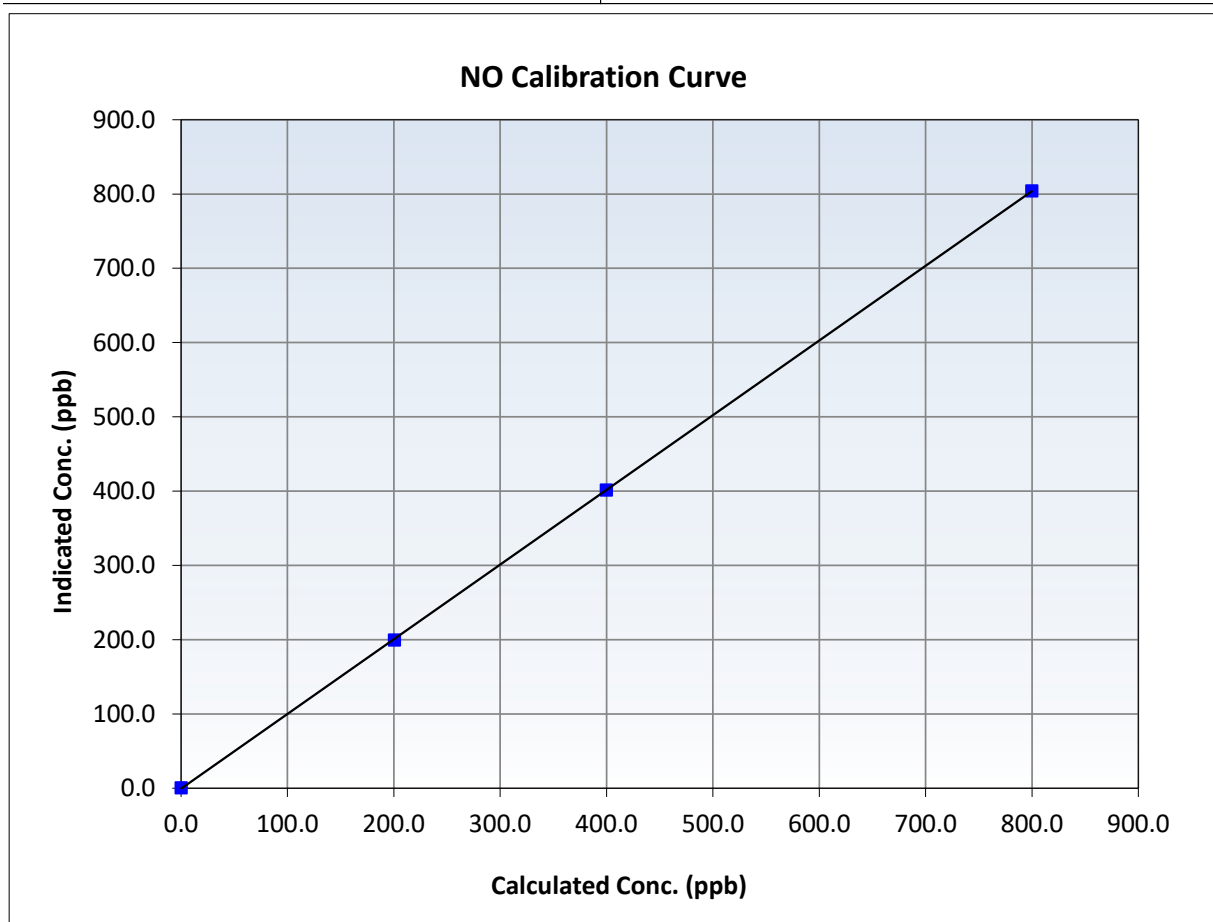
NO Calibration Summary

Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	August 6, 2025
Station Name:	Mackay River	Station Number:	AMS 20
Start Time (MST):	7:15	End Time (MST):	11:23
Analyzer make:	Thermo 42i	6:50:00 AM	1505164379

Calibration Data

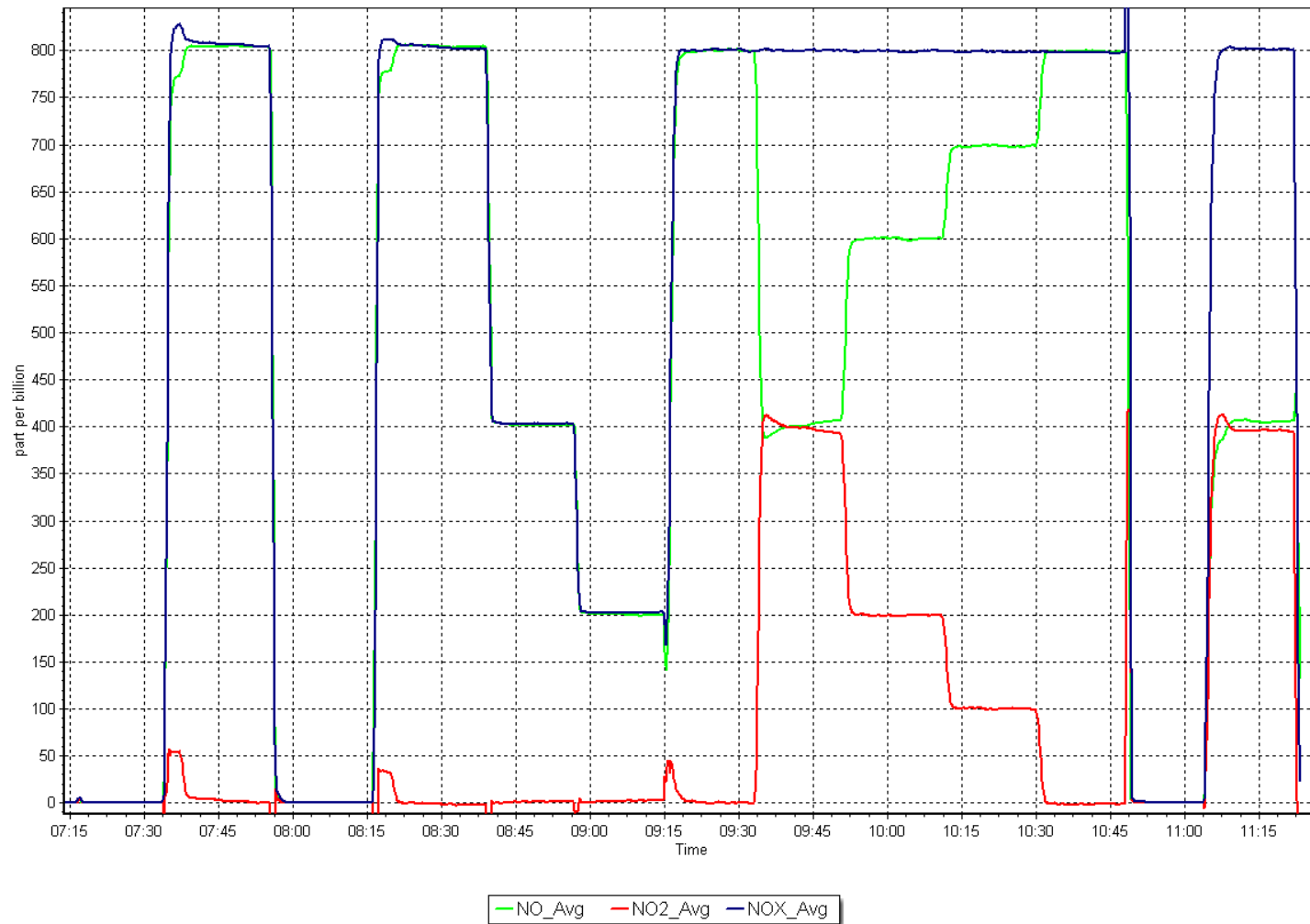
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	0.5	----	Correlation Coefficient	0.999990	≥ 0.995
799.8	804.1	0.9947	Slope	1.005655	0.90 - 1.10
399.9	401.5	0.9959	Intercept	-0.607201	+/-20
200.5	199.6	1.0047			



NO_x Calibration Plot

Date: September 2, 2025

Location: MacKay River





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

**AMS21
CONKLIN
SEPTEMBER 2025**

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Conklin
Calibration Date: September 23, 2025
Start time (MST): 9:58
Reason: Routine

Station number: AMS 21
Last Cal Date: August 7, 2025
End time (MST): 12:44

Calibration Standards

Cal Gas Concentration: 50.34 ppm
Cal Gas Cylinder #: CC340840
Removed Cal Gas Conc: 50.34 ppm
Removed Gas Cyl #: NA
Calibrator Model: Teledyne API T700P
Zero Air Gen Model: Teledyne API T701H

Cal Gas Exp Date: October 9, 2032
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 2656
Serial Number: 355

Analyzer Information

Analyzer make: Thermo 43i
Analyzer Range: 0 - 1000 ppb

Serial Number: 1428701363

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.009500	1.001290	Backgd or Offset:	29.3	29.3
Calibration intercept:	2.495254	2.496595	Coeff or Slope:	0.891	0.891

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.5	----
As found High point	4921	79.5	800.3	804.0	0.996
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	803.5	Previous response	810.4	*% change	-0.9%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4921	79.5	800.3	803.0	0.997
Mid point	4960	39.8	400.7	404.0	0.992
Low point	4980	19.9	200.4	206.0	0.973
As left zero	5000	0.0	0.0	0.1	----
As left span	4921	79.5	800.3	805.4	0.994
Average Correction Factor:					0.987

Notes: Sample inlet filter was changed after as founds. Adjusted zero only.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

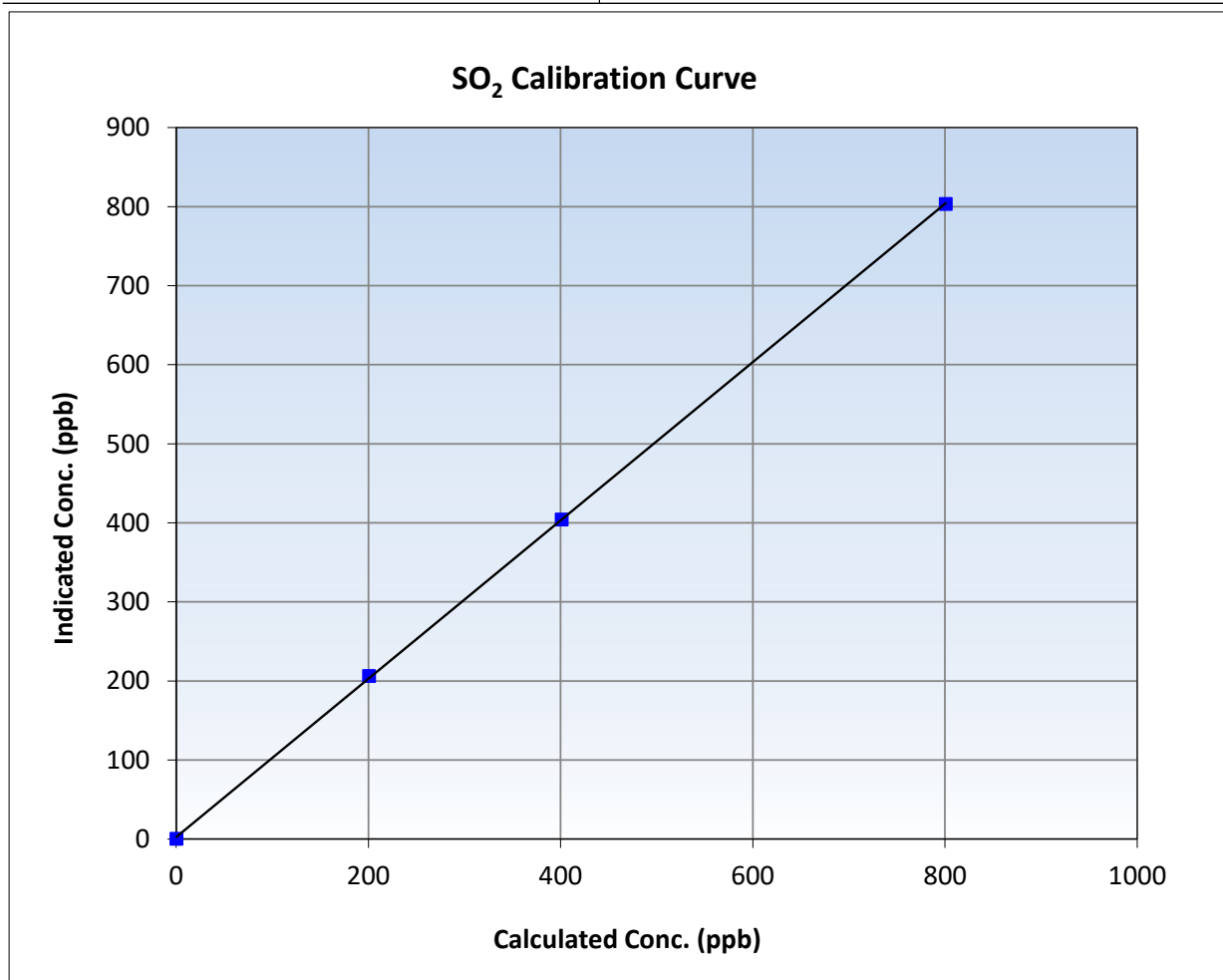
SO₂ Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	August 7, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:58	End Time (MST):	12:44
Analyzer make:	Thermo 43i	Analyzer serial #:	1428701363

Calibration Data

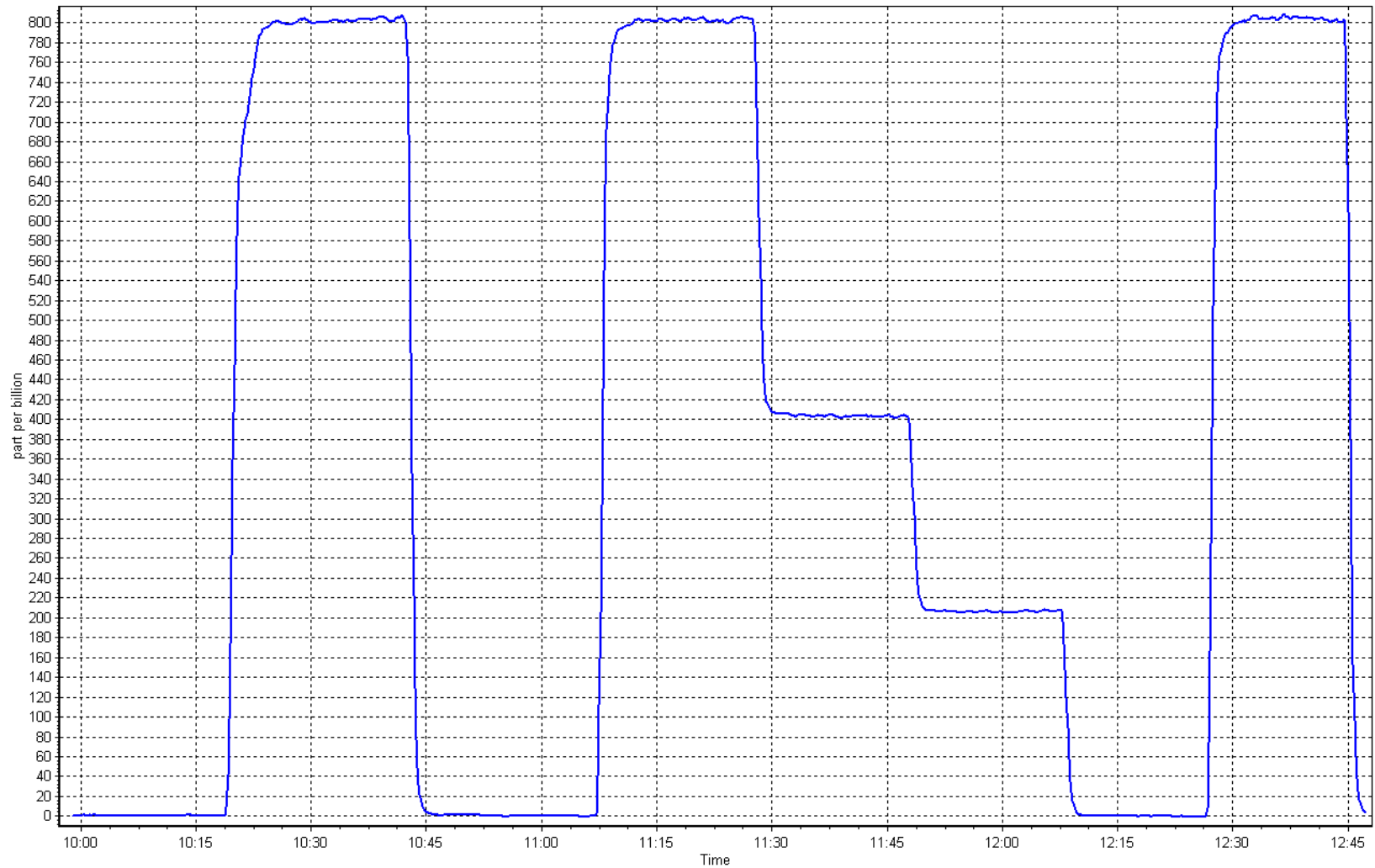
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999959	≥0.995
800.3	803.0	0.9967	Slope	1.001290	0.90 - 1.10
400.7	404.0	0.9919	Intercept	2.496595	+/-30
200.4	206.0	0.9726			



SO2 Calibration Plot

Date: September 23, 2025

Location: Conklin





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Conklin
Calibration Date: September 24, 2025
Start time (MST): 9:56
Reason: Routine

Station number: AMS 21
Last Cal Date: August 6, 2025
End time (MST): 13:20

Calibration Standards

Cal Gas Concentration: 5.14 ppm
Cal Gas Cylinder #: CC501204
Removed Cal Gas Conc: 5.14 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: Teledyne T700P
ZAG Make/Model: Teledyne T701H

Cal Gas Exp Date: January 3, 2026
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 2656
Serial Number: 355

Analyzer Information

Analyzer make: Thermo 43i-QTL
Converter make: CD-Nova 101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 12228021058
Converter serial #: 565
Converter Temp: 850 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.993273	0.997811	Backgd or Offset:	2.8	2.8
Calibration intercept:	0.278386	0.318383	Coeff or Slope:	1.467	1.467

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4922	78.4	80.6	80.0	1.007
As found Mid point	4961	39.2	40.3	40.5	0.995
As found Low point	4980	19.6	20.2	20.6	0.978
New cylinder response					
Baseline Corr As found:	80.0	Prev response:	80.33	*% change:	-0.4%
Baseline Corr 2nd AF pt:	40.5	AF Slope:	0.990862	AF Intercept:	0.338390
Baseline Corr 3rd AF pt:	20.6	AF Correlation:	0.999916	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4922	78.4	80.6	80.6	1.000
Mid point	4961	39.2	40.3	40.7	0.990
Low point	4980	19.6	20.2	20.6	0.978
As left zero	5000	0.0	0.0	0.1	----
As left span	4922	78.4	80.6	81.0	0.995
SO2 Scrubber Check	4921	79.5	794.9	0.0	----
Date of last scrubber change:	August 6, 2025		Ave Corr Factor		0.989
Date of last converter efficiency test:					

Notes: Sample inlet filter and pump was changed after multipoint as founds. SO2 scrubber check done and passed. No adjustment made.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

TRS Calibration Summary

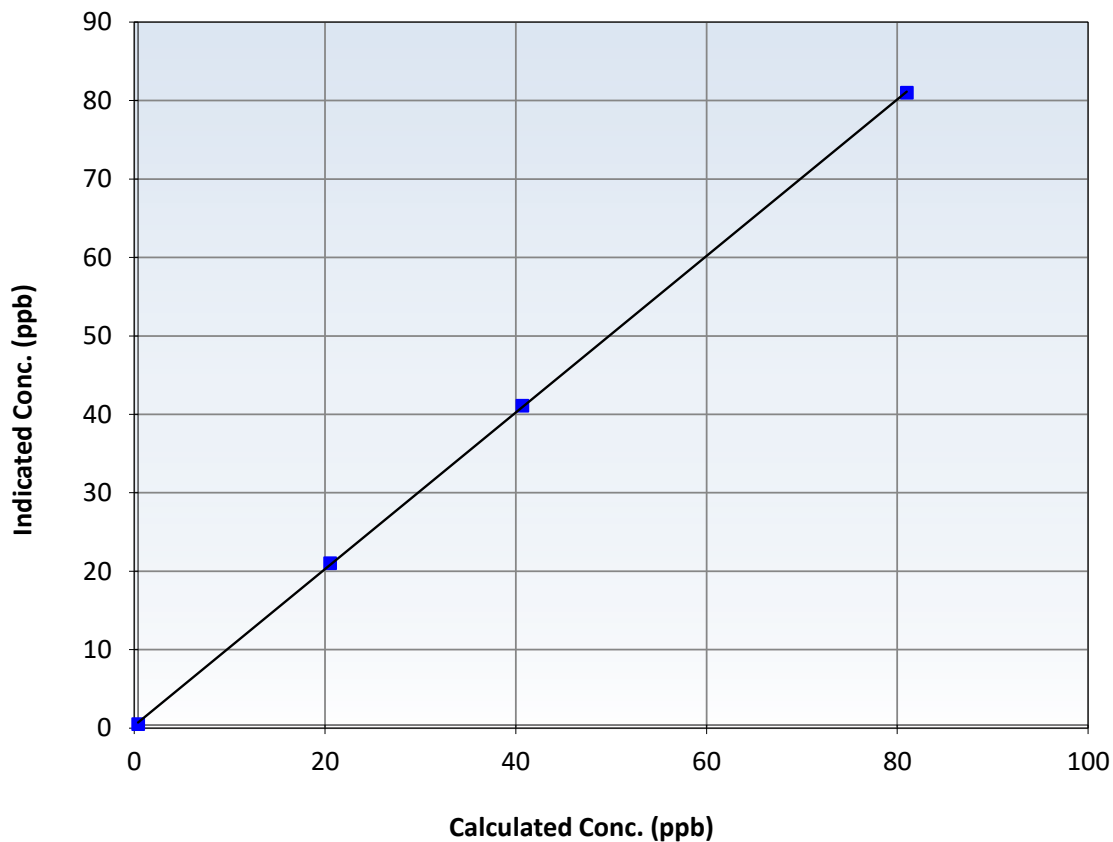
Station Information

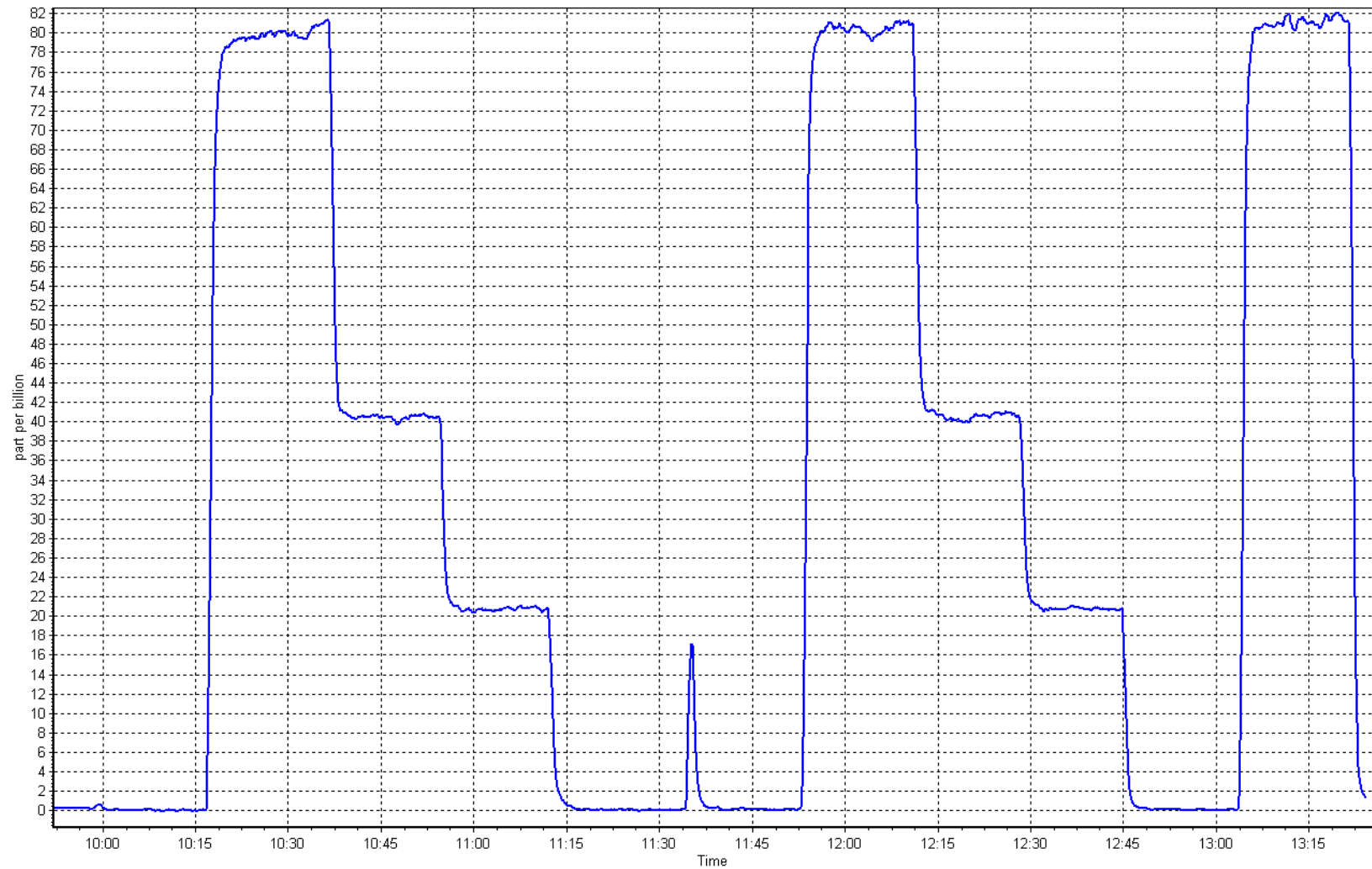
Calibration Date:	September 24, 2025	Previous Calibration:	August 6, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:56	End Time (MST):	13:20
Analyzer make:	Thermo 43i-QTL	Analyzer serial #:	12228021058

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999964		≥ 0.995
80.6	80.6	0.9999	Slope	0.997811		$0.90 - 1.10$
40.3	40.7	0.9901	Intercept	0.318383		± 3
20.2	20.6	0.9782				

TRS Calibration Curve







Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name:	Conklin	Station number:	AMS 21
Calibration Date:	September 23, 2025	Last Cal Date:	August 7, 2025
Start time (MST):	9:58	End time (MST):	12:44
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC340840	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	503.8 ppm	CH ₄ Equiv Conc.	1067.6 ppm
C ₃ H ₈ Cal Gas Conc.	205.0 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH ₄ Conc.	503.8 ppm	CH ₄ Equiv Conc.	1067.6 ppm
Removed C ₃ H ₈ Conc.	205.0 ppm	Diff between cyl (THC):	
Diff between cyl (CH ₄):		Diff between cyl (NM):	
Calibrator Model:	Teledyne API T700P	Serial Number:	2656
Zero Air Gen model:	Teledyne API T701H	Serial Number:	355

Analyzer Information

Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039
THC Range:	0 - 20 ppm	NMHC/CH ₄ Range:	0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.28E-04	2.28E-04	NMHC SP Ratio:	4.84E-05
CH ₄ Retention time:	15.2	15.2	NMHC Peak Area:	185126
Zero Chromatogram:	OFF	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.5	16.97	16.81	1.010
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	16.81	Prev response	16.86	*% change	-0.3%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.5	16.97	16.80	1.010
Mid point	4960	39.8	8.50	8.43	1.008
Low point	4980	19.9	4.25	4.31	0.987
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	16.97	16.80	1.010
Average Correction Factor					1.002

Notes: Sample inlet filter was changed after as founds. No adjustment made.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4921	79.5	8.96	8.89	1.008
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.89	Prev response	8.90	*% change	-0.1%
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	5000	0.0	0.00	0.00	----
High point	4921	79.5	8.96	8.88	1.009
Mid point	4960	39.8	4.49	4.47	1.004
Low point	4980	19.9	2.24	2.29	0.980
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	8.96	8.88	1.009
Average Correction Factor					0.998

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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4921	79.5	8.01	7.92	1.012
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	7.92	Prev response	7.95	*% 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	5000	0.0	0.00	0.00	----
High point	4921	79.5	8.01	7.91	1.012
Mid point	4960	39.8	4.01	3.96	1.013
Low point	4980	19.9	2.01	2.02	0.994
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.5	8.01	7.93	1.011
Average Correction Factor					1.006

Calibration Statistics

	Start	Finish
THC Cal Slope:	0.990794	0.987939
THC Cal Offset:	0.047317	0.044532
CH ₄ Cal Slope:	0.991318	0.986167
CH ₄ Cal Offset:	0.013395	0.014206
NMHC Cal Slope:	0.989498	0.988528
NMHC Cal Offset:	0.034923	0.031728

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

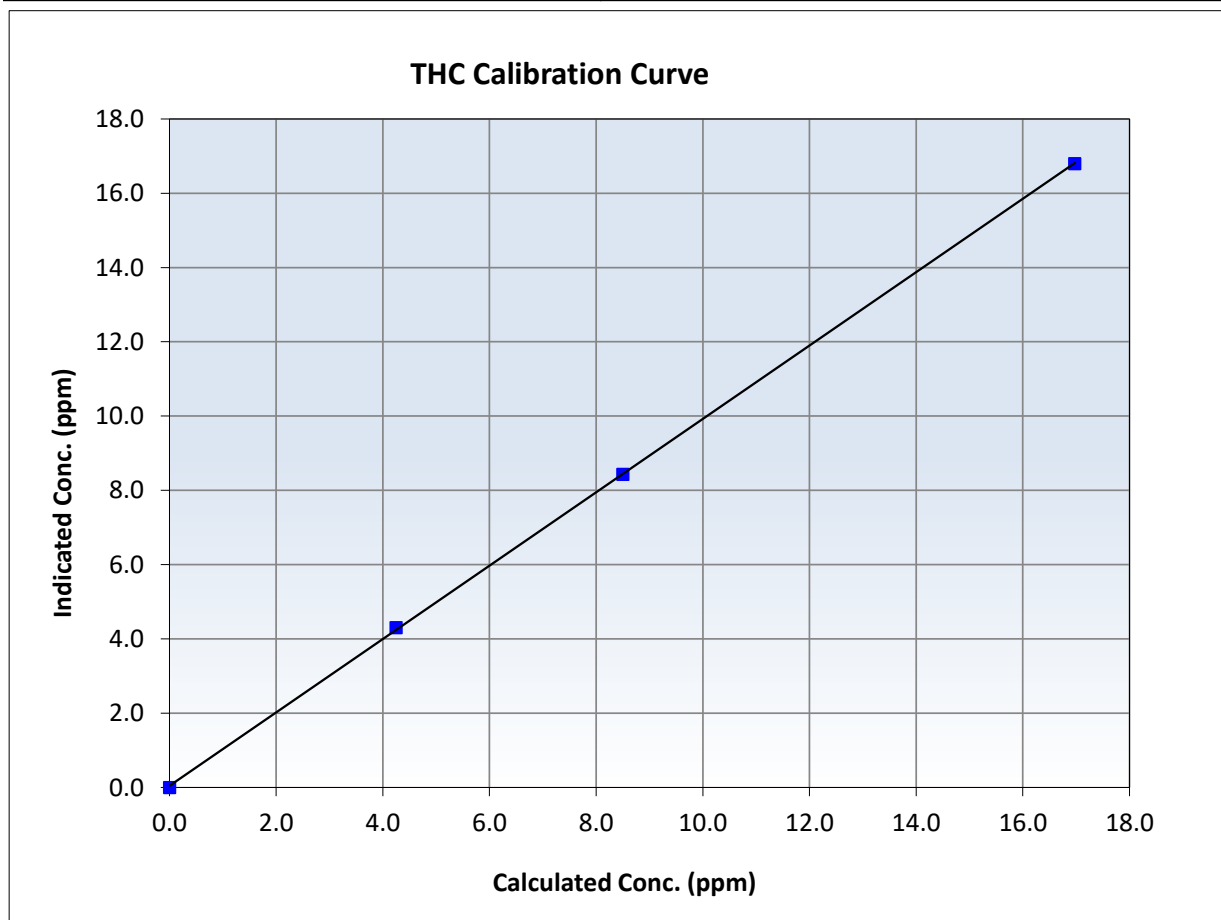
THC Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	August 7, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:58	End Time (MST):	12:44
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999958	≥ 0.995
16.97	16.80	1.0103	Slope	0.987939	$0.90 - 1.10$
8.50	8.43	1.0078	Intercept	0.044532	± 0.5
4.25	4.31	0.9865			





Wood Buffalo Environmental Association

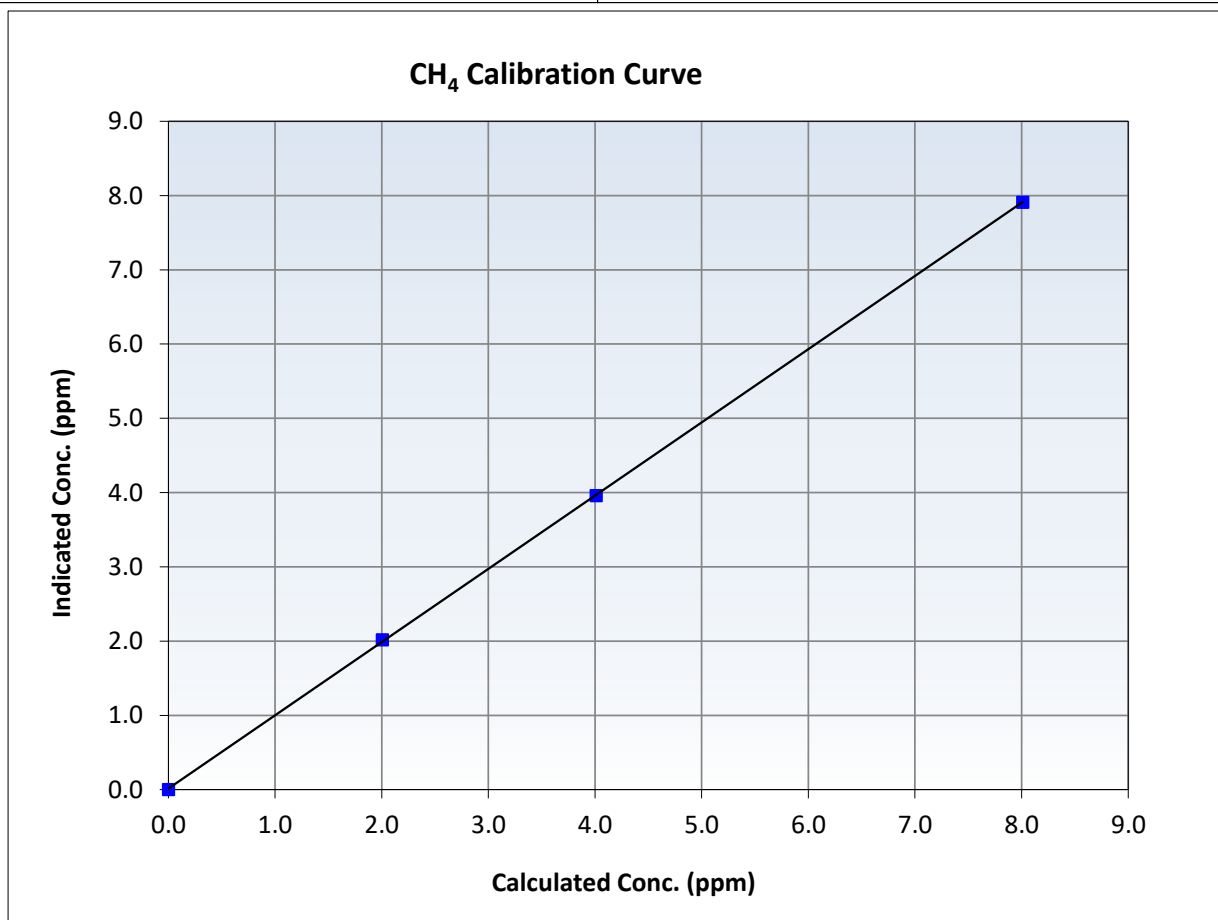
CH₄ Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	August 7, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:58	End Time (MST):	12:44
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999970	<i>≥0.995</i>
8.01	7.91	1.0123	Slope	0.986167	<i>0.90 - 1.10</i>
4.01	3.96	1.0132	Intercept	0.014206	<i>+/-0.5</i>
2.01	2.02	0.9936			





Wood Buffalo Environmental Association

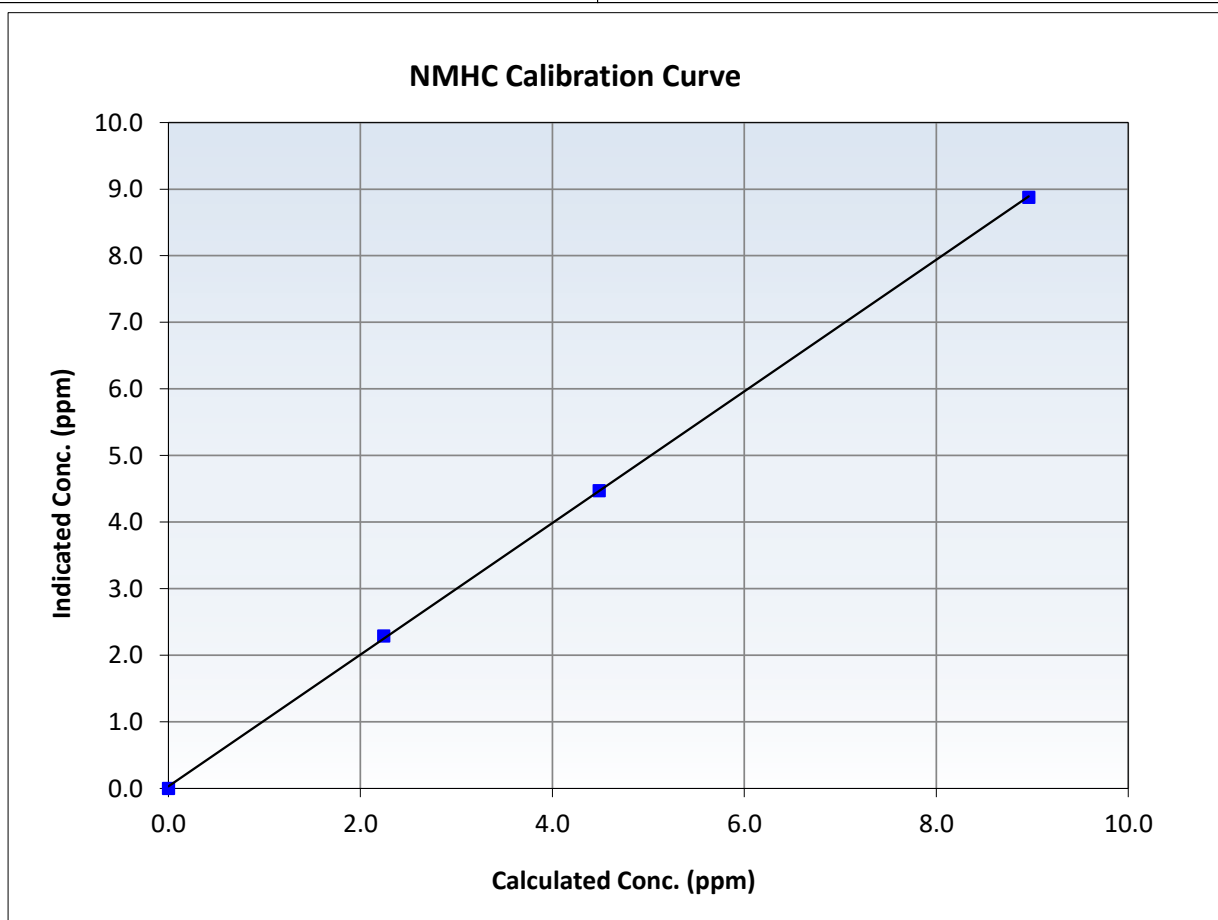
NMHC Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	August 7, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:58	End Time (MST):	12:44
Analyzer make:	Thermo 55i	Analyzer serial #:	1180320039

Calibration Data

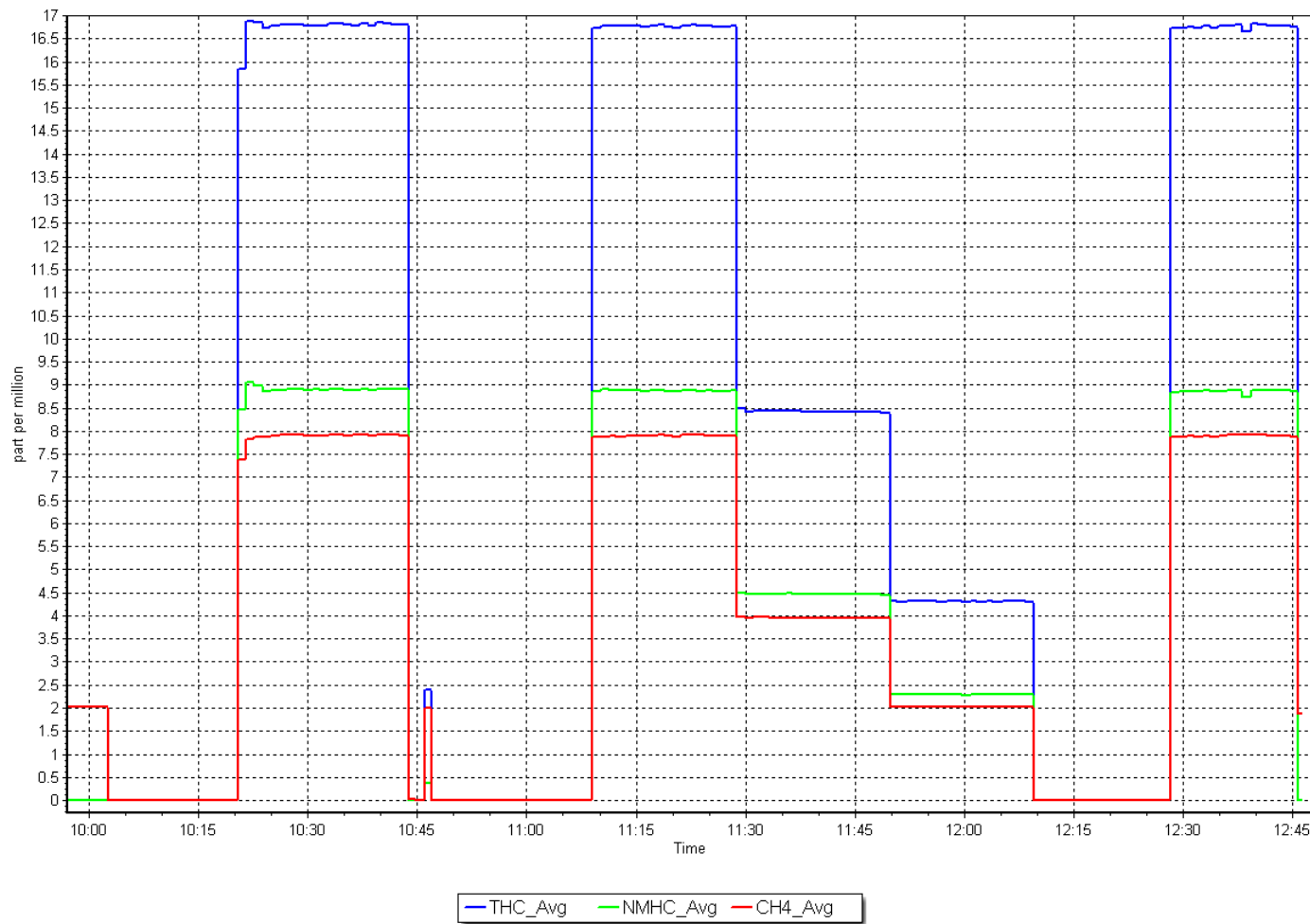
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999935	<i>≥0.995</i>
8.96	8.88	1.0093	Slope	0.988528	<i>0.90 - 1.10</i>
4.49	4.47	1.0037	Intercept	0.031728	<i>+/-0.5</i>
2.24	2.29	0.9798			



NMHC Calibration Plot

Date: September 23, 2025

Location: Conklin





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Conklin
Station number: AMS 21
Calibration Date: September 16, 2025
Last Cal Date: August 20, 2025
Start time (MST): 9:21
End time (MST): 13:30
Reason: Routine

Calibration Standards

NO Gas Cylinder #: SA18828
NOX Cal Gas Conc: 48.90 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 48.90 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700P
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: November 3, 2031
NO Cal Gas Conc: 48.80 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 48.80 ppm
NO gas Diff:
Serial Number: 2659
Serial Number: 953

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO _x Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.3	0.1	----	----
AF High point	4918	82.0	802.0	800.3	1.6	814.6	807.3	7.4	0.9842	0.9910
AF Mid point										
AF Low point										
New cyl resp										
Previous Response	NO _x = 803.3 ppb	NO = 800.4 ppb				* = > +/-5% change initiates investigation		*Percent Change	NO _x = 1.4%	
Baseline Corr 1st pt	NO _x = 814.8 ppb	NO = 807.6 ppb				<u>As Found Statistics</u>		*Percent Change	NO = 0.9%	
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb				As found	NO _x r ² :	Nx SI:	Nx Int:	
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb				As found	NO r ² :	NO SI:	NO Int:	
						As found	NO ₂ r ² :	NO ₂ SI:	NO ₂ Int:	

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO ₂ Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1218153356

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.659	0.648	NO bkgnd or offset:	3.7	3.7
NOX coeff or slope:	0.995	0.994	NOX bkgnd or offset:	3.6	3.6
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	164.4	165.6

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.998844	0.998174
NO _x Cal Offset:	2.228068	2.188064
NO Cal Slope:	0.998906	0.999434
NO Cal Offset:	0.948032	0.888035
NO ₂ Cal Slope:	1.002596	0.999907
NO ₂ Cal Offset:	0.875759	-0.013101

Dilution Calibration Data

Set Point	Dilution flow rate (scm)	Source gas flow rate (scm)	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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	-0.2	0.1	----	----
High point	4918	82.0	802.0	800.3	1.6	802.0	800.6	1.5	1.0000	0.9997
Mid point	4959	41.0	401.0	400.2	0.8	402.3	400.2	2.2	0.9967	0.9999
Low point	4980	20.5	200.5	200.1	0.4	205.3	202.7	2.6	0.9765	0.9870
As left zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.3	0.1	----	----
As left span	4918	82.0	802.0	390.4	411.6	801.7	390.4	411.3	1.0003	1.0000
Average Correction Factor									0.9910	0.9955

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.1	----	----
High GPT point	800.6	391.9	410.3	410.4	0.9999	100.0%
Mid GPT point	800.6	591.1	211.1	210.9	1.0011	99.9%
Low GPT point	800.6	694.3	107.9	107.9	1.0004	100.0%
Average Correction Factor					1.0005	100.0%

Notes:

Sample inlet filter was changed after as founds. Adjusted span only.

Calibration Performed By:

Jan Castro



Wood Buffalo Environmental Association

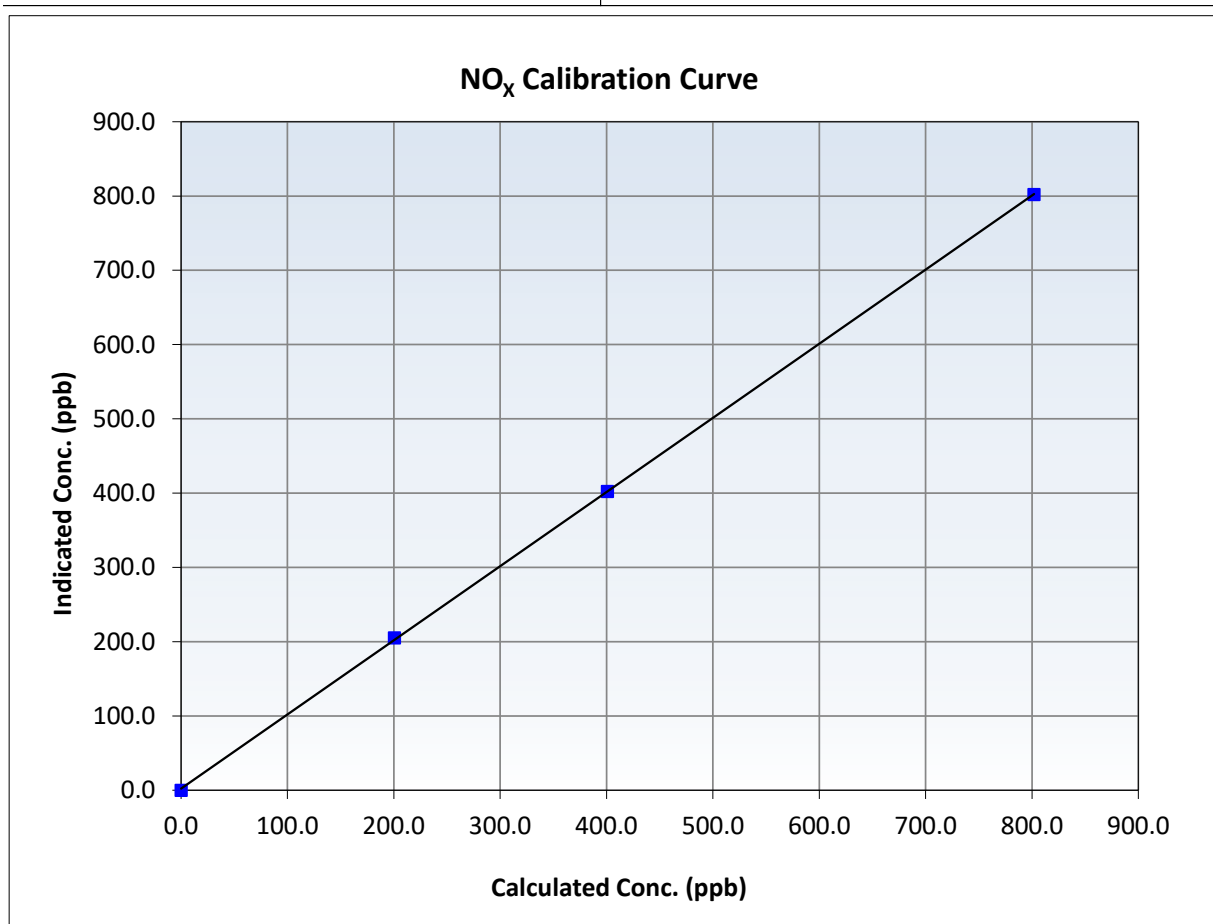
NO_x Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 20, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:21	End Time (MST):	13:30
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153356

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999959	≥ 0.995
802.0	802.0	1.0000	Slope	0.998174	$0.90 - 1.10$
401.0	402.3	0.9967	Intercept	2.188064	± 20
200.5	205.3	0.9765			





Wood Buffalo Environmental Association

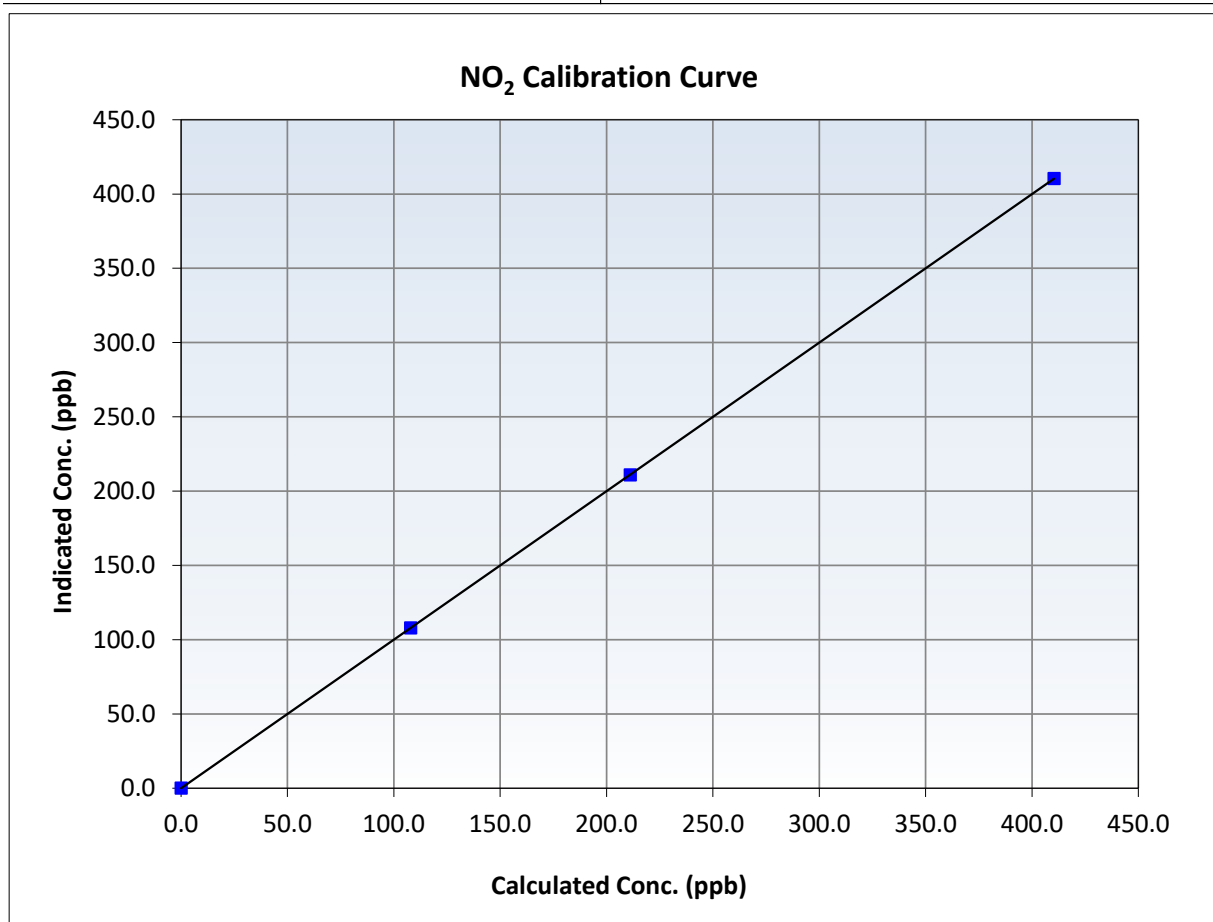
NO₂ Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 20, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:21	End Time (MST):	13:30
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153356

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999999	≥0.995
410.3	410.4	0.9999	Slope	0.999907	0.90 - 1.10
211.1	210.9	1.0011	Intercept	-0.013101	+/-20
107.9	107.9	1.0004			





Wood Buffalo Environmental Association

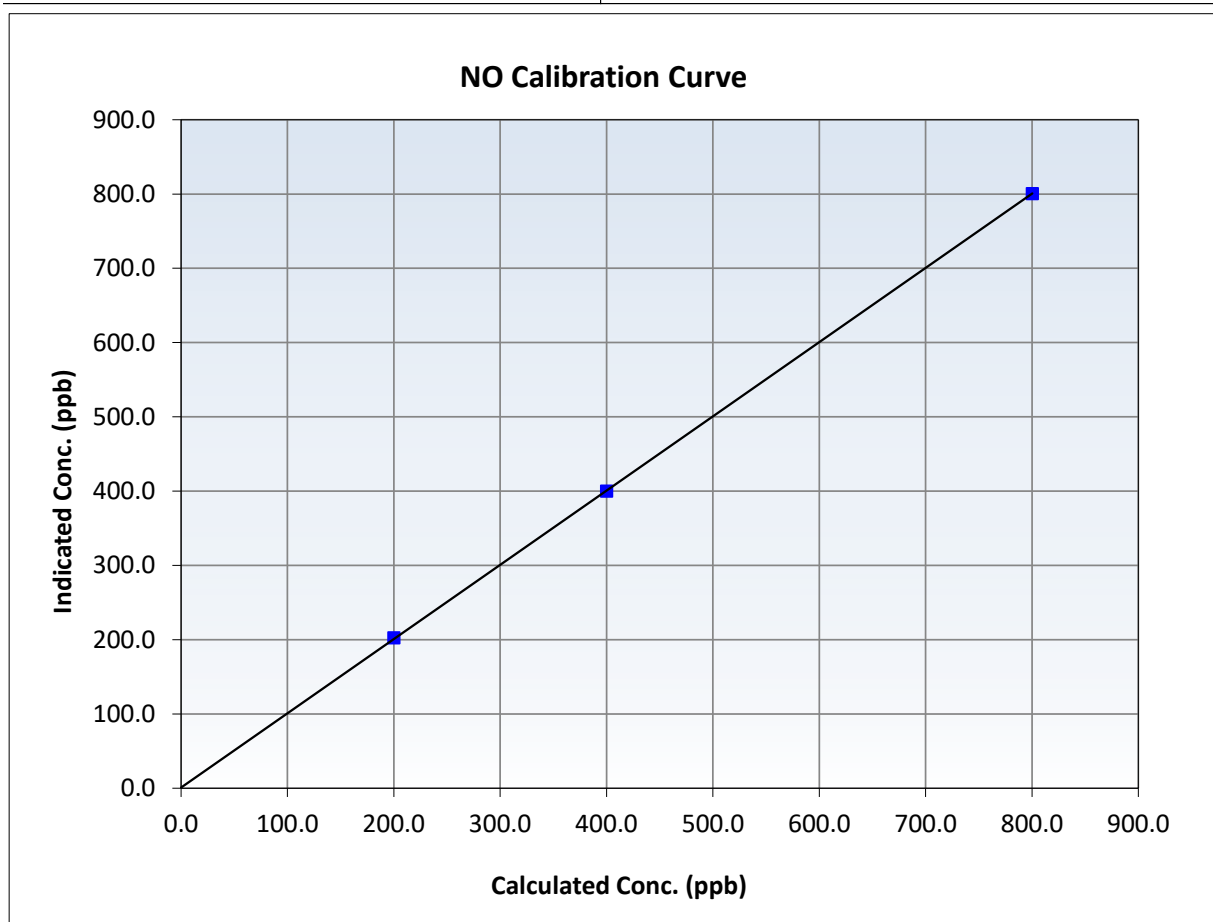
NO Calibration Summary

Station Information

Calibration Date:	September 16, 2025	Previous Calibration:	August 20, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	9:21	End Time (MST):	13:30
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153356

Calibration Data

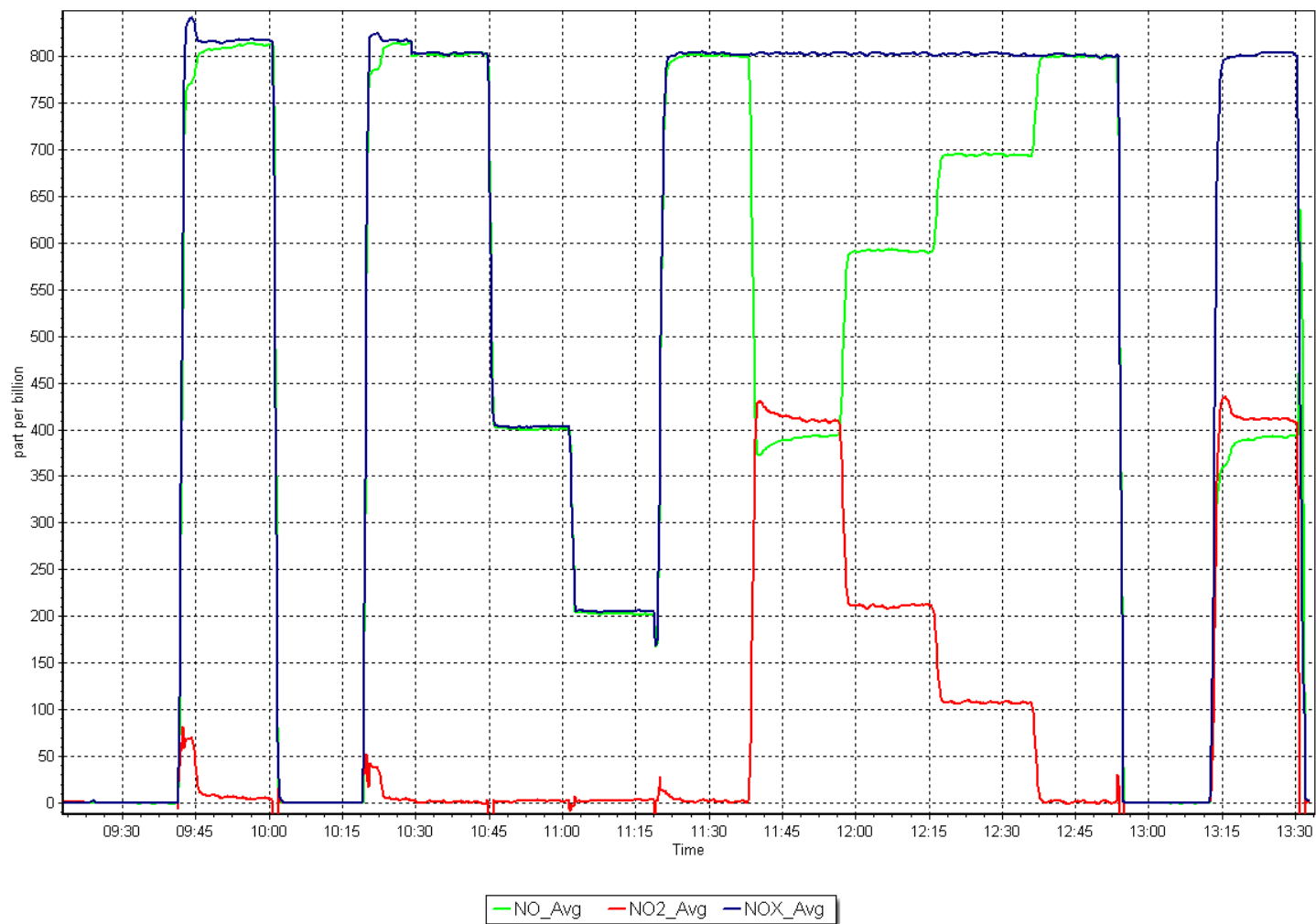
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999986	≥ 0.995
800.3	800.6	0.9997	Slope	0.999434	$0.90 - 1.10$
400.2	400.2	0.9999	Intercept	0.888035	± 20
200.1	202.7	0.9870			



NO_x Calibration Plot

Date: September 16, 2025

Location: Conklin





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Conklin
Calibration Date: September 3, 2025
Start time (MST): 10:20
Reason: Routine

Station number: AMS 21
Last Cal Date: August 11, 2025
End time (MST): 12:51

Calibration Standards

O₃ generation mode: Photometer
Calibrator Make/Model: Teledyne API T750
ZAG Make/Model: Teledyne API 751H

Serial Number: 281
Serial Number: 530

Analyzer Information

Analyzer make: Thermo 49i
Analyzer Range: 0 - 500 ppb

Analyzer serial #: 1300156233

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002114	0.998771	Backgd or Offset:	0.0	0.0
Calibration intercept:	1.880000	0.940000	Coeff or Slope:	1.207	1.229

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	800.0	0.0	-0.4	----
As found High point	5000	1074.8	400.0	393.0	1.017
As found Mid point					
As found Low point					
Baseline Corr As found:	393.4	Previous response	402.7	*% change	-2.4%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O₃ 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- AFzero)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	800.0	0.0	-0.1	----
High point	5000	1074.7	400.0	400.0	1.000
Mid point	5000	821.5	200.0	201.0	0.995
Low point	5000	694.1	100.0	102.0	0.980
As left zero	5000	800.0	0.0	-0.3	----
As left span	5000	1177.5	400.0	406.3	0.984
Average Correction Factor					0.992

Notes: Calibrated using portable calibrator and ZAG. Sample inlet filter was changed after as founds.
Adjusted span only.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

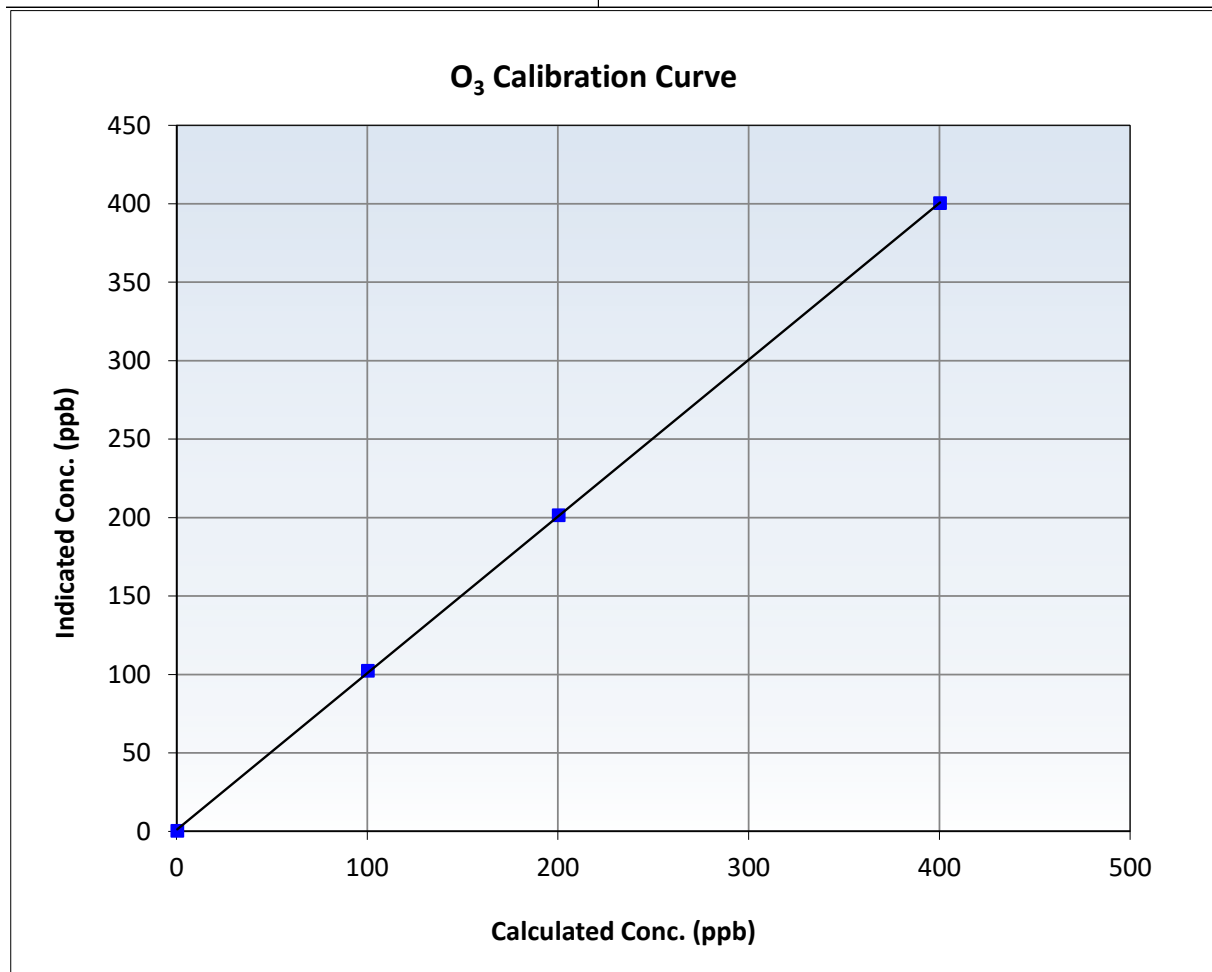
O₃ Calibration Summary

Station Information

Calibration Date:	September 3, 2025	Previous Calibration:	August 11, 2025
Station Name:	Conklin	Station Number:	AMS 21
Start Time (MST):	10:20	End Time (MST):	12:51
Analyzer make:	Thermo 49i	Analyzer serial #:	1300156233

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999968	≥0.995
400.0	400.0	1.0000	Slope	0.998771	0.90 - 1.10
200.0	201.0	0.9950	Intercept	0.940000	+/- 5
100.0	102.0	0.9804			



O₃ Calibration Plot

Date: September 3, 2025

Location: Conklin





Wood Buffalo Environmental Association

T640 PM_{2.5} CALIBRATION

Version-01-2024

Station Information

Station Name: Conklin
Calibration Date: September 23, 2025
Start time (MST): 11:39
Station number: AMS 21
Last Cal Date: August 6, 2025
End time (MST): 12:09
Analyzer Make: API T640
Particulate Fraction: PM2.5
S/N: 1266
Flow Meter Make/Model: Alicat FP-25BT
Temp/RH standard: Alicat FP-25BT
S/N: 388754
S/N: 388754

Monthly Calibration Test

Parameter	As found	Measured	As left	Adjusted	(Limits)
T (°C)	20.20	19.39	20.20	☐	+/- 2 °C
P (mmHg)	709.30	711.30	709.30	☐	+/- 10 mmHg
Flow (LPM)	5.02	5.07	5.02	☐	+/- 0.25 LPM
PW% (pump)	38	----	38	☐	>80%
Zero Verification	PM w/o HEPA: 1.30		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: August 6, 2025
Date Disposable Filter Changed: August 6, 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

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Conklin	Station Number:	AMS 21
Calibration Date:	September 16, 2025	Prev Cal Date:	NA
Start Time (MST):	11:49	End Time (MST):	12:51
Tower Height (m):	10.0	Reason:	Install

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	G3211
WS Calibrator:	MetOne 053	Serial Number:	CA05230

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
0	0.0	0.0	---
200	20.2	20.1	-0.3%
400	39.4	39.4	0.1%
600	58.6	58.5	-0.1%
800	77.8	77.8	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999999	≥ 0.9995
Calculated slope		0.999473	$0.98 - 1.02$
Calculated intercept		0.026227	± 2

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	G3858
As Found Declination (deg east of True North):	<u>NA</u>	As Left Declination (deg east of True North):	<u>13</u>
Solar noon (MST):	13:19	Calc Declination*:	12.86 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) <i>Limit = +/- 1%</i>
10	7.7	-0.6%
90	89.3	-0.2%
180	180.8	0.2%
270	272.6	0.7%
355	357.0	0.6%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999988	≥ 0.9995
Calculated slope		0.986484	$0.97 - 1.03$
Calculated intercept		1.972850	± 5

Notes: WS/ WD new sensors installed. All points within limits. Both bearings are good. Confirm true north using a compass.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Conklin	Station Number:	AMS 21
Calibration Date:	September 16, 2025	Prev Cal Date:	September 19, 2024
Start Time (MST):	11:16	End Time (MST):	11:46
Tower Height (m):	10.0	Reason:	Removal

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	J4337
WS Calibrator:	MetOne 053	Serial Number:	CA05230

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
0	0.0	0.0	---
200	20.2	20.1	-0.3%
400	39.4	39.4	0.1%
600	58.6	58.5	-0.1%
800	77.8	77.8	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999998	0.999999	≥ 0.9995
Calculated slope	0.999062	0.999473	$0.98 - 1.02$
Calculated intercept	0.033729	0.026227	± 2

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	D14062
As Found Declination (deg east of True North):	<u>13</u>	As Left Declination (deg east of True North):	<u>NA</u>
Solar noon (MST):	13:19	Calc Declination*:	12.86 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) <i>Limit = +/- 1%</i>
10	7.6	-0.7%
90	86.3	-1.0%
180	177.9	-0.6%
270	271.3	0.4%
350	350.9	0.2%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999937	0.999965	≥ 0.9995
Calculated slope	0.989874	0.986453	$0.97 - 1.03$
Calculated intercept	1.525550	3.622275	± 5

Notes: WS/ WD sensors removed because of faulty bearings, will do further troubleshooting at the shop.

Calibration Performed By: Jan Castro



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

**AMS22
JANVIER
SEPTEMBER 2025**

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Janvier
Calibration Date: September 22, 2025
Start time (MST): 11:27
Reason: Routine

Station number: AMS 22
Last Cal Date: August 11, 2025
End time (MST): 15:24

Calibration Standards

Cal Gas Concentration: 50.11 ppm
Cal Gas Cylinder #: CC281519
Removed Cal Gas Conc: 50.11 ppm
Removed Gas Cyl #: NA
Calibrator Model: Teledyne API T700
Zero Air Gen Model: Teledyne API T701

Cal Gas Exp Date: January 18, 2029
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 3806
Serial Number: 691

Analyzer Information

Analyzer make: Thermo 43i
Analyzer Range: 0 - 1000 ppb

Serial Number: 1152430006

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002895	0.999707	Backgd or Offset:	26.3	26.4
Calibration intercept:	0.983403	0.624279	Coeff or Slope:	1.000	1.000

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4920	79.8	799.8	800.0	1.000
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	800.0	Previous response	803.1	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4920	79.8	799.8	799.6	1.000
Mid point	4960	39.9	399.9	401.4	0.996
Low point	4980	20.0	200.4	201.3	0.996
As left zero	5000	0.0	0.0	0.1	----
As left span	4920	79.8	799.8	803.1	0.996
Average Correction Factor:					0.997

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

Calibration Performed By: Rene Chamberland



Wood Buffalo Environmental Association

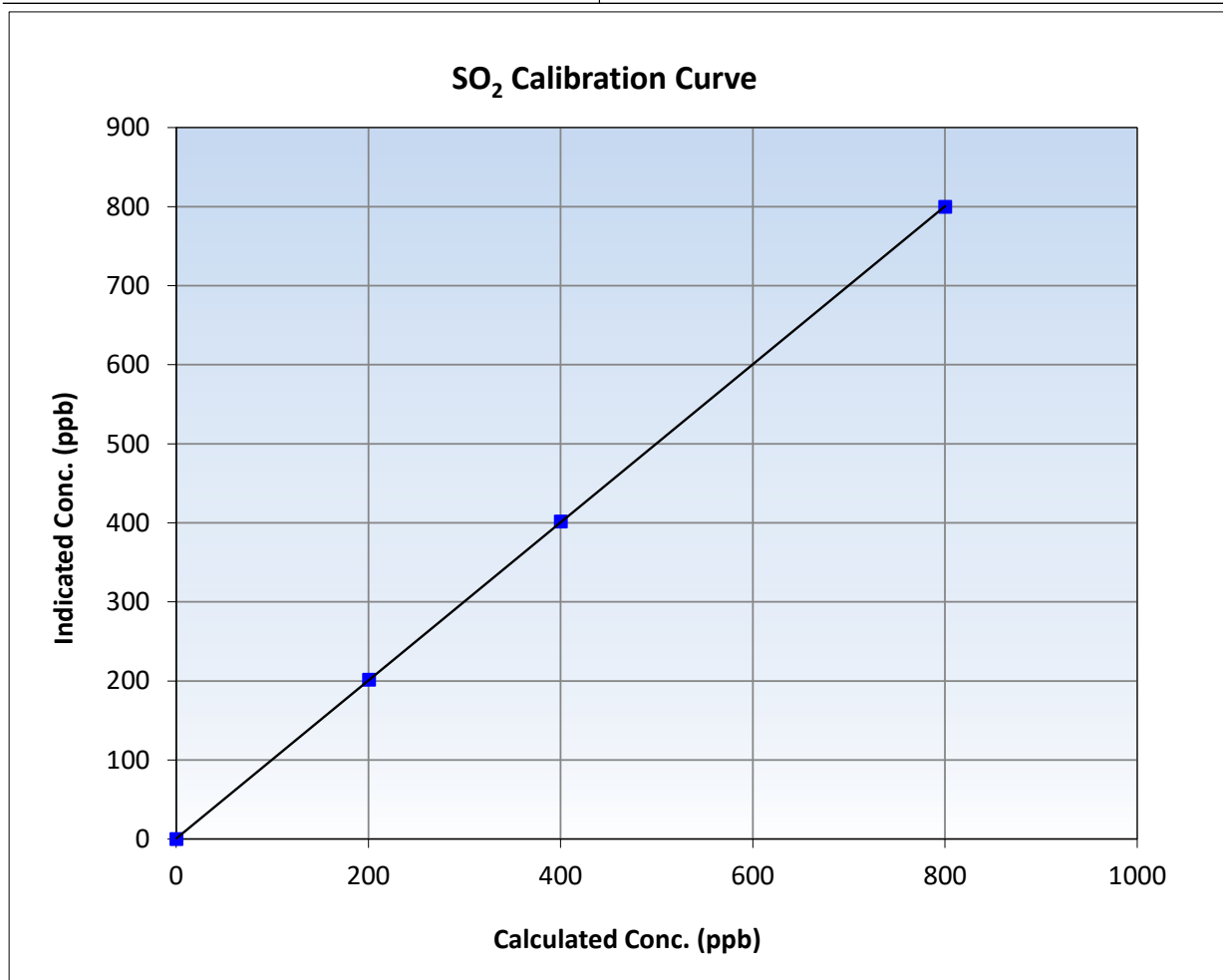
SO₂ Calibration Summary

Station Information

Calibration Date:	September 22, 2025	Previous Calibration:	August 11, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:27	End Time (MST):	15:24
Analyzer make:	Thermo 43i	Analyzer serial #:	1152430006

Calibration Data

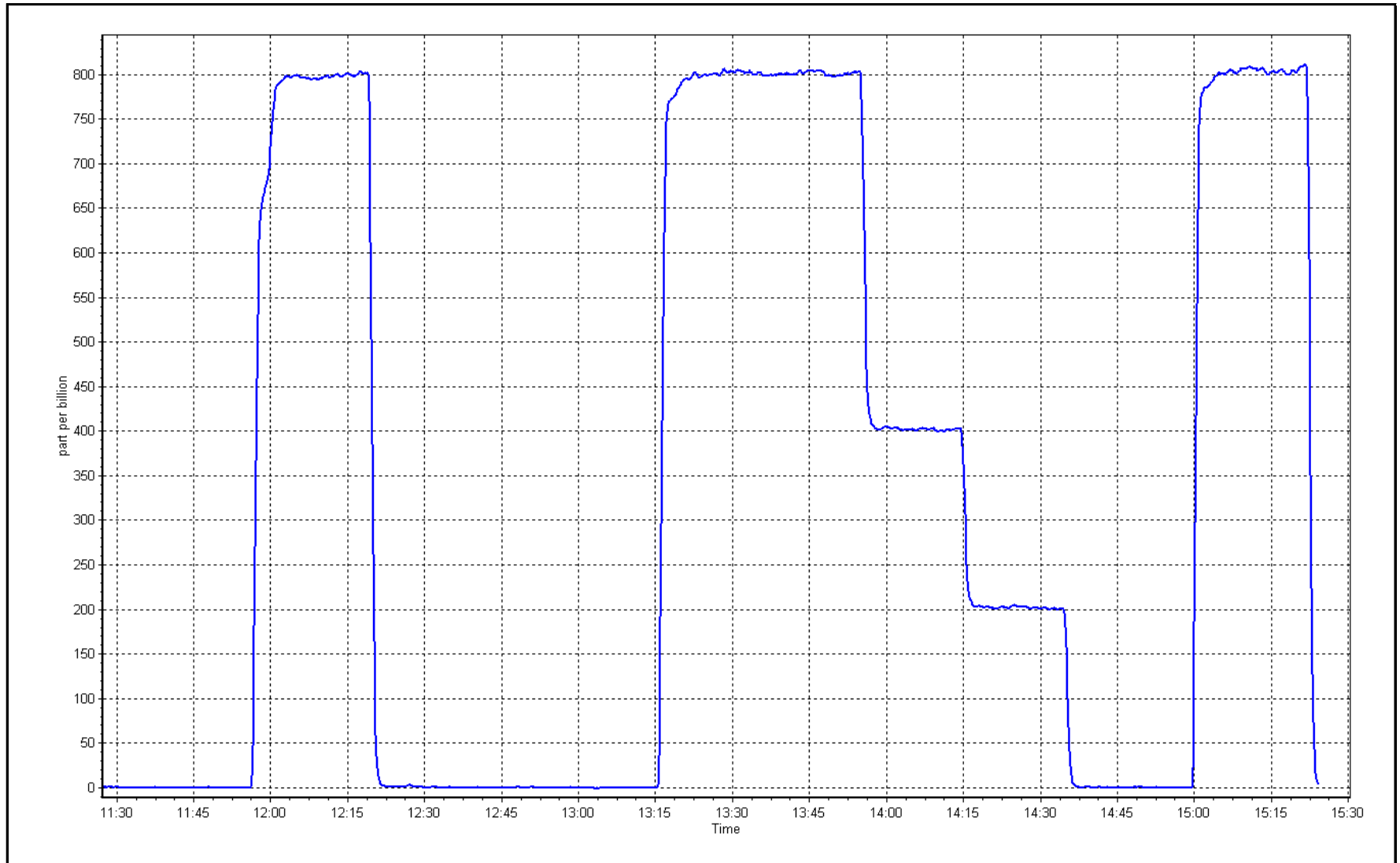
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999994	≥0.995
799.8	799.6	1.0002	Slope	0.999707	0.90 - 1.10
399.9	401.4	0.9962	Intercept	0.624279	+/-30
200.4	201.3	0.9957			



SO2 Calibration Plot

Date: September 22, 2025

Location: Janvier





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Janvier
Calibration Date: September 18, 2025
Start time (MST): 11:23
Reason: Routine

Station number: AMS 22
Last Cal Date: August 26, 2025
End time (MST): 15:35

Calibration Standards

Cal Gas Concentration: 5.02 ppm
Cal Gas Cylinder #: CC424047
Removed Cal Gas Conc: 5.02 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701

Cal Gas Exp Date: November 15, 2026
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 3806
Serial Number: 691

Analyzer Information

Analyzer make: Thermo 43i-TLE
Converter make: CDN-101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1151680031
Converter serial #: 620
Converter Temp: 850 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.006521	1.003379	Backgd or Offset:	3.43	3.43
Calibration intercept:	-0.019279	0.140666	Coeff or Slope:	1.180	1.180

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4920	79.7	80.0	82.4	0.970
As found Mid point	4960	39.8	40.0	41.3	0.965
As found Low point	4980	19.9	20.0	20.6	0.965
New cylinder response					
Baseline Corr As found:	82.5	Prev response:	80.53	*% change:	2.4%
Baseline Corr 2nd AF pt:	41.4	AF Slope:	1.030797	AF Intercept:	-0.018735
Baseline Corr 3rd AF pt:	20.7	AF Correlation:	0.999992	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4920	79.7	80.0	80.4	0.995
Mid point	4960	39.8	40.0	40.3	0.992
Low point	4980	19.9	20.0	20.2	0.989
As left zero	5000	0.0	0.0	0.4	----
As left span	4920	79.7	80.0	79.2	1.010
SO2 Scrubber Check	4920	79.8	798.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	0.992
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

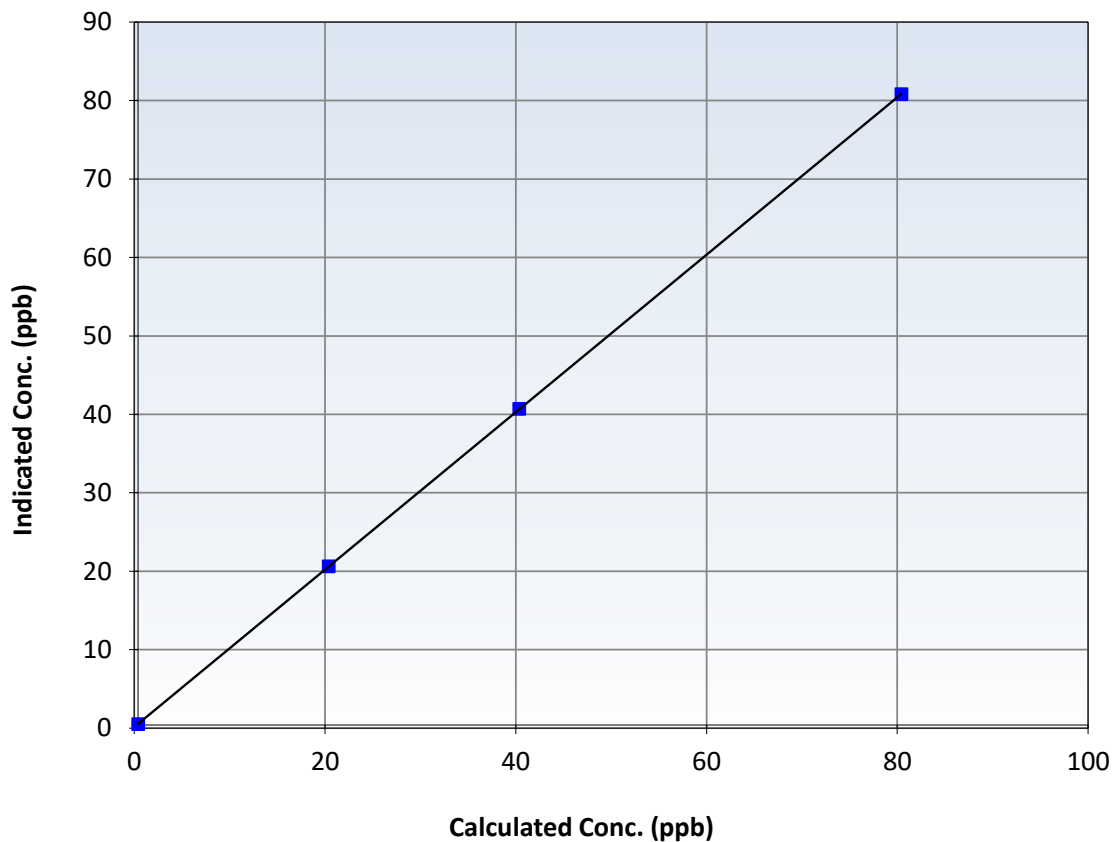
Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 26, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:23	End Time (MST):	15:35
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1151680031

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999998	≥ 0.995
80.0	80.4	0.9953	Slope	1.003379	$0.90 - 1.10$
40.0	40.3	0.9916	Intercept	0.140666	± 3
20.0	20.2	0.9891			

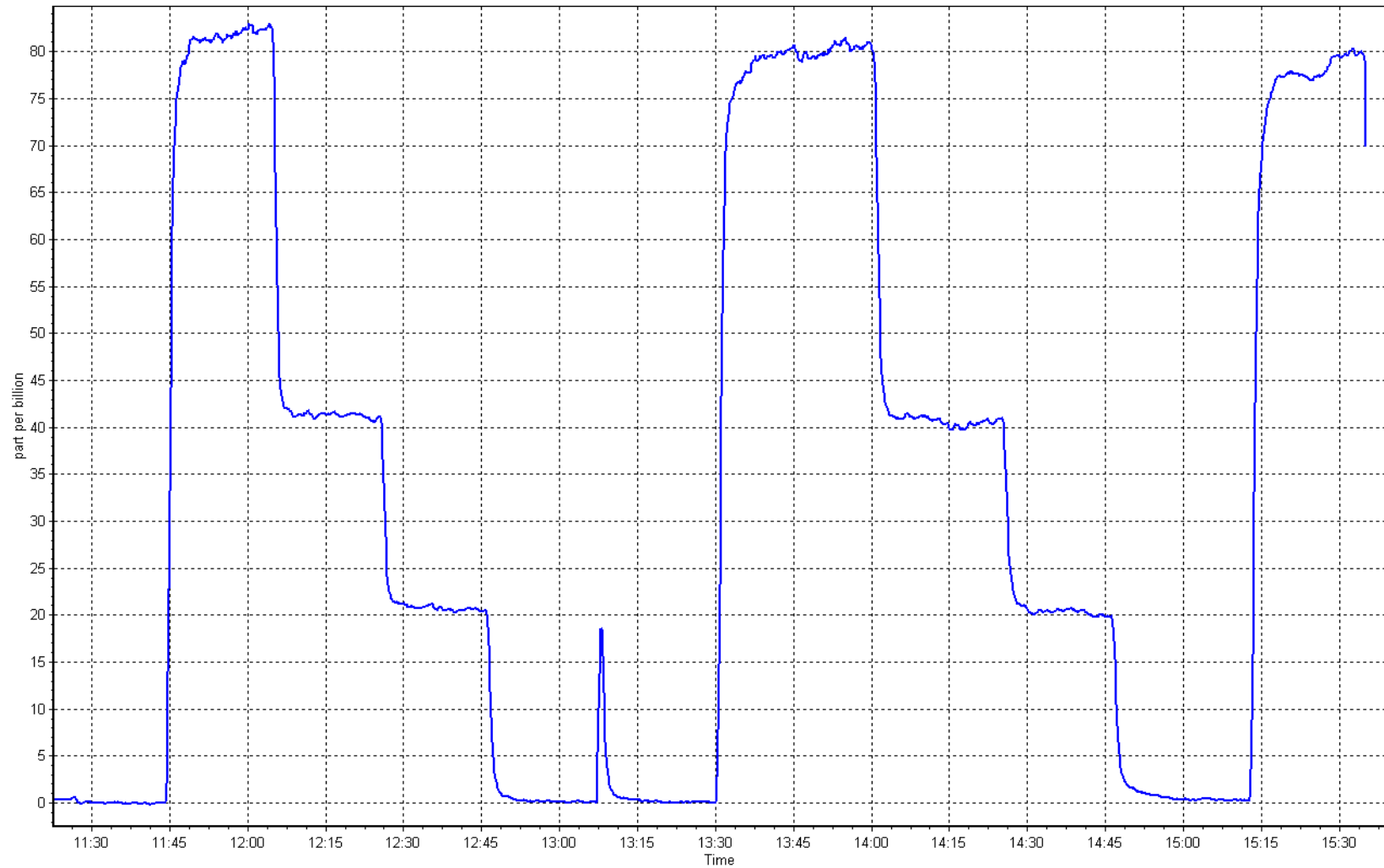
TRS Calibration Curve



TRS Calibration Plot

Date: September 18, 2025

Location: Janvier





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name:	Janvier	Station number:	AMS 22
Calibration Date:	September 22, 2025	Last Cal Date:	August 11, 2025
Start time (MST):	11:27	End time (MST):	15:24
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC281519	Cal Gas Expiry Date:	January 18, 2029
CH ₄ Cal Gas Conc.	502.8 ppm	CH ₄ Equiv Conc.	1075.9 ppm
C ₃ H ₈ Cal Gas Conc.	208.4 ppm		
Removed Gas Cert:	NA	Removed Gas Expiry:	NA
Removed CH ₄ Conc.	502.8 ppm	CH ₄ Equiv Conc.	1075.9 ppm
Removed C ₃ H ₈ 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/CH ₄ Range:	0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	2.60E-04	2.54E-04	NMHC SP Ratio:	6.22E-05
CH ₄ Retention time:	11.6	11.6	NMHC Peak Area:	147202
Zero Chromatogram:	OFF	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	17.17	17.44	0.985
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.44	Prev response	17.17	*% change	1.5%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	17.17	17.21	0.998
Mid point	4960	39.9	8.59	8.49	1.011
Low point	4980	20.0	4.30	4.26	1.011
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	17.17	16.99	1.011
Average Correction Factor					1.007

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



Wood Buffalo Environmental Association

THC / CH₄ / 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	9.15	9.32	0.982
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.32	Prev response	9.13	*% change	2.0%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	9.15	9.24	0.990
Mid point	4960	39.9	4.57	4.59	0.997
Low point	4980	20.0	2.29	2.30	0.996
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	9.15	9.11	1.004
Average Correction Factor					0.994

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4920	79.8	8.03	8.12	0.988
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.12	Prev response	8.04	*% change	1.0%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4920	79.8	8.03	7.96	1.008
Mid point	4960	39.9	4.01	3.90	1.028
Low point	4980	20.0	2.01	1.95	1.029
As left zero	5000	0.0	0.00	0.00	----
As left span	4920	79.8	8.03	7.87	1.019
Average Correction Factor					1.022

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
THC Cal Slope:	1.001028	1.002326
THC Cal Offset:	-0.022598	-0.044604
CH ₄ Cal Slope:	1.004501	0.992807
CH ₄ Cal Offset:	-0.022965	-0.032144
NMHC Cal Slope:	0.998043	1.010515
NMHC Cal Offset:	0.000366	-0.012060

Calibration Performed By: Rene Chamberland



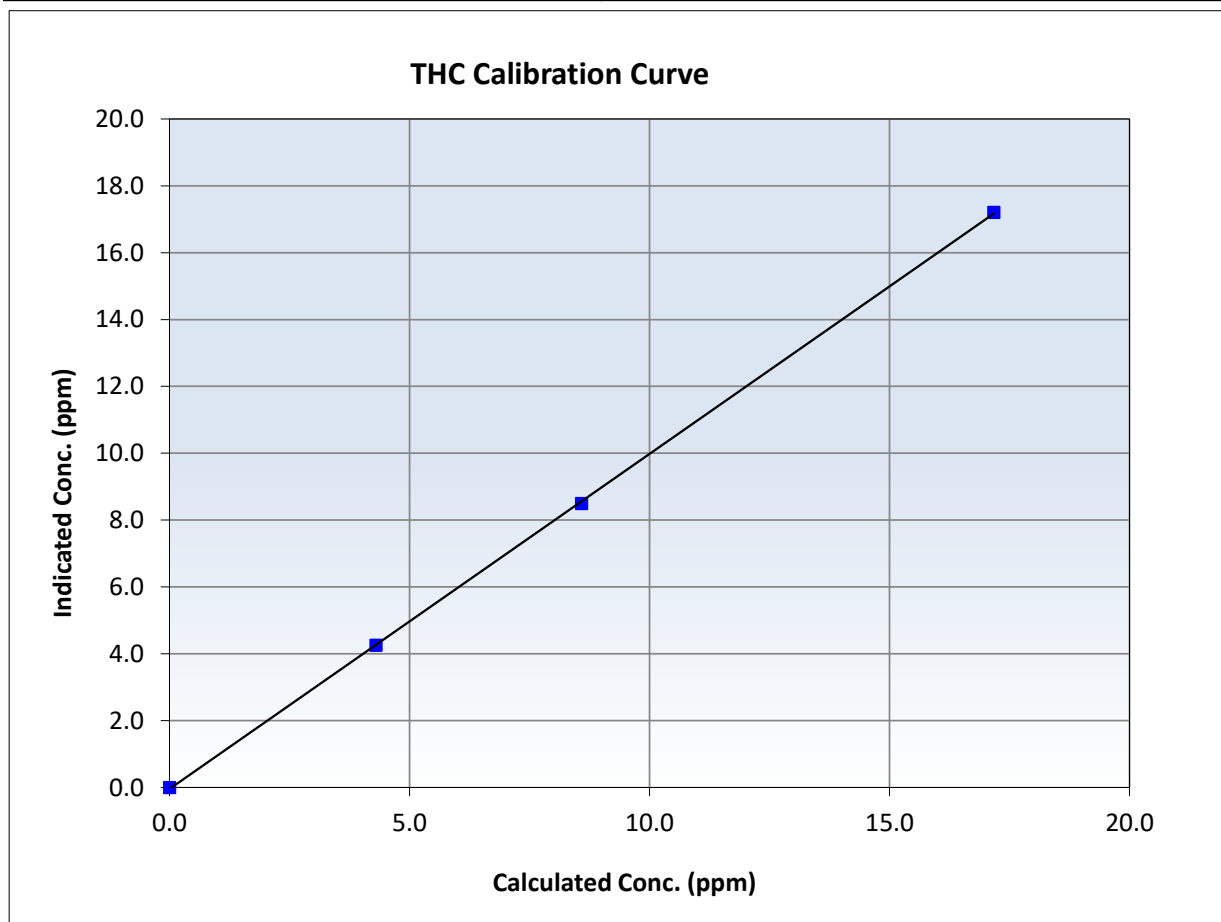
Wood Buffalo Environmental Association THC Calibration Summary

Station Information

Calibration Date:	September 22, 2025	Previous Calibration:	August 11, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:27	End Time (MST):	15:24
Analyzer make:	Thermo 55i	Analyzer serial #:	1317958219

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999949	≥ 0.995
17.17	17.21	0.9981	Slope	1.002326	$0.90 - 1.10$
8.59	8.49	1.0109	Intercept	-0.044604	± 0.5
4.30	4.26	1.0114			





Wood Buffalo Environmental Association

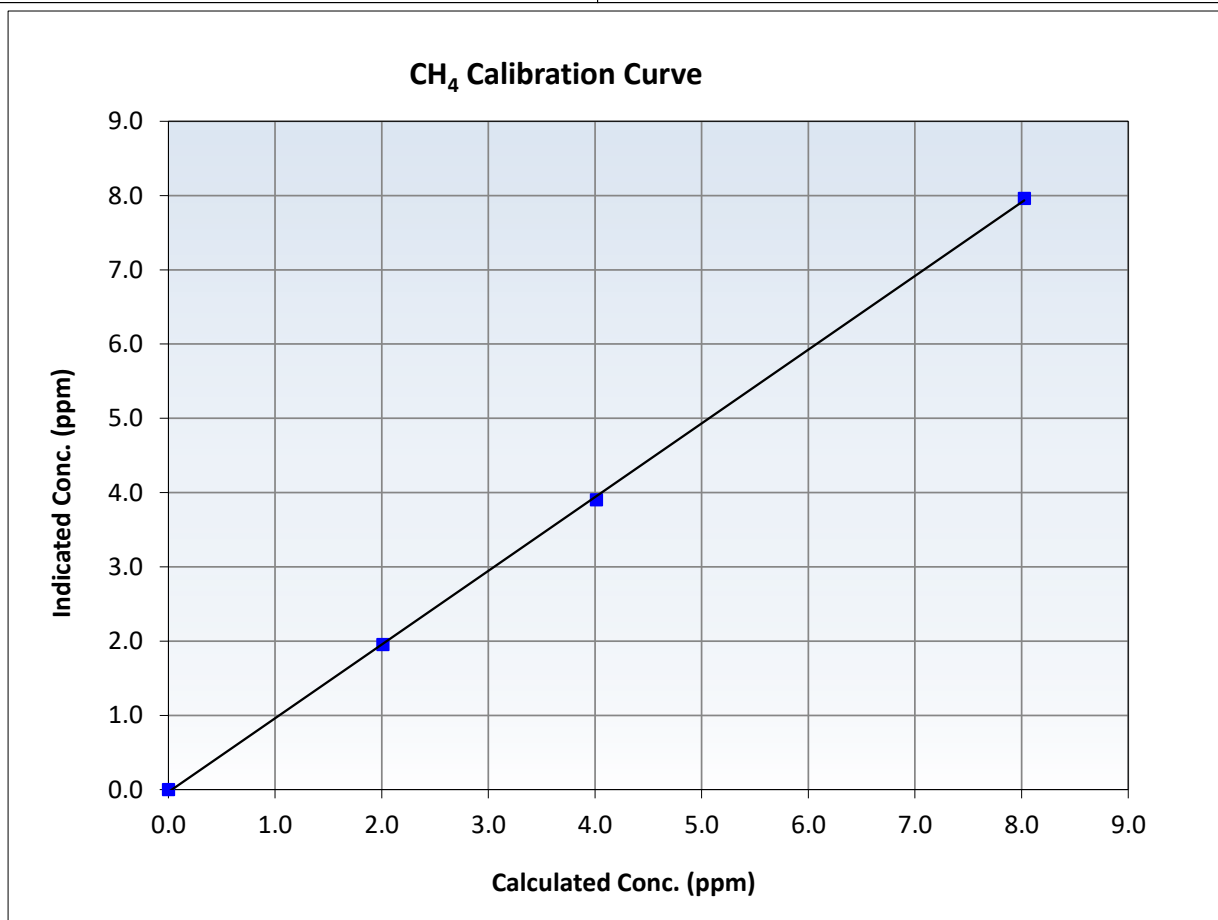
CH₄ Calibration Summary

Station Information

Calibration Date:	September 22, 2025	Previous Calibration:	August 11, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:27	End Time (MST):	15:24
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	0.999879	≥ 0.995
8.03	7.96	1.0079	Slope	0.992807	$0.90 - 1.10$
4.01	3.90	1.0280	Intercept	-0.032144	± 0.5
2.01	1.95	1.0293			





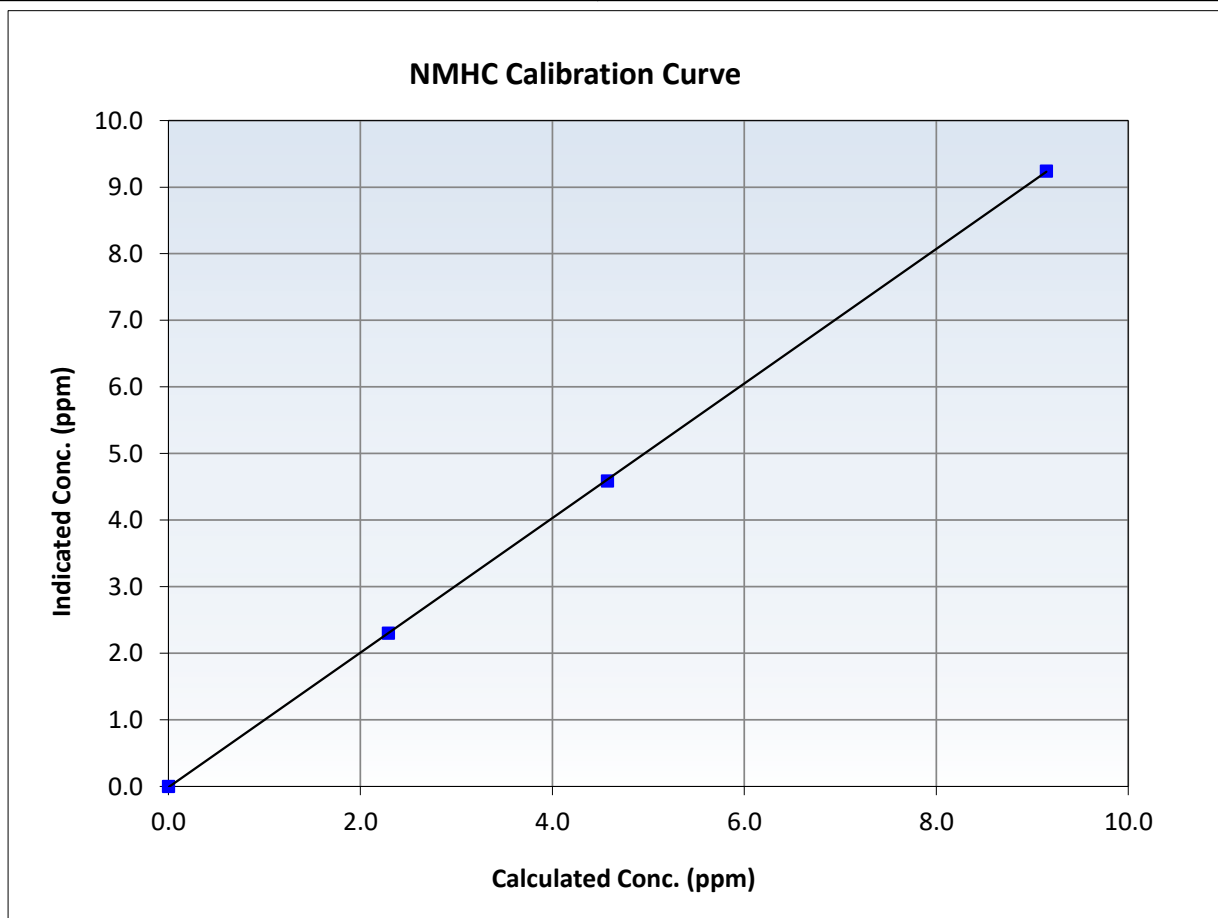
Wood Buffalo Environmental Association NMHC Calibration Summary

Station Information

Calibration Date:	September 22, 2025	Previous Calibration:	August 11, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:27	End Time (MST):	15:24
Analyzer make:	Thermo 55i	Analyzer serial #:	1317958219

Calibration Data

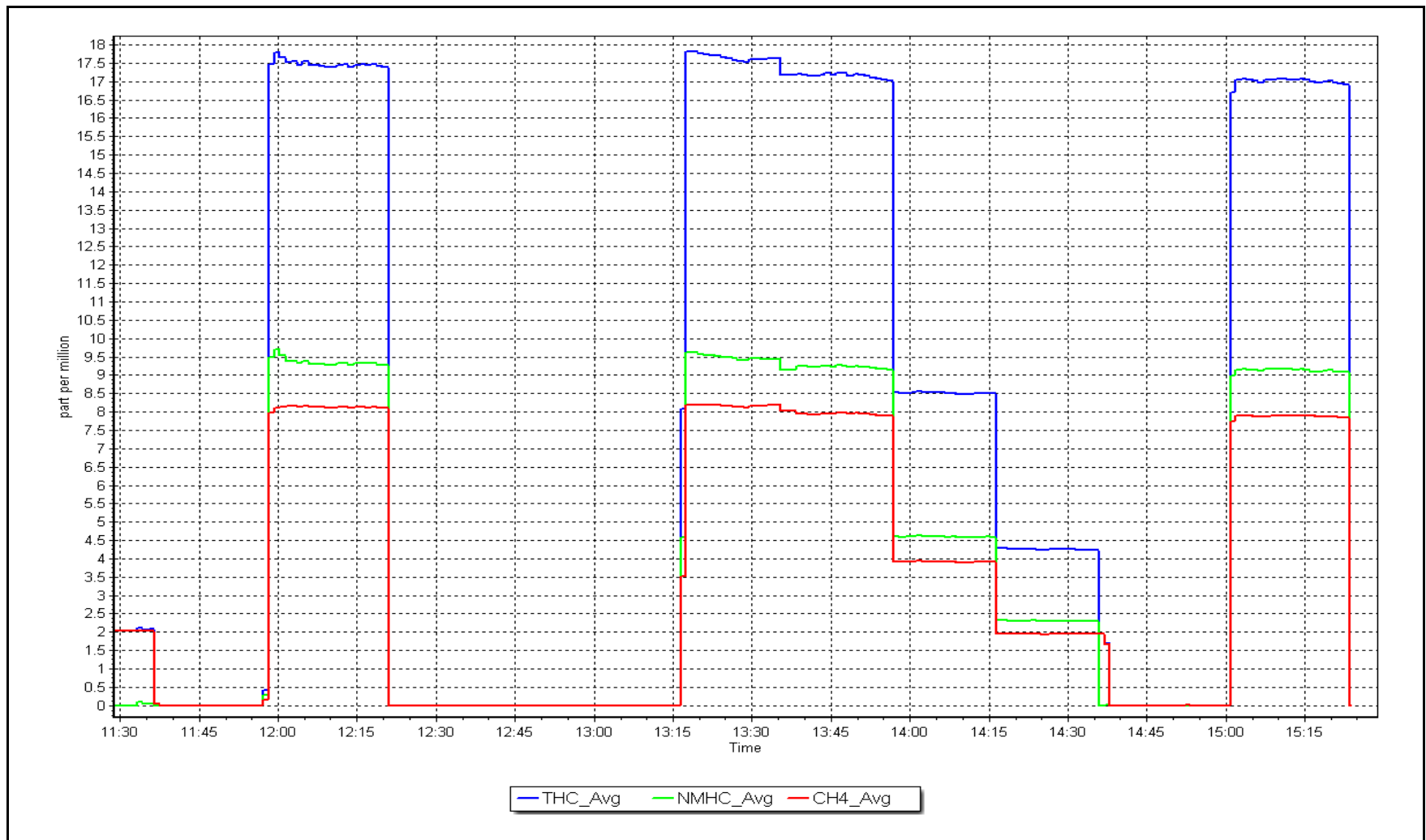
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999985	<i>≥0.995</i>
9.15	9.24	0.9897	Slope	1.010515	<i>0.90 - 1.10</i>
4.57	4.59	0.9966	Intercept	-0.012060	<i>+/-0.5</i>
2.29	2.30	0.9958			



NMHC Calibration Plot

Date: September 22, 2025

Location: Janvier





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Janvier
Station number: AMS 22
Calibration Date: September 19, 2025
Last Cal Date: August 22, 2025
Start time (MST): 11:12
End time (MST): 15:26
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0047765
NOX Cal Gas Conc: 48.90 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 48.90 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: March 11, 2031
NO Cal Gas Conc: 48.80 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 48.80 ppm
NO gas Diff:
Serial Number: 3806
Serial Number: 691

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO _x Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
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	802.5	796.5	6.1	0.9991	1.0045
AF Mid point										
AF Low point										
New cyl resp										
Previous Response	NO _x = 802.3 ppb	NO = 798.9 ppb				* = > +/-5% change initiates investigation		*Percent Change	NO _x = 0.0%	
Baseline Corr 1st pt	NO _x = 802.7 ppb	NO = 796.7 ppb				<u>As Found Statistics</u>		*Percent Change	NO = -0.3%	
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb				As found	NO _x r ² :	Nx SI:	Nx Int:	
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb				As found	NO r ² :	NO SI:	NO Int:	
						As found	NO ₂ r ² :	NO ₂ SI:	NO ₂ Int:	

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO ₂ Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1229254994

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.012	1.012	NO bkgnd or offset:	2.7	2.7
NOX coeff or slope:	0.997	0.997	NOX bkgnd or offset:	2.9	2.9
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	175.3	172.6

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.000095	1.001535
NO _x Cal Offset:	0.284070	0.504115
NO Cal Slope:	0.999003	1.001288
NO Cal Offset:	-0.616092	-1.116032
NO ₂ Cal Slope:	1.003645	1.004012
NO ₂ Cal Offset:	0.673277	1.010979

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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.0	0.1	----	----
High point	4918	82.0	802.0	800.3	1.6	803.5	800.8	2.8	0.9981	0.9994
Mid point	4960	41.0	400.9	400.1	0.8	402.2	398.9	3.3	0.9968	1.0030
Low point	4980	20.5	200.5	200.1	0.4	201.7	198.1	3.5	0.9939	1.0099
As left zero	5000	0.0	0.0	0.0	0.0	0.1	-0.1	0.1	----	----
As left span	4918	82.0	802.0	395.7	406.3	803.4	395.7	407.8	0.9982	1.0000
Average Correction Factor									0.9963	1.0041

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.1	----	----
High GPT point	798.4	394.5	405.5	407.6	0.9949	100.5%
Mid GPT point	798.4	600.5	199.5	202.2	0.9868	101.3%
Low GPT point	798.4	698.3	101.7	103.8	0.9802	102.0%
Average Correction Factor					0.9873	101.3%

Notes:

Inlet filter was changed after as founds. No adjustments made.

Calibration Performed By:

Rene Chamberland



Wood Buffalo Environmental Association

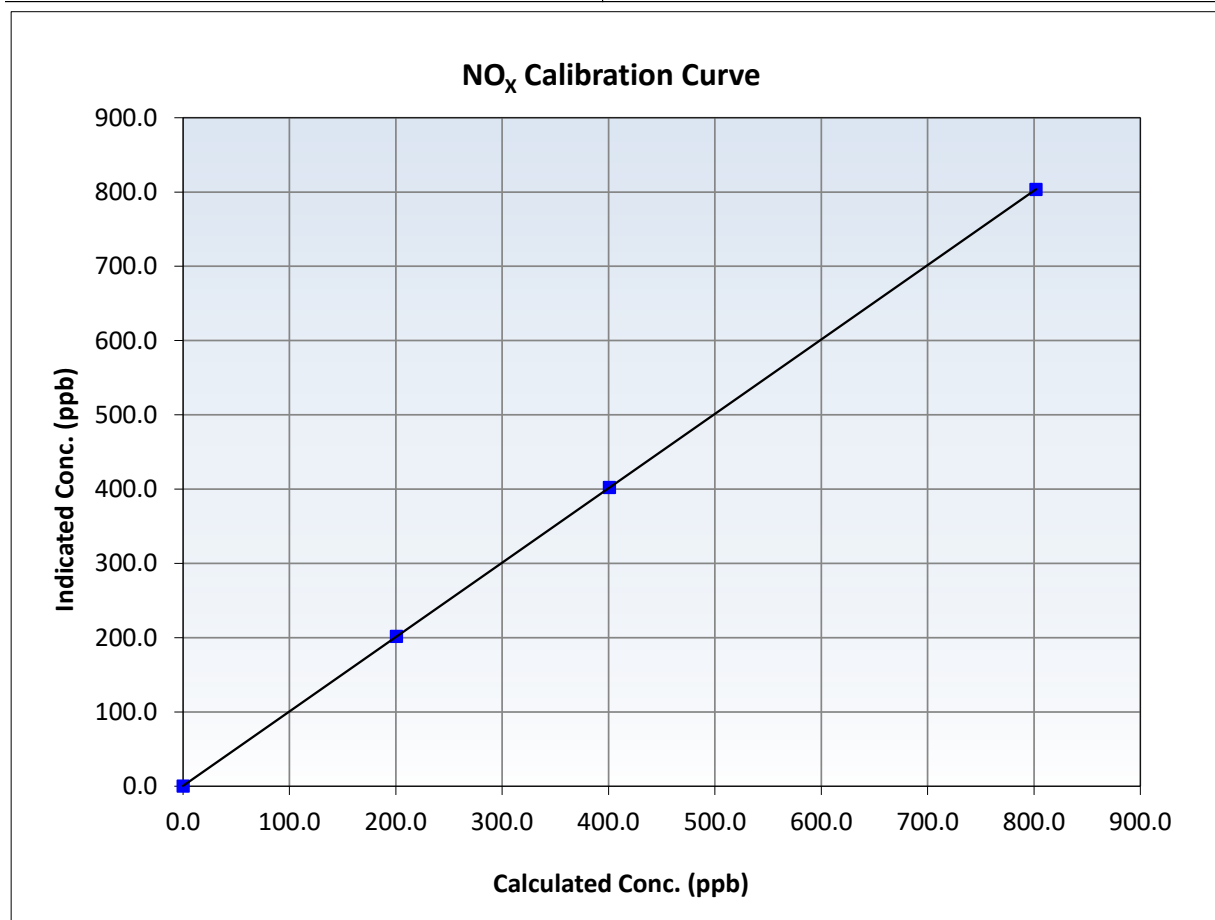
NO_x Calibration Summary

Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 22, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:12	End Time (MST):	15:26
Analyzer make:	Thermo 42i	Analyzer serial #:	1229254994

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999999	≥0.995
802.0	803.5	0.9981	Slope	1.001535	0.90 - 1.10
400.9	402.2	0.9968	Intercept	0.504115	+/-20
200.5	201.7	0.9939			





Wood Buffalo Environmental Association

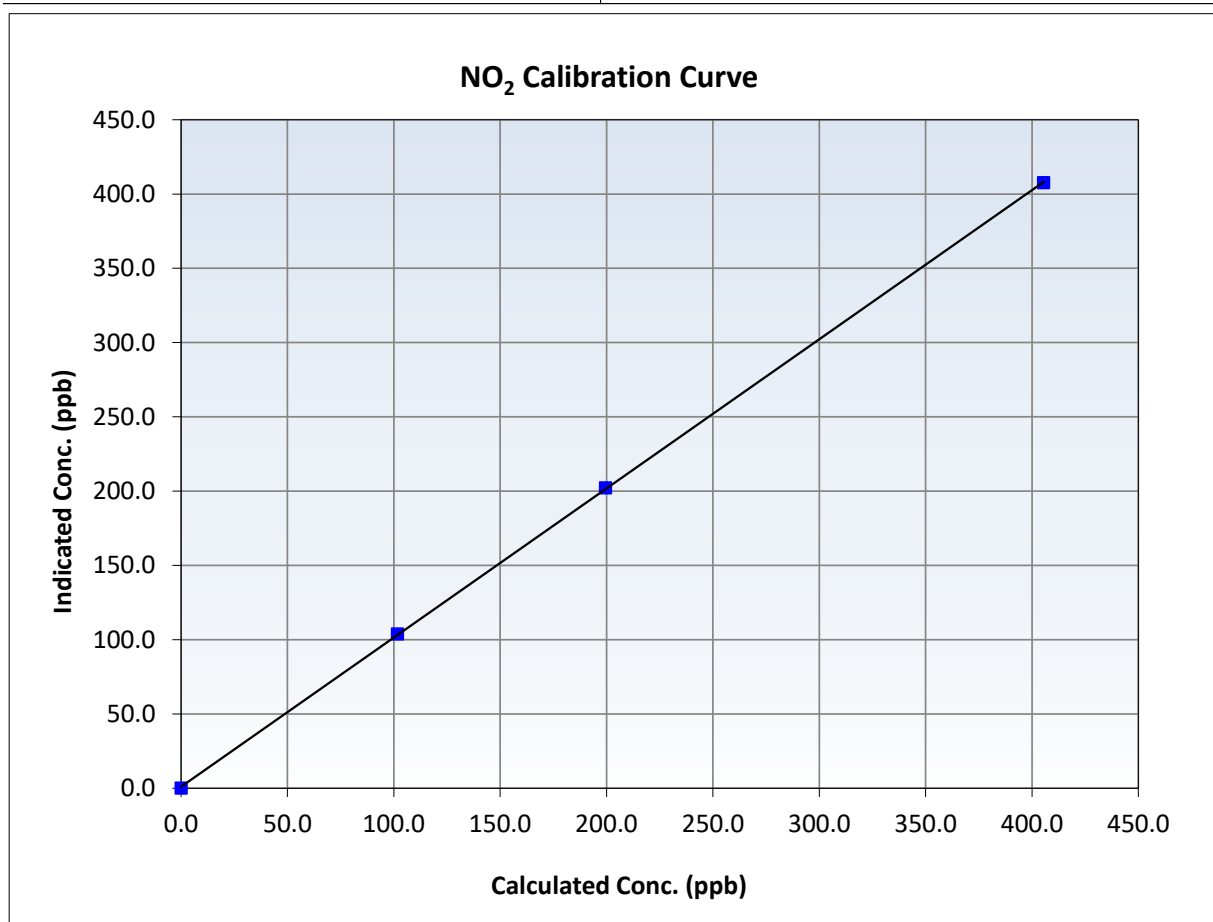
NO₂ Calibration Summary

Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 22, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:12	End Time (MST):	15:26
Analyzer make:	Thermo 42i	Analyzer serial #:	1229254994

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999975	≥0.995
405.5	407.6	0.9949	Slope	1.004012	0.90 - 1.10
199.5	202.2	0.9868	Intercept	1.010979	+/-20
101.7	103.8	0.9802			





Wood Buffalo Environmental Association

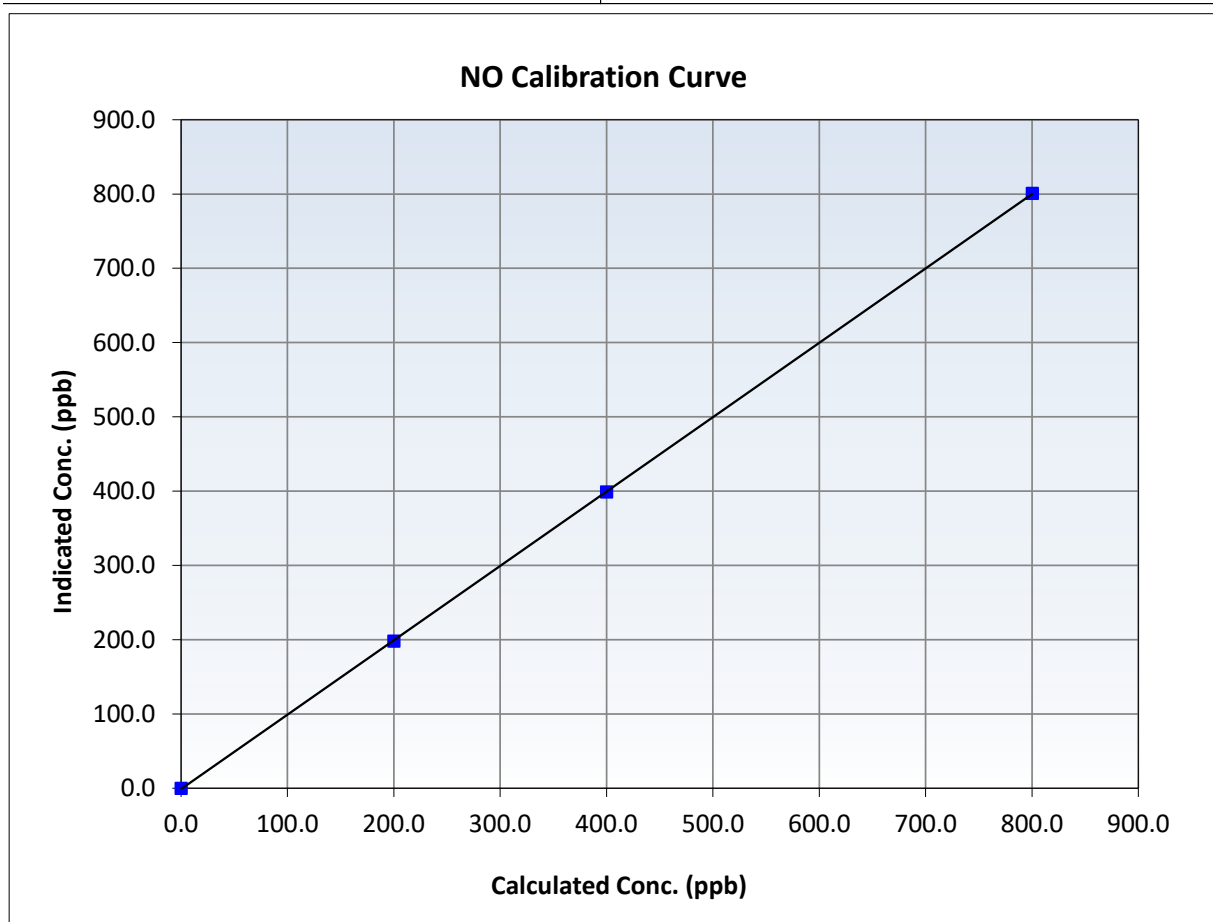
NO Calibration Summary

Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 22, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:12	End Time (MST):	15:26
Analyzer make:	Thermo 42i	Analyzer serial #:	1229254994

Calibration Data

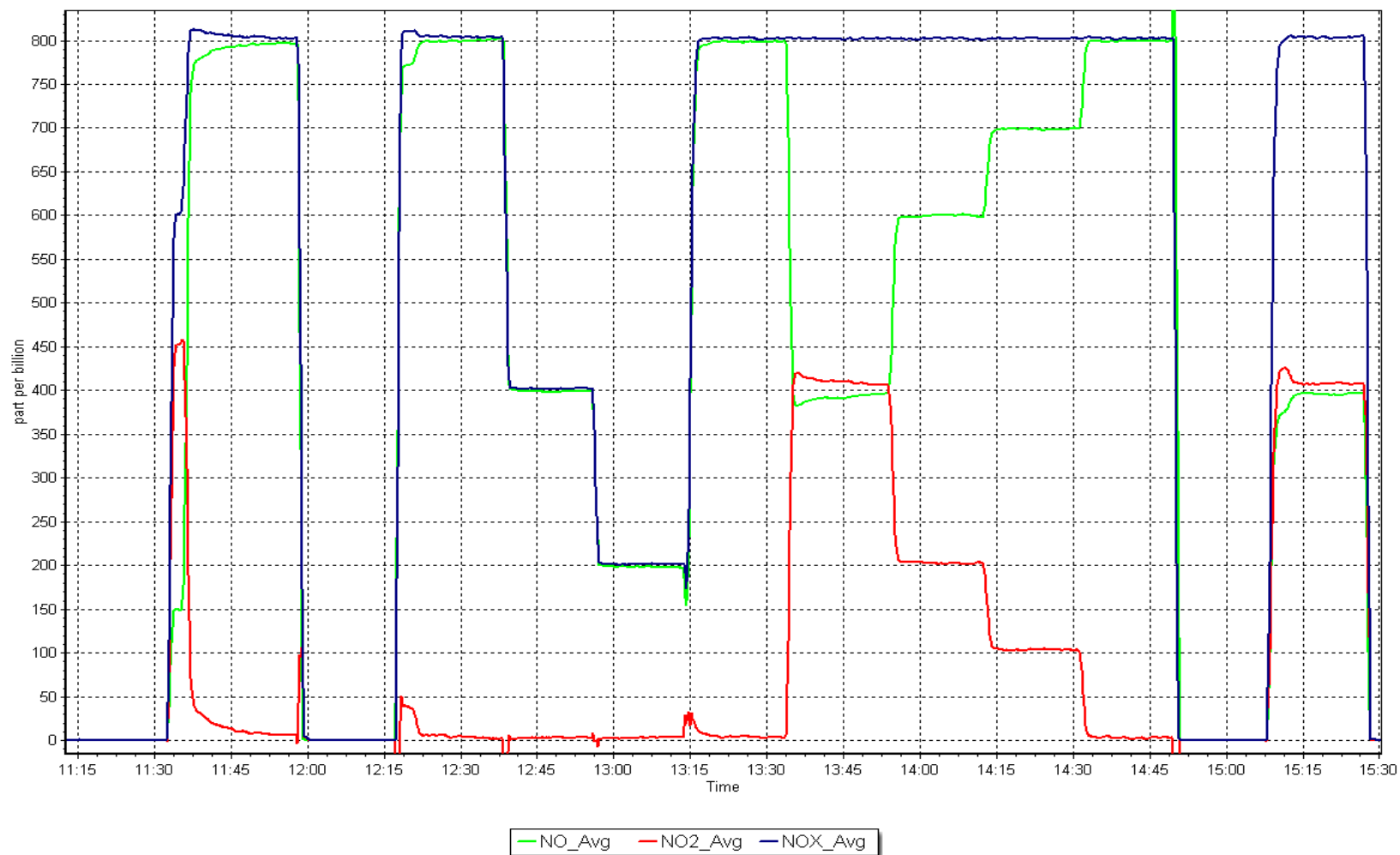
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999991	≥ 0.995
800.3	800.8	0.9994	Slope	1.001288	$0.90 - 1.10$
400.1	398.9	1.0030	Intercept	-1.116032	± 20
200.1	198.1	1.0099			



NO_x Calibration Plot

Date: September 19, 2025

Location: Janvier





Wood Buffalo Environmental Association

O₃ Calibration Report

Station Information

Station Name: Janvier Station number: AMS 22
Calibration Date: September 9, 2025 Last Cal Date: August 13, 2025
Start time (MST): 11:15 End time (MST): 14:11
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: Thermo 49i Analyzer serial #: 1227254861
Analyzer Range: 0 - 500 ppb

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.999971	1.000400	Backgd or Offset:	-0.2	-0.2
Calibration intercept:	0.780000	0.980000	Coeff or Slope:	1.524	1.553

O₃ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	800.0	0.0	-0.4	----
As found High point	5000	926.2	400.0	392.3	1.019
As found Mid point					
As found Low point					
Baseline Corr As found:	392.7	Previous response	400.8	*% change	-2.1%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

O₃ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	800.0	0.0	0.1	----
High point	5000	926.2	400.0	400.6	0.999
Mid point	5000	768.9	200.0	201.8	0.991
Low point	5000	666.4	100.0	101.7	0.983
As left zero	5000	800.0	0.0	0.2	----
As left span	5000	926.2	400.0	405.8	0.986
Average Correction Factor					0.991

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

Calibration Performed By: Rene Chamberland



Wood Buffalo Environmental Association

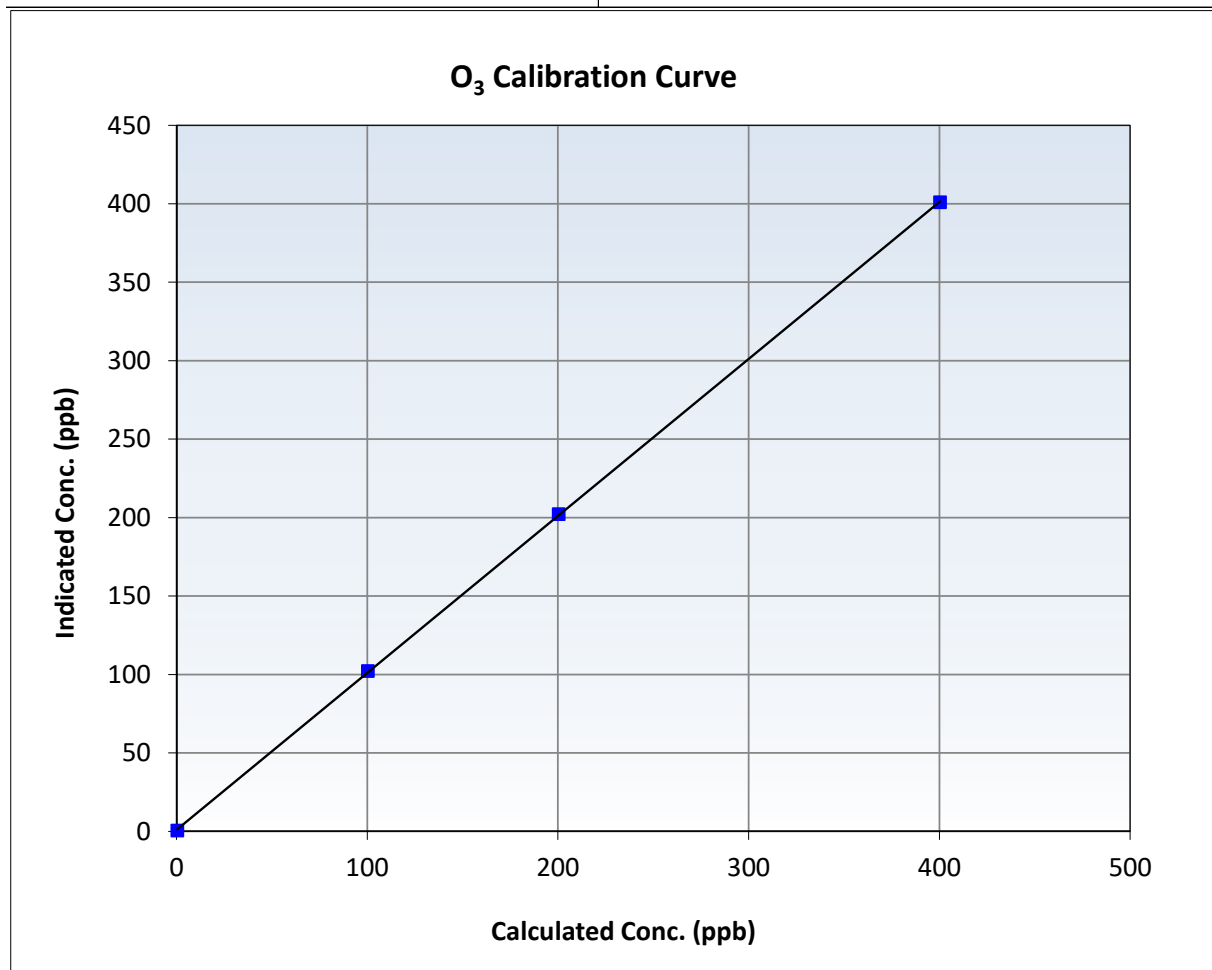
O₃ Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 13, 2025
Station Name:	Janvier	Station Number:	AMS 22
Start Time (MST):	11:15	End Time (MST):	14:11
Analyzer make:	Thermo 49i	Analyzer serial #:	1227254861

Calibration Data

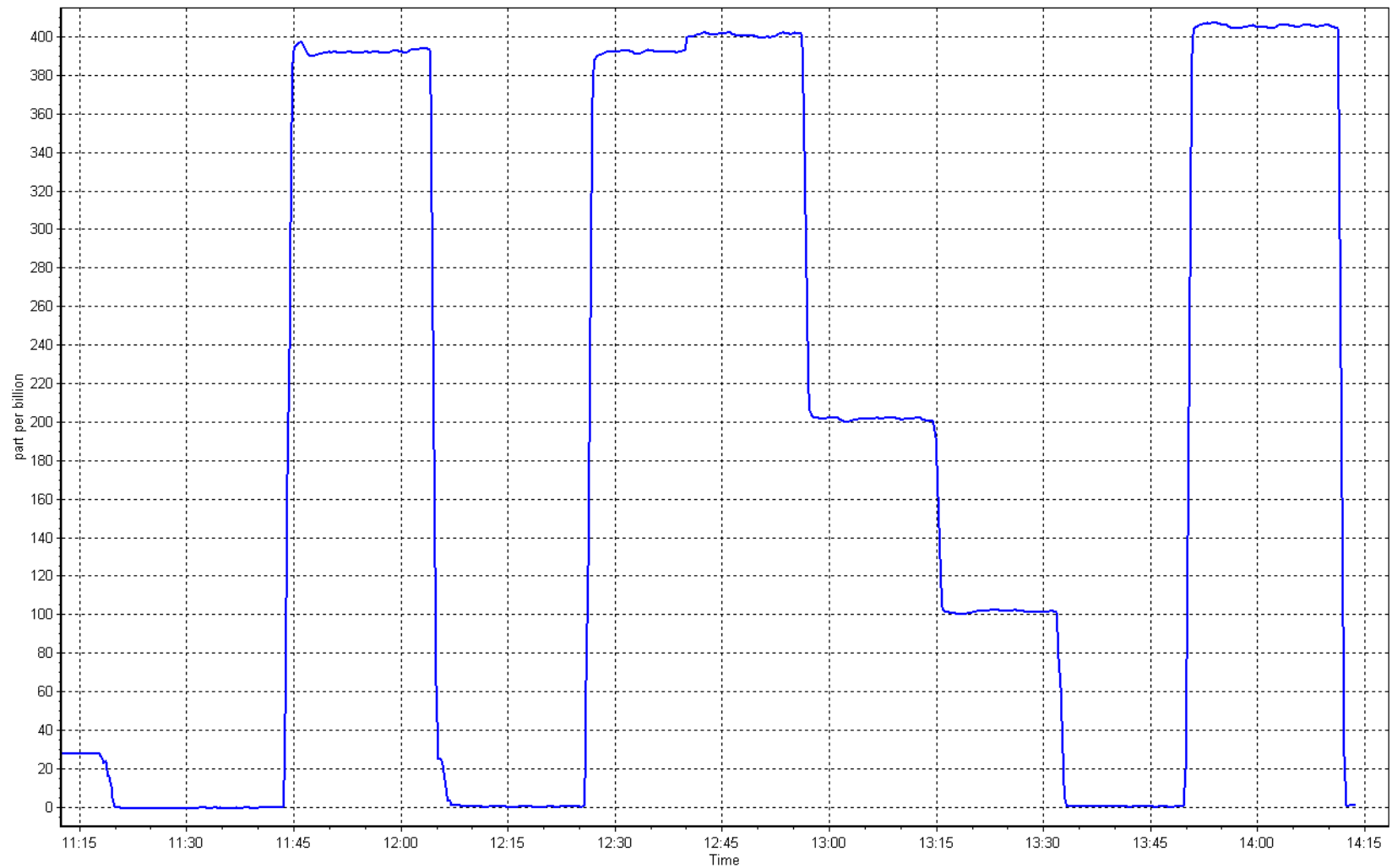
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999976	≥0.995
400.0	400.6	0.9985	Slope	1.000400	0.90 - 1.10
200.0	201.8	0.9911	Intercept	0.980000	+/- 5
100.0	101.7	0.9833			



O₃ Calibration Plot

Date: September 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: September 19, 2025 Last Cal Date: August 26, 2025
Start time (MST): 12:46 End time (MST): 14:27

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)	22.8	22.52	22.8	☐	+/- 2 °C
P (mmHg)	716	716.94	716	☐	+/- 10 mmHg
Flow (LPM)	4.99	4.944	4.99	☐	+/- 0.25 LPM
PW% (pump)	34	----	34	☐	>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: October 6, 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: August 26, 2025
Date Disposable Filter Changed: August 26, 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: August 26, 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: September 24, 2025 Prev Cal Date: October 8, 2024
Start Time (MST): 13:35 End Time (MST): 13:45
Tower Height (m): 20.0 Reason: Removal

Wind Speed Information

Sensor make/model: Met One 010C-1 Serial Number: P22393
WS Calibrator: MetOne 053 Serial Number: B22309

Shaft RPM	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
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%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999999	0.999999	≥ 0.9995
Calculated slope	0.999594	0.999615	<i>0.90 - 1.10</i>
Calculated intercept	-0.028293	-0.025296	<i>+/- 2</i>

Wind Direction Information

Sensor make/model: Met One 020C-1 Serial Number: D14054
As Found Declination (deg east of True North): 14 As Left Declination (deg east of True North): 14
Solar noon time (MST): 13:25 Calc Declination*: 13.02 Degrees
Deadband calc: 3.6 degrees (*Limit 4 deg*)
* - calculated declination as per NOAA website

Physical Direction (Degrees) (Cv)	Indicated Direction (Degrees) (Iv)	% Error (based on 357° FS) <i>Limit = +/- 1.0%</i>
0	0.8	---
90	88.9	-0.3%
180	177.3	-0.8%
270	269.2	-0.2%
357	354.2	-0.8%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999979	0.999974	≥ 0.9995
Calculated slope	1.001480	1.007653	<i>0.90 - 1.10</i>
Calculated intercept	0.582167	-0.048869	<i>+/- 4</i>

Notes: WS and WD sensor removed. Cross arm declination verified.

Calibration Performed By: Devin Russell & Ryan Power



Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Version-10-2022

Station Information

Station Name: Janvier Station Number: AMS 22
Calibration Date: September 24, 2025 Prev Cal Date: NA
Start Time (MST): 12:55 End Time (MST): 13:30
Tower Height (m): 20.0 Reason: Install

Wind Speed Information

Sensor make/model: Met One 010C-1 Serial Number: J4337
WS Calibrator: MetOne 053 Serial Number: B22309

Shaft RPM	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
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%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999999	0.999999	≥ 0.9995
Calculated slope	0.999594	0.999615	<i>0.90 - 1.10</i>
Calculated intercept	-0.028293	-0.025296	<i>+/- 2</i>

Wind Direction Information

Sensor make/model: Met One 020C-1 Serial Number: Y5194
As Found Declination (deg east of True North): 14 As Left Declination (deg east of True North): 14
Solar noon time (MST): 13:25 Calc Declination*: 13.02 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) <i>Limit = +/- 1.0%</i>
0	0.4	---
90	91.3	0.4%
180	179.4	-0.2%
270	271.1	0.3%
355	356.3	0.4%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999979	0.999985	≥ 0.9995
Calculated slope	1.001480	0.998104	<i>0.90 - 1.10</i>
Calculated intercept	0.582167	-0.347297	<i>+/- 4</i>

Notes: Annual WS/WD calibration. WS and WD sensor installed.

Calibration Performed By: Devin Russell & Ryan Power



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS23 FORT HILLS SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Fort Hills Station number: AMS 23
Calibration Date: September 11, 2025 Last Cal Date: August 19, 2025
Start time (MST): 7:54 End time (MST): 10:29
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.003548	0.998675	Backgd or Offset:	19.0	18.5
Calibration intercept:	0.561557	0.040494	Coeff or Slope:	1.092	1.063

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4921	79.4	799.5	819.4	0.976
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	819.2	Previous response	802.9	*% change	2.0%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.4	----
High point	4921	79.4	799.5	798.9	1.001
Mid point	4960	39.7	399.8	398.4	1.004
Low point	4980	19.8	199.4	199.3	1.000
As left zero	5000	0.0	0.0	0.3	----
As left span	4921	79.4	799.5	800.3	0.999
Average Correction Factor:					1.002

Notes: No maintenance done. Span adjusted.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

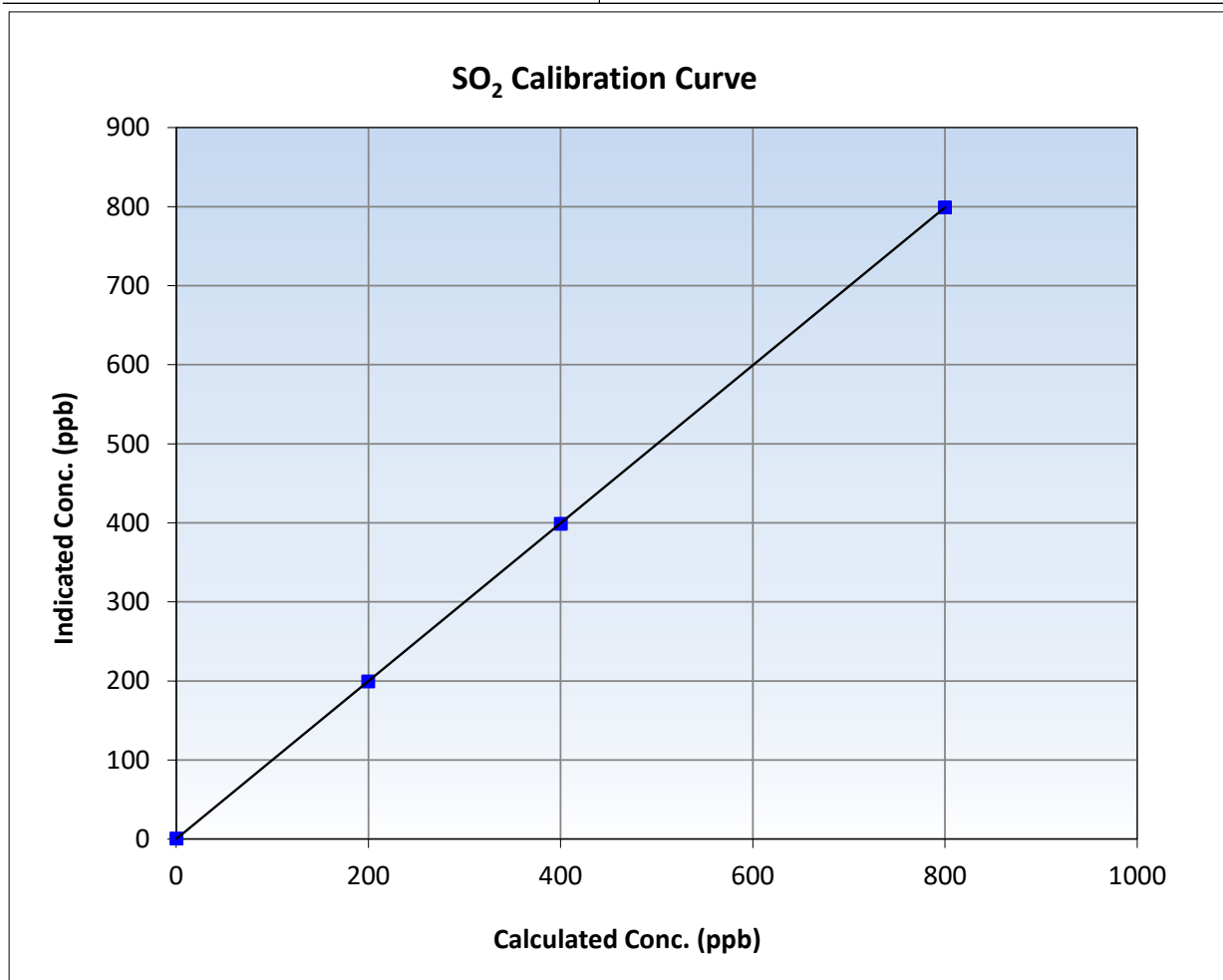
SO₂ Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 19, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:54	End Time (MST):	10:29
Analyzer make:	Thermo 43i	Analyzer serial #:	1160290012

Calibration Data

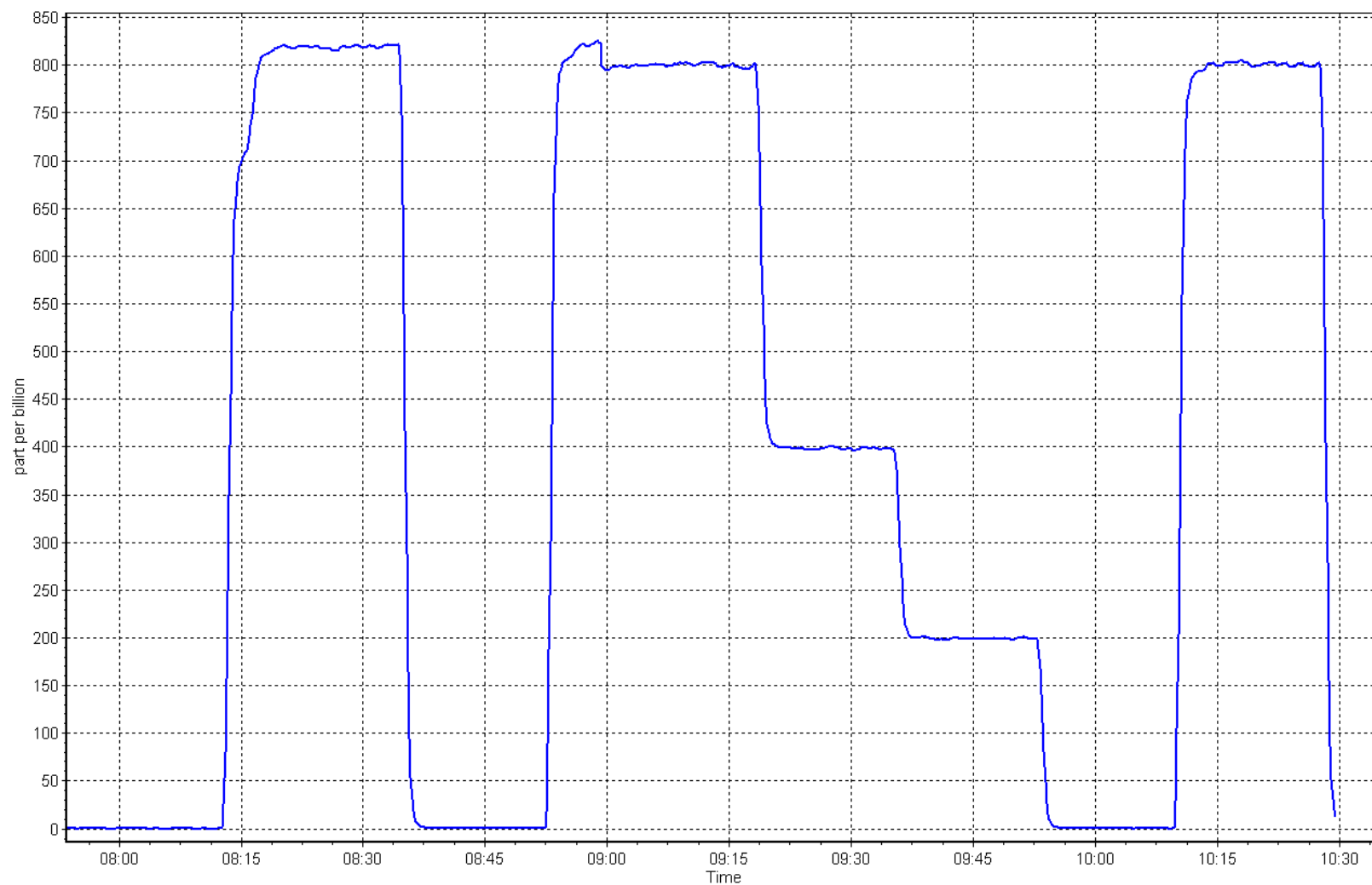
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.4	----	Correlation Coefficient	0.999997	≥0.995
799.5	798.9	1.0007	Slope	0.998675	0.90 - 1.10
399.8	398.4	1.0035	Intercept	0.040494	+/-30
199.4	199.3	1.0005			



SO2 Calibration Plot

Date: September 11, 2025

Location: Fort Hills





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Fort Hills
Calibration Date: September 12, 2025
Start time (MST): 5:46
Reason: Routine

Station number: AMS 23
Last Cal Date: August 8, 2025
End time (MST): 9:38

Calibration Standards

Cal Gas Concentration: 4.84 ppm
Cal Gas Cylinder #: DT0021910
Removed Cal Gas Conc: 4.84 ppm
Removed Gas Cyl #:
Calibrator Make/Model: API T700
ZAG Make/Model: API T701

Cal Gas Exp Date: August 28, 2027
Rem Gas Exp Date:
Diff between cyl:
Serial Number: 1222
Serial Number: 1117

Analyzer Information

Analyzer make: Thermo 43i TLE
Converter make: CDN-101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1300156232
Converter serial #: 594
Converter Temp: 800 degC

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	0.996387	1.012537	Backgd or Offset:	2.00
Calibration intercept:	-0.018048	-0.058229	Coeff or Slope:	1.010

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4917	82.6	80.0	80.5	0.993
As found Mid point	4959	41.3	40.0	40.2	0.994
As found Low point	4979	20.7	20.0	20.0	1.002
New cylinder response					
Baseline Corr As found:	80.5	Prev response:	79.66	*% change:	1.0%
Baseline Corr 2nd AF pt:	40.2	AF Slope:	1.007392	AF Intercept:	-0.078163
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999995	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4917	82.6	80.0	80.8	0.990
Mid point	4959	41.3	40.0	40.7	0.982
Low point	4979	20.7	20.0	20.1	0.997
As left zero	5000	0.0	0.0	0.1	----
As left span	4917	82.6	80.0	81.4	0.982
SO2 Scrubber Check	4920	80.3	803.0	0.1	----
Date of last scrubber change:				Ave Corr Factor	0.990
Date of last converter efficiency test:		March 13, 2024		110.3% efficiency	

Notes: SOx scrubber checked after the calibrator zero. Span adjusted.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

TRS Calibration Summary

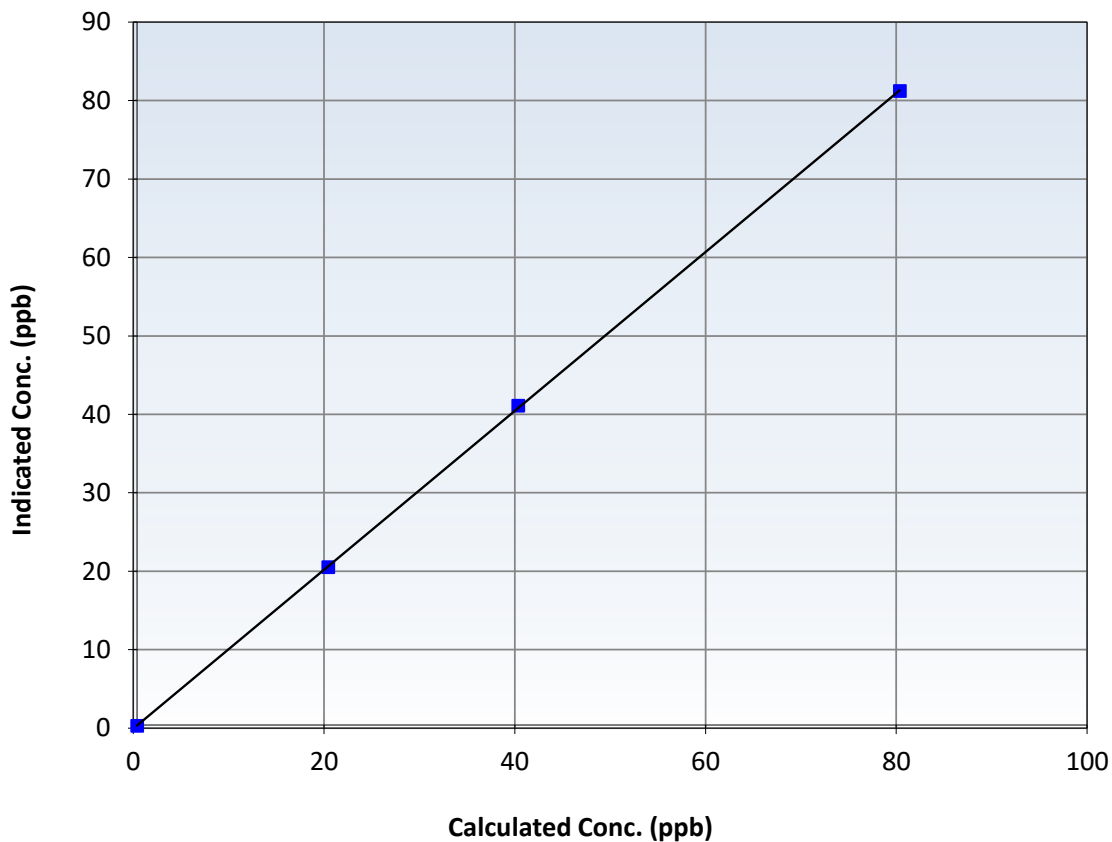
Station Information

Calibration Date:	September 12, 2025	Previous Calibration:	August 8, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	5:46	End Time (MST):	9:38
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1300156232

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999969	≥ 0.995
80.0	80.8	0.9896	Slope	1.012537	$0.90 - 1.10$
40.0	40.7	0.9822	Intercept	-0.058229	± 3
20.0	20.1	0.9970			

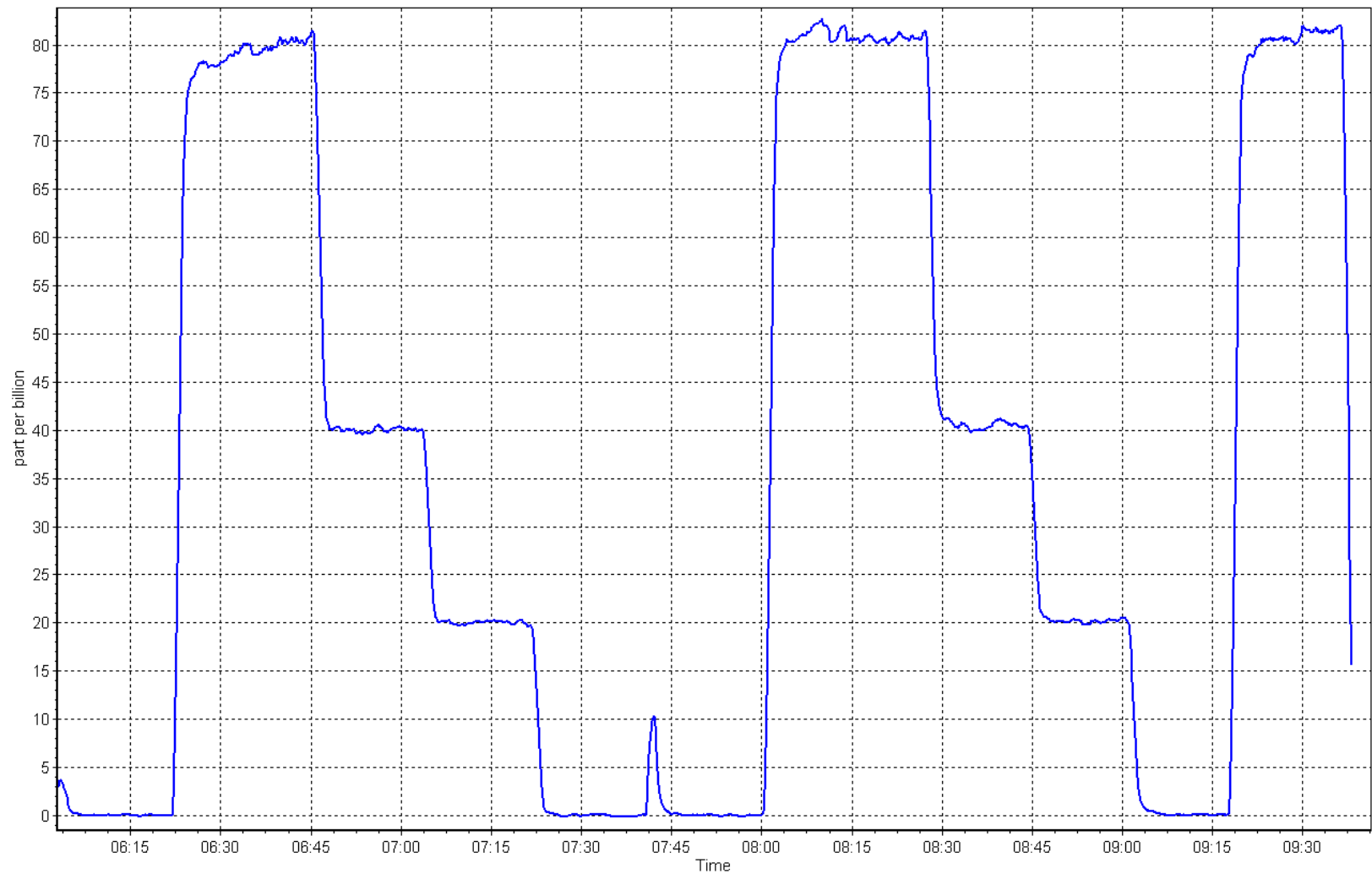
TRS Calibration Curve



TRS Calibration Plot

Date: September 12, 2025

Location: Fort Hills





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name:	Fort Hills	Station number:	AMS 23
Calibration Date:	September 11, 2025	Last Cal Date:	August 19, 2025
Start time (MST):	7:54	End time (MST):	10:29
Reason:	Routine		

Calibration Standards

Gas Cert Reference:	CC484463	Cal Gas Expiry Date:	October 9, 2032
CH ₄ Cal Gas Conc.	504.3 ppm	CH ₄ Equiv Conc.	1065.6 ppm
C ₃ H ₈ Cal Gas Conc.	204.1 ppm		
Removed Gas Cert:		Removed Gas Expiry:	
Removed CH ₄ Conc.	504.3 ppm	CH ₄ Equiv Conc.	1065.6 ppm
Removed C ₃ H ₈ 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/CH ₄ Range:	0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	3.76E-04	3.66E-04	NMHC SP Ratio:	5.81E-05
CH ₄ Retention time:	15.2	15.2	NMHC Peak Area:	153330
Zero Chromatogram:	OFF	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	79.4	16.92	17.44	0.970
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.44	Prev response	16.78	*% change	3.8%
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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4921	79.4	16.92	16.82	1.006
Mid point	4960	39.7	8.46	8.31	1.018
Low point	4980	19.8	4.22	4.17	1.012
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.4	16.92	16.75	1.010
Average Correction Factor					1.012

Notes: No maintenance done. Span adjusted.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4921	79.4	8.91	9.19	0.970
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.19	Prev response	8.83	*% change	3.9%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4921	79.4	8.91	8.86	1.006
Mid point	4960	39.7	4.46	4.39	1.015
Low point	4980	19.8	2.22	2.21	1.004
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.4	8.91	8.81	1.012
Average Correction Factor					1.008

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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4921	79.4	8.01	8.25	0.971
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.25	Prev response	7.95	*% change	3.7%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4921	79.4	8.01	7.96	1.006
Mid point	4960	39.7	4.00	3.92	1.022
Low point	4980	19.8	2.00	1.96	1.020
As left zero	5000	0.0	0.00	0.00	----
As left span	4921	79.4	8.01	7.94	1.008
Average Correction Factor					1.016

Calibration Statistics

	Start	Finish
THC Cal Slope:	0.991892	0.996287
THC Cal Offset:	-0.004995	0.007225
CH ₄ Cal Slope:	0.994765	0.996877
CH ₄ Cal Offset:	-0.018199	-0.013595
NMHC Cal Slope:	0.989412	0.995745
NMHC Cal Offset:	0.012804	0.020620

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

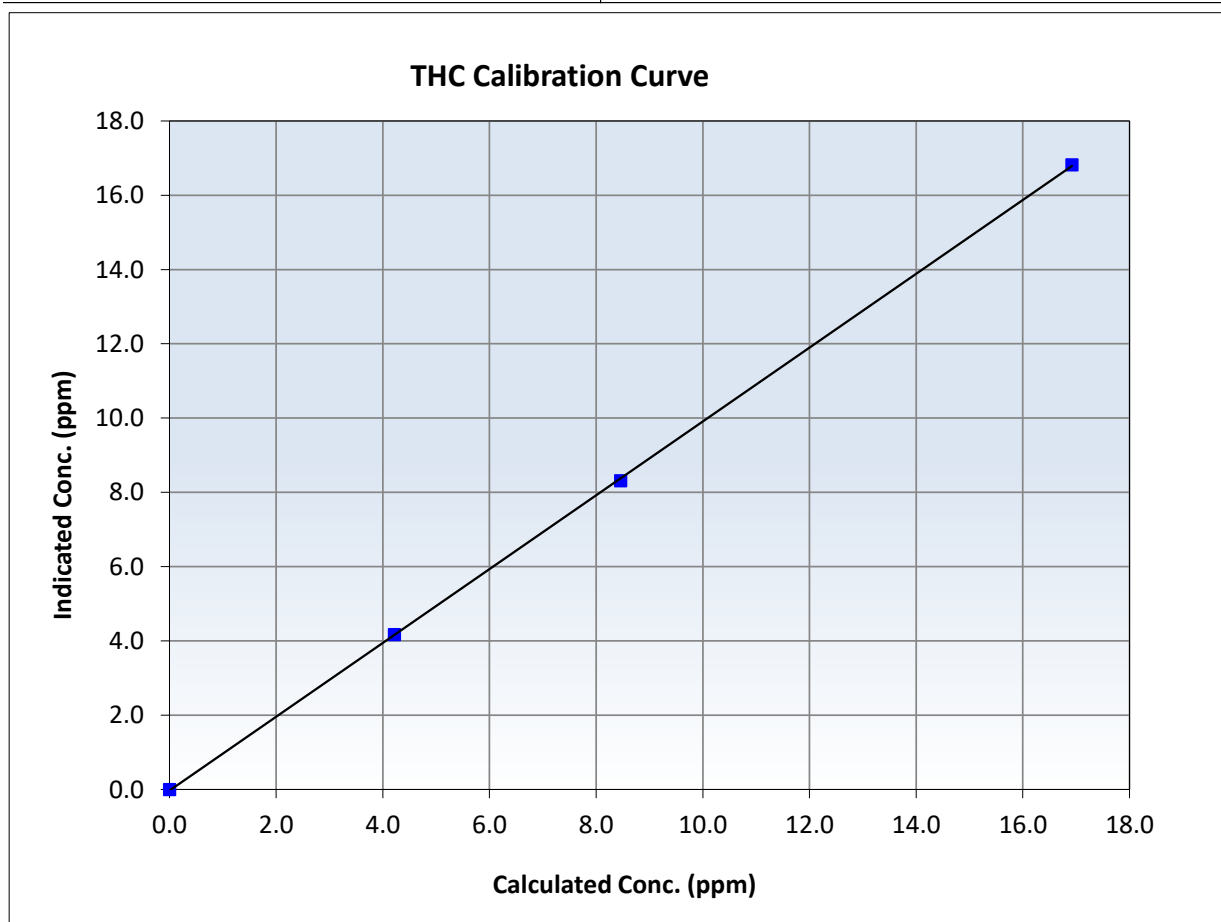
THC Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 19, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:54	End Time (MST):	10:29
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620777

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.00	0.00	----	Correlation Coefficient	0.999955		≥ 0.995
16.92	16.82	1.0059	Slope	0.993891		0.90 - 1.10
8.46	8.31	1.0182	Intercept	-0.029794		+/-0.5
4.22	4.17	1.0117				





Wood Buffalo Environmental Association

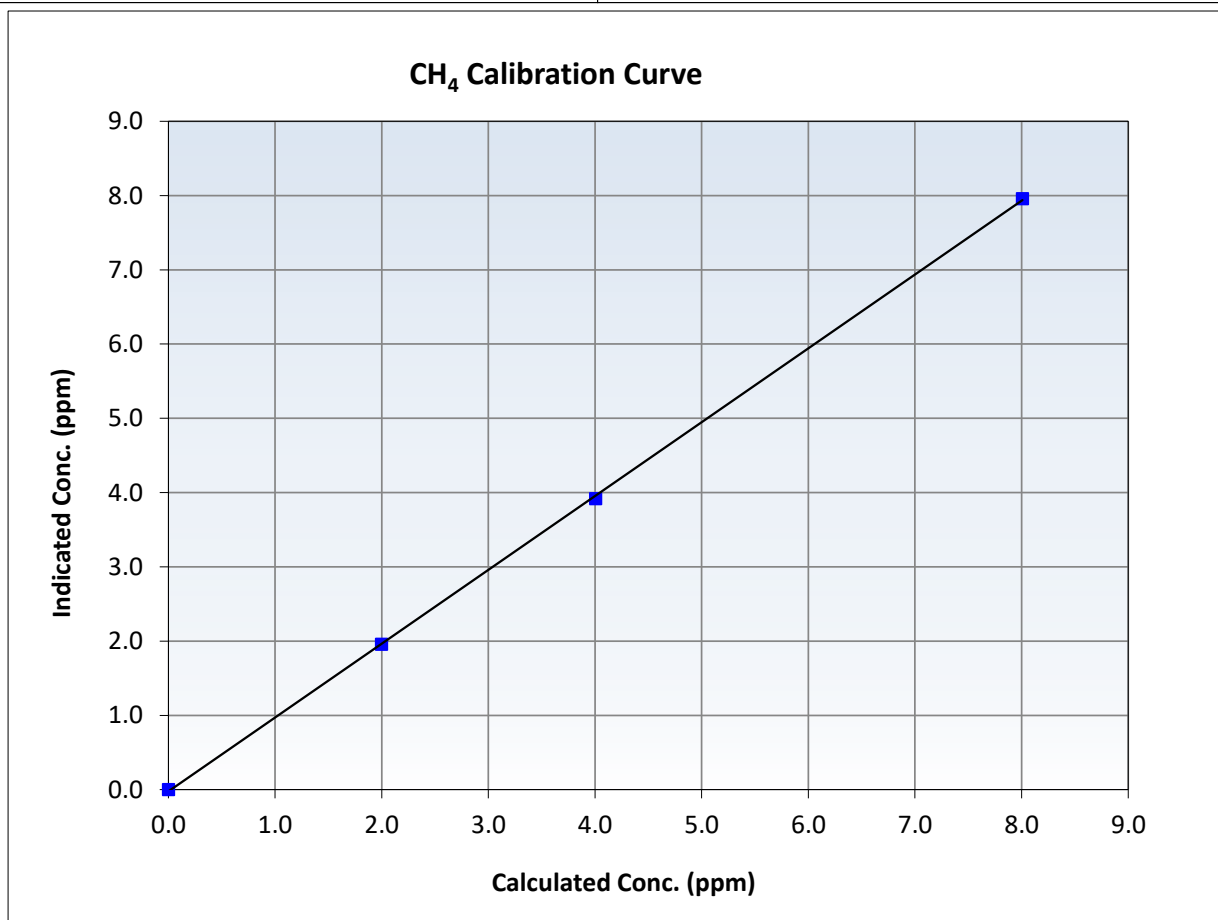
CH₄ Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 19, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:54	End Time (MST):	10:29
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620777

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999924	<i>≥0.995</i>
8.01	7.96	1.0060	Slope	0.994366	<i>0.90 - 1.10</i>
4.00	3.92	1.0220	Intercept	-0.023801	<i>+/-0.5</i>
2.00	1.96	1.0205			





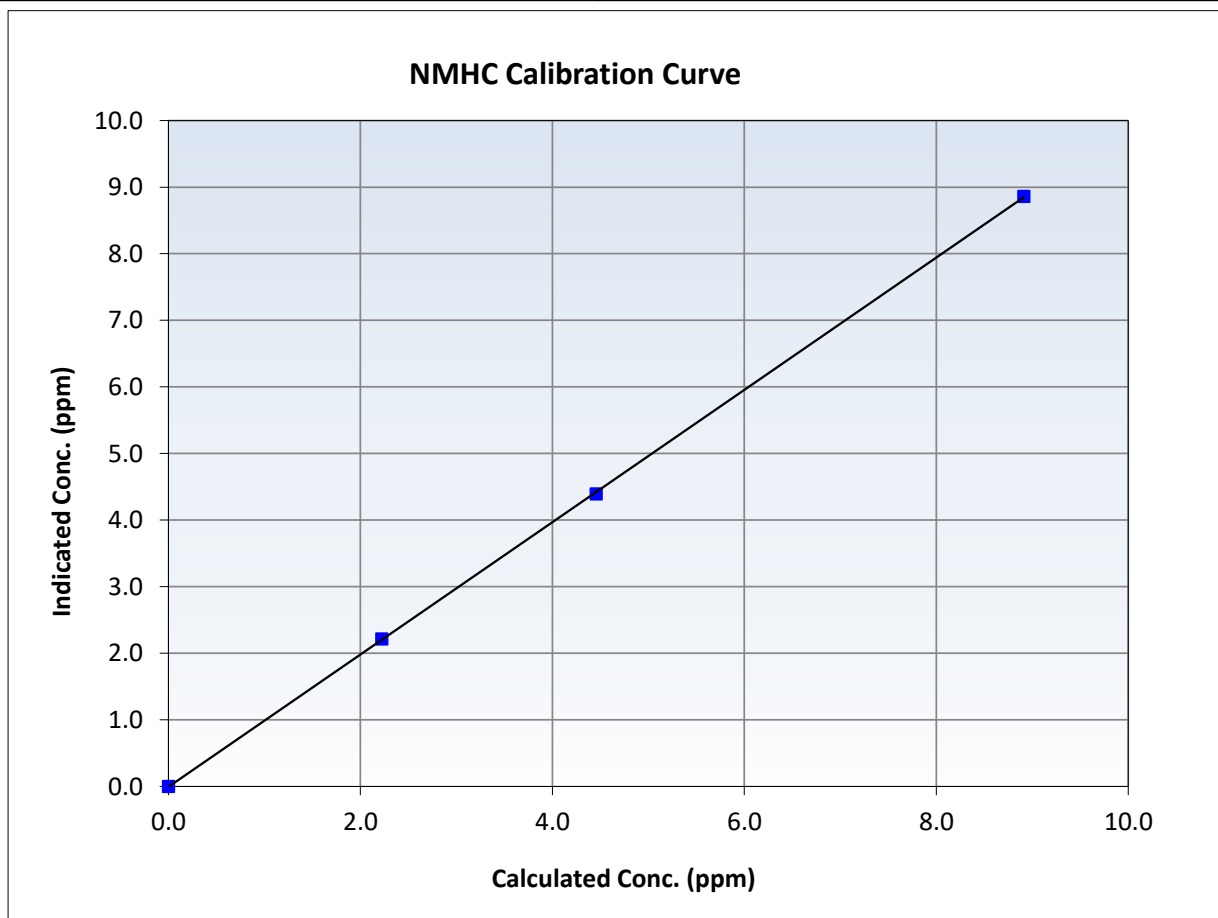
Wood Buffalo Environmental Association NMHC Calibration Summary

Station Information

Calibration Date:	September 11, 2025	Previous Calibration:	August 19, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	7:54	End Time (MST):	10:29
Analyzer make:	Thermo 55i	Analyzer serial #:	12227620777

Calibration Data

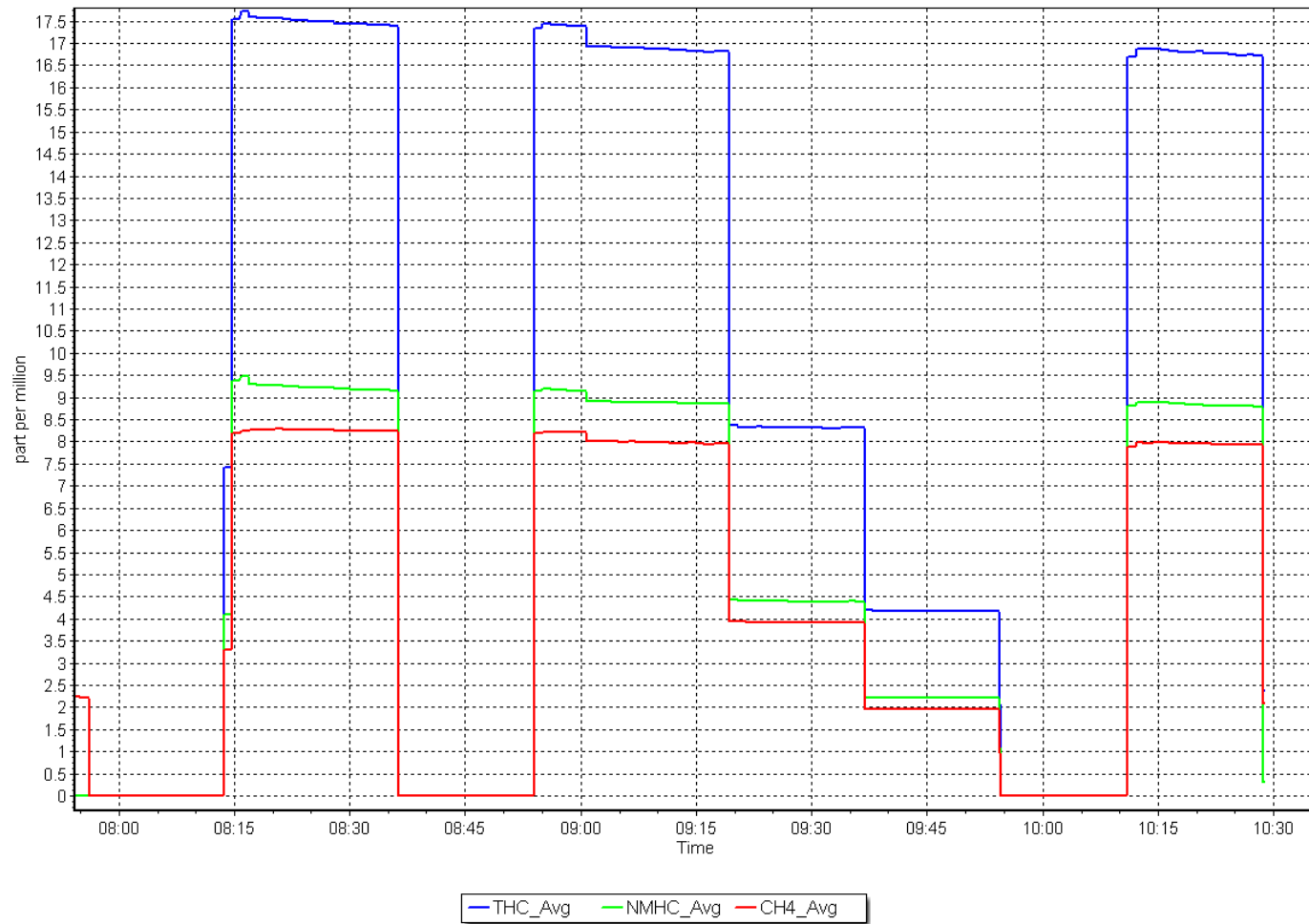
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999972	<i>≥0.995</i>
8.91	8.86	1.0058	Slope	0.993580	<i>0.90 - 1.10</i>
4.46	4.39	1.0148	Intercept	-0.006192	<i>+/-0.5</i>
2.22	2.21	1.0039			



NMHC Calibration Plot

Date: September 11, 2025

Location: Fort Hills





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Fort Hills
Station number: AMS 23
Calibration Date: September 9, 2025
Last Cal Date: August 18, 2025
Start time (MST): 6:46
End time (MST): 11:07
Reason: Routine

Calibration Standards

NO Gas Cylinder #: CC358149
NOX Cal Gas Conc: 60.30 ppm
Removed Cylinder #:
Removed Gas NOX Conc: 60.30 ppm
NOX gas Diff:
Calibrator Model: API T700
ZAG make/model: API T701
Cal Gas Expiry Date: January 5, 2032
NO Cal Gas Conc: 60.10 ppm
Removed Gas Exp Date:
Removed Gas NO Conc: 60.10 ppm
NO gas Diff:
Serial Number: 1222
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.3	-0.3	0.1	----	----
AF High point	4934	66.3	799.5	796.9	2.7	825.8	823.5	2.4	0.9678	0.9673
AF Mid point										
AF Low point										
New cyl resp										
Previous Response	NO _x = 800.3 ppb	NO = 800.5 ppb	* = > +/-5% change initiates investigation			*Percent Change	NO _x = 3.1%			
Baseline Corr 1st pt	NO _x = 826.1 ppb	NO = 823.8 ppb	<u>As Found Statistics</u>			*Percent Change	NO = 2.8%			
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb	As found NO _x r ² :			Nx SI:	Nx Int:			
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb	As found NO r ² :			NO SI:	NO Int:			
			As found NO ₂ r ² :			NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1152430007

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.008	0.975	NO bkgnd or offset:	3.2	2.8
NOX coeff or slope:	0.989	0.992	NOX bkgnd or offset:	3.6	3.2
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	147.8	147.8

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.995005	1.001155
NO _x Cal Offset:	4.743933	-0.133957
NO Cal Slope:	1.000608	1.002620
NO Cal Offset:	3.144459	-1.532494
NO ₂ Cal Slope:	0.998306	0.998169
NO ₂ Cal Offset:	-1.747781	-0.341510

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	----	----
High point	4934	66.3	799.5	796.9	2.7	800.6	798.5	2.1	0.9987	0.9980
Mid point	4967	33.2	400.4	399.0	1.3	400.0	396.9	3.2	1.0009	1.0054
Low point	4983	16.6	200.2	199.5	0.7	200.6	197.6	3.1	0.9981	1.0099
As left zero	5000	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	----	----
As left span	4934	66.3	799.5	397.8	401.7	800.5	397.8	402.7	0.9988	1.0000
Average Correction Factor									0.9992	1.0044

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.0	----	----
High GPT point	795.4	395.6	402.5	401.7	1.0019	99.8%
Mid GPT point	795.4	597.6	200.5	199.1	1.0068	99.3%
Low GPT point	795.4	696.8	101.3	100.7	1.0055	99.5%
Average Correction Factor					1.0047	99.5%

Notes: No maintenance done. Zero and Span adjusted.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

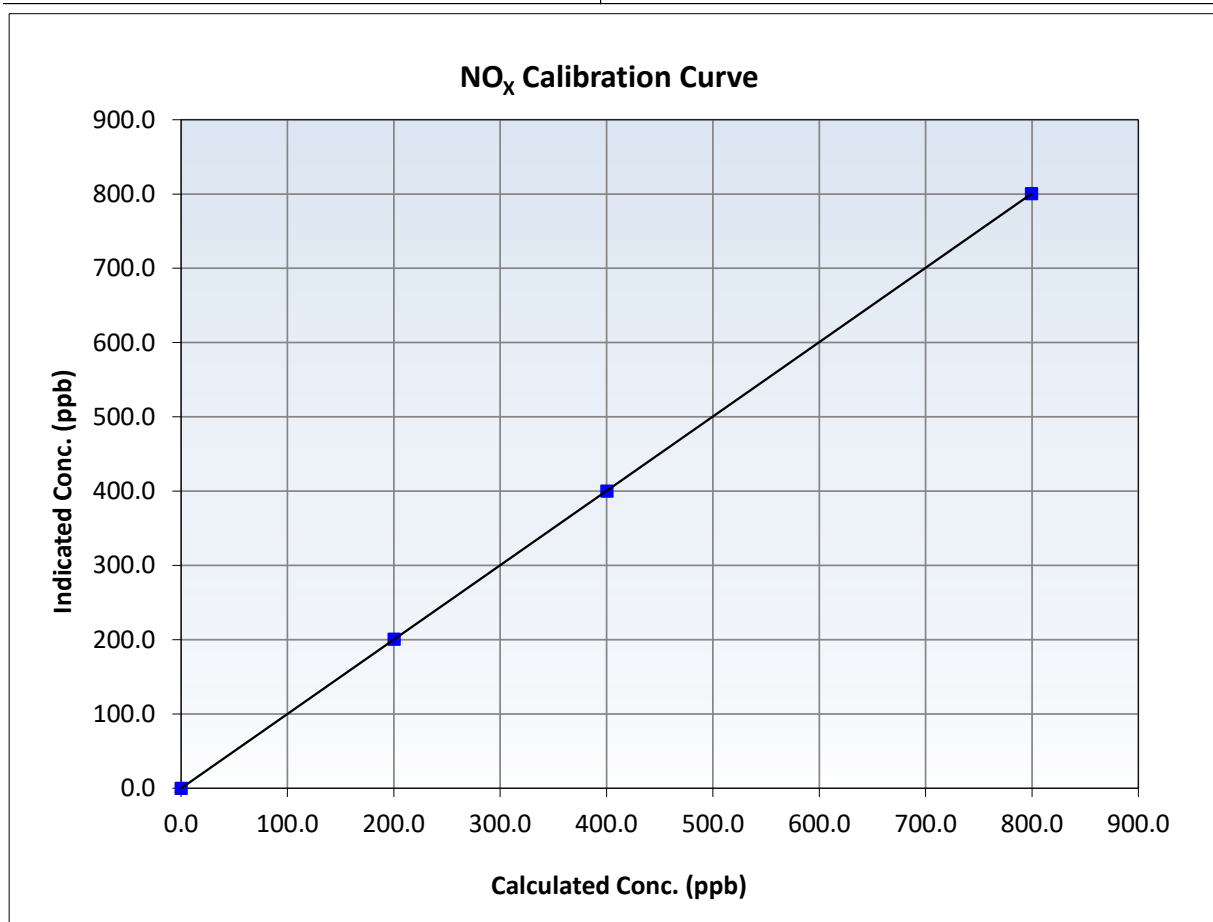
NO_x Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 18, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	6:46	End Time (MST):	11:07
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430007

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999998	≥0.995
799.5	800.6	0.9987	Slope	1.001155	0.90 - 1.10
400.4	400.0	1.0009	Intercept	-0.133957	+/-20
200.2	200.6	0.9981			





Wood Buffalo Environmental Association

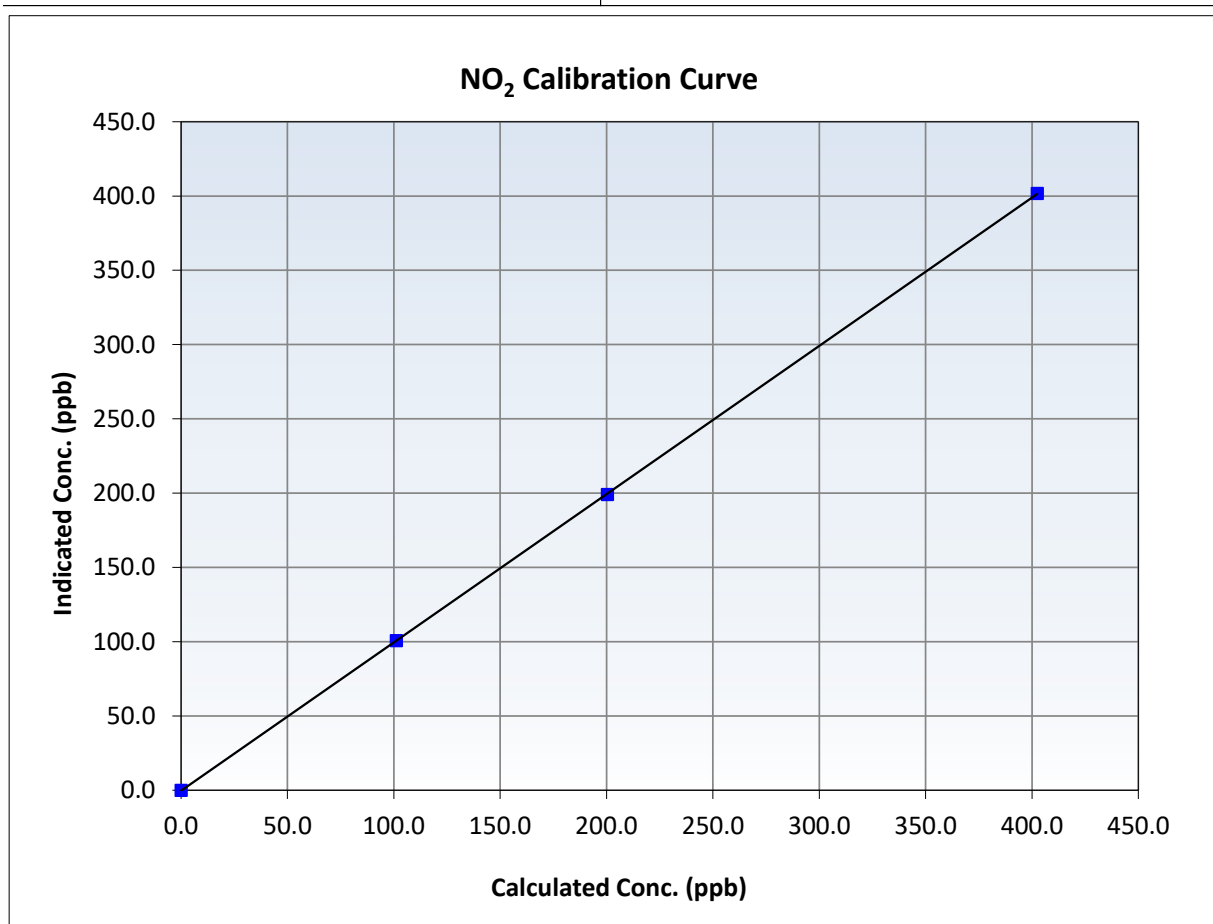
NO₂ Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 18, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	6:46	End Time (MST):	11:07
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430007

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999993	≥0.995
402.5	401.7	1.0019	Slope	0.998169	0.90 - 1.10
200.5	199.1	1.0068	Intercept	-0.341510	+/-20
101.3	100.7	1.0055			





Wood Buffalo Environmental Association

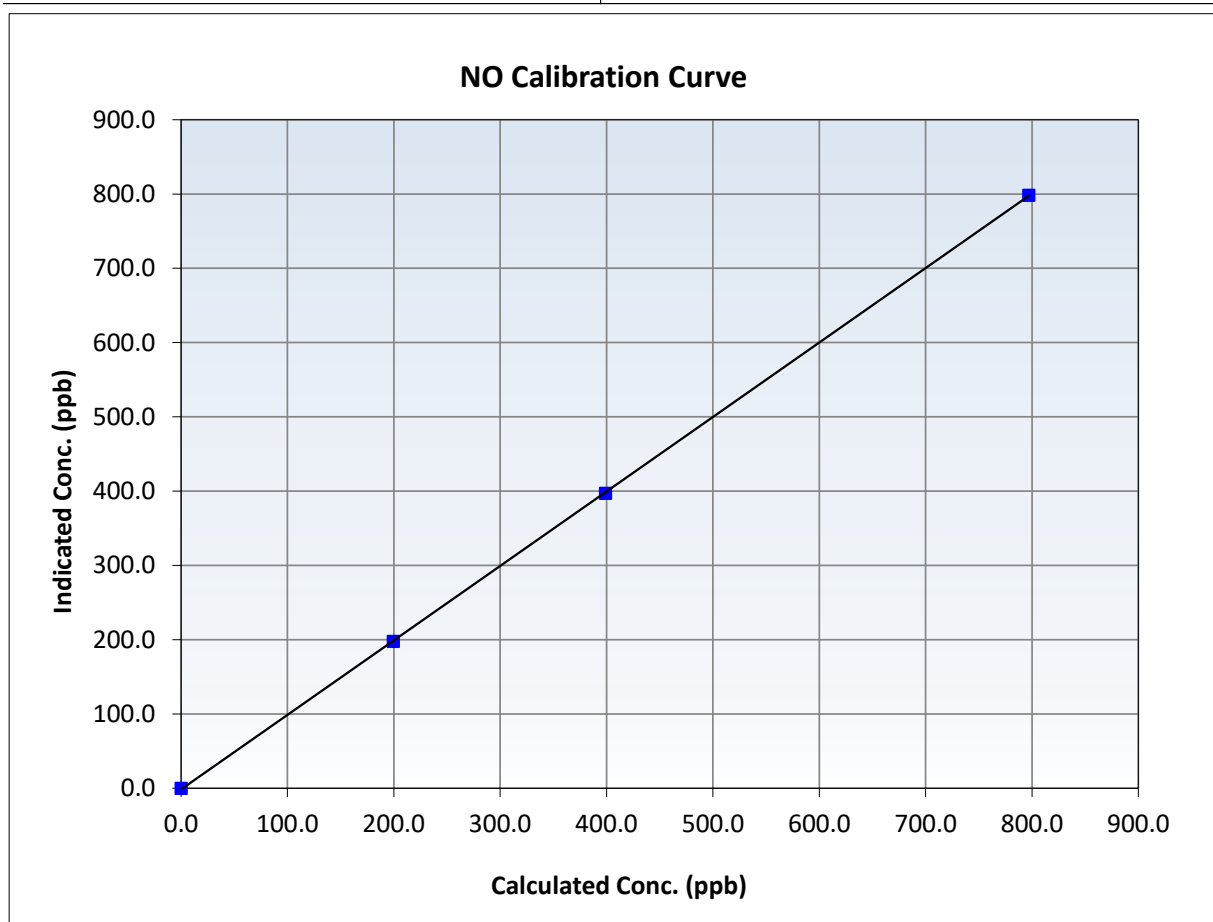
NO Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 18, 2025
Station Name:	Fort Hills	Station Number:	AMS 23
Start Time (MST):	6:46	End Time (MST):	11:07
Analyzer make:	Thermo 42i	Analyzer serial #:	1152430007

Calibration Data

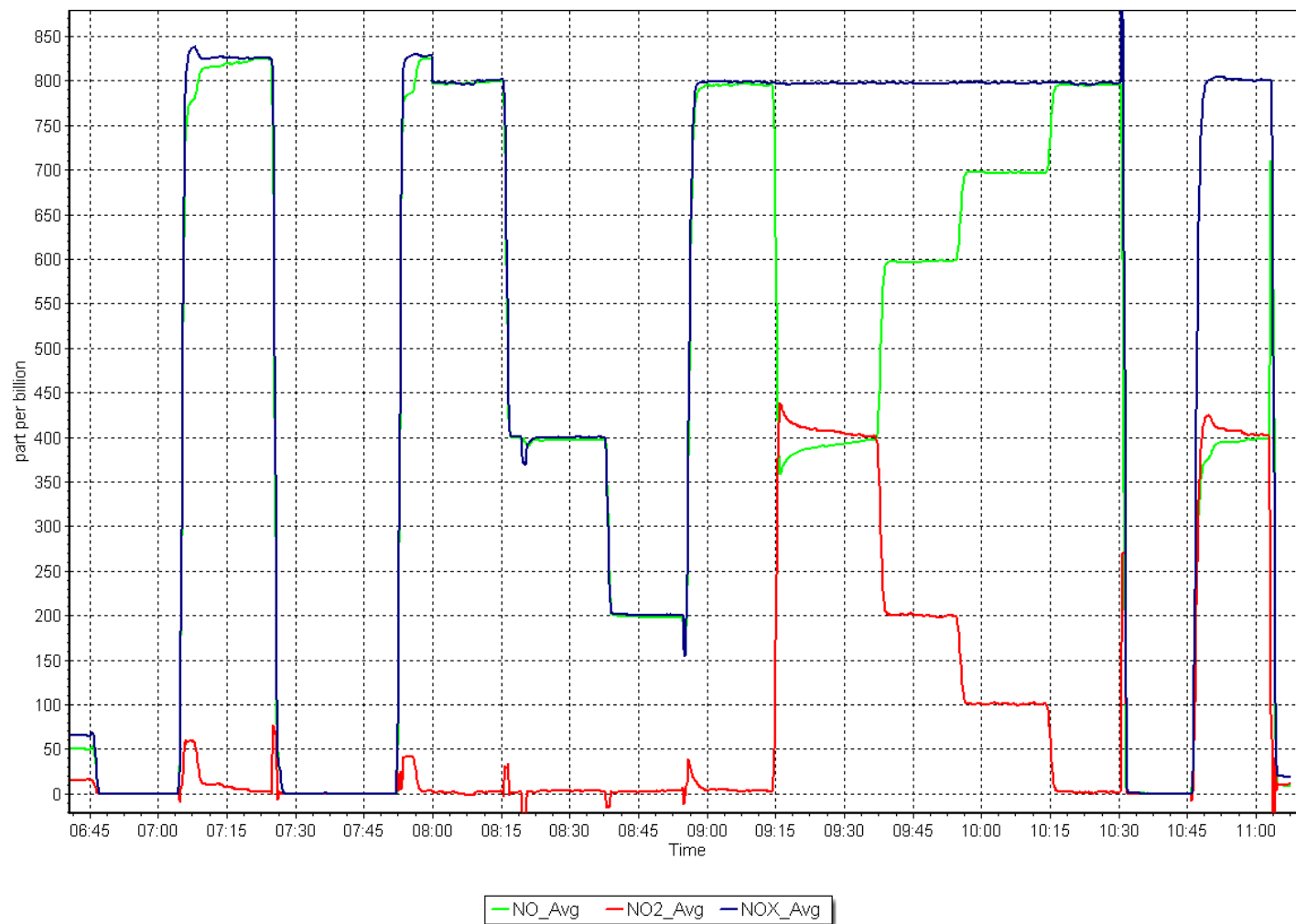
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999980	≥ 0.995
796.9	798.5	0.9980	Slope	1.002620	$0.90 - 1.10$
399.0	396.9	1.0054	Intercept	-1.532494	± 20
199.5	197.6	1.0099			



NO_x Calibration Plot

Date: September 9, 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: September 11, 2025 Last Cal Date: August 19, 2025
Start time (MST): 7:00 End time (MST): 7:54

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)	8.6	8.3	8.6	☐	+/- 2 °C
P (mmHg)	735.3	734.7	735.3	☐	+/- 10 mmHg
Flow (LPM)	4.97	4.95	4.97	☐	+/- 0.25 LPM
PW% (pump)	53	----	51	☐	>80%
Zero Verification	PM w/o HEPA: _____	7.3	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: 10.9 Expiry Date: 16-Jul-26
Lot No.: 100128-050-050

Parameter	As found	Post maintenance	As left	Adjusted	(Limits)
PMT Peak Test	9.1	11.4	10.8	☐	+/- 0.5

Date Optical Chamber Cleaned: September 11, 2025
Date Disposable Filter Changed: September 11, 2025

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

Annual Maintenance

Date Sample Tube Cleaned: September 11, 2025
Date RH/T Sensor Cleaned: September 11, 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 SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Waskow ohci Pimatisiwin Station number: AMS 25
Calibration Date: September 23, 2025 Last Cal Date: August 14, 2025
Start time (MST): 7:21 End time (MST): 10:11
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002497	1.001884	Backgd or Offset:	10.5	10.5
Calibration intercept:	0.588229	0.027877	Coeff or Slope:	1.038	1.038

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4920	80.5	800.1	798.8	1.002
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	798.6	Previous response	802.7	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.3	----
High point	4920	80.5	800.1	801.7	0.998
Mid point	4960	40.2	399.6	400.4	0.998
Low point	4980	20.1	199.8	199.8	1.000
As left zero	5000	0.0	0.0	0.5	----
As left span	4920	80.5	800.1	802.6	0.997
Average Correction Factor:					0.999

Notes: No maintenance or adjustments done.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

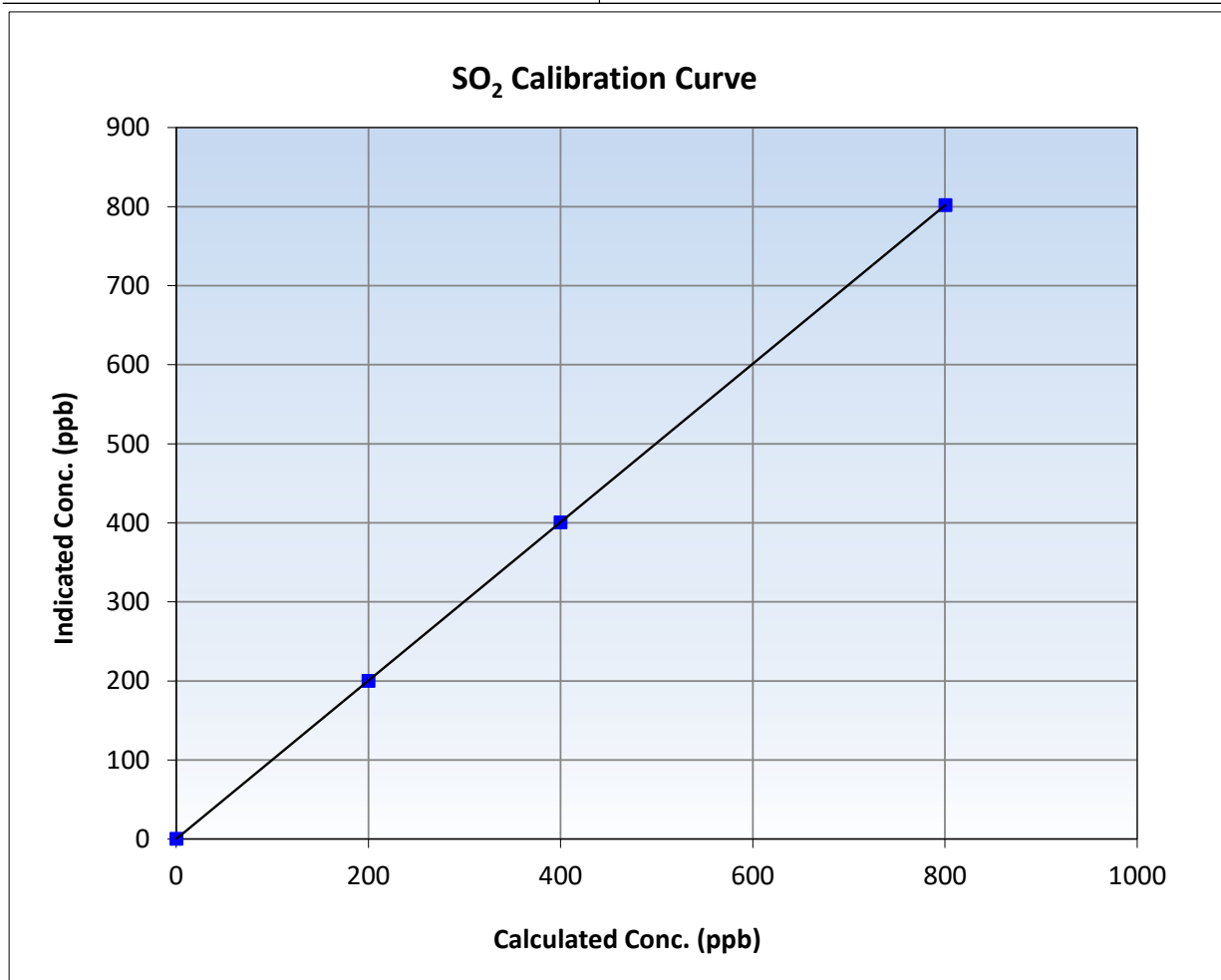
SO₂ Calibration Summary

Station Information

Calibration Date:	September 23, 2025	Previous Calibration:	August 14, 2025
Station Name:	Waskow ohci Pimatisiwin	Station Number:	AMS 25
Start Time (MST):	7:21	End Time (MST):	10:11
Analyzer make:	Thermo 43i	Analyzer serial #:	1118148497

Calibration Data

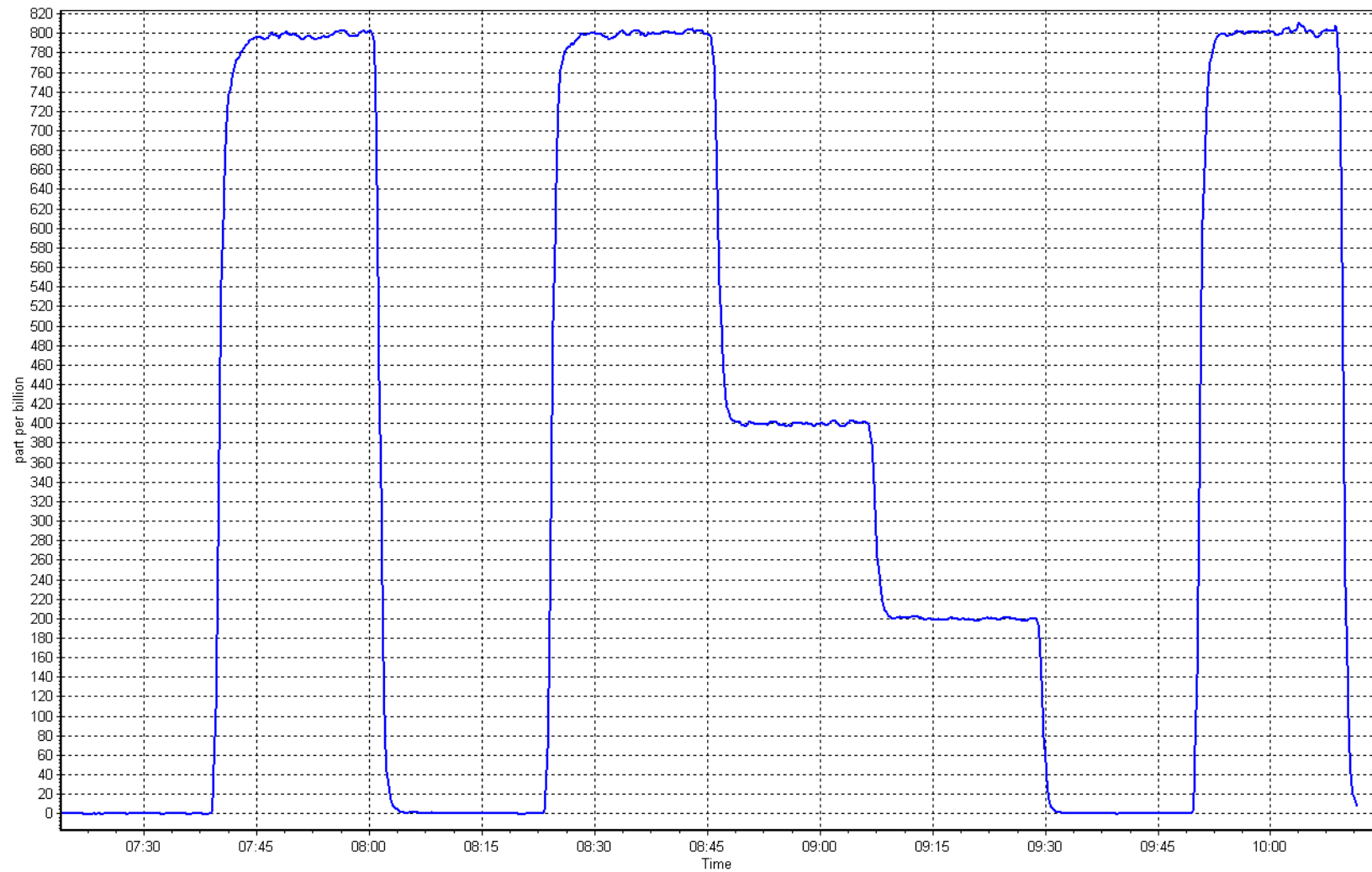
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.3	----	Correlation Coefficient	0.999999	≥0.995
800.1	801.7	0.9980	Slope	1.001884	0.90 - 1.10
399.6	400.4	0.9979	Intercept	0.027877	+/-30
199.8	199.8	0.9999			



SO2 Calibration Plot

Date: September 23, 2025

Location: Waskow ohci Pimatisiwin





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: Waskow ohci Pimatisiwin Station number: AMS 25
Calibration Date: September 10, 2025 Last Cal Date: August 21, 2025
Start time (MST): 6:38 End time (MST): 10:51
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	0.991939	0.984518	Backgd or Offset:	3.32
Calibration intercept:	0.242321	0.302144	Coeff or Slope:	1.102

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4919	80.5	80.0	79.9	1.002
As found Mid point	4960	40.3	40.1	40.0	1.001
As found Low point	4980	20.1	20.0	20.1	0.994
New cylinder response					
Baseline Corr As found:	79.9	Prev response:	79.62	*% change:	0.3%
Baseline Corr 2nd AF pt:	40.0	AF Slope:	0.997794	AF Intercept:	0.062277
Baseline Corr 3rd AF pt:	20.1	AF Correlation:	0.999996	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4919	80.5	80.0	79.0	1.013
Mid point	4960	40.3	40.1	39.9	1.004
Low point	4980	20.1	20.0	20.0	0.999
As left zero	5000	0.0	0.0	0.2	----
As left span	4920	80.0	800.0	805.0	0.994
SO2 Scrubber Check	4920	80.0	800.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	1.005
Date of last converter efficiency test:		February 12, 2025		111.0% efficiency	

Notes: SOx Scrubber checked after the calibrator zero. No adjustments done.

Calibration Performed By: Melissa Lemay



Wood Buffalo Environmental Association

H₂S Calibration Summary

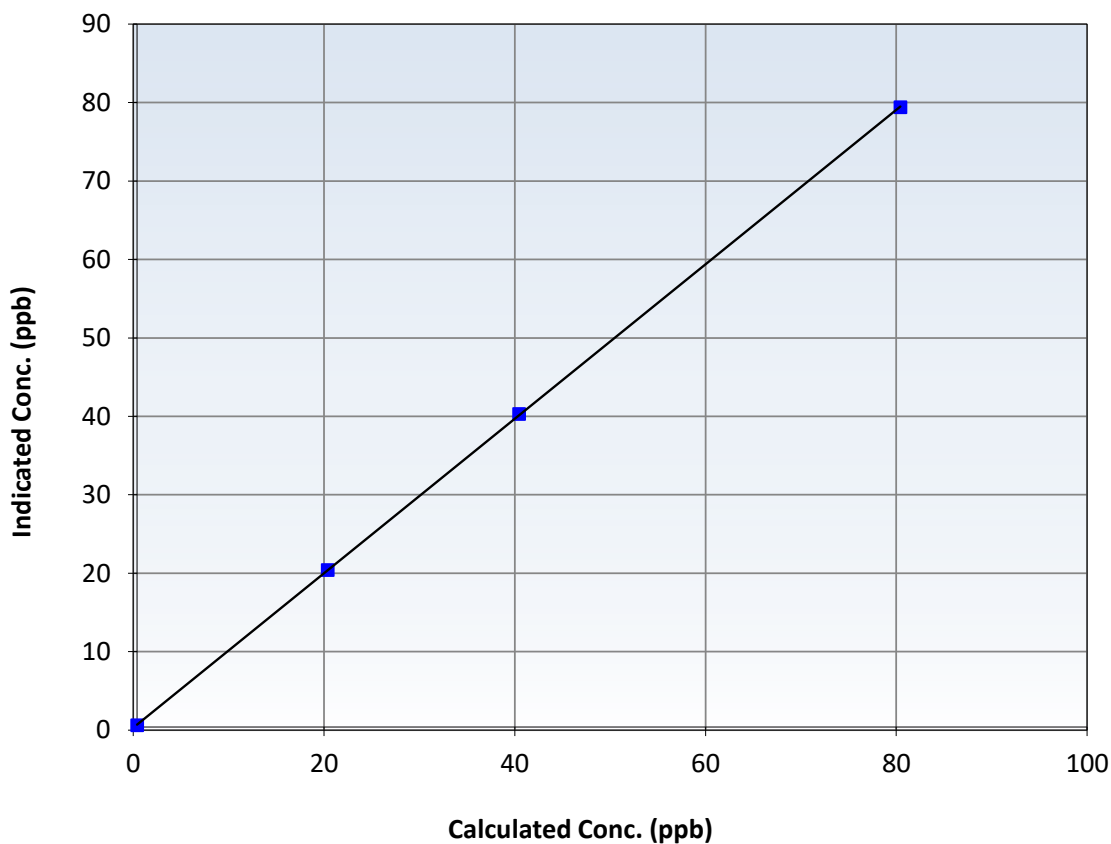
Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 21, 2025
Station Name:	Waskow ohci Pimatisiwin	Station Number:	10:47:00 AM
Start Time (MST):	6:38	End Time (MST):	10:51
Analyzer make:	Thermo 43i-LTE	Analyzer serial #:	1170050146

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999987	≥ 0.995
80.0	79.0	1.0130	Slope	0.984518	$0.90 - 1.10$
40.1	39.9	1.0039	Intercept	0.302144	± 3
20.0	20.0	0.9990			

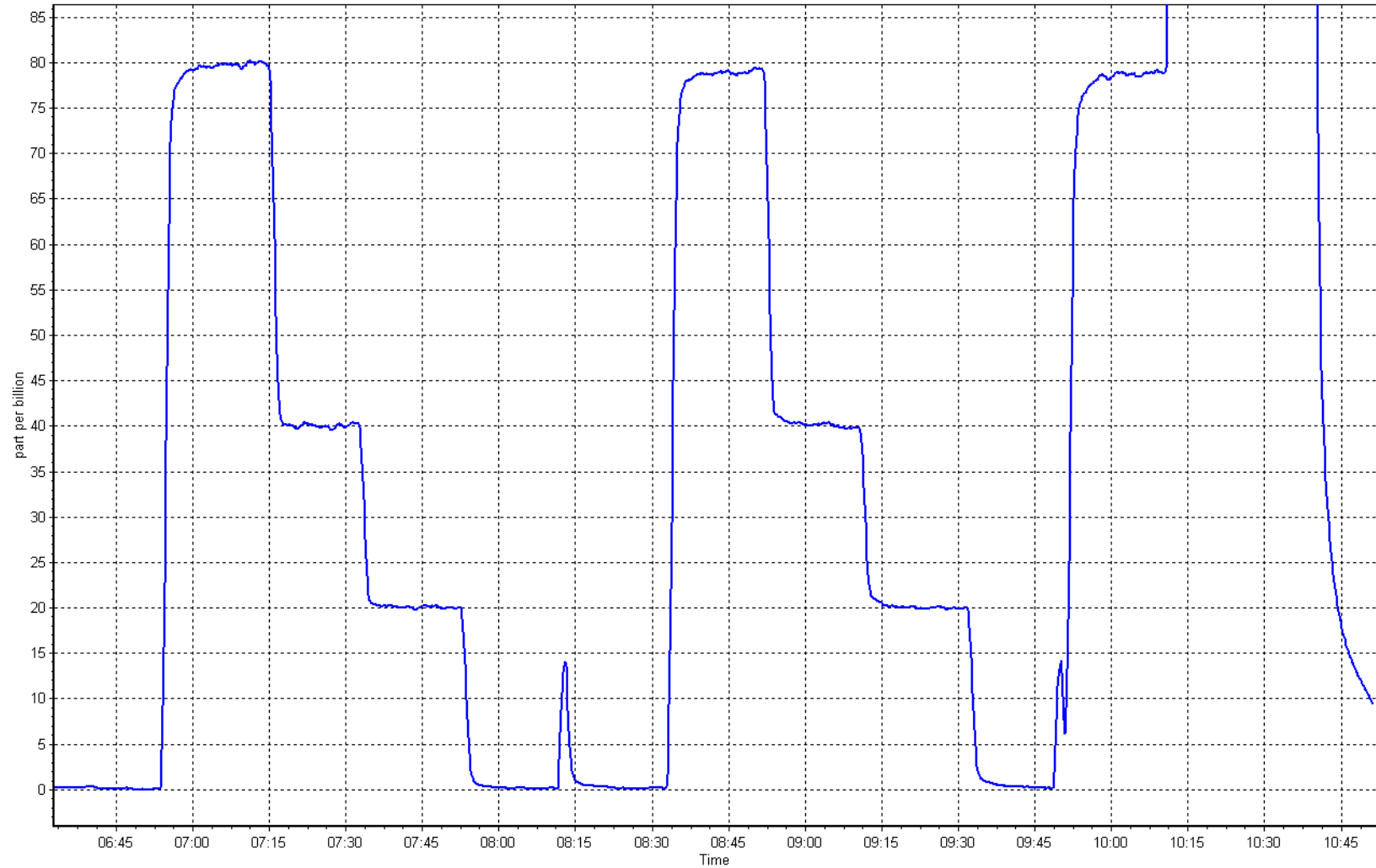
H₂S Calibration Curve



H₂S Calibration Plot

Date: September 10, 2025

Location: Waskow ohci Pimatisiwin





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS27
JACKFISH 2/3
SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Jackfish 2/3 Station number: AMS 27
Calibration Date: September 9, 2025 Last Cal Date: August 15, 2025
Start time (MST): 11:10 End time (MST): 14:39
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.000061	1.005262	Backgd or Offset:	9.3	9.3
Calibration intercept:	0.622178	0.502931	Coeff or Slope:	0.907	0.907

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.1	----
As found High point	4913	78.9	799.4	801.3	0.998
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	801.2	Previous response	800.1	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4913	78.9	799.4	804.2	0.994
Mid point	4955	39.5	400.0	402.1	0.995
Low point	4971	19.7	199.7	202.1	0.988
As left zero	5000	0.0	0.0	0.1	----
As left span	4913	78.9	799.4	806.7	0.991
Average Correction Factor:					0.992

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

Calibration Performed By: Mohammed Kashif



Wood Buffalo Environmental Association

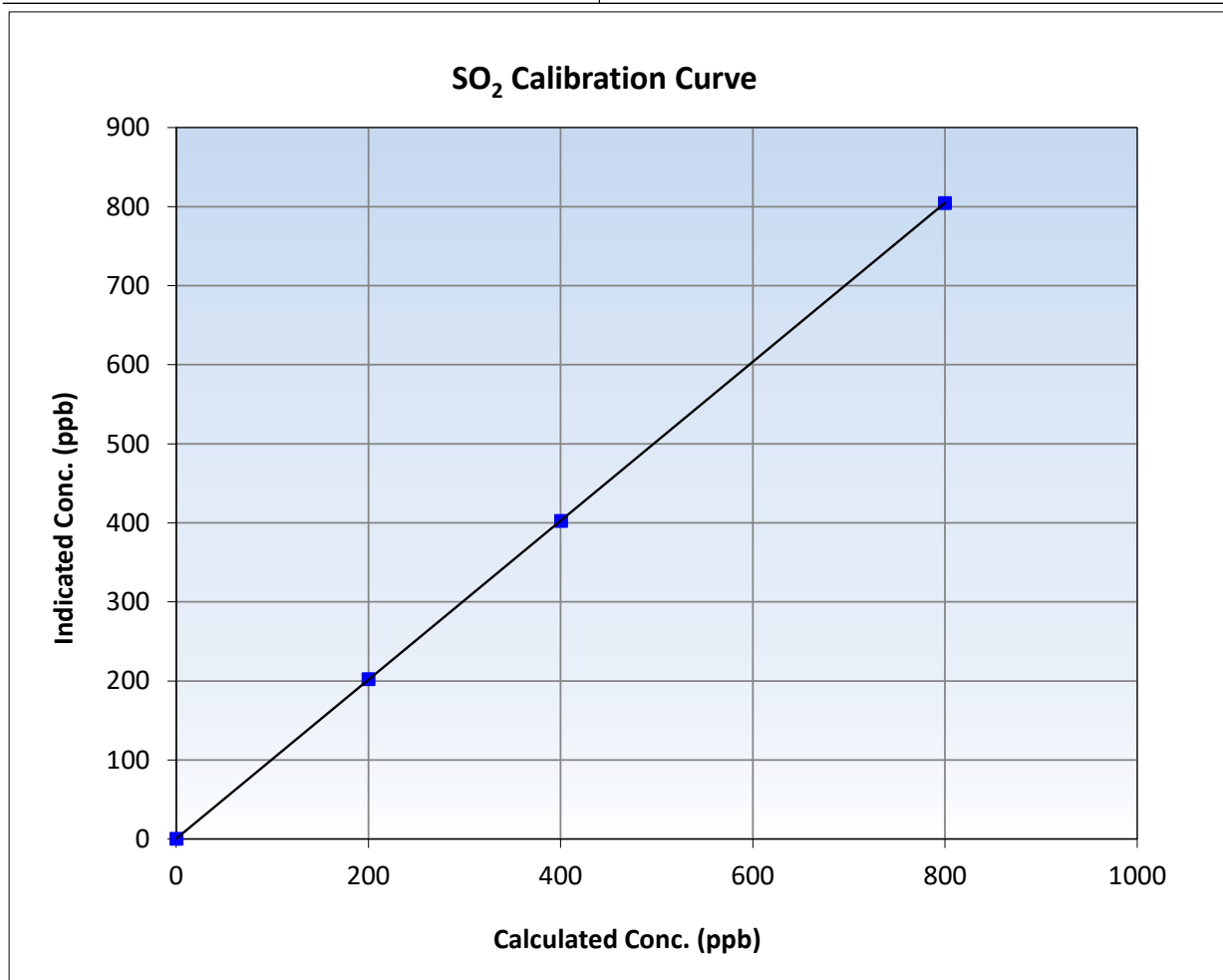
SO₂ Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 15, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	11:10	End Time (MST):	14:39
Analyzer make:	Thermo 43iQ-TL	Analyzer serial #:	12124313138

Calibration Data

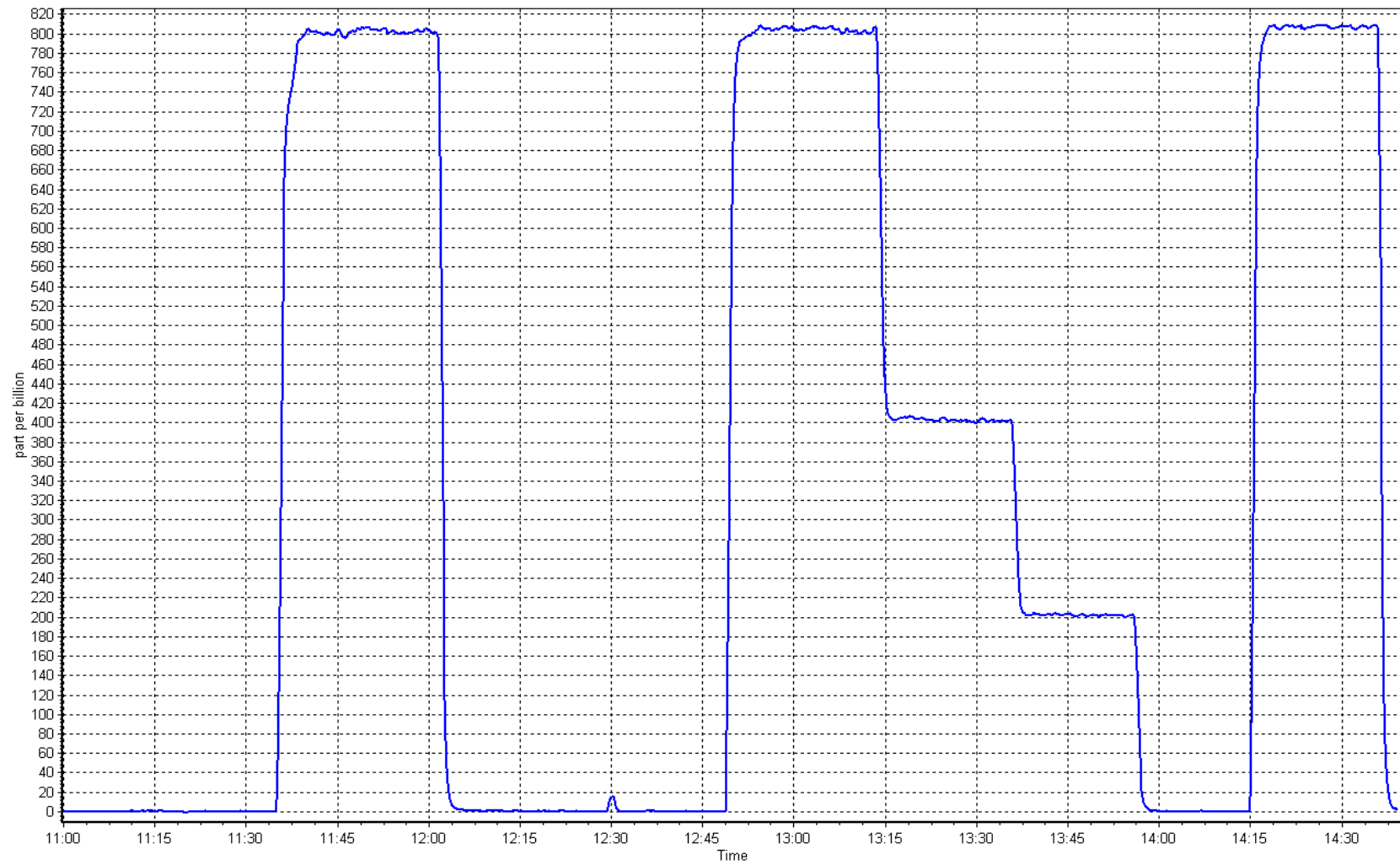
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999996	≥0.995
799.4	804.2	0.9941	Slope	1.005262	0.90 - 1.10
400.0	402.1	0.9948	Intercept	0.502931	+/-30
199.7	202.1	0.9879			



SO2 Calibration Plot

Date: September 9, 2025

Location: Jackfish 2/3





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: Jackfish 2/3
Calibration Date: September 18, 2025
Start time (MST): 11:47
Reason: Routine

Station number: AMS 27
Last Cal Date: August 18, 2025
End time (MST): 17:01

Calibration Standards

Cal Gas Concentration: 4.87 ppm
Cal Gas Cylinder #: CC523090
Removed Cal Gas Conc: 4.87 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701H

Cal Gas Exp Date: September 5, 2027
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 5252
Serial Number: 268

Analyzer Information

Analyzer make: Thermo 43iQ
Converter make: Global G150
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 12228021055
Converter serial #: 2022-195
Converter Temp: 325 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.017446	1.015588	Backgd or Offset:	3.26	3.26
Calibration intercept:	0.075888	0.115904	Coeff or Slope:	1.228	1.228

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4918	82.1	80.0	79.7	1.002
As found Mid point	4951	41.0	40.0	40.0	0.997
As found Low point	4973	20.5	20.0	20.1	0.990
New cylinder response					
Baseline Corr As found:	79.8	Prev response:	81.43	*% change:	-2.0%
Baseline Corr 2nd AF pt:	40.1	AF Slope:	0.997152	AF Intercept:	0.035960
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4918	82.1	80.0	81.3	0.984
Mid point	4951	41.0	40.0	40.7	0.983
Low point	4973	20.5	20.0	20.6	0.971
As left zero	5000	0.0	0.0	0.2	----
As left span	4911	82.0	80.0	87.7	0.912
SO2 Scrubber Check	4915	78.9	790.0	0.0	----
Date of last scrubber change:	21-Feb-25		Ave Corr Factor		0.979
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

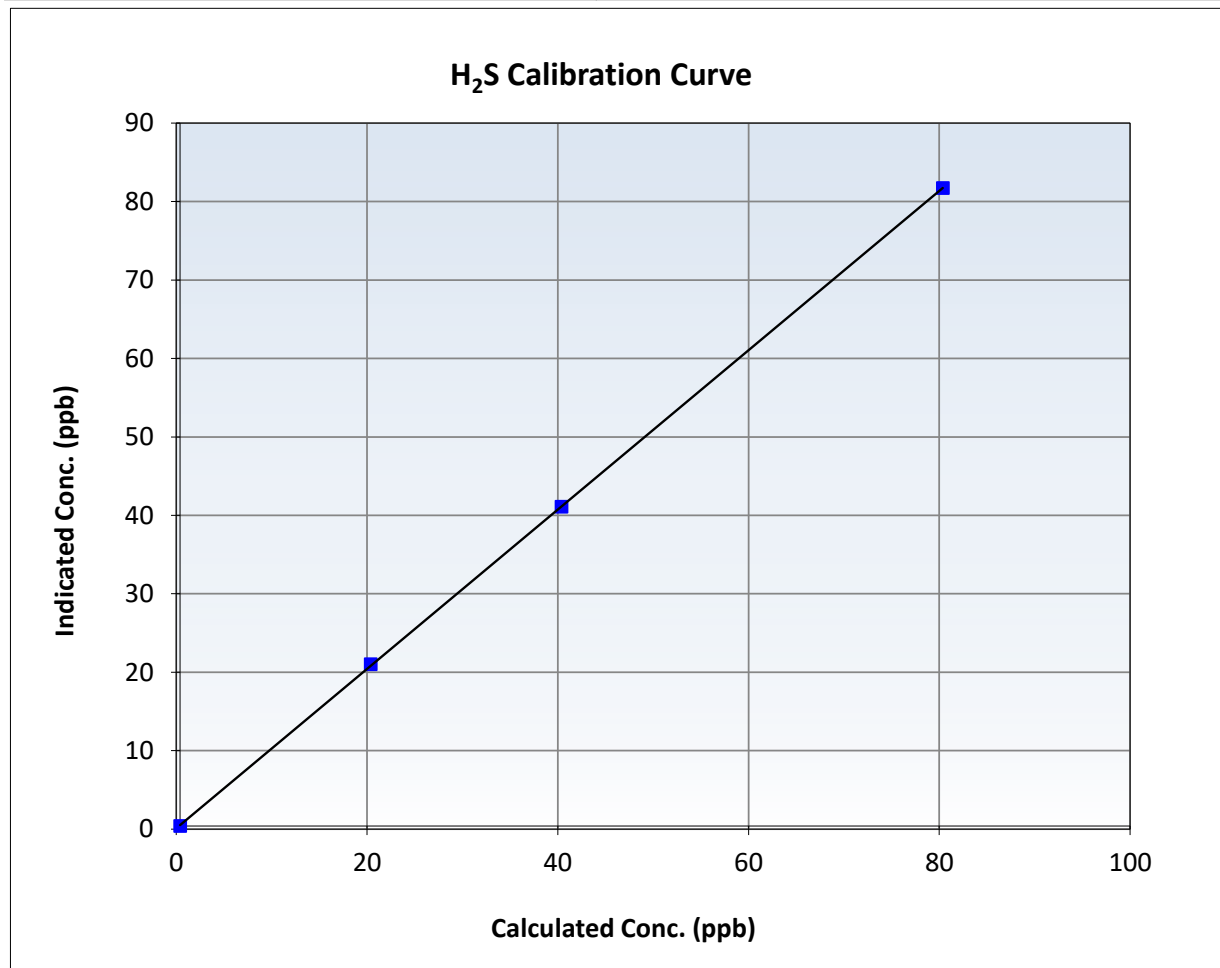
H₂S Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 18, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	11:47	End Time (MST):	17:01
Analyzer make:	Thermo 43iQ	Analyzer serial #:	12228021055

Calibration Data

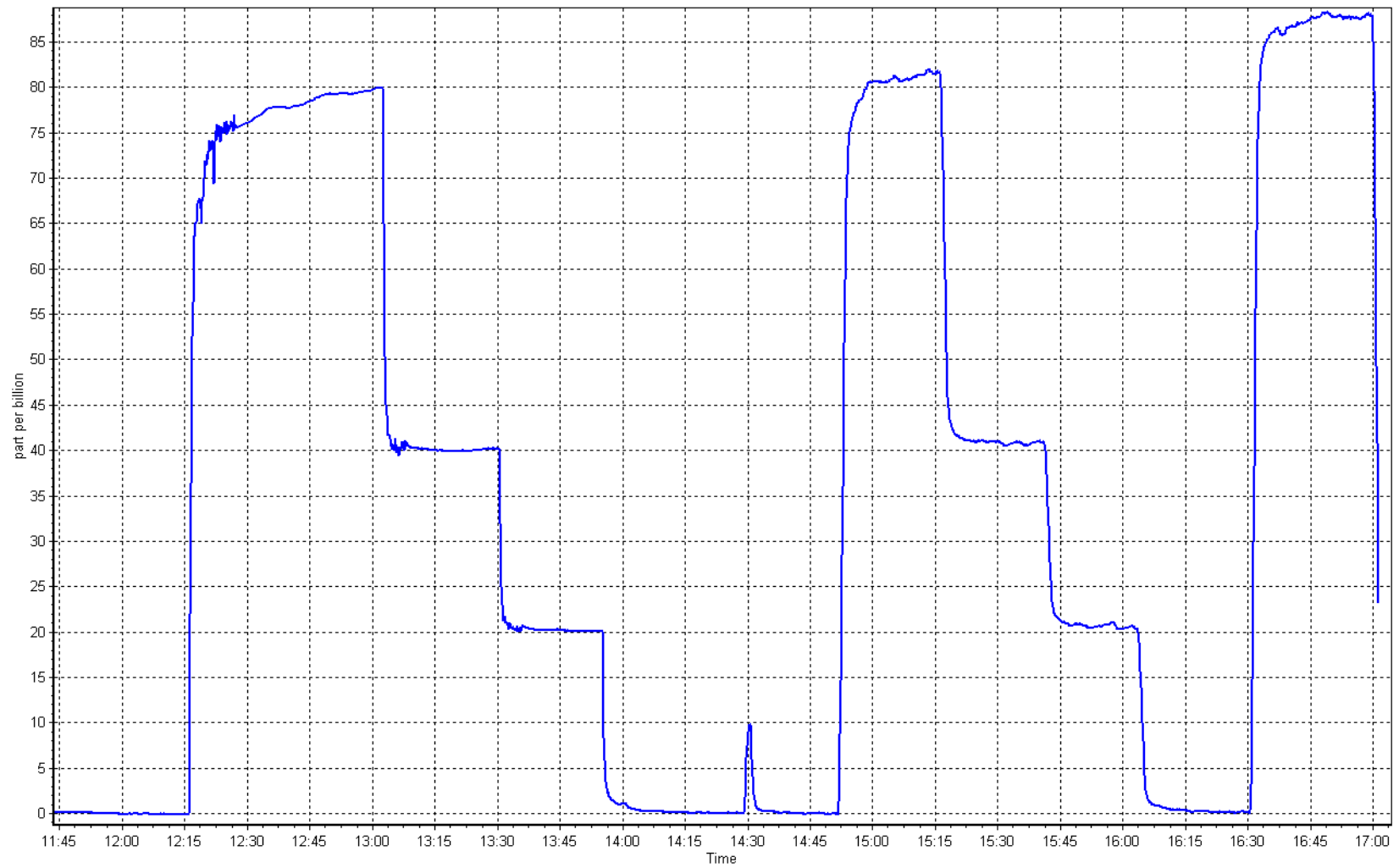
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999987	≥ 0.995
80.0	81.3	0.9836	Slope	1.015588	$0.90 - 1.10$
40.0	40.7	0.9828	Intercept	0.115904	± 3
20.0	20.6	0.9705			



H₂S Calibration Plot

Date: September 18, 2025

Location: Jackfish 2/3





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Jackfish 2/3
Station number: AMS 27
Calibration Date: September 19, 2025
Last Cal Date: August 20, 2025
Start time (MST): 7:48
End time (MST): 13:07
Reason: Routine

Calibration Standards

NO Gas Cylinder #: CC757838
NOX Cal Gas Conc: 60.30 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 60.30 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: January 9, 2032
NO Cal Gas Conc: 60.20 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 60.20 ppm
NO gas Diff:
Serial Number: 5252
Serial Number: 268

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO _x Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.0	-0.1	0.1	----	----
AF High point	4924	66.3	801.1	799.8	1.3	786.6	781.8	4.8	1.0185	1.0229
AF Mid point										
AF Low point										
New cyl resp										

Previous Response NO_x = 800.7 ppb NO = 798.4 ppb
Baseline Corr 1st pt NO_x = 786.6 ppb NO = 781.9 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

*Percent Change NO_x = -1.8%

*Percent Change NO = -2.1%

As Found Statistics

As found NO_x r²:
As found NO r²:
As found NO₂ r²:
Nx SI:
NO SI:
NO₂ SI:
Nx Int:
NO Int:
NO₂ Int:

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO ₂ Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
-------------------	--	---------------------------------------	---	--	--	--

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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1218153357

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.352	1.379	NO bkgnd or offset:	5.5	5.6
NOX coeff or slope:	0.996	0.996	NOX bkgnd or offset:	5.6	5.7
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	171.7	173.2

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.998046	0.997431
NO _x Cal Offset:	1.129549	1.070038
NO Cal Slope:	0.998688	0.997915
NO Cal Offset:	-0.389676	-0.569212
NO ₂ Cal Slope:	1.005126	1.005946
NO ₂ Cal Offset:	0.826700	0.227357

Dilution Calibration Data

Set Point	Dilution flow rate (scm)	Source gas flow rate (scm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.4	0.1	0.3	----	----
High point	4924	66.3	801.1	799.8	1.3	799.9	797.9	2.0	1.0015	1.0024
Mid point	4958	33.2	401.1	400.4	0.7	401.2	398.7	2.5	0.9997	1.0043
Low point	4976	16.6	200.5	200.2	0.3	201.9	198.5	3.4	0.9930	1.0084
As left zero	5000	0.0	0.0	0.0	0.0	1.2	0.2	1.0	----	----
As left span	4924	66.3	801.1	375.4	425.7	799.8	375.4	424.6	1.0017	1.0000
Average Correction Factor									0.9981	1.0050

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.3	----	----
High GPT point	793.9	368.7	426.5	429.3	0.9935	100.6%
Mid GPT point	793.9	579.0	216.2	217.8	0.9928	100.7%
Low GPT point	793.9	680.4	114.8	115.6	0.9933	100.7%
Average Correction Factor					0.9932	100.7%

Notes:

Changed sample inlet filter after as founds. Adjusted span only.

Calibration Performed By:

Mohammed Kashif



Wood Buffalo Environmental Association

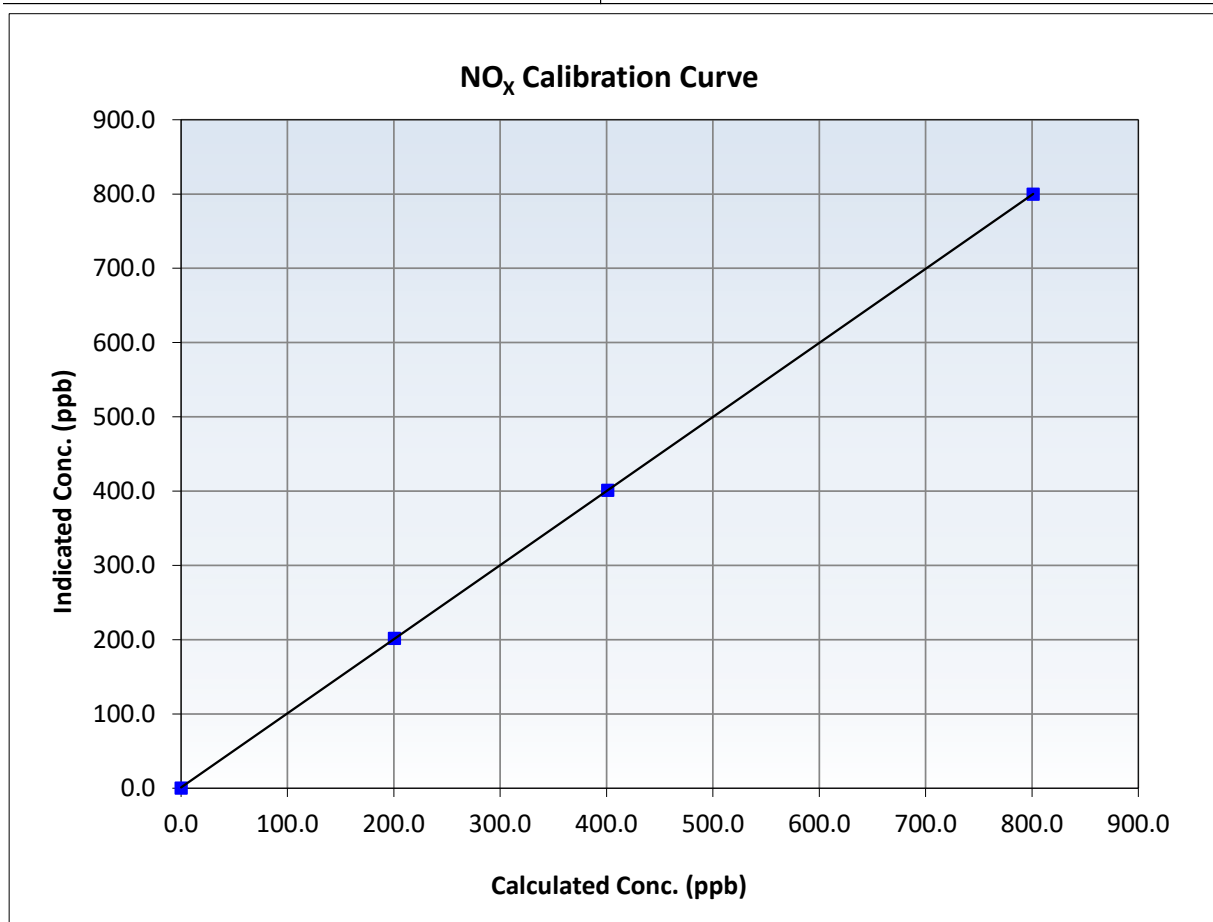
NO_x Calibration Summary

Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 20, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	7:48	End Time (MST):	13:07
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153357

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.4	----	Correlation Coefficient	0.999996	≥0.995
801.1	799.9	1.0015	Slope	0.997431	0.90 - 1.10
401.1	401.2	0.9997	Intercept	1.070038	+/-20
200.5	201.9	0.9930			





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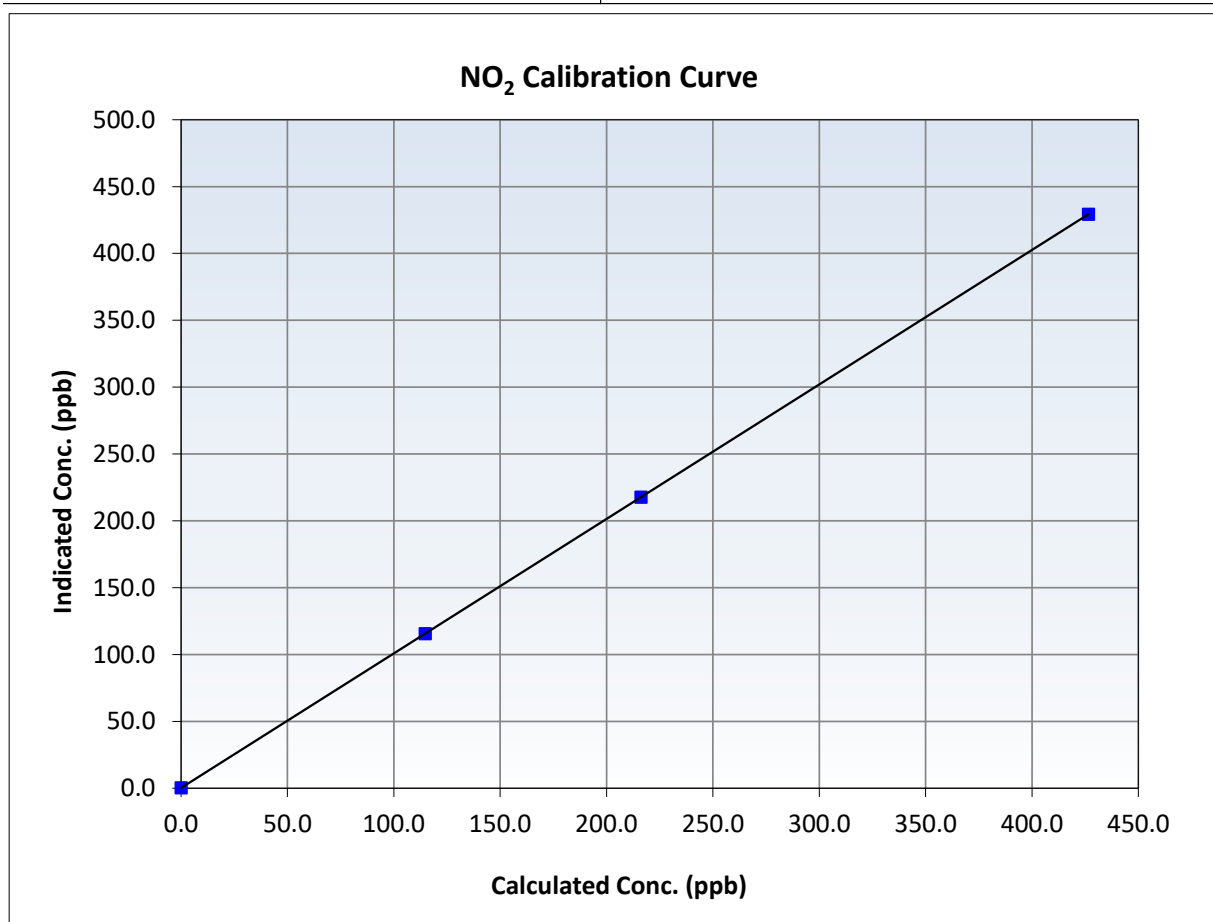
NO₂ Calibration Summary

Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 20, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	7:48	End Time (MST):	13:07
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153357

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	0.3	----	Correlation Coefficient	1.000000	≥0.995
426.5	429.3	0.9935	Slope	1.005946	0.90 - 1.10
216.2	217.8	0.9928	Intercept	0.227357	+/-20
114.8	115.6	0.9933			





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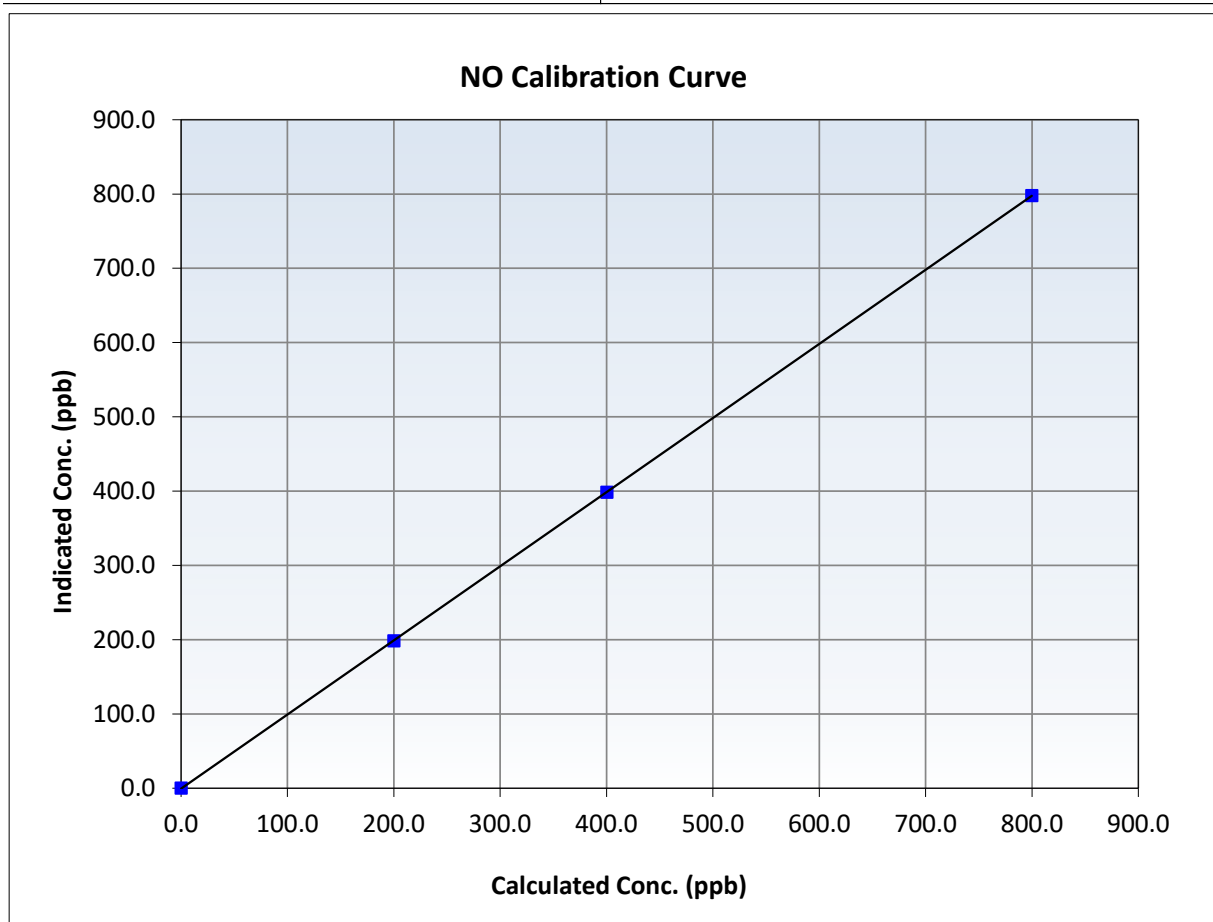
NO Calibration Summary

Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 20, 2025
Station Name:	Jackfish 2/3	Station Number:	AMS 27
Start Time (MST):	7:48	End Time (MST):	13:07
Analyzer make:	Thermo 42i	Analyzer serial #:	1218153357

Calibration Data

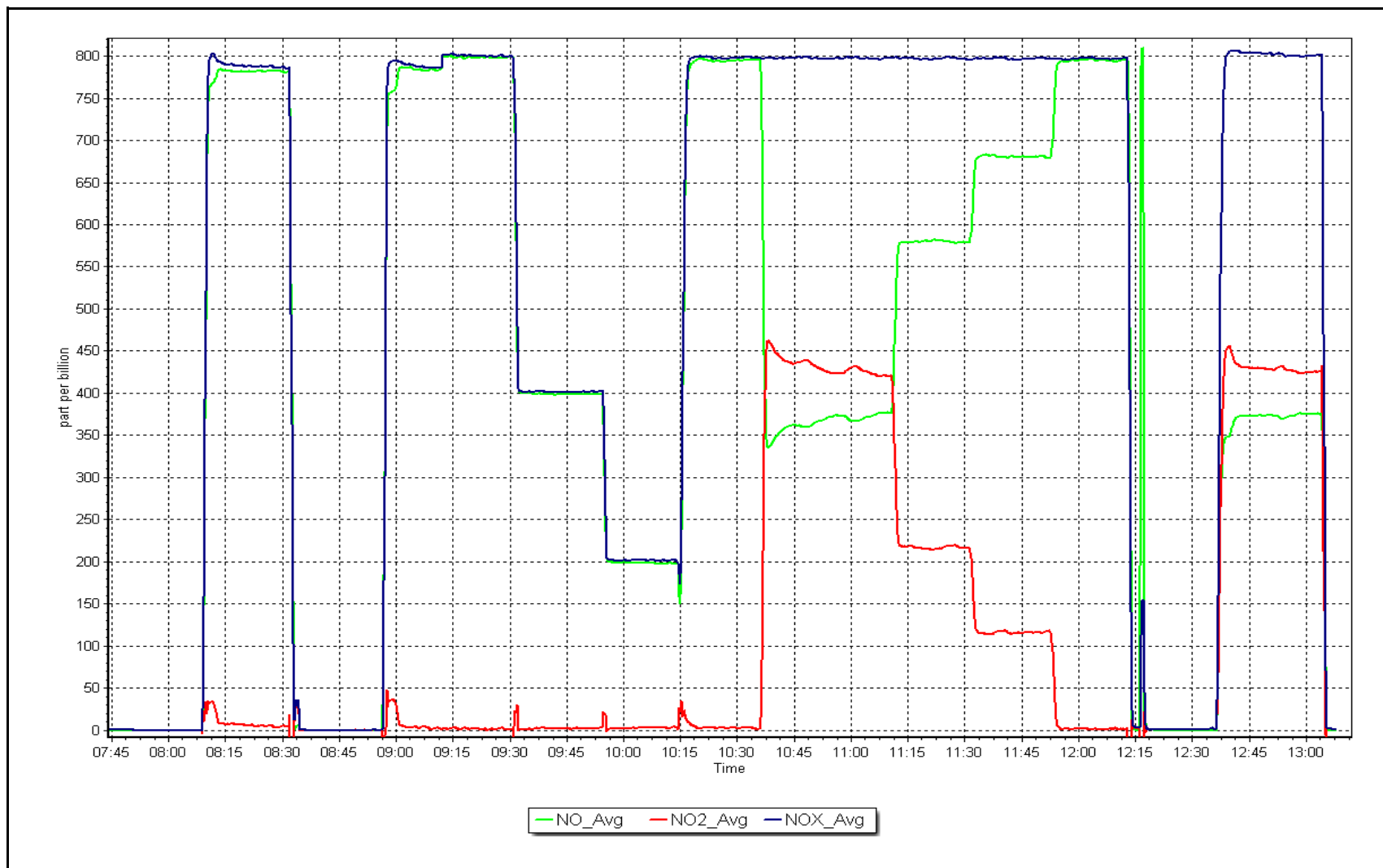
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999997	≥ 0.995
799.8	797.9	1.0024	Slope	0.997915	$0.90 - 1.10$
400.4	398.7	1.0043	Intercept	-0.569212	± 20
200.2	198.5	1.0084			



NO_x Calibration Plot

Date: September 19, 2025

Location: Jackfish 2/3





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS29 SURMONT 2 SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Surmont 2 Station number: AMS 29
Calibration Date: September 5, 2025 Last Cal Date: August 15, 2025
Start time (MST): 9:55 End time (MST): 13:42
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.004073	1.001760	Backgd or Offset:	13.9	14.3
Calibration intercept:	-0.899828	-1.340582	Coeff or Slope:	0.949	0.940

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.2	----
As found High point	4919.9	80.1	800.2	810.0	0.988
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	809.8	Previous response	802.6	*% change	0.9%
Baseline Corr 2nd AF pt:	NA	AF Slope:		AF Intercept:	
Baseline Corr 3rd AF pt:	NA	AF Correlation:		* = > +/-5% change initiates investigation	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4920	80.1	800.2	801.0	0.999
Mid point	4960	40.0	399.6	398.0	1.004
Low point	4980	20.0	199.8	197.8	1.010
As left zero	5000	0.0	0.0	0.1	----
As left span	4920	80.1	800.2	802.0	0.998
Average Correction Factor:					1.004

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

Calibration Performed By: Braiden Boutillier



Wood Buffalo Environmental Association

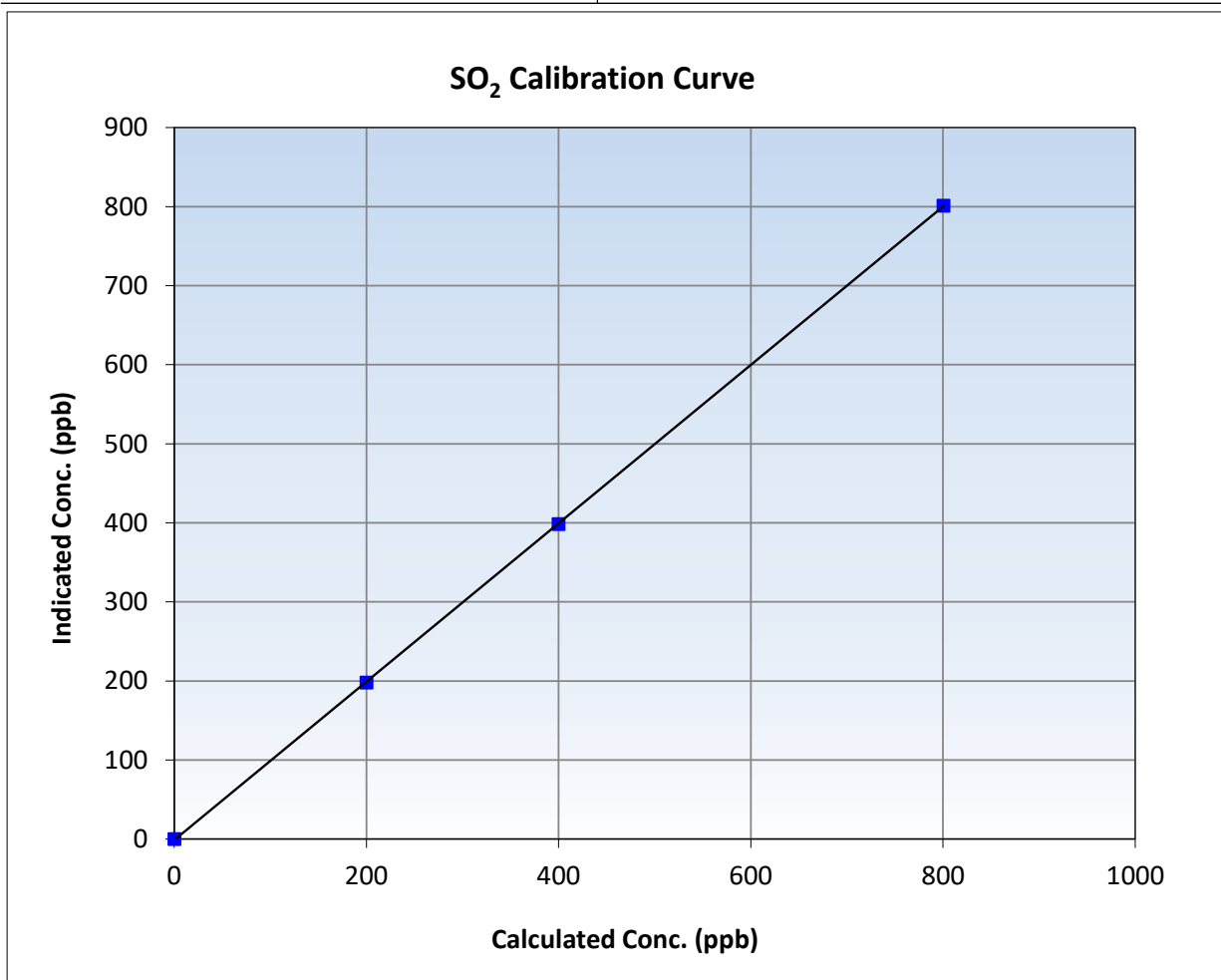
SO₂ Calibration Summary

Station Information

Calibration Date:	September 5, 2025	Previous Calibration:	August 15, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:55	End Time (MST):	13:42
Analyzer make:	Thermo 43i	Analyzer serial #:	1170050150

Calibration Data

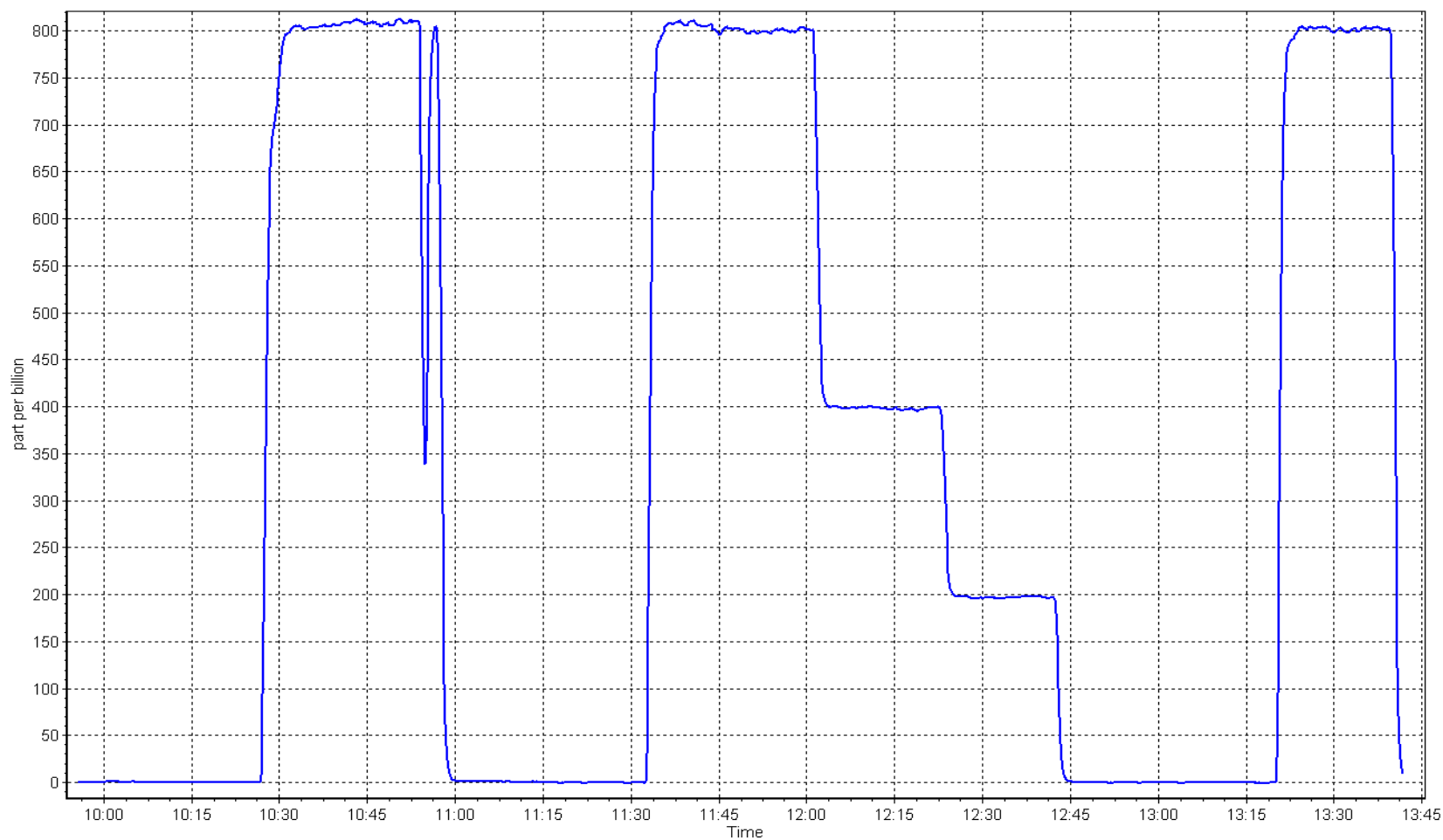
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999989	≥0.995
800.2	801.0	0.9990	Slope	1.001760	0.90 - 1.10
399.6	398.0	1.0040	Intercept	-1.340582	+/-30
199.8	197.8	1.0101			



SO2 Calibration Plot

Date: September 5, 2025

Location: Surmont 2





Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name: Surmont 2
Calibration Date: September 9, 2025
Start time (MST): 8:37
Reason: Routine

Station number: AMS 29
Last Cal Date: August 5, 2025
End time (MST): 14:25

Calibration Standards

Cal Gas Concentration: 4.750 ppm
Cal Gas Cylinder #: CC737848
Removed Cal Gas Conc: 4.750 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701

Cal Gas Exp Date: August 28, 2027
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 5472
Serial Number: 4428

Analyzer Information

Analyzer make: Thermo 43iQ-TLE
Converter make: Global
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1200326170
Converter serial #: 2022-220
Converter Temp: 325.0 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	0.998453	0.988594	Backgd or Offset:	0.95	0.82
Calibration intercept:	-0.140479	-0.020475	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4916	84.2	80.0	80.7	0.989
As found Mid point	4958	42.1	40.0	40.4	0.985
As found Low point	4979	21.1	20.0	20.2	0.980
New cylinder response					
Baseline Corr As found:	80.9	Prev response:	79.72	*% change:	1.5%
Baseline Corr 2nd AF pt:	40.6	AF Slope:	1.010883	AF Intercept:	-0.100486
Baseline Corr 3rd AF pt:	20.4	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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4916	84.2	80.0	79.0	1.012
Mid point	4958	42.1	40.0	39.7	1.007
Low point	4979	21.1	20.0	19.6	1.020
As left zero	5000	0.0	0.0	0.1	----
As left span	4916	84.2	80.0	78.0	1.025
SO2 Scrubber Check	4919	81.3	813.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	1.013
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. Adjusted zero.

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

H2S Calibration Summary

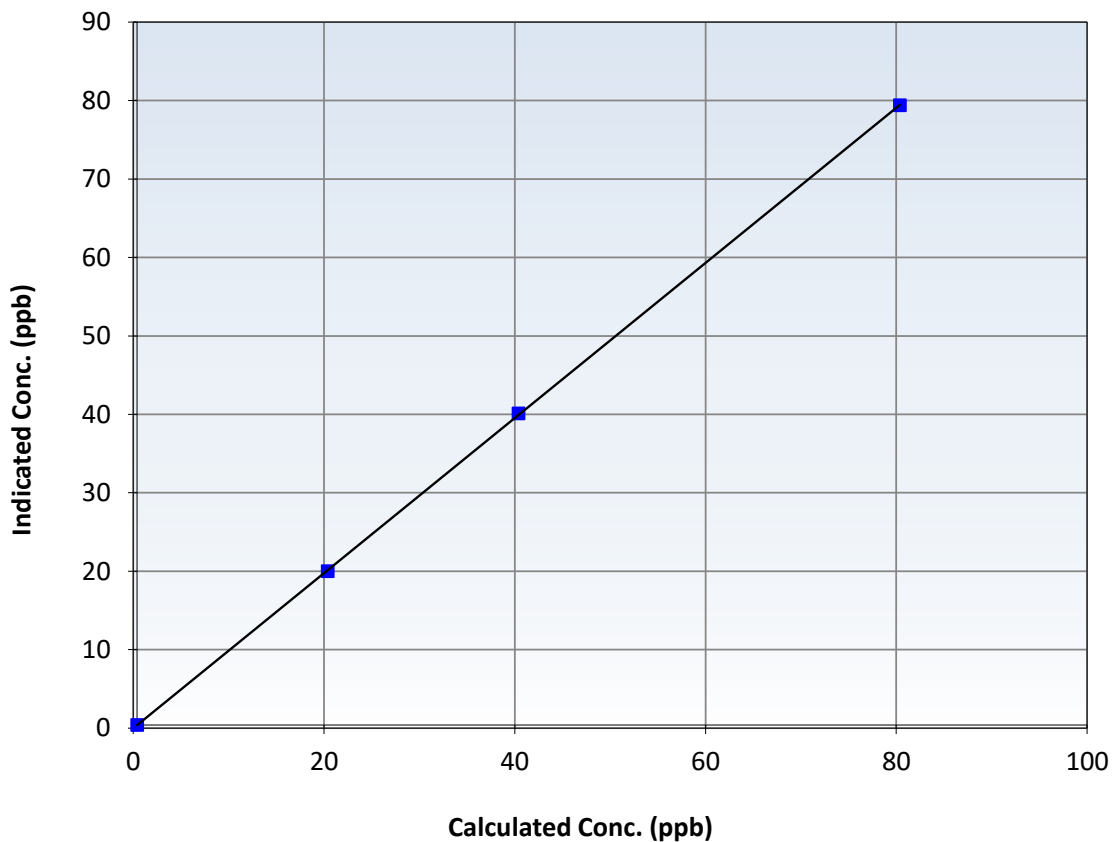
Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 5, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	8:37	End Time (MST):	14:25
Analyzer make:	Thermo 43iQ-TLE	Analyzer serial #:	1200326170

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999983		≥ 0.995
80.0	79.0	1.0125	Slope	0.988594		$0.90 - 1.10$
40.0	39.7	1.0074	Intercept	-0.020475		± 3
20.0	19.6	1.0203				

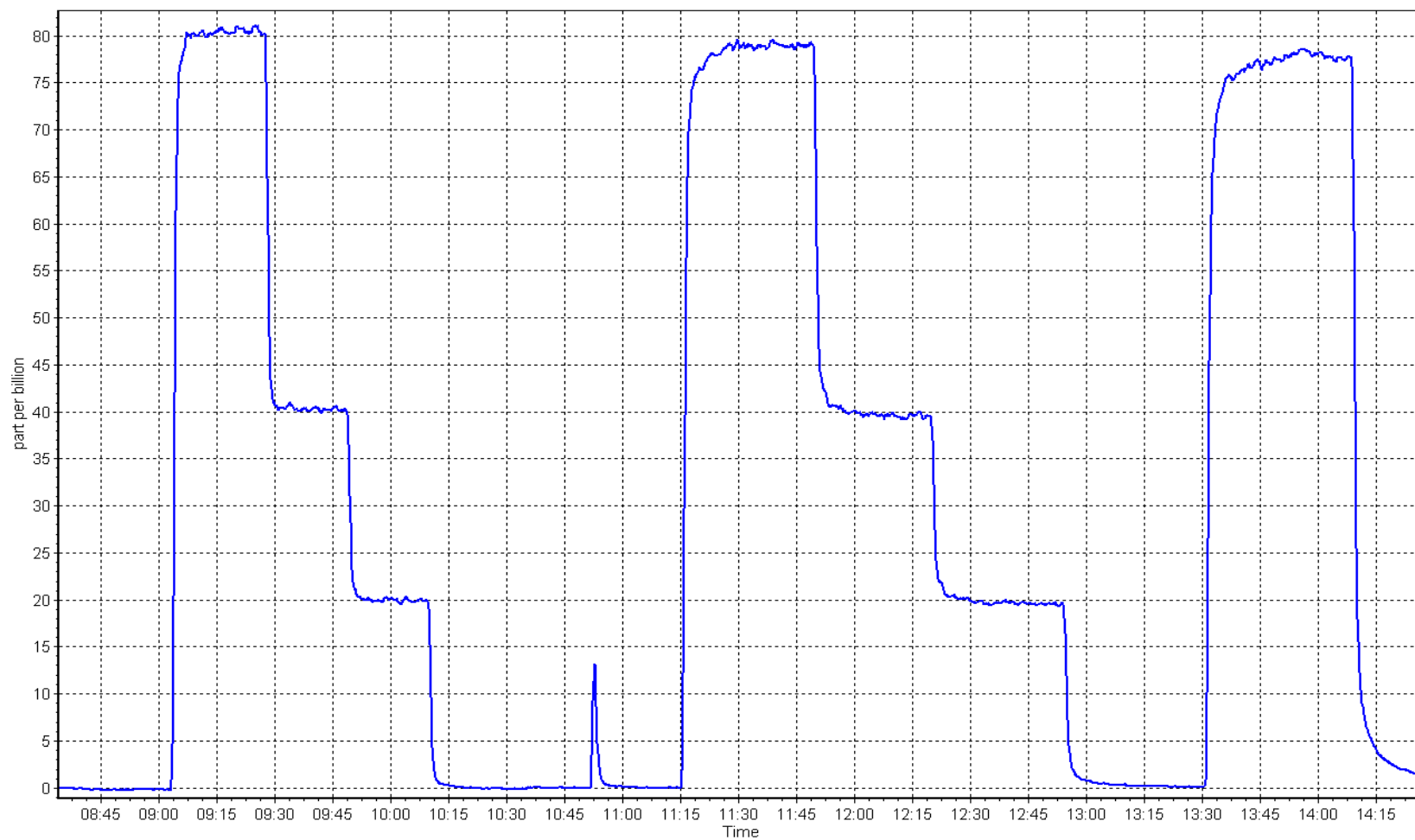
H₂S Calibration Curve



H2S Calibration Plot

Date: September 9, 2025

Location: Surmont 2





Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name: Surmont 2 Station number: AMS 29
Calibration Date: September 5, 2025 Last Cal Date: August 15, 2025
Start time (MST): 9:55 End time (MST): 13:42
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.001199	1.004862	Background:	3.65	3.68
Calibration intercept:	-0.101346	-0.055723	Coefficient:	4.081	4.114

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	-0.05	----
As found High point	4920	80.1	17.09	16.93	1.006
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	16.98	Previous response	17.01	*% 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) <i>Limit = 0.95-1.05</i>
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	8.50	1.004
Low point	4980	20.0	4.27	4.23	1.009
As left zero	5000	0.0	0.00	-0.05	----
As left span	4920	80.1	17.09	17.18	0.995
Average Correction Factor					1.004

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

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

THC Calibration Summary

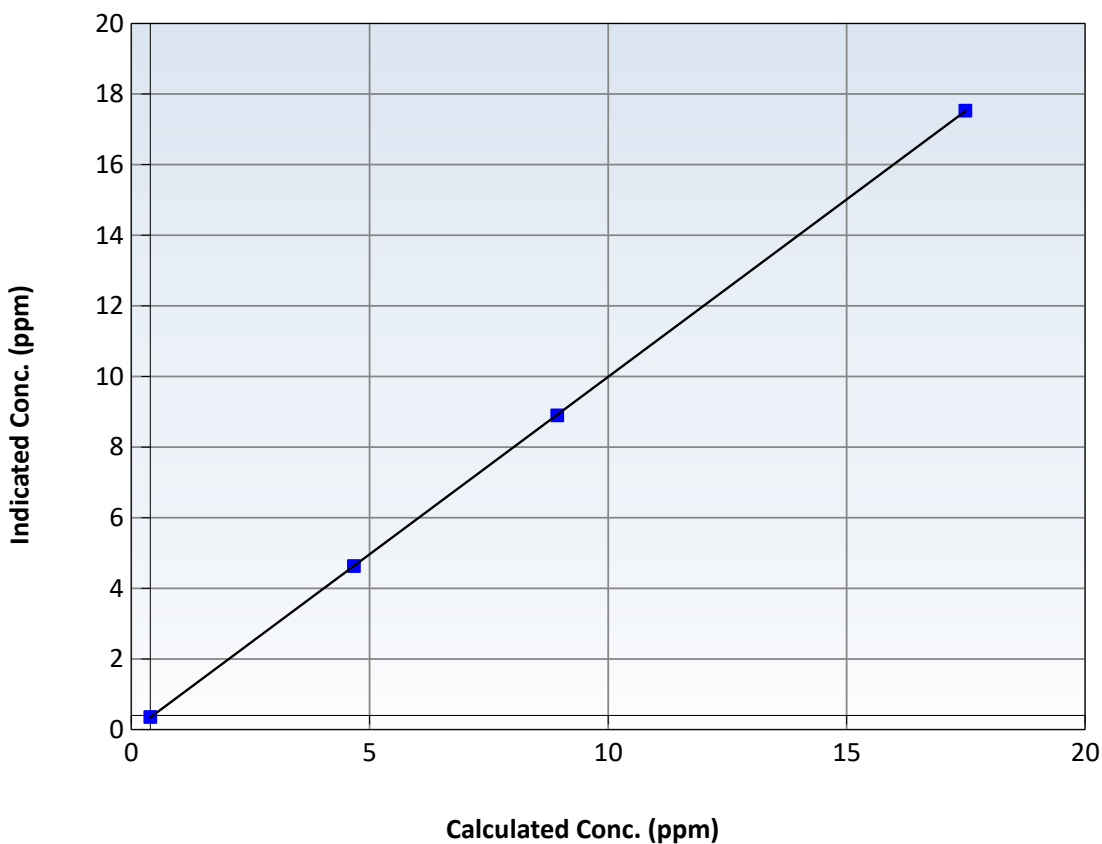
Station Information

Calibration Date:	September 5, 2025	Previous Calibration:	August 15, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:55	End Time (MST):	13:42
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1170050149

Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	-0.04	----	Correlation Coefficient	0.999996	≥ 0.995
17.09	17.13	0.9978	Slope	1.004862	$0.90 - 1.10$
8.54	8.50	1.0041	Intercept	-0.055723	± 1.5
4.27	4.23	1.0087			

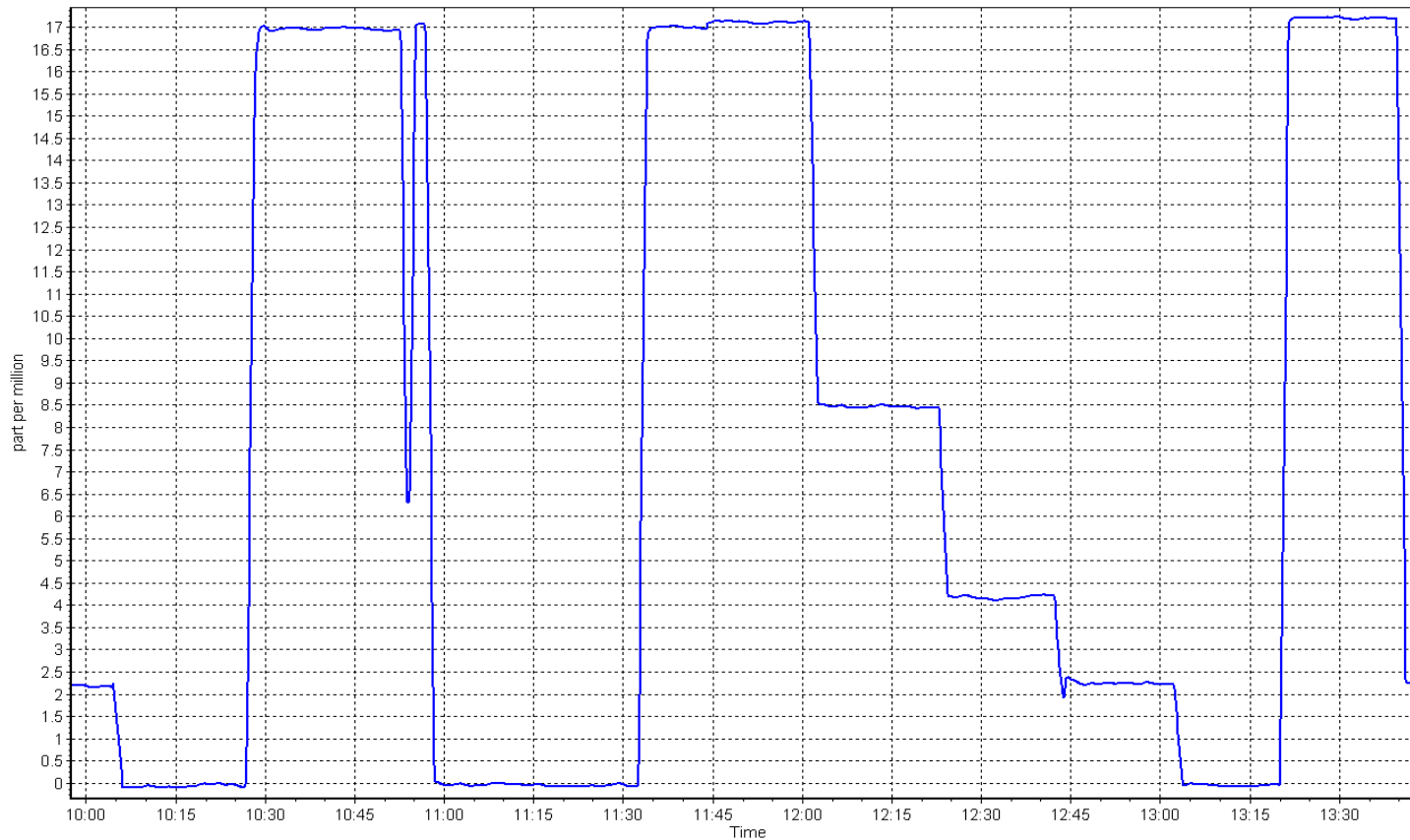
THC Calibration Curve



THC Calibration Plot

Date: September 5, 2025

Location: Surmont 2





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Surmont 2
Station number: AMS 29
Calibration Date: September 4, 2025
Last Cal Date: August 13, 2025
Start time (MST): 9:57
End time (MST): 15:41
Reason: Routine

Calibration Standards

NO Gas Cylinder #: CC218007
NOX Cal Gas Conc: 60.20 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 60.20 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701
Cal Gas Expiry Date: January 9, 2032
NO Cal Gas Conc: 60.00 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 60.00 ppm
NO gas Diff:
Serial Number: 5472
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0	0.0	0.0	0.0	0.1	-0.2	0.2	----	----
AF High point	4933	66.7	803.1	800.4	2.7	798.7	796.2	2.5	1.0057	1.0051
AF Mid point										
AF Low point										
New cyl resp										

Previous Response	NO _x = 802.6 ppb	NO = 800.8 ppb	* = > +/-5% change initiates investigation		*Percent Change	NO _x = -0.5%
Baseline Corr 1st pt	NO _x = 798.6 ppb	NO = 796.4 ppb	<u>As Found Statistics</u>		*Percent Change	NO = -0.6%
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb	As found	NO _x r ² :	Nx SI:	Nx Int:
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb	As found	NO r ² :	NO SI:	NO Int:
			As found	NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1170050148

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.999466	0.998556
NO _x Cal Offset:	-0.088616	-0.568938
NO Cal Slope:	1.002798	0.999656
NO Cal Offset:	-1.888530	-2.488482
NO ₂ Cal Slope:	0.995935	1.005325
NO ₂ Cal Offset:	-0.220594	-0.127845

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.040	1.042	NO bkgnd or offset:	1.4	1.5
NOX coeff or slope:	0.992	0.996	NOX bkgnd or offset:	1.4	1.9
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	148.7	151.4

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.1	-0.1	----	----
High point	4933	66.7	803.1	800.4	2.7	801.0	798.1	2.5	1.0026	1.0029
Mid point	4967	33.3	400.9	399.6	1.3	401.3	398.1	3.2	0.9990	1.0037
Low point	4983	16.7	201.1	200.4	0.7	198.7	193.9	4.8	1.0120	1.0336
As left zero	5000	0.0	0.0	0.0	0.0	-0.3	-0.2	-0.1	----	----
As left span	4933	66.7	803.1	418.0	385.1	801.0	418.0	383.1	1.0026	1.0000
Average Correction Factor									1.0045	1.0134

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	797.5	420.1	380.1	382.1	0.9947	100.5%
Mid GPT point	797.5	617.4	182.8	183.2	0.9976	100.2%
Low GPT point	797.5	704.4	95.8	96.4	0.9934	100.7%
Average Correction Factor					0.9953	100.5%

Notes:

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

Calibration Performed By:

Braiden Boutilier



Wood Buffalo Environmental Association

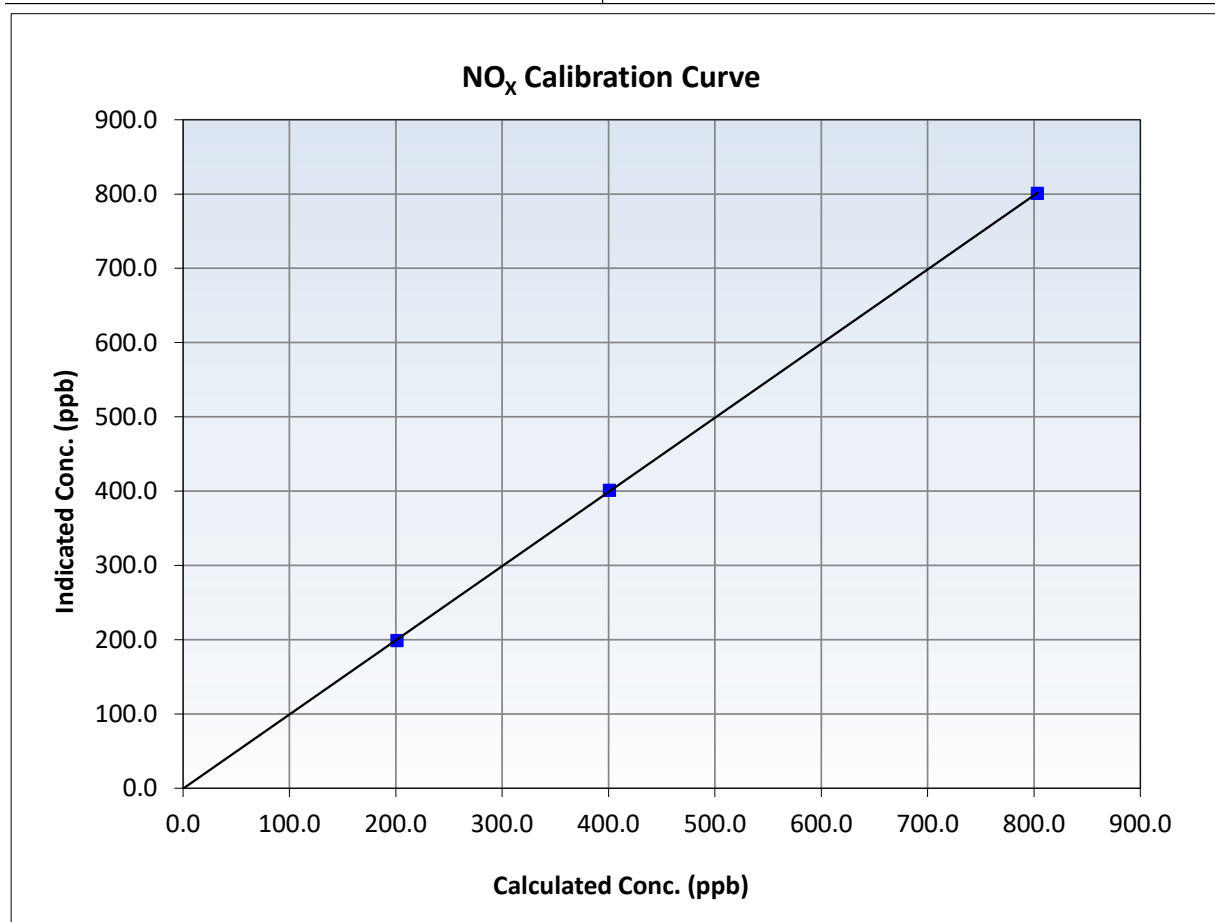
NO_x Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 13, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:57	End Time (MST):	15:41
Analyzer make:	Thermo 42i	Analyzer serial #:	1170050148

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999986	≥0.995
803.1	801.0	1.0026	Slope	0.998556	0.90 - 1.10
400.9	401.3	0.9990	Intercept	-0.568938	+/-20
201.1	198.7	1.0120			





Wood Buffalo Environmental Association

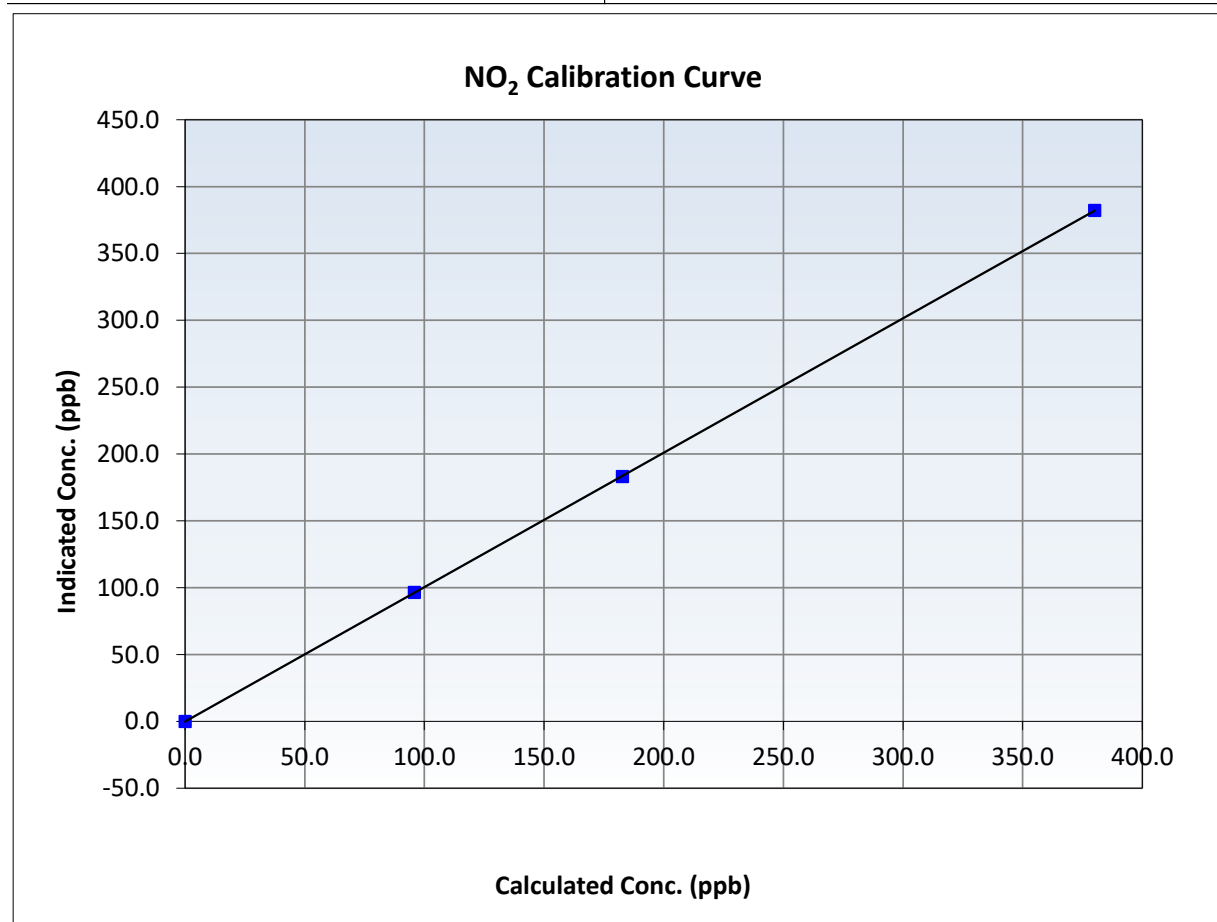
NO₂ Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 13, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:57	End Time (MST):	15:41
Analyzer make:	Thermo 42i	Analyzer serial #:	1170050148

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.0	-0.1	----	Correlation Coefficient	0.999997	<i>≥0.995</i>
380.1	382.1	0.9947	Slope	1.005325	<i>0.90 - 1.10</i>
182.8	183.2	0.9976	Intercept	-0.127845	<i>+/-20</i>
95.8	96.4	0.9934			





Wood Buffalo Environmental Association

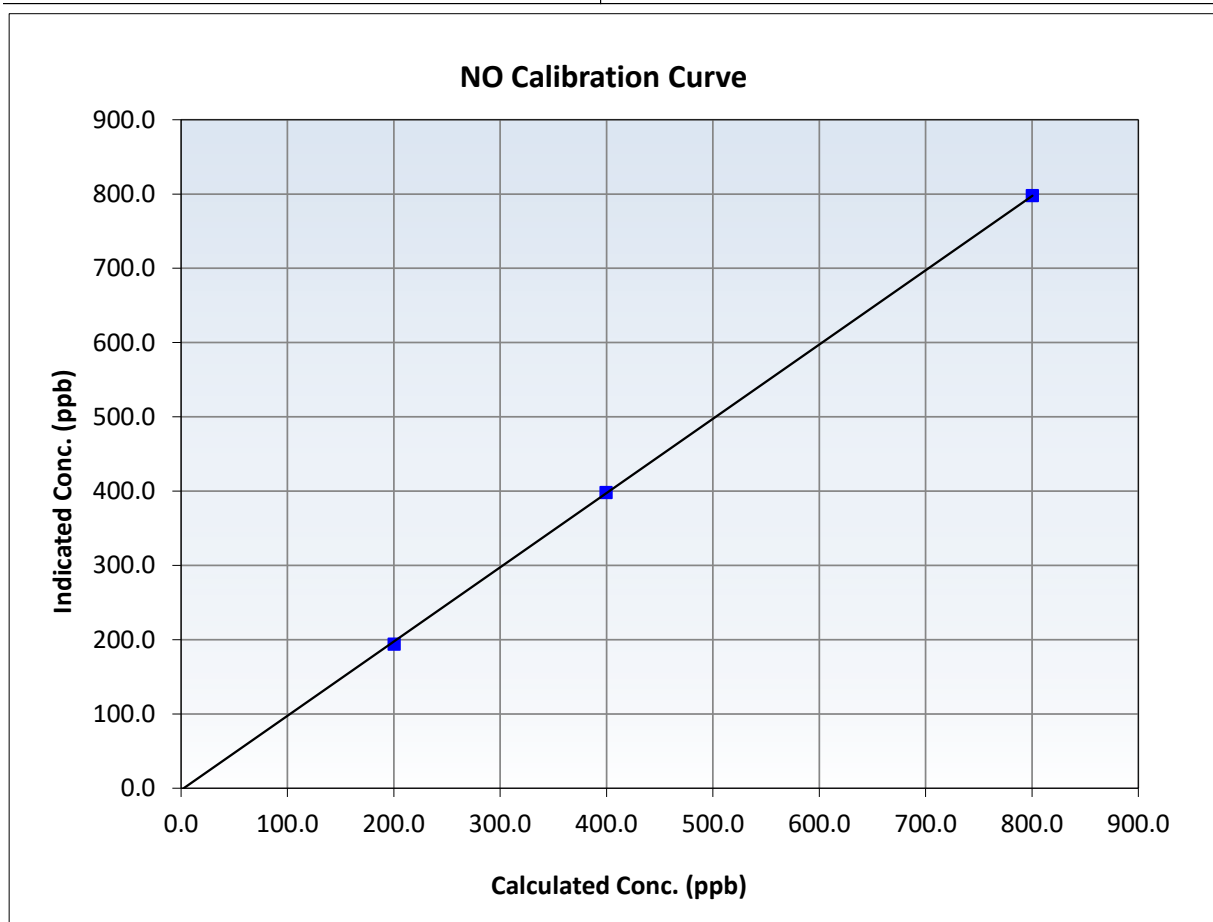
NO Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 13, 2025
Station Name:	Surmont 2	Station Number:	AMS 29
Start Time (MST):	9:57	End Time (MST):	15:41
Analyzer make:	Thermo 42i	Analyzer serial #:	1170050148

Calibration Data

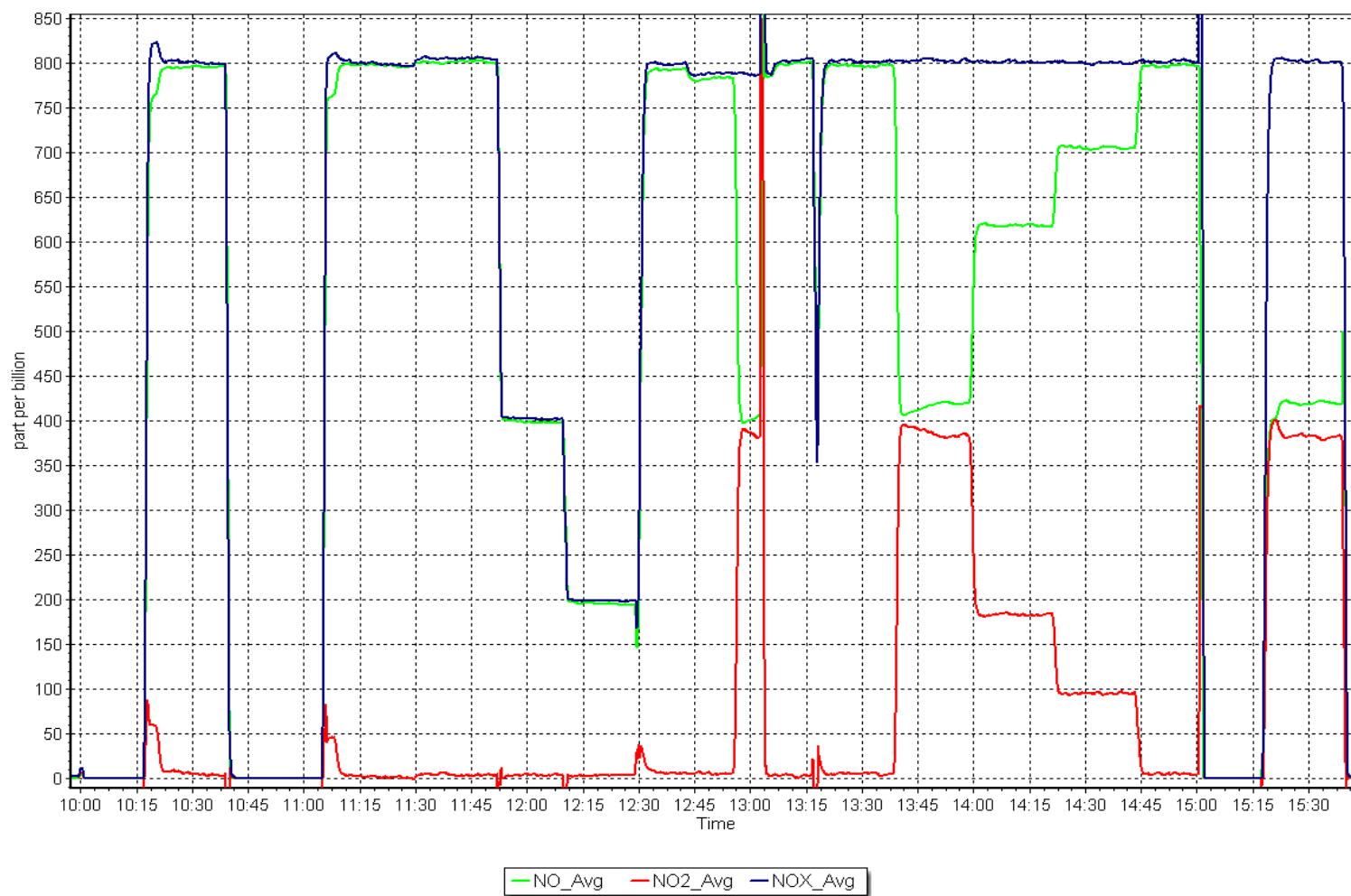
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999935	≥ 0.995
800.4	798.1	1.0029	Slope	0.999656	$0.90 - 1.10$
399.6	398.1	1.0037	Intercept	-2.488482	± 20
200.4	193.9	1.0336			



NO_x Calibration Plot

Date: September 4, 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: September 9, 2025 Last Cal Date: August 15, 2025
Start time (MST): 8:39 End time (MST): 9:13

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)	17.9	18.33	18.33	☐	+/- 2 °C
P (mmHg)	711.5	709.8	709.8	☐	+/- 10 mmHg
Flow (LPM)	5.02	4.880	5.012	☒	+/- 0.25 LPM
PW% (pump)	30	----	30	☐	>80%
Zero Verification	PM w/o HEPA: 23.2		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: July 15, 2025
Date Disposable Filter Changed: July 15, 2025

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

Annual Maintenance

Date Sample Tube Cleaned: April 14, 2025
Date RH/T Sensor Cleaned: July 15, 2025

Notes: Adjusted flow. Verified temperature and pressure. Leak check passed.

Calibration by: Braiden Boutilier



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS30 ELLS RIVER SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Ells River Station number: AMS 30
Calibration Date: September 8, 2025 Last Cal Date: August 5, 2025
Start time (MST): 10:45 End time (MST): 13:23
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.006821	0.998444	Backgd or Offset:	10.6	10.6
Calibration intercept:	-3.712021	-3.132072	Coeff or Slope:	0.991	0.991

SO₂ 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) <i>Limit = 0.90-1.10</i>
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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.2	----
High point	4918	82.0	799.5	796.7	1.004
Mid point	4959	41.0	399.8	394.2	1.014
Low point	4980	20.5	199.9	193.7	1.032
As left zero	5000	0.0	0.0	-0.2	----
As left span	4918	82.0	799.5	798.9	1.001
Average Correction Factor:					1.016

Notes: Pump was DOA. No as founds done. Pump changed out. No adjustments needed.

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

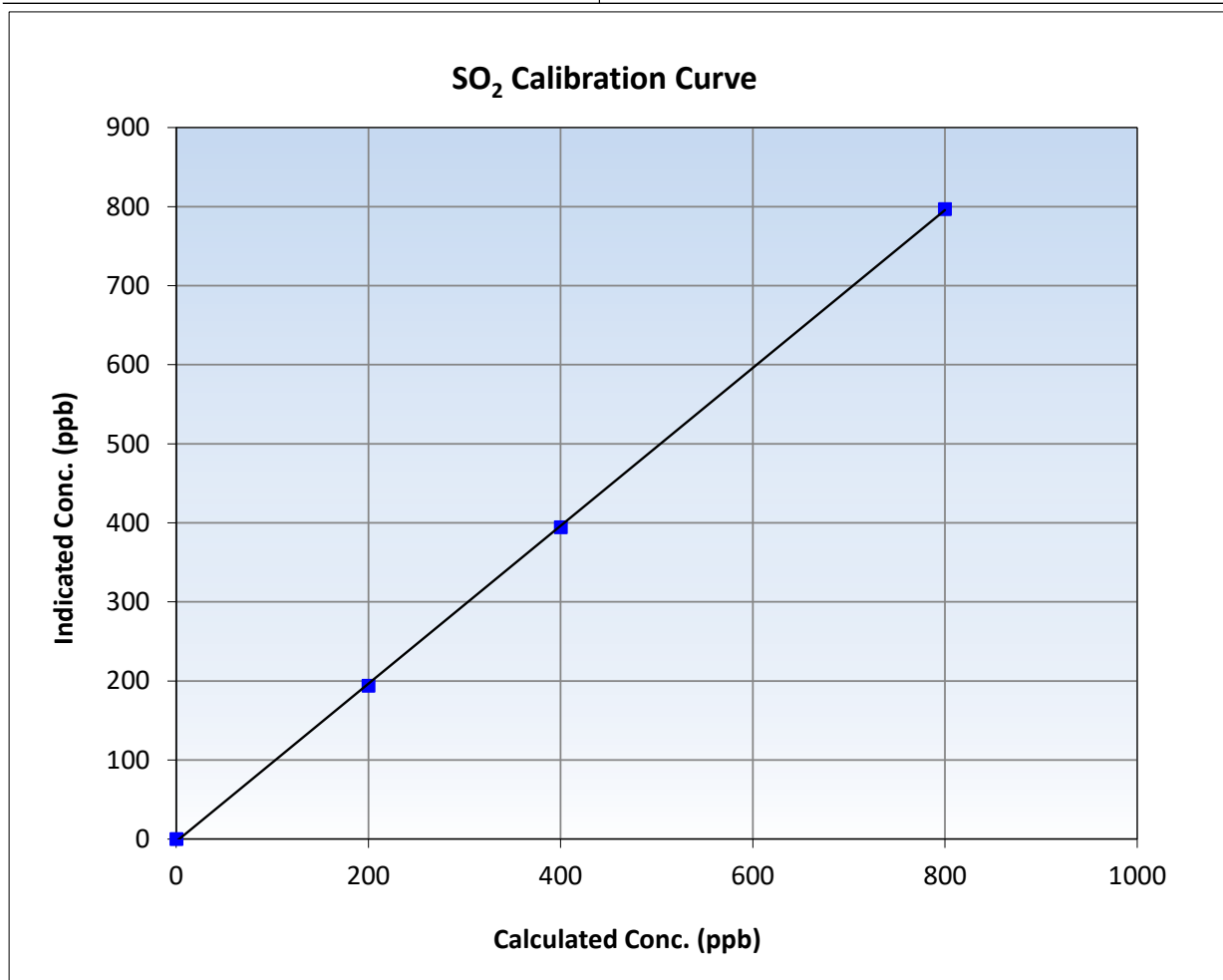
SO₂ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 5, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	10:45	End Time (MST):	13:23
Analyzer make:	Thermo 43i	Analyzer serial #:	1008841397

Calibration Data

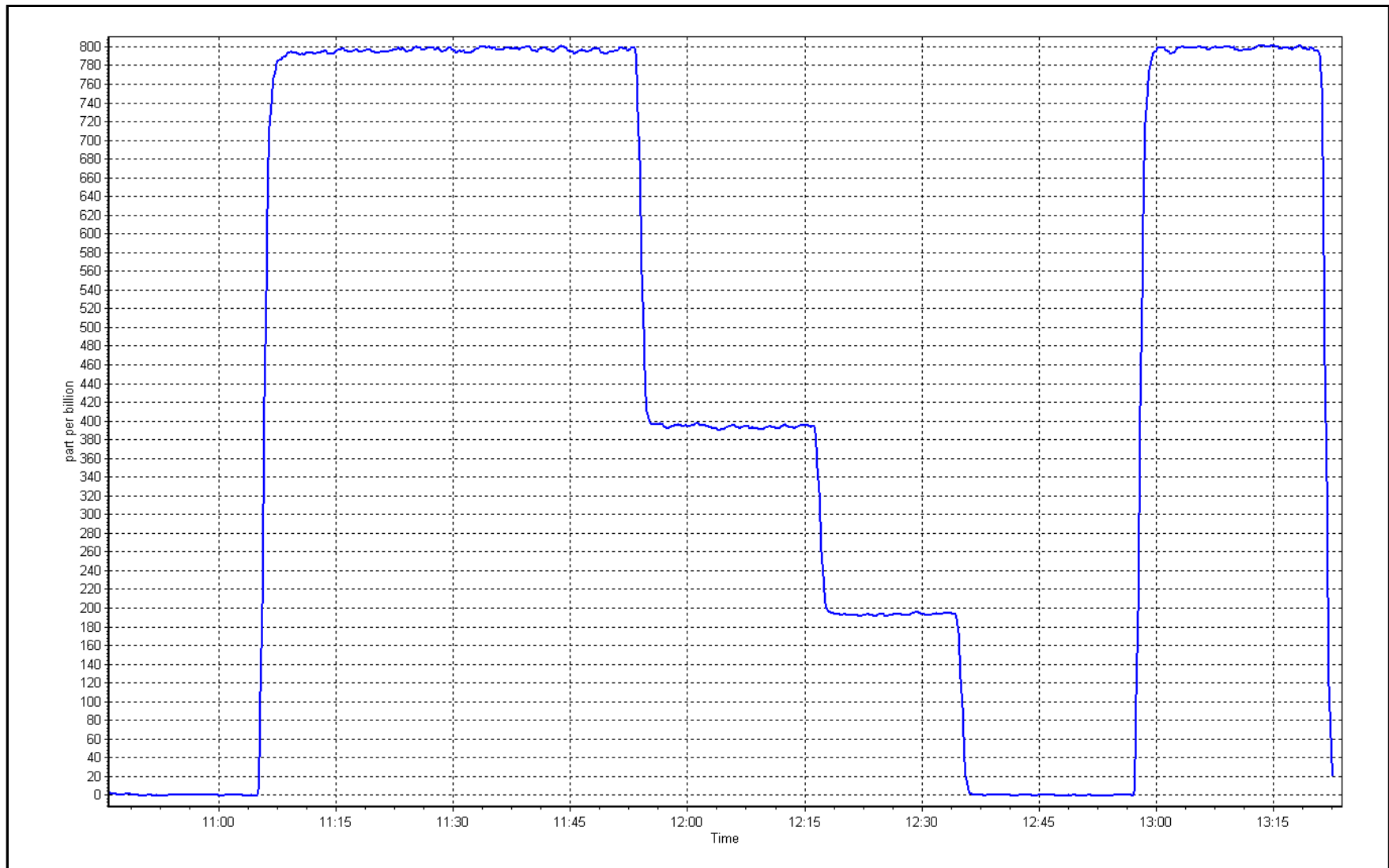
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.2	----	Correlation Coefficient	0.999938	≥0.995
799.5	796.7	1.0035	Slope	0.998444	0.90 - 1.10
399.8	394.2	1.0141	Intercept	-3.132072	+/-30
199.9	193.7	1.0318			



SO2 Calibration Plot

Date: September 8, 2025

Location: Ells River





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Ells River Station number: AMS 30
Calibration Date: September 2, 2025 Last Cal Date: August 13, 2025
Start time (MST): 9:30 End time (MST): 13:02
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.010328	1.007475	Backgd or Offset:	1.7	1.7
Calibration intercept:	-0.140380	-0.240506	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4920	80.2	80.0	77.8	1.029
As found Mid point	4960	40.1	40.0	39.1	1.024
As found Low point	4980	20.0	20.0	19.1	1.045
New cylinder response					
Baseline Corr As found:	77.8	Prev response:	80.72	*% change:	-3.8%
Baseline Corr 2nd AF pt:	39.1	AF Slope:	0.973640	AF Intercept:	-0.081159
Baseline Corr 3rd AF pt:	19.1	AF Correlation:	0.999964	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4920	80.2	80.0	80.5	0.994
Mid point	4960	40.1	40.0	40.0	1.000
Low point	4980	20.0	20.0	19.6	1.018
As left zero	5000	0.0	0.0	0.1	----
As left span	4920	80.2	80.0	80.5	0.994
SO2 Scrubber Check	4918	82.0	820.0	0.1	----
Date of last scrubber change:	13-Aug-25		Ave Corr Factor		1.004
Date of last converter efficiency test:					

Notes: Changed sample inlet filter after multipoint as founds. SO2 scrubber check done after calibrator zero and passed. No adjustment made.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

TRS Calibration Summary

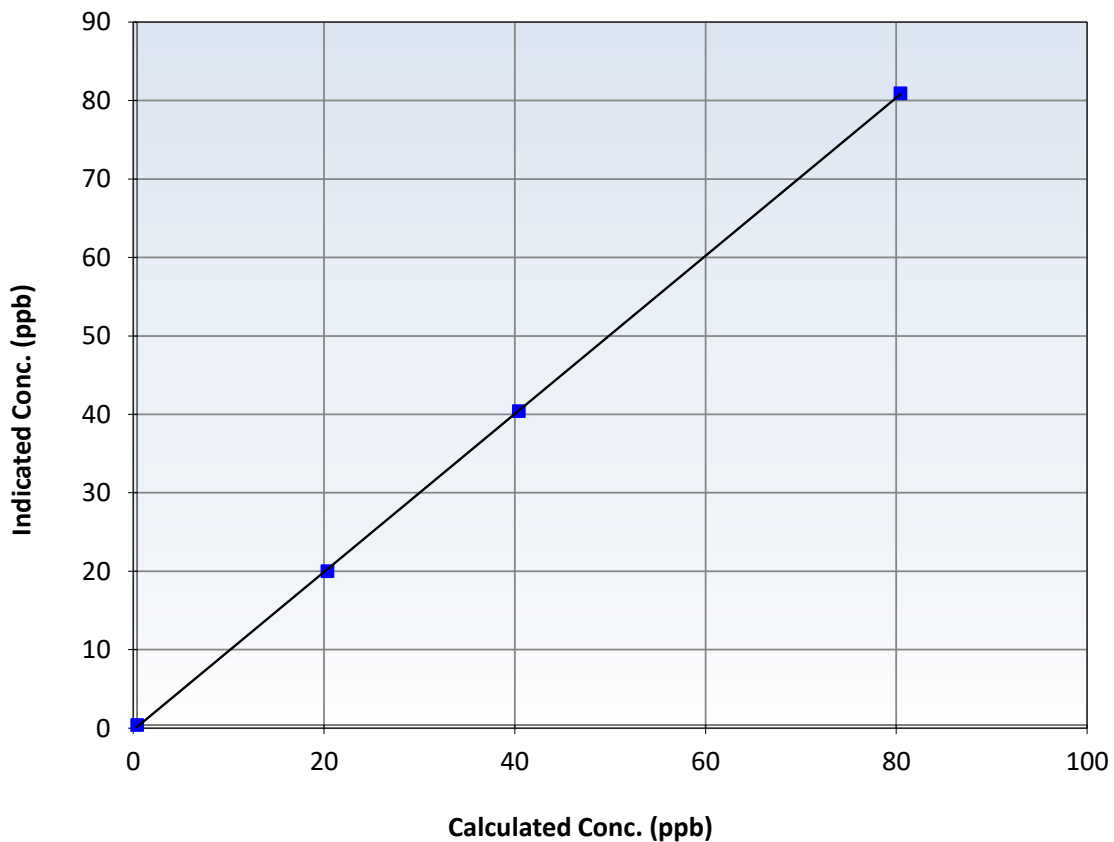
Station Information

Calibration Date:	September 2, 2025	Previous Calibration:	August 13, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:30	End Time (MST):	13:02
Analyzer make:	Thermo 43i TLE	Analyzer serial #:	1410661331

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999959		≥ 0.995
80.0	80.5	0.9942	Slope	1.007475		$0.90 - 1.10$
40.0	40.0	1.0005	Intercept	-0.240506		± 3
20.0	19.6	1.0184				

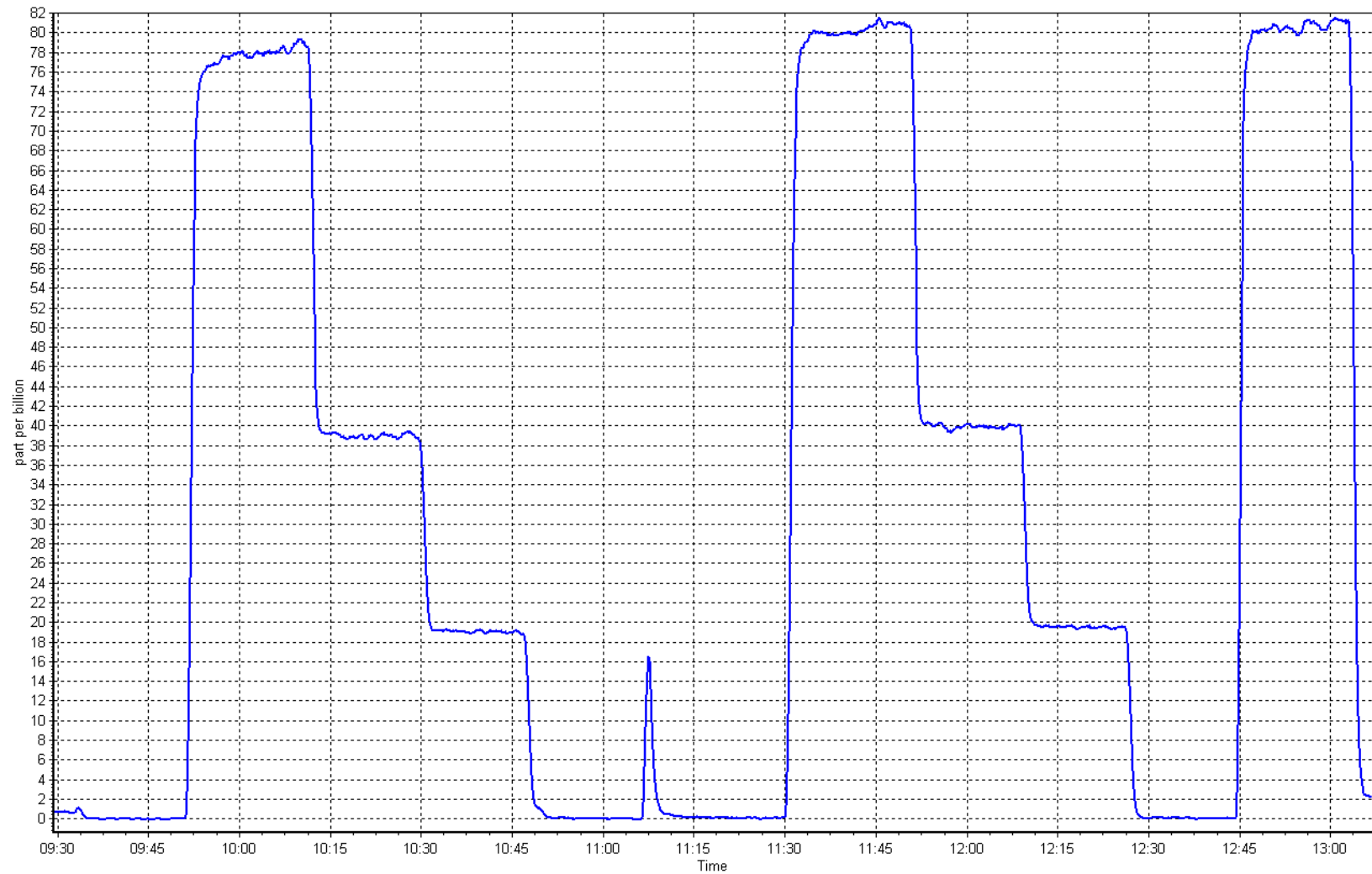
TRS Calibration Curve



TRS Calibration Plot

Date: September 2, 2025

Location: Ells River





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Ells River
Calibration Date: September 15, 2025
Start time (MST): 10:20
Reason: Removal

Station number: AMS 30
Last Cal Date: September 2, 2025
End time (MST): 11:50

Calibration Standards

Cal Gas Concentration: 4.99 ppm
Cal Gas Cylinder #: CC505806
Removed Cal Gas Conc: 4.99 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: API T700
ZAG Make/Model: API 701H

Cal Gas Exp Date: November 15, 2026
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 3061
Serial Number: 358

Analyzer Information

Analyzer make: Thermo 43i TLE
Converter make: CDN- 101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1410661331
Converter serial #: 562
Converter Temp: 800 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.007475	NA	Backgd or Offset:	1.7	NA
Calibration intercept:	-0.240506	NA	Coeff or Slope:	1.089	NA

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4920	80.2	80.0	71.9	1.113
As found Mid point	4960	40.1	40.0	38.0	1.053
As found Low point	4980	20.0	20.0	18.8	1.062
New cylinder response					
Baseline Corr As found:	71.9	Prev response:	80.39	*% change:	-11.8%
Baseline Corr 2nd AF pt:	38.0	AF Slope:	0.897543	AF Intercept:	0.757536
Baseline Corr 3rd AF pt:	18.8	AF Correlation:	0.999001	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero					
High point					
Mid point					
Low point					
As left zero					
As left span					
SO2 Scrubber Check	4918	82.0	820.0		----
Date of last scrubber change:		13-Aug-25		Ave Corr Factor	
Date of last converter efficiency test:					

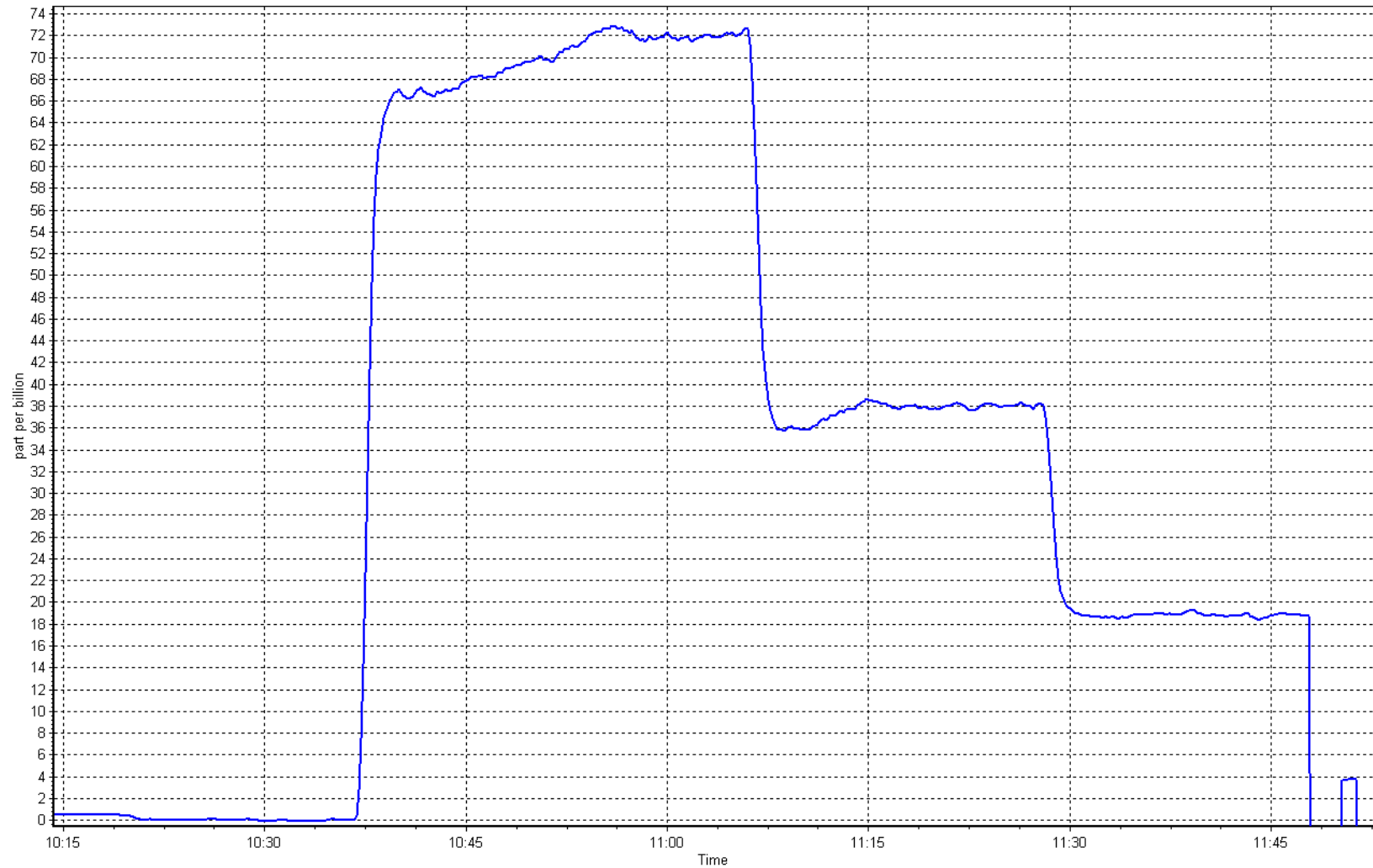
Notes: Analyzer removed due to unstable span. Maintenance needed.

Calibration Performed By: Ryan Power

TRS Calibration Plot

Date: September 15, 2025

Location: Ells River





Wood Buffalo Environmental Association

TRS Calibration Report

Station Information

Station Name: Ells River
Calibration Date: September 15, 2025
Start time (MST): 12:30
Reason: Install

Station number: AMS 30
Last Cal Date: NA
End time (MST): 14:48

Calibration Standards

Cal Gas Concentration: 4.99 ppm
Cal Gas Cylinder #: CC505806
Removed Cal Gas Conc: 4.99 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: API T700
ZAG Make/Model: API 701H

Cal Gas Exp Date: November 15, 2026
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 3061
Serial Number: 358

Analyzer Information

Analyzer make: Thermo 43iq TL
Converter make: CDN- 101
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 12426335708
Converter serial #: 562
Converter Temp: 800 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	NA	0.998054	Backgd or Offset:	NA	1.54
Calibration intercept:	NA	-0.360734	Coeff or Slope:	NA	1.057

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)) <i>Limit = 0.90-1.10</i>
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4920	80.2	80.0	79.7	1.004
Mid point	4960	40.1	40.0	39.4	1.016
Low point	4980	20.0	20.0	19.2	1.040
As left zero	5000	0.0	0.0	-0.4	----
As left span	4920	80.2	80.0	80.5	0.994
SO2 Scrubber Check	4918	82.0	820.0		----
Date of last scrubber change:		13-Aug-25		Ave Corr Factor	1.020
Date of last converter efficiency test:					

Notes: Install cal, scrubber tested earlier this month

Calibration Performed By: Ryan Power



Wood Buffalo Environmental Association

TRS Calibration Summary

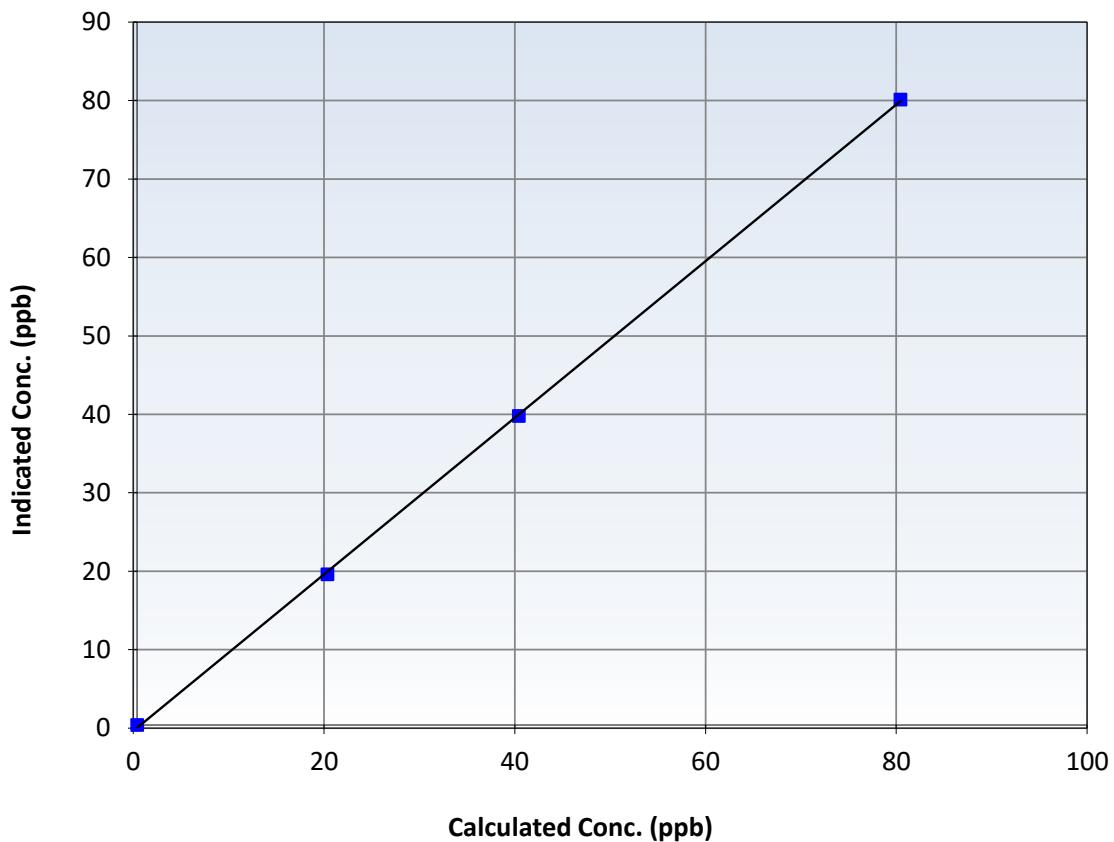
Station Information

Calibration Date:	September 15, 2025	Previous Calibration:	NA
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	12:30	End Time (MST):	14:48
Analyzer make:	Thermo 43iq TL	Analyzer serial #:	12426335708

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999907		≥ 0.995
80.0	79.7	1.0042	Slope	0.998054		0.90 - 1.10
40.0	39.4	1.0157	Intercept	-0.360734		+/-3
20.0	19.2	1.0396				

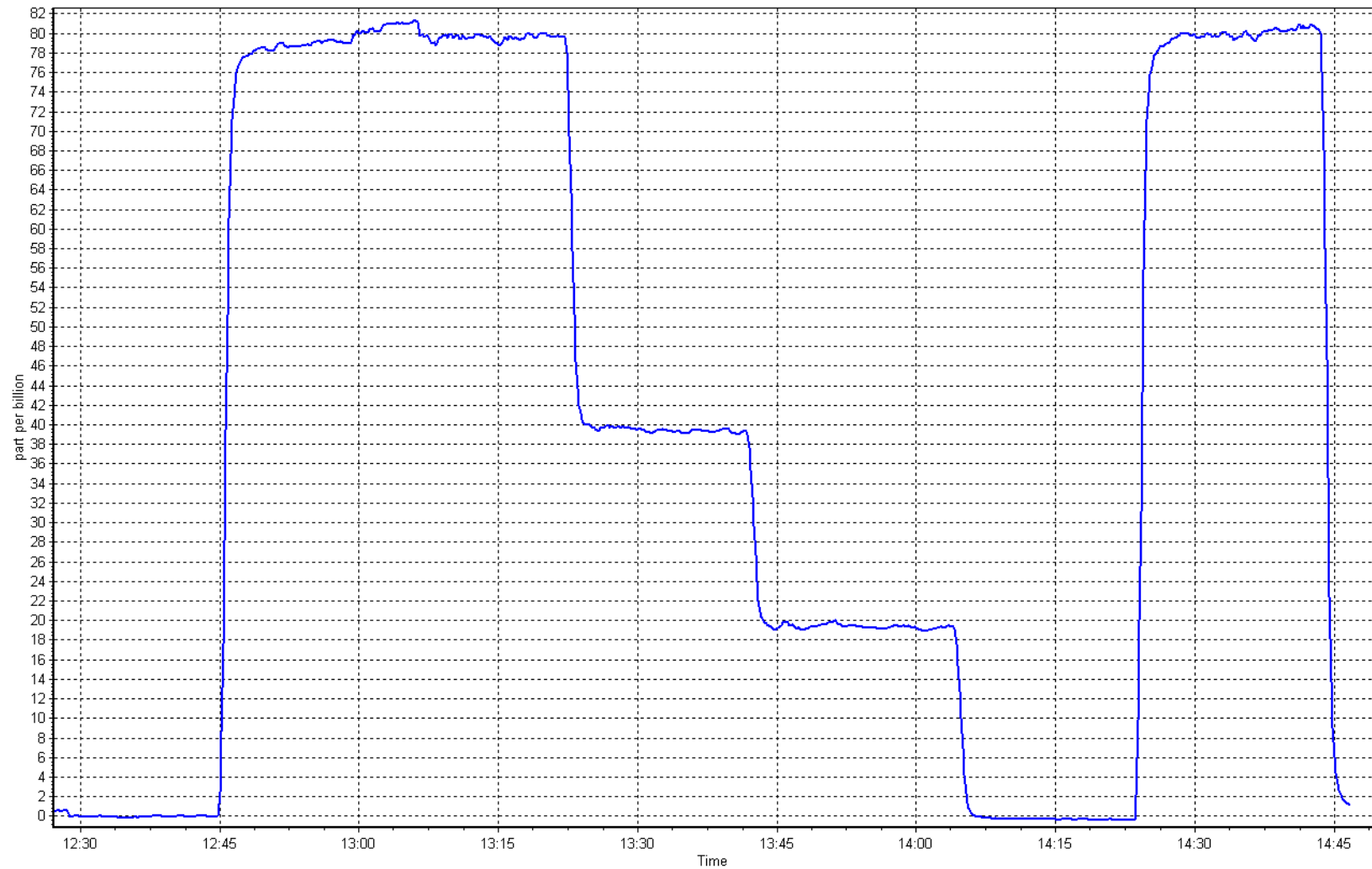
TRS Calibration Curve



TRS Calibration Plot

Date: September 15, 2025

Location: Ells River





Wood Buffalo Environmental Association

THC / CH₄ / NMHC Calibration Report

Station Information

Station Name: Ells River
Calibration Date: September 8, 2025
Start time (MST): 9:50
Reason: Routine

Station number: AMS 30
Last Cal Date: August 5, 2025
End time (MST): 13:23

Calibration Standards

Gas Cert Reference: CC350110
CH₄ Cal Gas Conc. 496.6 ppm
C₃H₈ Cal Gas Conc. 207.2 ppm
Removed Gas Cert: NA
Removed CH₄ Conc. 496.6 ppm
Removed C₃H₈ Conc. 207.2 ppm
Diff between cyl (CH₄):
Calibrator Model: API T700
Zero Air Gen model: API T701H

Cal Gas Expiry Date: Monday, March 10, 2031
CH₄ Equiv Conc. 1066.4 ppm
Removed Gas Expiry: NA
CH₄ Equiv Conc. 1066.4 ppm
Diff between cyl (THC):
Diff between cyl (NM):
Serial Number: 3061
Serial Number: 358

Analyzer Information

Analyzer make: Thermo 55i
THC Range: 0 - 20 ppm

Analyzer serial #: 1152430011
NMHC/CH₄ Range: 0 - 10 ppm

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
CH ₄ SP Ratio:	3.11E-04	3.12E-04	NMHC SP Ratio:	5.96E-05
CH ₄ Retention time:	17.4	17.4	NMHC Peak Area:	156612
Zero Chromatogram:	ON	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4918	82.0	17.49	17.59	0.994
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	17.59	Prev response	17.50	*% 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)) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.00	----
High point	4918	82.0	17.49	17.52	0.998
Mid point	4959	41.0	8.74	8.66	1.010
Low point	4980	20.5	4.37	4.28	1.021
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	82.0	17.49	17.44	1.003
Average Correction Factor					1.010

Notes:

Sample inlet filter changed out. Span adjusted.



Wood Buffalo Environmental Association

THC / CH₄ / 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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4918	82.0	9.34	9.48	0.986
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	9.48	Prev response	9.43	*% 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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4918	82.0	9.34	9.38	0.996
Mid point	4959	41.0	4.67	4.65	1.005
Low point	4980	20.5	2.34	2.32	1.008
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	82.0	9.34	9.32	1.003
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))
As found zero	5000	0.0	0.00	0.00	Limit = 0.90-1.10
As found High point	4918	82.0	8.14	8.11	1.004
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr AF:	8.11	Prev response	8.07	*% change	0.4%
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)
Calibrator zero	5000	0.0	0.00	0.00	Limit = 0.95-1.05
High point	4918	82.0	8.14	8.14	1.001
Mid point	4959	41.0	4.07	4.01	1.016
Low point	4980	20.5	2.04	1.96	1.037
As left zero	5000	0.0	0.00	0.00	----
As left span	4918	82.0	8.14	8.12	1.003
Average Correction Factor					1.018

Calibration Statistics

	Start	Finish
THC Cal Slope:	1.004073	1.003028
THC Cal Offset:	-0.055225	-0.059225
CH ₄ Cal Slope:	0.995907	1.001618
CH ₄ Cal Offset:	-0.038720	-0.041319
NMHC Cal Slope:	1.010860	1.004280
NMHC Cal Offset:	-0.014906	-0.018506

Calibration Performed By: Aswin Sasi Kumar



Wood Buffalo Environmental Association

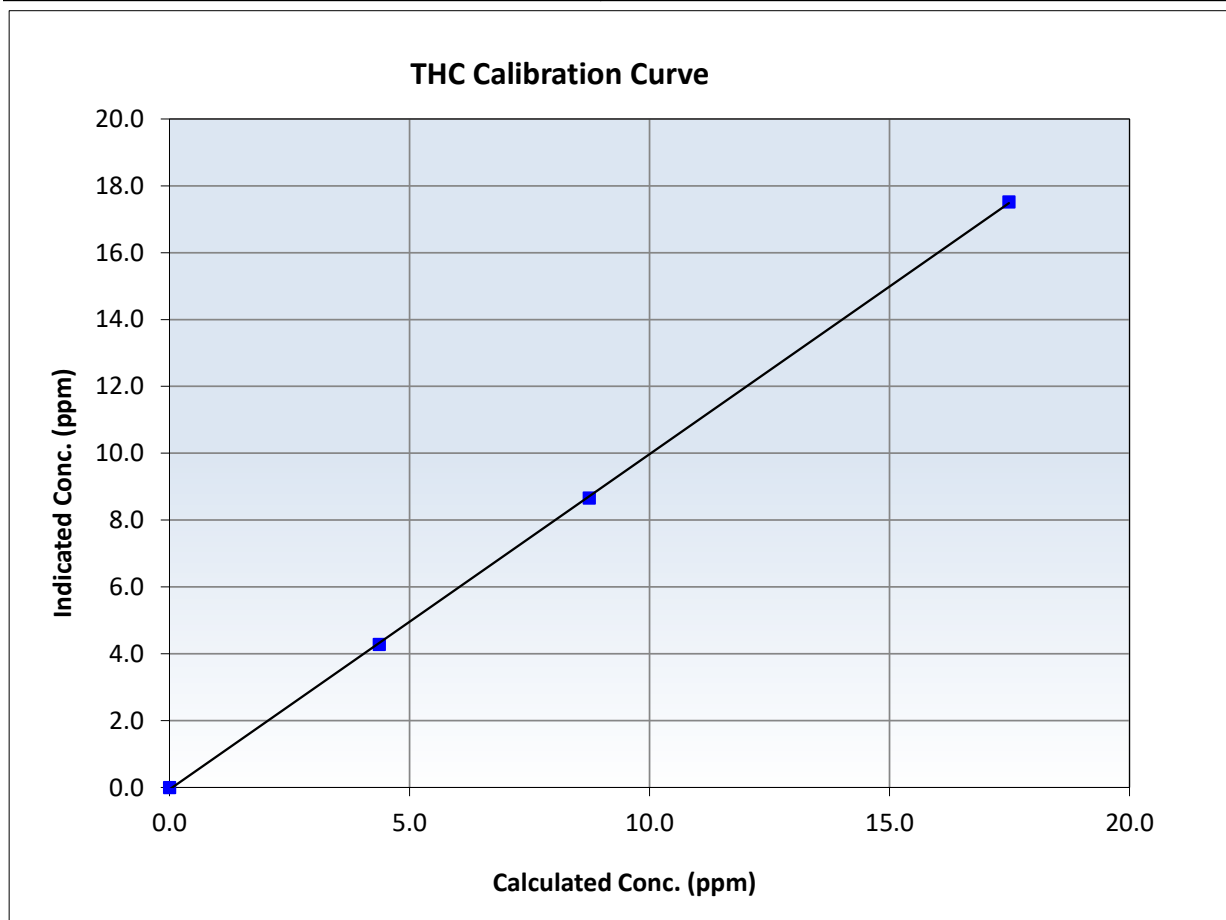
THC Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 5, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:50	End Time (MST):	13:23
Analyzer make:	Thermo 55i	Analyzer serial #:	1152430011

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999943	<i>≥0.995</i>
17.49	17.52	0.9982	Slope	1.003028	<i>0.90 - 1.10</i>
8.74	8.66	1.0099	Intercept	-0.059225	<i>+/-0.5</i>
4.37	4.28	1.0210			





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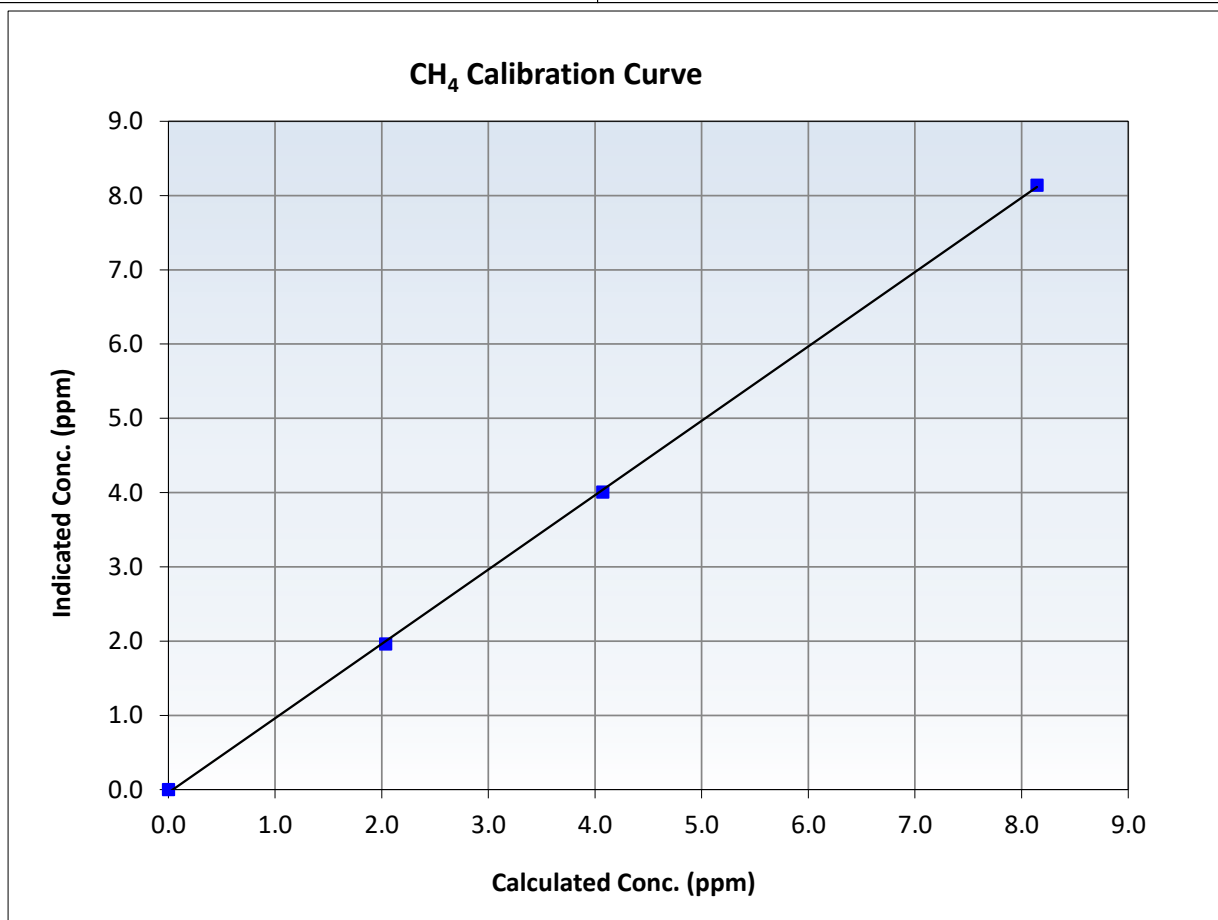
CH₄ Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 5, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:50	End Time (MST):	13:23
Analyzer make:	Thermo 55i	Analyzer serial #:	1152430011

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999879	<i>≥0.995</i>
8.14	8.14	1.0005	Slope	1.001618	<i>0.90 - 1.10</i>
4.07	4.01	1.0163	Intercept	-0.041319	<i>+/-0.5</i>
2.04	1.96	1.0371			





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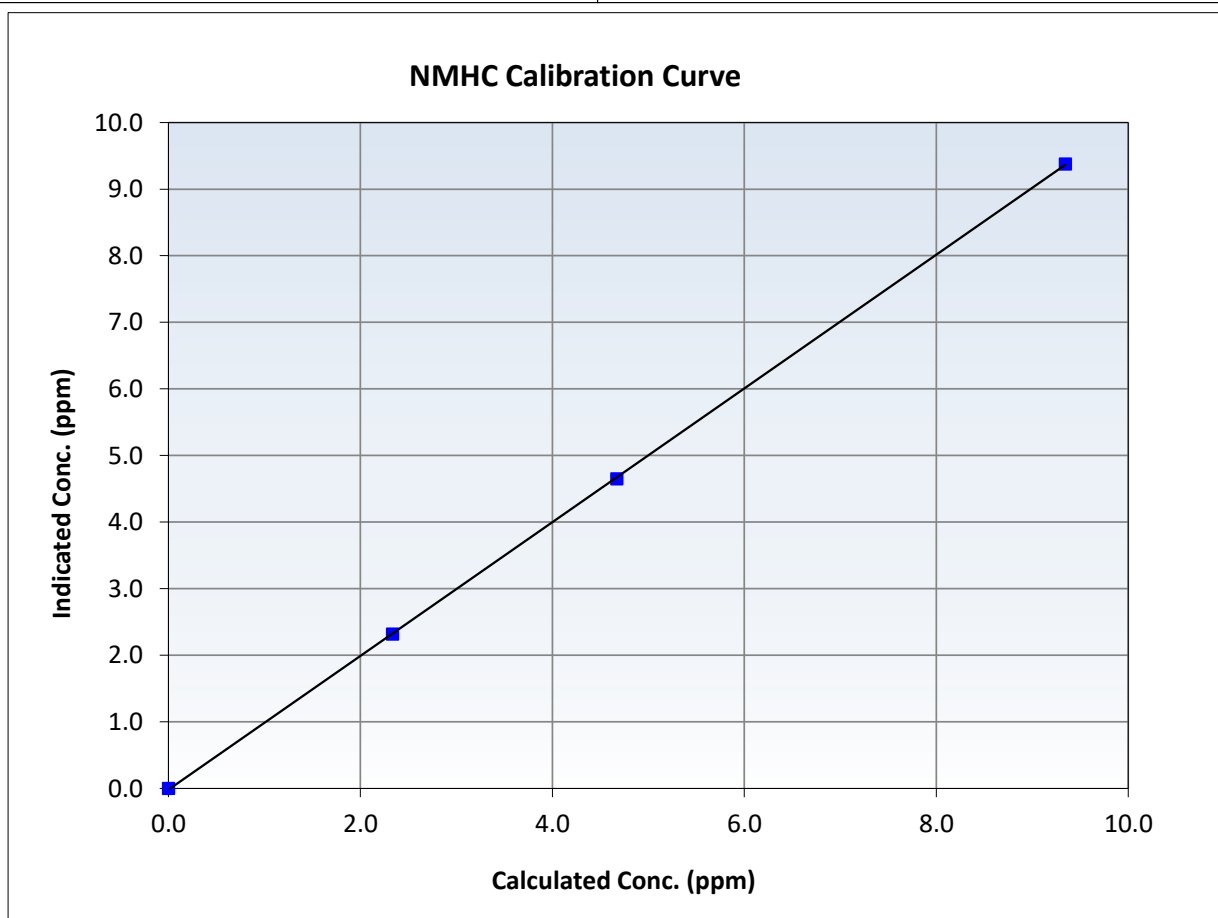
NMHC Calibration Summary

Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 5, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	9:50	End Time (MST):	13:23
Analyzer make:	Thermo 55i	Analyzer serial #:	1152430011

Calibration Data

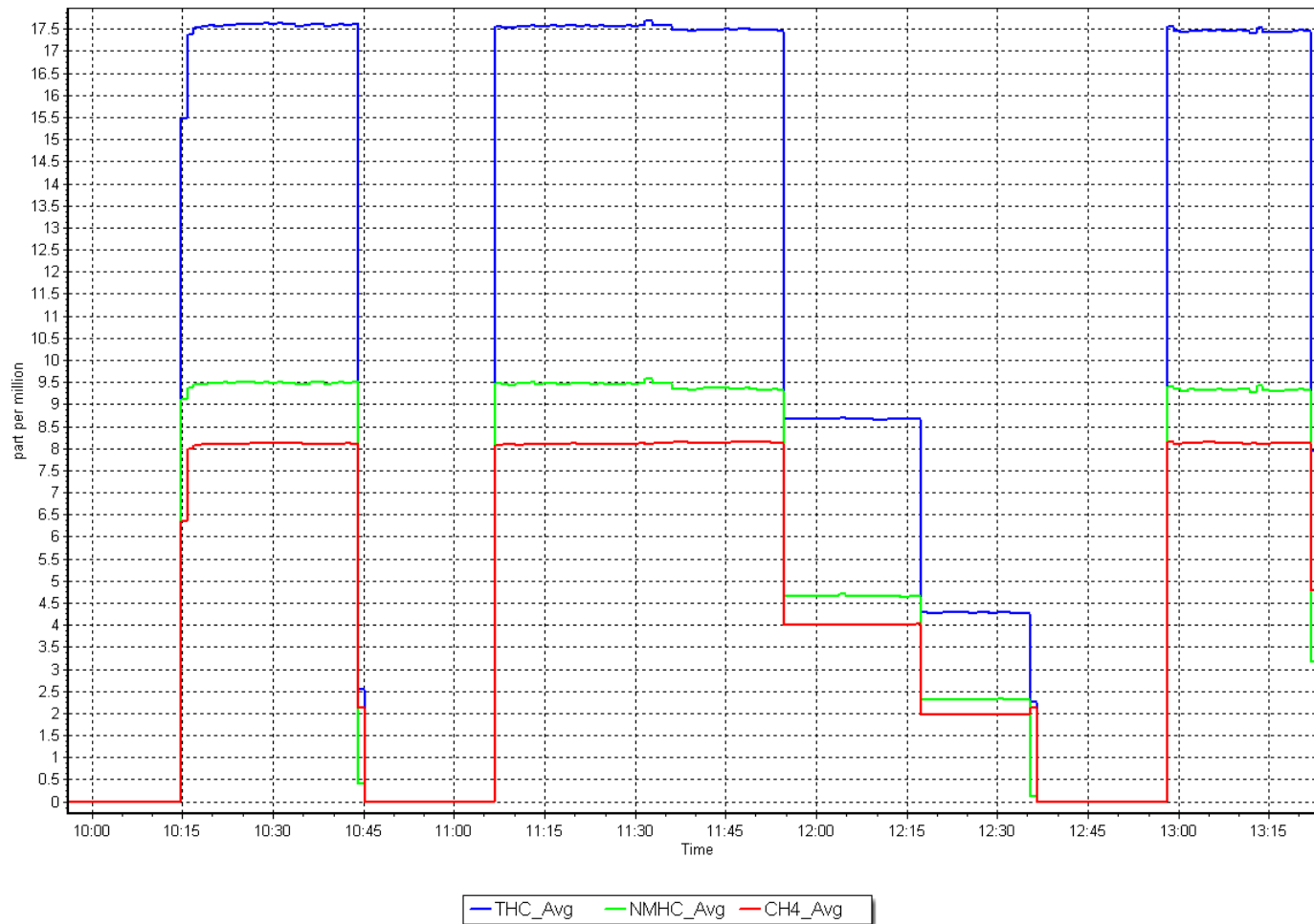
Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.00	0.00	----	Correlation Coefficient	0.999976	<i>≥0.995</i>
9.34	9.38	0.9962	Slope	1.004280	<i>0.90 - 1.10</i>
4.67	4.65	1.0046	Intercept	-0.018506	<i>+/-0.5</i>
2.34	2.32	1.0077			



NMHC Calibration Plot

Date: September 8, 2025

Location: Ells River





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Ells River
 Station number: AMS 30
 Calibration Date: September 4, 2025
 Last Cal Date: August 15, 2025
 Start time (MST): 8:59
 End time (MST): 13:20
 Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0027487
 NOX Cal Gas Conc: 59.30 ppm
 Removed Cylinder #: NA
 Removed Gas NOX Conc: 59.30 ppm
 NOX gas Diff:
 Calibrator Model: API T700
 ZAG make/model: API T701H
 Cal Gas Expiry Date: January 9, 2032
 NO Cal Gas Conc: 59.10 ppm
 Removed Gas Exp Date: NA
 Removed Gas NO Conc: 59.10 ppm
 NO gas Diff:
 Serial Number: 3061
 Serial Number: 358

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO _x Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.1	-0.1	----	----
AF High point	4932	67.7	803.0	800.3	2.7	796.5	794.1	2.4	1.0079	1.0076
AF Mid point										
AF Low point										
New cyl resp										
Previous Response	NO _x = 802.5 ppb	NO = 800.4 ppb				* = > +/-5% change initiates investigation		*Percent Change	NO _x = -0.7%	
Baseline Corr 1st pt	NO _x = 796.7 ppb	NO = 794.2 ppb				<u>As Found Statistics</u>		*Percent Change	NO = -0.8%	
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb				As found	NO _x r ² :	Nx SI:	Nx Int:	
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb				As found	NO r ² :	NO SI:	NO Int:	
						As found	NO ₂ r ² :	NO ₂ SI:	NO ₂ Int:	

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO ₂ Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 710321429

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.326	1.335	NO bkgnd or offset:	15.5	15.6
NOX coeff or slope:	0.992	0.995	NOX bkgnd or offset:	15.7	15.8
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	200.5	202.6

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.002294	1.000644
NO _x Cal Offset:	-2.278469	-2.399282
NO Cal Slope:	1.004603	1.000320
NO Cal Offset:	-3.499559	-3.900988
NO ₂ Cal Slope:	0.998869	1.003151
NO ₂ Cal Offset:	-0.292840	0.343802

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	----	----
High point	4932	67.7	803.0	800.3	2.7	802.3	798.5	3.7	1.0008	1.0022
Mid point	4966	33.8	400.9	399.5	1.4	397.5	394.0	3.5	1.0085	1.0140
Low point	4983	16.9	200.4	199.8	0.7	195.8	191.9	3.9	1.0237	1.0410
As left zero	5000	0.0	0.0	0.0	0.0	0.2	0.1	0.1	----	----
As left span	4932	67.7	803.0	431.2	371.8	802.1	431.2	370.9	1.0011	1.0000
Average Correction Factor									1.0110	1.0191

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.0	----	----
High GPT point	794.0	420.3	376.4	377.7	0.9966	100.3%
Mid GPT point	794.0	606.0	190.7	192.0	0.9933	100.7%
Low GPT point	794.0	697.2	99.5	100.4	0.9911	100.9%
Average Correction Factor					0.9937	100.6%

Notes: Sample inlet filter was changed after as founds. Adjusted span only.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

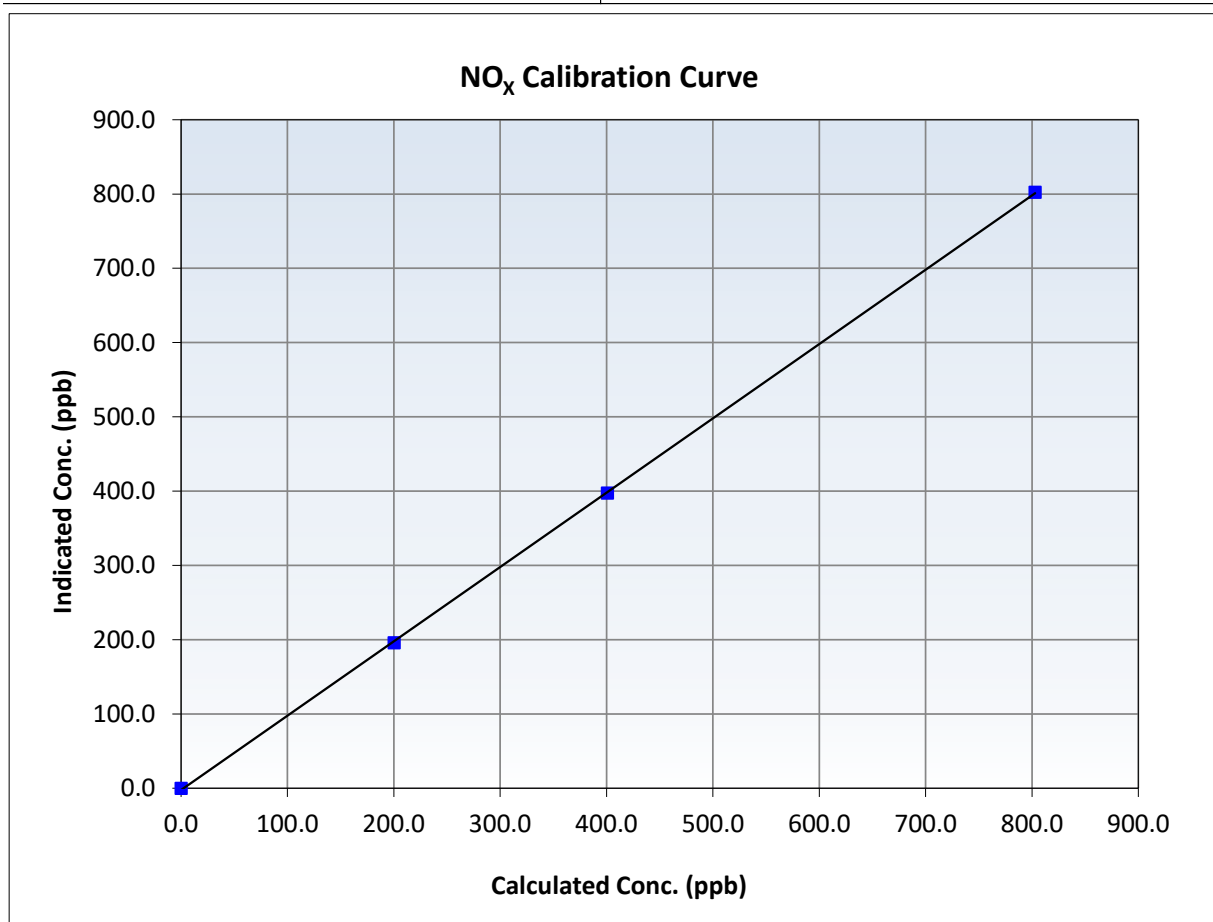
NO_x Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 15, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	8:59	End Time (MST):	13:20
Analyzer make:	Thermo 42i	Analyzer serial #:	710321429

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999959	≥0.995
803.0	802.3	1.0008	Slope	1.000644	0.90 - 1.10
400.9	397.5	1.0085	Intercept	-2.399282	+/-20
200.4	195.8	1.0237			





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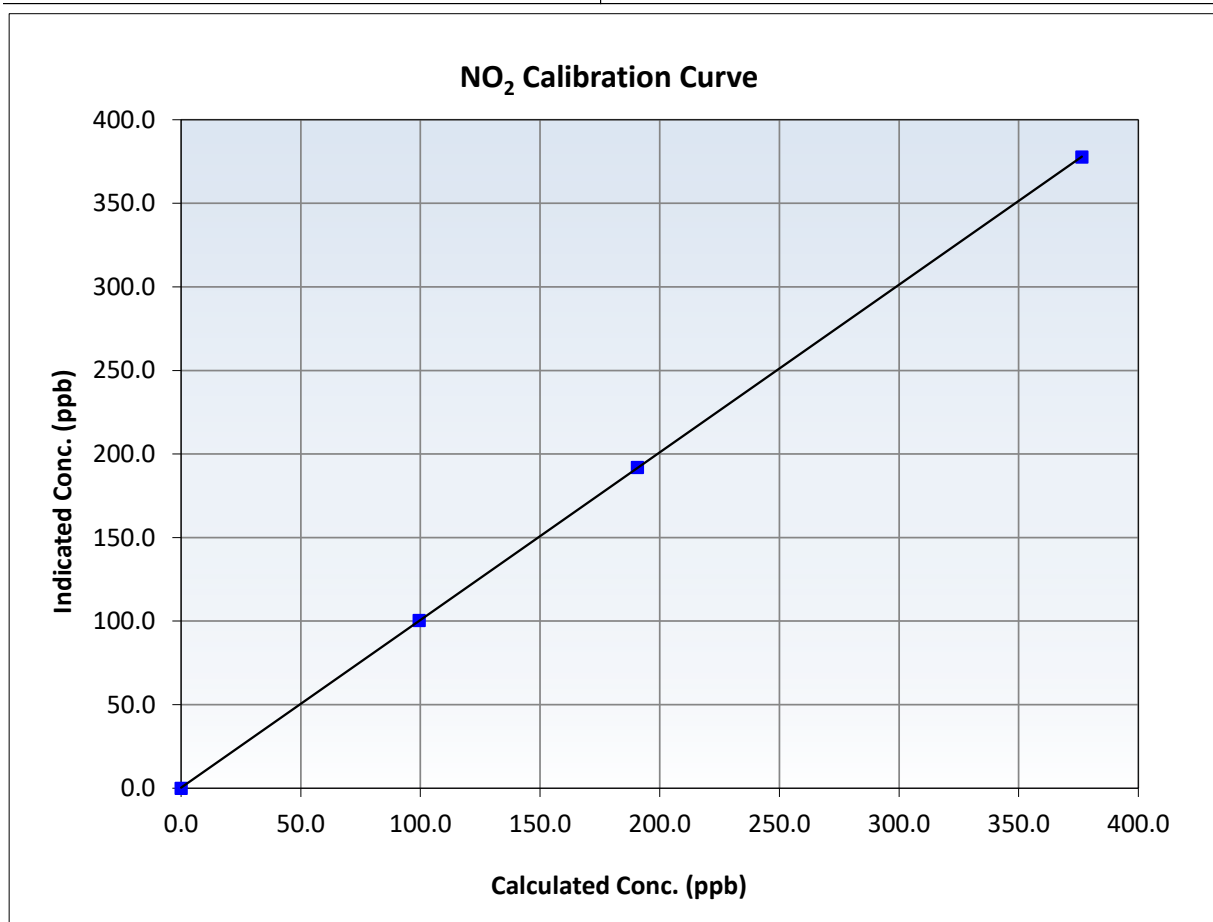
NO₂ Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 15, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	8:59	End Time (MST):	13:20
Analyzer make:	Thermo 42i	Analyzer serial #:	710321429

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999995	≥0.995
376.4	377.7	0.9966	Slope	1.003151	0.90 - 1.10
190.7	192.0	0.9933	Intercept	0.343802	+/-20
99.5	100.4	0.9911			





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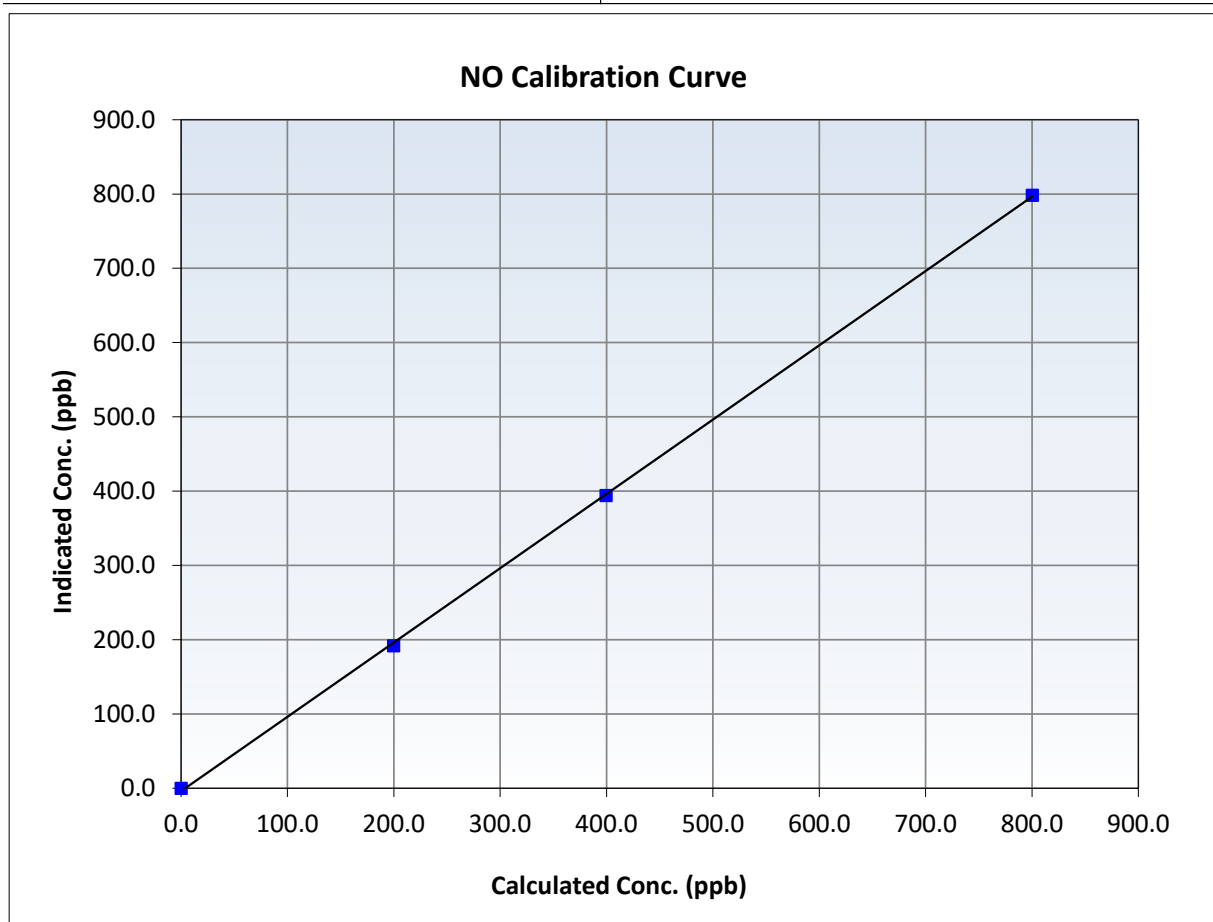
NO Calibration Summary

Station Information

Calibration Date:	September 4, 2025	Previous Calibration:	August 15, 2025
Station Name:	Ells River	Station Number:	AMS 30
Start Time (MST):	8:59	End Time (MST):	13:20
Analyzer make:	Thermo 42i	Analyzer serial #:	710321429

Calibration Data

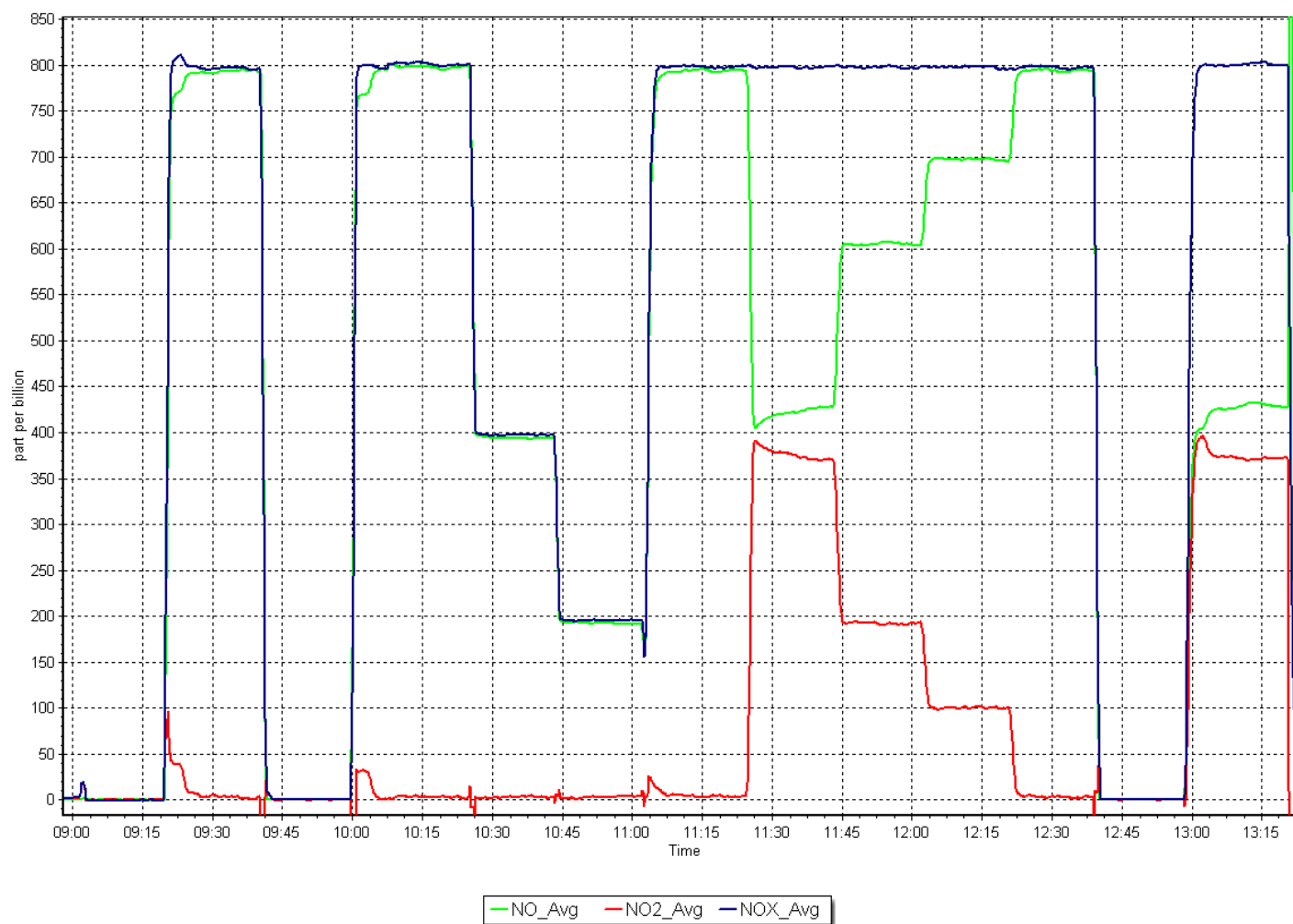
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999891	≥ 0.995
800.3	798.5	1.0022	Slope	1.000320	$0.90 - 1.10$
399.5	394.0	1.0140	Intercept	-3.900988	± 20
199.8	191.9	1.0410			



NO_x Calibration Plot

Date: September 4, 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: September 2, 2025 Last Cal Date: August 15, 2025
Start time (MST): 10:51 End time (MST): 11:44

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 (°C)	13.40	12.83	13.40	☐	+/- 2 °C
P (mmHg)	740.40	742.40	740.40	☐	+/- 10 mmHg
Flow (LPM)	4.99	5.05	4.99	☐	+/- 0.25 LPM
PW% (pump)	32	----	32	☐	>80%
Zero Verification	PM w/o HEPA: 70.20		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: January 30, 2027
Lot No.: 100128-050-040

Parameter	As found	Post maintenance	As left	Adjusted	(Limits)
PMT Peak Test	9.80	10.60	10.60	☐	+/- 0.5

Date Optical Chamber Cleaned: September 2, 2025
Date Disposable Filter Changed: September 2, 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

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Ells River	Station Number:	AMS 30
Calibration Date:	September 4, 2025	Prev Cal Date:	August 23, 2024
Start Time (MST):	10:30	End Time (MST):	11:14
Tower Height (m):	10.0	Reason:	Removal

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	A3111
WS Calibrator:	MetOne 053	Serial Number:	P15103

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
0	0.0	0.0	---
200	20.2	20.1	-0.3%
400	39.4	39.4	0.1%
600	58.6	58.5	-0.1%
800	77.8	77.8	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999999	0.999999	≥ 0.9995
Calculated slope	0.999473	0.999473	$0.98 - 1.02$
Calculated intercept	0.026227	0.026227	± 2

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	J2732
As Found Declination (deg east of True North):	<u>14</u>	As Left Declination (deg east of True North):	<u>14</u>
Solar noon (MST):	13:25	Calc Declination*:	13.49 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) <i>Limit = +/- 1%</i>
10	7.9	-0.6%
90	85.0	-1.4%
180	174.8	-1.4%
270	268.8	-0.3%
350	347.3	-0.7%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999950	0.999920	≥ 0.9995
Calculated slope	0.997328	0.996608	$0.97 - 1.03$
Calculated intercept	-0.719101	3.839600	± 5

Notes: Removal done. WS/ WD bearings not good and WD readings not accurate. Will do further troubleshooting at the shop.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Ells River	Station Number:	AMS 30
Calibration Date:	September 4, 2025	Prev Cal Date:	NA
Start Time (MST):	11:16	End Time (MST):	12:09
Tower Height (m):	10.0	Reason:	Install

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	E5131
WS Calibrator:	MetOne 053	Serial Number:	P15103

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
0	0.0	0.0	---
200	20.2	20.1	-0.3%
400	39.4	39.4	0.1%
600	58.6	58.5	-0.1%
800	77.8	77.8	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999999	≥ 0.9995
Calculated slope		0.999473	$0.98 - 1.02$
Calculated intercept		0.026227	± 2

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	M8240
As Found Declination (deg east of True North):	<u>NA</u>	As Left Declination (deg east of True North):	<u>14</u>
Solar noon (MST):	13:25	Calc Declination*:	13.49 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) <i>Limit = +/- 1%</i>
10	10.7	0.2%
90	91.4	0.4%
180	180.4	0.1%
270	270.6	0.2%
350	350.8	0.2%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999996	≥ 0.9995
Calculated slope		1.000737	$0.97 - 1.03$
Calculated intercept		-0.913173	± 5

Notes: Install calibrations. Both bearings good. All points within limits. Confirm true north using a compass.

Calibration Performed By: Jan Castro



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS31 BLACKROD SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Blackrod
Calibration Date: September 8, 2025
Start time (MST): 12:30
Reason: Routine

Station number: AMS 31
Last Cal Date: August 28, 2025
End time (MST): 15:06

Calibration Standards

Cal Gas Concentration: 50.25 ppm
Cal Gas Cylinder #: CC327023
Removed Cal Gas Conc: 50.25 ppm
Removed Gas Cyl #: N/A
Calibrator Model: Teledyne T700
Zero Air Gen Model: Teledyne N701H

Cal Gas Exp Date: March 10, 2031
Rem Gas Exp Date: N/A
Diff between cyl:
Serial Number: 1220
Serial Number: 72

Analyzer Information

Analyzer make: Thermo 43i
Analyzer Range: 0 - 1000 ppb

Serial Number: 1160290014

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.005742	1.010356	Backgd or Offset:	37.7	37.7
Calibration intercept:	0.528053	-0.011908	Coeff or Slope:	0.980	0.980

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.2	----
As found High point	4920	79.6	800.0	806.6	0.992
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	806.8	Previous response	805.2	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.1	----
High point	4920	79.6	800.0	808.0	0.990
Mid point	4960	39.8	400.0	405.0	0.988
Low point	4980	19.9	200.0	201.6	0.992
As left zero	5000	0.0	0.0	0.0	----
As left span	4920	79.6	800.0	810.0	0.988
Average Correction Factor:					0.990

Notes: Sample inlet filter was changed after as founds. No adjustment made.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

SO₂ Calibration Summary

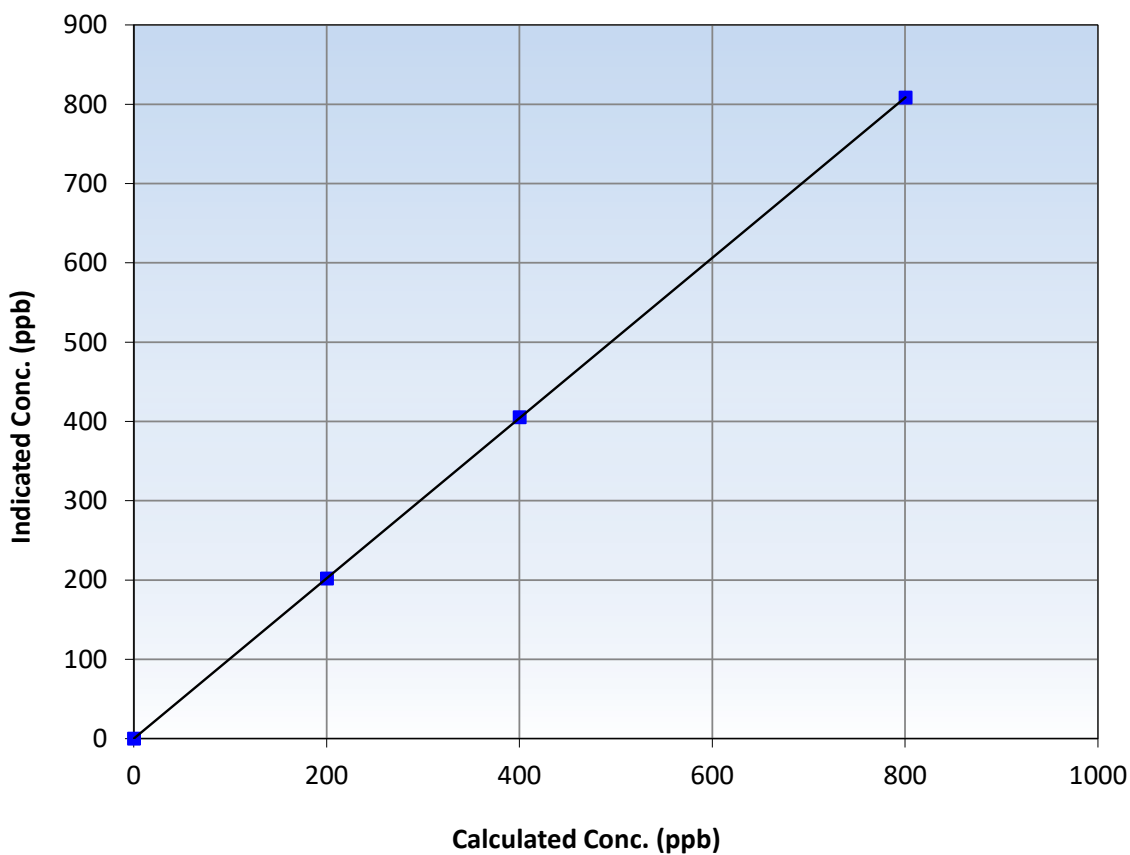
Station Information

Calibration Date:	September 8, 2025	Previous Calibration:	August 28, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	12:30	End Time (MST):	15:06
Analyzer make:	Thermo 43i	Analyzer serial #:	1160290014

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999997	≥0.995
800.0	808.0	0.9902	Slope	1.010356	0.90 - 1.10
400.0	405.0	0.9877	Intercept	-0.011908	+/-30
200.0	201.6	0.9921			

SO₂ Calibration Curve



SO2 Calibration Plot

Date: September 8, 2025

Location: Blackrod





Wood Buffalo Environmental Association

H₂S Calibration Report

Station Information

Station Name: Blackrod Station number: AMS 31
Calibration Date: September 17, 2025 Last Cal Date: August 27, 2025
Start time (MST): 10:02 End time (MST): 13:43
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: 1220
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

	<u>Start</u>	<u>Finish</u>	<u>Start</u>	<u>Finish</u>
Calibration slope:	1.002623	1.003618	Backgd or Offset:	2.57
Calibration intercept:	0.319461	-0.140377	Coeff or Slope:	0.954

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.1	----
As found High point	4926	73.8	80.0	81.8	0.977
As found Mid point	4963	36.9	40.0	41.0	0.973
As found Low point	4982	18.5	20.1	20.1	0.993
New cylinder response					
Baseline Corr As found:	81.9	Prev response:	80.53	*% change:	1.7%
Baseline Corr 2nd AF pt:	41.1	AF Slope:	1.025335	AF Intercept:	-0.200780
Baseline Corr 3rd AF pt:	20.2	AF Correlation:	0.999969	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4926	73.8	80.0	80.2	0.998
Mid point	4963	36.9	40.0	40.0	1.000
Low point	4982	18.5	20.1	19.8	1.013
As left zero	5000	0.0	0.0	0.0	----
As left span	4926	73.8	80.0	80.2	0.998
SO2 Scrubber Check	4921	79.5	794.9	-0.1	----
Date of last scrubber change:	27-Aug-25			Ave Corr Factor	1.003
Date of last converter efficiency test:					

Notes: Sample inlet filter and pump 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

H₂S Calibration Summary

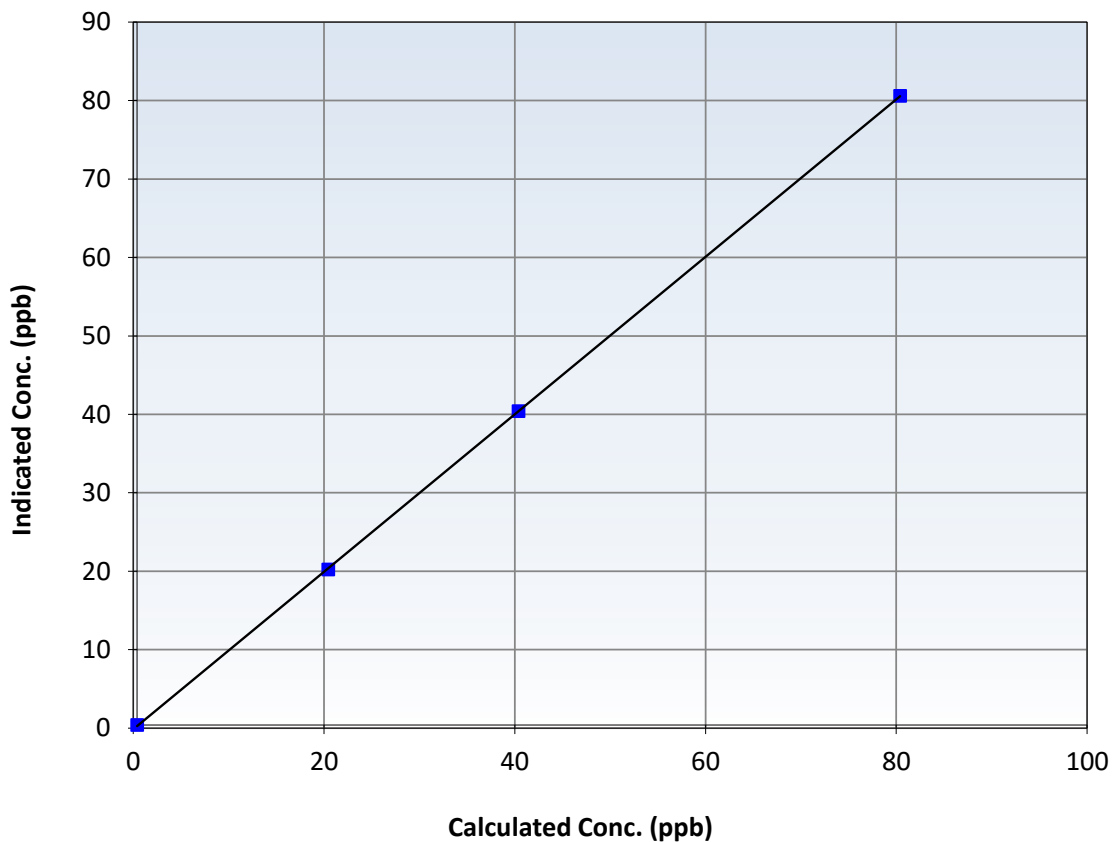
Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 27, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	10:02	End Time (MST):	13:43
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12228021056

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999984		≥0.995
80.0	80.2	0.9975	Slope	1.003618		0.90 - 1.10
40.0	40.0	1.0000	Intercept	-0.140377		+/-3
20.1	19.8	1.0127				

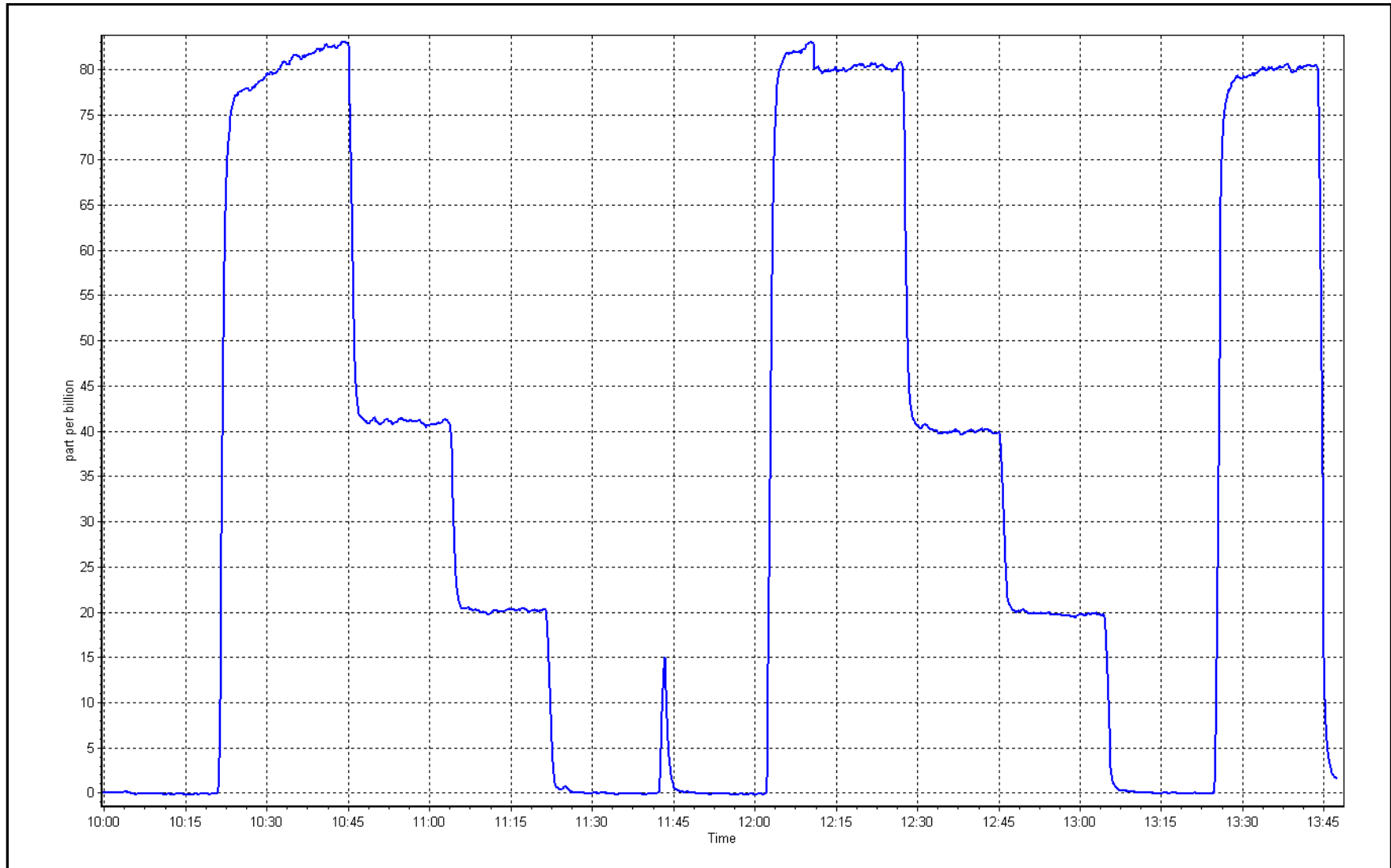
H₂S Calibration Curve



H₂S Calibration Plot

Date: September 17, 2025

Location: Blackrod





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Blackrod
Station number: AMS 31
Calibration Date: September 8, 2025
Last Cal Date: August 21, 2025
Start time (MST): 10:05
End time (MST): 12:30
Reason: As Found

Calibration Standards

NO Gas Cylinder #: DT0035071
NO_x Cal Gas Conc: 59.30 ppm
Removed Cylinder #: NA
Removed Gas NO_x Conc: 59.30 ppm
NO_x gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API N701H
Cal Gas Expiry Date: January 9, 2032
NO Cal Gas Conc: 59.10 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 59.10 ppm
NO gas Diff:
Serial Number: 1220
Serial Number: 72

As Found Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO _x Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
As found zero	5000	0.0	0.0	0.0	0.0	0.2	0.3	-0.1	----	----
AF High point	4932	67.7	803.0	800.3	2.7	803.0	795.4	7.6	1.0002	1.0065
AF Mid point	4966	33.8	400.9	399.5	1.4	404.9	399.7	5.2	0.9906	1.0003
AF Low point	4983	16.9	200.4	199.8	0.7	202.6	198.0	4.6	0.9903	1.0104

New cyl resp

Previous Response	NO _x = 815.3 ppb	NO = 811.2 ppb	* = > +/-5% change initiates investigation		*Percent Change	NO _x = -1.6%
Baseline Corr 1st pt	NO _x = 802.8 ppb	NO = 795.1 ppb	<u>As Found Statistics</u>		*Percent Change	NO = -2.0%
Baseline Corr 2nd pt	NO _x = 404.7 ppb	NO = 399.4 ppb	As found	NO _x r ² : 0.999970	Nx SI: 0.999483	Nx Int: 1.784
Baseline Corr 3rd pt	NO _x = 202.4 ppb	NO = 197.7 ppb	As found	NO r ² : 0.999983	NO SI: 0.994228	NO Int: 0.481
			As found	NO ₂ r ² : 0.999989	NO ₂ SI: 0.999506	NO ₂ Int: -0.395

As Found GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	Baseline Adjusted NO ₂ Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
As Found GPT zero	----	----	0.0	-0.1	----	----
As found high GPT point	795.1	405.8	392.0	391.8	1.0005	99.9%
As found mid GPT point	795.1	596.7	201.1	199.8	1.0065	99.3%
As found low GPT point	795.1	692.7	105.1	104.8	1.0029	99.7%



Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1426262592

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.957	NA	NO bkgnd or offset:	13.4	NA
NOX coeff or slope:	0.998	NA	NOX bkgnd or offset:	13.7	NA
NO2 coeff or slope:	1.000	NA	Reaction cell Press:	172.5	NA

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.014614	
NO _x Cal Offset:	0.546460	
NO Cal Slope:	1.013779	
NO Cal Offset:	-0.135288	
NO ₂ Cal Slope:	1.008015	
NO ₂ Cal Offset:	-0.374612	

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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
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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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
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Cal zero
High GPT point
Mid GPT point
Low GPT point

Average Correction Factor

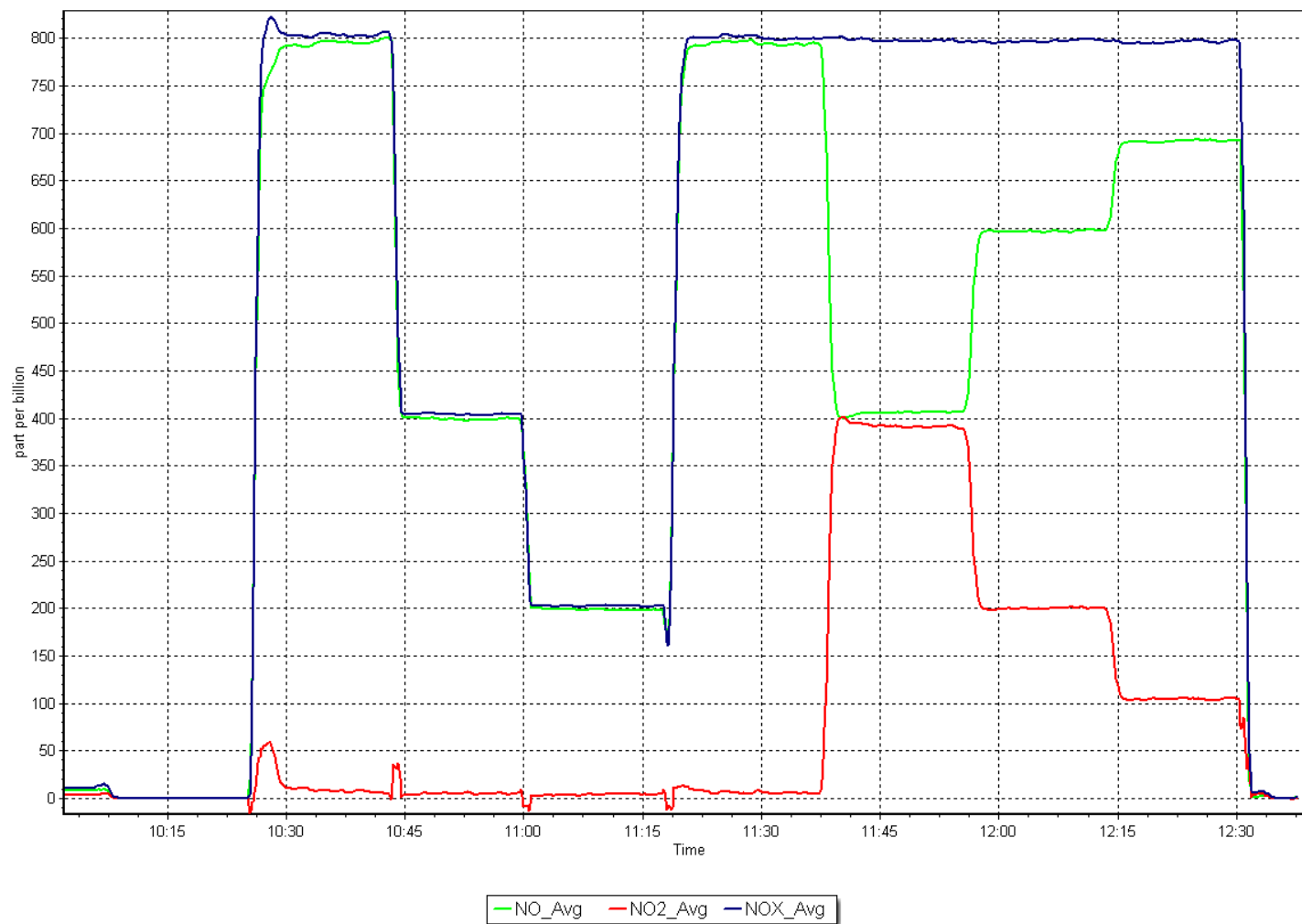
Notes: Multipoint as founds was done to replace pump and charcoal.

Calibration Performed By: Jan Castro

NO_x Calibration Plot

Date: September 8, 2025

Location: Blackrod





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Blackrod
Station number: AMS 31
Calibration Date: September 9, 2025
Last Cal Date: August 21, 2025
Start time (MST): 7:42
End time (MST): 11:59
Reason: Routine

Calibration Standards

NO Gas Cylinder #: DT0035071
NOX Cal Gas Conc: 59.30 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 59.30 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API N701H
Cal Gas Expiry Date: January 9, 2032
NO Cal Gas Conc: 59.10 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 59.10 ppm
NO gas Diff:
Serial Number: 1220
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
-----------	------------------------------	--------------------------------	---	--	---	--	---	--	--	---

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	<u>As Found Statistics</u>	*Percent Change	NO = NA
Baseline Corr 2nd pt	NO _x = NA	ppb	NO = NA	ppb	As found NO _x r ² :	Nx SI:	Nx Int:
Baseline Corr 3rd pt	NO _x = NA	ppb	NO = NA	ppb	As found NO r ² :	NO SI:	NO Int:
					As found NO ₂ r ² :	NO2 SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
-------------------	---	--	--	---	--	--

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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1426262592

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.014614	1.003173
NO _x Cal Offset:	0.546460	-0.437111
NO Cal Slope:	1.013779	1.003814
NO Cal Offset:	-0.135288	-1.198337
NO ₂ Cal Slope:	1.008015	1.004641
NO ₂ Cal Offset:	-0.374612	-0.688005

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.957	1.059	NO bkgnd or offset:	13.4	15.8
NOX coeff or slope:	0.998	0.997	NOX bkgnd or offset:	13.7	15.9
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	172.5	143.6

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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	-0.4	-0.3	-0.1	----	----
High point	4932	67.7	803.0	800.3	2.7	805.0	802.5	2.6	0.9975	0.9972
Mid point	4966	33.8	400.9	399.5	1.4	402.0	399.6	2.5	0.9972	0.9998
Low point	4983	16.9	200.4	199.8	0.7	200.4	198.3	2.1	1.0002	1.0074
As left zero	5000	0.0	0.0	0.0	0.0	-0.2	-0.3	0.1	----	----
As left span	4932	67.7	803.0	406.3	396.7	797.8	406.3	391.5	1.0065	1.0000
Average Correction Factor									0.9983	1.0015

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	796.4	408.4	390.7	392.3	0.9959	100.4%
Mid GPT point	796.4	598.5	200.6	200.1	1.0025	99.7%
Low GPT point	796.4	695.0	104.1	103.6	1.0049	99.5%
Average Correction Factor					1.0011	99.9%

Notes: As founds were done yesterday. Adjusted zero and span.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

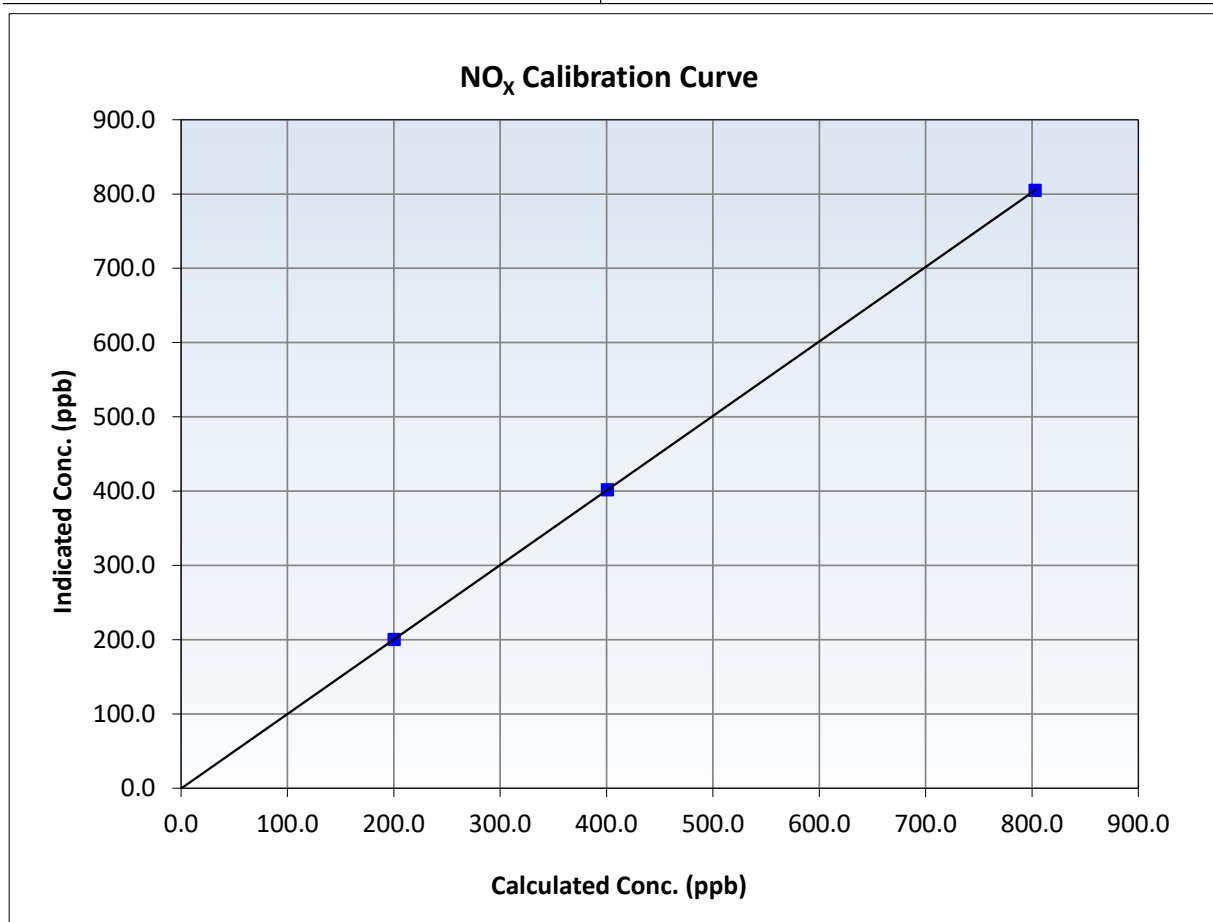
NO_x Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 21, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	7:42	End Time (MST):	11:59
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262592

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.4	----	Correlation Coefficient	1.000000	≥0.995
803.0	805.0	0.9975	Slope	1.003173	0.90 - 1.10
400.9	402.0	0.9972	Intercept	-0.437111	+/-20
200.4	200.4	1.0002			





Wood Buffalo Environmental Association

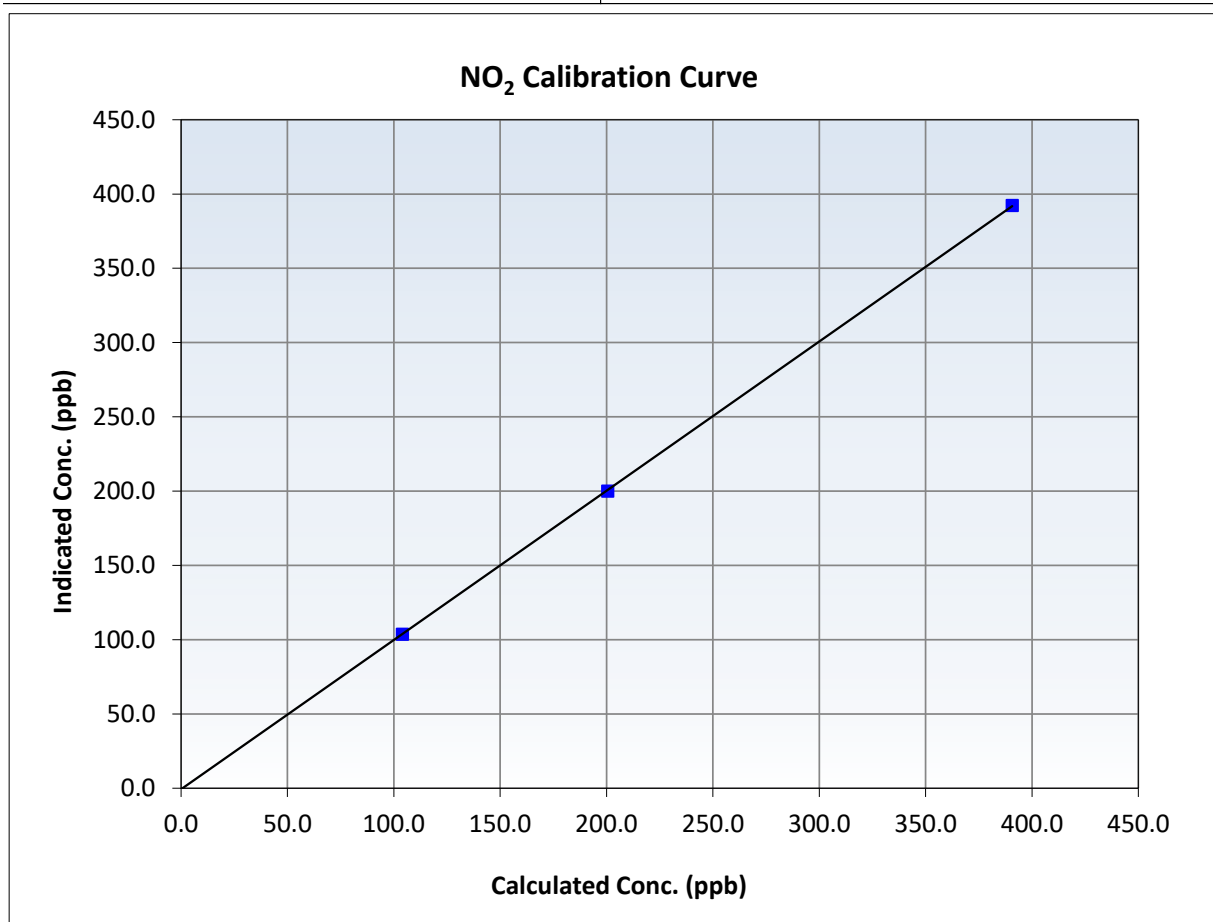
NO₂ Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 21, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	7:42	End Time (MST):	11:59
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262592

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999985	≥ 0.995
390.7	392.3	0.9959	Slope	1.004641	$0.90 - 1.10$
200.6	200.1	1.0025	Intercept	-0.688005	± 20
104.1	103.6	1.0049			





Wood Buffalo Environmental Association

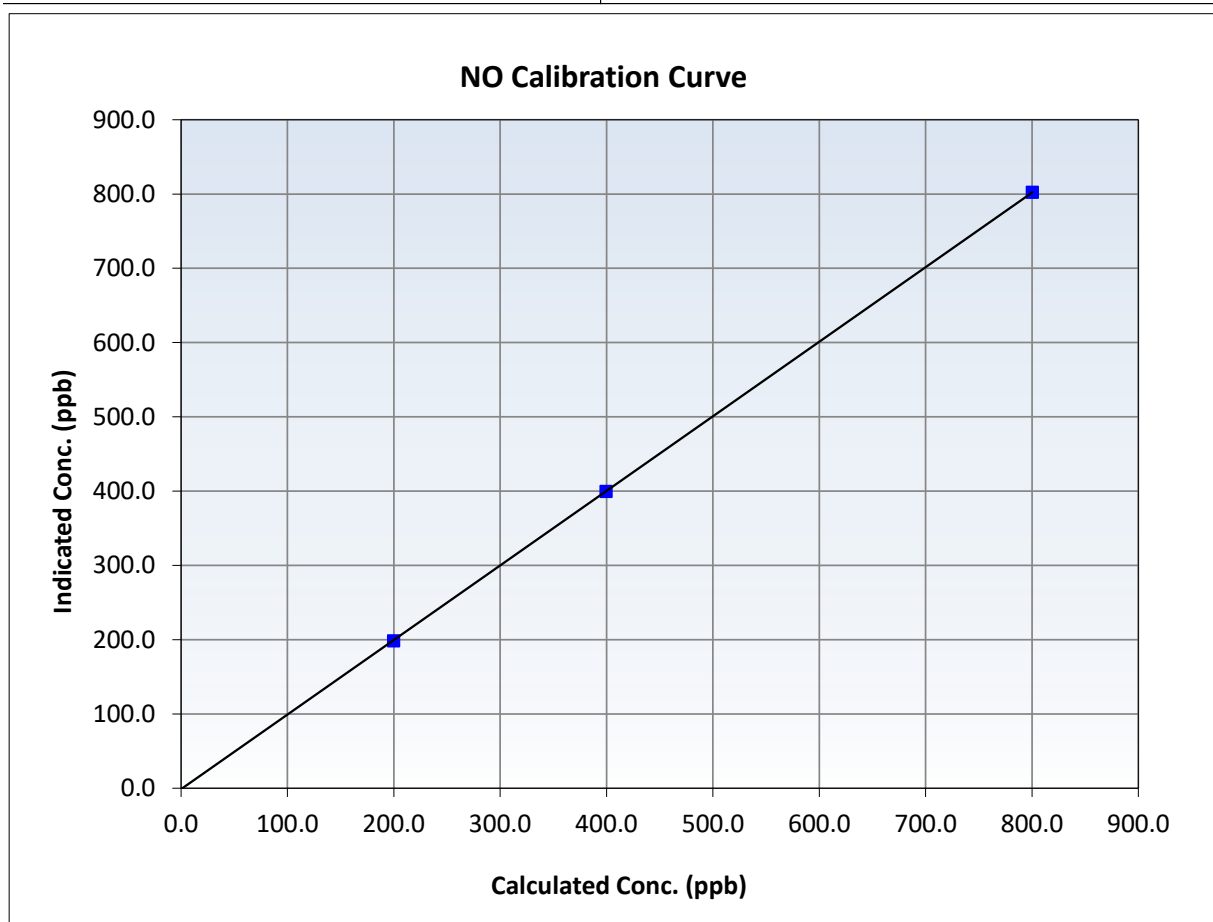
NO Calibration Summary

Station Information

Calibration Date:	September 9, 2025	Previous Calibration:	August 21, 2025
Station Name:	Blackrod	Station Number:	AMS 31
Start Time (MST):	7:42	End Time (MST):	11:59
Analyzer make:	Thermo 42i	Analyzer serial #:	1426262592

Calibration Data

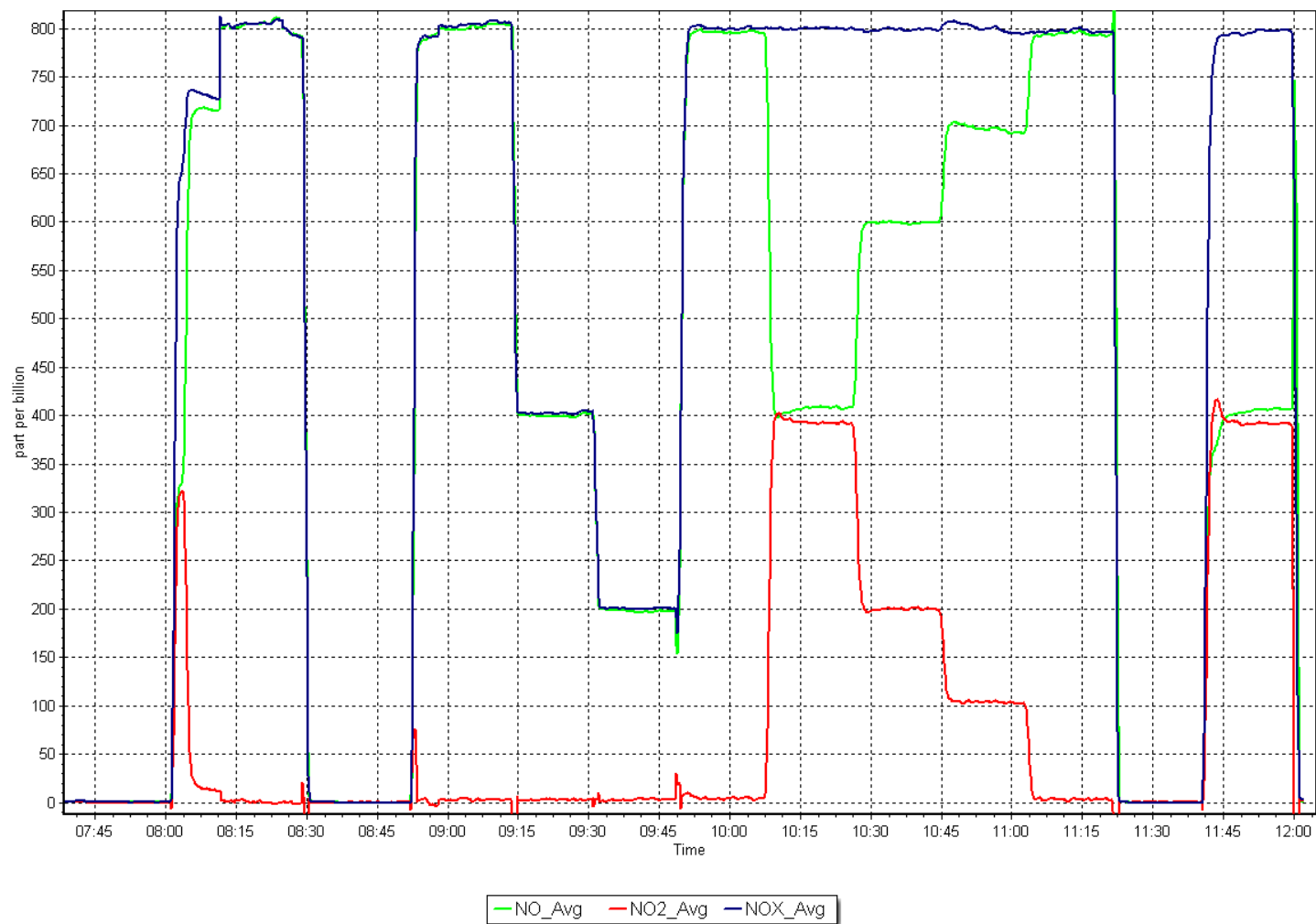
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.3	----	Correlation Coefficient	0.999994	≥ 0.995
800.3	802.5	0.9972	Slope	1.003814	$0.90 - 1.10$
399.5	399.6	0.9998	Intercept	-1.198337	± 20
199.8	198.3	1.0074			



NO_x Calibration Plot

Date: September 9, 2025

Location: Blackrod





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS33 MONDAY CREEK SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Monday Creek Station number: AMS 33
Calibration Date: September 25, 2025 Last Cal Date: August 22, 2025
Start time (MST): 10:10 End time (MST): 12:48
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.006621	1.003381	Backgd or Offset:	30.3	31.0
Calibration intercept:	0.402235	-0.137802	Coeff or Slope:	0.970	0.970

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.1	----
As found High point	4921	79.1	800.8	803.0	0.997
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	802.9	Previous response	806.5	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	-0.3	----
High point	4921	79.1	800.8	803.0	0.997
Mid point	4961	39.5	399.9	402.0	0.995
Low point	4980	19.8	200.5	200.6	0.999
As left zero	5000	0.0	0.0	0.1	----
As left span	4921	79.1	800.8	803.0	0.997
Average Correction Factor:					0.997

Notes: Sample inlet filter was changed after as founds. Adjusted zero only.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

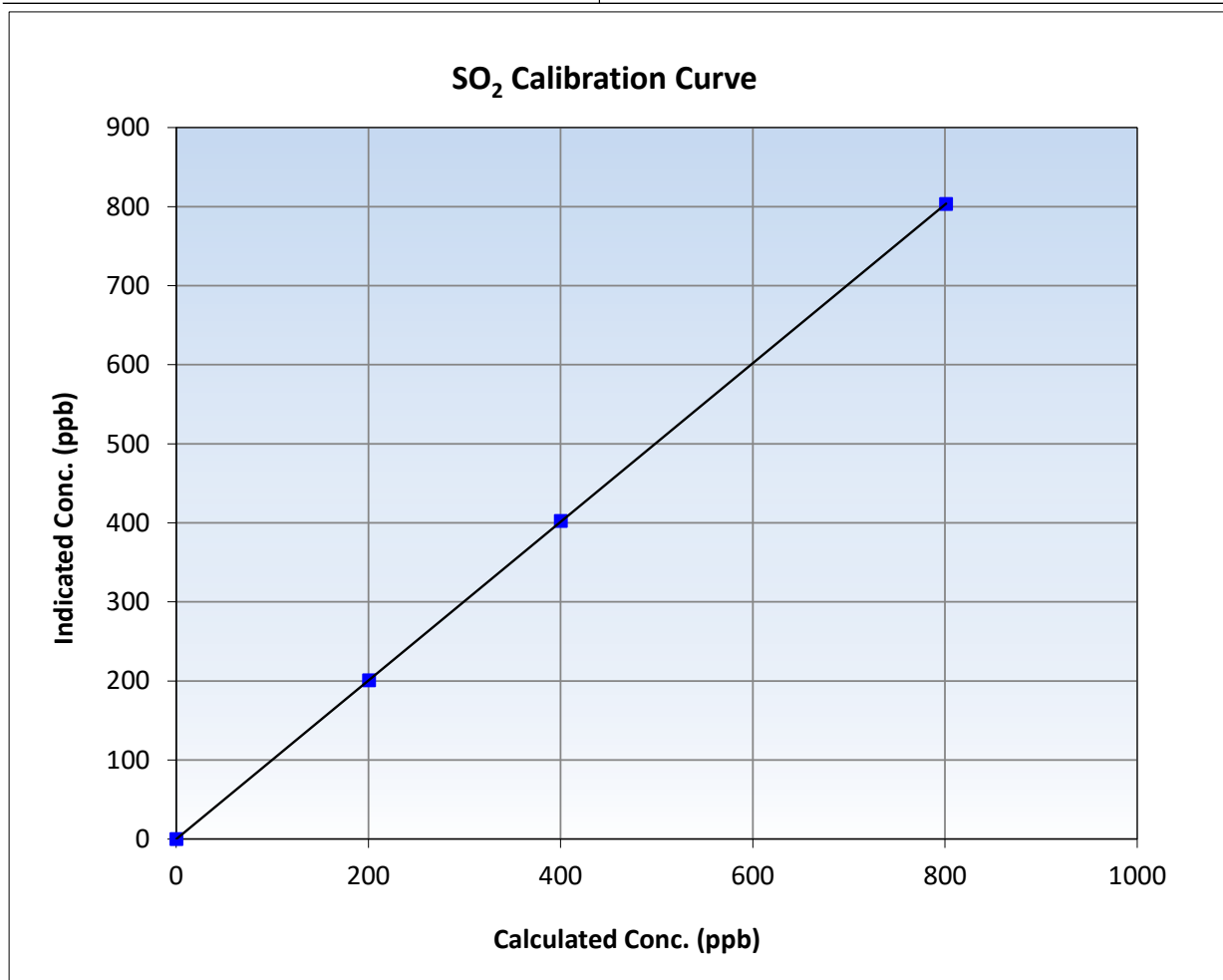
SO₂ Calibration Summary

Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 22, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:10	End Time (MST):	12:48
Analyzer make:	Thermo 43i	Analyzer serial #:	1152430005

Calibration Data

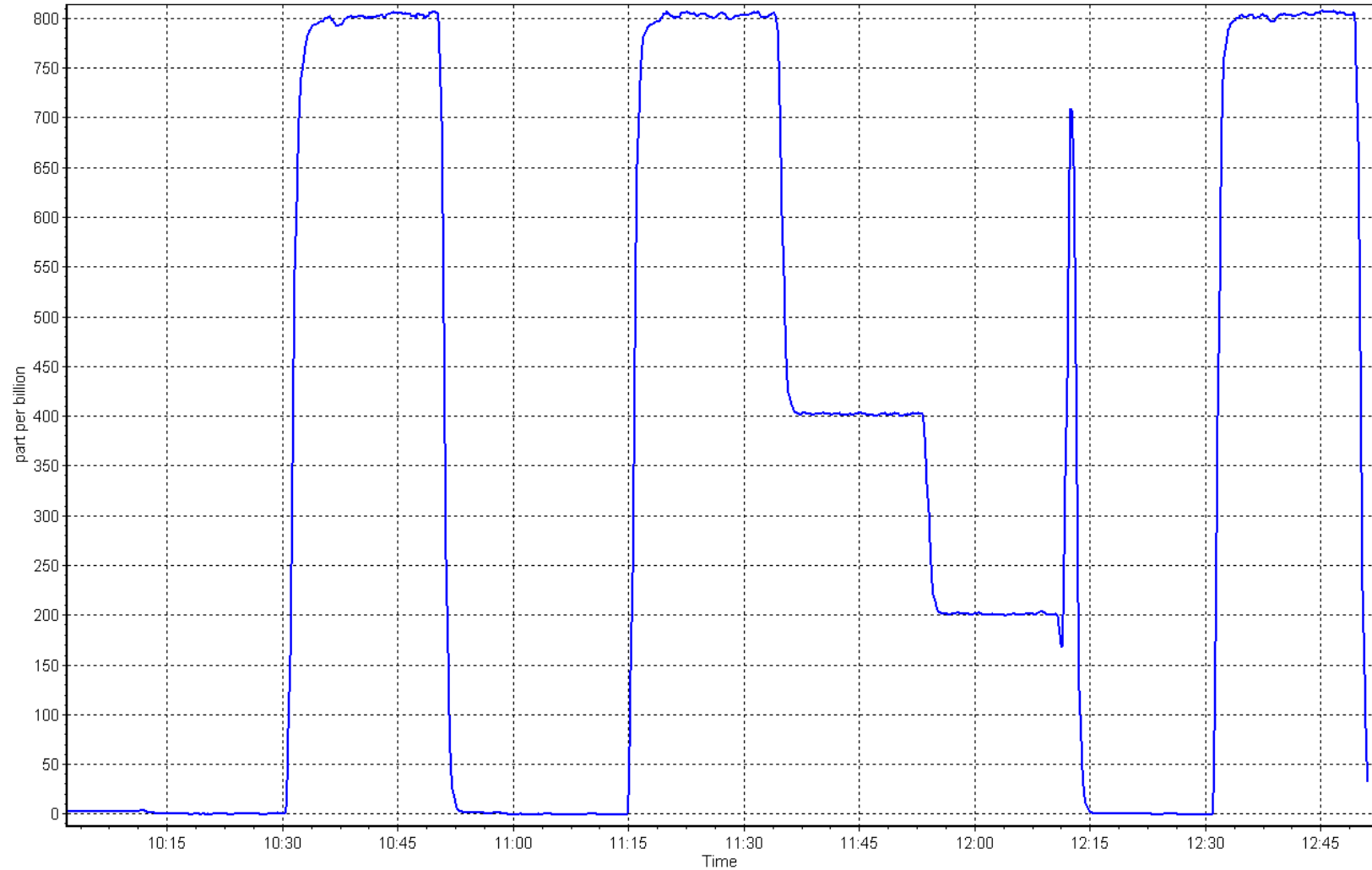
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.3	----	Correlation Coefficient	0.999997	≥0.995
800.8	803.0	0.9973	Slope	1.003381	0.90 - 1.10
399.9	402.0	0.9947	Intercept	-0.137802	+/-30
200.5	200.6	0.9993			



SO2 Calibration Plot

Date: September 25, 2025

Location: Monday Creek





Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name: Monday Creek
Calibration Date: September 10, 2025
Start time (MST): 9:54
Reason: Routine

Station number: AMS 33
Last Cal Date: August 26, 2025
End time (MST): 13:27

Calibration Standards

Cal Gas Concentration: 5.05 ppm
Cal Gas Cylinder #: DT0014831
Removed Cal Gas Conc: 5.05 ppm
Removed Gas Cyl #: NA
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne T701H

Cal Gas Exp Date: November 15, 2026
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 3253
Serial Number: 832

Analyzer Information

Analyzer make: Thermo 43iQTL
Converter make: Global 150
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 12333331547
Converter serial #: 2022-196
Converter Temp: 325 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.012284	1.006712	Backgd or Offset:	1.3	1.3
Calibration intercept:	-0.001616	0.118386	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4921	79.2	80.0	80.3	0.996
As found Mid point	4960	39.6	40.0	40.3	0.993
As found Low point	4980	19.8	20.0	20.4	0.980
New cylinder response					
Baseline Corr As found:	80.3	Prev response:	80.97	*% change:	-0.8%
Baseline Corr 2nd AF pt:	40.3	AF Slope:	1.002712	AF Intercept:	0.158391
Baseline Corr 3rd AF pt:	20.4	AF Correlation:	0.999981	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4921	79.2	80.0	80.6	0.992
Mid point	4960	39.6	40.0	40.4	0.990
Low point	4980	19.8	20.0	20.4	0.980
As left zero	5000	0.0	0.0	0.2	----
As left span	4921	79.2	80.0	80.0	1.000
SO2 Scrubber Check	4921	79.1	791.0	0.1	----
Date of last scrubber change:	11-Apr-24		Ave Corr Factor		0.988
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. No adjustment made.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

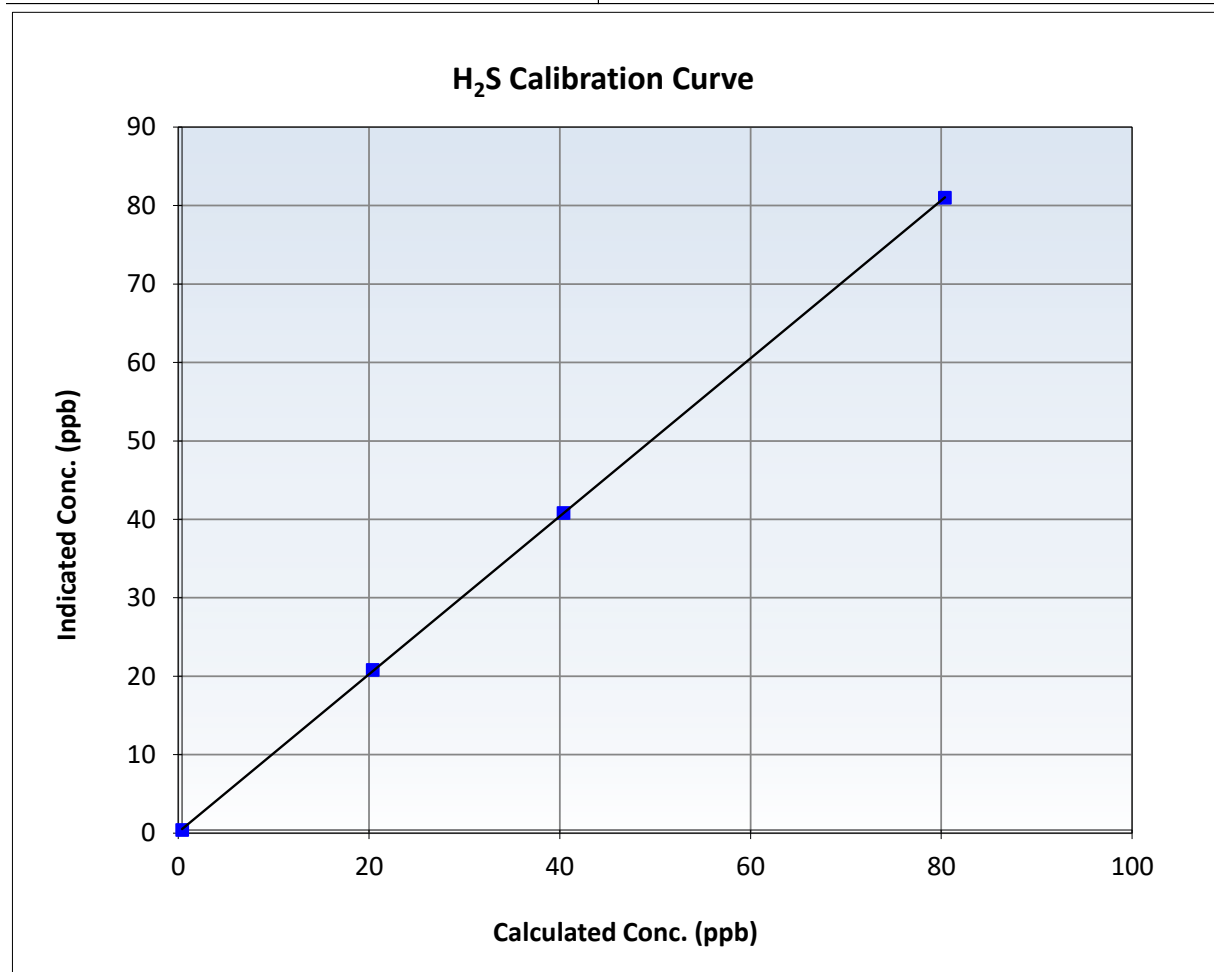
H2S Calibration Summary

Station Information

Calibration Date:	September 10, 2025	Previous Calibration:	August 26, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	9:54	End Time (MST):	13:27
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12333331547

Calibration Data

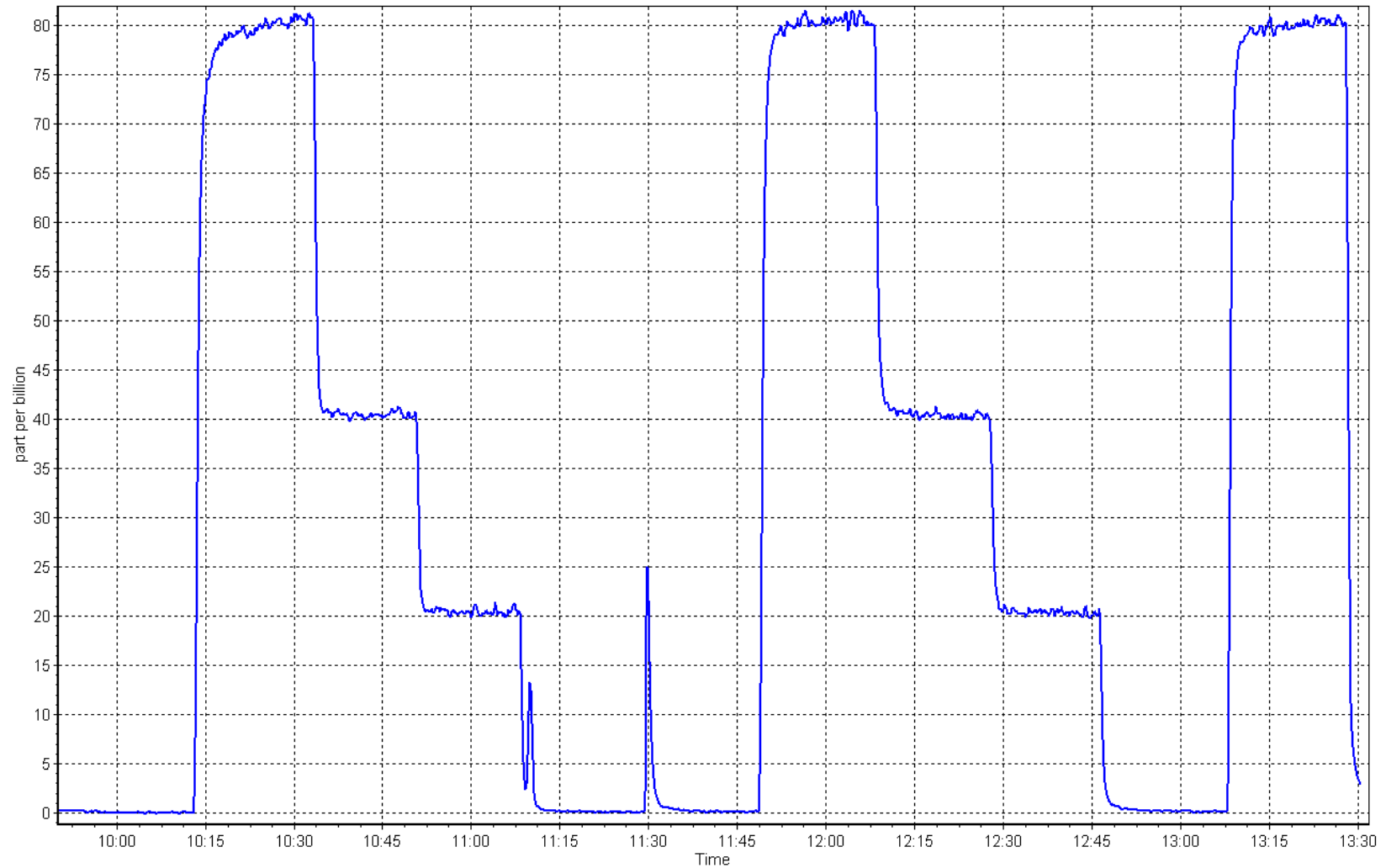
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			Limits
0.0	0.0	----	Correlation Coefficient	0.999989		≥ 0.995
80.0	80.6	0.9924	Slope	1.006712		0.90 - 1.10
40.0	40.4	0.9901	Intercept	0.118386		+/-3
20.0	20.4	0.9803				



H2S Calibration Plot

Date: September 10, 2025

Location: Monday Creek





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Station Information

Station Name: Monday Creek
Station number: AMS 33
Calibration Date: September 18, 2025
Last Cal Date: August 12, 2025
Start time (MST): 10:01
End time (MST): 13:56
Reason: Routine

Calibration Standards

NO Gas Cylinder #: CC755290
NOX Cal Gas Conc: 48.90 ppm
Removed Cylinder #: NA
Removed Gas NOX Conc: 48.90 ppm
NOX gas Diff:
Calibrator Model: Teledyne API T700
ZAG make/model: Teledyne API T701H
Cal Gas Expiry Date: March 11, 2031
NO Cal Gas Conc: 48.70 ppm
Removed Gas Exp Date: NA
Removed Gas NO Conc: 48.70 ppm
NO gas Diff:
Serial Number: 3253
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)) <i>Limit = 0.90 - 1.10</i>	Baseline Adjusted NO Correction factor (Cc/(Ic-AFzero)) <i>Limit = 0.90 - 1.10</i>
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	796.5	790.2	6.4	1.0079	1.0118
AF Mid point										
AF Low point										
New cyl resp										
Previous Response	NO _x = 803.3 ppb	NO = 800.0 ppb				* = > +/-5% change initiates investigation		*Percent Change	NO _x = -0.8%	
Baseline Corr 1st pt	NO _x = 796.6 ppb	NO = 790.3 ppb				<u>As Found Statistics</u>		*Percent Change	NO = -1.2%	
Baseline Corr 2nd pt	NO _x = NA ppb	NO = NA ppb				As found	NO _x r ² :	Nx SI:	Nx Int:	
Baseline Corr 3rd pt	NO _x = NA ppb	NO = NA ppb				As found	NO r ² :	NO SI:	NO Int:	
						As found	NO ₂ r ² :	NO ₂ SI:	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)) <i>Limit = 0.90 - 1.10</i>	Converter Efficiency <i>Limit = 96-104%</i>
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 \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42iQ
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 12426335704

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	0.999485	0.993621
NO _x Cal Offset:	0.810525	0.470640
NO Cal Slope:	1.000489	0.992614
NO Cal Offset:	-0.029616	-0.049056
NO ₂ Cal Slope:	0.996814	0.994046
NO ₂ Cal Offset:	-0.147052	0.760617

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	1.045	1.045	NO bkgnd or offset:	1.4	1.4
NOX coeff or slope:	0.999	0.999	NOX bkgnd or offset:	1.5	1.5
NO2 coeff or slope:	0.990	0.990	Reaction cell Press:	138.9	138.5

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) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	----	----
High point	4918	82.1	802.9	799.6	3.3	798.1	793.9	4.2	1.0060	1.0072
Mid point	4959	41.1	401.9	400.3	1.6	399.8	396.6	3.2	1.0054	1.0093
Low point	4979	20.5	200.5	199.7	0.8	200.5	198.7	1.8	1.0001	1.0050
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	396.9	406.0	785.7	396.9	388.7	1.0219	1.0000
Average Correction Factor									1.0038	1.0072

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) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.0	----	----
High GPT point	791.5	387.7	407.1	405.1	1.0049	99.5%
Mid GPT point	791.5	597.4	197.4	197.2	1.0009	99.9%
Low GPT point	791.5	694.8	100.0	101.0	0.9899	101.0%
Average Correction Factor					0.9986	100.1%

Notes:

Sample inlet filter was changed after as founds. No adjustment made.

Calibration Performed By:

Jan Castro



Wood Buffalo Environmental Association

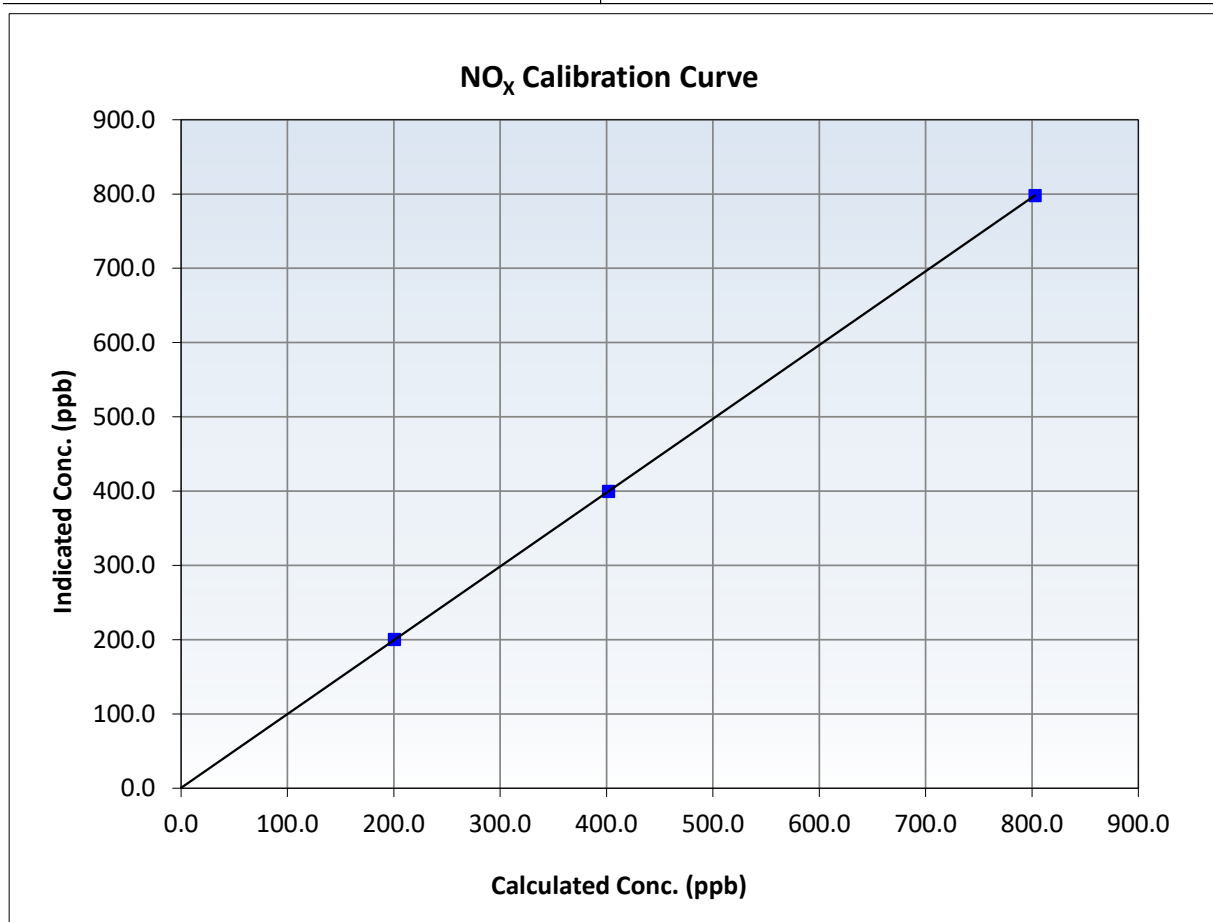
NO_x Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 12, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:01	End Time (MST):	13:56
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12426335704

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999997	≥0.995
802.9	798.1	1.0060	Slope	0.993621	0.90 - 1.10
401.9	399.8	1.0054	Intercept	0.470640	+/-20
200.5	200.5	1.0001			





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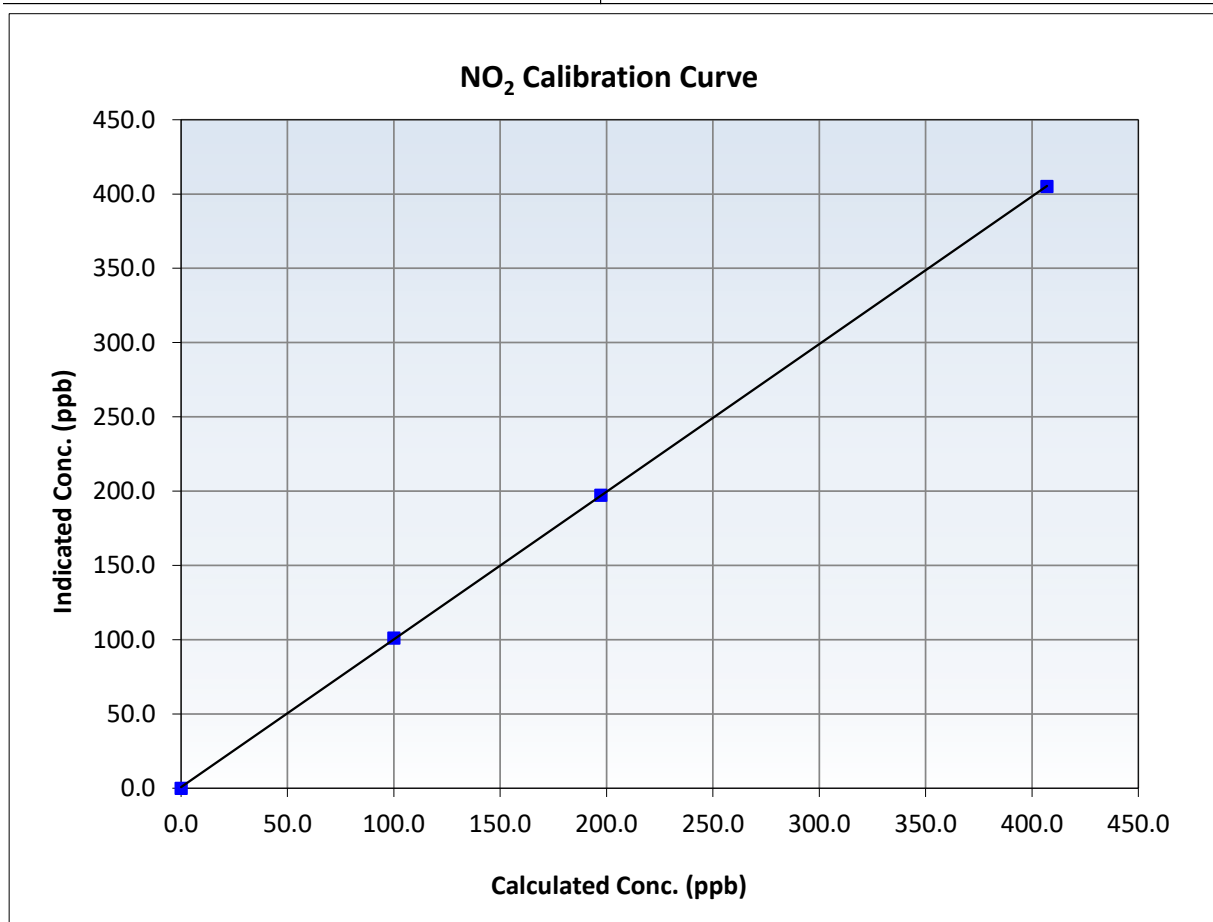
NO₂ Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 12, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:01	End Time (MST):	13:56
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12426335704

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999984	≥0.995
407.1	405.1	1.0049	Slope	0.994046	0.90 - 1.10
197.4	197.2	1.0009	Intercept	0.760617	+/-20
100.0	101.0	0.9899			





Wood Buffalo Environmental Association

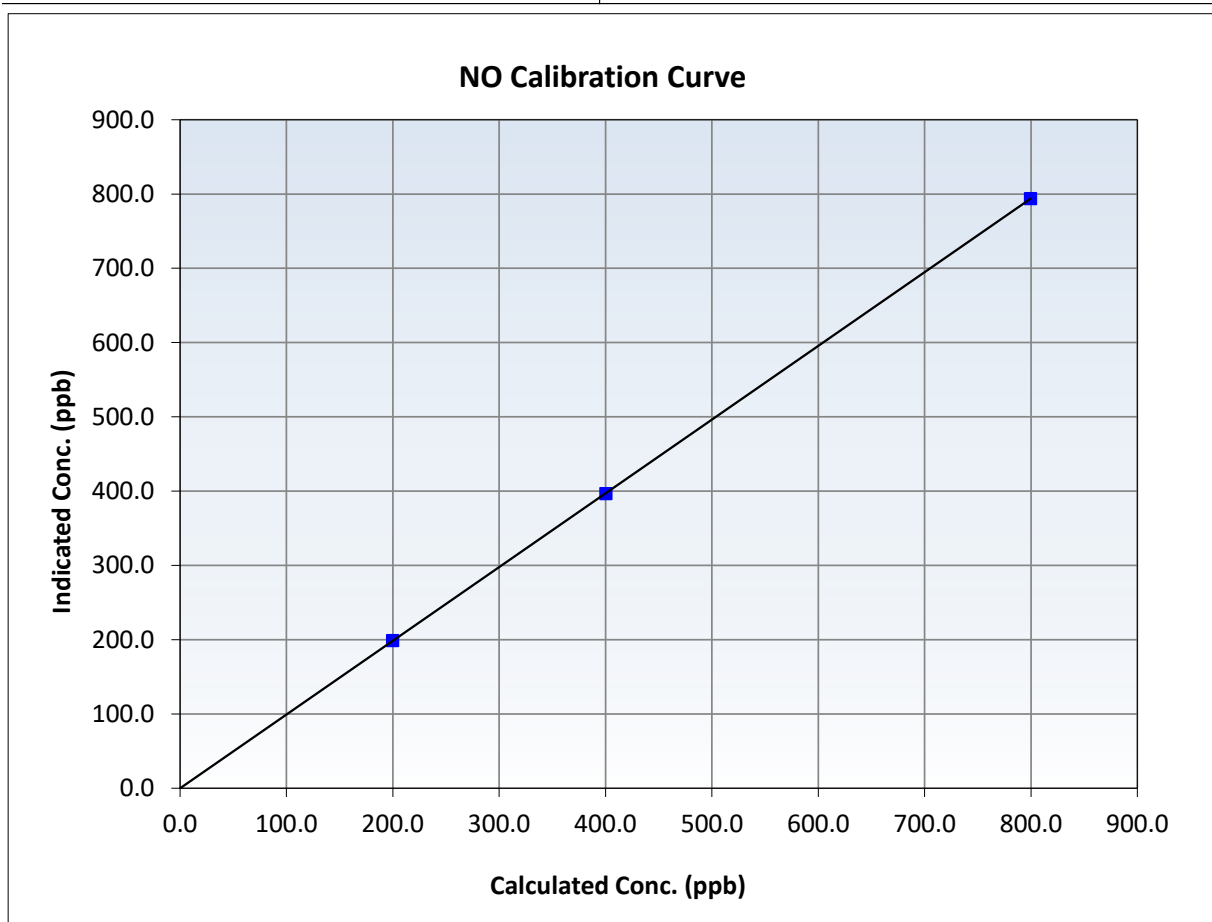
NO Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 12, 2025
Station Name:	Monday Creek	Station Number:	AMS 33
Start Time (MST):	10:01	End Time (MST):	13:56
Analyzer make:	Thermo 42iQ	Analyzer serial #:	12426335704

Calibration Data

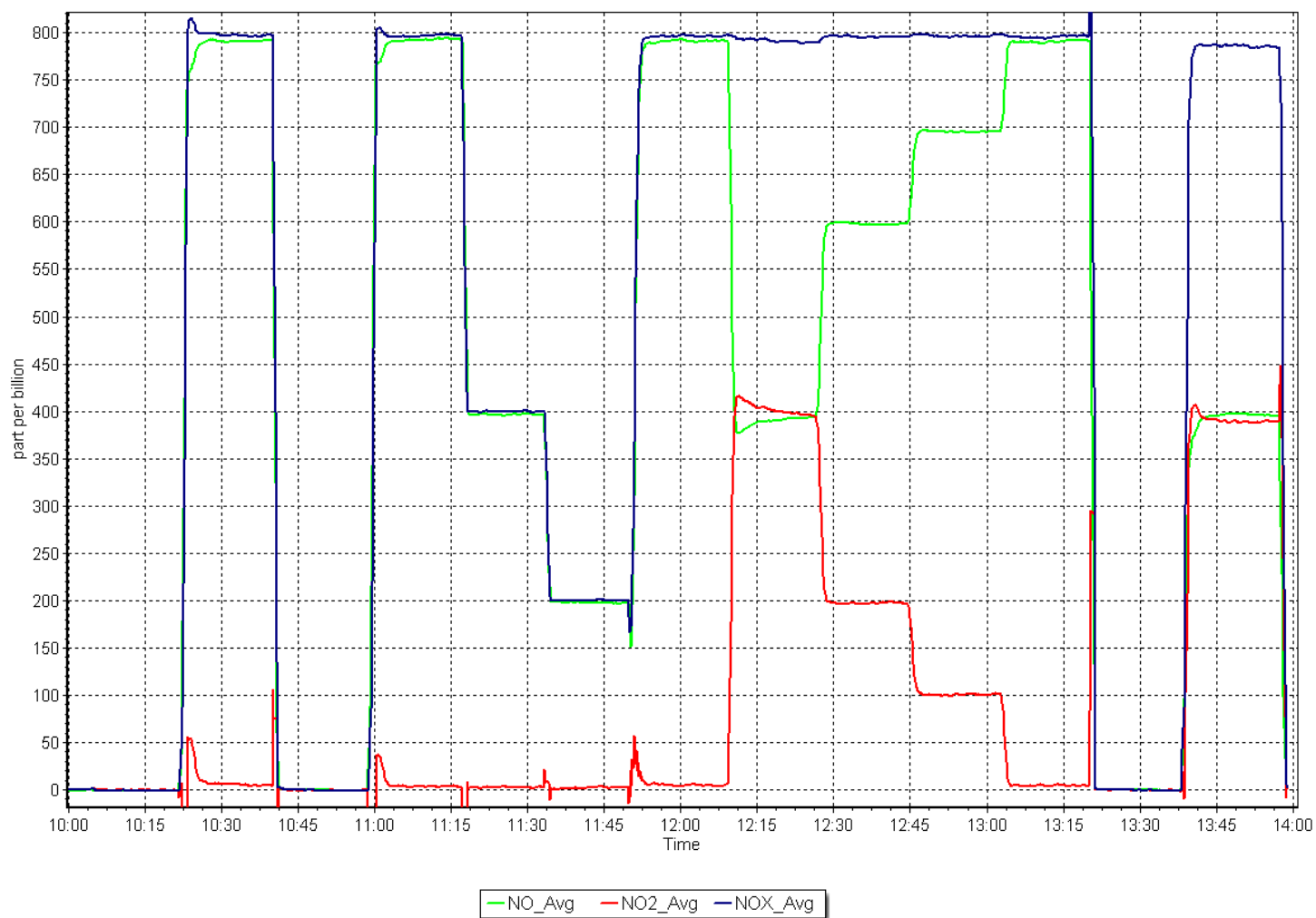
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.1	----	Correlation Coefficient	0.999998	≥ 0.995
799.6	793.9	1.0072	Slope	0.992614	0.90 - 1.10
400.3	396.6	1.0093	Intercept	-0.049056	+/-20
199.7	198.7	1.0050			



NO_x Calibration Plot

Date: September 18, 2025

Location: Monday Creek





Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Monday Creek	Station Number:	AMS 33
Calibration Date:	September 10, 2025	Prev Cal Date:	May 14, 2025
Start Time (MST):	11:30	End Time (MST):	12:03
Tower Height (m):	10.0	Reason:	Install

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	D16123
WS Calibrator:	MetOne 053	Serial Number:	CA 03988

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
0	0.0	0.0	---
200	20.2	20.1	-0.3%
400	39.4	39.4	0.1%
600	58.6	58.5	-0.1%
800	77.8	77.8	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)		0.999999	≥ 0.9995
Calculated slope		0.999473	$0.98 - 1.02$
Calculated intercept		0.026227	± 2

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	N13744
As Found Declination (deg east of True North):	<u>13</u>	As Left Declination (deg east of True North):	<u>13</u>
Solar noon (MST):	13:20	Calc Declination*:	12.73 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) <i>Limit = +/- 1%</i>
10	12.4	0.7%
90	90.9	0.3%
180	181.3	0.4%
270	271.7	0.5%
350	350.4	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999987	0.999991	≥ 0.9995
Calculated slope	1.008188	1.003616	$0.97 - 1.03$
Calculated intercept	-1.836873	-1.995759	± 5

Notes: WS sensor install. WD new vane installed. Both bearings inspected and good. All points within limits.
Verified true north using a compass.

Calibration Performed By: Jan Castro



Wood Buffalo Environmental Association

Wind Speed/Direction Calibration Report

Station Information

Station Name:	Monday Creek	Station Number:	AMS 33
Calibration Date:	September 10, 2025	Prev Cal Date:	May 14, 2025
Start Time (MST):	10:58	End Time (MST):	11:24
Tower Height (m):	10.0	Reason:	Removal

Wind Speed Calibration

Sensor make/model:	Met One 010C-1	Serial Number:	P22395
WS Calibrator:	MetOne 053	Serial Number:	CA 03988

Shaft RPM (Hz)	Calculated Speed (K/hr) (Cv)	Indicated Speed (K/hr) (Iv)	% Error <i>Limit = +/- 1.5%</i>
0	0.0	0.0	---
200	20.2	20.1	-0.3%
400	39.4	39.4	0.1%
600	58.6	58.7	0.2%
800	77.8	77.8	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999997	0.999998	≥ 0.9995
Calculated slope	1.000482	0.998443	$0.98 - 1.02$
Calculated intercept	-0.053275	0.026636	± 2

Wind Direction Calibration

Sensor make/model:	Met One 020C-1	Serial Number:	N13744
As Found Declination (deg east of True North):	<u>13</u>	As Left Declination (deg east of True North):	<u>13</u>
Solar noon (MST):	13:20	Calc Declination*:	12.73 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) <i>Limit = +/- 1%</i>
10	12.4	0.7%
90	90.9	0.3%
180	181.3	0.4%
270	271.7	0.5%
350	350.4	0.1%

	<u>Start</u>	<u>Finish</u>	<u>Limits</u>
Correl Coeff (r^2)	0.999987	0.999991	≥ 0.9995
Calculated slope	1.008188	1.003616	$0.97 - 1.03$
Calculated intercept	-1.836873	-1.995759	± 5

Notes: WS sensor removal, bearings not good. Will do further troubleshooting at the shop.

Calibration Performed By: Jan Castro



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS505 SAWBONES BAY SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Sawbones Bay Station number: AMS 505
Calibration Date: September 25, 2025 Last Cal Date: August 22, 2025
Start time (MST): 8:36 End time (MST): 11:53
Reason: Routine

Calibration Standards

Cal Gas Concentration: 50.05 ppm Cal Gas Exp Date: April 9, 2033
Cal Gas Cylinder #: EB0063977
Removed Cal Gas Conc: 51.40 ppm Rem Gas Exp Date: February 15, 2029
Removed Gas Cyl #: EY0000672 Diff between cyl: -0.4%
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.003067	1.000774	Backgd or Offset:	20.7	20.7
Calibration intercept:	-0.912727	-0.954928	Coeff or Slope:	1.111	1.111

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.3	----
As found High point	4922	77.8	799.8	808.0	0.990
As found Mid point					
As found Low point					
New cylinder response	4920	79.8	798.8	803.7	0.994
Baseline Corr As found:	807.7	Previous response	801.4	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.7	----
High point	4920	79.8	798.8	799.5	0.999
Mid point	4960	39.9	399.4	397.4	1.005
Low point	4980	20.0	200.2	198.1	1.011
As left zero	5000	0.0	0.0	0.4	----
As left span	4920	79.8	798.8	799.2	1.000
Average Correction Factor:					1.005

Notes: Changed inlet filter after as founds. No adjustment made.

Calibration Performed By: Sean Bala



Wood Buffalo Environmental Association

SO₂ Calibration Summary

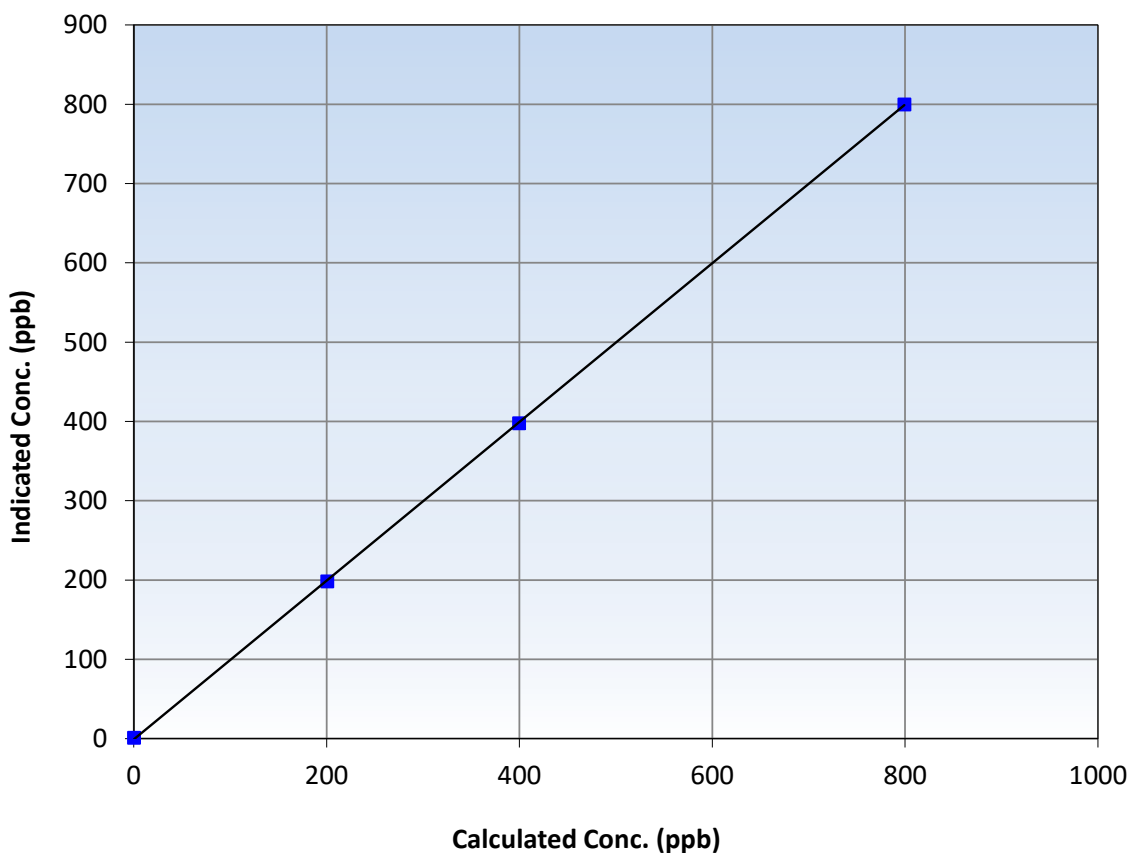
Station Information

Calibration Date:	September 25, 2025	Previous Calibration:	August 22, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:36	End Time (MST):	11:53
Analyzer make:	Thermo 43i	Analyzer serial #:	710321323

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.7	----	Correlation Coefficient	0.999979	≥0.995
798.8	799.5	0.9992	Slope	1.000774	0.90 - 1.10
399.4	397.4	1.0051	Intercept	-0.954928	+/-30
200.2	198.1	1.0106			

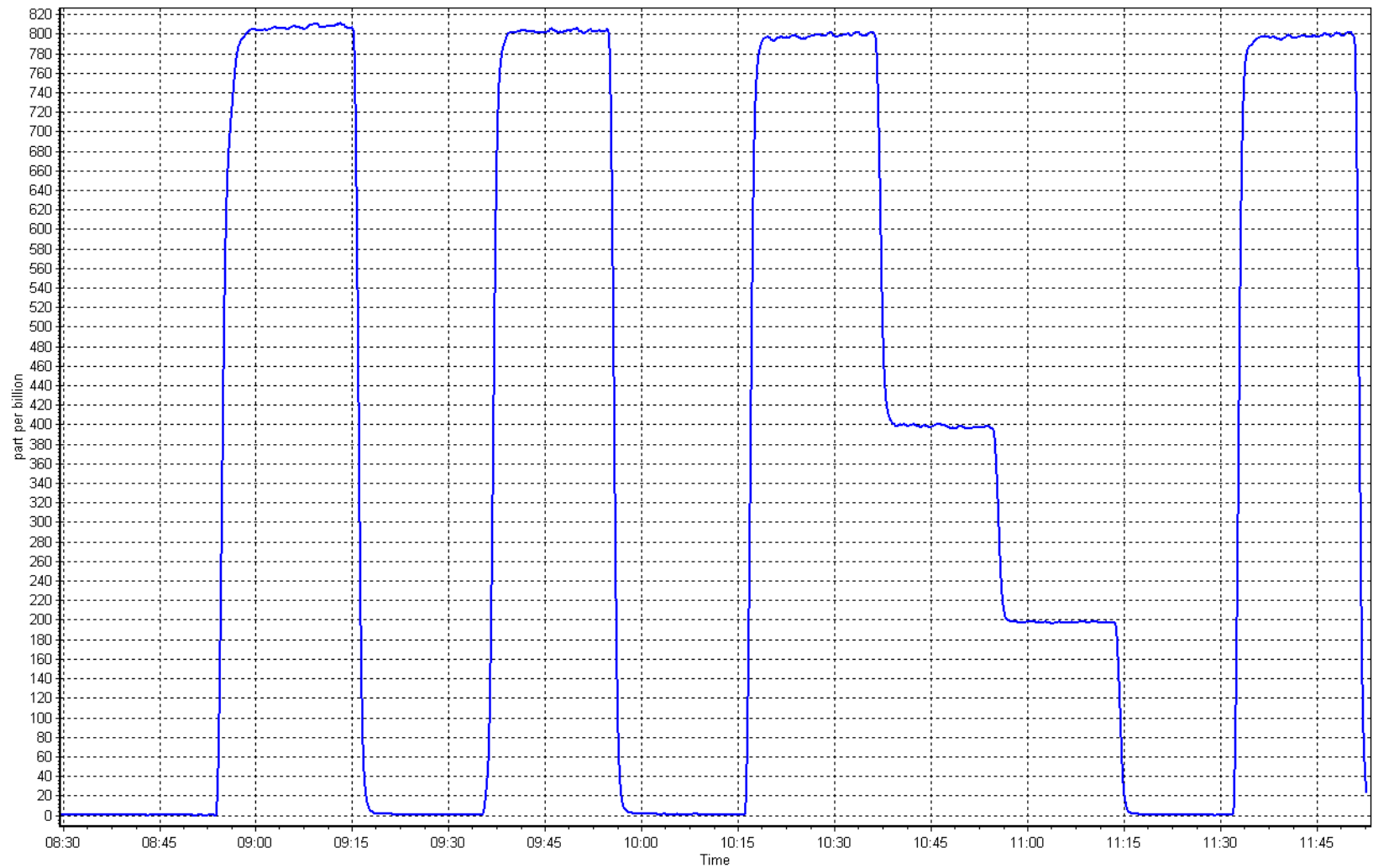
SO₂ Calibration Curve



SO2 Calibration Plot

Date: September 25, 2025

Location: Sawbones Bay





Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name: Sawbones Bay Station number: AMS 505
Calibration Date: September 19, 2025 Last Cal Date: August 27, 2025
Start time (MST): 8:53 End time (MST): 12:46
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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.004460	0.992596	Backgd or Offset:	0.920	0.920
Calibration intercept:	0.140000	0.080000	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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4924	76.0	80.0	79.8	1.002
As found Mid point	4962	38.0	40.0	39.7	1.007
As found Low point	4981	19.0	20.0	19.9	1.004
New cylinder response					
Baseline Corr As found:	79.8	Prev response:	80.45	*% change:	-0.8%
Baseline Corr 2nd AF pt:	39.7	AF Slope:	0.998027	AF Intercept:	-0.060000
Baseline Corr 3rd AF pt:	19.9	AF Correlation:	0.999992	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.1	----
High point	4924	76.0	80.0	79.5	1.006
Mid point	4962	38.0	40.0	39.6	1.009
Low point	4981	19.0	20.0	20.0	0.999
As left zero	5000	0.0	0.0	0.3	----
As left span	4924	76.0	80.0	79.0	1.012
SO2 Scrubber Check	4922	77.8	778.0	0.0	----
Date of last scrubber change:				Ave Corr Factor	1.005
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

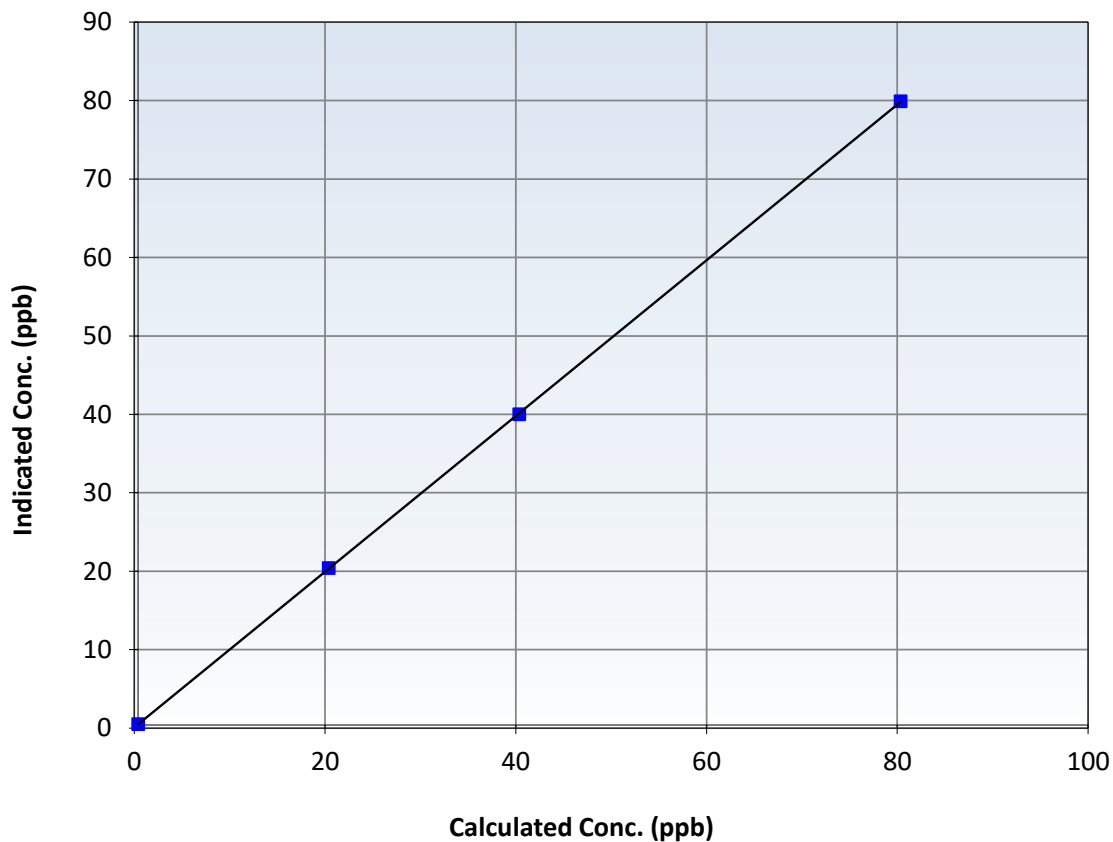
Station Information

Calibration Date:	September 19, 2025	Previous Calibration:	August 27, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:53	End Time (MST):	12:46
Analyzer make:	Thermo 43iQTL	Analyzer serial #:	12113311965

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation			<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999990		≥ 0.995
80.0	79.5	1.0057	Slope	0.992596		$0.90 - 1.10$
40.0	39.6	1.0095	Intercept	0.080000		± 3
20.0	20.0	0.9994				

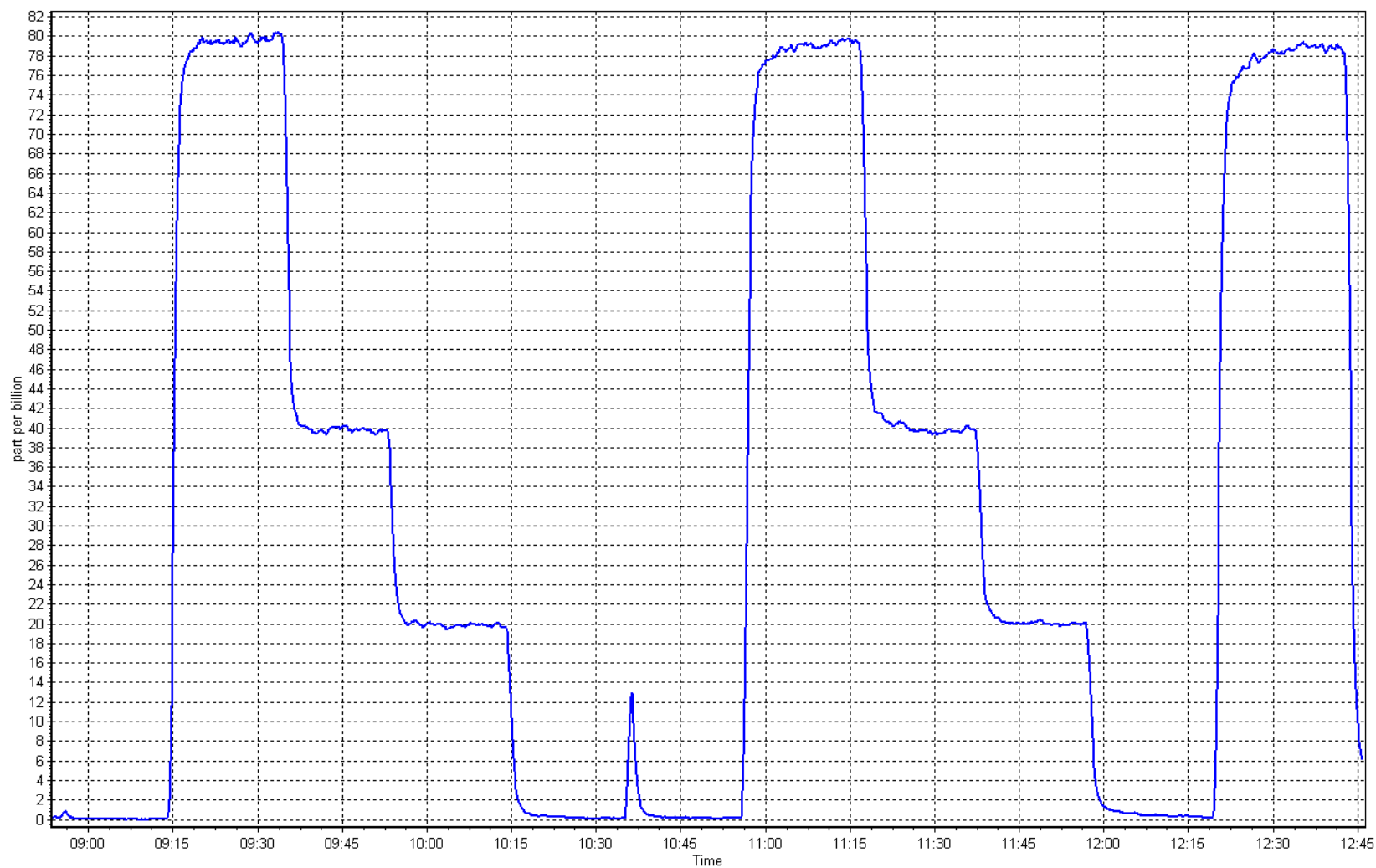
H₂S Calibration Curve



H2S Calibration Plot

Date: September 19, 2025

Location: Sawbones Bay





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: API T200
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 4259

Instrument Settings

	<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.945	0.949
NOX coeff or slope:	0.946	0.949
NO2 coeff or slope:	1.000	1.000

	<u>Start</u>	<u>Finish</u>
NO bkgnd or offset:	-5.4	0.9
NOX bkgnd or offset:	-4.4	1.4
Reaction cell Press:	3.7	3.7

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.001761	1.003271
NO _x Cal Offset:	-0.610029	-1.589599
NO Cal Slope:	1.000345	1.002516
NO Cal Offset:	-1.029891	-2.189877
NO ₂ Cal Slope:	1.001042	1.000956
NO ₂ Cal Offset:	0.837156	-0.173633

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	-0.4	-0.3	-0.1	----	----
High point	4933	66.7	801.8	800.4	1.3	803.1	801.0	2.3	0.9984	0.9993
Mid point	4967	33.3	400.2	399.6	0.7	400.3	398.1	2.3	0.9999	1.0037
Low point	4983	16.7	200.7	200.4	0.3	198.0	196.4	1.5	1.0139	1.0204
As left zero	5000	0.0	0.0	0.0	0.0	-0.3	-0.2	-0.1	----	----
As left span	4933	66.7	801.8	387.5	414.3	796.5	387.5	409.1	1.0066	1.0000
Average Correction Factor									1.0040	1.0078

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	-0.1	----	----
High GPT point	798.6	385.3	414.6	414.9	0.9994	100.1%
Mid GPT point	798.6	595.1	204.8	204.8	1.0002	100.0%
Low GPT point	798.6	695.5	104.4	104.3	1.0013	99.9%
Average Correction Factor					1.0003	100.0%

Notes:

Changed inlet filter after as founds. Adjusted zero only.

Calibration Performed By:

Sean Bala



Wood Buffalo Environmental Association

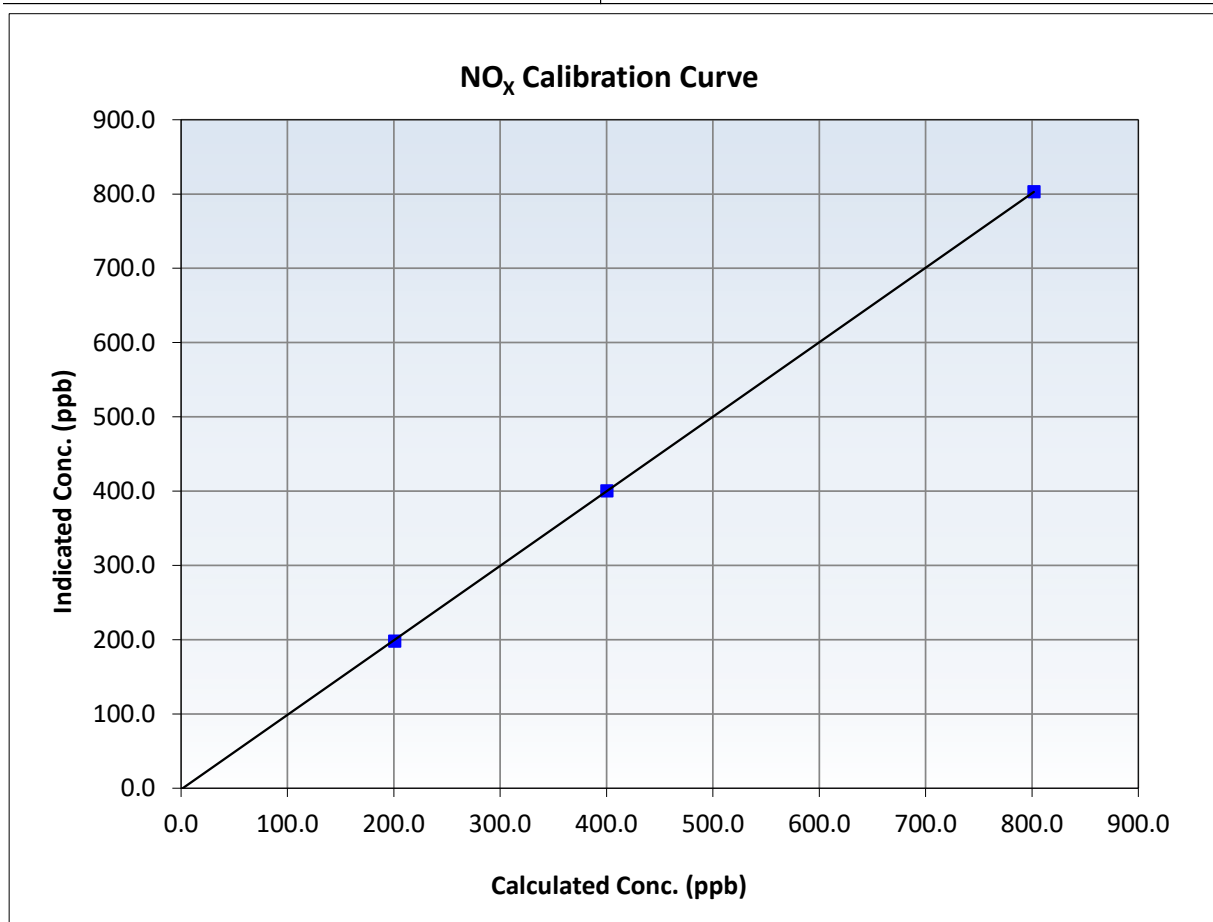
NO_x Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 21, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:50	End Time (MST):	13:04
Analyzer make:	API T200	Analyzer serial #:	4259

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.4	----	Correlation Coefficient	0.999986	≥0.995
801.8	803.1	0.9984	Slope	1.003271	0.90 - 1.10
400.2	400.3	0.9999	Intercept	-1.589599	+/-20
200.7	198.0	1.0139			





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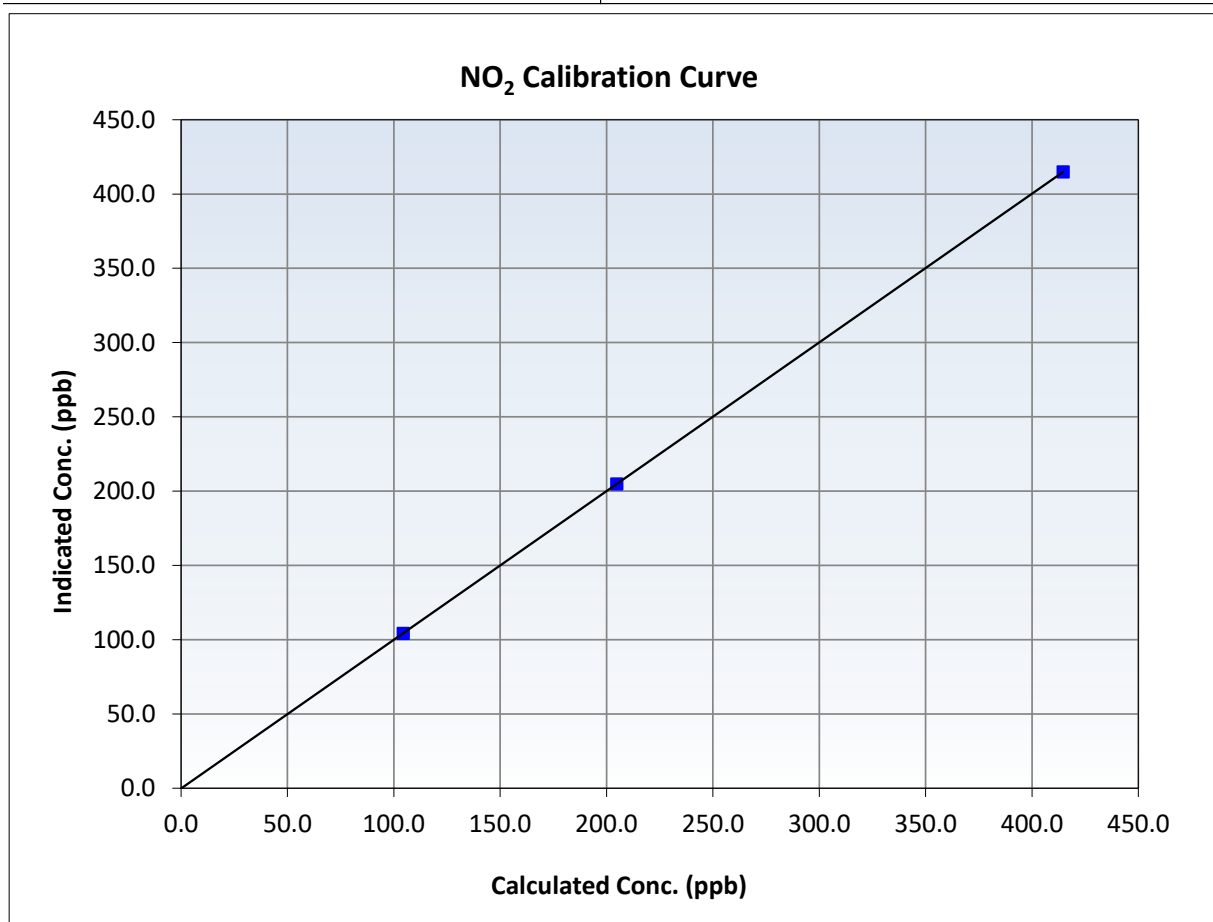
NO₂ Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 21, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:50	End Time (MST):	13:04
Analyzer make:	API T200	Analyzer serial #:	4259

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<i>Limits</i>
0.0	-0.1	----	Correlation Coefficient	1.000000	<i>≥0.995</i>
414.6	414.9	0.9994	Slope	1.000956	<i>0.90 - 1.10</i>
204.8	204.8	1.0002	Intercept	-0.173633	<i>+/-20</i>
104.4	104.3	1.0013			





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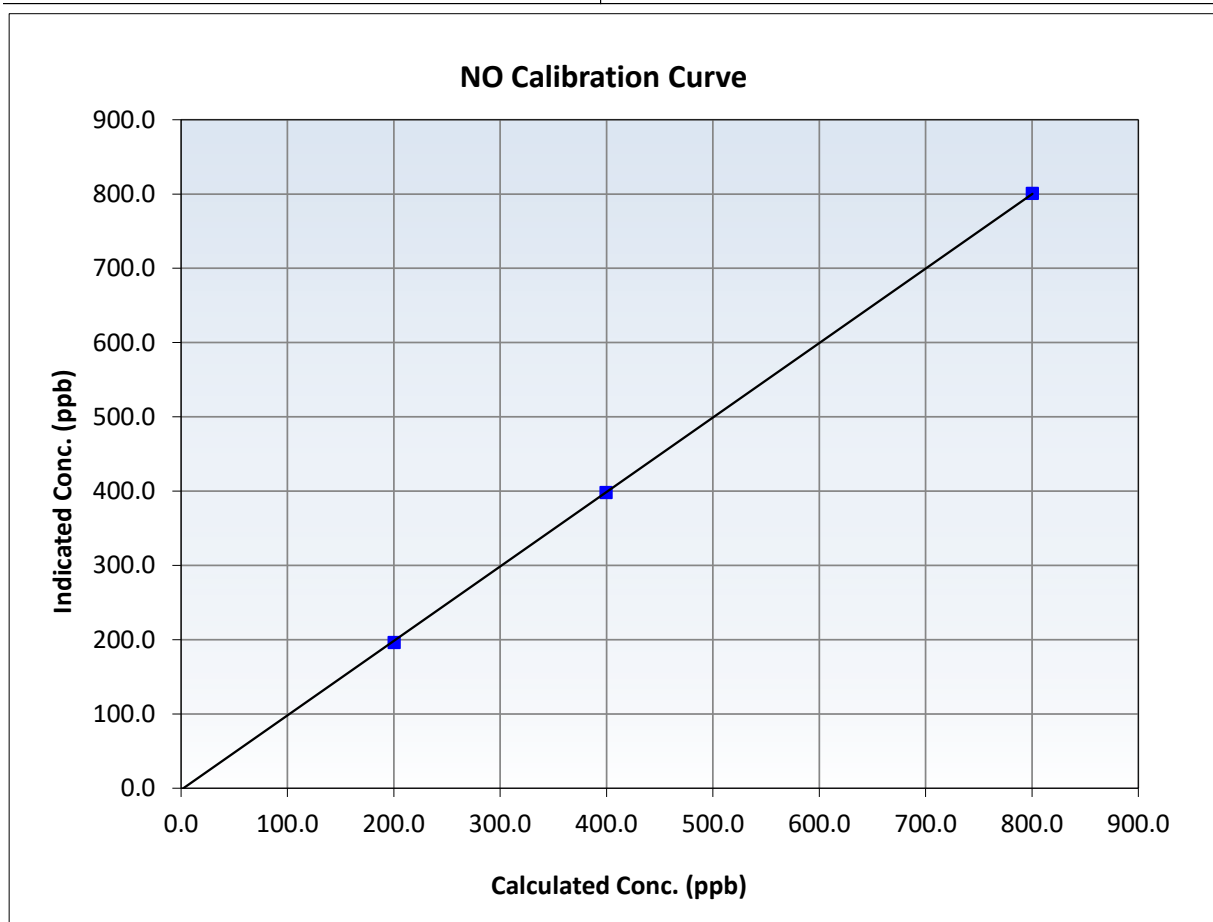
NO Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 21, 2025
Station Name:	Sawbones Bay	Station Number:	AMS 505
Start Time (MST):	8:50	End Time (MST):	13:04
Analyzer make:	API T200	Analyzer serial #:	4259

Calibration Data

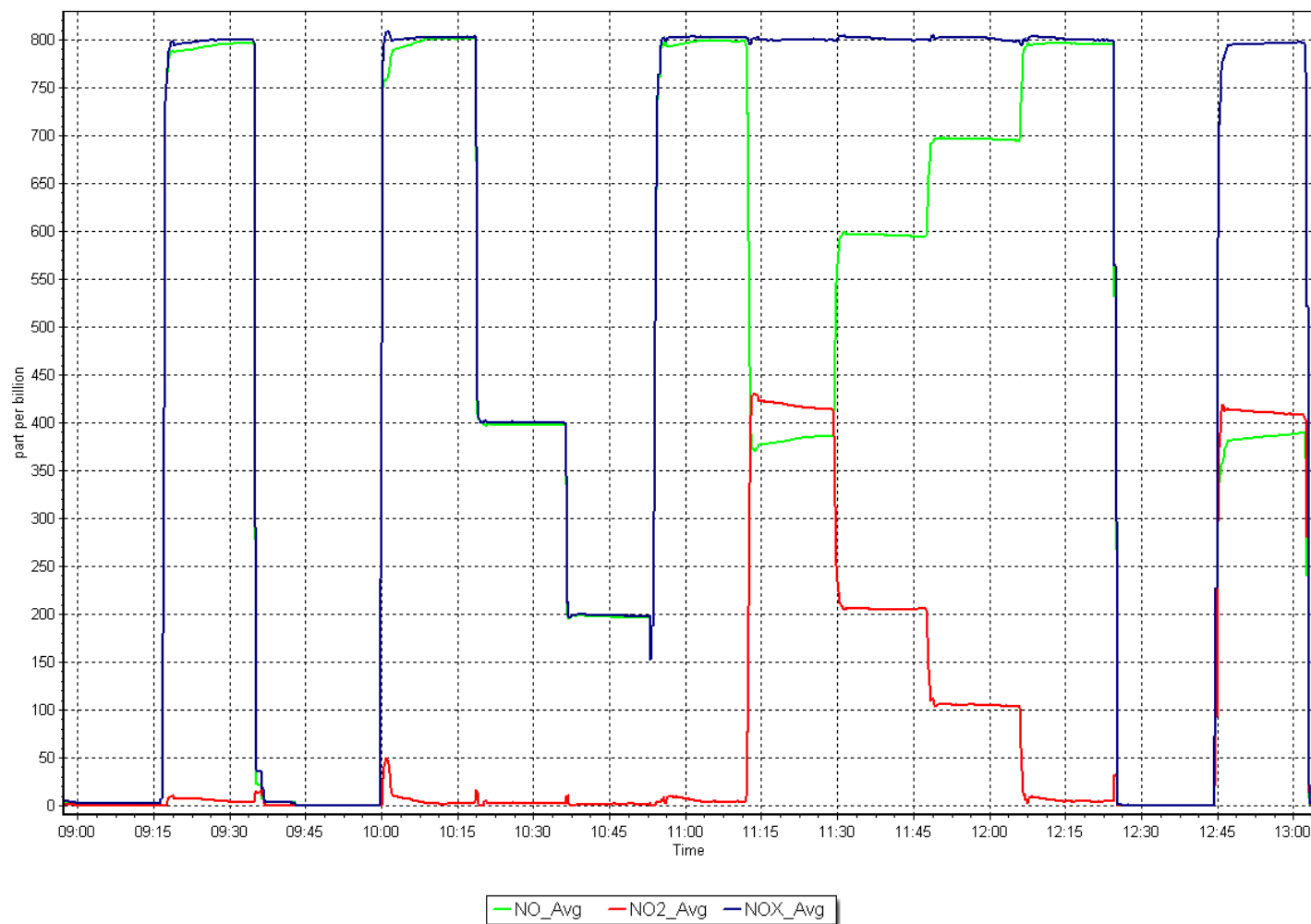
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	-0.3	----	Correlation Coefficient	0.999973	≥ 0.995
800.4	801.0	0.9993	Slope	1.002516	0.90 - 1.10
399.6	398.1	1.0037	Intercept	-2.189877	+/-20
200.4	196.4	1.0204			



NO_x Calibration Plot

Date: September 18, 2025

Location: Sawbones Bay





WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
CALIBRATION REPORT

AMS507
KIRBY SOUTH
SEPTEMBER 2025

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

October 31, 2025



Wood Buffalo Environmental Association

SO₂ Calibration Report

Station Information

Station Name: Kirby South Station number: AMS 507
Calibration Date: September 18, 2025 Last Cal Date: August 6, 2025
Start time (MST): 12:48 End time (MST): 15:58
Reason: Routine

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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.001334	1.003149	Backgd or Offset:	28.9	28.9
Calibration intercept:	-0.572090	-0.832026	Coeff or Slope:	1.091	1.091

SO₂ 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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	-0.3	----
As found High point	4921	78.8	799.7	802.0	0.997
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	802.3	Previous response	800.2	*% 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	

SO₂ 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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.0	----
High point	4921	78.8	799.7	802.0	0.997
Mid point	4961	39.4	399.8	399.2	1.002
Low point	4980	19.7	199.9	199.3	1.003
As left zero	5000	0.0	0.0	-0.1	----
As left span	4921	78.8	799.7	798.2	1.002
Average Correction Factor:					1.001

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

Calibration Performed By: Braiden Boutillier



Wood Buffalo Environmental Association

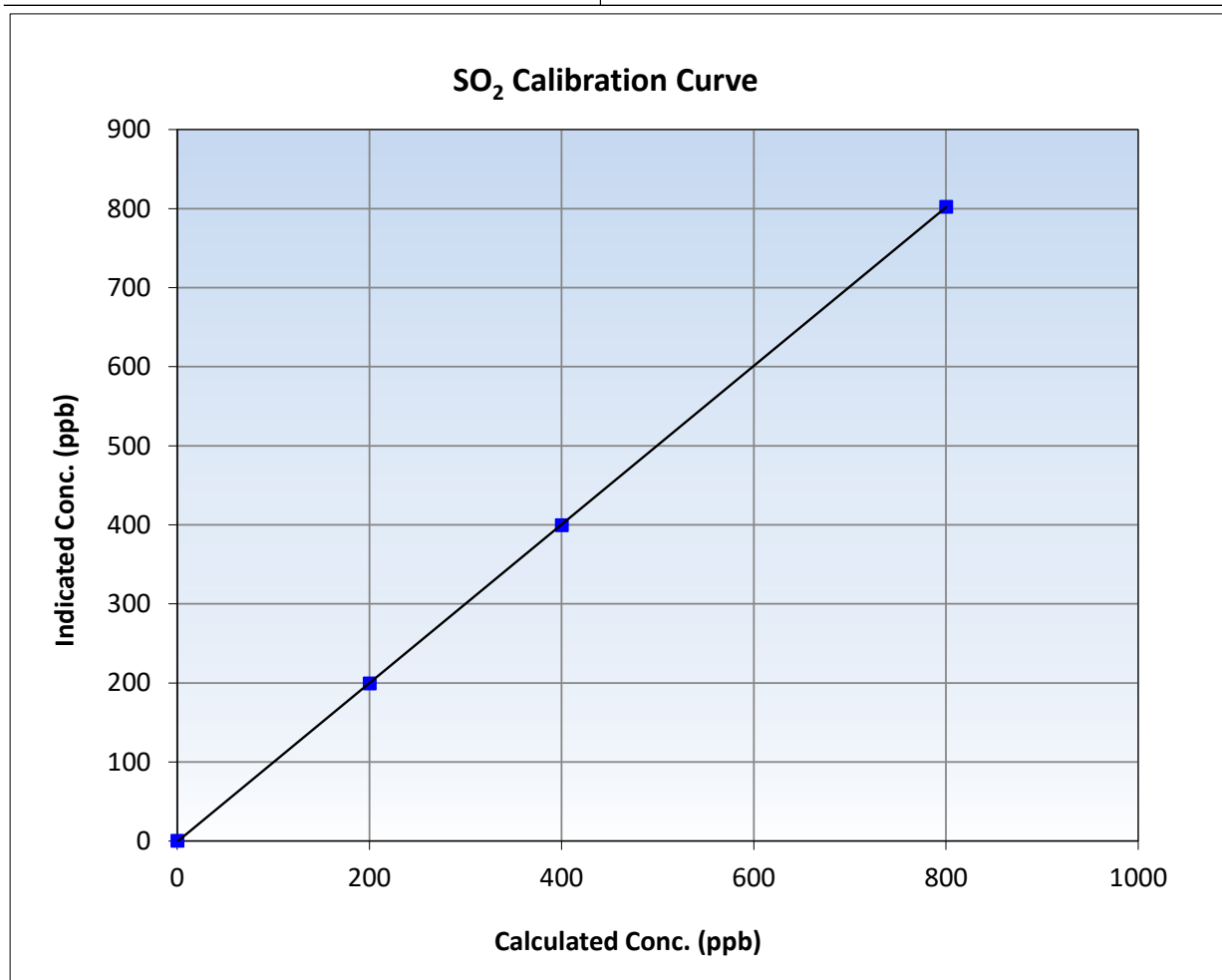
SO₂ Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 6, 2025
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	12:48	End Time (MST):	15:58
Analyzer make:	Thermo 43iQ	Analyzer serial #:	1182340007

Calibration Data

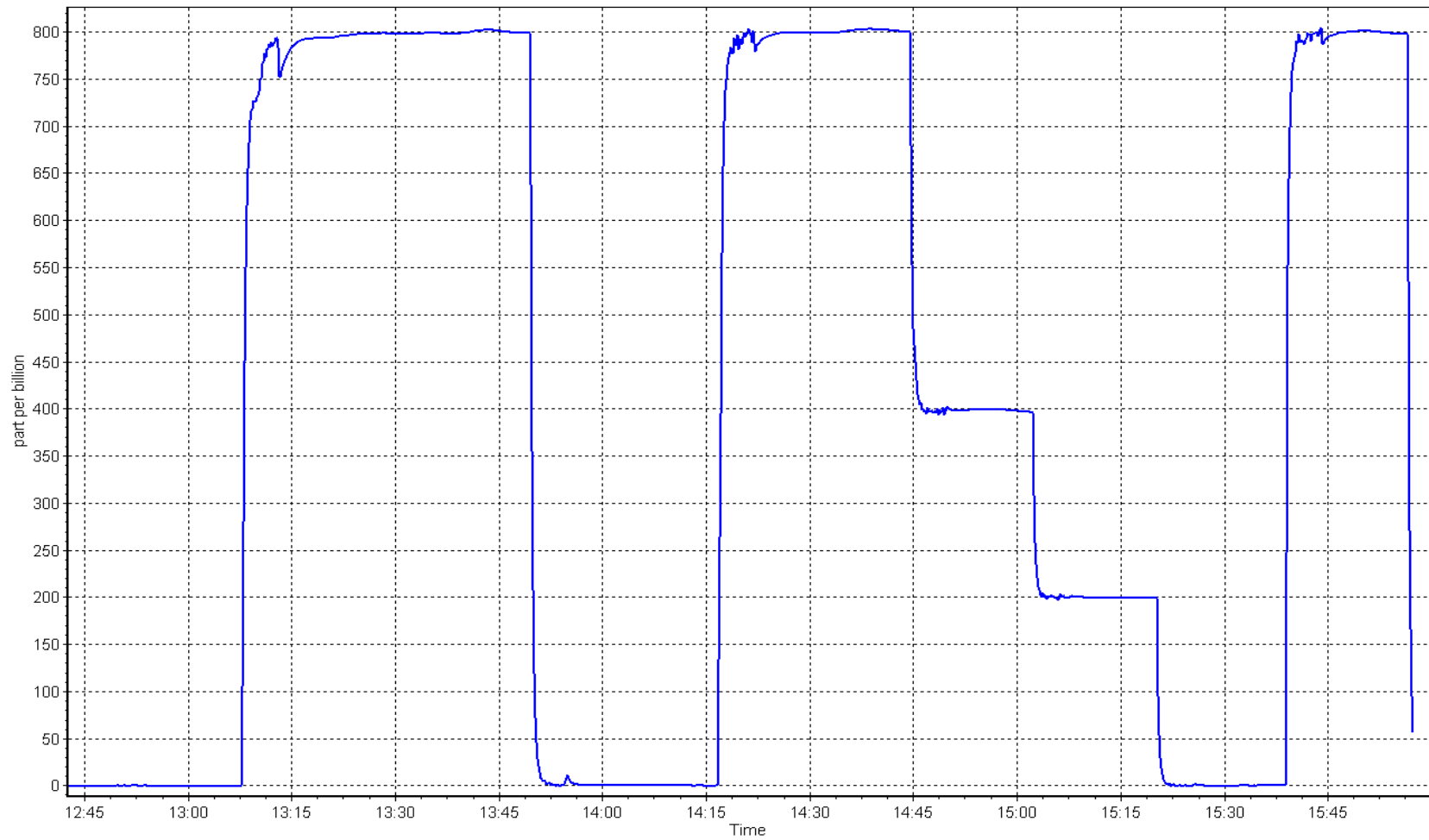
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999993	≥0.995
799.7	802.0	0.9971	Slope	1.003149	0.90 - 1.10
399.8	399.2	1.0015	Intercept	-0.832026	+/-30
199.9	199.3	1.0031			



SO2 Calibration Plot

Date: September 18, 2025

Location: Kirby South





Wood Buffalo Environmental Association

H2S Calibration Report

Station Information

Station Name: Kirby South
Calibration Date: September 18, 2025
Start time (MST): 6:45
Reason: Routine

Station number: AMS 507
Last Cal Date: August 6, 2025
End time (MST): 13:09

Calibration Standards

Cal Gas Concentration: 5.05 ppm
Cal Gas Cylinder #: DT0019762
Removed Cal Gas Conc: 5.05 ppm
Removed Gas Cyl #: n/a
Calibrator Make/Model: Teledyne API T700
ZAG Make/Model: Teledyne API T701H

Cal Gas Exp Date: November 15, 2026
Rem Gas Exp Date: NA
Diff between cyl:
Serial Number: 2445
Serial Number: 880

Analyzer Information

Analyzer make: Thermo 43i-TLE
Converter make: Global
Analyzer Range: 0 - 100 ppb

Analyzer serial #: 1150840012
Converter serial #: 2022-197
Converter Temp: 325 degC

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.006243	1.002672	Backgd or Offset:	1.70	1.69
Calibration intercept:	-0.140000	0.060000	Coeff or Slope:	1.053	1.052

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.0	0.0	----
As found High point	4921	79.2	80.0	81.8	0.978
As found Mid point	4960	39.6	40.0	40.6	0.985
As found Low point	4980	19.8	20.0	20.0	1.000
New cylinder response					
Baseline Corr As found:	81.8	Prev response:	80.35	*% change:	1.8%
Baseline Corr 2nd AF pt:	40.6	AF Slope:	1.024102	AF Intercept:	-0.240000
Baseline Corr 3rd AF pt:	20.0	AF Correlation:	0.999961	* = > +/-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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.0	0.2	----
High point	4921	79.2	80.0	80.3	0.996
Mid point	4960	39.6	40.0	40.2	0.995
Low point	4980	19.8	20.0	19.9	1.005
As left zero	5000	0.0	0.0	0.1	----
As left span	4922	78.4	79.2	78.6	1.007
SO2 Scrubber Check	4919	80.0	800.2	-0.2	----
Date of last scrubber change:		July 25, 2023		Ave Corr Factor	0.999
Date of last converter efficiency test:		September 18, 2025		102.4% efficiency	

Notes: Changed sample inlet filter and ran converter efficiency test after as founds. Adjusted span.

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

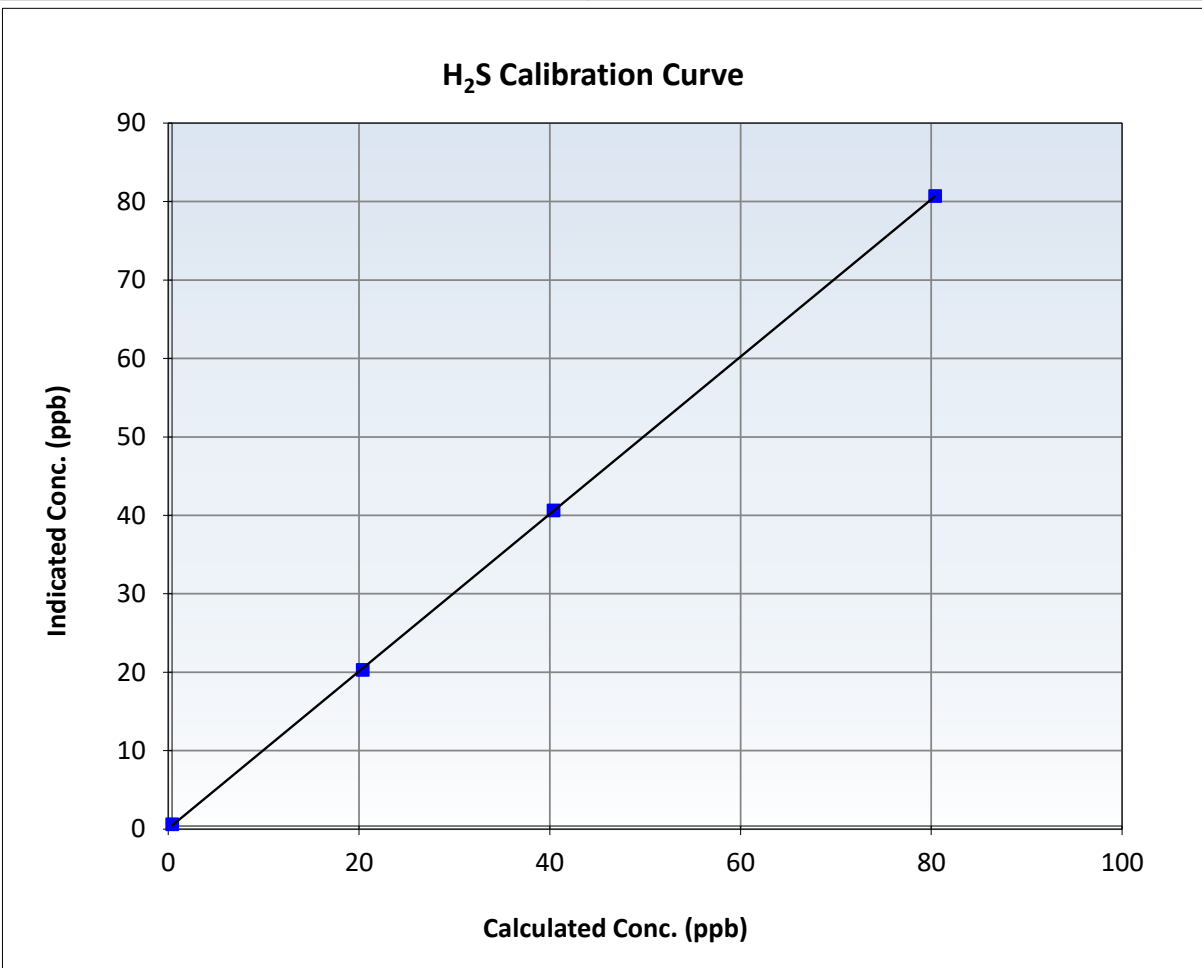
H2S Calibration Summary

Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 6, 2025
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	6:45	End Time (MST):	13:09
Analyzer make:	Thermo 43i-TLE	Analyzer serial #:	1150840012

Calibration Data

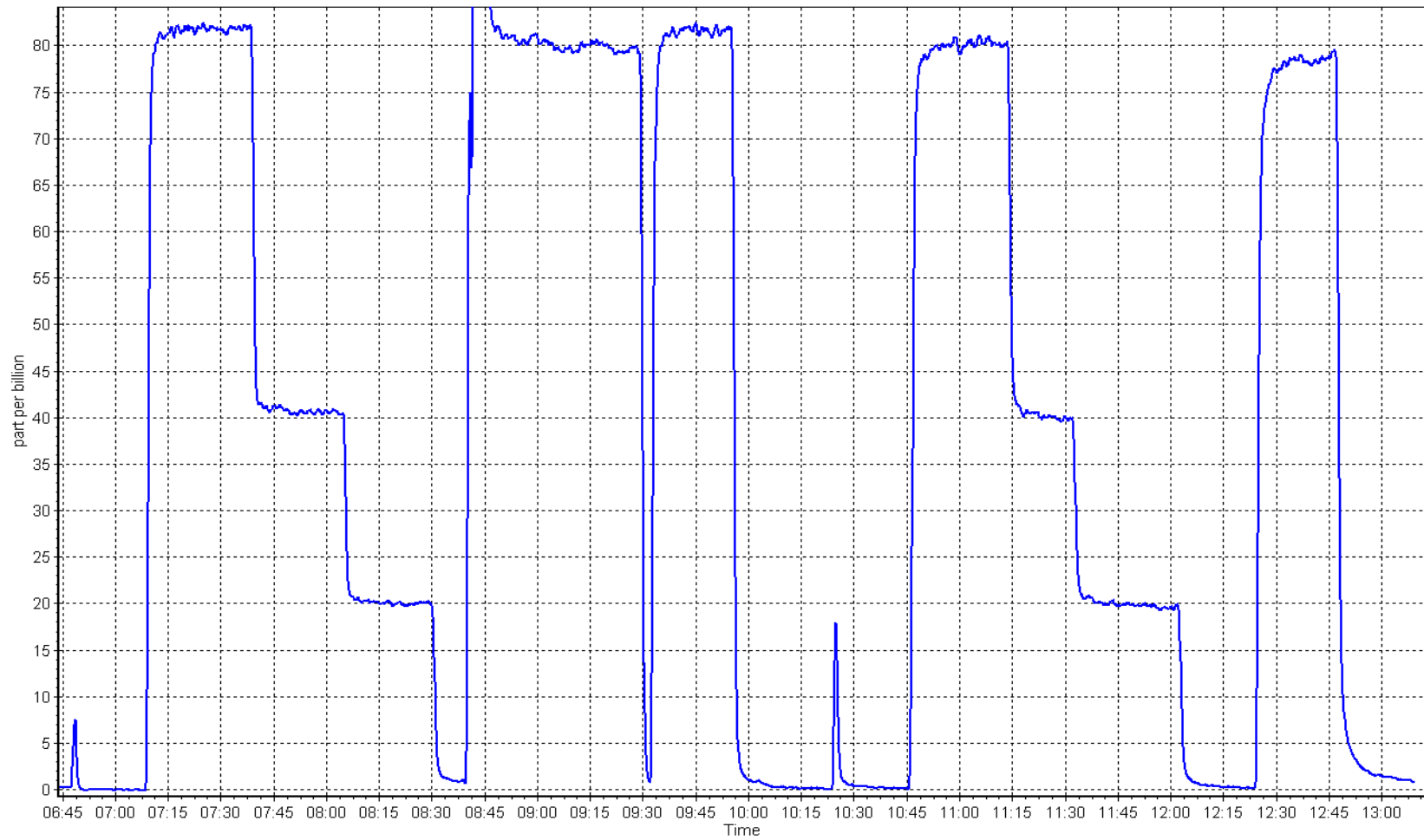
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.2	----	Correlation Coefficient	0.999981	≥ 0.995
80.0	80.3	0.9962	Slope	1.002672	$0.90 - 1.10$
40.0	40.2	0.9949	Intercept	0.060000	± 3
20.0	19.9	1.0049			



H2S Calibration Plot

Date: September 18, 2025

Location: Kirby South





Wood Buffalo Environmental Association

THC Calibration Report

Station Information

Station Name: Kirby South Station number: AMS 507
Calibration Date: September 18, 2025 Last Cal Date: August 6, 2025
Start time (MST): 12:48 End time (MST): 15:58
Reason: Routine

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

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
Calibration slope:	1.005744	1.001956	Background:	1.88	1.81
Calibration intercept:	-0.069633	-0.038431	Coefficient:	3.718	3.589

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)) <i>Limit = 0.90-1.10</i>
As found zero	5000	0.0	0.00	0.00	----
As found High point	4921	78.8	16.87	17.43	0.968
As found Mid point					
As found Low point					
New cylinder response					
Baseline Corr As found:	17.43	Previous response	16.89	*% change	3.1%
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) <i>Limit = 0.95-1.05</i>
Calibrator zero	5000	0.0	0.00	0.01	
High point	4921	78.8	16.87	16.88	0.999
Mid point	4961	39.4	8.43	8.40	1.004
Low point	4980	19.7	4.22	4.13	1.021
As left zero	5000	0.0	0.00	-0.02	----
As left span	4921	78.8	16.87	16.86	1.000
Average Correction Factor					1.008

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

Calibration Performed By: Braiden Boutilier



Wood Buffalo Environmental Association

THC Calibration Summary

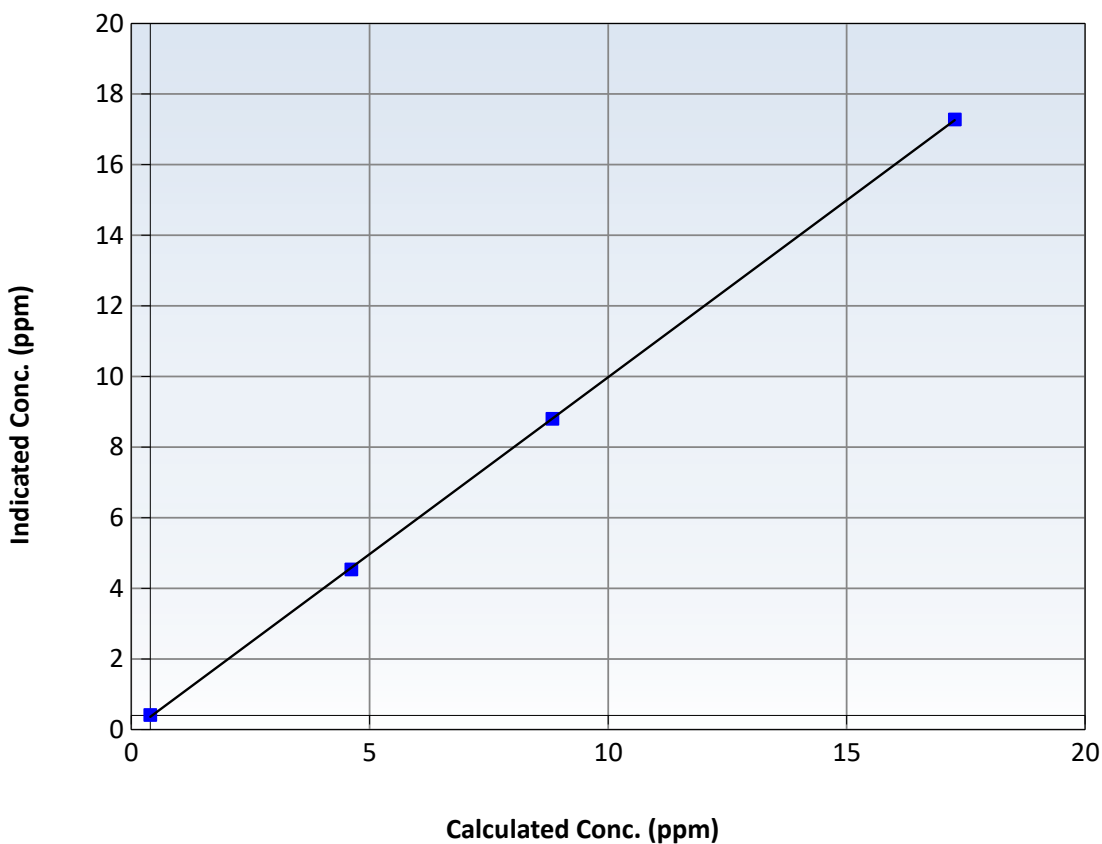
Station Information

Calibration Date:	September 18, 2025	Previous Calibration:	August 6, 2025
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	12:48	End Time (MST):	15:58
Analyzer make:	Thermo 51i-LT	Analyzer serial #:	1182340005

Calibration Data

Calculated Concentration (ppm) (Cc)	Indicated Concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.00	0.01	----	Correlation Coefficient	0.999962	≥ 0.995
16.87	16.88	0.9992	Slope	1.001956	$0.90 - 1.10$
8.43	8.40	1.0038	Intercept	-0.038431	± 1.5
4.22	4.13	1.0210			

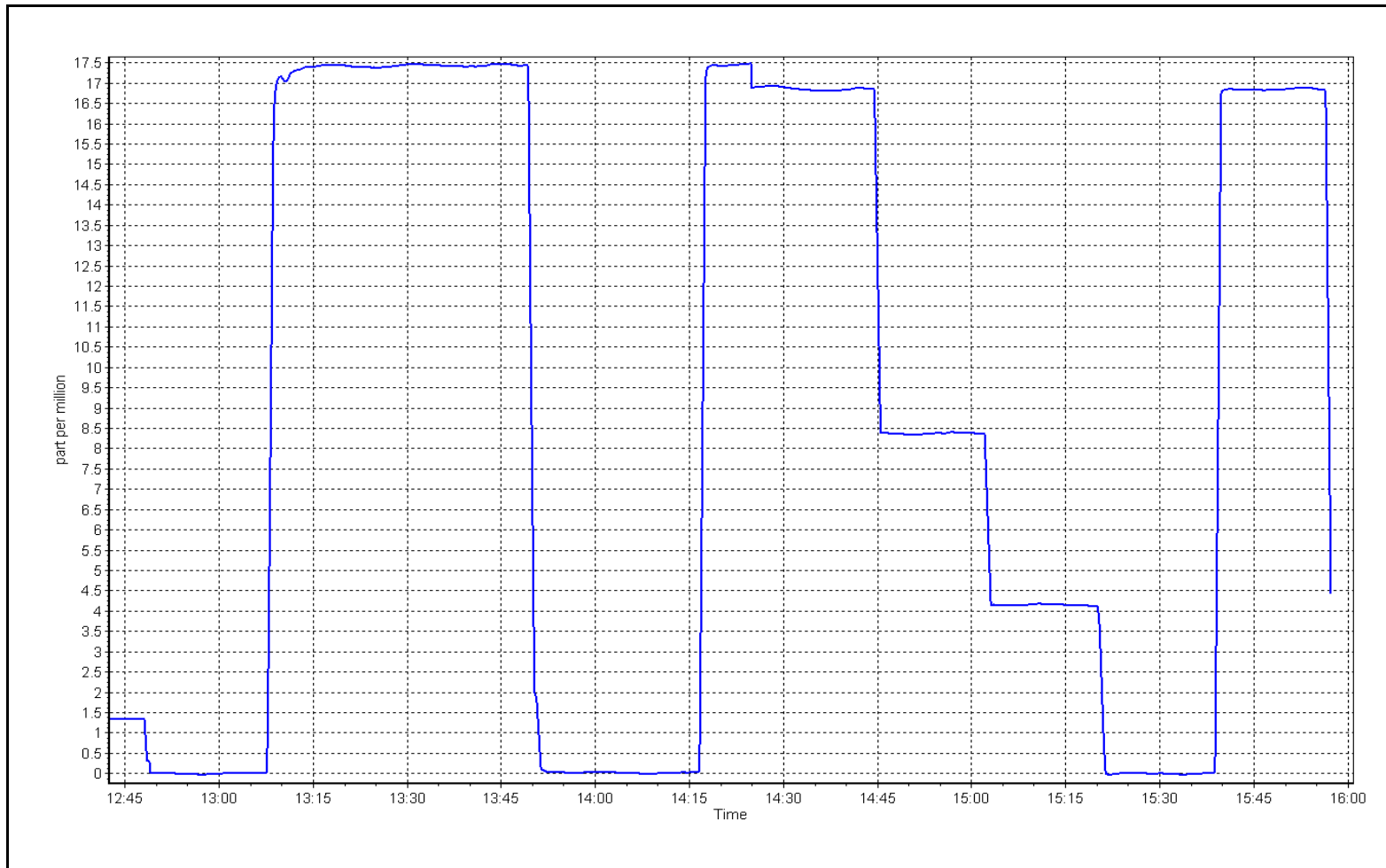
THC Calibration Curve



THC Calibration Plot

Date: September 18, 2025

Location: Kirby South





Wood Buffalo Environmental Association

NO_x \ NO \ NO₂ Calibration Report

Analyzer Information

Analyzer Make: Thermo 42i
NOX Range (ppb): 0 - 1000 ppb

Serial Number: 1173480006

Instrument Settings

	<u>Start</u>	<u>Finish</u>		<u>Start</u>	<u>Finish</u>
NO coeff or slope:	0.753	0.745	NO bkgnd or offset:	7.7	7.6
NOX coeff or slope:	0.994	0.996	NOX bkgnd or offset:	7.8	7.8
NO2 coeff or slope:	1.000	1.000	Reaction cell Press:	143.8	145.9

Calibration Statistics

	<u>Start</u>	<u>Finish</u>
NO _x Cal Slope:	1.003381	1.001898
NO _x Cal Offset:	-3.093621	-2.373614
NO Cal Slope:	1.004385	1.001214
NO Cal Offset:	-3.933638	-3.273654
NO ₂ Cal Slope:	0.994615	0.994238
NO ₂ Cal Offset:	0.920230	1.340861

Dilution Calibration Data

Set Point	Dilution flow rate (sccm)	Source gas flow rate (sccm)	Calculated NO _x concentration (ppb) (Cc)	Calculated NO concentration (ppb) (Cc)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO _x concentration (ppb) (Ic)	Indicated NO concentration (ppb) (Ic)	Indicated NO ₂ concentration (ppb) (Ic)	NO _x Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	NO Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>
Cal zero	5000	0.0	0.0	0.0	0.0	0.1	0.1	0.0	----	----
High point	4933	66.8	801.6	800.3	1.3	802.0	800.0	1.8	0.9995	1.0004
Mid point	4967	33.4	400.8	400.1	0.7	398.0	394.7	3.2	1.0070	1.0138
Low point	4983	16.7	200.4	200.1	0.3	195.9	194.3	1.6	1.0230	1.0297
As left zero	5000	0.0	0.0	0.0	0.0	0.1	0.1	0.0	----	----
As left span	4933	66.8	801.6	403.4	398.2	795.3	403.4	391.9	1.0080	1.0000
Average Correction Factor									1.0098	1.0146

GPT Calibration Data

O3 Setpoint (ppb)	Indicated NO Reference concentration (ppb)	Indicated NO Drop concentration (ppb)	Calculated NO ₂ concentration (ppb) (Cc)	Indicated NO ₂ concentration (ppb) (Ic)	NO ₂ Correction factor (Cc/Ic) <i>Limit = 0.95-1.05</i>	Converter Efficiency <i>Limit = 96-104%</i>
Cal zero	----	----	0.0	0.0	----	----
High GPT point	799.4	404.0	396.7	394.8	1.0049	99.5%
Mid GPT point	799.4	618.4	182.3	184.6	0.9877	101.2%
Low GPT point	799.4	707.9	92.8	94.0	0.9876	101.3%
Average Correction Factor					0.9934	100.7%

Notes:

Changed sample inlet filter after as founds. Adjusted span.

Calibration Performed By:

Braiden Boutilier



Wood Buffalo Environmental Association

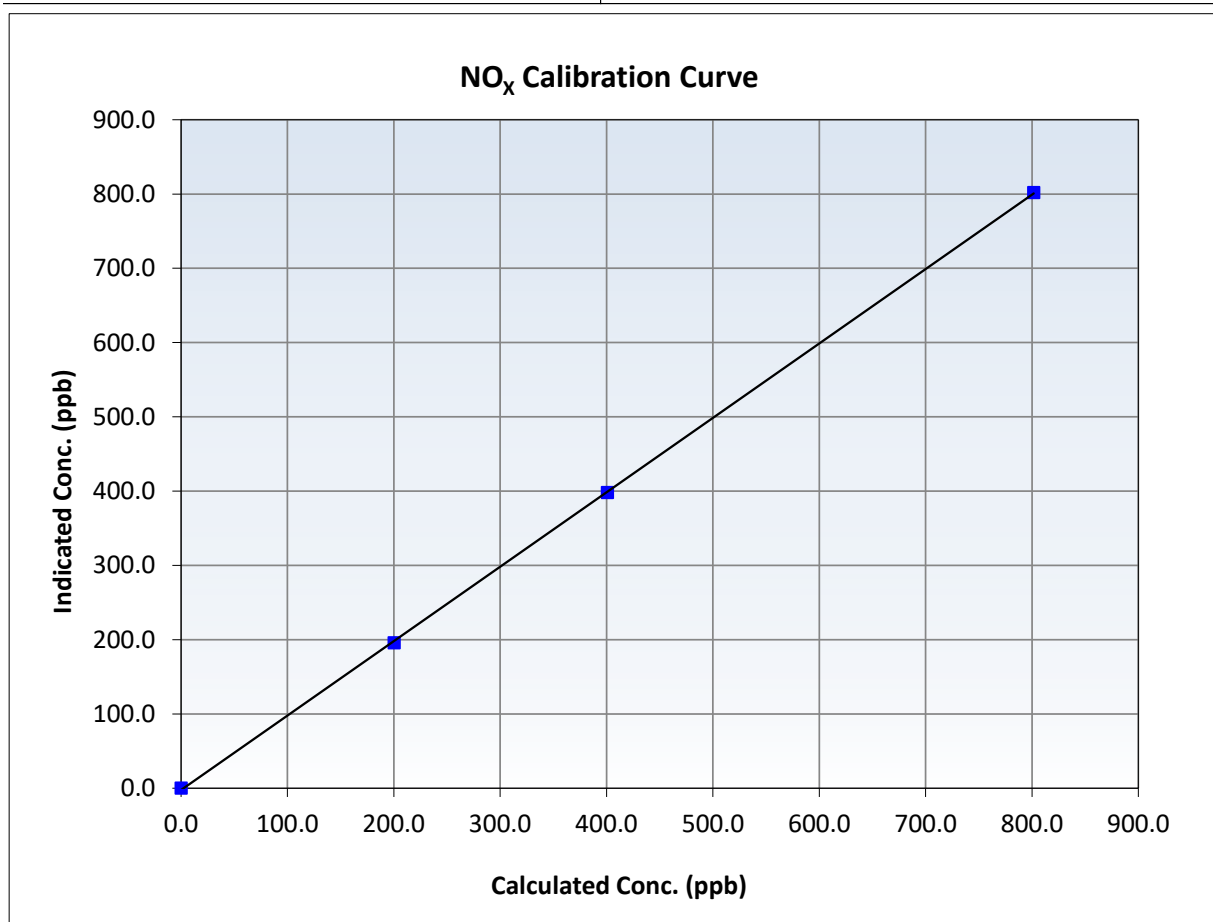
NO_x Calibration Summary

Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 7, 2025
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	11:04	End Time (MST):	15:49
Analyzer make:	Thermo 42i	Analyzer serial #:	1173480006

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.1	----	Correlation Coefficient	0.999957	≥ 0.995
801.6	802.0	0.9995	Slope	1.001898	0.90 - 1.10
400.8	398.0	1.0070	Intercept	-2.373614	+/-20
200.4	195.9	1.0230			





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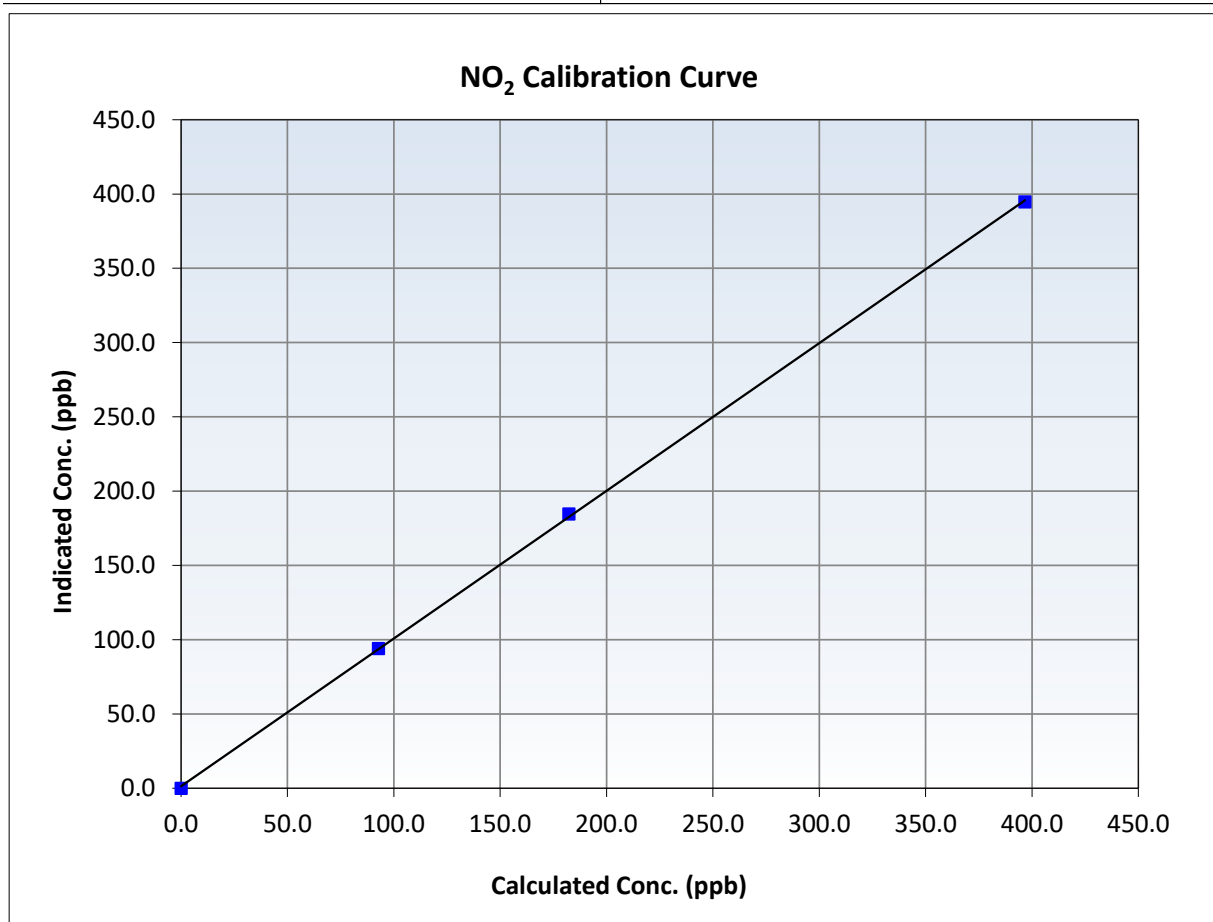
NO₂ Calibration Summary

Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 7, 2025
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	11:04	End Time (MST):	15:49
Analyzer make:	Thermo 42i	Analyzer serial #:	1173480006

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		<u>Limits</u>
0.0	0.0	----	Correlation Coefficient	0.999920	≥0.995
396.7	394.8	1.0049	Slope	0.994238	0.90 - 1.10
182.3	184.6	0.9877	Intercept	1.340861	+/-20
92.8	94.0	0.9876			





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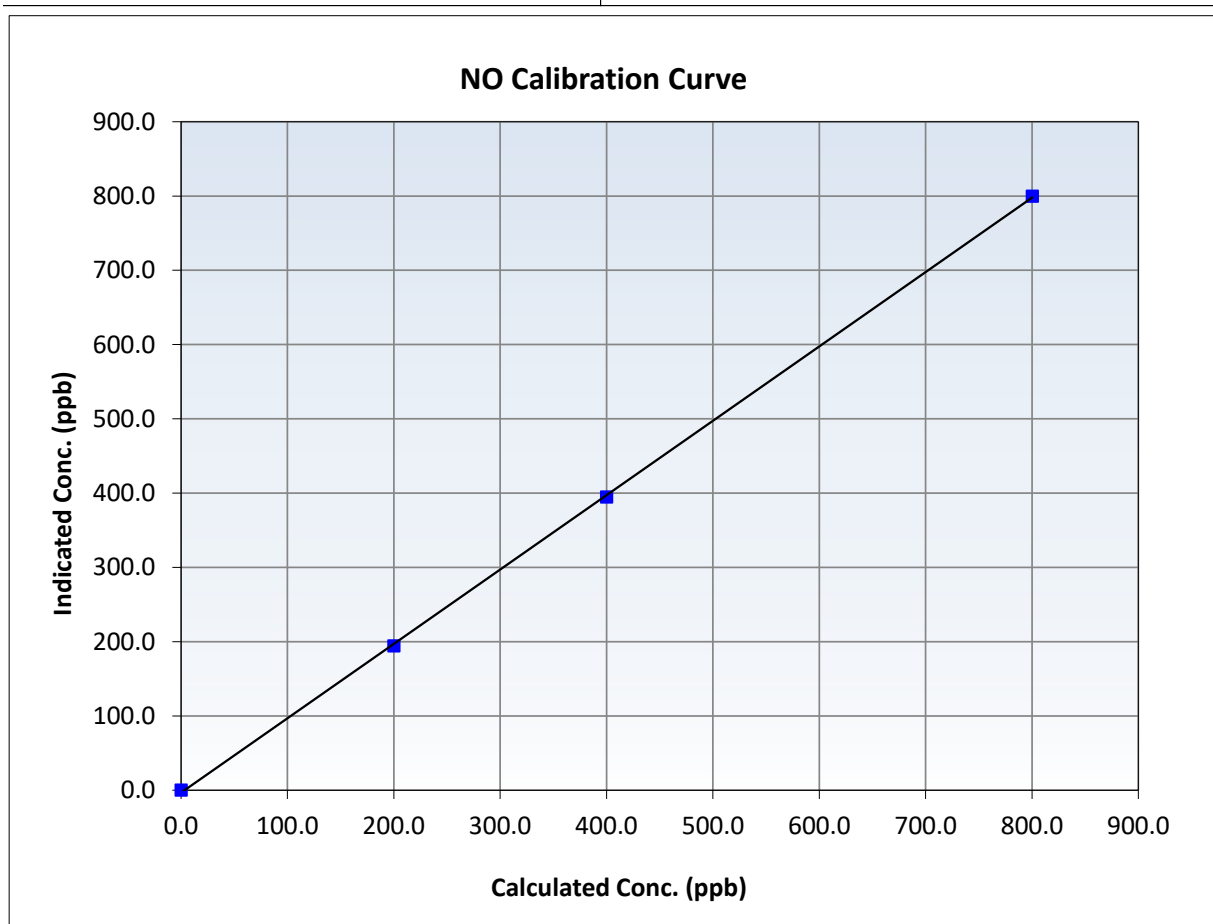
NO Calibration Summary

Station Information

Calibration Date:	September 17, 2025	Previous Calibration:	August 7, 2025
Station Name:	Kirby South	Station Number:	AMS 507
Start Time (MST):	11:04	End Time (MST):	15:49
Analyzer make:	Thermo 42i	Analyzer serial #:	1173480006

Calibration Data

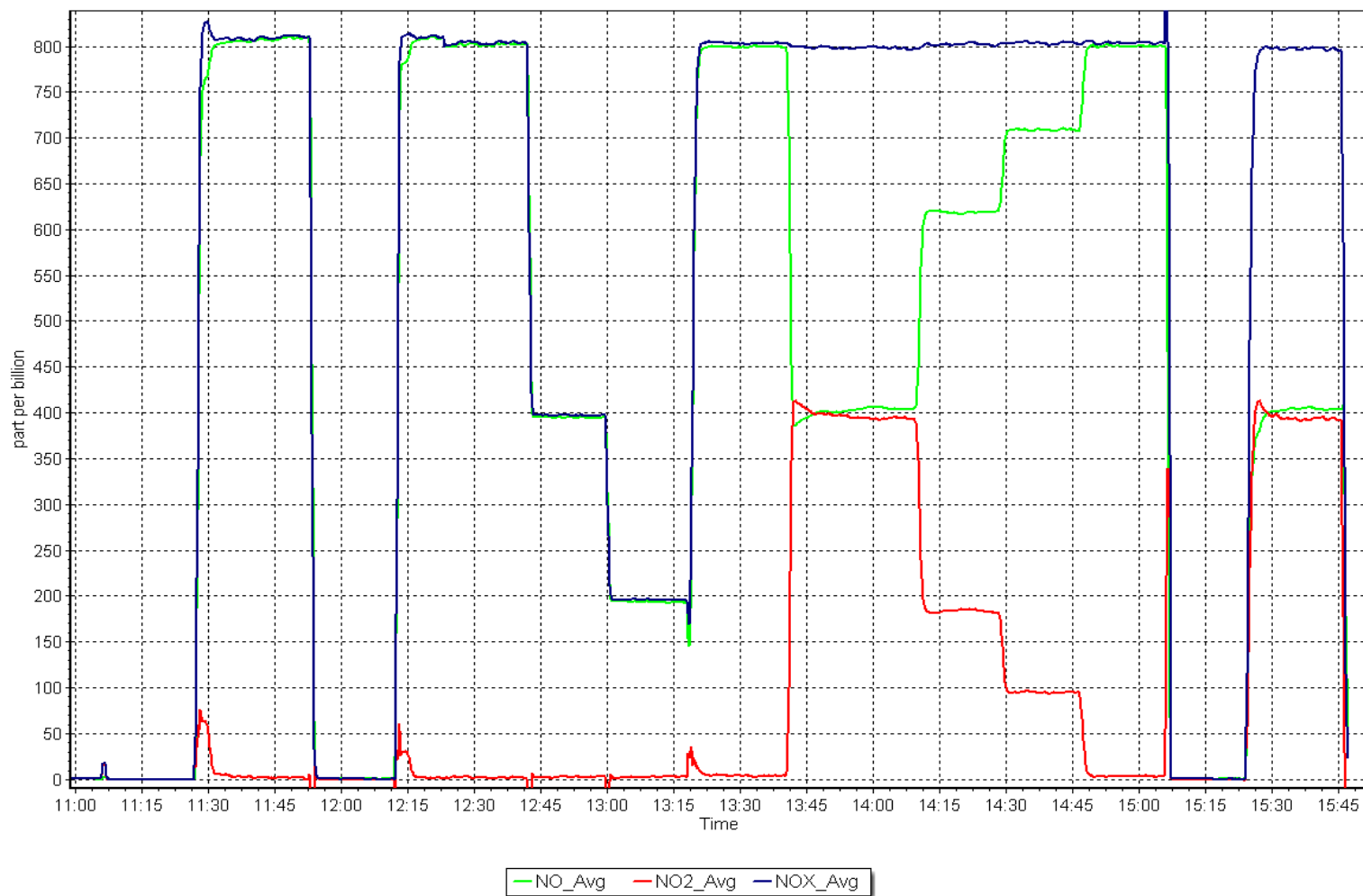
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation		Limits
0.0	0.1	----	Correlation Coefficient	0.999915	≥ 0.995
800.3	800.0	1.0004	Slope	1.001214	0.90 - 1.10
400.1	394.7	1.0138	Intercept	-3.273654	+/-20
200.1	194.3	1.0297			



NO_x Calibration Plot

Date: September 17, 2025

Location: Kirby South





End of Report