Government of Alberta

Environment

Environmental Assurance Air Monitoring and Audit Center 4946 89 Street N.W. Edmonton, Alberta T6E-5K1 Canada Telephone: 780-427-7888 www.alberta.ca

May 20, 2010

File No(s). 2010-021A / 044A

Shelly Pruden Program Manager Pease Airshed Zone Association P.O. Box 21135 Grande Prairie, AB T8V 6W7

Dear Shelly:

Re: PASZA Ambient Air Monitoring Station Audits

Please see attached audit summary for all audit findings from the audits conducted on the PASZA ambient air monitoring stations.

Please address the issues noted by June 16th, in writing indicating what corrective actions have been taken. If you have any questions please contact the undersigned at 780-427-7888.

Yours truly,

Jolene Scott Monitoring Systems Auditor Environmental Assurance

Attachment(s): none cc: Gary Sasseville: District Approvals Manager Greg Smith: District Compliance Manager Marilyn Albert: Industrial Monitoring Assessment Technologist Janine Ross: Ambient Air Support Tech Jennifer Keturakis: Industrial Approvals Engineer

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Facility / Zone			PASZA	
Total # of parameters that passed				
Total # of parameters audited in the network				
Date(s) of the audit	May 10 - 13, 2010			
Issue Date of Audit Summary			May 20, 2010	
Station Name			Valleyview	
Auditor			J. Scott	
Audit Date			May 10, 2010	
Critical	Pass		Fail	
H ₂ S				
SO ₂	Ń			
TRS				
NO / NO ₂ / NO _X				
O ₃				
СО				
HC				
TEOM/BAM PM _{2.5}				
Wind Speed / Wind Direction	γ			
Wind head Orientation				
Manifold Fan				
Precipitation Sampler				
Zero/Span Systems Operational	λ			
Inspection Items	OK		Need for Improvement	
Sample pump venting/scrubbing		Х	Not vented	
Heating / Air Conditioning				
Manifold				
Sample Lines				
TEOM/BAM PM _{2.5}				
Safety				
Site Conditions				
Non-critical	OK	O	oportunity for Improvement	
RH	N		· · · · ·	
Ambient Temperature		Х	+/- 1°C	
TEOM 'Pump On' test				
Station Condition	$\overline{\mathbf{N}}$			
Station Documentation	Ň			
Not monitored at this location				

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Facility / Zone			PASZA	
Total # of parameters that passed			22	
Total # of parameters audited in the network		23		
Date(s) of the audit			May 10 - 13, 2010	
Issue Date of Audit Summary			May 20, 2010	
Station Name			Smoky Heights	
Auditor			J. Scott	
Audit Date			May 10, 2010	
Critical	Pass		Fail	
H ₂ S	Ì			
SO ₂				
TRS				
NO / NO ₂ / NO _X				
O ₃				
СО				
HC				
TEOM/BAM PM _{2.5}				
	,			
Wind Speed / Wind Direction	N			
Wind head Orientation	N			
Manifold Fan	γ			
Precipitation Sampler				
Zero/Span Systems Operational	N			
Inspection Items	OK		Need for Improvement	
Sample pump venting/scrubbing	γ			
Heating / Air Conditioning				
Manifold				
Sample Lines				
TEOM/BAM PM _{2.5}		Х	Dusty Heads	
Safety				
Site Conditions				
Non-critical	OK	0	pportunity for Improvement	
RH				
Ambient Temperature				
TEOM 'Pump On' test	Ň			
Station Condition	Ń			
Station Documentation	Ń			
Not monitored at this location				

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Facility / Zone			PASZA
Total # of parameters that passed	0		
Total # of parameters audited in the network	0		
Date(s) of the audit			May 10 - 13, 2010
Issue Date of Audit Summary			May 20, 2010
Station Name			Beaverlodge
Auditor			J. Scott
Audit Date			May 11, 2010
Critical	Pass		Fail
H ₂ S			
SO ₂			
TRS			
NO / NO ₂ / NO _X			
O ₃ CO			
HC			
TEOM/BAM PM _{2.5}		х	Flow
	,	~	Leak
Wind Speed / Wind Direction	N		
Wind head Orientation	N		
Manifold Fan	N		
Precipitation Sampler	N		
Zero/Span Systems Operational	N		
Inspection Items	OK		Need for Improvement
Sample pump venting/scrubbing			
Heating / Air Conditioning			
Manifold			
Sample Lines			
TEOM/BAM PM _{2.5}		Х	Dirty Heads
Safety			
Site Conditions			
Non-critical	OK	0	pportunity for Improvement
RH			
Ambient Temperature	Ń		
TEOM 'Pump On' test	Ń		
Station Condition			
Station Documentation			
Not monitored at this location			

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Facility / Zone			PASZA
Total # of parameters that passed			0
Total # of parameters audited in the network			0
Date(s) of the audit			May 10 - 13, 2010
Issue Date of Audit Summary			May 20, 2010
Station Name			Evergreen
Auditor			J. Scott
Auditor			May 11, 2010
Critical	Pass		Fail
H ₂ S			
SO ₂			
TRS			
NO / NO ₂ / NO _X			
O ₃ CO			
HC			
TEOM/BAM PM _{2.5}			
	N		
Wind Speed / Wind Direction			
Wind head Orientation			
Manifold Fan			
Precipitation Sampler			
Zero/Span Systems Operational			
Inspection Items	ОК		Need for Improvement
Sample pump venting/scrubbing		Х	Not vented
Heating / Air Conditioning			
Manifold	Ń		
Sample Lines		Х	Dirty
TEOM/BAM PM _{2.5}			
Safety			
Site Conditions			
Non-critical	OK	0	pportunity for Improvement
RH			
Ambient Temperature		Х	+/- 1°C
TEOM 'Pump On' test			
Station Condition	Ń		
Station Documentation	Ń		
Not monitored at this location			

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Facility / Zone			PASZA
Total # of parameters that passed			22
Total # of parameters audited in the network			23
Date(s) of the audit			May 10 - 13, 2010
Issue Date of Audit Summary			May 20, 2010
Station Name	1		Henry Pirker
Auditor			J. Scott
Auditor			May 12, 2010
Critical	Pass		Fail
H ₂ S			
SO ₂			
TRS	Ń		
$NO / NO_2 / NO_X$	Ń		
O ₃	Ń		
CO	Ń		
HC	Ń		
TEOM/BAM PM _{2.5}			
	V		
Wind Speed / Wind Direction			
Wind head Orientation			
Manifold Fan			
Precipitation Sampler			
Zero/Span Systems Operational			
Inspection Items	ОК		Need for Improvement
Sample pump venting/scrubbing			
Heating / Air Conditioning	Ń		
Manifold			
Sample Lines			
TEOM/BAM PM _{2.5}		Х	Dusty Heads
Safety			
Site Conditions			
Non-critical	OK	Op	portunity for Improvement
RH		i	· · · ·
Ambient Temperature	Ń		
TEOM 'Pump On' test	Ň		
Station Condition	Ň		
Station Documentation	Ń		
Not monitored at this location	•		

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Facility / Zone			PASZA
Total # of parameters that passed			0
Total # of parameters audited in the network			0
Date(s) of the audit			May 10 - 13, 2010
Issue Date of Audit Summary			May 20, 2010
Station Name	I		Rover
Auditor			J. Scott
Audit Date			May 13, 2010
Critical	Pass		Fail
H ₂ S			
SO ₂			
TRS	Ń		
NO / NO ₂ / NO _X	Ń		
O ₃			
CO			
HC			
TEOM/BAM PM _{2.5}			
Wind Speed / Wind Direction			
Wind head Orientation			
Manifold Fan			
Precipitation Sampler			
Zero/Span Systems Operational			
Inspection Items	ОК		Need for Improvement
Sample pump venting/scrubbing	\mathbf{N}		
Heating / Air Conditioning			
Manifold			
Sample Lines			
TEOM/BAM PM _{2.5}			
Safety			
Site Conditions			
Non-critical	OK	0	pportunity for Improvement
RH		Х	
Ambient Temperature			
TEOM 'Pump On' test			
Station Condition			
Station Documentation	Ń		
Not monitored at this location			

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STATION AUDIT							
			File No. <u>2010 - 026</u>	A / 030A			
Date:	May 11, 2010	Performed by:	J. Scott				
Station Name:	Beaverlodge	Location:	Beaverlodge				
Facility/Zone:	PASZA	Operator:	FOCUS				
	Temp: 22.5 C	Barometric Press:	697mmHg				
Location Status	Latitude N Longitute W Elevation of Site Documentation	55°11'47.7" 119°23'47.7" 755m Good					
	d Material Glas Condition Goo						
Meterologi Wind Speed	Cal Observ Direction 169.7 Deg		Audit Value S 0-5 kph				
Station Te	mperature N/A	<u> </u>	N/A				
Relative	Humidity 23.32	%	23.47%				
Ambient Te	mperature 17.27	<u> </u>	16.91 C				
Solar	Radiation N/A	<u> </u>	N/A				
Pr	ecipitation N/A	<u> </u>	N/A				
Remarks:							
	ld needed for precip sa	mpler.					

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SO2 ANALYZER AUDIT							
					File No.	2010 -	026A
Date:	May 11	I, 2010	_ P	Performed by:		J. Scott	
Station Name:	Beave	rlodae		Location:	Beave	rlodae	
		-	-	-			
Facility/Zone:			-		FOC		
	Temp:	22.5 C	Baro	ometric Press:	697 m	nmHg	
Monitor							
Make/Model:	`		o 43i	Serial No:			
Inlet flow (sccr Last cal. Date:	m):		02 2, 2010	Full Scale Rar Old C.F.	$\frac{1}{2}$ ige ppm:	0.1	
Last cal. Date.		Дрії і	2,2010		0.37	30	
Zero/Bkg	2.	59					
Span Coef	0.8	86	-				
Calibrato	~						
Calibrat	tion Method:	GAS D	ILUTION				
	/lake/Model:	R&R M	IFC 201	-	AMU # :	169	
	Cylinder # :	SV 1	4616	Cyl.	Conc PPM:	11	.2
C	Calibrator Flo	W	Calculated			% Diffe	erence
A :	(sccm)	TD (1	Conc.	Concent		VS	T · · ·
Air 4919	Gas 0.00	Total 4919	(ppm)	(pp) 0.00		Audit Gas	Limits
4939	34.90	4919	0.0000	0.00		-4%	± 15%
4989	16.52	5006	0.0370	0.07		-3%	± 10%
4985	6.84	4992	0.0153	0.01		-6%	± 15%
		_	Absolute A	Average Percen	t Difference	4%	
Linear Regre	ession Anal	ysis:	y=mx+b (where x=calculate		n, y=indicated o	concentration)
	Correla	tion Coeff.=	1.0000		_IMITS ≥ 0.995		
	Concia	m (Slope)=			2 0.995).85-1.15		
b (Inte	ercept as % of	· •			± 3% F.S.		
Remarks:							

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	NO	-NOx-	NO2	Ana	lyze	er Au	dit		
					J		File No.	2010	- 027A
	Date:	May 11,	2010			Performed	by:	J. S	Scott
Station:	Name:	BVLG	Location:	Beave	rlodge	Operator:			
Facility/Zone:		PASZA		Temp.	22	2.5 C	BP:	697 r	nmHg
Monitor:		Make/Model:	Тесо	942i		Serial No.		AMU 179	6
		t flow (sccm):				lange ppm:		1.0	
	Ι	Last cal. Date:	April 12	., 2010	. (Old C.F.'s	NO:		
	NO DI	0.0					NOx:		
		2.3	5	-			NO2:	0.9	861
	NOx Bkg NO Coef			-					
	NOx Coef			-					
	NO2 Coef			-					
Calibration Met	hod:		Gas Di	lution / G	iPT				
Calibrator:		Make/Model:		abio 2010			AMU#	17	78
NO	cylinder #	CLM 00	1756	NO co	onc. ppm	50.2	NOx o	conc. ppm	50.7 <u>5</u>
		~		-		~ .			. 1
Calibrate	or	Calc. C NO	Conc. NOx	Ir NC		Concentration NOx	on		ference dit Gas
Flows Air Gas	Total	(ppm)	(ppm)) om)	(ppi	m)	NO	NOx
4801 0.00	4801	0.0000	0.0000		0001	0.00			± 15%
4841 78.23	4919	0.7984	0.8063		734	0.78		-3%	-3%
4934 39.29	4973	0.3966	0.4006	0.3	886	0.39	34	-2%	-2%
4944 19.68	4964	0.1990	0.2010		958	0.19		-2%	-1%
				Absolut	e Average	e Percent D	ifference	2%	2%
Linear Regress	ion Analy	sis	v–m	x+h (whe	re x–calcul	ated concent	tration v—in	dicated cor	centration)
	lon / mary		NO		NOx		NO ₂	aloaloa ool	LIMITS
	Correl	lation Coeff.=	1.0000		1.0000		1.0000		≥ 0.995
		m (Slope)=		_	0.9667		0.9960		0.85-1.15
b (Inte	rcept as %	of full scale)=	0.2025	-	0.3033		0.0952		± 3% F.S.
	O ₃	Flow	Indicated	Conc. (p	pm)	NO	NO ₂	% Dif	ference
	Setting	Rate	NO	NOx	NO ₂	Decrease	Increase	vs Au	dit Gas
	0.000	4919	0.7669	0.7734	0.0057	\geq	\geq	\geq	%Dif Limit
	0.80 V	4919	0.3727	0.7725	0.3989	0.3942	0.3932	0%	± 15%
	0.40 V	4919	0.5916	0.7741	0.1824	0.1753	0.1767	1%	± 15%
	0.20 V	4919	0.6976	0.7727	0.0749	0.0693	0.0692	0%	± 15%
Converter Effic Aver	-	ter Efficiency	100.1%	Aosolut	e Average	e Percent D		0%	
Remarks:		ted for a rang or the analzy							ds to be

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O3 ANALYZER AUDIT							
					File No.	2010 -	028A
Date:	May 11	I, 2010	. I	Performed by:		J. Scott	
Station Name:	Beave	rlodge		Location:	Beave	rlodge	
Facility/Zone:	PAS	SZA	-	Operator:	FO	CUS	
		22.5 C	Baro	ometric Press:			
Monitor Make/Model: Inlet flow (sccn Last cal. Date: Zero/Bkg Span Coeff.	-0	691 April 1		Serial No: Full Scale Ra Old C.F.		0.5	
Ν	lake/Model:	Gas Dilut Sabio CLM (2010	NO conce	AMU # : ntration ppm:	<u> </u>	2
Ozone	C	alibrator Flo (sccm)	W	Calculated Conc.	Indicated Conc.	% Diffe vs	erence
Setting	Air	Gas	Total	(ppm)	(ppm)	Audit Gas	Limits
0.00 V	4919	\succ	4919	0.0000	-0.0002		
0.80 V	4919	\times	4919	0.3942	0.4088	4%	± 15%
0.40 V	4919	\geq	4919	0.1753	0.1820	4%	± 15%
0.20 V	4919	$>\!$	4919	0.0693	0.0715	3%	± 15%
Linear Regression Analysis:Absolute Average Percent Difference4% $y=mx+b$ (where $x=calculated$ concentration, $y=indicated$ concentration)LIMITSCorrelation Coeff.=1.0000 \geq 0.995m (Slope)=1.03780.85-1.15b (Intercept as % of full scale)= -0.0425 \pm 3% F.S.							
Remarks:							

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	TEON	/I AUDIT	
D	May 44, 0040	File #:	2010 - 029A
Dat	e: May 11, 2010	Performed by:	J. Scott
Station			
Name:	Beaverlodge	Location:	Beaverlodge
Facility/Zone:	PASZA	Operator:	FOCUS
Temperature:	22.5 C	Barometric Press.	697 mmHg
Audit Transfer Standard			
Make/Model:	DeltaCal	Cell s/n:	0566
Serial Number:	AMU 1761		
Sampler Set-up and Currer	nt Readings	- F-Main Set Pt (l/min)	3.00
Make/Model	R&P 1400a	F-Aux Set Pt (l/min)	13.67
Unit #	PM 2.5	Filter Load (%)	17
Control unit s/n	AMU 1649	K _o Factor	14287
Transducer s/n	AMU 1649		11.7
		Press (ATM)	0.917
		FAdj Main	1.005
		FAdj Aux	1.005
Conversion from mm Hg o		-	1.000
ATM = (mm Hg) X (Note: Tolerances are noted as BOI Zero Flow		$\underline{\text{or}} \qquad \text{ATM} = (\text{``Hg}) X (3)$	3.34207 X 10 ⁻²)
Pump Off		Pump On (Time to	reach set points)
F-Main (l/min)	0.01	(45-60 Sec)	23
F-Aux (l/min)	0.06	(45-60 Sec)	32
Tomporaturo/Brassura			
Temperature/Pressure	12.7	1°C	1.00
Measured Temp ($\pm 2 \degree C$)	0.917	$\Delta^{\circ}C$	0.00%
Measured Press (± 1.5% ATM)	0.917	Δ% ATM	0.0078
Flow Audit		Δ% of Measured Flow	
Indicated Main/Aux Flow (l/min)			-
	2.99 13.68	(± 2%)	-0.3% 0.1%
Total Flow = Main + Aux (l/min)	2.99 13.68 16.67		-0.3% 0.1%
Total Flow = Main + Aux (l/min)	16.67	(± 2%)(± 2%) (± 2%) ∆ of Measured Flow fro	-0.3% 0.1% 0.0%
Measured Total Flow (l/min)	16.67 6.99	(± 2%)(± 2%) (± 2%) ∆ of Measured Flow fro (± 1.00 l/min)	-0.3% 0.1% 0.0% 0m Indicated 9.68
	16.67	(± 2%)(± 2%) (± 2%) ∆ of Measured Flow fro	-0.3% 0.1% 0.0%
Measured Total Flow (l/min)	16.67 6.99 3.03	(± 2%)(± 2%) (± 2%) ∆ of Measured Flow fro (± 1.00 l/min)	<u>-0.3%</u> 0.1% 0.0% 0m Indicated 9.68 0.04
Measured Total Flow (l/min) Measured Main Flow (l/min)	16.67 6.99	(± 2%) (± 2%)_ Δ of Measured Flow fro (± 1.00 l/min)_ (± 0.20 l/min.)_	-0.3% 0.1% 0.0% 0m Indicated 9.68 0.04 ump On – Pump Off
Measured Total Flow (l/min) Measured Main Flow (l/min) Leak Check	16.67 6.99 3.03	(± 2%) (± 2%) ∆ of Measured Flow fro (± 1.00 l/min) (± 0.20 l/min.) Actual leakage = Pu	<u>-0.3%</u> 0.1% 0.0% 0m Indicated 9.68 0.04 ump On – Pump Off
Measured Total Flow (l/min) Measured Main Flow (l/min) Leak Check Main (< 0.15 l/min)	16.67 6.99 3.03 2.99	(± 2%) (± 2%) ∆ of Measured Flow fro (± 1.00 l/min) (± 0.20 l/min.) Actual leakage = Pu 2.98	<u>-0.3%</u> 0.1% 0.0% 0m Indicated 9.68 0.04 ump On – Pump Off
Measured Total Flow (l/min) Measured Main Flow (l/min) Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min)	16.67 6.99 3.03 2.99	(± 2%) (± 2%) ∆ of Measured Flow fro (± 1.00 l/min) (± 0.20 l/min.) Actual leakage = Pu 2.98	<u>-0.3%</u> 0.1% 0.0% 0m Indicated 9.68 0.04 ump On – Pump Off
Measured Total Flow (l/min) Measured Main Flow (l/min) Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K ₀ Factor	16.67 6.99 3.03 2.99 13.68	(± 2%) (± 2%) ∆ of Measured Flow fro (± 1.00 l/min) (± 0.20 l/min.) Actual leakage = Pu 2.98	<u>-0.3%</u> 0.1% 0.0% 0m Indicated 9.68 0.04 ump On – Pump Off
Measured Total Flow (l/min) Measured Main Flow (l/min) Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K ₀ Factor Measured	16.67 6.99 3.03 2.99 13.68 14211 0.54 PM 10 - good. PM 2.9	(± 2%) (± 2%) Δ of Measured Flow fro (± 1.00 l/min) (± 0.20 l/min.) Δctual leakage = Pu 2.98 13.62	-0.3% 0.1% 0.0% 0m Indicated 9.68 0.04 Imp On – Pump Off 3 2
Measured Total Flow (l/min) Measured Main Flow (l/min) Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K_0 Factor Measured K_0 % Difference (± 2.5%)	16.67 6.99 3.03 2.99 13.68 14211 0.54 PM 10 - good. PM 2.5 Grover found a leak of	(± 2%) (± 2%) Δ of Measured Flow fro (± 1.00 l/min) (± 0.20 l/min.) Actual leakage = Pu 2.98 13.62	-0.3% 0.1% 0.0% 0m Indicated 9.68 0.04 Imp On – Pump Off 3 2
Measured Total Flow (l/min) Measured Main Flow (l/min) Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K_0 Factor Measured K_0 % Difference (± 2.5%)	16.67 6.99 3.03 2.99 13.68 14211 0.54 PM 10 - good. PM 2.4 Grover found a leak opassed.	(± 2%) (± 2%) Δ of Measured Flow fro (± 1.00 l/min) (± 0.20 l/min.) Δctual leakage = Pu 2.98 13.62	-0.3% 0.1% 0.0% 0m Indicated 9.68 0.04 Imp On – Pump Off 3 2

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	TEON	AUDIT	
	TLON	File #:	2010 - 030A
Date	: May 11, 2010	Performed by:	J. Scott
Station			
Name:	Beaverlodge	Location:	Beaverlodge
Facility/Zone:	PASZA	Operator:	FOCUS
Temperature:	22.5 C	Barometric Press.	697 mmHg
Audit Transfer Standard			
Make/Model:	DeltaCal	Cell s/n:	0566
Serial Number:	AMU 1761		
Sampler Set-up and Current	t Readings	F-Main Set Pt (l/min)	3.00
Make/Model	R&P 1400a	F-Aux Set Pt (l/min)	13.67
Unit #	PM 2.5	Filter Load (%)	17
Control unit s/n	AMU 1649	K_0 Factor	14287
	AMU 1649	$\frac{K_0 ractor}{\text{Temp}(^{\circ}C)}$	11.7
Transducer s/n			0.917
		Press (ATM)	1.005
		FAdj Main	
		FAdj Aux	1.005
Conversion from mm Hg or	"Hg to ATM (Atmos		
ATM = (mm Hg) X (1 Note: Tolerances are noted as BOL		$\underline{\text{or}} \qquad \text{ATM} = (\text{``Hg}) X (3)$	3.34207 X 10 ⁻²)
Zero Flow			
Pump Off		Pump On (Time to	reach set points)
F-Main (l/min)	0.01	(45-60 Sec)	23
F-Aux (l/min)	0.06	(45-60 Sec)	32
Temperature/Pressure			
Measured Temp (± 2 °C)	12.7	Δ°C	1.00
Measured Press (± 1.5% ATM)	0.917	Δ% ATM	0.00%
Flow Audit		Δ% of Measured Flow	from Set-point
Indicated Main/Aux Flow (l/min)	2.99 13.68	(± 2%)	-0.3% 0.1%
Total Flow = Main + Aux (l/min)	16.67	(± 2%)	0.0%
		∆ of Measured Flow fr	om Indicated
Measured Total Flow (l/min)	16.24	(± 1.00 l/min)	0.43
Measured Main Flow (l/min)	3.03	(± 0.20 l/min.)	0.04
Leak Check		Actual leakage = Pu	Imp On – Pump Off
Main (< 0.15 l/min)	-0.11	-0.12	
Aux (< 0.65 l/min)	0.19	0.13	}
K _o Factor			
Measured			
$K_0 \%$ Difference (± 2.5%)			
Remarks:			

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Company:		PASZA		_	Fac	ility Name:		Beave	rlodge		
Approval N	No.:	N/A		_	Site	Name:		Beave	rlodge		
AENV Reg Parameters			1	_	AEI	NV District:		North	nwest		
H ₂ S		SO_2	Х	NO _X	Х	NH ₃		O ₃		Х	
CO		CH ₄		NonCH4		THC		Ethyle	ene		
PM _{2.5}	Х	PM ₁₀		TSP		BTEX		Wind	Speed	Х	
Wind Dir	X	Amb. Temp	Х	Stn.Temp		RH	Х	Solar R	Radiation		
Rainfall		Precip		VWS		Other					
All parame	eters	monitored as	per aj	oproval: Ye	s	No					
GENE	RAL								YES N	O N/A	
		Has the location	n rem	ained unchai	nged f	from previous	audita	?	Х	I	٦
		Is site secure?			0				Х		-
		Are station ope	rating	conditions a	adequ	ate?			Х		
DATA ACQ	mer	τιον									
DAIAACQ	0151	Are strip charts	in 115	e?						Х	٦
		Is a telemetry s			miciti	on in usa?			X	<u>A</u>	-
		is a telementy s	ystem	i ioi uata acy	laisin	on in use?			Λ		
SYSTEM CO	OMP	ONENTS									
		Is a glass sample	ling n	nanifold insta	alled?				Х		
		Is sampling ma	nifold	l clean?					Х		
		Is a manifold tr	ap in	place?					Х		
		Are spare mani	fold p	orts capped					Х		
		Is manifold orie	ented	so it is not e	xactly	horizontal?			Х		
		Are manifold p	orts si	ituated to pre	event	water entering	g moni	tors?	Х		
		Is manifold pur	np pro	operly install	led an	d operative?			Х		=
		Do sample lines							Х		
		Are monitor sa							Х		-
		Are sampling li							X		-
		Are monitors p			nd se	cure?			X		-
		Are monitors p					bed?		X		-
		Are zero and sp	-	-			Joeu.		X		=
		rne zero anu sp	an sy	stems operat	ional	•			Δ	1	
WIND EQU	IPM.	ENT									
		Is wind sensor j		•					Х		
		Does wind equi	pmen	it appear to b	e fun	ctioning prope	erly?		Х		
COMMENT	'S:										_
											—
											—
AUDITOR:		J.	Scott				DATE	E:	Mav	11, 2010	
11					-					,	—
				1.	1.11						
					2eA	Achieve.					

		STATIO	n aue	DIT	
				File No. <u>2010 - 03</u>	1A / 033A
Date:	May 11, 2010	Pe	rformed by:	J. Scott	
Station Name:	Evergreen		Location:	Evergreen	
Facility/Zone:	PASZA		Operator:	FOCUS	_
	Temp: 21.5 (C Baron	netric Press:	705 mmHg	_
Location Status	Longitute	e N 55°07 e W 118°45 ion 650 ion	5'54.2")m		
Manifol Manifold	d Material Condition	Glass Good			
Meterologi Wind Speed		Dbserved Deg 16.3 kph	_	Audit Value SW 15-20 kph	_
Station Te	mperature	N/A	_	N/A	_
Relative	Humidity	21.00%	_	19.57%	_
Ambient Te	emperature	17.29 C	_	20.17 C	_
Solar	Radiation	N/A	_	N/A	_
Pre	ecipitation	N/A	_	N/A	_
Remarks:					
	nd RH taken at gro	ound level. Ser	sor at top of	tower.	

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		SO ₂	ANALY	ZER A	UDIT		
					File No.	2010 -	031A
Date:	May 11	, 2010	Per	formed by:		J. Scott	
Station Name:	Ever	reen		Location:	Evero	reen	
Facility/Zone:			_	Operator:			
Tacinty/2011C.			Barometric Press.				
Monitor Make/Model:		Teo		erial No:	07011	20008	
Inlet flow (scc Last cal. Date:	·	2 April 2	449 F 20, 2010 C	ull Scale Rang Id C.F.	e ppm: 0.98	1.0 393	
Zero/Bkg Span Coef	10 1.0	.9 41	_				
	Aake/Model: Cylinder # : Calibrator Flo	CLM	Calculated	Cyl. C	AMU # : Conc PPM:	169 50 % Diffe	.2
	(sccm)		Conc.	Concentra		VS	
Air	Gas	Total	(ppm)	(ppm)		Audit Gas	Limits
3042	0.00	3042	0.0000	0.000		00/	4.50/
3056	48.52	3105	0.7844	0.769		-2%	± 15%
3049 3031	24.52 11.90	3074 3043	0.4004 0.1963	0.394		-2% -3%	± 15% ± 15%
Linear Regre	Correla	tion Coeff.= m (Slope)=	y=mx+b (whe = <u>1.0000</u> = <u>0.9807</u>	≥ 0.	concentration MITS 0.995 85-1.15	2% n, y=indicated c	concentration
Remarks: Calibrated fro		of 0 - 0.5 n	= 0.0262 ot 0 - 1.0. The y calibrated for	range of the		needs to be o	changed

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		TRS	ANAL	YZER AUDI	Т	
				File No	o. 2010 -	032A
Date:	May 1	1, 2010	P	erformed by:	J. Scott	
Station						
Name:	Ever	green	_	Location: Eve	rgreen	
Facility/Zone:	PA	SZA		Operator: FC	CUS	
·	Temp.		- Baro	metric Press. 705		
Monitor	Ĩ		-			
Make/Model:		Tecc	o 43C	Serial No: 0436	610005	
Inlet flow (scc	m):			Full Scale Range ppm:		
Last cal. Date:	,			Old C.F. 0.		
				· · · · · · · · · · · · · · · · · · ·		
Zero/Bkg	15	5.4	_			
Span Coef	0.8	359	_			
Calibrato						
Calibra	tion Method:	GAS D		• • • • • • • •	: 169	סר
ľ	Make/Model: Cylinder # :	<u>רמר וי</u> 31 1	1FC 201 1679	Cyl. Conc PPM		
	Cymuci π .	52	1073	Cyl. Colle 11 M		0
(Calibrator Flo	W	Calculated	Indicated	% Diffe	erence
	(sccm)		Conc.	Concentration	VS	
Air	Gas	Total	(ppm)	(ppm)	Audit Gas	Limits
3042	0.00	3042	0.0000	0.0005		
3080	24.82	3105	0.0767	0.0784	2%	± 15%
3062	12.19	3074	0.0381	0.0393	2%	± 15%
3038	5.12	3043	0.0162	0.0169	2% e 2%	± 15%
Linear Regro	assion Ana	lveie	Absolute A	Average Percent Differenc	∈ 2%	
		19313.	v=mx+h (m	here x=calculated concentrat	ion. v=indicated c	oncentration)
			<i>y=110</i> (W	LIMITS	, y=maloutou o	
	Correla	tion Coeff.=	1.0000	≥ 0.995		
		m (Slope)=		0.85-1.15		
b (Inte	ercept as % of	f full scale)=	0.5317	± 3% F.S.		
Remarks:						

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	TEON	I AUDIT	
		File #:	2010 - 033A
Date	e: May 11, 2010	Performed by:	J. Scott
Station			
Name:	Evergreen	Location:	Evergreen
Facility/Zone:	PASZA	Operator:	FOČUS
Temperature:	21.5 C	Barometric Press.	705 mmHg
Audit Transfer Standard			
Make/Model:	DeltaCal	Cell s/n:	0566
Serial Number:	AMU 1761		
Sampler Set-up and Curren	nt Readings	F-Main Set Pt (l/min)	3.00
Make/Model	R&P 1400a	F-Aux Set Pt (1/min)	13.67
Unit #	PM 2.5	Filter Load (%)	37
Control unit s/n	140AB215549705	K_0 Factor	10124
	140AB215549705		18.5
Transducer s/n	140/02 100491 00	Temp (° C)	0.927
		Press (ATM)	
		FAdj Main	0.985
		FAdj Aux	0.975
Conversion from mm Hg or	r " Hg to ATM (Atmos	spheres)	
Note: Tolerances are noted as BOL Zero Flow Pump Off	D in Brackets	Pump On (Time to	reach set points)
F-Main (l/min)	-0.06	(45-60 Sec)	21
F-Aux (l/min)	-0.27	(45-60 Sec)	35
		(
Temperature/Pressure			
Measured Temp ($\pm 2 \ ^{\circ}C$)	17.6	Δ°C	0.90
Measured Press (± 1.5% ATM)	0.928	Δ% ATM	0.11%
Flow Audit		Δ% of Measured Flow	from Set-point
Indicated Main/Aux Flow (l/min)	2.99 13.67	(± 2%)	-0.3% 0.0%
Total Flow = Main + Aux (l/min)	16.66	(± 2%)	-0.1%
		∆ of Measured Flow fro	m Indicated
Measured Total Flow (l/min)	16.82	(± 1.00 l/min)	0.16
Measured Main Flow (l/min)	3.02	(± 0.20 l/min.)	0.03
Leak Check		Actual leakage = Pu	mp On – Pump Off
Main (< 0.15 l/min)	-0.05	0.01	
Aux (< 0.65 l/min)	-0.12	0.15	
K _o Factor	10349		
Measured			
$K_0 \%$ Difference (± 2.5%)	2.22		
Remarks:	April 20, 2010 - calibra	ted, filter changed, heads cl	eaned.

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Company:		PASZA		_	Faci	lity Name:		Everg	green		
Approval N	lo.:	N/A		_	Site	Name:		Ever	green		
AENV Reg			1	_	AEI	NV District:		North	nwest		
Parameters			v	NO _X		NH		0		1	
H_2S	Х	SO ₂	Х			NH ₃ THC		O ₃			_
CO	v	CH ₄		NonCH4 TSP				Ethyle		v	-
PM _{2.5} Wind Dir	X	PM ₁₀	v			BTEX	X		Speed	X	-
	X	Amb. Temp	Х	Stn.Temp VWS		RH	Λ	Solar K	adiation		-
Rainfall	24240	Precip				Other No					-
All paralle	eleis	monitored as	ber a	ppioval. Te	s						4
GENEI		Has the location Is site secure? Are station ope					audit?		YES N X X X	10	 N/A
DATA ACQ	UIST	TION							, <u> </u>		
Diffineg	0101	Are strip charts	in us	e?						Х	
		Is a telemetry s			nisitia	on in use?			X		
		is a telefficity s	ystem	i ioi uata acq	uisiti	m m use :			1	I	
SYSTEM CO		ONENTS Is a glass sampl Is sampling ma Is a manifold tr Are spare mani Is manifold orie Are manifold pur Do sample line: Are monitor sam Are sampling li Are monitors pu Are monitors pu	nifold ap in fold p ented orts sin np pro- s exte mplin nes c roperl roperl	l clean? place? ports capped so it is not ev ituated to pre operly install nd at least 3/ g lines conne lean? y mounted a y exhausted	event ed an 4"into ected nd sec from	water entering d operative? o manifold? to manifold? cure? room or scrub		tors?	X X		
WIND EQU		ENT Is wind sensor J Does wind equi		-		ctioning prope	rly?		X X		
COMMENT	S:										
AUDITOR:		J.	Scott	All	pert		DATE	2:	May	11, 20)10

	ST	ATION AUD	ΠT	
			File No. <u>2010 - 034</u> A	A / 040A
Date:	May 12, 2010	Performed by:	J. Scott	
Station Name:	Henry Pirker	Location:	Grande Prairie	
Facility/Zone:	PASZA	Operator:	FOCUS	
	Temp: <u>19.5 C</u>	Barometric Press:	703 mmHg	
Location Status	Latitude N Longitute W Elevation of Site Documentation	55°10'37.7" 118°48'26.8" 660m Good		
	d Material Glass Condition Good			
Meterologi Wind Speed	Cal Observe Direction 27.7 kph 26		Audit Value 20 - 30 kph W	
Station Te	mperature N/A		N/A	
Relative	Humidity 17.02%	6	15.75%	
Ambient Te	emperature 17.67 (<u> </u>	17.94 C	
Solar	Radiation N/A		N/A	
Pr	ecipitation N/A		N/A	
Remarks:				

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		CO /	ANALY	ZER A	JDIT		
					File No.	2010 -	034A
	Na 4	0040	D	6 11			
	May 12	2, 2010	- P	erformed by:		J. Scott	
Station	Hoppy	Dirkor		Location	Crondo	Droirio	
	Henry		-	Location:			
Facility/Zone:	PAS	SZA	-	Operator:	FOC	CUS	
	Temp.	20.5 C	Baro	metric Press.	702 n	nmHg	
Monitor Make/Model: Inlet flow (scc Last cal. Date: Zero/Bkg. Span Coeff.	,	11 April 2	34	Serial No: Full Scale Rang Old C.F.	e ppm:	50.0	
Calibrato							
Calibra	tion Method:	Gas I	Dilution				
]	Make/Model:	R&R M	1FC 201		AMU # :	169	8
CO	O cylinder # :	FF 2	3059	CO concentra	ation ppm:	246	6
	Calibrator Flo		Calculated	Indicate	d	% Diffe	ronco
	(sccm)	vv	Conc.	Concentra		70 DIIIC VS	
Air	Gas	Total	(ppm)	(ppm)		Audit Gas	Limits
3040	0.00	3040	0.00	0.12			
3038	48.47	3086	38.73	38.12		-2%	± 15%
3041	21.62	3063	17.41	17.42		-1%	± 15%
3033	9.17	3042	7.43	7.51		-1%	± 15%
			Absolute A	verage Percent l	Difference	1%	
Linear Regr	ession Anal	ysis:	v my h (v	who re v coloulated	oonoontrotic	n w indicated a	opportunition
			y=mx+D (v	where x=calculated	Concentratic MITS	n, y≡indicaled c	oncentration)
	Correla	tion Coeff.=	1.0000).995		
	Conela	m (Slope)=			35-1.15		
h (Int	ercept as % of	· · ·			3% F.S.		
U (Int	erecpt us 70 of	r run seule)–	0.1170		/// 1.01		
Remarks:							

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		SO ₂	ANAL`	YZER A	UDIT		
					File No.	2010 -	035A
Date:	May 12	2, 2010	P	erformed by:		J. Scott	
Station Name:	Henry	Pirker	_	Location:	Grande	Prairie	
Facility/Zone:	PAS	SZA		Operator:	FOC	CUS	
		19.5 C	Baro	metric Press.			
	8	4 April 2 .4	80	Serial No: Full Scale Ran Old C.F	ge ppm:	0.5	
Span Coef Calibrator	0.7	'99	-				
Ν	ion Method: /ake/Model: Cylinder # :	R&R M	IFC 201	Cyl.	AMU # : Conc PPM:	169 50	98 2
C	alibrator Flo	W	Calculated	Indica	ted	% Diffe	erence
	(sccm)		Conc.	Concent	ration	VS	
Air	Gas	Total	(ppm)	(ppn		Audit Gas	Limits
5001	0.00	5001	0.0000	0.00		00/	4.50/
5040 5028	41.86 19.39	5082 5047	0.4135 0.1929	0.40		-2% -2%	± 15% ± 15%
4998	9.31	5047	0.0933	0.18		-2 %	$\pm 15\%$ $\pm 15\%$
Linear Regre	ession Anal	ysis: tion Coeff.= m (Slope)=	Absolute <i>A</i> <i>y=mx+b</i> (v <u>1.0000</u> 0.9825	verage Percent where $x=ca cu ate$ L \geq 0	t Difference	2%	
Remarks:							

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		TRS	ANAL	YZER A	AUDIT	-	
					File No.	2010 -	036A
Date:	May 12	2, 2010	1	Performed by:			
Station							
Name:	Henry	Pirker	-	Location:	Grande	Prairie	
Facility/Zone:	PAS	SZA		Operator:	FOC	CUS	
	Temp.			ometric Press.			
Monitor							
Make/Model:		Teco	o 45C	Serial No:	AMU	1744	
Inlet flow (scci	n):	4	71	Full Scale Ran	ge ppm:	0.1	
Last cal. Date:		April 2	9, 2010	Old C.F.	1.00	034	
Zaro/Di-a	17	7.2					
Span Coef	17 0.8	. <u>.</u> 812	-				
Calibrator			-				
Ν	ion Method: Iake/Model: Cylinder # :	R&R M	IFC 201	Cyl.	AMU # : Conc PPM:		
C	alibrator Flo	W	Calculated	Indica	ted	% Diffe	erence
	(sccm)		Conc.	Concent		VS	
Air	Gas	Total	(ppm)	(ppn	n)	Audit Gas	Limits
5001	0.00	5001	0.0000	-0.00			
5039	43.01	5082	0.0812	0.080		-1%	± 15%
5027 4997	19.68	5047	0.0374	0.03		1%	± 15%
4997	9.82	5007		0.019 Average Percent		<u>3%</u> 1%	± 15%
Linear Regre		-	y=mx+b (where x=calculate	d concentratic IMITS		concentration)
	Correla	tion Coeff.= m (Slope)=			0.995 .85-1.15		
b (Inte	rcept as % of	· •			3% F.S.		
Remarks:	-			-			

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		HC /	ANALY	ZER A	UDIT		
					File No.	2010 -	037A
Date:	May 12	2. 2010	Р	erformed by:	-		
Station		-,	-				
	Henry	Pirker	-	Location:	Grande	Prairie	
Facility/Zone:	PA	SZA	_	Operator:	FOC	US	
	Temp.	20.5 C	Baro	metric Press.	702 m	ımHg	
Monitor Make/Model: Inlet flow (sccr Last cal. Date:	n):	Teco 5 6.49 April 2	51C-LT 9 psi 9, 2010	Serial No: Full Scale Ran Old C.F	51CLT-79 ge ppm: 1.01	0009-390 25 119	
Calibrator Calibrat M HC	ion Method:	Gas I Sabio SV 1	Dilution 2010 3950	HC concent	AMU # : ration ppm:	177 108	78 8.4
				• ••			
	alibrator Flo (sccm)	W	Calculated Conc.	Indicat Concentr		% Diffe	erence
Air	Gas	Total	(ppm)	(ppn		Audit Gas	Limits
2964	0.00	2964	0.00	0.0			
2965	49.34	3014	17.82	17.0	7	-4%	± 15%
2979	24.89	3004	9.02	8.55		-5%	± 15%
2982	9.91	2992	3.60	3.42		-5%	± 15%
Linear Regre		tion Coeff.= m (Slope)=	y=mx+b (w 1.0000 0.9577	≥ 0	E Contraction of the second seco	5% n, y=indicated c	concentration)
Remarks:	-						

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			-NOx-			-		File No.	2010	- 038A
		Date:	May 12,	2010	_		Performed	by:	J. S	Scott
Station	:	Name:	Henry Pirker	Location:	Grande	Prairie	Operator:		FOCUS	
Facilit	y/Zone:		PASZA		Temp.	19	5 C	BP:	703 r	nmHg
Monito	r:		Make/Model:	Тесо	42C		Serial No.	ŀ	AMU 165	8
		Inle	t flow (sccm):	754 /	' OK	R	ange ppm:		0.5	
]	Last cal. Date:	April 22	2, 2010	(Old C.F.'s	NO:	0.9	917
								NOx:	0.9	906
			10.		-			NO2:	1.0	011
		NOx Bkg			-					
		NO Coef			-					
		NOx Coef			-					
		NO2 Coef	1.00	0	-					
Calibra	tion Met	hod:		Gas Di	lution / G	iΡT				
Calibra	tor:		Make/Model:	Sa	abio 201(C		AMU#	17	78
	NO	cylinder #	CLM 00	1756	NO co	onc. ppm	50.2	NOx c	conc. ppm	50.7
					1			1		-
	Calibrato		Calc. C				Concentratio	on		ference
A :	Flows		NO	NOx	NC		NOx			dit Gas
Air	Gas	Total	(ppm)	(ppm)		om)	(ppr		NO	NOx
4920 4930	0.00 40.32	4920 4970	0.0000 0.4073	0.0000		000 927	0.00		-4%	± 15% -3%
4950	20.18	4970	0.4073	0.2055		927 977	0.39		-4%	-3%
4964	10.05	4974	0.2000	0.1024		993	0.20		-2%	-1%
	10100	.01 1	0.1011	0.1.02.1			e Percent D		3%	2%
						U				
inear	Regress	ion Analy	sis:	-	x+b (whe	re x=calcul	ated concent	ration, y=in	dicated cor	ncentration)
				NO		NOx		NO ₂		LIMITS
		Corre	lation Coeff.=		-	1.0000		1.0000		≥ 0.995
	1 (1 (m (Slope)=		-	0.9655		1.0023		0.85-1.1
	b (Inte	rcept as %	of full scale)=	0.1786	-	0.2751		-0.4562		± 3% F.
		O ₃	Flow	Indicated	Conc. (p	pm)	NO	NO_2	% Dif	ference
		Setting	Rate	NO	NOx	NO_2	Decrease	Increase	vs Au	dit Gas
		0.00 V	4970	0.3896	0.3957	0.0056	\times	\ge	\geq	%Dif Limit
		0.60 V	4970	0.0985	0.3933	0.2953	0.2911	0.2897	0%	± 15%
		0.40 V	4970	0.2086	0.3928	0.1843	0.1810	0.1787	-1%	± 15%
		0.20 V	4970	0.3179	0.3928	0.0754	0.0717	0.0698	-3%	± 15%
					Absolut	e Average	e Percent D	ifference	-1%	
Conver	ter Effic									
Conver			ter Efficiency	98.5%						

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	O3 ANALYZER AUDIT										
					File No.	2010 -	039A				
Date:	May 12	2, 2010	I	Performed by:		J. Scott					
Station Name	Henry	Pirker		Location:	Grande	Prairie					
-	Henry Pirker										
	PASZA				FO						
	Temp.	20.5 C	Baro	ometric Press.	/02 r	nmHg					
Monitor Make/Model: Inlet flow (sccn Last cal. Date:	Make/Model:Teco 49CSerial No:AMU 1709Inlet flow (sccm):720 / 737Full Scale Range ppm:0.5Last cal. Date:April 22, 2010Old C.F.0.9931										
Zero/Bkg -0.7 Span Coeff. 0.922											
Calibrat N	CalibratorCalibration Method:Gas Dilution / GPTMake/Model:Sabio 2010NO cylinder # :CLM 001756NO concentration ppm:50.2										
	С	alibrator Flo	w	Calculated	Indicated	% Diffe	erence				
Ozone	Air	(sccm)	Tetal	Conc.	Conc.	VS	T inside				
Setting 0.00 V	4970	Gas	Total 4970	(ppm) 0.0000	(ppm) 0.0006	Audit Gas	Limits				
0.80 V	4970	>	4970	0.3902	0.3676	-6%	± 15%				
0.40 V	4970	>	4970	0.1735	0.1645	-6%	± 15%				
0.20 V	4970	\searrow	4970	0.0686	0.0646	-7%	± 15%				
Absolute Average Percent Difference 6% Linear Regression Analysis: $y=mx+b$ (where x=calculated concentration, y=indicated concentration)LIMITSCorrelation Coeff.=1.0000 \geq 0.995m (Slope)=0.94120.85-1.15 \bullet 0.1088t 3% F.S.											
Remarks:											

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	TEOM	1 AUDIT	
Date	e: May 12, 2010	File #: Performed by:	2010 - 040A J. Scott
	i		
Station Name:	Henry Pirker	Location:	Grande Prairie
Facility/Zone:	PASZA	Operator:	FOCUS
Temperature:	20.5 C	Barometric Press.	702 mmHg
Audit Transfer Standard			
Make/Model:	DeltaCal	Cell s/n:	0566
Serial Number:	AMU 1761	-	
Sampler Set-up and Curren	t Readings	F-Main Set Pt (l/min)	3.00
Make/Model	R&P 1400a	F-Aux Set Pt (l/min)	13.67
Unit #	PM 2.5	Filter Load (%)	20
Control unit s/n	AMU 1697	K _o Factor	13020
Transducer s/n	140AB258750510	Temp (° C)	16.9
		- · · -	0.929
		Press (ATM)	1.000
		FAdj Main	
Conversion from mm Hg or		FAdj Aux	1.000
Zero Flow Pump Off	0.00		reach set points)
F-Main (l/min)	0.00	(45-60 Sec)	36
F-Aux (l/min)	0.07	(45-60 Sec)	30
Temperature/Pressure			
Measured Temp ($\pm 2 \ ^{\circ}C$)	17.3	$\Delta^{\circ}C$	0.40
Measured Press (± 1.5% ATM)	0.924	Δ% ATM	-0.54%
Flow Audit		Δ% of Measured Flow	from Set-point
Indicated Main/Aux Flow (l/min)	2.99 13.63	(± 2%)	-0.3% -0.3%
Total Flow = Main + Aux (l/min)	16.62	(± 2%)	<u>-0.3%</u> -0.3% -0.3%
		Δ of Measured Flow fr	
Measured Total Flow (l/min)	16.18	(± 1.00 l/min)_	0.44
Measured Main Flow (l/min)	2.9	(± 0.20 l/min.)	0.09
Leak Check		Actual leakage = P	ump On – Pump Off
Main (< 0.15 l/min)	0.01	0.0	1
Aux (< 0.65 l/min)	0.11	0.0-	4
K _o Factor			
Measured	13080		
$K_0 \%$ Difference (± 2.5%)	0.46%		
	March 9, 2010 - calibra	ation done, heads cleaned,	filters changed.
Remarks:	March 9, 2010 - Calibra		
Remarks:	Heads are dusty.		<u> </u>
Remarks:			

Albertan a Soldt To Arbieve

Company:		PASZA Facility Name: Henry Pirker									
Approval N	No.:	N/A		_	Site	Name:		Henry	Pirker		
AENV Reg Parameters			1	_	AEI	NV District:		Nort	hwest		
H ₂ S	X	SO ₂	Х	NO _X	Х	NH ₃		O ₃		X	
CO	X	CH ₄	Λ	NonCH4	Λ	THC	X	Ethyle	ano	Λ	
PM _{2.5}	X	PM ₁₀		TSP		BTEX	Wind Speed X				
Wind Dir	X	Amb. Temp	Х	Stn.Temp		RH	Х		Radiation	Λ	
Rainfall	Δ	Precip	Λ	VWS		Other	Δ	bolul I	Cadiation		
	eters	monitored as	ner ai		s	No					
	01015	monitored us	jer uj	5p10vui. 10	<u> </u>						
GENEI	GENERAL YES NO N/A Has the location remained unchanged from previous audit? X X X Is site secure? Are station operating conditions adequate? X X										
DATA ACQ	UISI	TION									
- 2		Are strip charts	in us	e?						Х	
					uisiti	on in use?			X		
Is a telemetry system for data acquisition in use?											
5151Em et		Is a glass sampl	ling n	nanifold insta	alled?				Х		
		Is sampling ma							X		
		Is a manifold tr							X		
			-	-							
		Are spare mani							X		
		Is manifold orig							Х		
		Are manifold p	orts si	ituated to pre	event	water entering	g moni	tors?	Х		
		Is manifold pur	np pro	operly install	led an	d operative?			Х		
		Do sample line	s exte	nd at least 3/	/4"int	o manifold?			Х		
		Are monitor san	mplin	g lines conne	ected	to manifold?			Х		
		Are sampling li							Х		
		Are monitors p			nd se	cure?			X		
		Are monitors p					bod?		X		
							Jocu:				
		Are zero and sp	oan sy	stems operat	lionai	2			Х		
WIND EQU											
		Is wind sensor		•					Х		
		Does wind equi	pmen	it appear to b	e fun	ctioning prope	erly?		Х		
COMMENT	'S:										
AUDITOR:		J.	Scott		_		DATE	E:	May	12, 2010	
				All	pert	tan 10 Actives					

	STATION AUDIT											
			File No. <u>2010 - 041A</u>	/ 044A								
Date:	May 13, 2010	Performed by:	J. Scott									
Station Name:	Rover	Location:	Kinuso									
Facility/Zone:	PASZA	Operator:	FOCUS									
	Temp: 22.5 C	Barometric Press:	706 mmHg									
Location Status	Latitude N Longitute W Elevation of Site Documentation	55°15'05.9" 115°21'51.6" 619 m Good										
Manifold Material Glass Manifold Condition Good												
Meterologi Wind Speed	cal Obse Direction 322 Deg		Audit Value N 5-10 kph									
Station Te	emperature N/	A	N/A									
Relative	e Humidity -73.4	0%	30.46%									
Ambient Te	emperature 16.0) C	16.18 C									
Solar	Radiation N/	A	N/A									
Pr	recipitation N/	A	N/A									
Remarks:												

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	SO2 ANALYZER AUDIT									
					File No.	2010 -	041A			
Date:	May 13	3, 2010	F	Performed by:		J. Scott				
Station Name:	Ro	ver		Location:	Kinu	uso				
Facility/Zone:	PAS	SZA		Operator:	FOC	CUS				
		Temp. 22.5 C		ometric Press.						
Monitor										
Make/Model:			o 43C	Serial No:						
Inlet flow (scc	m):	4	89	Full Scale Ran	nge ppm:	0.5				
Last cal. Date:		April 1	4, 2010	Old C.F.	1.00	044				
Zero/Rkg	8	8								
	0.8		-							
	ion Method: /ake/Model: Cylinder # :	R&R M	IFC 201	Cyl.	AMU # : Conc PPM:	169 50				
C	Calibrator Flo	W	Calculated Conc.	Indicated Concentration		% Diffe	erence			
Air	(sccm) Gas	Total	(ppm)	(ppr		vs Audit Gas	Limits			
4969	0.00	4969	0.0000	0.00		Thun Ous	Linits			
5015	41.58	5057	0.4128	0.41		1%	± 15%			
5019	19.33	5038	0.1926	0.19	47	1%	± 15%			
5011	9.34	5020	0.0934	0.09		1%	± 15%			
Linear Regre		ysis: tion Coeff.=	y=mx+b (-	1% n, y=indicated d	concentration)			
		m (Slope)=).85-1.15					
b (Inte	ercept as % of	f full scale)=	0.0700	- ±	⊧ 3% F.S.					
Remarks:										

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	TRS ANALYZER AUDIT									
					File No.	2010 -	042A			
Date:	May 13	3, 2010	P	Performed by:		J. Scott				
Station										
Name:	Ro	ver		Location:	Kinu	JSO				
Facility/Zone:	PΔ	S74	-	Operator:	FOC	2115				
Tacinty/2011e.			-							
	Temp.	22.5 C	Baro	ometric Press.	706 m	nmHg				
Monitor										
Make/Model:				Serial No:						
Inlet flow (scc				Full Scale Range						
Last cal. Date:		April 1	4, 2010	Old C.F.	1.02	295				
Zero/Bkg	10).2								
Span Coef		375								
Calibrato			•							
		0 4 0 D								
	tion Method: Make/Model:			-	A MIT # .	169	סר			
I.	Cylinder # :				AMU # :	9.				
		U	015			0.	0			
	Calibrator Flo	***	Calculated	Indicated	1	% Diffe	oronco			
	(sccm)	w	Calculated Conc.	Concentrat	le l	VS				
Air	Gas	Total	(ppm)	(ppm)		Audit Gas	Limits			
4969	0.00	4969	0.0000	-0.0005	5					
5014	42.85	5057	0.0813	0.0800		-1%	± 15%			
5018	19.67	5038	0.0375	0.0369		0%	± 15%			
5010	9.78	5020	0.0187	0.0186		2%	± 15%			
Linear Regre	nation Anal	veie	Absolute A	Average Percent D	ofference	0%				
	551011 Alla	19515.	v = mx + b (v	where x=calculated c	oncentratio	n v–indicated o	concentration)			
			<i>j=mx10</i> (1		IITS	n, y—maloatoù e				
	Correla	tion Coeff.=	1.0000		.995					
		m (Slope)=		-	5-1.15					
b (Inte	ercept as % of	f full scale)=	-0.1967	<u> </u>	% F.S.					
Remarks:										

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								File No.	2010	- 043A
		Date:	May 13,	2010	_		Performed	by:	J. S	Scott
Station:		Name:	Rover	Location:	Kin	uso	Operator:		FOCUS	
Facility	Zone:		PASZA		Temp.	22	2.5 C	BP:	706 r	nmHg
Monitor			Make/Model:	Тесо	42i		Serial No.	7	0112001	11
		Inle	t flow (sccm):	536 /	' OK	R	Range ppm:		0.5	
		Ι	Last cal. Date:	April 14	, 2010	(Old C.F.'s	NO:	0.9	792
								NOx:	0.9	766
		NO Bkg			_			NO2:	1.0	092
		NOx Bkg	4.5	5	-					
		NO Coef			-					
		NOx Coef			-					
		NO2 Coef	1.00)1	-					
Calibrat	ion Met	hod:		Gas Di	lution / G	iPT				
Calibrat			Make/Model:		abio 2010			AMU#	17	78
		cylinder #				onc. ppm	50.2		onc. ppm	n 50.7
		•								
	Calibrato	or	Calc. C	Conc.	Ir	dicated O	Concentratio	on	% Dif	ference
<u>.</u>	Flows		NO	NOx	NC)	NOx			dit Gas
Air	Gas	Total	(ppm)	(ppm)	(pp	om)	(ppi	n)	NO	NOx
4851	0.00	4851	0.0000	0.0000		007	0.00		Limit	± 15%
4910	35.07	4945	0.3560	0.3596		345	0.34		-6%	-5%
4952	20.00	4972	0.2019	0.2039		927	0.19		-5%	-4%
4966	10.00	4976	0.1009	0.1019		975	0.09		-4%	-3%
					Absolut	e Average	e Percent D	Interence	5%	4%
inear F	earess	ion Analy	sis:	v=m	x+h (whe	re x=calcul	lated concent	ration v=ind	dicated co	ncentration
			0.01	NO	(1110)	NOx		NO ₂	noutou oor	LIMITS
		Correl	lation Coeff.=	1.0000		0.9999		1.0000		≥ 0.995
			m (Slope)=	0.9370	-	0.9452	-	0.9922		0.85-1.
	b (Inter	rcept as %	of full scale)=		-	0.3719	-	0.2780		± 3% F
			Elam	Tudiantad	Cana (n		NO	NO	0/ D:f	C
		O_3	Flow	Indicated	.	$\frac{\text{pm}}{\text{NO}_2}$	NO	NO_2		ference
		Setting	Rate	NO	NOx		Decrease	Increase	vs Au	dit Gas
		0.00 V	4945	0.3334	0.3398	0.0039	\geq	\geq	\geq	%Dif Lim
		0.60 V	4945	0.0466	0.3387	0.2897	0.2868	0.2858	0%	± 15%
		0.40 V	4945	0.1568	0.3395	0.1808	0.1766	0.1769	0%	± 15%
		0.20 V	4945	0.2642	0.3404	0.0738	0.0692	0.0699	1%	± 15%
² onvort	or Effici	ionov			AUSOIU	e Average	e Percent D	merence	0%	
Jonvert	er Effici	-	ter Efficiency	100.20/						

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		O ₃ A	NALY	ZER A	UDIT				
					File No.	2010 -	044A		
Date:	May 13	3, 2010	. 1	Performed by:		J. Scott			
Station Name:	Ro	vor		Location	Kin				
-					Kin				
Facility/Zone:					FO				
	Temp.	22.5 C	Bar	ometric Press.	706 n	nmHg			
Monitor Make/Model:		Tecc	0 49C	Serial No:	6097 ⁻	16240			
Inlet flow (sccm Last cal. Date:									
Zero/Bkg	-14		,	-					
Zero/Bkg Span Coeff.	1.4	79							
Calibrator Calibration Method: Gas Dilution / GPT Make/Model: Sabio 2010 AMU # : 1778 NO cylinder # : CLM 001756 NO concentration ppm: 50.2									
	С	alibrator Flo	W	Calculated	Indicated	% Diffe	erence		
Ozone Setting	Air	(sccm) Gas	Total	Conc. (ppm)	Conc. (ppm)	vs Audit Gas	Limits		
0.00 V	4945		4945	0.0000	0.0023	Addit Oas	Linits		
0.80 V	4945	>	4945	0.3921	0.4118	4%	± 15%		
0.40 V	4945	\searrow	4945	0.1744	0.1854	5%	± 15%		
0.20 V	4945	\succ	4945	0.0689	0.0742	4%	± 15%		
Absolute Average Percent Difference5%Linear Regression Analysis: $y=mx+b$ (where $x=calculated$ concentration, $y=indicated$ concentration) $y=mx+b$ (where $x=calculated$ concentration, $y=indicated$ concentration)LIMITSCorrelation Coeff.=1.0000 \geq 0.995m (Slope)=1.04460.85-1.15b (Intercept as % of full scale)=0.4979 \pm 3% F.S.									
Remarks:									

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Company:		PASZA Facility Name: Kinuso									
Approval N	No.:	N/A		_	Site	Name:		Ro	ver		
AENV Reg Parameters			1	_	AEI	NV District:		North	nwest		
H ₂ S	Χ	SO ₂	Х	NO _X	Х	NH ₃		O ₃		Х	1
CO		CH ₄		NonCH4		THC					
PM _{2.5}		PM ₁₀		TSP		BTEX		Wind	Speed	Х	
Wind Dir	Х	Amb. Temp	Х	Stn.Temp		RH	Х	Solar R	Radiation		
Rainfall		Precip		VWS		Other					
All parame	eters	monitored as	per aj	oproval: Ye	S	No					
GENE	RAL								YES N	Ο Λ	1/A
		Has the location	n rem	ained unchai	nged f	from previous	audit	?	Х		
		Is site secure?							Х		
		Are station ope	rating	conditions a	adequ	ate?			Х		
DATA ACQ	UISI	TION									
Diffiniteg	0151	Are strip charts	in us	e?						Х	
		Is a telemetry s			misiti	on in use?			X		
		is a telementy s	ystem	i ioi uata acq	laisia	on in use.			- 71	I	
SYSTEM CO									·		
		Is a glass samp	ling n	nanifold insta	alled?				Х		
		Is sampling ma	nifold	l clean?					Х		
		Is a manifold tr	ap in	place?					Х		
		Are spare mani	fold p	orts capped					Х		
		Is manifold orig	ented	so it is not e	xactly	horizontal?			Х		
		Are manifold p	orts si	ituated to pre	event	water entering	g moni	tors?	Х		
		Is manifold pur		-		-			Х		
		Do sample line							Х		
		Are monitor sa							X		
		Are sampling li			cetted	to munifold.			X		
		Are monitors p			nd so	cure?			X		
		Are monitors p	-	-			had?		X		
			-	•			bbeu?				
		Are zero and sp	oan sy	stems operat	lional	<i>!</i>			Х	I	
WIND EQU	IPM.	ENT									
		Is wind sensor	prope	rly oriented?	,				Х	I	
		Does wind equi	ipmen	it appear to b	e fun	ctioning prope	erly?		Х		
COMMENT	TS:										
		-	a .				DAT	-		10.00	10
AUDITOR:		J.	Scott		-		DATE	2:	May	13, 201	10
				1							
				All	pert	an					
				Freedom To Cre	uste. Spirit 1	la Achieve.					

	STATION AUDIT											
			File No. <u>2010 - 023</u>	A / 025A								
Date:	May 10, 2010	Performed by:	J. Scott									
Station Name:	Smoky Heights	Location:	Smoky Heights									
Facility/Zone:	PASZA	Operator:	FOCUS									
	Temp: 23.0 C	Barometric Press:	704 mmHg									
Location Status o	Longitude W	55°24'09.8" 118°16'52.2" 649m Good										
Manifold Material Glass Manifold Condition Good												
Meteorologi Wind Speed I		erved 8.7 kph	Audit Value 5 - 10 kph E									
Station Tem	nperature N	/A	N/A									
Relative I	Humidity N	/A	N/A									
Ambient Ten	nperature 16.	5 C	16.4 C									
Solar F	Radiation N	/A	N/A									
Prec	cipitation N	/A	N/A									
Remarks:												

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SO2 ANALYZER AUDIT									
					File No.	2010 -	023A		
							020/1		
Date:	May 10	0, 2010	P	erformed by:		J. Scott			
Station									
Name:	Smoky	Heights	-	Location:	Smoky	Heights			
Facility/Zone:	PAS	SZA	_	Operator:	FOO	CUS			
			Baro	metric Press:	704 n	nmHg			
Monitor									
Make/Model:				Serial No:					
Inlet flow (scen	m):			Full Scale Range					
Last cal. Date:		April 1	5, 2010	Old C.F.	0.9	o∠ŏ			
Zero/Bkg	8	.2							
Span Coef	0.6	696	-						
Calibrato									
	ion Method:	GAS D							
	lake/Model:				AMU # :	169	8		
	Cylinder # :	CLM (008622	Cyl. C	onc PPM:	50.			
				-					
C	alibrator Flo	W	Calculated	Indicate	d	% Diffe	erence		
	(sccm)		Conc.	Concentration		vs			
Air	Gas	Total	(ppm)	(ppm)		Audit Gas	Limits		
5000	0.00	5000	0.0000	0.0007		4.07	4.50/		
5041 5026	41.80 19.30	5083 5045	0.4128	0.4084		-1% -1%	± 15%		
4992	9.35	5045	0.1920	0.1908		-1%	± 15% ± 15%		
1002	0.00	0001		Average Percent I			1070		
Linear Regre	ssion Ana	ysis:		0					
_			y=mx+b (w	here x=calculated		n, y=indicated c	oncentration)		
	<i></i>	. ~ ~			MITS				
	Correla	tion Coeff.=).995				
h (Tert-	rcept as % of	m (Slope)=			35-1.15 3% F.S.				
b (Inte	rcept as % 0	Tull scale)=	0.1516		о% г. э.				
Remarks:									
·									

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	TRS ANALYZER AUDIT						
					File No.	2010 -	024A
					-		
	May 10	0, 2010	- P	erformed by:		J. Scott	
Station	a .						
Name:	Smoky	Heights	-	Location:	Smoky	Heights	
Facility/Zone:	PAS	SZA	_	Operator:	FOC	CUS	
	Temp:	23.0 C	Baro	metric Press:	704 m	nmHg	
Monitor							
Make/Model:		Teco	o 43C	Serial No:	43661	0004	
Inlet flow (scc	,			Full Scale Rang			
Last cal. Date:		April 1	o, ∠010	Old C.F.	1.00	192	
Zero/Bkg	14	.2					
Span Coef	0.9	99	-				
Calibrato							
Calibrat N	ion Method: /ake/Model: Cylinder # :	R&R M	1FC 201	Cyl. C	AMU # : onc PPM:	169 9.0	
C	Calibrator Flo	W	Calculated			% Diffe	erence
	(sccm)	T 1	Conc.	Concentra		VS	T T T
Air 5000	Gas	Total 5000	(ppm) 0.00	(ppm)		Audit Gas	Limits
5040	0.00 42.80	5000	0.00	0.000		-1%	± 15%
5025	19.53	5005	0.00	0.0373		0%	± 15%
4991	9.72	5001	0.02	0.018		1%	± 15%
				verage Percent l			
Linear Regre		ysis: tion Coeff.=			concentration WITS).995	n, y≕indicated c	oncentration)
	Concia	m (Slope)=			35-1.15		
b (Inte	ercept as % of	· • •			3% F.S.		
Remarks:							

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	TEON	I AUDIT	
		File #:	
Date	e: May 10, 2010	Performed by:	J. Scott
Station			
Name:	Smoky Heights	Location:	Smoky Heights
Facility/Zone:	PASZA	Operator:	FOCUS
Temperature:	23.0 C	Barometric Press.	704 mmHg
Audit Transfer Standard			
Make/Model:	DeltaCal	Cell s/n:	0566
Serial Number:	AMU 1761	_	
Sampler Set-up and Curren	t Readings	F-Main Set Pt (l/min)	3.00
Make/Model	R&P 1400a	F-Aux Set Pt (l/min)	13.67
Unit #	PM 2.5	Filter Load (%)	32
Control unit s/n	140AB246340305	K_0 Factor	12122
Transducer s/n	140AB246340305	Temp (°C)	16.4
11a115uutti 5/11			0.924
		Press (ATM)	1.000
		FAdj Main	
Conversion from mm Hg or		FAdj Aux	1.025
Pump Off	0.00	Pump On (Time to (45-60 Sec)	reach set points)
F-Main (l/min)	0.00		38
F-Aux (l/min)	0.04	(45-60 Sec)	30
Temperature/Pressure			
Measured Temp ($\pm 2 \ ^{\circ}C$)	16.5	Δ°C	0.10
Measured Press (± 1.5% ATM)	0.926	Δ% ATM	0.22%
Flow Audit		Δ% of Measured Flow	from Set-point
Indicated Main/Aux Flow (l/min)	3.00 13.68	(± 2%)	0.0% 0.1%
Total Flow = Main + Aux (l/min)	16.68	(± 2%)	0.1%
		Δ of Measured Flow fr	om Indicated
Measured Total Flow (l/min)	16.33	(± 1.00 l/min)	0.35
	2.9		0.10
Measured Main Flow (l/min)	2.9	(± 0.20 l/min.)	0.10
Measured Main Flow (l/min) Leak Check	2.9	-	ump On – Pump Off
Leak Check	0.00	-	
Leak Check Main (< 0.15 l/min)		Actual leakage = Pu	ump On – Pump Off
Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min)	0.00	Actual leakage = Pu	ump On – Pump Off
Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K _o Factor	0.00	Actual leakage = Pu	ump On – Pump Off
Measured Main Flow (l/min) Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K ₀ Factor Measured K ₀ % Difference (± 2.5%)	0.00	Actual leakage = Pu	ump On – Pump Off
Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K ₀ Factor Measured K ₀ % Difference (± 2.5%)	0.00 0.05 12126 0.04	Actual leakage = Pu 0 0.0 ⁻	ump On – Pump Off
Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K ₀ Factor Measured	0.00 0.05 12126 0.04	Actual leakage = Pu	ump On – Pump Off
Leak Check Main (< 0.15 l/min) Aux (< 0.65 l/min) K ₀ Factor Measured K ₀ % Difference (± 2.5%)	0.00 0.05 12126 0.04 April 19, 2010 - head of	Actual leakage = Pu 0 0.0 ⁻	ump On – Pump Off

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Station Performance Audit Summary

Company:		PASZA		Facility Name: Smoky Heights						-	
Approval N	lo.:	N/A		Site Name: Smok			Smoky	Heights		-	
AENV Reg				AENV District: North			North	nwest			
Parameters			v	NO		NIL		0		<u> </u>	
H_2S	Х	SO ₂	Х	NO _X NonCH4		NH ₃ THC		O ₃			
CO	v	CH ₄		TSP				Ethyle		v	_
PM _{2.5} Wind Dir	X X	PM ₁₀	X			BTEX RH			Speed adiation	X	_
	Λ	Amb. Temp	Λ	Stn.Temp				Solar K	adiation		_
Rainfall		Precip		VWS		Other					_
All parame	eters	monitored as	per a	pproval: re	s	No					
GENEI		Has the location Is site secure? Are station ope					audit?		YES N X X X	0	N/A
DATA ACQ	UISĽ	TION									-
2eg	0101	Are strip charts	in us	e?						Х	
		Is a telemetry s			nisiti	on in use?			X		
			ystern	i ioi data acq	uibiti	in use.					
SYSTEM CC	OMP										
		Is a glass sample			alled?				X		
		Is sampling ma	nifold	l clean?					X		
		Is a manifold tr	ap in	in place? X							
		Are spare mani	e manifold ports capped X								
		Is manifold orie	ented	so it is not ex	kactly	horizontal?			X		
		Are manifold p					moni	tors?	X		
		Is manifold pur		-		-			X		
		Do sample lines							X		
		Are monitor san	-	-	ected	to manifold?			X		
		Are sampling li							X		
		Are monitors p							X		
		Are monitors p	roperl	y exhausted	from	room or scrub	bed?		Х		
		Are zero and sp	an sy	stems operat	ional'	?			Х		
WIND EOU	IPM	ENT									
		Is wind sensor	prope	rly oriented?					X		
		Does wind equi	pmer	t appear to b	e fun	ctioning prope	rly?		Х		
COMMENT	'S:										
AUDITOR:		J.	Scott	Alk	pert	ЖЛ	DATE	2:	May	10, 2	010

	STATION AUDIT								
			File No. 2010 - 021A /	022A					
Date:	May 10, 2010	Performed by:	J. Scott						
Station Name:	Valleyview	Location:	South Sturgeon						
Facility/Zone:	PASZA	Operator:	FOCUS						
	Temp. 21.5 C	Barometric Press.	702 mmHg						
Location Status	Longitute W	54°56'23.7" 117°12'57.7" 657m Good							
Manifol Manifold	d Material <u>Teflon li</u> Condition <u>Good</u>	inesd							
Meterologi Wind Speed	Cal Observ Direction <u>321 Deg 4.</u>		Audit Value 0-5 kph W						
Station Te	mperature N/A		N/A						
Relative	Humidity 26.08	%	24.87%						
Ambient Te	mperature 12.7	<u> </u>	22.10 C						
Solar	Radiation N/A		N/A						
Pre	ecipitation N/A		N/A						
Remarks:									
I emperature ta	Temperature taken at ground level and not up with at the sensor.								

Albertan Freedom To Create. Spirit To Achieve.

		50 ₂	ANAL	YZER A	UDII		
					File No.	2010 -	021A
Date:	May 10	, 2010	P	erformed by:		J. Scott	
Station Name:	Valley	view		Location:	South S	turaeon	
-			_				
Facility/Zone:			– Baron	Operator:			
Monitor	F.						
Make/Model: Inlet flow (sccr Last cal. Date:		4	169	Serial No: Full Scale Ran Old C.F.	ge ppm:	1.0	
Zero/Bkg Span Coef			_				
Calibrator							
	on Method: lake/Model:				AM∐#•	169	98
11.	Cylinder # :	CLM	008622	Cyl.	Conc PPM:	169 50	.2
	111 / 171			T 1'	,	0/ D.00	
C.	alibrator Flov (sccm)	N	Calculated Conc.	Indicat Concentr		% Diffe	erence
Air	Gas	Total	(ppm)	(ppn		Audit Gas	Limits
4421	0.00	4421	0.0000	-0.00	02		
4442	35.79	4478	0.4012	0.387	73	-3%	± 15%
4381	16.83	4398	0.1921	0.186		-3%	± 15%
4356	7.02	4363	0.0808	0.076 verage Percent		-5% 4%	± 15%
Linear Regre		tion Coeff.= m (Slope)=	y=mx+b (wi = <u>1.0000</u> = <u>0.9671</u>	here x=calculatec L ≥	•		oncentratior
Remarks: Calibrated fro or the analyze						needs to be o	changed

Albertan Freedom To Create, Spirit To Achieve,

H2S ANALYZER AUDIT							
				File	No. 2010 -	022A	
	N	0040					
	May 10	J, 2010	P	erformed by:	J. Scott		
Station	Valla			Logation. So	ith Sturgoop		
	Valle		-	Location: Sou			
Facility/Zone:	PA	SZA	-	Operator:	FOCUS		
	Temp.	21.5 C	Baro	metric Press. 7	02 mmHg		
Monitor							
Make/Model:				Serial No: 07			
Inlet flow (scci	m):			Full Scale Range ppm			
Last cal. Date:		Aprii 1	3, 2010	Old C.F.	1.0021		
Zero/Bkg	5	.0					
Span Coef	1.()85	-				
Calibrato	r						
Ν	Calibration Method:GAS DILUTIONMake/Model:R&R MFC 201AMU # : 1698Cylinder # :3L1679Cyl. Conc PPM: 9.6						
C	alibrator Flo	W	Calculated	Indicated	% Diff	erence	
	(sccm)		Conc.	Concentration	VS	.	
Air	Gas	Total	(ppm)	(ppm)	Audit Gas	Limits	
4421 4442	0.00 36.37	4421 4478	0.0000 0.0780	0.0001 0.0793	2%	+ 15%	
4442	17.00	4478	0.0780	0.0793	1%	± 15% ± 15%	
4356	7.43	4363	0.0163	0.0164	0%	± 15%	
				verage Percent Differ			
Linear Regre	ession Ana	ysis:					
b (Inte	Correla	tion Coeff.= m (Slope)= f full scale)=	1.0000	here x=calculated concen LIMITS ≥ 0.995 0.85-1.1 ± 3% F.	15	concentration)	
Remarks:							

Albertan Freedom To Create. Spirit To Achieve.

Station Performance Audit Summary

Company:		PASZA		Facility Name: South Sturgeon							
Approval N	No.:	N/A		Site Name:		Valleyview					
AENV Reg			1		AENV District: Northwest						
Parameters	aud	ited:		1		1		r			
xH ₂ S	Х	SO_2	Х	NOX		NH ₃		O ₃			
CO		CH ₄		NonCH4		THC		Ethyl			
PM _{2.5}		PM ₁₀		TSP		BTEX			Speed	Χ	
Wind Dir	Х	Amb. Temp	Х	Stn.Temp		RH	X	Solar l	Radiation		
Rainfall		Precip		VWS		Other					
All parame	eters	monitored as	per a	pproval: Ye	s	No					
CENE	DAT								VEC	0	
GENE	KAL	Has the location		ainad unahar	and f		andita	,		0	N/A
		Has the location	i rem	amed unchar	iged i	rom previous	audit :		X		
		Is site secure?							X		
		Are station oper	rating	conditions a	adequ	ate?			Х		
DATA ACQ	UISI										
		Are strip charts	in us	e?						Х	
		Is a telemetry s	ystem	for data acq	uisiti	on in use?			Х		
SYSTEM CO	OMP										
		Is a glass samp	ling n	nanifold insta	alled?					Х	
		Is sampling ma	nifold	l clean?							Х
		Is a manifold trap in place?									
		Are spare mani	fold p	orts capped							Х
		Is manifold orie	ented	so it is not ex	xactly	horizontal?					Х
		Are manifold p			-		moni	tors?			Х
		Is manifold pur		-		-	,				Х
		Do sample lines									X
		Are monitor sa									X
					ecieu				v		Λ
		Are sampling li				2			X		
		Are monitors pr							X		
		Are monitors p					bed?			Х	
		Are zero and sp	oan sy	stems operat	ional	?			Х		
WIND EQU	IPM	ENT									
1112 220		Is wind sensor	prope	rly oriented?					X		
		Does wind equi		•		ctioning prope	orly?		X		
		Does while equi	piner	it uppear to b	e run	ettoning prope	JIY.		21		
COMMENT	'S:	Mon	itors	will be prope	erly ve	ented when the	e new	trailer i	s installed	•	
AUDITOR:		Т	Scott				DATI	<i>न्</i> .	May	10. 20	010
nobiion.		J.	Scou		_		2111	. .	Iviay	10, 20	,10
				MI	and						

A Derta





June 16, 2010

Jolene Scott Monitoring Systems Auditor Environmental Assurance Air Monitoring and Audit Centre 4946 89 Street N.W. Edmonton, Alberta T6E 5K1

Dear Ms. Scott

SUBJECT: PASZA Ambient Air Monitoring Station(s) Audit File No. 2010 – 021A / 044A

Further to the Alberta Environment (AENV) audit conducted May 10 - 13th, 2010 and AENV correspondence dated May 20, 2009, PASZA provides the following response.

Valleyview Station:

At the Vallyview station two items were identified as need or opportunity for improvement, the sample lines not adequately vented and the ambient temperature sensor greater than +/- 1°C. The Valleyview station building is currently being replaced and the sample lines will be adequately vented in the new building. The building replacement is scheduled for the end of June 2010. The temperature sensor at this site is a part of the ultrasonic met sensor pak and is sited at the 10 metre level on the tower. Audit measurements were taken at ground level which is likely the reason for the temperature difference. However, the temperature sensor will be audited internally during the met calibration that is scheduled for completion within the next few months

Smoky Heights Station:

At the Smoky Heights station one item was identified as a need for improvement, the TEOM particulate matter sampling head was noted as "dusty". The sample head was previously cleaned April 19, 2010. The sample head was cleaned at the time of the audit and again on May 26th. The function of the head will always show some particulate material on the impaction plate as a result of the head performing its function. It is PASZA's understanding, that the point noted in the audit summary is considered to be a notation only and that the current frequency of cleaning every 30 days is acceptable

Beaverlodge Station:

At the Beaverlodge station, the FDMS 8500C particulate matter analyzer initially failed the flow leak check. During the audit, a leak was found and repaired. Following the repair, the system was checked again and the leak test passed. As a result of this the data prior to the audit may be in question due to the initial leak found. A review of the data indicates that the data appeared



normal over the previous two months with the exception of a large negative spike observed in the data on May 5, 2010. There is no evidence to support this was the event that caused the leak. A field check was completed on the TEOM system on May 4 during routine maintenance. A leak check was completed at that time and passed. The event on May 5 may have contributed to, or been the cause of the leak in the system. The field documentation from the Beaverlodge site visit on May 4 has been included for your review. Data over the period from the previous passed leak test on May 4 to the audit on May 10 will be invalidated.

The audit also identified the particulate matter sampling head as being "dirty" and noted as a need for improvement. Prior to the audit, the sample head was last cleaned on May 4, 2010 and was cleaned again during regular maintenance on May 20[,] 2010. The function of the head will always show some particulate material on the impaction plate as a result of the head performing its function. It is PASZA's understanding, that the point noted in the audit summary is considered to be a notation only and that the current frequency of cleaning every 30 days is acceptable

Evergreen Park Station:

Three items were identified as a need or opportunity for improvement at the Evergreen Park station, the sample pump lines not adequately vented, the sample lines were noted as "dirty" and the ambient temperature sensor was greater than +/- 1 °C.

The sample pump was adequately vented following the audit on May 23, 2010. The field service report is attached for your review. The sample lines were cleaned during the time of the audit and this will be inspected monthly during routine maintenance and cleaned as required. The temperature sensor is a part of the ultrasonic met sensor pak and is sited at the 10 metre level on the tower. The audit measurements were taken at ground level which is likely the reason for the temperature difference. However, the temperature sensor will be audited internally during the met calibration scheduled for completion within the next few months. Unlike the Valleyview station, the tower at the Evergreen Park station can be lowered to the trailer roof. For future AENV audits, the tower will be lowered to allow access to the met sensor pak at the roof of the trailer.

Henry Pirker Station:

One item was identified as a need for improvement at the Henry Pirker station; the TEOM particulate matter sample head was noted as "dusty". The sample head was previously cleaned late in April. The sample head was cleaned at the time of the audit and again on May 18, 2010 during regular maintenance. The function of the head will always show some particulate material on the impaction plate as a result of the head performing its function. It is PASZA's understanding, that the point noted in the audit summary is considered to be a notation only and that the current frequency of cleaning every 30 days is acceptable.

Rover Station / Kinuso:

The relative humidity sensor was identified as a need for improvement item at the Rover station. Currently there is no relative humidity sensor located at the Rover station. This sensor was previously relocated to a different station however the channel for this data collection was not removed from the data acquisition system. This channel will be removed from the system.



P.O. Box 21135 Grande Prairie, Alberta T8V 6W7 (780) 833-4343

If you have any questions or concerns with regards to PASZA's audit response, please contact me at (780) 882-4071.

Yours Truly,

Shelly Pruden PASZA Program Manager

Cc: Gary Cross, Focus Corporation Greg Smith, Alberta Environment Jennifer Keturkis, Alberta Environment

Attachments: Field Service Reports

AB TEOM PM2.5 Calibration

STATION:	Smokey Heights				
LOCATION:	PASZA - Grande Prairie				

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB				
Configuration	PM2.5				
Serial Number	24634				
Site Number	3				
Inlet Type	PM 10 / SCC				
FAdj. Main Setting	1.000				
FAdj. Aux. Setting	1.000				
T-Case Indicated / Set Point	40/40				
T-Air Indicated / Set Point	40/40				
T-Cap Indicated / Set Point	40/40				
Splitter Assembly Alignment (cm)	15.5				
(vs. specified depth of 15.5 cm from top of					
flow tube to top of concentric 1/2 in. tube)					



OPERATOR:	Grover Christansen
DATE:	26-May-10

RECENT CALIBRATION AND AUDIT HISTORY

Previous Audit	15-Apr-10
Previous Calibration	NA

PUMP CAPACITY CHECK *	PASS

* capacity test or pump on timed test utilized to verify pump integrity "FAIL" indicates that pump requires service.

LEAK CHECK	Indicated Flow (lpm)		
	Main	Auxiliary	
PUMP ON	0.000	0.060	
PUMP OFF	0.000	0.001	
NET	0.000	0.059	
LIMITS	<0.15	<0.60	

Serial #:

CVK 3831

		Ambient Temp. (^º C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
	SET POINT (S)	na	na	12122	13.67	3.000
	INDICATED (1)	19.6	0.929	\searrow	13.68	3.000
As Found Data	MEASURED (AF)	18.8	0.930	\searrow	13.64	2.970
Adjusted Data	MEASURED (M)	18.8	0.930	12218	13.64	2.970
	DIFFERENCE (M-I)	-0.8	0.001	0.8%	-0.22	-0.03
	LIMITS	$\pm 2^{0} C$	± 0.005 atm	± 2.5 %	± 1.0 L/min	± 0.2 L/min

Weight:

0.10814

Ko Audit Filter data

<u>COMMENTS:</u> PASS

Sample Head Inspection/Cleaning: PM10:Cleaned PM2.5:Cleaned Large In Line Filter Inspection & Or Replacement: Main: Good Aux: Good



AIR QUALITY MONITORING

Air Monitoring Network / Client: Peace AirShed Zone Association

Station Information

Visit Date:	May 26, 2010.	Project Number:	20500006	
Station Location:	Smokey Heights	Station Number:	9	
Reason for Visit:	Monthly Calibration			
Arrival Time:	8:20 MST	Departure Time:		
Weather Conditions: Sunshine!!! Temp: 14.7, NE wind at 8.6km/hr.				
Record of Hours	Parts Used			

Employee	Category	Hours	Qty	Description
GC	CAL	7.0		Monthly Calibrations
GC	TRA	4.0		

Station Information

Time (MST)	Comments
08:20	Arrived onsite to perform monthly calibration and maintenance of AQM Station.
08:30	Entered as found Zero for SO2
08:38	Start As found span, SO2 – (Slow climb on the SO2, so we did a quick drop
	back to zero, and tried again for as found span 08:47AM.)
09:05	Noticed that zero air is not as steady as usual.
	Noticeable overheating smell coming from the pump.
09:18	Tried span again to see what would happen; same results
09:22	Turned off SO2 Cylinder, to look at calibrator, zero air and pump
09:43	Took TEOM offline, to utilize the pump, so we can continue with the calibrations.
10:08	Restart SO2 cal. Entered As found zero.
10:50	Cleaned TEOM head, while TEOM is offline.
11:22	Entered second point for SO2 cal.
11:47	Entered third point for SO2 cal.
11:50	Updated third point for SO2 cal (forgot to hit update)
11:50	Entered as found zero for TRS cal.
12:12	Initiated AIC for SO2 cal
12:24	Entered as found span TRS
12:44	Entered second point of TRS cal.
13:17	Ended SO2 cal.
13:27	Initiated AIC for TRS cal
13:49	Calibrated TEOM, checked for flows, BP, and temperature.
14:19	Finished TRS calibration
14:30	TEOM back on line/enabled.
14:36	-Reconnected AP1000 directly to modem, secured connection w/ Kelly.
15:00	Left Site.
	Technician:

Grover/Courtney

FDMS TEOM PM2.5 AUDIT

STATION:	BeaverLodge
LOCATION:	PASZA - Grande Prairie

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB			
Configuration	PM2.5			
Serial Number	AMU1649			
Site Number	4			
Inlet Type	PM 10 / SCC			
FAdj. Main Setting	1.000			
FAdj. Aux. Setting	1.000			
T-Case Indicated / Set Point	30/30			
T-Air Indicated / Set Point	30/30			
T-Cap Indicated / Set Point	30/30			
Splitter Assembly Alignment (cm)	15.5			
(vs. specified depth of 15.5 cm from top of				

flow tube to top of concentric 1/2 in. tube)



OPERATOR:	Grover Christiansen
DATE:	4-May-10

RECENT CALIBRATION AND AUDIT HISTORY

Previous Audit	12-Apr-10
Previous Calibration	

PUMP CAPACITY CHECK *					PASS				

 * capacity test or pump on timed test utilized to verify pump integrity

"FAIL" indicates that pump requires service.

LEAK CHECK	Indicated Flow (Ipm)		
	Main Auxiliary		
PUMP ON	-0.080	0.220	
PUMP OFF	0.000	0.050	
NET	-0.080	0.170	
LIMITS	<0.15	<0.60	

		Ambient Temp. (^º C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
	SET POINT (S)	na	na	14287	13.67	3.000
	INDICATED (1)	2.7	0.916	$\left \right\rangle$	13.67	3.000
As Found Data	MEASURED (AF)	2.6	0.916	$\left \right\rangle$	13.70	3.003
Adjusted Data	MEASURED (M)	2.6	0.916	14119	13.70	3.003
	DIFFERENCE (M-I)	-0.1	0.000	-1.2%	0.22	0.10
	LIMITS	$\pm 2^{0} C$	± 0.005 atm	± 2.5 %	± 1.0 L/min	± 0.2 L/min

	Ko Audit Filter data	Weight:	0.11477	Serial #:	CVK 3532
<u>COMMENTS:</u>	8500C FDMS was removed after disabling th	e data to Cal I	Mode. Unit was i	installed at H.P. and H.P	.'s unit was transported
back to Beaverlo	dge to replace the unit removed. Although a K.C	O.was not pre	formed all other p	parameters were identica	al to what was noted
on Aprils calibrati	on. Have informed Harry Benders that PM 2.5	data from both	h H.P. and BL wil	I be flagged in the CAL r	node while observing the data

over the next period.

PASS

Sample Head Inspection Or Cleaning: PM10: Inspected PM2.5: Inspected

TEOM / FDMS IN LINE FILTER INSPECTION OR REPLACEMENT: TEOM IN LINE: FDMS Water knock out:Good Main: Good AUX: Good FDMS 47 mm Filter Cassette: Replaced



Air Monitoring Network

PASZA

	Station Informa	ation	
Visit Date	May 4, 2010	Project Number	20500006
Station Location	Beaverlodge	Station Number	4
Reason for visit	Remove/rep	place 8500C FDMS Unit	
Arrival Time (MST)			

Weather Conditions

A few clouds, wind NW 12 Km/h, 6 deg C

				Parts Used
Employee	Category	Hours	QTY	Description
	TRA	1		
	CAL			
	RM			
GC	ER	1		Remove/Replace FDMS Unit
	IS			
	TOTAL HOURS	2		

Details of visit

17:30: Disable TEOM PM 2.5 8500 FDMS at B.L. Power off TEOM, remove 8500C FDMS unit and transport to H.P.

Return to B.L. & install 8500C FDMS unit from H.P. Change sample filters, run diagnostics & allow stabilize.

Leak checks and a quick check of parameters were performed following swap.

B.L. Leak Check: Main pump off: 0.000 Aux pump off: 0.050 Main pump on: -0.070 Aux pump on: 0.220

Flows measured: Main: 3.003 Aux: 13.70

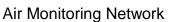
TEOM data will be left in CAL mode to observe data and any changes if any.

All parameters are functioning well.

TEOM data will remain in CAL mode for enough time to assess data; Harry Benders has been notified.

Technician

Grover Christiansen



PASZA

	Station Inform	nation	
Visit Date	May 20, 2010	Project Number	20500006
Station Location	Beaverlodge	Station Number	4
Reason for visit	Monthly Ca	librations Nox, SO2 & O3	
Arrival Time (MST)	8:30		14:41

Weather Conditions Light rain showers. 9°C. Wind: NE 19km/hr

		Parts Us		
Employee	Category	Hours	QTY	Description
СТ	TRA	1		
СТ	CAL	7		Cal Nox, SO2 & O3
	RM			
	ER			
	IS			
	TOTAL HOURS	8		

Details of visit

8:30: Arrive on site, set up calibrator and take readings of analyzers. Bleeding lines etc.

8:55: Started Cal for NOX and SO2

9:15: Adjusted the NO and NOX on analyzer.

10:13 Start as found span NOx & SO2.

11:34: Going over chart representation of data, and again I have an out of place blip compared to Grover's last calibration. I am not to sure what caused this, but I will discuss it with Grover.

11:41 Set up for O3 Calibration

12:33 Set O3 reading to last point from NOX Calibration

13:16: Finished NOX cal, and put NO,NO2,NOX back online on ESC data logger.

14:00 Gathered precipitation sample, changed out rain bucket as well as box up sample. 42mm of precip. rain water collected from sample shack. * Quick Note*It is raining out, and the sample was taken in the middle of the day. The forcast calls for more rain, but the sample was taken to late, should be done every Wednesday **14:05:** Swapped TEOM head's for cleaning as per monthly schedule as well as to address audit's issue.

14:14: Watching real time data for O3 in AIC, and no un-called for blips! (BOO YA)

14:27: AIC completed, put O3 back online on ESC data logger, and exported data.

14:41: Packed up and leave shack.

Courtney Thompson



FOCUS

Air Monitoring Network

PASZA

	Station	Information	
Visit Date	May 23, 2010	Project Number	2050006
Station Location	Evergreen Park	Station Number	2
Reason for visit		Monthly Calibrations	
Arrival Time (MST)	8:15	_ Departure Time (MST)	15:35

Weather Conditions Fair, Winds SE 13 Km/h, 5.9 deg C.

	Record of Hours on Visit			Parts Used	
Employee	Category	Hours	QTY	Description	
GC	TRA	1			
GC	CAL	7		Monthly cals SO2, TEOM & TRS	
	RM	1		Clean TEOM heads	
	ER				
	IS				
	ADMIN				
	TOTAL HOURS	9			

Details of visit

8:15: Arrived on site, to discover that the fence has been tampered with. The chain link locking system has been tampered with, as well as a section of the gate completely broken. Called Dawn Ewan to get contact information from Land Owner, as of current time, no response.

08:36 Arrived and set up equipment and computer problems.

08:46 Start as found zero SO2.

09:07: Start as found span SO2 Cal.

09:58: Start TRS as found zero.

10:22: Started as found span for TRS (No adjust needed on TRS)

11:08 Vented sample pumps to ambient.

11:12 Finish SO2 cal.

12:05 Finish TRS Cal.

12:49: Auditing ambient temperature, as indicated by sensor the reading is 6.24168, the comparison when measured was 5.9

13:00 Audit TEOM- Change filter.

13:30 TEOM back on line.

13:45 Direct to AP1000 from modem, noticed an empty serial port on the DACS.

13:50 Leave trailer.

Technician

Grover Christiansen

FDMS AB TEOM PM2.5 AUDIT

STATION:	Henry Pirker
LOCATION:	PASZA - Grande Prairie

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB			
Configuration	PM2.5			
Serial Number	AMU 1697			
Site Number	1			
Inlet Type	PM 10 / SCC			
FAdj. Main Setting	1.000			
FAdj. Aux. Setting	1.000			
T-Case Indicated / Set Point	30/30			
T-Air Indicated / Set Point	30/30			
T-Cap Indicated / Set Point	30/30			
Splitter Assembly Alignment (cm)	15.5			
(vs. specified depth of 15.5 cm from top of				
flow tube to top of concentric 1/2 in. to	ube)			



OPERATOR:	Grover Christiansen
DATE:	5/18/2010

RECENT CALIBRATION AND AUDIT HISTORY

Previous Audit	29-Apr-10
Previous Calibration	NA

PUMP CAPACITY CHECK *	PASS

* capacity test or pump on timed test utilized to verify pump integrity

"FAIL" indicates that pump requires service.

LEAK CHECK	Indicated Flow (lpm)			
	Main	Auxiliary		
PUMP ON	0.000	0.000		
PUMP OFF	0.030	-0.080		
NET	-0.030	0.080		
LIMITS	<0.15	<0.60		
]		

		Ambient Temp. ([°] C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
· · · · ·	SET POINT (S)	na	na	13020	13.67	3.000
	INDICATED (1)	21.5	0.915	\searrow	13.65	3.000
As Found Data	MEASURED (AF)	21.5	0.915	$\left \right\rangle$	13.68	3.001
Adjusted Data	MEASURED(M)	21.5	0.915	12919	13.68	3.001
	DIFFERENCE (M-I)	0.0	0.000	-0.8%	0.07	0.03
	LIMITS	$\pm 2^{0} C$	± 0.005 atm	± 2.5 %	± 1.0 L/min	± 0.2 L/min

COMMENTS:

Ko Audit Filter data

Weight: 0.11014 Serial #: CVK 2123

PASS

Sample Head Inspection Or Cleaning: PM10: Cleaned PM2.5: Cleaned

TEOM / FDMS IN LINE FILTER INSPECTION OR REPLACEMENT: TEOM IN LINE: FDMS Water knck out:Good Main: Good AUX: Replace next cal.

FDMS 47 mm Filter Cassette: Replaced

Government of Alberta

Environment

Environmental Assurance Air Monitoring and Audit Center 4946 89 Street N.W. Edmonton, Alberta T6E-5K1 Canada Telephone: 780-427-7888 www.alberta.ca

June 18, 2010

File No(s). 2010 - 021A / 044A

Shelly Pruden Program Manager Peace Airshed Zone Association P.O. Box 21135 Grande Prairie, AB T8V 6W7

Dear Shelly:

Re: PASZA Ambient Air Monitoring Station Audits Closure Letter

The PASZA letter dated May 20, 2010 indicates that all actions required to address the audit findings have been taken.

Alberta Environment has not verified that these actions have indeed been taken. Based on the content of the letter, Alberta Environment is satisfied that PASZA has fulfilled the requirements of the audit findings and considers this audit closed.

If you have any questions please contact the undersigned at 780-427-7888.

Yours truly,

Jolene Scott Monitoring Systems Auditor Environmental Assurance

Attachment(s): none cc: Gary Sasseville: District Approvals Manager Greg Smith: District Compliance Manager Marilyn Albert: Industrial Monitoring Assessment Technologist Janine Ross: Ambient Air Support Tech Jennifer Keturakis: Industrial Approvals Engineer

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