



Office of the Chief

Bill John Baker Principal Chief OP Ch JSS&OJ OFFOG.A

S. Joe Crittenden
Deputy Principal Chief

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April 09, 2015

Mark Hansen Acting Associate Director for Air U.S. EPA Region 6 1445 Ross Avenue Suite 1200 Mail Code: 6PD Dallas, TX 75202-2733

RE: Air Monitoring Data Certification Letter

Mr. Hansen,

The Cherokee Nation Environmental Programs (CNEP) office is submitting AMP450NC and AMP600 reports for the first, second, third and fourth quarters of 2014. The reports were generated by April Hathcoat, Environmental Specialist III and the Data Reporting Officer for CNEP. Data from all combinations of site, monitor, pollutant, and POC in the attached 2014 AMP450NC and AMP600 summary reports is being certified. An electronic copy of the reports in PDF format will also be sent to the regional office. Our Data Reporting Officer certifies that the ambient concentration data and the quality assurance data are completely submitted to AQS, and that the ambient data are accurate to the best of her knowledge taking into consideration the quality assurance findings.

If you need any additional information or have questions, please contact me at (918) 453-5093 or reallison@cherokee.org.

Sincerely,

, Director Cherokee Nation Environmental Programs

CC: Aunjanee Gautreaux, Project Officer, EPA Region VI Office, Air Quality Analysis Section (6PD)

Trisha Curran, Data Certification Contact, EPA Region VI Office, Air Quality Analysis Section (6PD)

User ID: HCZ

#### QUICKLOOK ALL PARAMETERS

2014 2014	DATE CRITERIA Start Date End Date	EVENTS PROCESSING AGENCY ROLE	MERGE PDF FILES	Option Type	ALL	PROTOCOL SELECTIONS ter sation Parameter Method		Tribal Code State	Report Request ID: 1319118
		EXCLUDE REGIONALLY CONCURRED EVENTS 2 PQAO 4 5 7	YES 1	Option Value		Duration Cherokee Nation/ITEC (consortium)		GEOGRAPHIC SELECTIONS  County Site Parameter POC City AQCR	Report Code: AMP450NC
CO 8-hour 1971  Lead 3-Month 2009  Lead 3-Month PM10 Surrogate 2009  Lead Quarterly 1978  NO2 Annual 1971  Ozone 8-Hour 2008  PM10 24-hour 2013  SO2 1-hour 2010	APPLICABLE STANDARDS Standard Description	2 COUNTY_CODE 3 SITE_ID 4 PARAMETER_CODE 5 POC 6 DATES 7 EDT_ID	1 STATE_CODE	Order Column	מונים מונים		A second	EPA CR UAR CBSA CSA Region	Apr. 9, 2015

#### QUICKLOOK ALL PARAMETERS

### EXCEPTIONAL DATA TYPES

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	DESCRIPTION

- NO EVENTS
- EVENTS EXCLUDED
- EVENTS INCLUDED

N

EVENTS WITH CONCURRENCE EXCLUDED

#### QUICKLOOK ALL PARAMETERS

Apr. 9, 2015

44201	Site ID:	0000	0	88502	86101		81102	81102	65101		62201	62101	62101	61104	61103			44201	42612	42604	42603	42601	42600	42401	42401			42101	Site ID:	Parameter		
Ozone	ID: 40-021-9002	Mass		Acceptable PM2.5	PM10-2.5 - Local		PM10 Total 0-101m	PM10 Total 0-10um	Rain 24hr total			Outdoor Temperature	Outdoor Temperature	Wind Direction -	Wind Speed - Resu			Ozone	NOY - NO	ற	Oxides of nitrogen	Nitric oxide (NO)	Reactive oxides c	Sulfur dioxide	Sulfur dioxide			Carbon monoxide	: 40-001-9009	Cer		
	City: Park Hill	нот и ореставтом	1	AQI & Speciation	Conditions		STP	STP				re	ire	Resultant	Resultant						n (NOx)		of nitrogen (NOy)						City: Cherry Tree			
Parts per million	County:	(TC)		Micrograms/cubic meter	Micrograms/cubic meter (LC)		(25 C) Micrograms/cubic meter	Micrograms/cubic meter	Inches (rainfall)	humidity	Percent relative	Degrees Fahrenheit	Degrees Fahrenheit	Degrees Compass	Knots				per		Parts per billion	Parts per billion	Parts per billion	Parts per billion	Parts per billion			Parts per million	County:	Unit		
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905	Cherokee	i i	2	905	905		905	905	905		905	905	905	905	905			905	905	905	905	905	905	905	905			905	ir	PQAO		
2014		1	2	2014	2014		2014	2014	2014		2014	2014	2014	2014	2014			2014	2014	2014	2014	2014	2014	2014	2014			2014		Year		
087		ŀ	1	170	185		122	122	091		011	020	020	020	020			091	690	592	591	690	690	592	592			588		Meth		
6800	A	( (	0 2 6 3	347	8200		342	8195	8224		8139	8667	8667	8663	8671			8504	7686	7102	7114	6866	7869	***	7345			8164	A	SqO	#	
.063	Address: P.O.	č	n n	26.3	985.0		350	592	1.53		100	96	94	359.0	21.3			.066	125.3	.0210	14.0	33.0	124.2	88.2	43.2			.4	Address: Sou	Value	t Max	
.061	. BOX 948		2	23.9	934.0		195	589	1.16		100	96	94	359.0	20.1			.064	87.1	.0198	13.9	31.0	87.8	53.8	35.4			TWELL,	th High	varue	25	
.061		( (	ר מת	23.0	358.3		103	570	.96		100	96	94	359.0	19.7			.063	34.0	.0195	13.7	31.0	34.0	35.6	34.8			SELLWELL, OKLANOMA	way 59, R	Agrue	3rd Max	
.061	TAHLEQUAH, OK		n 2	22.4	214.7		71	522	.91		100	96	94	359.0	19.5			.063	34.0	.0162	13.6	7.7	32.0	35.4	34.5			. 4	ress: South Highway 59, RR1, 1795 Dahlonegan	Aarue	4th Max	
.0412	74464		р 7,г	8.71	7.52		18.2	18.6	.005		70.0	57.1	57.3	185.26	5.25			.0415	2.91	.00293	2.54	.17	3.09	.60*	2.02*			.17	ahLonegal	Meall	Arith.	
8-HR RUN AVG BEGIN HOUR			AVG	24-HR BLK	1 HOUR	AVG	24-HR BLK	1 HOUR	1 HOUR		1 HOUR	1 HOUR	1 HOUR	1 HOUR	1 HOUR	HOUR	AVG BEGIN	8-HR RUN	1 HOUR	1 HOUR	1 HOUR	1 HOUR	1 HOUR	* 5 MINUTE	* 1 HOUR	HOUR	AVG END	8-HR RUN	n Park Road,		Cert&	America Company
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#### QUICKLOOK ALL PARAMETERS

Apr. 9, 2015

#### QUICKLOOK ALL PARAMETERS

Apr. 9, 2015

81102 PM10 Total 0-10um STP	62201 Relative Humidity	Outdo	61102 Wind Direction - Scalar	61101 Wind Speed - Scalar			Ozone	42603 Oxides of nitrogen (NOx)	42602 Nitrogen dioxide (NO2)	42601 Nitric oxide (NO)	Site ID: 40-135-9021 City: Roland		62201 Relative Humidity	62101 Outdoor Temperature	61102 Wind Direction - Scalar	61101 Wind Speed - Scalar	Site ID: 40-125-9023 City: Not :	65101 Rain 24hr total		62201 Relative Humidity	62101 Outdoor Temperature	61102 Wind Direction - Scalar	61101 Wind Speed - Scalar			Ozone	42612 NOy - NO	42601 Nitric oxide (NO)	42600 Reactive oxides of nitrogen	Site ID: 40-097-9014 City: Not:	Parameter		
humidity Micrograms/cubic meter (25 C)	Percent relative		Degrees Compass	Knots			per	Parts per billion	Parts per billion	Parts per billion	nd County:	humidity	Percent relative	Degrees Fahrenheit	Degrees Compass	Knots	in a city County:	Inches (rainfall)	humidity	Percent relative	Degrees Fahrenheit	Degrees Compass	Knots			Parts per million	Parts per billion	Parts per billion	(NOy) Parts per billion	in a city County:	Unit		A minute Add Add Add and a second a second and a second a
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905	905	905	905	905			905	905	905	905	Sequoyah		W32	W32	W32	W32	Pottawatomie	905		905	905	905	905			905	905	905	905	ãi	PQAO		
2014	2014	2014	2014	2014			2014	2014	2014	2014			2014	2014	2014	2014	mie	2014		2014	2014	2014	2014			2014	2014	2014	2014		Year		
150	011	040	020	020			087	090	090	090			011	040	020	020		160		011	040	020	020			091	691	691	691		Meth		
8268	8345	8345	8345	8233			6117	7494	7415	7494	***		179	179	179	179	₩	8354		8620	8720	8719	8416			6881	8115	6091	8117	<b>h</b> ⊷	Obs	#	
349	89	98	340	22.1			.067	107.0	60.0	68.0	Address: 207 Cherokee		79	61	324	14.5	Address: Located behind Environmental	. 99		94	96	332	18.5			.062	68.8	141.2	132.0	Address: CH	Value	1st Max	
319	68	98	339	21.0			.061	103.0	40.4	66.0	)7 Chero		76	60	324	Snawnee, OK	cated b	.99		94	96	332	17.5			.061	36.2	27.0	65.9	IEROKEE	varue	2nd Max	
307	9 89	3 98	336	20.8				99.0	34.8	) 65.0	kee Boulev		76	) 60	324	14.2	ehind Envi	.96		94	96	332	17.2			061	31.8	26.6	58.6	ress: CHEROKEE HEIGHTS DRIVE	Aathe		
298	89	98	331	17.6			.060	97.0	33.7	63.0	Boulevard, Roland,		75	58	323	14.2				94	96	331	17.2			.060	31.5	21.9	45.6	IVE	ATTE	4th Max	
20.5	63.4	58.8	144.9	3.59			.0402	6.98	5.87	1.23	OK.		52.5	30.6	222.5	7.18	Office o	.004		63.8	57.4	171.1	4.65			.0406	3.96	.37*	4.20		Medit	AFICH.	
1 HOUR	1 HOUR	1 HOUR	1 HOUR	1 HOUR	HOUR	AVG BEGIN	8-HR RUN	1 HOUR	1 HOUR	1 HOUR	74954		1 HOUR	1 HOUR	1 HOUR	1 HOUR	Office on Hardesty Road,	1 HOUR		1 HOUR	1 HOUR	1 HOUR	1 HOUR	HOUR	AVG BEGIN	8-HR RUN	1 HOUR	* 1 HOUR	1 HOUR		Duration Eval	Cert&	
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#### QUICKLOOK ALL PARAMETERS

Apr. 9, 2015

	88501		88501		81102		Site	Parameter		
	PM2.5 Raw Data		PM2.5 Raw Data		PM10 Total 0-10um		Site ID: 40-135-9021	neter		
					ım STP		City: Roland			
(LC)	Micrograms/cubic meter 3	(LC)	Micrograms/cubic meter	(25 C)	Micrograms/cubic meter		County: Sequoyah	Unit		
	ω		3		Н		Seq	O	0	۳
	905		905		905	٠	iovah	PQAO		
	2014		2014		2014			Year		
	701		701		2014 150			Year Meth		
	8323		346		342		ď	SqO	#	
	103.9		26.9		72		ddress: 20	Value	1st Max	
	93.5		25.4		72		7 Cherok	Value	2nd Max 3rd Max	
	76.6		23.1		61		ee Boulev	Value		
	67.5		23.1		55		Address: 207 Cherokee Boulevard, Roland, OK 74954	Value	- ^	
	10.10		10.04		20.1		id, ok 1	Mean	Aricn.	
	10.10 1 HOUR	AVG	10.04 24-HR BLK	AVG	20.1 24-HR BLK		74954	Duration Eval	C	
	0		0		0			Eval H	Cert& H	

#### QUICKLOOK ALL PARAMETERS

### METHODS USED IN THIS REPORT

	METHOD		
PARAMETER	CODE	COLLECTION METHOD	ANALYSIS METHOD
42101	588	INSTRUMENTAL	Gas Filter Correlation Ecotech EC9830T
42401	592	Instrumental	Ultraviolet Fluorescence EC9850T
42600	690	Instrumental	Chemiluminescence Ecotech EC9841T
42600	691	Instrumental	Chemiluminescence Ecotech EC9843
42601	090	Instrumental	Gas Phase Chemiluminescence
42601	690	Instrumental	Chemiluminescence Ecotech EC9841T
42601	691	Instrumental	Chemiluminescence Ecotech EC9843
42602	090	INSTRUMENTAL	GAS-PHASE CHEMILUMINESCENCE
42603	090	Instrumental	Gas Phase Chemiluminescence
42603	591	Instrumental	Chemiluminescence Ecotech EC9843
42604	592	Instrumental	Chemiluminescence Ecotech EC9842T
42612	690	Instrumental	Chemiluminescence Ecotech EC9841T
42612	691	Instrumental	Chemiluminescence Ecotech EC9843
44201	087	INSTRUMENTAL	ULTRA VIOLET ABSORPTION
44201	091	INSTRUMENTAL	ULTRAVIOLET RADIATION ABSORBTN
61101	020	INSTRUMENTAL	SPOT READING
61101	061	Instrumental	Met One Sonic Anemometer Model 50.5
61102	020	INSTRUMENTAL	SPOT READING
61102	061	Instrumental	Met One Sonic Anemometer Model 50.5
61103	020	INSTRUMENTAL	VECTOR SUMMATION
61104	020	INSTRUMENTAL	VECTOR SUMMATION
62101	020	INSTRUMENTAL	SPOT READING
62101	040	INSTRUMENTAL	ELECTRONIC OR MACHINE AVG.
62201	011	INSTRUMENTAL	HYGROTHERMOGRAPH ELEC OR MACH AVG
65101	091	BUCKET	STANDARD NWS RAIN GAGE
81102	079	INSTRUMENTAL-R&P SA246B-INLET	TEOM-GRAVIMETRIC
81102	122	INSTRUMENT MET ONE 4 MODELS	BETA ATTENUATION
81102	150	T A Series FH 62 Cl4 Continuous	Beta Attenuation
86101	185	Met One BAM-1020 System	Paired Beta Difference
88501	701	PM2.5 SCC w/No Correction Factor	TEOM Gravimetric 50 deg C
88502	170	Met-one BAM-1020 W/PM2.5 SCC	Beta Attenuation

#### QUICKLOOK ALL PARAMETERS

PQAOS USED IN THIS REPORT

W32	905	PQAO	
Cherokee Nation/ITEC (consortium)	Cherokee Nation, Oklahoma	AGENCY DESCRIPTION	

QUICKLOOK ALL PARAMETERS

#IERS Apr. 9, 2015

## CERTIFICATION EVALUATION AND CONCURRENCE FLAG MEANINGS

FLAG

MEANING

≤	The monitoring organization has revised data from this monitor since the
	most recent certification letter received from the state.
N	The certifying agency has submitted the certification letter and required
	summary reports, but the certifying agency and/or EPA has determined
	that issues regarding the quality of the ambient concentration data cannot
	be resolved due to data completeness, the lack of performed quality
	assurance checks or the results of uncertainty statistics shown in the
	AMP255 report or the certification and quality assurance report.
Ø	The certifying agency has submitted the certification letter and required
	summary reports. A value of "S" conveys no Regional assessment regarding
	data quality per se. This flag will remain until the Region provides an "N" or
	"Y" concurrence flag.
П	Uncertified. The certifying agency did not submit a required certification
	letter and summary reports for this monitor even though the due date has
	passed, or the state's certification letter specifically did not apply the
	certification to this monitor.
×	Certification is not required by 40 CFR 58.15 and no conditions apply to be
	the basis for assigning another flag value
ĸ	The certifying agency has submitted a certification letter, and EPA has no
	unresolved reservations about data quality (after reviewing the letter, the
	attached summary reports, the amount of quality assurance data
	submitted to AQS, the quality statistics, and the highest reported
	concentrations).

### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

User ID: HCZ CERTIFICATION EVALUATION AND CONCURRENCE

				Report Request ID: 1319142
40	Code State	Tribal		1319142
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	te E			Repo
	County Site Parameter		GEO	Report Code: AMP600
	POC		3RAPHIO	AN
	City		GEOGRAPHIC SELECTIONS	4P600
	AQCR		SNOL	
	UAR			
	CBSA			
	CSA			
	Region	EPA		
				Apr. 9, 2015

Classification Parameter CRITERIA MERGE PDF FILES Option Type AGENCY ROLE PROTOCOL SELECTIONS DATE CRITERIA SELECTED OPTIONS Parameter Method Duration Option Value Cherokee Nation/ITEC (consortium) Cherokee Nation, Oklahoma CERTIFYING AGENCY SELECTIONS

Start Date

2014

End Date

Certification Year: 2014

Certifying Agency (CA): Cherokee Nation, Oklahoma (905)

Carbon monoxide	Parameter Name	Pollutants in Report:	
42101	Code		
_	Evaluated	Monitors	
_	Concurrence by AQS	Monitors Recommended for	
0	for Concurrence by AQS	Monitors NOT Recommended	

0	<b>→</b>	_	42401	Sulfur dioxide
0	2	2	81102	PM10 Total 0-10um STP
0	Cī	Ŋ	44201	Ozone
0	_	_	42602	Nitrogen dioxide (NO2)
0	_	<u> </u>	42101	Carbon monoxide
				רמומווכנכו ושמווכ

PQAOs in Report:

Cherokee Nation, Oklahoma	PQAO Name
905	PQAO Code
	TSA Date

Summary of 'N' flags for all pollutants: **Parameter** AQS Cert. Agency Recommended Recommended

Code AQS Site-ID POC Flag Reason for AQS Recommendation

Signature of Monitoring Organization Representative: \_

40 001 0000 1 TEIBAI	AQS POC Monitor Site ID Type			NPAP Audit Summary:	PQAO Name QAPP Approval Date	Certifying Year 2014 Certifying Agency Code Cherokee Nation, Oklahoma (905) Parameter Carbon monoxide (42101) (ppm)
0.168	r Mean	Rout		nary:	Date	cy Code
0.010	Min	Routine Data		Number	Cherokee N 06/11/2012	2014 Cherc Carbo
1.361	Max		0	Number of Valid Audits	)kee N /2012	okee N
0	Exceed. Outlier Perc. Count Comp			Audits	Cherokee Nation, Oklahoma (905) 06/11/2012	2014 Cherokee Nation, Oklahoma (905 Carbon monoxide (42101) (ppm)
0	Outlier Perc. Count Comp.			N P	Oklahc	Oklahc (42101
88	Perc. Comp.			NPAP Bias	oma (9)	oma (9)  ) (ppr
6.49	Precision Bias Complete	One Point Quality Check	~	Criteria Met	05)	n)
6.49 +/-5.45	Bias C	Quality (		Met		
85	omplete	Check				
- 0.11	Bias	An				
100	Complete	Annual PE				
	Bias I					
~	Bias PQAO Level QAPP Aqs Rec CA Rec Epa Criteria Appr. Flag Flag Concur	NPAP				
~	QAPP Appr.					
~	Aqs Rec Flag	ဂ္ဂ				
~	CA Rec Flag	Concur. Flag				
တ	Epa Concur	ğ				

40-135-9021 1 TRIBAL	AQS F			NPAP A	QAPP Appro	Certifying Year Certifying Ager Parameter
1 TRIBAL	POC Monitor Type			NPAP Audit Summary:	QAPP Approval Date	Certifying Year  Certifying Agency Code Cherokee Nation, Oklahoma (905)  Parameter  Nitrogen dioxide (NO2) (42602) (p
5.9	Mean	Rout		יאַ	ate	/ Code
0.3	Min	Routine Data		Number	06/11/2012	2014 Chero Nitrog
60.0	Max		0	Number of Valid Audits	/2012	kee Nen dio
	Exceed. Count			Audits	06/11/2012	2014 Cherokee Nation, Oklahoma (905) Nitrogen dioxide (NO2) (42602) (ppb)
0	Exceed. Outlier Perc. Count Count Count			Z.	O NI MILIO	Oklaho NO2) (
85	Perc. Comp.			NPAP Bias	Jilia (S	oma (9) 42602)
5.78	Precision Bias Complete	One Point Quality Check	~	Criteria Met	Ja)	05) (ppb)
-9.78	n Bias (	t Quality		Met		
77	Complete	Check				
- 3.81	Bias	A				
100	Complete	\nnual PE				
	Bias					
~	Bias PQAO Level QAPP Aqs Rec CA Rec Epa Criteria Appr. Flag Flag Concu	NPAP				
~	QAPP Appr.					
4	Aqs Rec Flag	င္ပ				
~	CA Rec Flag	Concur. Flag				
တ	Epa Concur	īg				

AQS Site ID **PQAO Name Parameter Certifying Agency Code** Certifying Year 40-135-9021 1 TRIBAL 40-097-9014 1 TRIBAL 40-021-9002 1 TRIBAL 40-001-9009 1 TRIBAL **QAPP Approval Date** 40-071-9010 1 TRIBAL NPAP Audit Summary: POC Monitor Type 0.046 0.049 0.046 0.046 0.046 Mean Routine Data Cherokee Nation, Oklahoma (905) Cherokee Nation, Oklahoma (905) 06/11/2012 2014 0.006 0.011 0.014 0.013 0.011 Number of Valid Audits Ozone (44201) (ppm) Min 0.101 Max 0.071 0.079 0.076 0.071 Exceed.
Count Outlier Perc. Count Comp. 0 NPAP Bias 91 93 86 94 Criteria Met **One Point Quality Check Precision Bias Complete** 3.82 2.28 1.32 2.98 2.58 +/-3.17 +/-3.07 +/-2.03 +/-2.40 +2.45 100 100 100 100 95 Bias - 0.76 0.14 4.94 0.41 4.80 Annual PE Complete 100 100 B 8 100 Bias PQAO Level QAPP Aqs Rec CA Rec Epa Criteria Appr. Flag Flag Concur Concur. Flag S S S S

One Point Quality Check Ann
Annual PE NPAP Concur. Flag
Concur. Flag

## Data Evaluation and Concurrence Report for Particulate Matter

Certifying Year: 2014
Certifying Agency: Cherokee Nation, Oklahoma (905)

Parameter: PQAO Name: PM10 Total 0-10um STP (81102) CONTINUOUS Cherokee Nation, Oklahoma (905)

Quality Assurance Project Plan Approval Date:	pprov		06/11/2012								
Monitors Summaries											
		Routine Data (ug/m3)		Flow Ra	Flow Rate Verification	Flow R	Flow Rate Audit		Collocationrence Flag	mence	Flag
AQS Site ID POC Type Mean Min	Min	Max Count Count Complete Bias Complete	r % t Complete	Bias	% Complete	Bias C	% Bias Complete	QAPP,	Appr. Flag Flag Concu	cCA Re	A Rec EPA Flag Concur
40-001-9009 3 TRIBAL 18.56	2.0	592.0 0	93	+/-0.25 100	100	+1.71	70	~	~	~	S
40-135-9021 1 TRIBAL 20.54 2.0 349.0	2.0	349.0 0	94	+/-0.61 100	100	-1.04	-1.04 100 Y	~	~	~	S