CHEROKEE NATION

P.O. Box 948
Tahlequah, OK 74465-0948
918-456-0671

Chad "Corntassel" Smith
Principal Chief

Joe Grayson, Jr.
Deputy Principal Chief

August 16, 2005

Michael N. Jones
Project Officer
U.S. EPA (D243-02)
EMAD/AAMG
Research Triangle Park, NC. 27709

Dear Mr. Jones,

Enclosed is the Cherokee Nation's Environmental Programs FY2005 Cherokee Heights Community Air Toxics Monitoring Proposal. The proposed toxic air monitoring project will be collocated with the Cherokee Nation's continuous monitoring shelter in Pryor Oklahoma (Cherokee Heights tribal community). The Cherokee Nation is requesting $165,000 in Federal funding under EPA Request for Applications (RFA) Solicitation # RFA NO: OAR-EMAD-05-16 to support this project. This funding will be used to monitor for volatile organic compounds outlined in the attached work plan. The data collected will provide vital information on the types and levels of toxic air pollutants that exist in industrialized rural areas. This scope of this hazardous air pollutant project will be a first for tribes in Oklahoma.

If you have any inquiries or need additional information please contact Ryan Callison at (918) 458-5496 x1006.

Sincerely,

Jeannine Hale

Jeannine Hale
Acting Environmental Administrator
Cherokee Nation Environmental Programs

(*) Original Application received by Mike Jones in response to RFA.

Attachments

APPLICATION FOR FEDERAL ASSISTANCE

Version 7/03

2. DATE SUBMITTED 8/16/05	Applicant Identifier Cherokee Nation	
3. DATE RECEIVED BY STATE N/A	State Application Identifier N/A	
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier	

1. TYPE OF SUBMISSION:

Application	Pre-application
☐ Construction	☐ Construction
☑ Non-Construction	☑ Non-Construction

5. APPLICANT INFORMATION

Legal Name: Cherokee Nation	**Organizational Unit:**
	Department: Office of Environmental Services (OES)
Organizational DUNS: 06-163-0554	Division: Environmental Programs
Address:	**Name and telephone number of person to be contacted on matters involving this application (give area code)**
Street: Grants Administration; Attn: OES: AIR Program P.O. BOX 947	Prefix: Mr. First Name: Ryan
City: Tahlequah	Middle Name
County: Cherokee	Last Name Callison
State: OK Zip Code 74465	Suffix:
Country:	Email: rcallison@cherokee.org
6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 73-0757033	Phone Number (give area code) (918) 458-5498 Fax Number (give area code) (918) 458-5499

8. TYPE OF APPLICATION:

☑ New ☐ Continuation ☐ Revision

If Revision, enter appropriate letter(s) in box(es)
(See back of form for description of letters.) ☐ ☐

Other (specify)

7. TYPE OF APPLICANT: (See back of form for Application Types)

K. Indian Tribe

Other (specify)

9. NAME OF FEDERAL AGENCY:
U.S. EPA

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 66-034

TITLE (Name of Program):
Clean Air Act Section 103 Grants

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:

Community Air Toxics Grant

12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*:

Oklahoma

13. PROPOSED PROJECT

Start Date:	Ending Date:
10-1-2005	9-30-2007

14. CONGRESSIONAL DISTRICTS OF:

a. Applicant	b. Project
District 2	District 2

15. ESTIMATED FUNDING:

a. Federal	$ 165,000.00
b. Applicant	$ .00
c. State	$ .00
d. Local	$ .00
e. Other	$ .00
f. Program Income	$ .00
g. TOTAL	$ 165,000.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. Yes. ☐ THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON

DATE:

b. No. ☑ PROGRAM IS NOT COVERED BY E. O. 12372

☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

☐ Yes If "Yes" attach an explanation. ☑ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Authorized Representative

Prefix Mr.	First Name Chad	Middle Name
Last Name Smith		Suffix
b. Title Principal Chief, Cherokee Nation		c. Telephone Number (give area code) (918) 456-0671
d. Signature of Authorized Representative N. Delanie Wright for Chad Smith		e. Date Signed 8/16/05

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Standard Form 424 (Rev.9-2003)
Prescribed by OMB Circular A-102

Cherokee Heights Air Toxics Monitoring Project

Determining Community Impact From Air Toxics

Category: Community Scale Monitoring

Cherokee Nation

Air Toxics Monitoring Proposal

Submitted to

EPA Office of Air Quality Policy and Standards (OAQPS)

Research Triangle Park, NC

For

Cherokee Nation Environmental Programs

P.O. BOX 948
Tahlequah, Oklahoma 74465
(918) 458-5496

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I. INTRODUCTION

A. Request for Funding

Cherokee Nation's Environmental Programs is requesting $***165,000*** in Federal funding under EPA Request for Applications (RFA) Solicitation # RFA NO: OAR-EMAD-05-16. The Clean Air Act Section 103 grant funding will be utilized for monitoring toxics in ambient air to determine the amounts and types of Volatile Organic Compounds (VOC) at the Cherokee Heights tribal community near Pryor in Mayes County, Oklahoma. Cherokee Nation will submit all air toxics data to the EPA. This data will be used to determine potential community health impacts from toxic air pollution sources and provide for community education and awareness of the pollutants present. The funding will also be used to provide public outreach and awareness by posting data on the Cherokee Nation Information Exchange website and the EPA AQS database. The Project Period for this funding will be from October 1, 2005 through September 30, 2007.

B. Cherokee Nation Clean Air Program

Cherokee Nation is the largest Indian Tribe in the United States with over 300,000 tribal members Nationwide. Cherokee Nation is the lead agency for the Inter-Tribal Environmental Council (ITEC), a 39-tribe environmental consortium with member tribes in New Mexico, Texas and Oklahoma (Figure 1). Cherokee Nation/ITEC Clean Air Program staff operate and maintain ambient air monitoring equipment including: ozone (4-sites), NOx (3-sites), NOy (3-sites), CO (2-sites), SO_2 (3-sites), PM_{10} (2-TEOMs, 1-BAM, and 2-FRMs), $PM_{2.5}$ (6-FRM, and 1-TEOM FDMS), and 6-meteorological sites. Cherokee Nation/ITEC participates in several national and regional ambient air monitoring networks such as the CASTNet, IMPROVE, Mercury Deposition (MDN), and the CENRAP Regional Planning Organizations (RPO) ammonia study. ITEC performs Quality Assurance (QA) audits, provides training, and provides technical assistance for tribes throughout EPA Region 6 that have their own air quality management programs. Currently, ITEC performs tribal quarterly equipment QA audits on $PM_{2.5}$ samplers, criteria pollutant gaseous monitors and meteorological stations for tribes throughout Oklahoma and New Mexico. Required QA audits for ITEC equipment are performed by an outside engineering firm under contract. EPA Region 6 provides PEP audits and Technical System Review audits on ITEC monitoring activities. Additionally, EPA Region 6 annually checks ITEC operated ozone primary standards, and periodically tests each analyzer in the network with "through the probe audits". All data gathered through ITEC ambient air activities are subjected to established verification procedures and are reported through the respective monitoring network, or through EPA's Air Quality System (AQS) database. All air quality work is done in accordance with EPA guidelines and EPA approved QMP's & QAPP's.

II. PROJECT BACKGROUND

A. Industrial Park Emissions

A 9000-acre industrial park is located in Mayes County, Oklahoma, which is 40 miles east from Tulsa and 30 miles north of Muskogee. It is advertised as the largest industrial park in Oklahoma, and as the nation's largest rural industrial park. The park is located at the intersection of two major highways. U.S. 69 is sometimes referred to in articles as part of the "NAFTA Transportation Corridor" and US 412 is sometimes referred to as part of the "Wal-Mart Expressway." Truck traffic is considerable along both highways. The park has its own airport, water supply and wastewater treatment facilities that possibly emit hazardous air pollutants. The wastewater treatment facility includes lagoons with aeration. They advertise that over 70 firms now operate within the complex. Facilities include a coal-fired power plant, a new gas-fired power plant, chemical and plastic industries, paper product industries, and several other industries that emit hazardous air pollutants. New expansions to the industrial park are planned and they are actively recruiting additional industry to the area. Other significant air release point sources are located just outside the industrial park boundaries. All major point sources in Mayes County are spatially clustered near the industrial park, as are the tribal population centers of Pryor, Chouteau, Locust Grove, Salina, Sportsman Acres, and Cherokee Heights. Cherokee Heights is less than one mile from some sections of the industrial park (Figure 2).

B. Criteria Air Pollutant Facility Emissions

EPA's National Emission Inventory (NEI) Database (the most recent publicly available database for Criteria pollutants) indicates that Criteria point source emissions in Mayes County include:

- 1,379 Tons per Year (TPY) of Carbon Monoxide (CO)
  - Mayes County emits 1.9% of all Oklahoma facility CO emissions,
- 15,726 TPY of Nitrogen Oxides (NOx)
  - Mayes County emits 8% of all Oklahoma facility NOx emissions,
- 767 TPY of Volatile Organic Compounds (VOC)
  - Mayes County emits 2% of all Oklahoma facility VOC emissions
- 20,063 TPY of Sulfur Dioxide (SO2)
  - Mayes County emits 14.3% of all Oklahoma SO2 facility emissions
- 1,582 TPY of Course Particulate Matter (PM10),
  - Mayes County emits 10.7% of all Oklahoma facility PM10 emissions
- 1,301 TPY of Fine Particulate Matter (PM 2.5)
  - Mayes County emits 12.6% of all Oklahoma facility PM2.5 emissions

C. Hazardous Air Pollutants (HAPs) Emissions

The 1996 HAPs NEI Database indicates major source emissions for HAPs in Mayes County at 4,392,093 pounds. Total HAPs for Mayes County are reported to be 5,235,528 pounds. Area sources are reported at 255,227 pounds; On-Road emissions are reported at 473,063 pounds; and, Non-Road emissions are reported at 115,146 pounds. Population has significantly increased in Mayes County since 1996. Traffic along Highways 69 and 412 has also increased. The 2001 Toxic Release Inventory (TRI) indicates a total of 205,143.6 pounds of HAP's released in Mayes County. Most of these are clustered in and near the Cherokee Heights community. Some information about specific HAPs of concern follows:

- Lead (not including lead compounds)
  - The 19th largest facility source for air releases of lead in the United States is in Mayes County (3,698 pounds)
- Lead Compounds
  - An additional 2,088 pounds of lead compounds are air released in Mayes County
- Naphthalene
  - Mayes county has both the 8th largest and the 25th largest facilities for air releases of Naphthalene in the United States (53,796 pounds combined –According to EPA's IRIS, Naphthalene has a Reference Concentration of .003mg/m^3)
- Dicyclopentadiene
  - The 19th largest facility source for air releases of Dicyclopentadiene in the United States is in Mayes County (1,866 pounds)
- Formaldehyde
  - A new power plant has established a Potential to Emit (PTE) of over 22,000 pounds per year of Formaldehyde in its permit application
- Hydrochloric Acid
  - The coal-fired power plant at MidAmerica reported 3,682,790 pounds of hydrochloric acid air released in 1996. The 2001 TRI shows 63,000 pounds. Comparing models to measured concentrations would be useful to determine whether or not the reported results are actually achieved.

D. Public Complaints

After the startup of the new Chouteau gas-fired power plant, Cherokee Nation citizens living at Cherokee Heights contacted the Cherokee Nation government complaining of "green" clouds passing through the

community about twice a month. Community members could not identify the specific source causing the green clouds along with the very unusual odor. Cherokee Nation staff have noticed green plumes from the new gas-fired power plant's stacks, but have not witnessed a visible green cloud in the housing community. The community is expressing increasing concerns about the air quality and the potential impact on health.

E. Health Data

According to the 1999 National Cancer Institute Database, Mayes County has the second highest death rate (Males) for respiratory types of cancer in Oklahoma, and rates that are 32% greater than the US average. The most recent data indicates a slight rate increase for Mayes County and is reported at a rate 40% higher than the US average. This includes lung, trachea, bronchus, & pleura cancer mortality rates. *Mayes County Health Status Indicators*, Oklahoma State Department of Health, reported that Mayes County fetal death rates are over double the state average for the period examined.

F. Current Ambient Air Monitoring (Tribal/State)

Oklahoma Department of Environmental Quality staff indicated that the State of Oklahoma has only conducted limited air toxics studies in Oklahoma. The State also indicated that no such monitoring is planned for the area of concern. Consequently, no historical tribal-state-federal data are available to determine actual concentrations of HAPs in ambient air in Northeastern Oklahoma. This project will help determine health based benchmarks for the area and assist with determining if new facilities or permit changes significantly impact the tribal community. Cherokee Nation has applied for "Treatment as State" for Affected State Status through EPA Region 6. Once the application is approved Cherokee Nation may comment on any permit that could significantly impact tribal air sheds such as the Cherokee Heights community.

Cherokee Nation has established an ambient air monitoring site in Mayes County. The site is located on Tribal Trust land at the Cherokee Heights housing complex. This site is approximately 3.8 miles from the coal-fired power plant, 1.5 miles from the new gas-fired power plant, and 0.75 miles from the sewage lagoon for the industrial park (Figure 2). Instrumentation at the current Cherokee Heights site includes: R&P TEOM for continuous PM10 measurement (Federal Equivalent Method), R&P TEOM with FDMS for continuous PM2.5 measurement (the FDMS includes reference flow to account for volatile loss), R&P 2025 Sequential Sampler for PM2.5 (Federal Reference Method), API gaseous monitors including NOx, NOy, Ozone, and SO2, as well as MetOne wind speed, wind direction, ambient temperature, and relative humidity and meteorological instrumentation. The proposed VOC sampling equipment would be collocated with the Cherokee Heights monitoring station and complement the overall project.

The Cherokee Nation conducted a VOC screening project at the Cherokee Heights monitoring station during the winter of 2005 (December 23, 2004 to March 29, 2005). Fifteen samples were collected in vacuum canisters and analyzed via GC/MS in accordance with EPA Test Method TO-15. The sampling interval was 1-in-6 days and each sample was a 24-hour composite. The results of the screening project were as follows: (1) 24 of 59 VOCs were detected in one or more samples; (2) 15 of the 24 detected VOCs were hazardous air pollutants (HAPs); (3) only 5 detected VOCs (HAPs) exceeded an EPA health-based benchmark in one or more samples, ***but 4 of these 5 VOCs are respiratory carcinogens (benzene, MTBE, methylene chloride, TCE)***. Thus the data for this short-term screening project revealed a potential problem with VOC air toxics in the Cherokee Heights area. Much more data will be needed for an assessment of the cumulative risks posed by VOCs and other pollutants to residents of Cherokee Heights.

Additional sampling for VOCs at the Cherokee Nation's Cherokee Heights Community is warranted. Funding of this grant proposal will permit the Cherokee Nation to conduct such monitoring and to further build air toxics technical capacity for the Cherokee Nation and other tribal governments.

III. TOXIC AIR MONITORING OBJECTIVES, TASKS, METHODS, PLANNED OUTPUTS, AND EXPECTED BENEFITS

Objectives

The Cherokee Nation's major objectives for this project are as follows:

(1) Collect VOC toxics data at Cherokee Heights monitoring station for 18 months so that seasonal variations in VOC concentrations can be documented.

(2) Focus on hazardous air pollutants (VOC HAPs) identified as "drivers" in 1999 NATA, as well as on VOC HAPs detected in Cherokee Nation's screening project in winter of 2005.

(3) Analyze data, identifying VOCs of concern, determining which VOCs exceed EPA human health benchmarks, and identifying sources of VOCs, if possible. Cherokee Nation data will help supports EPA's Strategic Plan to determine exposure to hazardous air pollutants.

(4) Process data so it can be used in a future human health risk assessment.

(5) Share data with EPA, state of Oklahoma (ODEQ), Cherokee Nation, and general public via AQS, Information Exchange Node(s), and other means, as appropriate.

(6) Share data with residents of Cherokee Heights via public meeting.

Tasks

Cherokee Nation Clean Air Program staff will collect VOC samples every sixth day for eighteen (18) months in specially treated canisters for a 24-hour sample period utilizing a commercially available canister sampling system, and deliver the exposed canister to an appropriate laboratory for analysis. The sampling system will be collocated with an identical (duplicate) system utilizing separate intake manifolds. The Cherokee Nation currently has one VOC sampling system in place and will seek a second collocated system if funded. Not less than 10% of the sample events will be duplicate samples and up to 10% of the samples will be field blank samples for QA/QC. Consideration will be given to include split samples and/or blind samples supplied by the EPA in the sampling regimen in order to enhance the usability of the sample data in a future human health risk assessment.

The laboratory will analyze samples for a suite of VOCs, including VOC HAPs identified as "drivers" in the 1999 NATA and VOC HAPs detected in Cherokee Nation's screening project in the winter of 2005. The "drivers" include benzene, carbon tetrachloride, chloroform, 1,3-butadiene, 1,2-dichloropropane, methylene chloride, tetrachloroethylene, trichloroethylene, vinyl chloride, and formaldehyde. Of the 24 VOCs detected in the Cherokee Nation's winter, 2005 screening project, particular emphasis will be given to those 5 VOCs (benzene, MTBE, methylene chloride, TCE, and m,p-xylene) that exceeded an EPA human health benchmark.

The Cherokee Nation will analyze the lab data, identifying VOCs detected in project samples, checking the lab's detection limits for those VOCs, and comparing the data to EPA human health benchmarks and ODEQ MAACs. Seasonal trends in VOC concentrations will be identified. Data will be compared to EPA's TRI inventory, Oklahoma's TRI inventory, and to wind rose diagrams provided by onsite met data and the Oklahoma Climatological Survey in an attempt to identify industrial sources of detected VOCs. Concentrations of BTEX compounds (benzene, toluene, ethylbenzene, xylene) and MTBE will be examined to see if such concentrations are correlated. Positive correlation of BTEX and MTBE would indicate mobile (vehicular) sources for those compounds. VOC data will be compared to data for other pollutants (ozone, NOx, NOy, SO_2, continuous PM10, continuous PM2.5, and FRM PM2.5) monitored by Cherokee Nation at its Cherokee Heights station to determine if the concentrations of such constituents are correlated. VOC concentration data will be converted from ppbv to ug/m^3 for use in a future human

health risk assessment. VOC data will be converted to XML AQS flat files and entered into the AQS database.

The Cherokee Nation will host a public meeting to present the results of this project to the residents of Cherokee Heights and to advise those residents of any health risks they might be exposed to from VOCs and other monitored pollutants in ambient air.

Cherokee Nation has developed equipment Standard Operating Procedures (SOP's) to be included in the Cherokee Nation Air Toxics Quality Assurance Project Plan (QAPP) and will receive EPA Region 6 approval for the QAPP amendments prior to initiating the sampling regimen. All work performed by the Cherokee Nation during this project will be conducted in accordance with this EPA-approved QAPP and the Cherokee Nation Environmental Programs QMP. The laboratory will analyze samples in accordance with its own QAPP. The lab will meet any detection limits required by the Cherokee Nation for this project. Detection limits must be as low, or lower than, any applicable EPA human health benchmarks for the VOCs of concern.

Methods

Cherokee Nation will use the methodology in Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), the Technical Assistance Document for NAATS, and an EPA approved QAPP for sample collection and analysis. The lab analyzing the samples will also adhere to this method. The Cherokee Nation will follow standard reporting requirements for listing project data in AQS.

Planned Outputs

Approximately 200 VOC samples will be collected at the Cherokee Heights community. Sampling data collected will be used to assess health risks to community members living in Cherokee Heights. The funding will also be used to provide public outreach and awareness by posting data either on the Cherokee Nation Information Exchange website via XML formatted AQS data or the EPA AQS database. Cherokee Nation will also present the sampling activities and data gathered from the project at the EPA Data Analysis Workshop or the EPA Region 6 Monitoring Strategy Meeting. Cherokee Nation will also involve the community at a regularly scheduled public meeting.

In summary, the work products to be developed from this project are as follows:

(1) VOC toxics data for the Cherokee Heights/Pryor Industrial Park area, with this data being posted to AQS, and with this data being useable for future human health risk assessment.

(2) Public outreach, informing the residents of Cherokee Heights of any health risks to which they are exposed from VOCs and other pollutants in ambient air.

Expected Benefits

Project benefits to the public are expected to include the following:

(1) VOC toxics data for the Cherokee Heights/Pryor Industrial Park area will be shared with the EPA, Oklahoma Department of Environmental Quality, the Cherokee Nation, and the general public. As no such data currently exist, aside from the Cherokee Nation's screening project data, the data acquired in this project will fill an important data gap for a tribal area of Oklahoma with concentrated industrial activity.

(2) Project data can be used by the Cherokee Nation for a future human health risk assessment.

(3) Project data can be used by the EPA, the state of Oklahoma (SIP's), and the Cherokee Nation in identifying and evaluating emissions sources, in evaluating permit applications and permit renewals, and

for regulatory enforcement. Cherokee Nation data will help support EPA's Strategic Plan to determine exposure to hazardous air pollutants.

(4) Residents of Cherokee Heights, as well as the general public, will benefit from information that can be used to improve public health by reducing the incidence of respiratory diseases.

Project outcomes transferable to other similar scenarios and locations are expected to include:

(1) The project can be used as a model for other tribes and tribal communities in their own VOC monitoring.

(2) The Cherokee Nation will increase its technical skills and capacities in air quality monitoring and will be able to share this knowledge and expertise with other tribes. For example, the Cherokee Nation will share its QAPP, SOPs, and data analysis tables and protocols for this project with other tribes contemplating similar projects.

IV. PROJECT TIMELINE, EVALUATING PROJECT SUCCESS, AND LEVERAGING OTHER RESOURCES

Project Timeline

(1) Cherokee Nation will complete the QAPP for this project by November 30, 2005, or by the end of the second month of the project.

(2) Cherokee Nation will solicit bids from labs for sample analysis during the first month of the project and will select the winning bid and award the contract by the beginning of the third month of the project.

(3) Cherokee Nation will begin sample collection by the beginning of the third month of the project, or by the date of project QAPP approval by EPA, whichever is later.

(4) Cherokee Nation will begin data analysis as soon as the first data is received from lab. Data analysis will continue to the end of the project on September 30, 2007.

(5) Cherokee Nation will complete sample collection by the end of the 20th month of the project, or by the end of 18 months of sampling, whichever is later.

(6) Cherokee Nation will complete final posting of project data to AQS within 90 days after the conclusion of the project on September 30, 2007. Posting of project data to AQS may begin as early as the 9th month of the project. The ultimate AQS entry goal will be within 90 days of each quarters end.

(7) Cherokee Nation will host public meeting to present results of project to residents of Cherokee Heights no later than the final month of the project (September, 2007).

(8) Cherokee Nation will submit final project report to EPA within 90 days after the conclusion of the project on September 30, 2007. Quarterly technical reports will be submitted to EPA within 30 days after the end of each three-month quarter of each fiscal year.

The Cherokee Nation will monitor progress on this project by means of regular staff meetings, in-house sample tracking, coordination with the lab, and internal QA procedures, as specified in the project QAPP and in the Cherokee Nation's QMP for its ITEC environmental programs. The EPA's project officer for this project will monitor progress via quarterly technical reports received from the Cherokee Nation and via other communication, as necessary.

Evaluating Project Success

This project will be considered successful if the six objectives listed at the beginning of Section III above are met.

Leveraging Other Resources

The primary participants in this project are the Cherokee Nation and the lab contracted to analyze the project samples. Secondary participants may include a Cherokee Nation health clinic and a Cherokee Nation epidemiologist. These secondary participants may assist with data interpretation, evaluating data from a human health perspective. The secondary participants may also assist with the hosting of a public meeting, helping Cherokee Nation Clean Air Program staff with the presentation and interpretation of project results to the residents of Cherokee Heights. The Oklahoma Climatological Survey will provide the Cherokee Nation with wind rose diagrams for project sample dates. Cherokee Nation will also work closely with EPA Region 6 Air Quality & Analysis section for project support and guidance.

Quality Assurance Narrative Statement

The Cherokee Nation Environmental Programs currently operate under an approved Quality Management Plan (QMP) which will be modified to include this award. The Clean Air program currently operates under six approved Quality Assurance Project Plans. These include the ITEC Criteria Pollutant Monitoring program, PM2.5-10, IMPROVE, CASTNet, Mercury Deposition Network (MDN), CENRAP RPO Midwest Ammonia Study, and other short term special projects. The Cherokee Nation's QA policy and procedures have been recognized by EPA Region 6 through numerous Management System Reviews (MSR's) and grant close-out audits. Cherokee Nation-ITEC was the recipient of the 1997 Regional Administrators Award for Environmental Excellence. Cherokee Nation was presented a certificate of recognition in October of 2000 by EPA Regional Administrator Greg Cooke for "*exemplary efforts in the field of air monitoring by implementing one of the Nation's leading tribal air quality monitoring programs*".

V. BIOGRAPHIES/QUALIFICATIONS OF CHEROKEE NATION STAFF

Ryan Callison, Environmental Specialist III

Ryan has an Associates Degree in Biology from Connors State College, Bachelors Degree in Environmental Management and Masters Degree in Industrial Management from Northeastern State University. He is a Certified Hazardous Materials Manager (CHMM), Registered Sanitarian (RS), and Registered Professional Environmental Specialist (RPES). Ryan began working with the Cherokee Nation Clean Air Program as an Environmental Analyst in December 1996. Ryan is the manager of the Cherokee Nation and ITEC Clean Air Programs. This program manages one of the largest tribal air monitoring networks in the United States. EPA Clean Air grants have assisted the Cherokee Nation and other Indian tribes in EPA R6 with air monitoring on tribal land. Clean Air projects include ambient air monitoring for the criteria pollutants, PM2.5-10, Mercury Deposition Network, IMPROVE, CASTNet, air toxics, and special purpose monitoring. Ryan currently serves on the Executive Committee of the National Tribal Air Association (NTAA) and the Tribal Air Monitoring Support Center (TAMS) Steering Committee at NAU/ITEP. Ryan is a Cherokee Nation tribal member.

Jack Butler, Environmental Specialist II

Jack holds a Bachelor of Science Degree in Industrial Technology with emphases in Environmental Management, and is registered with the State of Oklahoma as a Registered Sanitarian / Registered Environmental Specialist. Jack's employment with the Cherokee Nation began in November 1996, as an Environmental Analyst. Since then, he has performed as the Technical Project Officer for Cherokee Nation Clean Air Projects. His technological training includes courses from the following manufacturers: Teledyne Monitor Labs, Advanced Pollution Instrumentation (API), American EcoTech, and Rupprecht & Patashnick Co Incorporated. As Technical Project Officer, he has successfully installed, operated, maintained, and repaired equipment for seven criteria pollutant monitoring stations and ten particulate PM10 & PM 2.5 monitoring sites. Jack is primarily responsible for the integration, installation, and operations of the Cherokee Nation air toxic sampling equipment.

Sohail Khan, Epidemiologist

Mr. Khan has worked as Tribal Epidemiologist for Cherokee Nation Health services since November, 1994. He has a medical degree from University of Karachi and a Master of Public Health degree from University of Oklahoma Health Sciences Center April 1987. Mr. Khan has received trainings in Infection control, Human Subject Protection, Principal of Oncology for Cancer Registry professionals, Cancer Registry management, privacy (HIPAA) Training, Forensic Epidemiology, and EPI INFO and Training in Post awards grants administration. Mr. Khan has served as Principal investigator on National Library of Medicine Native American Health Information project, Cherokee Nation Cancer Registry, Cherokee Nation Lead screening project, funded by EPA, and as Co-Investigator on the "School based intervention for reducing risk of type-2 Diabetes among Oklahoma Indian Children" Project, funded by NIH-NIGMS. He also serves as the Co-Chair of Cherokee Nation IRB.

Kent Curtis, Environmental Specialist II

Kent Curtis is a Certified Hazardous Materials Manager (CHMM) and is a member of the National Ground Water Association. He has a Bachelor of Science degree in Environmental Biology and Geology from the University of Tulsa, and a Master of Arts degree in Paleontology from the University of California at Berkeley. Kent worked with the ITEC Superfund program from 1991 to 2005 and was manager of the Superfund program from 1996 to 2002. He began working with the OES/ITEC air quality monitoring projects in 2004. He is responsible for Quality Assurance and Quality Control (QA/QC) of the air quality monitoring projects and of the ITEC Superfund and Brownfields programs. He is also responsible for health and safety aspects of those projects and programs. He developed the ITEC Superfund Quality Assurance Project Plan (QAPP) and the ITEC Superfund General Health and Safety Plan (GHSP), and he is responsible for health, safety, and technical training of the OES staff. He is also providing such training to environmental staffs of the ITEC tribes. He was involved in the planning and implementation of two Remedial Investigation/Feasibility Study (RI/FS) projects on lands of the Quapaw Tribe and supervised extensive soil sample collection and sample data analysis for one of those projects. He is currently responsible for analyzing data from the VOC/air toxics screening project that was completed at the Pryor site during the winter of 2005.

April Hathcoat, Environmental Specialist I

April holds a Bachelor of Science degree in Biology from Northeastern State University. She joined Cherokee Nation Environmental Programs in February 2004 and works in the Clean Air Program. She previously worked at Wiltel Communications as a technical analyst responsible for capacity management of their network. Her current duties include quality control and quality assurance of all air monitoring data, and she is responsible for uploading data into the EPA's Air Quality System (AQS). She is also developing a system to code air toxics data for AQS upload. She is a member of the Oklahoma Society of Environmental Professionals and is licensed with the State of Oklahoma as a Registered Sanitarian and a Registered Environmental Specialist.

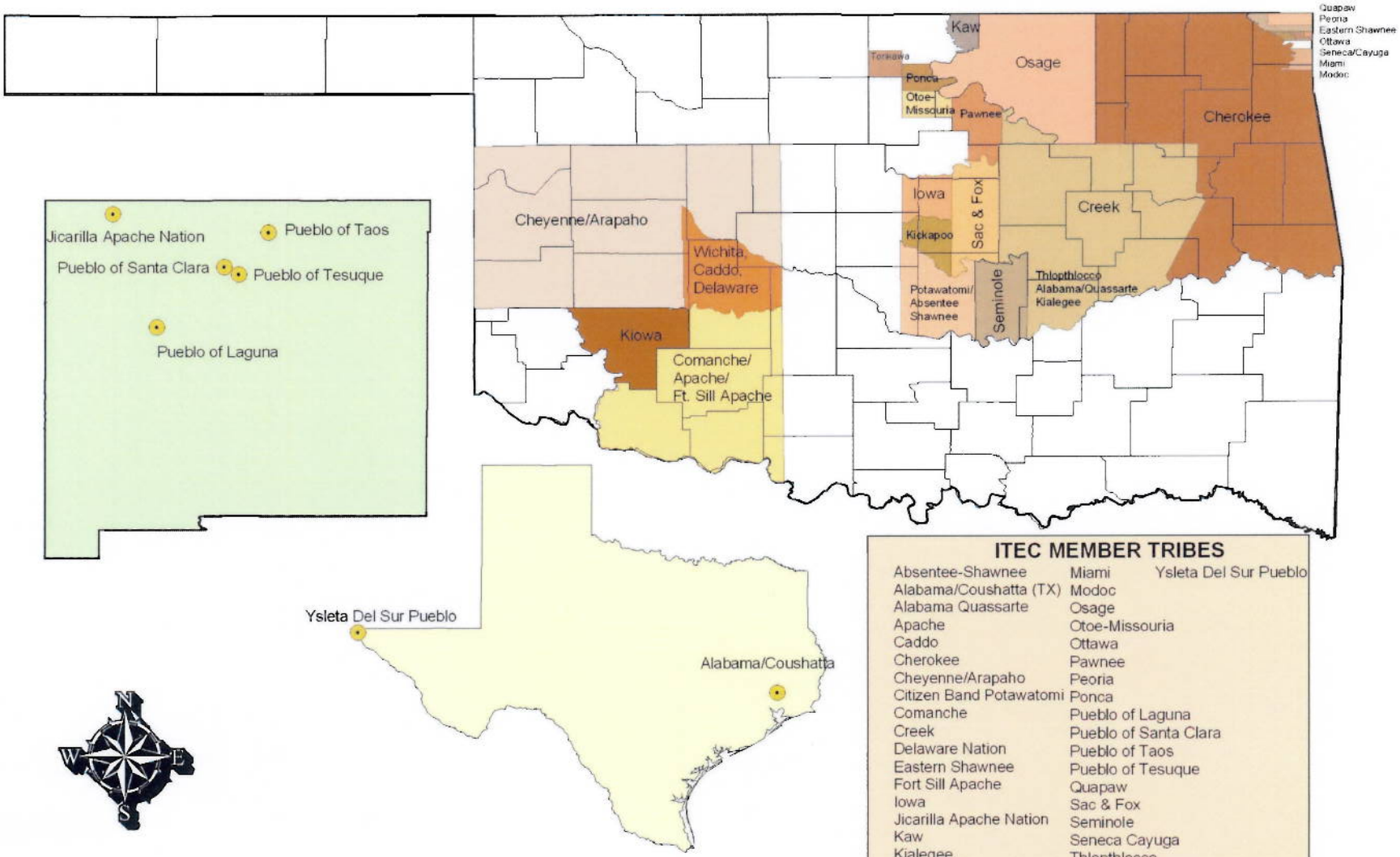
Valorie A. Strange, Environmental Specialist I

Valorie graduated from Northeastern State University with a Bachelor of Arts degree in Geography/Minor in Geology. She has worked for Tulsa Life Flight as a medic and Communications Specialist where she was in charge of QA for flight safety utilizing flight following, radar and meteorological data for flight safety and determination for flight safety on a continuous basis for crew and patients. In 2002 she worked as producer for the weather center in Tulsa for KOTV Channel 6 which included gathering data, weather analysis, utilizing ArcGIS and radar for forecasting. Valorie worked as a Technical Writer for Coburn Optical, writing engineering and plant processes and procedures for optical equipment. As a certified ISO 9000 Auditor at Gerber Scientific/Coburn Optical, her auditing included all plant processes and procedures, compliance/non-compliance reporting, electrostatic monitoring, troubleshooting electronics and equipment and Alpha/Beta testing. Before coming to Cherokee Nation she taught Geography at Northeastern State University and Algebra at Bacone University. Other certifications that Valorie holds are, Paramedic, Swift Water Rescue Technician and Hazmat D. Valorie began working in the Cherokee Nation Clean Air Program in July, 2005.

Jacque Adam, Environmental Technician

Jacque is pursuing a Bachelor of Science degree in Environmental Management from Northeastern State University and should obtain her degree in August 2005. She joined the Cherokee Nation Clean Air Program in June, 2005. Jacque is involved with the sampling of particulate matter, mercury deposition, and ammonia. Jacque is the primary site operations coordinator for passive ozone monitoring (POM) sampling. Her additional work duties include the quality control aspects of the collection, handling, and shipping of air samples.

INTER-TRIBAL ENVIRONMENTAL COUNCIL (ITEC)
39 MEMBER TRIBES



ITEC MEMBER TRIBES

Absentee-Shawnee	Miami	Ysleta Del Sur Pueblo
Alabama/Coushatta (TX)	Modoc	
Alabama Quassarte	Osage	
Apache	Otoe-Missouria	
Caddo	Ottawa	
Cherokee	Pawnee	
Cheyenne/Arapaho	Peoria	
Citizen Band Potawatomi	Ponca	
Comanche	Pueblo of Laguna	
Creek	Pueblo of Santa Clara	
Delaware Nation	Pueblo of Taos	
Eastern Shawnee	Pueblo of Tesuque	
Fort Sill Apache	Quapaw	
Iowa	Sac & Fox	
Jicarilla Apache Nation	Seminole	
Kaw	Seneca Cayuga	
Kialegee	Thlopthlocco	
Kickapoo	Tonkawa	
Kiowa	Wichita & Affiliated Tribes	

FIGURE 1

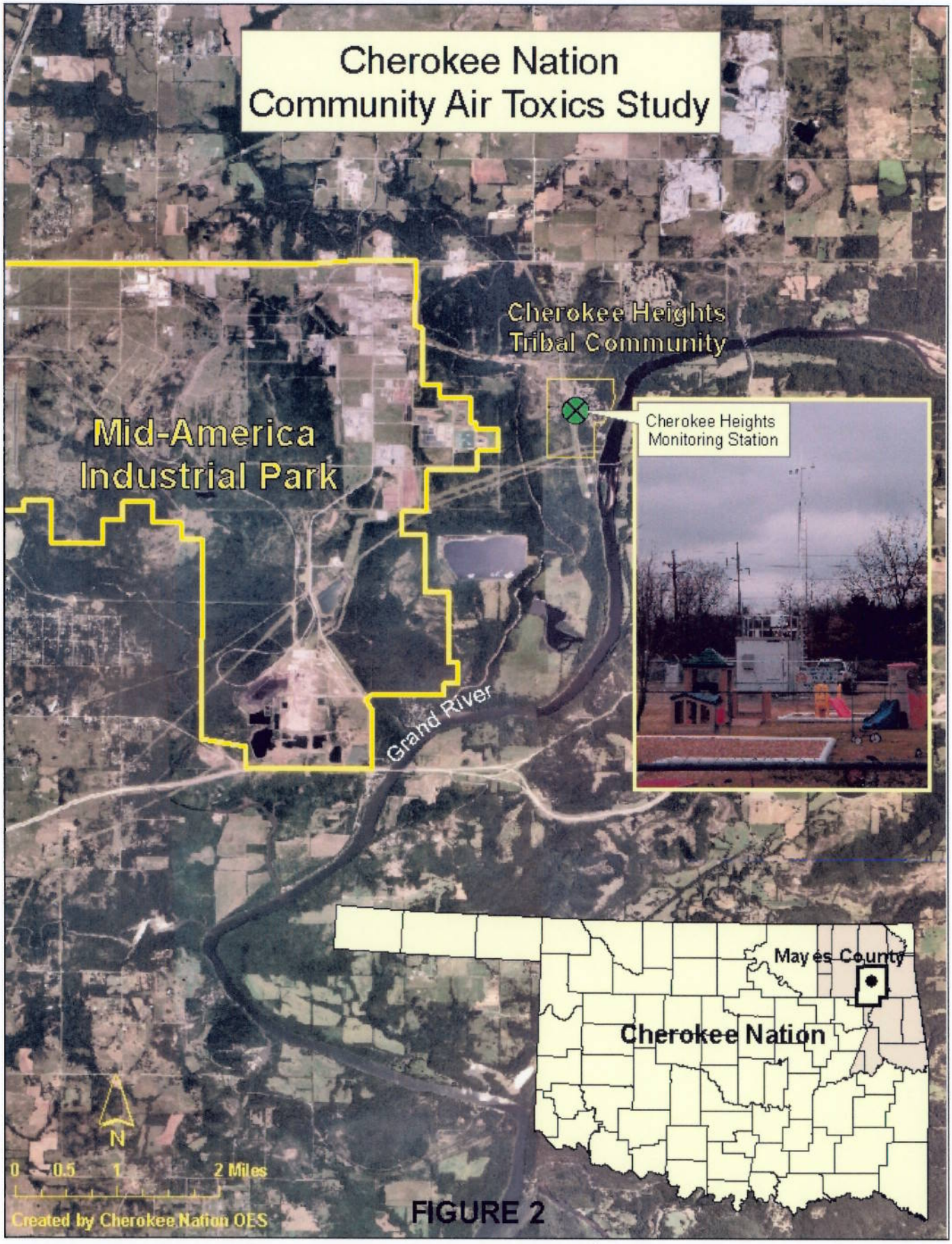

Cherokee Nation
Community Air Toxics Study
Cherokee Heights
Tribal Community
Cherokee Heights
Monitoring Station
Mid-America
Industrial Park
Grand River
Mayes County
Cherokee Nation
N
0 0.5 1 2 Miles
Created by Cherokee Nation OES

FIGURE 2

Cherokee Nation Community Air Toxics Monitoring Budget
Project Period 10/1/05-9/30/07

OES PERSONNEL:							**$31,769**
Regional Program Director:				$26.83	at	80	hours
Regional Program Manager:				$23.82	at	80	hours
Environmental Specialist III:				$22.98	at	300	hours
Environmental Specialist II:				$19.71	at	200	hours
Environmental Specialist II:				$25.33	at	300	hours
Environmental Specialist I:				$13.77	at	200	hours
Environmental Technician:				$10.53	at	200	hours
Budget Analyst II:				$14.52	at	200	hours
Administrative Assistant:				$13.80	at	110	hours
FRINGE: @ 34.87%							**$11,078**
TRAVEL:							**$9,011**
Per Diem - hotel & per diem		$132.00	per day				
EPA National Air Quality Meeting	2	staff x	1	trip(s) x	3	day(s)	$792
EPA Air Quality System (AQS) Conference	2	staff x	1	trip(s) x	5	day(s)	$1,320
EPA R6 visits (Includes Monitoring Strategy Mtg)	3	staff x	3	trip(s) x	1	day(s)	$1,188
Technical training(s) (EPA, ITEP, APTI, etc)	1	staff x	1	trip(s) x	3	day(s)	$396
Commercial Air Travel :		$345.00	per flight				
EPA R6 visits (Includes Monitoring Strategy Mtg)	3	staff x	3	trip(s)			$3,105
EPA National Air Quality Meeting	2	staff x	1	trip(s)			$690
Technical training(s) (ITEP, APTI, etc)	1	staff x	1	trip(s)			$345
EPA Air Quality System (AQS) Conference	2	staff x	1	trip(s)			$690
Oklahoma Turnpike Pass fees (Toll Roads)							$200
Misc. Taxi Cab Fares	$20.00	cab fare x	3	trip(s)			$60
Rental car	$75.00	rental fee x	3	trip(s)			$225
EQUIPMENT:							**$6,995**
(Equipment over $5K not subject to IDC)							
Environmental Systems Model 910A* AVOCS Toxics Sampler *Meets NATTS requirements							$6,995
CONTRACTUAL:							**$77,000**
(Contractual not subject to IDC)							
Volatile Organic Compound (VOC) Toxic Analysis (EPA TO-15)	200	samples @	$385				$77,000

Sampling schedule follows EPA's National 1 in 6 day sampling schedule
(5 samples per month X 18 months X 2 units) + 20 Field Blanks

SUPPLIES:					**$3,400**
Office supplies, PPE, printer cartridges, paper, copies, etc.				$1,500	
Laboratory Instrumentation Rack				$900	
Stainless tubing, fittings, and supplies				$1,000	
OTHER:					**$13,600**
Shelter (site utilities) $50 per month x 1 shelters x 18 months	1 shelters @	50	per month	$900	
Shelter, Instrument, & Operational Insurance				$1,000	
Shelter heat & air maintenance & repair				$200	
Office & cellular telephones				$500	
Office copy machine				$300	
Office shipping (instruments & summa canisters)				$4,500	
Office computers, business software, & printers				$4,400	
Community Outreach - Clean Air & Air Toxics Promotional & Awareness Materials				$1,800	

PERSONNEL:	$	31,769
FRINGE:	$	11,078
TRAVEL:	$	9,011
EQUIPMENT: (NO IDC)	$	6,995
CONTRACTUAL: (NO IDC)	$	77,000
SUPPLIES:	$	3,400
OTHER:	$	13,600
CATEGORY TOTALS SUBJECT TO IDC	$	68,858
DIRECT FEDERAL (NOT SUBJECT TO IDC ITEMS)	$	83,995
DIRECT FEDERAL	$	152,853
INDIRECT = DIRECT X IDC RATE		$12,147
IDC Rate = **17.64%**		
APPLICANT: NO MATCH		$0.00
AWARD TOTAL:		**$165,000**

United States Department of the Interior

National Business Center

Indirect Cost Services
2180 Harvard Street, Suite 430
Sacramento, CA 95815

U.S. Department of the Interior
NBC
National Business Center

March 10, 2005

Ms. Sharon Swepston, Acting Controller
Cherokee Nation
P.O. Box 948
Tahlequah, Oklahoma 74465-0948

Dear Ms. Swepston:

Enclosed is an original copy of the Indirect Cost Negotiation Agreement for the 12-month period ending September 30, 2005, between the Federal Government and the Cherokee Nation.

If you have any questions regarding this agreement, please write or call Ms. Maria Nua, Program Analyst, at (916) 566-7111.

Sincerely,

Elena Chow

for Inge Montich
Indirect Cost Coordinator

Enclosure

cc: Self-Determination Specialist, Eastern Oklahoma Regional Office, BIA
Director of External Audits, Office of Inspector General, Department of Interior

Ref: J:Eastern Oklahoma/CHERc102/Issue.ltr

OFFICE OF THE CONTROLLER
MAR 14 2005
RECEIVED BY

Indian Organizations
Indirect Cost Negotiation Agreement

EIN: 73-0757033

Organization:

Cherokee Nation
P.O. Box 948
Tahlequah, Oklahoma 74465-0948

Date: March 10, 2005

Report No(S).: 05-A-348

Filing Ref.:
Last Negotiation Agreement
dated February 20, 2004

The indirect cost rate contained herein is for use on grants and contracts with the Federal Government to which Public Law 93-638 and Office of Management and Budget Circular A-87 apply, subject to the limitations contained in 25 CFR, Part 900, and in Section II.A. of this agreement. The rate was negotiated by the U.S. Department of the Interior, National Business Center, and the subject organization in accordance with the authority contained in the Circular.

Section I: Rate

Type	Effective Period From	Effective Period To	Rate*	Locations	Applicable To
Fixed Carryforward	10/01/04	09/30/05	17.64%	All	All Programs

*Base: Total direct costs, less capital expenditures and passthrough funds. Passthrough funds are normally defined as major subcontracts, payments to participants, stipends to eligible recipients, and subgrants, all of which normally require minimal administrative effort.

Treatment of fringe benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs; fringe benefits applicable to indirect salaries and wages are treated as indirect costs.

Section II: General

A. **Limitations:** Use of the rate contained in this agreement is subject to any applicable statutory limitations. Acceptance of the rate agreed to herein is predicated upon these conditions: (1) no costs other than those incurred by the subject organization were included in its indirect cost rate proposal, (2) all such costs are the legal obligations of the grantee/contractor, (3) similar types of costs have been accorded consistent treatment, and (4) the same costs that have been treated as indirect costs have not been claimed as direct costs (for example, supplies can be charged directly to a program or activity as long as these costs are not part of the supply costs included in the indirect cost pool for central administration).

B. **Audit:** All costs (direct and indirect, federal and non-federal) are subject to audit. Adjustments to amounts resulting from audit of the cost allocation plan or indirect cost rate proposal upon which the negotiation of this agreement was based will be compensated for in a subsequent negotiation agreement.

C. **Changes:** The rate contained in this agreement is based on the organizational structure and the accounting system in effect at the time the proposal was submitted. Changes in organizational structure, or changes in the method of

accounting for costs that affect the amount of reimbursement resulting from use of the rate in this agreement, require the prior approval of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowance.

D. **Provisional/Final Rates:** Within 6 months after yearend, a final rate must be submitted based on actual costs. Billings and charges to contracts and grants must be adjusted if the final rate varies from the provisional rate. If the final rate is greater than the provisional rate and there are no funds available to cover the additional indirect costs, the organization may not recover all indirect costs. Conversely, if the final rate is less than the provisional rate, the organization will be required to pay back the difference to the funding agency.

E. **Fixed Carryforward Rate:** The fixed carryforward rate is based on an estimate of costs that will be incurred during the period for which the rate applies. When the actual costs for such period have been determined, an adjustment will be made to the rate for a future period, if necessary, to compensate for the difference between the costs used to establish the fixed rate and the actual costs.

F. **Agency Notification:** Copies of this document may be provided to other federal offices as a means of notifying them of the agreement contained herein.

G. **Record Keeping:** Organizations must maintain accounting records that demonstrate that each type of cost has been treated consistently either as a direct cost or an indirect cost. Records pertaining to the costs of program administration, such as salaries, travel, and related costs, should be kept on an annual basis.

H. **Reimbursement Ceilings:** Grantee/contractor program agreements providing for ceilings on indirect cost rates or reimbursement amounts are subject to the ceilings stipulated in the contract or grant agreements. If the ceiling rate is higher than the negotiated rate in Section I of this agreement, the negotiated rate will be used to determine the maximum allowable indirect cost.

I. **Use of Other Rates:** If any federal programs are reimbursing indirect costs to this grantee/contractor by a measure other than the approved rate in this agreement, the grantee/contractor should credit such costs to the affected programs, and the approved rate should be used to identify the maximum amount of indirect cost allocable to these programs.

J. **Central Service Costs:** Where central service costs are estimated for the calculation of indirect cost rates, adjustments will be made to reflect the difference between provisional and final amounts.

K. **Other:**

1. The purpose of an indirect cost rate is to facilitate the allocation and billing of indirect costs. Approval of the indirect cost rate does not mean that an organization can recover more than the actual costs of a particular program or activity.

2. Programs received or initiated by the organization subsequent to the negotiation of this agreement are subject to the approved indirect cost rate if the programs receive administrative support from the indirect cost pool. It should be noted that this could result in an adjustment to a future rate.

3. New indirect cost proposals are necessary to obtain approved indirect cost rates for future fiscal or calendar years. The proposals are due in our office

6 months prior to the beginning of the year to which the proposed rates will apply.

Section III: Acceptance

Listed below are the signatures of acceptance for this agreement:

By the Indian Organization:

Sharon Swepston /s/

Sharon Swepston
Name

Acting Controller
Title

3/8/05
Date

By the Cognizant Federal Government Agency:

Elena Chan /s/

for Inge Montich
Name

Indirect Cost Coordinator
Indirect Cost Services
Title

U.S. Department of the Interior
National Business Center
Agency

Date March 10, 2005

Negotiated by Steve Dallosta
Telephone (916) 566-7111