IPAMS
Independent Petroleum Association of Mountain States

410 Seventeenth Street ◆ Suite 700 ◆ Denver, Colorado 80202 ◆ 303/623-0987 ◆ FAX: 303/893-0709 ◆ www.ipams.org

February 12, 2010

North Dakota Industrial Commission
ATTN: Oil and Gas Research Program
State Capitol – Fourteenth Floor
600 East Boulevard
Bismarck, North Dakota 58505

Re: IPAMS Grant Application Transmittal Letter

Dear Sir or Madam:

The Independent Petroleum Association of Mountain States (IPAMS) represents over 400 member companies engaged in environmentally responsible exploration and production of natural gas and oil in North Dakota and across the Intermountain West. IPAMS has teamed with the Western Regional Air Partnership (WRAP) of the Western Governors' Association, to develop a comprehensive air emissions inventory for the oil and gas industry in order to help industry continue to make improvements to air quality. The result will be credible, scientific data on emissions from the major producing basins across the region.

IPAMS is seeking a grant from the Oil and Gas Research Council for a portion of the cost of developing the inventory and mid-term projections for the Williston Basin in North Dakota. IPAMS would use the grant to leverage additional funds from companies in order to secure the full remaining cost of the project. IPAMS commits to completing the project as described in our attached grant application, contingent upon receiving the matching funding from companies. If we are unsuccessful in our efforts to raise the remaining 74% of matching funds for the project, we would decline the OGRC funding. However, we are confident that we will be able to leverage the grant to secure the matching funds from industry.

Thank you for considering our grant application. Please contact IPAMS Director of Government Affairs, Kathleen Sgamma, (303) 623-0987 or ksgamma@ipams.org, with any questions or requests for clarification.

Sincerely,

Marc W. Smith
Executive Director

Oil and Gas Research Program

North Dakota

Industrial Commission

Application

Project Title: WRAP Phase III Oil and Gas Air Emissions Inventory for the Williston Basin

Applicant: Independent Petroleum Association of Mountain States (IPAMS)

Principal Investigators: IPAMS, Western Regional Air Partnership, and ENVIRON Corporation

Date of Application: February 12, 2010

Amount of Request: $25,000

Total Amount of Proposed Project: $95,000

Duration of Project: Seven months

Point of Contact (POC): Kathleen Sgamma

POC Telephone: (303) 623-0987

POC E-Mail Address:ksgamma@ipams.org

POC Address: 410 17th St., Suite 700, Denver, CO 80202

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ABSTRACT

Objective: The Western Regional Air Partnership (WRAP) and the Independent Petroleum Association of Mountain States (IPAMS) are conducting a Phase III regional oil and gas emission (O&G) inventory for the Intermountain West, including the Williston Basin in North Dakota. The objective of the project is to provide credible, scientific data on emissions from comprehensive sources associated with the exploration and production of oil and natural gas. The data enable regulators and industry to identify sources of air emissions in order to determine high-value, efficient means to reduce those emissions and develop better environmental practices particular to the basin.

Expected Results: The results will be an accurate, comprehensive criteria pollutant emissions inventory for all sources associated with the exploration and production of oil and gas as well as future projection years. The initial baseline is a 2006 inventory, with emissions projected to year 2012. The scientific data generated from the project will provide the most detailed inventory of all sources of emissions from the upstream oil and gas industry available. The data will enable industry to identify particular equipment from which emissions can be most efficiently and effectively reduced, and provide regulators with detailed data they would not otherwise have without industry's voluntarily provided data.

Duration: Seven months for the 2006 baseline inventory and 2012 projections. Project results will be further enhanced in later phases of the overall project, with triennial updates and 2018 projections completed after all other basins across the West are completed. The phase of the project included in this grant application is just the baseline and 2012 projections for the Williston Basin in North Dakota.

Total Project Cost: $95,000

Participants: IPAMS; WRAP, an initiative of the Western Governors' Association; the WRAP oil and gas working group consisting of state regulators, including the North Dakota Department of Health; producers, including ConocoPhillips, EOG Resources, Hess Petroleum, Marathon Oil, St. Mary Land & Exploration, and Whiting Petroleum; Environ Corp., the primary contractor; and Buys & Associates, the Quality Assurance contractor.

PROJECT DESCRIPTION

Objectives:

The WRAP Phase III regional oil and gas emission (O&G) inventory will build on the WRAP Phase I and Phase II inventory projects conducted in prior years by including greater representation of industry data and more comprehensive source categories. The phase of the project that is the subject of this grant application is the baseline inventory and 2012 emissions projections for the Williston Basin. The result will be an accurate, comprehensive criteria pollutant (SOx, NOx, Carbon Monoxide, Volatile Organic Compounds, and Particulate Matter) emissions inventory for all sources associated with the exploration and production of oil and gas in the basin as well as future projection years. The project involves comprehensive categories of emissions sources, including tanks, dehys, vapor recovery unit engines, gas plants, rigs, and many others.

The project will provide accurate, scientific data that would otherwise not be available and will enable industry to identify environmental practices that will reduce air emissions in North Dakota. Industry has voluntarily sponsored and provided data for the inventory. Regulators, constrained by limited budgets, benefit from much better data as input into their regulatory decisions. Industry benefits from accurate data that takes into account declining production, rather than just speculation and potential to emit calculations which often assume the worst. Both industry and regulators are better able to determine how to provide meaningful reductions in air emissions in a more efficient, economical manner.

Methodology: The WRAP Phase III project methodology is a bottom-up survey of detailed emissions source data from producers along with verified state permit data. The contractor, Environ, will work with the North Dakota Department of Public Health to obtain air permit data for oil and gas point sources, and verify the data with producers for the 2006 base year. This verification is necessary because often permits are obtained but the facility is not built, or a permit is obtained for higher emissions levels than actually measured at the facility. This verification ensures that the data more accurately reflect actual development.

Producers voluntarily provide detailed area source data via surveys that are much more detailed than the state permitting data. More sources of emissions are included than permitted, and are reported even in the absence of a regulatory requirement. Therefore, WRAP Phase III is much more comprehensive, making the data much more valuable than just the permitting data alone. IPAMS has already distributed surveys to Williston Basin producers, and Environ has collected survey data from five

producers representing over 40% of the production in the basin. The goal is to receive a sample size representing at least 50% of production in order to enable scaling of emissions to the full basin. Since the basin extends into Montana, there will also be data collected for Montana counties in the basin, but that portion of the cost is not included in this grant application.

The contractor compiles the verified permitted point source data and the producer-provided detailed survey data to produce a complete inventory of criteria pollutants covering all oil and gas activities in the basin. EPA standard emissions calculation methods are used to develop the inventory from the raw producer and permit data. A detailed statement of work containing all emissions calculations and scaling factors can be provided to the grant review committee upon request. The calculations and emissions factors are based on EPA guidance.

The contractors then prepare the mid-year projections by making mathematical projections of the emissions data based on history and four factors – spuds, oil production, gas production, and total well count. These projections are refined based on producer input on future year plans, infrastructure constraints, and other basin-specific factors.

Work products and deliverables will reside at http://wrapair.org/forums/ogwg/PhaseIII_Inventory.html, and consist of a technical memo for each basin, detailed inventory data, 2012 projections, and a summary presentation. Deliverables from completed basins are available on the web page.

Anticipated Results: Prior to WRAP initiating the regional air inventory efforts, there were essentially no emissions estimates for oil and gas area sources in several western states. Phases I and II provided some good initial estimates, but Phase III increases the breadth and accuracy, as many more source categories and a much broader sample of industry data are included. The results will be an accurate, comprehensive criteria pollutant emissions inventory for multiple categories of emissions sources associated with the exploration and production of oil and gas as well as future projection years. The data will enable industry to identify particular equipment from which emissions can be most efficiently and effectively reduced.

These projections will to be used for emissions analysis and haze/criteria pollutant air quality modeling purposes by WRAP, state, tribal, and federal agencies, and other interested parties. The North Dakota Department of Public Health has already informed IPAMS that the data will be very useful in regional haze planning, and determining compliance with the Clean Air Act. The WRAP Phase III project will also

include a mechanism for triennial updates, starting with 2009. This will enable the data to remain current and relevant, and a regular source of scientific data for state modeling and regulatory efforts.

The data from this project will be used in future stages of the overall regional project. After the Williston basin, and the Powder River and Green River basins in Wyoming are complete, a triennial update will be done for the entire Intermountain West region, including North Dakota. That updated data will be used for 2018 projections, which are particularly useful for state regulators performing modeling and long-term air planning, such as regional haze.

The project work includes projecting the 2006 baseline emissions to future year 2012. This project provides a basis for latter phases of the WRAP Phase III project, not covered in this grant application, which will involve projecting emissions for the Williston and all other major basins across the Intermountain West to year 2018.

Deliverables include:

- Basin, tribal and county level baseline air emissions inventory data for baseline year 2006
- Updated permitted point source data
- Mid-year (2012) emissions projections

Once the WRAP Phase III data are delivered, they are readily available to regulators and become the standard emissions data, as they are much more comprehensive and accurate than any other available data. Regulators in Colorado, New Mexico and Utah have already begun to use the data for State Implementation Plans (SIP), air modeling studies, and other regulatory efforts. We anticipate that the North Dakota Department of Public Health will likewise use the Phase III data to ensure compliance with the Clean Air Act, regional haze planning, and other mandates.

Facilities: No special facilities are necessary. All work is done in the contractors' and responding producers' offices.

Resources: All project resources will cover contractor time and materials costs to develop the inventory and projections. In addition, detailed data from IHS on number of wells and production are used to determine scaling of the collected sample data to the entire basin and for developing 2012 projections. These data have already been purchased from IHS and are not included in the project cost. Producers provide in-kind resources by responding to the surveys, which take about two person-weeks of time for each company, for a total cost of about $56,000.

Techniques to Be Used, Their Availability and Capability: EPA standard emissions calculation methods are used to develop the inventory. The contractor has extensive experience compiling air emissions inventories for the oil and gas and other industries, and combines the detailed company emissions data along with state air permit data to develop the baseline 2006 emissions inventory. A detailed statement of work containing all emissions calculations and scaling factors can be provided to the grant review committee upon request. The calculations and emissions factors are based on EPA guidance.

Environmental and Economic Impacts while Project is Underway: There are no environmental impacts from the project, as all work is performed in contractors' and producers' offices. There are no immediate economic impacts, as the project does not delay ongoing oil and gas work.

Ultimate Technological and Economic Impacts: The ultimate impact is credible scientific data that can be used by companies to effectively and in a cost-efficient manner reduce air emissions and improve environmental practices, and by the state to ensure compliance with Clean Air Act requirements and perform air quality planning and modeling. Long-term economic impacts are indirect but important, as the data help assure the public and regulators that industrial economic development can continue while maintaining air quality in North Dakota.

Why the Project is Needed: The project is needed to better understand the sources of emissions from the oil and gas industry in order to determine the best ways to ensure that North Dakota remains in attainment for all Clean Air Act National Ambient Air Quality Standards (NAAQS).

Recent concerns about ozone in the basin illustrate the utility of the project. Crude oil from the Bakken formation in North Dakota is rich in associated natural gas, which is the gas that comes out of solution as the crude moves up the well bore to the surface and is depressurized. Most operators in North Dakota have several crude oil storage tanks on each well location. As the oil is entering the onsite storage tanks, the associated gas is emitted into the tanks. These flash emissions are usually volatile organic compounds (VOC), which are precursors to ozone. WRAP Phase III will help to quantify VOC emissions from twenty-three categories of sources, and to determine the effectiveness of air emission control technologies to capture the associated gas such as vapor recovery units (VRU) or thermal destabilizers. By providing the baseline emissions, mid-term projections, and in the future triennial updates and 2018 projections, WRAP Phase III will enable tracking of VOCs in order to help the North Dakota Department of Public Health maintain attainment for ozone.

STANDARDS OF SUCCESS

WRAP and IPAMS will continue to use the same process and standards of success used for the five basins that have been completed in three other states: development of a 2006 baseline emissions inventory that represents at least 50% of production in the basin; and mid-term projections based from historical data, four projections factors, and basin-specific characteristics. The results will be presented to the WRAP oil and gas working group that includes EPA, other federal air quality experts, state air regulators, including the North Dakota Dept. of Public Health, industry, and environmental groups. The working group is somewhat akin to a 'peer review' as the group ensures the data conform to WRAP standards for quality air emissions data, and provide input and comment to the process to ensure the deliverables (as described above) conform to project standards. IPAMS will report to the OGRC on the project milestones described above, and will inform the Council when full funding is secured, and when the project is initiated.

The value to North Dakota is accurate scientific data that help state air regulators understand emissions from the oil and gas industry and assist them in ensuring North Dakota continues to remain in attainment for criteria pollutant standards of the Clean Air Act. The benefit extends to North Dakota oil and gas producers, who can use the information to identify cost-effective ways to reduce air emissions.

Concerns about ozone and other air pollutants have the potential to raise questions about the benefit of oil and gas production within the larger community. If the public believes that the industry threatens their environment and quality of life, elements of society may become actively opposed to the development, despite the positive economic impacts and jobs created. By providing detailed data on emissions from industry in an open manner, regulators and the public can see how industry is likewise concerned to maintain a minimal impact on the environment and is working to reduce emissions as much as practicable. WRAP Phase III data help producers reduce air emissions, while maintaining good faith with regulators and the public. This good faith effort combined with providing real opportunities for emissions reductions will help maintain support with regulators and the public for continued oil and gas development in North Dakota.

BACKGROUND/QUALIFICIATIONS

IPAMS: IPAMS is a trade association representing 400 companies involved in all aspects of exploration and production of oil and gas in thirteen states in the West. IPAMS has served as project manager for the WRAP Phase III project. IPAMS has brought together companies from across the region to provide emissions data, funding, and expertise. IPAMS has successfully raised over $640,000 for the project and completed inventories and 2012 projections for five basins and the soon-to-be-released Wind River Basin in Wyoming.

Western Regional Air Partnership: WRAP is an initiative of the Western Governors' Association. WRAP has extensive experience bringing together state regulators, tribes, EPA, federal land managers, industry, environmental groups and others from across the West to work on air quality issues. WRAP completed Phase I and II inventories for the oil and gas industry that were/are the standard for information on industry air emissions before Phase III data became/becomes available. WRAP is trusted by state departments of environmental quality and public health across the West, especially for its work on regional haze. WRAP data have been used in State Implementation Plans (SIP) for complying with regional haze and Clean Air Act mandates. WRAP is perceived as a neutral, unbiased partner by the regulatory community in air quality issues.

ENVIRON Corporation (Primary Contractor): ENVIRON has been working on air quality issues for the oil and gas sector for more than five years through a variety of innovative studies examining emissions, air quality, and control strategies. ENVIRON has extensive experience in development of methodologies for estimating emissions. ENVIRON has successfully completed the WRAP Phase III emissions work for five basins, and performed the Phase I and II work for the entire region. ENVIRON is also active in modeling air quality impacts of oil and gas emissions through regional studies such as those in the Uinta Basin and Southwest Wyoming, and specific NEPA project modeling. ENVIRON has contributed to the development of reporting protocols for oil and gas greenhouse gas emissions.

Buys & Associates (IPAMS Quality Assurance Contractor): Buys is an environmental consulting firm consisting of professionals with over 300 years of experience in providing environmental services. Their core services include air quality permitting, modeling & management, regulatory compliance & permitting, emissions inventories and evaluations, emissions control technology, air quality monitoring, and risk assessment.

MANAGEMENT

IPAMS will manage the project with help from Buys & Associates who serves as the technical integrator to ensure that work documents from Environ meet project standards, and quality assures all work products from Environ. Buys also helps increase producer participation in responding to the surveys, and prepares producer input into the mid-term projections. WRAP staff participate in all bi-weekly project meetings to ensure project standards are met, and coordinate bi-monthly 'peer review' calls with the WRAP oil and gas working group of state regulators and others.

Project participants meet bi-weekly to ensure the project stays on schedule, that data are provided according to plan, and issues resolved. IPAMS will provide monthly status reports to the OGRC outlining tasks completed, funding status, and project issues that could affect the plan.

The first evaluation point will be to ensure the survey response data is compiled into a common format, and that it reaches at least 50% of the production in the basin. Current survey responses reflect 43% of production, so we are confident of a good response. From that point, the contractor can begin to apply emissions factors and scaling to provide the emissions profile for the basin.

The next evaluation point is receipt of permitting data from the Dept of Public Health. Upon receiving that information, Environ will parse the data and provide it to individual operators to make any updates. With permitting data, it is not uncommon for companies to obtain permits for wells or other facilities that are not actually built. The data are updated to ensure they are accurate.

After both permitting and producer data are compiled into a draft inventory, the data are quality assured by Buys & Associates and distributed for review by producers. Comments are compiled, changes made, and the baseline inventory finalized.

When the baseline is complete, mathematical projections are made from historic data, and four factors, and are distributed to basin producers for comment and input. Buys & Associates works with producers to arrive at projections based on basin-specific characteristics, economic factors, infrastructure constraints, and other factors that could affect future production. WRAP ensures that the projections approach is consistent with those in other basins across the West.

Once the mid-term projections are finalized, a meeting of the WRAP Oil & Gas Working Group is called, a presentation of the WRAP results is prepared, and the results are presented to state regulators for their input. IPAMS has already met with the North Dakota Department of Public Health to share information on the project methodology, and received positive feedback on the project. The department is eager to receive the final results, which will be useful for their regional haze planning.

TIMETABLE

Based on experience with completing five other basins, we anticipate the total project will take about seven months. We have already completed WRAP Phase III inventories and mid-term projections for five basins – the Denver-Julesburg, Piceance and San Juan basins in Colorado, the Uinta Basin in Utah, and the San Juan Basin in New Mexico. The Wind River Basin in Wyoming is nearly complete as well. Since the first task is to raise the matching funds, we are unable to give a precise starting date until we have the full funding commitment. However the following outlines the time for each major task:

1. Gather remaining survey responses and compile survey data: Project start date plus six weeks
2. Gather permitting data from state regulators and verify data with producers: Project start date plus two months
3. Prepare baseline inventory: Task 1 plus 2 months
4. Quality assure inventory: Task 3 plus 1 month
5. Develop mid-term projections: Task 3 plus 6 weeks
6. Quality assure projections: Task 5 plus 3 weeks
7. Prepare reports and present to WRAP Oil & Gas Working Group: Task 6 plus 2 weeks.

The project team, consisting of IPAMS, WRAP, Environ, Buys & Associates, and producers, meet bi-weekly to ensure the project stays on schedule, and that data are provided according to plan. IPAMS will provide monthly status reports to the OGRC outlining tasks completed, funding status, and project issues that could affect the.

BUDGET

Project Associated Expense	NDIC's Share	Applicant's Share (Cash)	Applicant's Share (In-Kind)	Other Project Sponsor's Share
Primary contractor fees	26% 19,700			74% 55,300
Quality assurance contractor fees	26% $5,300			74% 14,700
IPAMS project management costs	0%		100% $5,000	
Producer data costs	0%	0%	0	$56,000

Please use the space below to justify project associated expenses, and discuss if less funding is available that that requested, whether the project's objectives will be unattainable or delayed.

$70,000 will be raised from producers operating in the Williston basin. The NDIC funds, if granted, would be leveraged to raise the funds. IPAMS anticipates that the $25,000 amount will encourage companies operating in the basin to commit funds to ensure the project is brought to full completion. If a lower amount than requested is granted, the project will still proceed, but may be delayed as there will be more fundraising that needs to be raised. A lower amount also would not have as much of an incentivizing impact. Lack of the grant would also cause the project to cut costs by proceeding with a smaller sample in the basin, which would reduce the quality of the base data.

The cost estimate is based on experience developing the WRAP Phase III data for five other basins. That experience gained over the last two years has helped us to refine the process and methodology and become more efficient. All costs for the project are for contractor fees. The Williston basin project is able to take advantage of IHS data purchased earlier in the overall WRAP Phase III project.

CONFIDENTIAL INFORMATION

Any information in the application that is entitled to confidentiality and which the applicant wants to be kept confidential should, if possible, be placed in an appendix to allow for administrative ease in protecting the information from public disclosure while allowing public access to the rest of the application. Such information must be clearly labeled as confidential and the applicant must explain why the information is entitled to confidentiality as described in North Dakota Century Code 54-17.6. Oil and gas well data that is a result of financial support of the Council shall be governed by North Dakota Century Code 38-08-04(6). ***If there is no confidential information please note that below.***

There is no confidential information.

PATENTS/RIGHTS TO TECHNICAL DATA

Any patents or rights that the applicant wishes to reserve must be identified in the application. ***If this does not apply to your proposal, please note that below.***

No patents or rights are to be reserved.

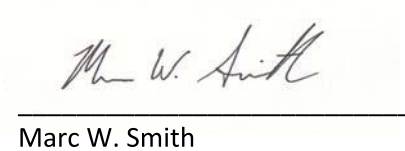
STATUS OF ONGOING PROJECTS (IF ANY)

If the applicant is a recipient of previous funding from the Commission, a statement must be provided regarding the current status of the project.

Not applicable.

Affidavit of Tax Liability

IPAMS does not have any outstanding tax liability owed to the State of North Dakota or any of its political subdivision.



Marc W. Smith
Executive Director

www.wrapair2.org

March 31, 2010

Brent Brannan
Oil and Gas Research Program
North Dakota Industrial Commission, Oil and Gas Division
600 East Boulevard Avenue, Department 405
Bismarck, ND 58505-0840

Dear Mr. Brannan:

The Western Regional Air Partnership (WRAP) is the collaborative, consensus-based entity responsible for technical support and coordination of the planning and implementation to reduce and eventually eliminate anthropogenic haze in the West, as well as the regional transport analysis effort to address the Ozone and PM National Ambient Air Quality Standards (NAAQS), and the emissions, transport and deposition of nitrogen and mercury. There are more than 100 national parks and wilderness areas that are addressed in regional haze planning and tracking analyses. Founded in 1997, WRAP includes a membership of 15 state environmental quality agencies, dozens of sovereign Indian tribes, the U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, and the U.S. Environmental Protection Agency, as well as including significant participation from both the regulated community and environmental groups. The WRAP is the air quality project of the Western Governors' Association.

The WRAP and the Independent Petroleum Association of Mountain States (IPAMS) are conducting a joint Phase III regional oil and gas emission (O&G) inventory for the Intermountain West, including the Williston Basin in North Dakota, building on extensive earlier O&G emissions work by the WRAP. The objective of the project is to provide credible, scientific, and comprehensive data on emissions from sources associated with the exploration and production of oil and natural gas. These data enable regulators and industry to identify sources of air emissions in order to determine high-value, efficient means to reduce those emissions and develop better environmental practices particular to the basin.

The scientific data generated from the project will provide the most detailed inventory of all sources of emissions from the upstream oil and gas industry available. The data will enable industry to identify particular equipment from which emissions can be most efficiently and effectively reduced, and provide regulators with detailed data they would not otherwise have without industry's voluntarily provided data. WRAP supports this project through our oil and gas working group consisting of state regulators, including the North Dakota Department of Health; producers, including ConocoPhillips, EOG Resources, Hess Petroleum, Marathon Oil, St. Mary Land & Exploration, and Whiting Petroleum; federal agency members, as well as other producer firms and environmental organizations from across the region.

I would like to express my support for the grant proposal submitted by IPAMS to the Oil and Gas Research Division of the North Dakota Industrial Commission, and encourage your funding support to complete this essential work for the Williston Basin. The 2006 baseline inventory and 2012 emissions projections will provide complete and thorough work products for the State of North Dakota to use for both resource and environmental management purposes.

Please contact me with any questions, at 970.491.8837 or mooret@cira.colostate.edu.

Sincerely,

Tom Moore
Air Quality Program Manager, Western Governors' Association
Coordinator, Western Regional Air Partnership