**2018-2019 WRAP Workplan**

**Oil and Gas Work Group Status Report**

**Final - February 20, 2018**

***Mid-Course Workplan Review & Update – DRAFT January 22, 2019 DRAFT***

***[DRAFT Development NOTE: The 2018-2019 WRAP Workplan called for a mid-course review. The updates contained herein are minor in nature and were identified during the OGWG mid-course review. The OGWG will seek approval by consensus of the Mid-Course Workplan Review & Update.]***

The Oil and Gas Work Group will focus on analysis and planning activities related to improve activity data to support emissions inventories for oil and gas emissions, and begin scoping work to assess the present and range of future year scope of emissions management programs by the variety of regulatory jurisdictions within the WESTAR-WRAP region, by agency. The OGWG will coordinate among state, tribal, local, and federal member agencies’ Oil & Gas programs, including review of modeling, monitoring, and control program assessment studies for Oil & Gas emissions. Several of these activities involve close coordination with other WRAP Work Groups as described in the OGWG Workplan.

The WRAP Workplan set up topical Work Groups including the Oil and Gas Work Group to *“promote understanding of the role of oil and gas in regional and local air quality plans.”* The WRAP Workplan also identified the following with respect to the topic of oil and gas.

*“The Intermountain Region is especially impacted by exploration and production emissions from the oil and gas industry, and the West more broadly by emissions from the transport and use of those fuels. NAAQS exceedances during winter in production regions of Utah and Wyoming have demonstrated localized effects, while the contributions from exploration and production in the wider region on summer ozone is still being assessed. In addition, this sector must be considered for Regional Haze planning. Studies currently point to improvements in the emissions inventory as being one of the most needed products to improve performance of the air quality models. Current projects and funding opportunities make improvements in these areas likely in the 2016-17 timeframe. This is a rapidly changing sector due to variations in commodity prices, technology innovations, and emerging regulatory programs.”* - Annual WRAP Workplan approved by the WRAP Board May 9, 2016

Duties and WRAP Staff Support

In consultation with the Co-Chairs from the Oil and Gas Work Group (OGWG), the Technical Steering Committee (TSC) will review and seek WRAP Board (Board) approval of a written workplan to address and include all the elements for each Work Group, specific to OGWG as described in Section I of the Annual WRAP Workplan. Based on these elements, the OGWG is then charged with creating detailed workplan inputs to the WRAP annual workplan for achieving these objectives. The OGWG workplan will include a schedule for progress reports to the TSC (quarterly and annual summary) and a schedule for project completion. The OGWG will work with WRAP staff to have progress reports posted to the WRAP website. The OGWG and other Work Groups are responsible for translating technical materials into a form understandable by the TSC, Board, and general public. The OGWG has the additional responsibility for ensuring the best information and data are available for air quality planning across the region, with WRAP Staff support.

The OGWG will have conference calls on alternating months to manage activities and provide oversight to WRAP projects. The OGWG will provide inputs to the TSC for an annual WRAP workplan and budget for Board approval, covering technical projects and Work Groups. The OGWG may have meetings identified in the annual workplan. The OGWG Co-Chairs will plan and direct the calls and meetings, and with assistance from WRAP Staff, take the lead in communications and other necessary TSC and Board interaction.

WRAP Staff will provide support for OGWG calls and meetings. WRAP Staff will assist with arranging and documenting OGWG calls and meetings, prepare TSC workplan inputs and budgets for review and action, assist with status reports on the OGWG’s activities, and provide status reports on the deliverables, budgets, and timelines for the WRAP’s technical projects.

Processes

The OGWG is to conduct their business on a consensus basis. Consensus has the following parameters:

• Consensus is agreement.

• Consensus is selection of an option that everyone can live with.

• Consensus may not result in the selection of anyone's first choice, but everyone is willing to support the choice.

• Consensus is not a majority vote.

When the OGWG cannot reach a consensus on an issue it will be referred to the TSC. If the TSC cannot reach a consensus on the issue it will be referred to the WRAP for resolution.

Coordination

Through the TSC, the OGWG will coordinate with the following work groups and committees as needed to ensure activities conducted in WRAP projects, and under the auspices of the OGWG provide needed support:

1. Tribal Data Work Group (TDWG);
2. Regional Technical Operations Work Group (RTOWG);
3. Fire and Smoke Work Group (FSWG);
4. Regional Haze Planning Work Group (RHPWG);
5. WESTAR Planning Committee;
6. WESTAR Technical Committee; and
7. Other groups as designated by the Board in the annual Workplan process.

OGWG Structure

The OGWG Co-Chairs were designated by the TSC and approved by the WRAP Board to lead and execute the Workplan objectives associated with the OGWG. OGWG members have applicable oil and gas expertise and provide appropriate geographic representation from the WRAP member agencies (state, tribal, local, federal) to the greatest extent possible. OGWG members will be approved by the TSC. All OGWG Co-Chairs and members are appointed for two-years. Additional individuals with applicable oil and gas expertise will be encouraged to participate in the OGWG as advisors. The OGWG structure, including identification of Co-Chairs, members, and advisors is attached and will be updated as necessary.

Project Teams

Project Teams are intended to enable non-members of the WRAP to express interest and sponsor analysis or planning projects within the scope and topics of the WRAP Charter and Strategic Plan. Project Teams will be associated with a discrete, defined project for which the non-member sponsor is providing funding and expertise resources. The Project Teams are intended to allow sponsor participation and will include members of WRAP Work Groups and TSC, WRAP Staff, and non-member sponsors. Information will be included in the Annual Workplan to define the scope, membership and duration of each Project Team.

Project Teams that may be beneficial to the OGWG as future funding allows:

● Continue the Drill Rig 1-hour NO2 Collaborative Study

● Implement the Collaborative Air Landscape-Scale Management Pilot (CALM) Study – Oil and Gas development impacts in the intermountain west

Project Team Update:

● CALM Study

The CALM Study is awaiting federal funding for implementation.

● Drill Rig 1-hour NO2 Collaborative Study

The purpose of this Study is to collect ambient measurements adjacent to operating drilling rigs to evaluate actual 1-hour NO2 impacts from drilling operations. In addition, sufficient data would be collected regarding emissions from drilling operations that could be used to verify NO2 air quality models. The data were collected during two field studies in the fall of 2014. One field study was conducted in the Denver-Julesburg Basin of Colorado and the other was conducted on the north slope of Alaska.

To provide direction and guidance for the Study, the Study participants formed a Study Management Team involving the BLM, EPA OAQPS, Wyoming DEQ, and API. WESTAR and WRAP provide overall administrative and other assistance to the Study Management Team. The Study Management Team has continued efforts to seek additional funding for contractor assistance with the Study and additional funding was secured in 2017. Continued contractor assistance through WESTAR will provide for general study coordination and data analysis coordination.

A Model Evaluation Workgroup was formed to further process the Alaska and Colorado field studies data and to conduct the modeling to assess model performance. EPA is providing leadership for two functional Working Groups that have been active since late 2015 to review, analyze, and reformat the field studies data, which will be followed by dispersion modeling to assess model performance compared to the collected ambient data. With the additional funding, consulting services will assist the work of the Working Groups.

Once the work of the Working Groups is complete, they will summarize and document findings and conclusions, perhaps in technical journal articles, and then submit recommendations to the EPA for making improvements to applicable regulatory dispersion models. Available funding is anticipated to provide Study support through mid-2018.

2016-2017 OGWG Activity Summary

The OGWG formation began in 2016 by seeking members and advisors with oil and gas expertise from the WRAP member agencies (state, tribal, local, federal) and culminated with the TSC approval of OGWG members February 9, 2017. The OGWG formation also involved development of the OGWG 2017 Workplan, which was approved by Consensus January 10, 2017. The OGWG conducted ten (10) conference calls in 2016-2017 with an average of 14 participants including OGWG co-chairs, members, and advisors, WRAP staff, TSC and RHPWG co-chairs, and contractors. Progress on 2017 OGWG Workplan Tasks is captured in the deliverables table below.

| **Oil & Gas**  **Work Group** | **2017 Deliverable** | **Source** | **Funding** | **Timeline** | **2017 Progress** |
| --- | --- | --- | --- | --- | --- |
|  | Develop communication plan to distribute Oil and Gas Work Group work products | Workgroup | In-kind work, WRAP Budget SharePoint Development | 2nd Quarter 2017 | Complete/Ongoing:  *[www.wrapair2.org/OGWG.aspx](http://www.wrapair2.org/OGWG.aspx)*  Materials posted include call agendas, call notes, pertinent documents, finalized work products, and upcoming call dates |
|  | Identify Oil and Gas Work Group action items that will require coordination with WRAP and WESTAR work groups and committees | Workgroup | In-kind work | 2nd Quarter 2017 | Ongoing:  -Aug. & Sept. ‘17 OGWG Conf. Calls w/ RHPWG Co-Chairs  -Identify coordination need(s) for 2018-2019 tasks |
|  | Oil and Gas Work Group Scope:  Identify Oil and Gas sources for the entire upstream and midstream sectors  Identify WRAP member agencies dealing with oil and gas sources | Workgroup | In-kind work | 2nd Quarter 2017 | Complete:  -Oct. ’17 Oil and Gas Emission Sources approved by Consensus  -June ’17 identified WRAP Member Agencies |
|  | Review Oil and Gas Specific Work Products: review existing work products to identify and discuss relevance, strengths, areas for improvement, and gaps | Workgroup will initiate and continue to explore if additional assistance is necessary | Initiate in-kind work and continue to explore if funding is necessary | 4th Quarter 2017 | Underway:  Incorporated into Road Map Scope of Work approved by Consensus Oct. ’17 for contracted support |
|  | Identify regional and local air quality planning needs: Regional Haze, Ozone, Climate Change, Hazardous Air Pollutants, and Other Air Pollution Indicators | Workgroup will initiate and continue to explore if additional assistance is necessary | Initiate in-kind work and continue to explore if funding is necessary | 4th Quarter 2017 | Ongoing through coordination with TSC and RHPWG |

2018-2019 OGWG Workplan Action Items

OGWG 2018-2019 Workplan activities were developed in the 2018-2019 Workplan Master Task List and approved as such relate to the Gantt Chart. The OGWG Workplan activities are incorporated below and are associated with Regional Haze Planning Technical Support as well as Associated Regional Analysis Technical Support.

Task 12.1 Regional Haze Planning Technical Support

2.0 Emissions Inventory (Emission Inventory Development) – Feb-April 2018

*OGWG: The Western Regional Air Partnership (WRAP) Oil and Gas Workgroup (OGWG) has developed the “WRAP OGWG Road Map Scope of Work” (November 2017) which will guide efforts on all O&G related Regional Haze Planning Technical Support tasks.*

2.1 Process 2014 NEI and refinements (base year modeling) – Feb 2018 – April 2019

2.1.1 Incorporate inventory data from OGWG, FSWG, and TDWG

2.1.1.1 Deliver WRAP O&G inventory, ensuring no double counting of interstate O&G fields

*OGWG: The OGWG will identify and review existing oil and gas specific work products. Relevant strengths, areas for improvement, and gaps will be identified. Particular attention will be given to base year emissions inventory emission factors, calculation methods, assumptions and tracking of emissions reduction regulations, data completeness for minor source / midstream facilities, data for non-point sources not reporting directly to air agencies, and other topics.*

*The OGWG will develop regionally consistent base year oil & gas emissions inventories for the WRAP Region. The base year emission inventories will utilize work products with the most relevance and strength as the basis to focus on areas for improvement and gaps. To the extent feasible, technical improvements to emissions inventories will be made. Emission factor, speciation profiles, and spatial surrogate information will be identified for oil and gas sources. Reconciliation with existing inventories would be performed to ensure no double counting.*

*The OGWG will leverage work performed to develop the WRAP oil and gas base year inventory (version 1) to review 2016 Modeling Platform base year emissions.*

2.1.2 Refine base year inventory

2.1.2.1 States review minor source/area emission inventory

*OGWG: The draft inventory developed in 2.1.1.1 will be reviewed by state, local, and tribal agencies. Any necessary updates would be made to the final base year emission inventories.*

2.1.2.2 Consider sectors for refinement (O&G, Canada/Mexico, natural marine, offshore shipping, global, episodic dust storms, wildfires (average for 2028 projection), agricultural/industrial/mobile ammonia, prescribed fire projections, lightning NOx) from 2021 WESTAR Regional Haze SIP Workplan, page 14

*OGWG: The OGWG will identify and review existing oil and gas specific work products. Relevant strengths, areas for improvement, and gaps will be identified. Particular attention will be given to base year emissions inventory emission factors, calculation methods, assumptions and tracking of emissions reduction regulations, data completeness for minor source / midstream facilities, data for non-point sources not reporting directly to air agencies, and other topics.*

*The OGWG will develop regionally consistent base year oil & gas emissions inventories for the WRAP Region. The base year emission inventories will utilize work products with the most relevance and strength as the basis to focus on areas for improvement and gaps. To the extent feasible, technical improvements to emissions inventories will be made. Emission factor, speciation profiles, and spatial surrogate information will be identified for oil and gas sources. Reconciliation with existing inventories would be performed to ensure no double counting.*

*The OGWG will gather information through a survey that will be sent to agencies and then operators in select oil and gas basins. Additional contract assistance is necessary to transition the survey from agencies to operators.*

2.3 Develop and refine 2028 emission inventories – December 2018 - Summer 2019

2.3.1 Determine and adjust emissions as needed for source apportionment and sensitivity scaling of base year and 2028 Inventories

2.3.1.1 Determine and process 2028 emissions for modeling of on-the-way/on-the-books controls

2.3.1.2 Determine and process 2028 emissions for modeling of Additional Reasonable Controls scenarios

*OGWG: The OGWG will identify and review existing oil and gas specific projection methodologies. Relevant strengths, areas for improvement, and gaps will be identified. Particular attention will be given to emissions inventory projections and potential consideration of historic growth, supply, demand, production decline, control, and/or efficiency/effectiveness factors as well as spatial distribution.*

*The OGWG will develop regionally consistent 2028 forecast (OTB & OTW controls) emissions inventory for the WRAP region. Projection methodologies with the most relevance and strength will be used as the basis to focus on areas for improvement and gaps. Historic growth, supply, demand, and production decline; a range of forecast year oil and gas scenarios; OTB & OTW Controls for oil and gas sources; and spatial surrogates will be identified.*

*The OGWG will leverage work to-be completed on WRAP oil and gas future year inventory development to describe oil and gas activity forecast methods for EPA to implement in future year emission inventory development.*

3.0 Air Quality Modeling (Visibility and Source Appointment Modeling) – Feb 2018-early 2020

3.4 Conduct Sensitivity Testing (boundary conditions, fire emissions, grid size, climate change) – Summer – Winter 2019

*OGWG: No specific tasks/deliverables have been identified for this task. Base year and future year emission inventory development will inform this analysis. Potential changes (e.g. widespread implementation of tankless sites) and/or uncertainties in upstream emissions (e.g. high emitters) could be evaluated.*

4.0 Analyzing Future Year Modeling Results (Analysis of Modeling Results) – Feb 2018-early 2020

4.2 Sensitivity and Control Strategy Evaluation Modeling for 2028 projections – Fall 2019-early 2020

*OGWG: The OGWG will compile a comprehensive list of local, state, and federal regulations applicable to developing a controls analysis for O&G emission inventory forecasts in the WRAP region, noting applicable pollutants, geographical area(s) and source categories; applicability to existing, new, and/or modified sources. Approaches taken to apply controls to emission inventories will be identified.*

*The OGWG will develop regionally consistent 2028 control scenario future year emission inventory/inventories. The 2028 control scenario inventory/inventories will consider additional Reasonable Controls for oil and gas sources, rule penetration and effectiveness, and spatial surrogate information.*

5.0 Control Measure Analysis (Reasonable Progress Analysis) – Jan-Dec 2019

5.3 Conduct Regional/State Source Screening – April - late 2019

5.3.3 O&G sector focus on production engines, heaters/treaters, point vs. non-point tracking/permitting, fugitive dust, reconcile VOC emission estimates with observations

5.3.3.1 Address elements of WESTAR-BLM-NM AQB 4 Corners modeling study work

*OGWG: Analyses and deliverables for this task have not yet been decided on by the OGWG. Base year and future year inventory development and control scenario analyses will inform source screening.*

Task 12.2 Oil and Gas Associated Regional Analysis Technical Support

* + 1. Regional and Local Air Quality Planning Needs

*The Regional Haze Planning Technical Support deliverables may also be relevant to regional and local air quality planning needs for ozone and other air pollution indicators. Further, the effort by the OGWG to develop data and implement the results from the Regional Haze Planning Technical Support tasks will underpin a wide variety of air quality planning activities in the WESTAR and WRAP region for the next several years.*

* + 1. Identification and Review of Member Agency Oil & Gas Programs

*Identification and review of member agency oil and gas programs to provide information on existing programs such as requirements for permitting and registration, emissions management, emission inventory, modeling, and monitoring. This task will also include the identification and discussion of information strengths, areas for improvement, and gaps. The OGWG will discuss needs of agencies without existing oil and gas programs and develop a basic oil and gas program example.*

* + 1. Identification and Review of Member Agency Emissions Management

*Identification and review of member agency oil and gas emissions management to provide information on existing and proposed emissions management requirements by state, tribal, local, and federal agencies. This task will also include the identification and discussion of potential requirement overlap and authority concerns.*

* + 1. Assess Impacts from Oil and Gas Production

*Assess benefits from oil and gas production as well as the associated environmental compliance costs to the regional economy. This task will also include the identification of commonalities and differences in oil and gas production, resource uses, and management programs in the WRAP region.*

* + 1. Develop Oil and Gas Tool Box

*Utilize the data and results from the Regional Haze Planning Technical Support tasks to develop an oil and gas tool box with the ability to project future scenarios and trend assessments. Variables to be considered in the development of a tool box include methodologies, emissions, controls, production types and techniques, etc.*

* + 1. Member Agency Collaboration on Sub-Regional Oil and Gas Management

*Evaluate and identify opportunities for state, tribal, local, and federal agencies to collaborate on sub-regional oil and gas management matters.*