GUIDANCE FOR COORDINATING SMOKE MANAGEMENT PROGRAMS

DRAFT V-06

APPROVED BY CONSENSUS:

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GUIDING PRINCIPLES

This Guidance is intended to:

Facilitate efforts to prevent / mitigate visibility impairment in Class I areas from emissions from planned burning on an inter-jurisdictional basis.

This Guidance also:

- Clarifies the FEJF Enhanced Smoke Management Policy;
- Emphasizes planned burning, which may include other emissions;
- Defines who is eligible to participate;
- Generally describes types of fire emissions;
- Determines the size of fires;
- Defines what program elements to share inter-jurisdictionally;
- Complements the work of the fire tracking system;
- Provides examples of other coordination strategies;
- Provides information for air quality planning purposes and attaining reasonable progress goals; and
- Will be revised as necessary.

This Guidance is NOT intended to:

- Mandate participation;
- Create or revise smoke management programs or regulations;
- Emphasize National Ambient Air Quality Standards (NAAQS) or nuisance smoke;
- Dictate how shared information is used;
- Provide a basis for litigation or otherwise gain access to propriety information; and / or
- Require database entry.
- Make determination of what constitutes “cause or contribute” to visibility impairment.

ACRONYMS

308	40 CFR 51.308
309	40 CFR 51.309
BACT	Best Available Control Technology
DEQ	Department of Environmental Quality
EPA	United States Environmental Protection Agency
ESMP	Enhanced Smoke Management Program
FEJF	WRAP Fire Emissions Joint Forum
GCVTC	Grand Canyon Visibility Transport Commission
NAAQS	National Ambient Air Quality Standards
RHR	Regional Haze Rule
SIP	State Implementation Plan
SMP	Smoke Management Program
TIP	Tribal Implementation Plan
WRAP	Western Regional Air Partnership

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1.0 INTRODUCTION - Why Burners and Regulators Should Do This

The Western Regional Air Partnership (WRAP), as the successor to the Grand Canyon Visibility Transport Commission (GCVTC), is directed to implement the GCVTC recommendations and to develop the technical and policy tools necessary for western states and tribes to comply with the U.S. Environmental Protection Agency's (EPA) regional haze regulations. The WRAP Fire Emissions Joint Forum (FEJF) was established to develop policy and technical tools to address fire emissions. In 2002, the FEJF developed the Enhanced Smoke Management Policy (ESMP) that requires developing guidance facilitating regional coordination of Smoke Management Programs (SMPs). Under the Regional Haze Rule (RHR) at 40 CFR 51.309 (309) states are required to submit smoke management plans to the EPA that include, among other requisites, a regional program coordination component. The preamble to the RHR states, *"[T]herefore, States will need to develop strategies in coordination with one another, taking into account the effect of emissions from one jurisdiction to air quality in another."* 64 FR 35714. *Emphasis added*.

Under the RHR and the tribal authority rule, tribes in the Grand Canyon Visibility Transport Region may, but are not required to, receive delegation of authority to adopt tribal implementation plans (TIPs) under Sections 308 or 309. 40 CFR 49.1-11. Tribal selection of either is independent of the strategy of the state(s) within which the tribal land is located. In addition, tribes may apply for approval of "reasonably severable" elements of the RHR. Further, deadlines for EPA plan submission that apply to states do not apply to tribes.

Therefore, in December 2004, FEJF formed the Regional Coordination Task Team to establish this Guidance for coordinating Smoke Management Programs (Guidance) to assist burners and regulators in fulfilling requirements of the RHR during the implementation of SMPs. This guidance focuses primarily on the interjurisdictional exchange of certain critical information describing characteristics of planned burns, i.e., SMP elements.

Depending upon improvements in technology, the alteration of priorities, new regulatory requirements, and changes in air quality, state and tribal SMPs will likely be revised. Following an inter-jurisdictional evaluation of SMP performance for regional haze impacts, the SMP elements or their exchange might also be revised. Thus, the contents of this Guidance are dynamic and are expected to change as regulatory and environmental circumstances change.

2.0 PURPOSE - Why Burners and Regulators Should Coordinate

Emissions from fire may cross jurisdictional boundaries and obscure visibility for miles from the source. Therefore, burners and regulators should develop strategies to share SMP elements on a regional basis. Coordination is necessary in order to

harmonize planning and tracking of fire emissions that are continuous across state and tribal boundaries and take into consideration various burn seasons. Regional coordination also supports burners' and regulators' efforts to track fire emissions.

Regional coordination increases communication between burners and regulators, thus increasing regulatory predictability and minimizing possible regulatory differences across state and tribal boundaries. A state or tribe may elect to adopt this Guidance as State Implementation Plan (SIP) or TIP measures. SMP elements may also form the basis of regulatory measures developed to demonstrate reasonable further progress for improving visibility impairment.

3.0 GENERAL CITATIONS - Why Burners and Regulators Should Coordinate

RHR applicable to states under 40 CFR 51.308 (308) does not expressly require the same regional program coordination component as those under 309, but the ESMP encourages the same inclusion in 308 SIPs.

The ESMP Statement "D" identified the development of regional SMPs as a tool for states and tribes to use in support of required SIPs and optional TIPs. Section 308 requires states to address visibility impairment caused by emissions from all sources, including fire activities. The preamble to the RHR emphasizes the role of interstate cooperation: "In developing each reasonable progress goal, the State must consult with those states which may reasonably be anticipated to cause or contribute to visibility impairment in the mandatory Class I Federal Area." 64 FR 35714.

The 2001 WRAP Fire Categorization Policy (Categorization Policy) also advocates the establishment of regional SMP coordination. Management includes burner observance of applicable regulatory structures. However, many burners face the problem of managing land that is encompassed by, or is adjacent to, jurisdictions with dissimilar regulations (e.g., adjacent state or tribal lands).

The Categorization Policy also notes that coordination of burning activity is critical to avoiding cumulative Federal Class I visibility impacts over broad areas. In order to succeed in the process of mitigating, tracking, and reporting smoke emissions and, ultimately, realizing progress toward the 2064 "natural" conditions goal, burners, and regulators should establish a process of coordination.

4.0 POLICY CITATIONS - Why Burners and Regulators Should Coordinate

The following statements from the ESMP are relevant to this Guidance and are included herein for purposes of continuity between documents.

- Policy Statement C: "Enhanced smoke management programs are required for states under Section 309 of the [RHR]." Note: Tribes are not required to adopt ESMPs under Section 309.

- Policy Statement D: "Enhanced smoke management programs are a viable tool for all other states and tribes in the WRAP region to use in the development of their implementation plan."

- Policy Statement E: "Enhanced smoke management programs include nine elements that are necessary to meet the requirements of the [RHR] as follows: Element #9. Regional Coordination - Communication and information sharing across state/tribe jurisdictional lines."

- "Each state has an obligation to account for those emissions it produces that have impacts in its own mandatory Class I areas. Accountability also extends to states and tribes that have smoke impacts outside their jurisdictions."

- "Without a central burn authority considering the cumulative smoke impacts, it will be difficult on a daily basis for individual land managers/owners to assess their relative contribution to regional haze. Regional coordination (i.e., Element #9) is central to burn authorization, and will facilitate coordinated decision-making. It is a necessary mechanism to address transport issues and cumulative effects, especially when considering impacts of a source that may be large, or many sources that cumulatively are large, but a long distance from a Class I area (i.e., greater than 100 km)."

- 3.6.9. Element 9: Regional Coordination. "Coordination of burning activity is critical to avoiding cumulative smoke impacts within and across source types in mandatory Class I areas. Coordination may range from a passive mode of information sharing between land managers/owner and/or the public to a more active coordination in which burn decisions are altered based on jurisdictional authority and other activities that are occurring or have recently occurred. Methods for this inter-jurisdictional and regional coordination will need to be developed. The development process should be a collaborative one involving state, tribal, local, and federal agencies, and private parties."

5.0 APPLICABILITY - Who Participates in Regional Coordination

This Guidance is applicable to all burners and air quality regulators seeking to mitigate visibility impacts on an inter-jurisdictional basis. Burners include, but are not limited to, private, agricultural, state, tribal, municipal, or federal agencies. Regulators include state, tribal, or federal agencies with statutory obligations to address visibility in Federal Class I areas. Ultimately, the states and tribes themselves shall determine the formal or informal coordination and the geographical extent of the same between burners and regulators.

6.0 CORE SMP ELEMENTS - What Burners and Regulators Should Share

Regional coordination of SMP elements includes sharing information regarding emissions from burns occurring within state or tribal air quality authority that may have an inter-jurisdictional impact on visibility. These types of fires include agricultural fire, Native American cultural fire, escaped prescribed fire, Wildland Fire Use (WFU), wildland fire, and wildland / rangeland prescribed fire. The Guidance recognizes that not every SMP element may be available in every circumstance, e.g. fuel loading for wildfire.

In order to obtain information regarding the impact of fire emissions on visibility within a regional context, burners and regulators need to share data with other regional SMP coordinators. The incorporation of core SMP elements into a SMP is consistent with EPA's 1998 Interim guidance for certifying basic SMPs and with the Policy as set forth in Appendix C.2.9 Element 9. Regional Coordination. The following describes the minimum recommended shared SMP elements.

Shared Core SMP Elements:

(1) Location. Describe burn location through any means of describing absolute position including, but not limited to, Universal Transverse Mercator Coordinates, latitude and longitude, State Plane Coordinates, or Public Land Survey (townships and ranges).

(2) Size. Reported daily proposed prescribed burns, WFUs, and wildfires of 100 acres or more.

(3) Burn Type. Describe the type of burn, e.g. prescribed, WFU, wildfire, etc.

(4) Fuel Loading (tons/acre). Describe estimated fuel loadings in tons of consumable debris per acre or in total tons per unit. For wildfire and WFU, describe fuel loading as information allows.

(5) Burn Date. Reported daily prescribed burning date submitted at least 24-hours in advance of initial burn and/or a multiple day burn.

7.0 TEMPORAL APPLICABILITY - When Burners and Regulators Should Coordinate

(1) Before Ignition. Prior to ignition, burners and regulators should establish a strategy of sharing SMP elements. Because many states and tribes have overlapping burning seasons, establishing a strategy of sharing should occur and remain constant throughout the year. Sharing information before ignition occurs maximizes the time available for pursuing measures or instituting burn restrictions to mitigate visibility impairment.

(2) During Burn. Sharing information during the course of a burn maximizes decision-making regarding visibility protection as the burn proceeds.

(3) After Burn. Following the conclusion of a burn, archiving SMP elements for future retrieval allows burners and regulators to assess past activities and make appropriate corrections for future activity. After-burn assessments are also important in demonstrating reasonable progress.

8.0 SPATIAL APPLICABILITY - Where Burners and Regulators Should Coordinate

SMP elements should be shared from reported planned and unplanned burns located within local, state, or tribal boundaries and which may impact visibility in Class I areas.

9.0 COORDINATION STRATEGIES - How Burners and Regulators Should Coordinate

Burners and regulators are encouraged to share SMP elements through various coordination strategies. In order to mitigate visibility impairment, the focus of SMPs for purposes of regional coordination must emphasize the sharing of elements *prior* to burning.

Burners and regulators are free to choose their own coordination strategies, selecting as many or as few of the SMP elements as feasible or desired. Depending upon improvements in technology, the alteration of priorities, and changes in air quality, state and tribal SMPs will likely be revised. Following an inter-jurisdictional evaluation of SMP performance, the number and type of SMP elements might also be revised. Thus, the contents of this guidance are dynamic and are expected to change as circumstances change.

Sharing SMP elements depends upon effective coordination between burners and regulators of all affected jurisdictions. Coordination efforts range from establishing a simple phone, fax, or e-mail tree to protocol requiring a combination of prerequisite conditions and associated actions and ongoing evaluation. Coordination strategies should also include regularly scheduled face-to-face meetings complete with developed agendas and action items.

Sharing SMP elements through Internet access is the most effective strategy. Internet access to burn activity information allows burners and regulators complete access to information necessary for determining the probability of visibility impairment, establishing contact with other, smoke-emitting jurisdictions, and issuing burn restrictions and/or burn approvals. The need for frequent phone calls and e-mails is reduced and historic information is available for future planning.

The future challenge in regional coordination involves converting the core SMP element data into information available for assessing visibility impacts in multi-jurisdictional areas. The identification of visibility impairment then triggers compliance/enforcement actions that result in a decrease in emissions, regardless of the location of the source of the emissions. Regional coordination then facilitates a process effort to mitigate visibility impairment, providing for clearer expectations and more consistent actions and results.

Beyond establishing communication procedures, burners and regulators use consistent meteorological forecasting for burn authorization across the region. This information may come from either the National Weather Service or government agency services like BlueSkyRAINS. This system will allow burners and regulators to utilize the same information for decision-making, thus reducing inconsistency in burn restrictions. Additionally, SMPs should provide the public and burners consistent educational / regulatory (when applicable) information.

The capacity to add Geographic Information System layers to map past, present, and future burns is also beneficial to burners, regulators, and the public. The table below lists various coordination strategies generally described in order of increasing resource commitment.

COORDINATION STRATEGIES

#	STRATEGY	DESCRIPTION
1	Make core SMP elements available for each burn on state/tribal website	Burners may directly enter data (or regulators may post the same as reported by burners) into an online form.
2	Establish non-regulatory measures addressing inter-jurisdictional transport of fire emissions	Regulators may establish agreements for the use of voluntary burn restrictions, incentives for non-burn alternatives and other measures.
3	Develop phone, fax, or e-mail contact list and a regular distribution of updates to the same.	As a result of their visibility assessments, regulators contact other jurisdictions and notify them of their findings. The smoke-generating jurisdiction may implement any available option to mitigate the smoke emissions' impact on visibility. Some jurisdictions may have no authority to order suppression or restrict burning. These jurisdictions are encouraged to negotiate with burners to restrict burn activity on a voluntary basis. Sometime after the burn season, burners and regulators gather at a face-to face meeting to discuss the past season and plan for the upcoming year.
4	Hold meetings to ensure continued communication.	
5	Make ad hoc telephone calls or e-mail to inter-jurisdictional colleagues.	
6	Track information from other sources for wildfire and WFU information.	Besides the SMP elements posted by burners and regulators, other data may be available from many sources.
7	Using meteorological forecasting.	The regulator may use burn data to assess the relative impact on visibility in the regulator's jurisdiction. While the assessment method is left to each regulator to decide, the regulator may incorporate the data with meteorological/ventilation dispersion information using information generated by sources such as the National Weather Service or government agency services like BlueSkyRAINS. The regulator may ultimately use the results to model the anticipated visibility impacts.
8	Public outreach / education / training.	Providing press releases to the public on smoke/visibility health issues so those affected may monitor and take steps to protect their own health and voluntarily restrict outdoor burning. Assisting in the dissemination of public health advisories and burn restrictions. Organizing or

		providing instruction at burner training seminars.
9	Web-based data entry.	Ideally, prior to ignition, burn data is entered with the appropriate regulatory agency on a completely automated, web-based electronic form (burn location, burn data, burn type, and fuel loading). For example, States /Tribes may direct burners to submit the information, regardless of the existence or degree of open burning regulations.
10	Enter data into regional database	
11	Use consistent meteorological weather forecasting tools.	Beyond establishing communication procedures, burners and regulators use consistent meteorological forecasting tools for burn authorization across the region. This information may come from either the National Weather Service or government agency services like BlueSkyRAINS.
12	Model results on a map posted to a universally accessible website.	The capacity to add Geographic Information System layers to map past, present, and future burns is also beneficial to burners, regulators, and the public.
13	Assess current conditions	The ability to view real-time progress of emissions, air quality, and meteorology as a burn proceeds.
14	Archive visibility and burn activity data following burns.	The data should be entered into a universally-accessible database for use in measuring reasonable progress goals.
15	Evaluate efficacy of regional coordination strategies.	Hold an annual meeting or conference call among all WRAP states. Elect a chair to coordinate.
16	Jointly evaluate anomalous smoke events.	Regional Coordination Chair receives input prior to annual meeting/call regarding any major events.
17	Quantify / Qualify reasonable further progress on visibility goals.	Regional Coordination Chair and modeling personnel run each year's data.
18	Institute burn restrictions.	Following an assessment of meteorological conditions and burn data, restrict areas as necessary.
19	Respond to public	Offer a centralized hotline for personal contact or

	complaints.	recording or website for frequently asked questions.
20	Develop and implement non-regulatory measures addressing interstate transport of fire emissions.	Provide alternatives, such as ERTs, voluntary restrictions, or other measures to reduce interstate smoke impacts.
21	Address interstate transport of fire emissions.	
22	Conduct joint compliance/enforcement actions.	Rather than pursuing an enforcement action in more than one jurisdiction, two or more jurisdictions may assess the effect of a visibility-impairing burn and decide upon a course of action that results in pursuing formal action against a burner into a single jurisdiction for the purposes of compliance or enforcement.
23	Public outreach / education / training.	Post frequently asked questions or other information on website. Conduct educational outreach or train teachers to do the same in schools or other appropriate forums.
24	Burner & regulator training.	Smoke management personnel make themselves available to participate in federal smoke management training events and meetings with local groups, e.g., Cattlemen's Association, Pecan Growers Association, NRCS, etc.) to provide training. Participate in any revisions to federal training programs.

11.0 EXAMPLE STATE & TRIBAL SMPs

Several programs that feature coordination or other inter-jurisdictional cooperative arrangements already exist in some areas. While ultimately moving toward a more centralized system, states and tribes may fulfill immediate needs and obtain optimum results by joining with an existing group. These programs are briefly described below.

NAME	JURISDICTIONS INVOLVED	SMP E. 1	SMP E. 2	SMP E. 3	SMP E. 4	SMP E. 5	COMMENTS
MT/ID State Airshed Group	Montana, Idaho	X	X	X	X	X	Direct user input intocentralized database. Utilizes met forecasting to predict optimum dispersion. Restrictions reported daily.
AZ White Mountain Group	Arizona, Fort Apache Agency of BIA, USFS, White Mountain Apache Tribe						
NM State Smoke Management Program	New Mexico, Arizona	X			X		Utilizes met forecasting to predict optimum dispersion. Phone reco
CA Wildland Fire Use Coordination and Communication Protocol	California Land Management Agencies, California Local Air Pollution Control Districts						
OR Smoke Management Programs	Oregon						
Nez Perce	Nez Perce Reservation, Idaho	X	X	X	X	X	
Utah Smoke Management Program	Utah						
WA State							

11.1 MONTANA / IDAHO STATE AIRSHED GROUP

The Montana / Idaho State Airshed Group (Group) was formed in 1978 to minimize or prevent the accumulation of smoke from prescribed fire in order to protect state and federal air quality standards. The Group also recognizes the importance of prescribed fire for the removal of logging debris and forest health. The Group works to maintain a proper balance between protecting the need for prescribed fire by the forest products industry and the need to protect public health.

The Group is self-regulating. In Montana, the members are classified as major open burners based on a calculation of annual emissions. Members voluntarily abide by the provisions of the Smoke Management Plan Operations Guide. The ability to coordinate prescribed fire activities allows more opportunities to burn. Group membership reduces risk of violating state and federal air quality standards and may also reduce the number of public complaints concerning smoke.

Idaho does not regulate legal forms of open burning such as prescribed burning, but it does encourage participation in programs such as the Group. Montana implements a permit program for major outdoor burning activity. The Montana Department of Environmental Quality (MDEQ) recognizes Group membership as fulfilling requirements for best available control technology (BACT) for regulating smoke from prescribed fire. DEQ annually issues air quality open burning permits to Group members allowing them to burn under the rules and regulations of the Montana Clean Air Act and MDEQ air quality rules and the Smoke Management Plan Operations Guide.

The state of Montana is divided into ten airsheds and Idaho is divided into seventeen airsheds. Sensitive communities are recognized as impact zones within an airshed. The program coordinator, utilizing the services of a meteorologist, analyzes atmospheric conditions for burn day restrictions during the spring (February 28 through May 31) and fall (September 1 through November 30) open burning season (September through November). This airshed management approach offers more protection and allows Group members more flexibility to burn at various locations and/or elevations than if they operated independently. The meteorological information service is only available to Group members.

Group members submit their proposed Fall burn lists by September 1st of each year. Group members are required to enter burn unit descriptions into the RAZU database by 11 am the day before any planned burning. Members may access prescribed fire weather forecasts on MDEQ's 1-800 hotline by 4 pm for the next day's planned burns. Annual fees are based upon the previous year's number of completed acres. The Group recognizes nonattainment areas and closely monitors 'impact' zones to ensure member burning does not violate state or federal air quality regulations.

The Group meets at least once per year to discuss and review the performance of the previous year's burning. This meeting also provides members with the opportunity to make recommendations for the upcoming burn season and to fully participate in the function and operation of the Group.

Minor burners also contribute emissions to airsheds, but are not required to obtain a permit or pay fees. Minor burners are not eligible for Group membership. Montana requires minor open burners to observe other BACT, including utilizing the smoke management hotline and obtaining permission to burn from their local forestry office.

The URL below is the gateway to the Group web-site:

http://www.smokemu.org/home.php

11.2 ARIZONA WHITE MOUNTAIN ZONE

The Arizona Department of Environmental Quality (ADEQ) requires Federal/ State Land Managers and private or municipal burners with whom ADEQ has entered a Memorandum of Agreement, to obtain burn permits under the State's Forest and Range Management Burn Rule. Open burning permits are required primarily for agricultural, construction, residential and prescribed burning on private lands without Federal/State Land Manager assistance. The State of Arizona is divided into 11 airsheds that approximate large watersheds and 5 zones. Currently, Arizona does not assess fees to burners to implement the State's Smoke Management Program. The State convenes annual meetings between ADEQ and Federal/State Land Managers to evaluate the Smoke Management Program and cooperatively establish the annual emission goal. See the ADEQ website, www.azdeq.gov/environ/air/smoke, for more information.

In 199X, the White Mountain Apache Tribe (hereinafter "Tribe"), USDI Bureau of Indian Affairs, Fort Apache Agency (hereinafter "Agency"), and USDA Forest Service, Apache-Sitgreaves and Tonto National Forests (hereinafter "Forest Service") entered into a Memorandum of Understanding (MOU) to strengthen relationships and foster a shared stewardship approach to managing air quality in northeastern Arizona ---including key airsheds affecting Phoenix---through a cooperative smoke management program.

Parties use the MOU to resolve resource issues under the umbrella of a collaborative decision-making process. They share resource expertise and meet quarterly to facilitate dialogue and collaboration on smoke management and prescribed fire program implementation to promote healthy ecosystems. Under the MOU, the Forest Service recognizes Tribal lands are not necessarily subject to the same controls as Forest Service lands. The Forest Service also agrees, to the maximum extent allowed by law, to protect certain Tribal smoke management information from disclosure.

The MOU requires the parties to use Best Management Practices and to collaborate on development and implementation of a White Mountain Smoke Management Strategy including a coordination plan (pre-season, during season), operating procedures for a Multi-Agency Coordinating (MAC) Group that convenes to mitigate airshed conflicts when certain PM-10 thresholds are reached, a communication plan, and a smoke monitoring plan. The Smoke Management Strategy is periodically revised separately from the MOU through the individual review and approval processes of the parties. Each party maintains its individual prescribed fire and smoke management plans and priorities but implements them within the cooperative guidelines outlined in the strategy.

The Tonto National Forest and the Bureau of Indian Affairs assign one employee at the ADEQ office in Phoenix with major duties in State-wide interagency smoke coordination. The full-time ADEQ smoke specialist position was vacated in late May, 2005 and the long-term extent of ADEQ resource commitments is presently unknown. Under the current White Mountain Smoke Management Strategy, parties to the MOU exchange maps, burn information (9 elements), and smoke monitoring information at the annual pre-season meeting held in March/April. During burning season, start-up notification requirements (e.g., burn units to be initiated for the month, week, day) include adjacent Forests/Reservations but not adjacent States. (Occasional telecommunications are exchanged between AZ, NM, CO and UT for large burns planned near State boundaries.) Parties submit ADEQ burn request forms via e-mail or fax to the White Mountain Zone by 1300 the day prior to implementation. The White Mountain Zone submits request forms to ADEQ at 1300 and transmits via fax “approvals”/”responses” to districts or reservations by 1700 when possible. Approvals and responses are also available on ADEQ’s website if needed earlier.

11.3 NEW MEXICO STATE SMOKE MANAGEMENT PROGRAM

New Mexico (NM) operates a smoke management program which requires all burners (state, federal, private, municipal) to register burn projects greater than 10 acres or 1,000 cubic feet of piled material burned per day. Burners register and receive an identification number. Burners report the approximate season(s) they intend to burn, fuel type, fuel loading, public notification, etc. From the registration forms, maps of the planned burns are generated for each season for long-range planning purposes. One day before the actual ignition (10:00 a.m. the previous business day) the burner notifies the state of intent to burn. The state generates a daily map of planned burns and posts the map on the smoke management webpage.

Prior to ignition, burners use the ventilation index to determine if the weather is conducive to good smoke dispersion. The state provides a telephone recording of the daily ventilation forecast and links to the fire weather forecast provided by the National Weather Service. The state also provides smoke education for burners and

participates in the RX-410 (Federal smoke management class) and develops brochures for smoke management and open burning.

The state accesses the Southwest Fire website to view planned burns for the state of Arizona (AZ) and other national fire activity. Telephone calls / e-mails are occasionally exchanged between the states of AZ, NM, Colorado, and the county of Bernalillo. Tribes sometimes provide burn information. For wildfires and WFUs, the states of NM and AZ work with federal land managers to access wildfire reports (209 Forms) and have implemented a supplement to the 209 Form (Block 44) to obtain information to generate daily smoke estimates.

The Southwest Coordinating Group is implementing Zone Smoke Plans. Zone Plans facilitate communication between federal and state agencies to discuss future planned burning and coordinate resources. Currently, NM does not assess fees to burners to implement NM's smoke management program. The state meets annually with all burners to evaluate the efficacy of the smoke management program.

New Mexico's Smoke Management Website:

(www.nmenv.state.nm.us/aqb/SMP/smp_index.html) Need recently updated NM URLs (2)

New Mexico's Open Burning Website:

(www.nmenv.state.nm.us/aqb/projects/openburn/openburning_index.html.)

11.4 CALIFORNIA WILDLAND FIRE USE COORDINATION AND COMMUNICATION PROTOCOL

In order to minimize the smoke/emission impacts from WFUs, California's land management agencies (LMAs) and air quality management/air pollution control districts (Air Districts) developed a process for assess the effects of WFUs and emission mitigation measures before smoke causes health effects or visibility impairment.

The Protocol requires LMAs to contact air districts and register burns whenever they amend burns plans to include areas subject to Air District regulation. The LMAs and Air Districts meet prior to each fire season to evaluate the previous burn year and plan for the upcoming year. LMAs and Air Districts establish criteria for managing WFUs in progress, emissions data and timelines, mitigation measures, outreach opportunities, and any other necessary research or tools.

LMAs are required to interact with other LMAs to achieve burning goals, i.e., selecting appropriate acres for potential WFU activity, taking into consideration the possible smoke emissions impact.

LMAs are required to contact the appropriate Air District within 24 hours of identifying a WFU. For fires under 10 acres, the Air District provides the LMA with a Fire Emission Dispersal Advisory covering current and projected air quality conditions to assist in decision-making. Air Districts are required to coordinate with other Air Districts to discuss regional WFU effects.

For fires exceeding 10 acres, LMAs are required to submit a smoke management plan for Air District approval. LMAs and Air Districts identify and include triggering events and mitigation measure contingencies in the SMP. LMAs notify Air Districts when a WFU exceeds 100 acres and again at 250 acres. As long as the WFU is burning, the LMA and the Air District periodically evaluate the SMP and participate in a daily conference call.

For these larger WFUs, the Air District provides air quality forecasting to the LMA for use in decision-making. If air quality deteriorates, Air Districts will notify LMAs prior to disapproving an SMP. LMAs and Air Districts also produce public outreach messages for affected communities during the course of a WFU.

LMAs prepare and submit to Air Districts a postseason WFU summary, including a report of fire, smoke emissions, and related information.

Air Districts and LMAs are responsible for contacting neighboring states in the event WFU emissions are anticipated to affect those states.

Both LMA and Air Districts post and use tools, including the full Protocol, on a website available electronically at www.arb.ca.gov/smp/wfu/wfu.htm.

11.5 OREGON SMOKE MANAGEMENT PROGRAMS

The State of Oregon has two state-run smoke management programs. One regulates prescribed burning in most forested areas of the state, and the other regulates the largest source of agricultural burning, which takes place in Oregon's Willamette Valley. Both are considered mandatory smoke management programs, where burners seek daily authorization by the state. Both programs are 309 "Enhanced" smoke management programs. Three county-run smoke management programs exist in Jefferson, Union, and Umatilla counties for agricultural burning.

The Oregon Department of Forestry (ODF) regulates prescribed burning under the Oregon Smoke Management Program (OSMP). All state and national forests conduct prescribed burning under the OSMP. With the exception of two national forests operating on a voluntary basis, burning in all forests is regulated. ODF issues daily forecasts and burning authorizations for the entire state. ODF considers general unit size and spacing requirements when authorizing burning. Local forest districts select actual burn units. Burning may not cause smoke impacts in the larger cities, which are referred to as "Designated Areas". ODF tracks burns

and issues an annual report on acres and tons burned. Using equipment supplied by Oregon Department of Environmental Quality (ODEQ) and the Bureau of Land Management, ODF operates a real-time monitoring network to track and record smoke impacts. Under state law, ODF and ODEQ jointly conduct a periodic review of the OSMP every 5 years. Both ODF and ODEQ are required to approve the OSMP following this review.

The Oregon Department of Agriculture (ODA) regulates Willamette Valley agricultural burning. This is a summertime activity only (July through September) during which 65,000 acres may be burned according to state law. The majority of this burning is grass straw and wheat residue left over after harvest. The ODA charges fees to support the Willamette Valley Field Burning Program (WVFBP). ODA issues daily forecasts and burning authorizations and reports to rural fire protection districts, which, in turn, select the actual fields to be burned. All fields must be registered prior to burning, and a burn permit is required on the day of the burn. Strict compliance is required in terms of acres burned, location of fields burned, and time periods for burning. ODA tracks and records smoke impacts with a ODEQ-maintained network. The program also regulates field propane burning and straw bale burning. ODA operates a fee-funded Research and Development Program to develop alternatives to burning.

Other areas of concentrated agricultural burning occur in Jefferson, Union and Umatilla counties. These counties regulate burning through county ordinance. Jefferson and Union burn grass and wheat residue in the summer months, similar to the Willamette Valley, but in much smaller amounts (approximately 10,000 acres each). These counties assess fees, require field registration, issue daily burning authorizations, monitor smoke impacts, and conduct some enforcement. Umatilla county burning is a mix of different types of agricultural burning, and is operated year-round. This basic smoke management program does not require field registration or tracking of burns and primarily issues "burn day" and "no burn day" announcements.

Unregulated agricultural burning occurs in lesser amounts around the state under state law prohibiting the regulation of agricultural burning, except for Willamette Valley field burning.

Finally, rangeland burning occurs in some areas of central and eastern Oregon primarily on BLM land and is currently unregulated. No reliable estimates exist regarding the amount of rangeland burning.

11.6 NEZ PERCE TRIBE SMOKE MANAGEMENT PROGRAM

The Nez Perce Reservation covers 1,200 square miles and portions of five north central Idaho counties: Clearwater, Idaho, Latah, Lewis, and Nez Perce. The Reservation and these five counties comprise the Clearwater Airshed, a general airshed boundary established through a 2001 memorandum of agreement (MOA)

between the Tribe, EPA, and the Idaho Department of Environmental Quality (IDEQ) for the purposes of coordinating air quality management in the area. A subsequent MOA in 2003 between the Tribe, EPA, IDEQ, and the Idaho State Department of Agriculture (ISDA) was established to coordinate agricultural smoke management in the Airshed. This MOA was revised in 2005 to incorporate EPA Region 10 Federal Air Rules for Reservations in Idaho, Oregon, and Washington (FARR).

The complex geography of the Clearwater Airshed includes prairies, rolling hills, moderate to deep river valleys, canyons, and mountains. This contributes to varied microclimatic dispersion and ventilation conditions and reduced visibility. For example, four major and several smaller communities on the Reservation are located in river valleys and are especially prone to weather inversions that can trap pollutants.

The Tribe's involvement in the smoke management program (SMP) evolved from very general participation in agricultural SMP operated by another agency in 2001 to a significantly more complex program operated by the Tribe that covers all types of outdoor burning.

In 2002, the Nez Perce Tribe formed the smoke management program with the goal of protecting air quality while using fire as a tool for crop residue disposal on the Reservation. The Tribe has issued agricultural burn decisions for growers on the Reservation since 2002 using a permit program coordinated with the State of Idaho through the Clearwater Airshed SMP MOA. With the FARR effective in 2005, the burn permit program on the reservation became mandatory and enforceable, and EPA/Tribal-issued permits were required. More information on the FARR is available at www.epa.gov/r10earth/FARR.htm. The Tribe issues permits and runs the smoke management program for agricultural, forestry, residential outdoor and other large outdoor burning, including fire department practice fires, ditchbank burning, and range burning.

Through the use of a meteorological contractor, dispersion models, air quality monitors, and fire weather information, the Tribe's air quality staff makes daily burn decisions specific to each type of burn. The Nez Perce Tribe maintains an AQ monitoring network on the Reservation in Kamiah, Reubens, and Lapwai. In Kamiah, two collocated monitors collect manual PM2.5 data and a TEOM measures PM2.5 continuously. TEOMs are also located at Reubens and in Lapwai. Meteorological towers collect weather data at each of these three locations. Data from the TEOMs and met towers is accessible real time via modem. The Tribe also works with IDEQ to have PM2.5 continuous data polled by the state's data acquisition system and posted on the state's website at http://www.tcsn.net/family/Idaho/index.html. The site includes a page for current and 10-day history PM2.5 readings for the Clearwater Airshed and the Tribes' three sites and the states' three sites in the area.

Other sampling and data gathering work is also conducted to assist with SMP decisions. During the summers of 2003-2005 data was collected from a SODAR set up at the Reubens site. This data was used to help evaluate atmospheric dispersion characteristics. Balloon releases have been used since 2002 to help assess ventilation in the field.

Small residential burners obtain a one-year permit and are required to call a 1-800 number to see if the day is approved for residential burning and obtain the hours burning is allowed during the day. At the end of the recording, callers leave a message regarding their planned burning (including name, phone number, material to be burned, burn location) and record that information on their permit for their own records.

Tribal air quality staff approves agricultural, forestry, and large general open burns on a case-by-case basis. Application information includes burn location by township/range/section, acreage of each burn, burn type (field burning, piles, forestry burning, larger open burning), fuel type, special considerations (early burn, canyon rim, near highway, wind direction needs), and ignition method. After submitting a permit and prior to ignition, applicants call to be placed on a burn request list. Applicants are required to submit requests at least 24-hours before ignition. Using information on burn size, location, and other factors, requests are prioritized based upon air quality/visibility considerations and are processed on a first-come first-served basis. The Tribe is developing on-line access to permit and burn information at www.nezperce.org (under construction in 2005).

Approximately 45,000 acres of Kentucky Bluegrass, cereal grain stubble, and slash piles are burned on the Nez Perce Reservation each year. During the peak agricultural burn season, generally mid-July through October, the regional agricultural smoke management agencies discuss agricultural burn decisions in the Clearwater and adjoining North Idaho airsheds during twice-daily conference calls. A meteorologist provides a preliminary burn forecast by 2:30 p.m. the afternoon before a burn day and gives an update the following morning by 8:00 a.m. Growers requesting to burn are given preliminary approval the afternoon before the requested burn date and approvals are updated the following morning.

On approved burn days on the Reservation, Nez Perce Tribe air quality staff scrutinizes air quality monitoring data and forecasts. Two field coordinators provide additional staff resources for smoke management at the field level. Field coordinators evaluate fuel, wind speed and direction, ventilation, and dispersion conditions before allowing fields to be burned. Growers are required to contact field coordinators or office staff prior to ignition, provide a post-burn report, and may be required to suppress down burns if conditions warrant. Complaints may be phoned in to the Tribe's air office or to a North Idaho Agricultural Burning Complaint Line. Complaints to the complaint line are sent out immediately to all North Idaho agricultural SMP agencies for response based on location and jurisdiction.

The Tribe maintains log books to record forecast, fire weather, and/or monitoring information as the day progresses. Burn permit information for the programs on the Nez Perce Reservation is stored in a database. The Tribe prepares an annual summary report and smoke events analysis. Additionally, the Nez Perce Tribe contributes annually to the Idaho Crop Residue Disposal Smoke Management Program Season Review prepared by the Idaho State Department of Agriculture.

In the Clearwater Airshed, on-reservation agricultural SMP activities are coordinated with EPA, ISDA, and IDEQ. For agricultural smoke management at a regional level, this group also coordinates burn decisions with the Coeur d'Alene Tribe, the Kootenai Tribe of Idaho, and Washington State Department of Ecology. Ongoing involvement with growers and the public has been a major component of this effort. The Tribe coordinates forestry burning with the Montana Idaho Airshed Group and other forestry burning agencies involved in burning on and around the Reservation. The Tribe maintains a network of other agencies such as the Idaho Department of Lands, Nez Perce Tribe Fire Management, and county fire districts that receive daily notification of Tribal burn approvals made for the Reservation.

Regulatory and non-regulatory measures support the SMP. Until the implementation of the FARR on the Reservation, mechanisms were non-regulatory. Burners who do not follow the SMP process drop in priority for subsequent burn approvals. Since June of 2005, the FARR established federal enforceability for burn restrictions. The Tribe conducts investigations of compliance issues, submits reports to EPA, and EPA proceeds with any enforcement action. Investigations concerning cross-boundary events are coordinated between all parties to the Clearwater Airshed MOA.

11.7 UTAH SMOKE MANAGEMENT PROGRAM

The State of Utah administers a smoke management program that regulates prescribed fires and wildland fire use fires (WFUs) throughout the state. The program began in 1999 and is revised annually to ensure it meets the needs of both burners and the State air quality program.

The Utah Smoke Management Plan (SMP) and State administrative rule R307-204 contain Utah's smoke management program. The SMP describes the operational procedures for prescribed fires or WFUs on lands in Utah owned or managed by state and federal land management agencies. The SMP also provides details on the responsibilities of the parties involved in the program as well as the organizational structure that has been developed to operate the smoke management program. Additionally, on August 11, 2003, the Utah Enhanced Smoke Management Plan (ESMP) was finalized. The ESMP was developed to provide for visibility protection from smoke in Class I Areas as required by the federal Regional Haze Regulation (40 CFR 51.309(d)(6)). The ESMP is an addendum to the SMP and allows the SMP to be considered a §309 "Enhanced" smoke management program. Although the SMP does not have any legal power in and of itself, the plan provides detailed

operational procedures that were developed cooperatively to ensure safe and effective smoke management throughout the State.

In order to provide enforceability for the SMP, state administrative rule, R307-204 (Emission Standards, Smoke Management), was promulgated in 2001. The rule was drafted from the content of the SMP and specifies the regulatory responsibilities of all persons using prescribed fire or WFU fire on land that they own or manage. Under R307-204, prescribed fires requiring a burn plan cannot be ignited and WFU cannot be managed before the Executive Secretary of the Air Quality Board (AQB) approves or conditionally approves the burn request. R307-204 does not apply to agricultural activities; however, it does expand the scope of fires covered by the smoke management program. Although only fires on lands in Utah owned or managed by state and federal land management agencies are covered in the SMP, R307-204 applies to all non-agricultural burning in the State.

Operationally the Utah smoke management program works by making burn/no-burn/conditional burn decisions on a daily basis. These decisions are based on numerous fire related factors, including the size of planned burns, meteorological conditions, the impact of smoke from a proposed fire and the fire's relation to other proposed fires. The burn approvals are issued by the Executive Secretary of the AQB with assistance of an interagency Smoke Program Coordinator (SPC). The SPC is an interagency employee that works in the Utah Department of Air Quality (UDAQ) office. The SPC acts as a liaison between UDAQ and all participating burning agencies and provides necessary burn approval or denial recommendations to the Executive Secretary. In addition the SPC helps develop and maintain fire-related emissions inventory information, a database of fire activity and an annual report regarding the burning that occurred during each year.

Additional information about the Utah smoke management program can be found online at http://www.utahsmp.net/

11.8 – State of WA – Darrel Johnston

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