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27.9.1 Local Regulations

The implementation, administration, and enforcement of the following local regulations constitute the Lincoln County Air Pollution Control Program.

HEALTH AND ENVIRONMENT REGULATIONS

CHAPTER 1: Control of Air Pollution

(Revised 27 February 2006)

SUBCHAPTER 1: GENERAL PROVISIONS

75.1.101 INTENT: The purpose of this chapter is to achieve and maintain such levels of air quality as will protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property, and facilitate the enjoyment of the natural attractions of Lincoln County.

75.1.102: SCOPE: Unless otherwise indicated, the rules of Chapter 1 apply to activities and sources within the Air Pollution Control District.

75.1.103 DEFINITIONS: As used in this chapter, unless indicated otherwise, the following definitions apply:

(1) "Air Contaminant" means dust, ash, fumes, gas, mist, smoke, vapor or any particulate matter or a combination thereof present in the outdoor atmosphere.

(2) "Air Pollution Control District" means the geographical area designated on the attached map and as defined by the following Universal Transverse Mercator (UTM) coordinates:

Begin, 600000mE, 5370000mN; east to 620000mE, 5370000mN; south to 620000mE, 5340000mN; west to 600000mE, 5340000mN; north to 600000mE, 5370000mN.

(3) "Department" means the Lincoln County Environmental Health Department.

(4) "DEQ" means the Montana Department of Environmental Quality.

(5) "Emission" means a release into the outdoor atmosphere of an air contaminant.

(6) "EPA" means the US Environmental Protection Agency.

(7) "MAAQS" means Montana Ambient Air Quality Standards.

(8) "NAAQS" means National Ambient Air Quality Standards.

(9) "Person" means an individual, a partnership, a firm, an association, a municipality, a public or private corporation, the state or a subdivision or agency of the state, a trust, an estate, an interstate body, the federal government or an agency of the federal government, or any other legal entity and includes persons resident in Canada.

(10) "PM10" means particulate matter with an aerodynamic diameter of less than or equal to a nominal 10 micrometers.

(11) "PM2.5" means particulate matter with an aerodynamic diameter of less than or equal to a nominal 2.5 micrometers.

75.1.104 SELECTION & IMPLEMENTATION OF CONTINGENCY MEASURE PROGRAMS:

(1) Upon notification by DEQ or EPA that the Air Pollution Control District has failed to attain

NAAQS/MAAQS or make reasonable further progress in reducing emissions, the Department shall determine the source(s) contributing to the violation and designate the associated contingency measure(s) to be implemented. The Department shall identify sources of contribution based upon documented observations of emission sources and corresponding EPA reference method monitoring data.

(2) Unless otherwise prohibited by Section 75.1.104(2)(d), and within 60 days of notification from DEQ or EPA, the Department shall implement the following contingency measure(s) to reduce emissions from a source(s) identified as a contributor.

(a) If residential wood burning is determined to be a contributing source, the Department shall implement Section 75.1.208.

(b) If re-entrained dust is determined to be a contributing source, the Department shall implement Section 75.1.307.

(c) If industrial facility emissions are determined to be a contributing source, DEQ shall initiate contingency measures to reduce emissions.

(d) The Department shall address failure to attain NAAQS or to make reasonable further progress in reducing emissions attributable to natural events or impacts generating activities occurring outside state or local jurisdictional control according to EPA policy while initiating interim contingency measures at the local level.

(e) If no emission source(s) can be identified as a contributor, the Department shall conduct a comprehensive review, including chemical and microscopic filter analysis. Until such time as the review and analyses have been completed, the Department shall implement at least one of the above contingency measures on an interim basis. Any selected interim contingency measure(s) shall remain in effect until the Department completes a comprehensive review and determines whether a permanent contingency measure is necessary.

(3) Early voluntary implementation of a contingency measure shall not result in a requirement to develop additional moderate area contingency measures if the area later fails to attain the NAAQS/MAAQS or make reasonable further progress in reducing emissions. However, redesignation could necessitate additional control measures including Best Available Control Measures (BACM), Best Available Control Technology (BACT) and/or additional contingency measures.

75.1.105 ENFORCEABILITY:

The provisions of the regulations in this ordinance are enforceable by the Lincoln County Environmental Health Department authorities and/or appropriate law enforcement officials.

75.1.106 CONFLICT OF ORDINANCES:

(1) In any case where a provision of these regulations is found to be in conflict with a provision of any

zoning, building, fire, safety or health ordinance or code of any City of, Town of, or of the County of Lincoln, the provision which, in the judgment of the Health Officer, established the higher standard for the promotion and protection of the health and safety of the people shall prevail.
(2) If any portion of these regulations should be declared invalid for any reason whatsoever, such decision shall not affect the validity of the remaining portion(s) of the ordinance and such portions shall remain in full force and effect.

SUBCHAPTER 2: SOLID FUEL BURNING DEVICE REGULATIONS

75.1.201 INTENT:
(1) A regulation reducing the levels of particulate air pollutants to or below levels of the NAAQS/MAAQS.
(2) This regulation is necessary to preserve, protect, improve, achieve and maintain such levels of air quality as will protect the health and welfare of the citizens of Lincoln County.

75.1.202 SCOPE AND EFFECTIVE DATE:
(1) This regulation applies to all persons, agencies, institutions, businesses, industries or government entities living in or located within the Air Pollution Control District except for sources exempt from local regulation under 75-2-301(5), MCA.
(2) The effective date of this sub-chapter is January 1, 2007.

75.1.203 DEFINITIONS: As used in this subchapter, unless indicated otherwise, the following definitions apply:
(1) "Opacity" means a measurement of visible emissions defined as the degree expressed in percent to which emissions reduce the transmission of light and obscure the view of an object in the background.
(2) "Operating Permit" means a permit issued by the Department that allows the use of a solid fuel burning device within the boundaries of the Air Pollution Control District.
(3) "Pellet Fuel Burning Device" means a solid fuel burning device that burns only automatically fed biomass, pelletized fuels.
(4) "Solid Fuel Burning Device" means any fireplace, fireplace insert, wood stove, pellet stove, pellet furnace, wood burning heater, wood-fired boiler, wood or coal-fired furnace, coal stove, or similar device burning any solid fuel used for aesthetic, cooking or heating purposes which has a rated capacity of less than 1,000,000 BTU's per hour.
(5) "Standard Catalytic Device" means a solid fuel burning device with a catalytic emissions control system that has been certified by EPA test method as having emissions <4.1 grams/hour.

(6) "Standard Non-Catalytic Device" means a solid fuel burning device with a non-catalytic emissions

control system that has been certified by EPA test method as having emissions <7.5 grams/hour.

75.1.204 OPERATING & EMISSION LIMITS:

(1) No person may install or operate any type of solid fuel burning device without a valid Operating Permit issued by the Department.

(2) No person may burn any material in a solid fuel burning device except uncolored newspaper, untreated wood and lumber, and products manufactured for the sole purpose of use as a solid fuel. Products manufactured or processed for use as solid fuels must conform to any other applicable provisions of this subchapter.

(3) In the absence of an Air Pollution Alert, no person operating a solid fuel burning device may cause or allow the discharge of visible emissions greater than twenty percent opacity. The provisions of this section do not apply to visible emissions during the building of a new fire, for a period or periods aggregating no more than twenty minutes in any four-hour period.

(4) During an Air Pollution Alert, no person operating a solid fuel burning device that is permitted for use during an Alert may cause or allow the discharge of visible emissions greater than ten percent opacity. The provisions of this subsection shall not apply during the building of a new fire, for a period or periods aggregating no more than twenty minutes in any four-hour period. No person may operate a standard catalytic or non-catalytic solid fuel burning device during an Air Pollution Alert.

75.1.205 SOLID FUEL BURNING DEVICE PERMITS:

(1) Prior to installing or operating a solid fuel burning device in any residential or commercial property, a person shall apply to the Department for a permit and provide the following information:
the owner/operator of the device;
contact information for the device owner/operator;
location of the device;
device manufacturer & model;
type of device (rating); and
any other relevant information for the Department to determine whether it satisfies the requirements of this regulation.

(2) The Department may issue Operating Permits for the following types of solid fuel burning devices:

(a) **Standard catalytic devices**. The Department may issue an Operating Permit for a catalytic solid fuel burning device. Standard catalytic devices may not be operated during an Air Pollution Alert. Implementation of the contingency measure in 75.1.208 would automatically invalidate the operating permit for this type of device.

(b) **Standard non-catalytic devices**. The Department may issue an Operating Permit for a non-catalytic solid fuel burning device. Standard non-catalytic devices may not be operated during an Air Pollution Alert. Implementation of the contingency measure in 75.1.208 would automatically invalidate the operating permit for this type of device.

(c) **Pellet fuel burning devices**. The Department may issue an operating permit for a biomass pellet fuel burning device. Pellet fuel burning devices may be operated during an Air Pollution Alert. Implementation of the contingency measure in 75.1.208 would not invalidate the operating permit for this type of device.

(3) Unless otherwise invalidated by implementation of a contingency measure or future changes in solid fuel burning device regulations, Operating Permits are valid until the named owner/operator changes or the device is removed or modified in any way. Permits may not be transferred from person to person or from place to place.

(4) An Operating Permit for a solid fuel burning device may be revoked by the Department for non-compliance with these regulations or Operating Permit conditions.

75.1.206 AIR POLLUTION ALERTS:

(1) The Department may declare an Air Pollution Alert to be in effect whenever ambient PM concentrations, as averaged over a four hour period, exceed a level 20 percent below any state or federal ambient 24-hour standard established for particulate matter; and when scientific and meteorological data indicate the average concentrations will remain at or above these levels over the next 24 hours.

(2) The Department may also declare an Air Pollution Alert to be in effect whenever scientific and meteorological data indicate that the ambient PM concentrations over any four-hour period within the next twenty—four hours may reasonably be expected to exceed a level 20 percent below any state or federal ambient 24-hour standard established for particulate matter.

(3) No person shall be subject to any violation of 75.1.204(4) for three hours after the Department declares an Air Pollution Alert and makes that information reasonably available to the public.

75.1.207 PENALTY ASSESSMENTS:

(1) The Department shall issue a "Notice of Violation" for any documented violation. The first notice of violation issued is a warning to the violator and will include educational and compliance information on air pollution regulations.

(2) For a second and any subsequent violations, the Department shall process each notice of violation for a Civil Penalty Assessment of $25.00 per violation.

(3) No person or entity may be cited for a violation more than once in any calendar day. However, the Department may issue a notice of violation for each calendar day of violation and each such notice is considered as a separate violation.

75.1.208 CONTINGENCY MEASURES:

(1) If compliance with NAAQS/MAAQS are not achieved or compliance levels are not maintained, and the Department determines that solid fuel burning device emissions are a contributor to non-compliance, the Department shall implement the following control measure:

(a). No person may operate a solid fuel burning device except a biomass pellet fuel burning device with a valid operating permit issued by the Department.

SUBCHAPTER 3: DUST CONTROL REGULATIONS:

Control Measures For Roads, Parking Lots And Commercial Lots

75.1.301 INTENT: Regulations enacting an emission control plan within the Air Pollution Control District to meet NAAQS for particulate matter by requiring dust abatement and control.

75.1.302 SCOPE & EFFECTIVE DATE:

(1) This regulation applies to all persons, agencies, institutions, businesses, industries or government entities living in or located within the "Regulated Road Sanding and Sweeping District."

(2) The effective date of this subchapter is January 1, 2007.

75.1.303 DEFINITIONS: As used in this subchapter, unless indicated otherwise, the following definitions apply:

(1) "Areas of Public Safety Concern" means specific areas that may include, but are not necessarily limited to: roadways with steep grade hills; roadways around public school facilities; and parking areas for medical, senior or public school facilities.

(2) "Commercial Yard/Lot" means a parcel of land located off the public right-of-way with uses that may include, but are not necessarily limited to, logging yards, bus lots, store and shopping parking areas, construction firms, trucking/transportation firms, and industrial facility sites.

(3) "Emergency Situation" means a situation when:

(a) Liquid de-icing agents and/or de-icing salts become unavailable due to circumstances beyond the control of the person, government or private entity maintaining a roadway, alley, parking lot or commercial yard/lot or;

(b) due to extreme weather conditions, or hazardous roadways, liquid de-icing agents and/or de-icing salts do not provide adequate traction for public safety.

(4) "Parking Lot" means a parcel of land located off of the public right-of-way which is not less than 5,000 square feet in size and which is primarily used for the temporary storage of motor vehicles. A parking lot as used in this regulation does not include lots for the storage of special mobile equipment as defined in 61-1-101(59), MCA.
(5) "Prioritized Street Sweeping and Flushing" means a schedule of street sweeping and/or flushing which cleans streets with the highest traffic volumes first and proceeds in descending order of traffic volume to streets with the lowest traffic volume. When all ice-free streets have been cleaned the cycle is immediately repeated.
(6) "Reasonably Available Control Technology" means
(a) During winter, prioritized street sweeping and flushing of streets with accumulated carry-on or applied materials shall commence on the first working day after the roadbed becomes ice-free and temperatures remain above freezing.
(b) During summer, street sweeping and/or flushing which is accomplished on an as-needed basis to remove any accumulated carry-on or applied materials, with priority given to streets with the highest traffic volumes.
(7) "Regulated Road Sanding and Sweeping District" means the geographical area designated by the attached map, wherein the regulations of this sub-chapter apply, and defined as follows:
Point of beginning: intersection of Pipe Creek Road and Highway 37 North, follow Highway 37 south to Thomas Road then west-northwest along the Kootenai River to the west end of Jay-Effar Road; then west-southwest across Highway 2 to Parsnix Way; then south-southeast along the base of the foothills, crossing Flower Creek Road and Main Avenue, to Reese court; then south along Cabinet Heights Road and Westgate to Snowshoe Road; then North-northeast on Shaughnessy Road to Highway 2; then east to Libby Creek; then north following the streambank of Libby Creek to the Kootenai River; then west-northwest along the Kootenai River to Highway 37; then north on Highway 37 to the point of beginning.
(8) "Road" means any road or alley which is greater than 50-feet in length and which has or is projected to have an average traffic volume greater than 50 vehicles per day.
(9) "Summer" means the months of May, June, July, August, September and October.
(10) "Winter" means the months of November, December, January, February, March and April.

75.1.304 LIMITATION ON USE AND ON APPLICATION OF MATERIALS:
(1) No person may allow vehicular operation on any road, parking lot or commercial yard/lot that is not paved or otherwise surfaced or treated to prevent vehicular carry-on and wind-borne entrainment of dust.

(a) If an emergency situation arises that requires vehicular operation in/on an untreated area, the Department may authorize utilization of the area during the course of the emergency provided alternative methods are implemented to minimize carry-on or entrainment.

(2) With the exception of "Emergency Situations" and "Areas of Public Safety Concern", sanding materials may not be applied. Only liquid de-icing agents and/or de-icing salts may be used on roads, parking lots and commercial yards/lots.

(3) No person may place any sanding or chip seal material on any road, parking lot or commercial yard/lot which has a durability, as defined by the Montana Modified LA Abrasion Test, of greater than 7, and a fines content of material smaller than 200 mesh, as determined by standard wet sieving methods, that exceeds 3 percent oven dry weight.

(4) A person, prior to application, shall test materials proposed for use as sanding or chip seal material and provide the Department laboratory test data demonstrating that the material meets the specified requirements for durability and fines content.

75.1.305 STREET SWEEPING & FLUSHING:

(1) Any person responsible for the maintenance of a road shall implement and maintain a schedule of prioritized street sweeping and flushing.

(2) Reasonably available control technology shall be utilized to assure timely removal of carry-on or applied accumulations from all roads.

75.1.306 SPECIFIC MEASURES FOR COMMERCIAL YARDS/LOTS:

(1) Operators of all commercial yards/lots shall implement measures to prevent the collection and deposition of dust from equipment wheels and chassis.

(2) Operators of all commercial yards/lots shall implement dust suppression measures (chemical dust suppressants, dust oiling, watering, etc.) in bare, undeveloped areas of the property(ies) to eliminate fugitive air-born dust.

(3) Operators of all commercial yards/lots shall clean carry-on material generated from their facility from adjoining roadways in a timely manner.

75.1.307 CONTINGENCY MEASURES:

(1) If compliance with NAAQS is not achieved or compliance levels are not maintained, and the Department determines that re-entrained dust emissions contribute to non-compliance, the Department shall implement the following control measure:

(a) The Regulated Road Sanding and Sweeping District shall be extended to the boundaries of the Air Pollution Control District.

(b) Control measures in place for the Regulated Road Sanding and Sweeping District shall apply throughout the entire Air Pollution Control District.

75.1.308 MATERIALS APPLICATION OUTSIDE THE DISTRICT:

(1) For all areas of the Air Pollution Control District that lie outside of the Regulated Sanding and Sweeping District, each person or government or private entity is strongly

encouraged to reduce the amount of sanding materials applied, taking into consideration public safety and air quality.
(2) Outlying areas and low traffic volume roads should have a low priority.
(3) Residential areas may receive less sanding material because of lower speeds.
(4) Adding salt compounds to conventional sanding materials reduces the total amount of sand applied.
(5) Vehicles used for winter driving should be equipped with winter tires or traction devices.

SUBCHAPTER 4: OUTDOOR BURNING REGULATIONS

75.1.401 INTENT:
(1) Local geographic features and concentrations of populations in Libby and the immediate surrounding area necessitate rules and regulations concerning the outdoor burning of waste materials.
(2) Experience has demonstrated that air quality degradation and public health problems are often associated with the improper burning of waste materials in both urban and suburban areas.
(3) The purpose of this regulation is to improve air quality and meet NAAQS/MAAQS for particulate matter by restricting non-essential outdoor burning, promoting alternative disposal methods and recycling, and setting standards to minimize emissions when outdoor burning is required.

75.1.402: SCOPE AND EFFECTIVE DATE:
(1) This regulation applies to all persons, agencies, institutions, businesses, industries or government entities living in or located within the boundaries of the Air Pollution Control District and Impact Zone L and to all licensed landfills within the boundaries of Lincoln County.
(2) The effective date of this sub-chapter is April 15, 2006.

75.1.403 DEFINITIONS:
(1) "Best Available Control Technology" (BACT) means those techniques and methods of controlling emissions of pollutants from an existing or proposed outdoor burning source which limit those emissions to the maximum degree which the Department determines, on a case-by-case basis, is achievable for that source, taking into account impacts on energy use, the environment, and the economy, and any other costs, including cost to the source.
Such techniques and methods may include the following: scheduling of burning during periods and seasons of good ventilation; applying dispersion forecasts; utilizing predictive modeling results performed by and available from DEQ to minimize smoke impacts; limiting the amount of burning to be performed during any one time; using ignition and

burning techniques which minimize smoke production; selecting fuel preparation methods that will minimize dirt and moisture content; promoting fuel configurations which create an adequate air to fuel ratio; prioritizing burns as to air quality impact and assigning control techniques accordingly; promoting alternative treatments and uses of materials to be burned; and selecting sites that will minimize smoke impacts. BACT for all residential and management outdoor burning includes burning only as authorized by and during the time periods specified by the Department.

(2) "Bonfire" means a ceremonial fire or small recreational fire, in which the materials burned are cordwood or clean untreated dimensional wood and which is conducted by an educational, fraternal or religious organization for the purpose of celebrating a particular organization-related event or for a social gathering, picnic, campout, fireside singalong, etc.

(3) "Christmas Tree Waste" means wood waste from commercially grown Christmas trees left in the field where the trees were grown, after harvesting and on-site processing.

(4) "Conditional Open Burning Permit" means a permit issued to conduct outdoor burning at a licensed landfill.

(5) "Emergency outdoor burning" means an event beyond individual control that necessitates the use of outdoor burning in order to dispose of a substance that poses an immediate threat to public health and safety, or plant or animal life, and for which no alternative method of disposal is reasonably available.

(6) "Impact Zone L" means all of the land within the following boundaries: Beginning at Kootenai Falls, going southeast to Scenery Mountain, then south to Indian Head, then south to Treasure Mountain, then south to Mount Snowy, then east to Double N Lake, then across Highway 2 going northeast to McMillan Mountain, then north to Swede Mountain, then northeast across Highway 37 to the Vermiculite Mine, then west to Sheldon Mountain, then west-northwest to Flagstaff Mountain, then southwest to Kootenai Falls, the point of beginning.

(7) "Libby Outdoor Burning Control Area" means all of the land included with the boundaries of the Air Pollution Control District and Impact Zone L, including the City of Libby.

(8) "Licensed Landfill" means a solid waste disposal site that is licensed for operation by DEQ.

(9) "Licensed Landfill Outdoor Burning" means burning at a licensed landfill pursuant to a conditional outdoor burning permit.

(10) "Major Open Burning Source" means any person, agency, institution, business or industry conducting any outdoor burning that, on a statewide basis, will emit more than 500 tons per calendar year of carbon monoxide or 50 tons per calendar year of any other pollutant regulated under ARM 17.8.101 et seq., except hydrocarbons.

(11) "Management Burning" means any person, agency, institution, business or industry conducting any outdoor burning for any purpose except residential burning, including forestry/wildlife management, licensed landfill management, firefighter training exercises, commercial film productions, or fuel hazard reduction which is designated as necessary by a fire protection agency.
(12) "Outdoor Burning" means the combustion of any material directly in the open air without a receptacle, or in a receptacle other than a furnace, multiple chambered incinerator, or wood waste burner, with the exception of unexploded ordnance, small recreational fires (including bonfires), construction site heating devices used to warm workers, or safety flares used to combust or dispose of hazardous or toxic gases at industrial facilities, such as refineries, gas sweetening plants, oil and gas wells, sulfur recovery plants or elemental phosphorus plants.
(13) "Residential Burning" means any outdoor burning conducted on a residential, farm or ranch property to dispose of vegetative wastes.
(14) "Salvage operation" means any operation conducted in whole or in part to salvage or reclaim any product or material, except the silvicultural practice commonly referred to as a salvage cut.
(15) "Trade wastes" means solid, liquid or gaseous material resulting from construction or operation of any business, trade, industry or demolition project. Wood product industry wastes such as sawdust, bark, peelings, chips, shavings, branches, limbs and cull wood are considered trade wastes. Trade wastes do not include Christmas tree waste or wastes generally disposed of by residential outdoor burning or management outdoor burning, as defined in these regulations.

75.1.404 OUTDOOR BURNING CONTROL AREAS:
(1) Outdoor burning regulations shall apply to all outdoor burning activities within the boundaries of the Air Pollution Control District and/or Impact Zone L. The Department may issue restrictions and prohibit outdoor burning activities within these boundaries.
(2) Restrictions and permitting regulations for Licensed landfills shall apply throughout the boundaries of Lincoln County.

75.1.405 PROHIBITED MATERIALS & ACTIVITIES:
(1) 40 Code of Federal Regulations (CFR) Part 261, which identifies and defines hazardous wastes, is hereby incorporated by reference.
(2) Except as specifically provided under ARM 17.8.604 for firefighter training, commercial film production and licensed landfills; the following materials may not be disposed of by outdoor burning:
- (a) any waste moved from the premises where it was generated;
- (b) food wastes;
- (c) styrofoam and other plastics;
- (d) wastes generating noxious odors;

(e) wood and wood by-products that have been treated, coated, painted, stained, or contaminated by a foreign material, such as papers, cardboard, or painted or stained wood;
(f) poultry litter;
(g) animal droppings;
(h) dead animals or dead animal parts;
(i) tires;
(j) rubber materials;
(k) asphalt shingles;
(l) tar paper;
(m) automobile or aircraft bodies and interiors;
(n) insulated wire;
(o) oil or petroleum products;
(p) treated lumber and timbers;
(q) pathogenic wastes;
(r) hazardous wastes as defined by 40 CFR Part 261;
(s) trade wastes;
(t) any materials resulting from a salvage operation;
(u) chemicals;
(v) Christmas tree waste;
(w) asbestos or asbestos-containing materials;
(x) standing or demolished structures; and
(y) paint.

(3) The burning of stumps, the burning of grass clippings and leaves, and overnight smoldering of burns is prohibited.
(4) Burning on any city or county street, road or alley is prohibited.
(5) The use of burn barrels, or other unapproved devices, is prohibited.

75.1.406 **OUTDOOR BURNING PERIODS:** Various types of outdoor burning activities are limited to the following time periods:

(1) **Residential burning – April 1 through April 30:**
(a) Residential Outdoor Burning may be conducted during the month of April.
(b) In the event of unduly wet or wintry weather conditions during the month of April, the Department may extend the residential burning season into the month of May.
(c) No person may conduct residential outdoor burning at any other time during the year.

(2) **Management Burning – April 1 through October 31:**
(a) Management burns may be conducted throughout the management burning season of

April 1 through October 31.

(3) **Closed Burning Periods – November 1 through March 31:**

(a) No person may conduct outdoor burning during the months of November, December, January, February and March.

(b) The Department may authorize exceptions for emergency outdoor burning after receiving the following information:

(i) facts establishing that alternative methods of disposing of the substance are not reasonably available;

(ii) facts establishing that the substance to be burned poses an immediate threat to human health and safety or plant or animal life;

(iii) the legal description or address of the site where the burn will occur;

(iv) the amount of material to be burned;

(v) the date and time of the proposed burn; and

(vi) the date and time that the spill or incident giving rise to the emergency was first noticed.

(c) Management burning in closed burning periods may be conducted based on a written demonstration of need from a fire protection agency and approval from the Department prior to each ignition.

75.1.407 GENERAL COMPLIANCE & PERMITTING REQUIREMENTS:

(1) Outdoor burning is allowed only on days with good ventilation/dispersion forecasts. The Department will make this determination based on available interagency meteorological information and local ambient particulate concentrations.

(2) All residential burners shall apply for and receive an Air Quality Permit from the Department prior to initiating any outdoor burn.

(3) All burners shall apply for and receive any necessary fire permit(s) from the jurisdictional fire protection agency prior to initiating any burn.

(4) All burners shall use alternative disposal methods when reasonably available.

(5) All burners shall utilize BACT.

(6) All residential burners shall call the Air Quality Hotline at 293-5644 prior to ignition and comply with established burning hours and any burning bans or other announced restrictions.

(7) All management burners shall contact the Department and receive approval prior to ignition of a planned burn. The Department may authorize, restrict, or prohibit proposed burns after reviewing meteorological dispersion forecasts and local conditions.

(8) Prior to conducting any outdoor burning, all major open burning sources shall apply for and receive an air quality major open burning permit pursuant to ARM 17.8.610.

75.1.408 SPECIAL COMPLIANCE & PERMITTING REQUIREMENTS:

(1) **Firefighter Training:**

(a) Prior to conducting outdoor burning sessions as part of their training program, Fire Departments shall apply for and receive a Firefighter Training Permit issued by DEQ.

(b) Any person planning Firefighter Training outdoor burning shall contact the Department and receive approval prior to conducting the training burn. The Department may authorize, restrict, or prohibit proposed burns after reviewing meteorological dispersion forecasts and local conditions.

(c) Any person planning Firefighter training outdoor burning shall provide at least three weeks advance notice to all residents within a 1/4-mile or four-block radius of the proposed training site. The Department and County Health Officer shall evaluate any concerns about environmental or health impacts presented by surrounding residents prior to authorization or denial of the outdoor burning.

(2) **Commercial Film Production Burns:**

(a) Anyone planning to conduct Commercial Film Production outdoor burning shall apply for and receive a Commercial Film Production Permit issued by DEQ.

(b) Anyone planning Commercial Film Production outdoor burning shall contact the Department and receive approval prior to conducting outdoor burning. The Department may authorize, restrict, or prohibit proposed burns after reviewing meteorological dispersion forecasts and local conditions.

(3) **Fuel Hazard Reduction:**

(a) Any proposed burn for fuel hazard reduction must be designated as necessary by a fire protection agency.

(b) Anyone planning Fuel Hazard Reduction outdoor burning shall contact the Department and receive approval prior to conducting outdoor burning. The Department may authorize, restrict, or prohibit proposed burns after reviewing meteorological dispersion forecasts and local conditions.

(4) **Licensed Landfill Burns:**

(a) All licensed landfills within the boundaries of Lincoln County must:

(i) Have an approved burn site, as designated in the solid Waste Management System License issued by the DEQ, pursuant to ARM Title 17, chapter 50, subchapter 5, before a Conditional Air Quality Open Burning permit may be issued.

(ii) Obtain a Conditional Air Quality Outdoor Burning Permit from the Department before burning. A new permit must be obtained for each burn.

(iii) Comply with all conditions of the permit.

(b) No licensed landfill within the boundaries of Lincoln County shall cause or allow the burning of untreated wood waste unless they have first applied for and received a permit for such outdoor burning from the Department.

(c) The Department may issue a conditional air quality open burning permit if the Department determines that:

(i) alternative methods of disposal would result in extreme economic hardship to the applicant; and

(ii) emissions from open burning will not endanger public health or welfare or cause or contribute to a violation of any NAAQS/MAAQS.

(d) The Department must be reasonable when determining whether alternative methods of disposal would result in extreme economic hardship to the applicant.

(e) Conditional outdoor burning must conform with BACT.

(f) The Department may issue a conditional air quality outdoor permit to dispose of untreated wood waste at a licensed landfill site, if the Department determines that:

(i) the proposed open burning will occur at an approved burn site as designated in the solid waste management system license issued by DEQ pursuant to ARM title 17, chapter 50, subchapter 5; and

(ii) prior to the issuance of the air quality open burning permit, the wood waste pile is inspected by the Department or its designated representative and no prohibited materials listed in 75.1.405(2), other than wood waste, are present.

(g) A permit issued under this rule is valid for a single burn of untreated wood waste at licensed landfill sites. A new permit must be obtained for each burn.

(h) The Department may place any reasonable requirements in a conditional air quality open burning permit that it determines will reduce emissions of air pollutants or minimize the impact of emissions and the recipient of a permit must adhere to those conditions.

(i) An application for a conditional air quality open burning permit must be made on a form provided by the Department. The applicant shall provide adequate information to enable the Department to determine whether the application satisfies the requirements for a conditional air quality open burning permit contained in this rule. Proof of publication of public notice, as required in section (j) of this rule, must be submitted to the Department before an application will be considered complete.

(j) An applicant for a conditional air quality open burning permit shall notify the public of the application by legal publication, at least once, in a newspaper of general circulation in the area affected by the application. The notice must be published no sooner than 10 days prior to submittal of an application and no later than ten days after submittal of an application. Form of the notice must be provided by the Department and must include a statement that public comments

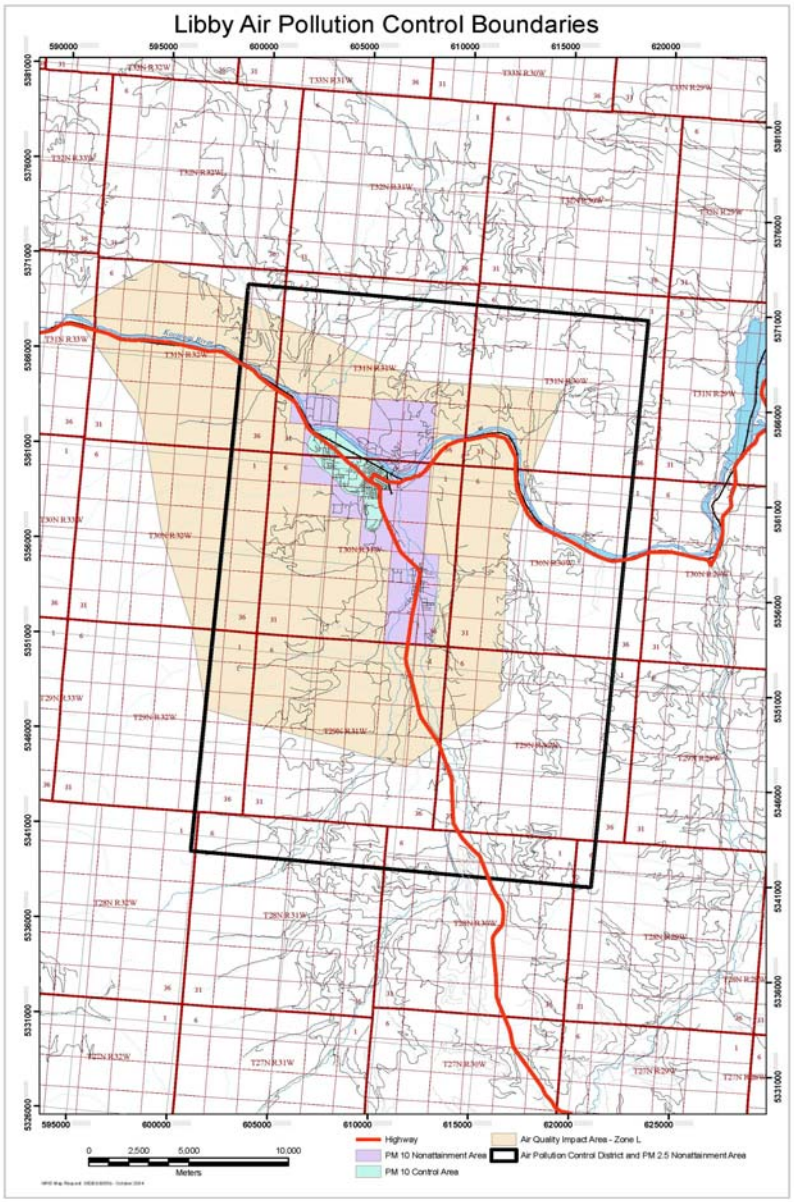
may be submitted to the Department concerning the application within 20 days after publication of notice or filing of the application, whichever is later. A single public notice may be published for multiple applications.

(k) When the Department approves or denies the application for a permit under 75.1.408(4), a person who is jointly or severally adversely affected by the decision may request a hearing before the Lincoln County Board of Health. The request for hearing must be filed within 15 days after the Department renders its decision and must include an affidavit setting forth the grounds for the request. The Department's decision on the application is not final unless 15 days have elapsed from the date of the decision and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department's decision until the conclusion of the hearing and issuance of a final decision by the Lincoln County Board of Health.

75.1.409 **PENALTY ASSESSMENTS:**

(1) Any person who violates any provision of these regulations or any provision of any directive, action, permit, or approval adopted pursuant to the authority granted by these regulations, except for intentional violations of Section 75.1.405(2)(r), shall be, upon conviction, punished by a fine not less than $25 and not more than $200 for each offense. Violations of Section 75.1.405(2)(r), burning hazardous wastes as defined by 40 CFR Part 261, shall be, upon conviction, punished by a fine not to exceed $10,000 per day per violation.

(2) Each day of violation shall be considered a separate offense.


Libby Air Pollution Control Boundaries
590000
595000
600000
605000
610000
615000
620000
625000
Highway
PM 10 Nonattainment Area
PM 10 Control Area
Air Quality Impact Area - Zone L
Air Pollution Control District and PM 2.5 Nonattainment Area
0
2,500
5,000
10,000
Meters

27.12 LIBBY AND VICINITY $PM_{2.5}$ CONTROL PLAN

27.12.1 Area Description

Libby is a small, rural community located in Lincoln County with a population of 2,626 in 2000 (U.S. Census). The town is located in a narrow, triangular valley created by the confluence of Libby Creek and the Kootenai River. The Kootenai Valley runs east and west in the vicinity of Libby with lesser valleys extending north and south along Pipe and Libby Creeks. Libby lies at an elevation of 2,100 feet with the surrounding mountains rising to over 7,000 feet. Historically, agriculture and the timber industry have been the economic basis for the area.

Libby is the county seat of Lincoln County - a large, rural county of 3,613 square miles located in the northwestern corner of Montana. The vast majority of the county is forest land owned by either the U.S. Forest Service or private timber companies. According to the 2000 U.S. census, the population of Lincoln County was 18,837.

The population growth that is occurring is located mostly within the $PM_{2.5}$ nonattainment area (NAA). Over the ten-year period from 1990 to 2000, the city of Libby's population only grew 3.71%. If that rate continued from 2000 to 2005, the city's population would be estimated at 2,674. Over the ten-year period from 1990 to 2000, Lincoln County's population only grew 7.76%. If that rate continued from 2000 to 2005, the population of the 'Libby Valley' would be estimated at 9,484. Traffic and commuting patterns are localized, mostly concentrated within the Libby Valley itself. Those patterns are not expected to change.

Climatic conditions and Libby's location in a deep mountain valley subject the community to some of the poorest atmospheric dispersion in Montana. During the late fall, winter and early spring, winds are light or nonexistent. Temperature inversions are common and can last for days or weeks trapping particulate matter in the Libby Valley.

Figure 27.12.1 illustrates the various Libby Air Pollution Control Boundaries. Specifically, Impact Zone "L"; PM_{10} NAA; PM-10 control area; Air Pollution Control District; and the $PM_{2.5}$ NAA.

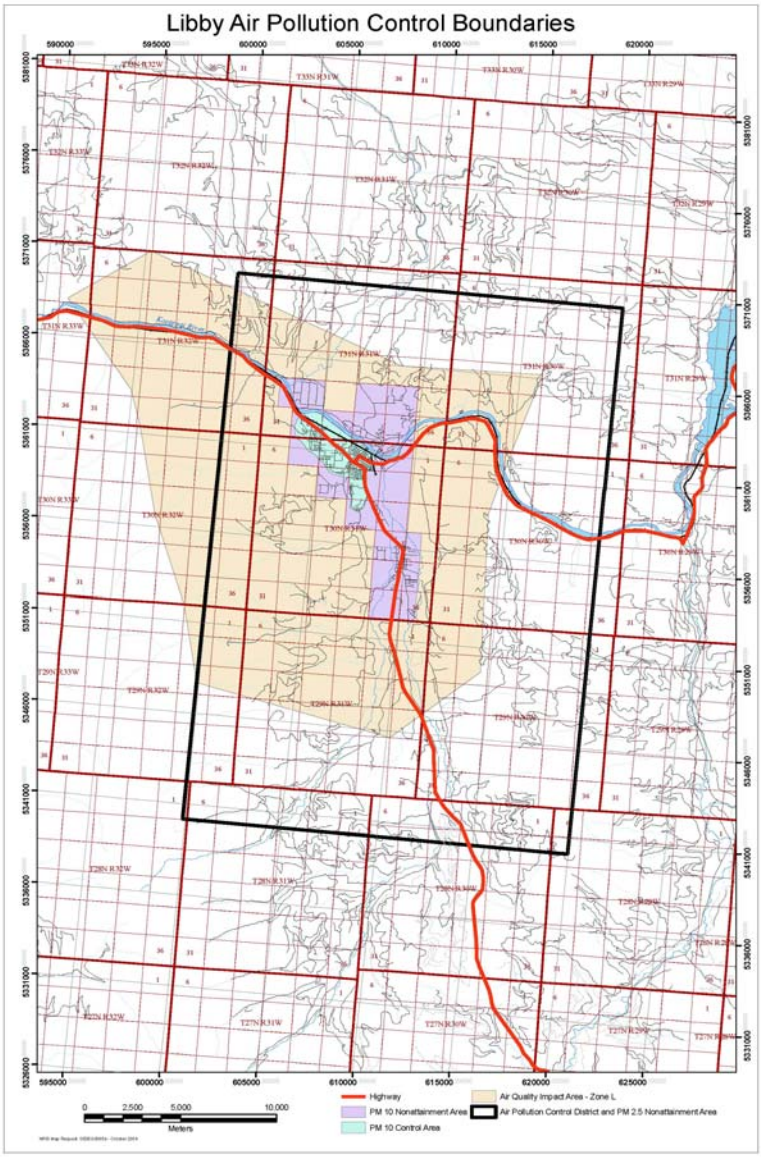


Figure 27.12.1. Libby Air Pollution Control Boundaries

27.12.2 Air Quality Monitoring

In Lincoln County, ambient air monitoring is conducted using Federal Reference Method (FRM) $PM_{2.5}$ samplers at the Courthouse Annex site in downtown Libby. The site is located at Latitude 48.3842, Longitude -115.5481, with an elevation of approximately 2,100 feet. The monitoring began in January 1999 and the results have shown consistently high $PM_{2.5}$ concentrations. This site has been assigned the identification number 30-053-0018 in EPA's national air quality database (AIRS). Data from the years 2001 to 2003 is illustrated in Figure 27.12.11.1 with the 3-year annual design value calculated to be 15.9 $\mu g/m^3$. That value is a violation of the annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS). The 3-year average of the 24-hour 98^{th} percentile values for the same time period is 44.7 $\mu g/m^3$, which was below the 1997 24-hr NAAQS (65 $\mu g/m^3$) previously in existence at that time.

In February 2002, DEQ initiated speciation monitoring at the Libby Courthouse Annex site to determine possible $PM_{2.5}$ emission sources. The results identified organic carbon (OC) as the main component of the wintertime $PM_{2.5}$ samples. Potential OC emission sources in the area included industry, wood combustion and biogenic sources. Given the high OC percentage in the samples, the Stimson Lumber Mill (Libby's only major industrial source) was suspected of being a major contributor to ambient $PM_{2.5}$.concentrations. However, ambient $PM_{2.5}$ concentrations did not significantly decrease after Stimson ceased operations in December 2002.

Further ambient monitoring was conducted from November 2003 to February 2004 to determine the geographic distribution of $PM_{2.5}$ concentrations. Additional monitoring sites were established in various locations beyond Libby city limits for one month periods. These FRM monitors each collected samples on the same schedule as the compliance FRM monitor at the Libby Courthouse Annex site. The sites were located within the two major stream drainages of the Kootenai River and Libby Creek. The $PM_{2.5}$ samples from these temporary sites were analyzed and compared to the $PM_{2.5}$ data collected at the Libby Courthouse Annex site in downtown Libby.

A meteorological station was also installed at the Libby Courthouse Annex site to measure weather data parameters such as temperature, precipitation, wind speed, and wind direction. The results of the study indicated that the Libby Courthouse Annex site represented the worst-case ambient $PM_{2.5}$ levels in the area and justified the selection of the Libby $PM_{2.5}$ NAA boundary (70 FR 986 on January 5, 2005).

27.12.3 Chemical Mass Balance Study (CMB)

During the winter of 2003-2004, The University of Montana, Center for Environmental Health Sciences (UM-CEHS) conducted a $PM_{2.5}$ CMB study in Libby.

The goal of the CMB study was to identify those emission sources in the Libby area that contributed to elevated $PM_{2.5}$ concentrations. Using chemical 'fingerprints' of the local and regional $PM_{2.5}$ emission sources, and similar chemical analyses of the ambient samples as inputs to a computer program, a CMB model apportions the contributions of various emission sources back to the measured $PM_{2.5}$ concentrations in the ambient air. The $PM_{2.5}$ chemical speciation sampler at the Libby Courthouse Annex site measured the mass and chemical composition (including elements, ions and organic and elemental carbon) of the ambient aerosol every six days from November 11, 2003 through February 27, 2004. A collocated FRM $PM_{2.5}$ monitor used quartz filters to collect particulate matter which was later analyzed for polar organic compounds, many of which are signature chemical markers emitted by local sources in the Libby airshed. In addition, a high volume (hivol) polyurethane foam (PUF) monitor was installed at the Courthouse Annex site to collect samples that were later analyzed for polycyclic aromatic hydrocarbon (PAH) compounds. The majority of this information was used as data inputs to the CMB model.

The average $PM_{2.5}$ concentration measured during the CMB study was 28.2 $\mu g/m^3$, with the highest concentration (40.9 $\mu g/m^3$) sampled on January 16, 2004. The CMB model runs indicated that emissions from residential wood combustion were the major source of the fine particles on the $PM_{2.5}$ filters, averaging 82% during the CMB study period (i.e., the winter months). This conclusion was also supported by the results of the polar organics and PAH sampling program, where many of the organic species with the highest measured concentrations were also signature chemical markers for wood combustion. Other contributing $PM_{2.5}$ sources identified by the CMB model were automobile exhaust (7%), ammonium nitrate (5%), diesel exhaust (4%), and sulfate (2%). Figure 27.12.3 illustrates the CMB results.

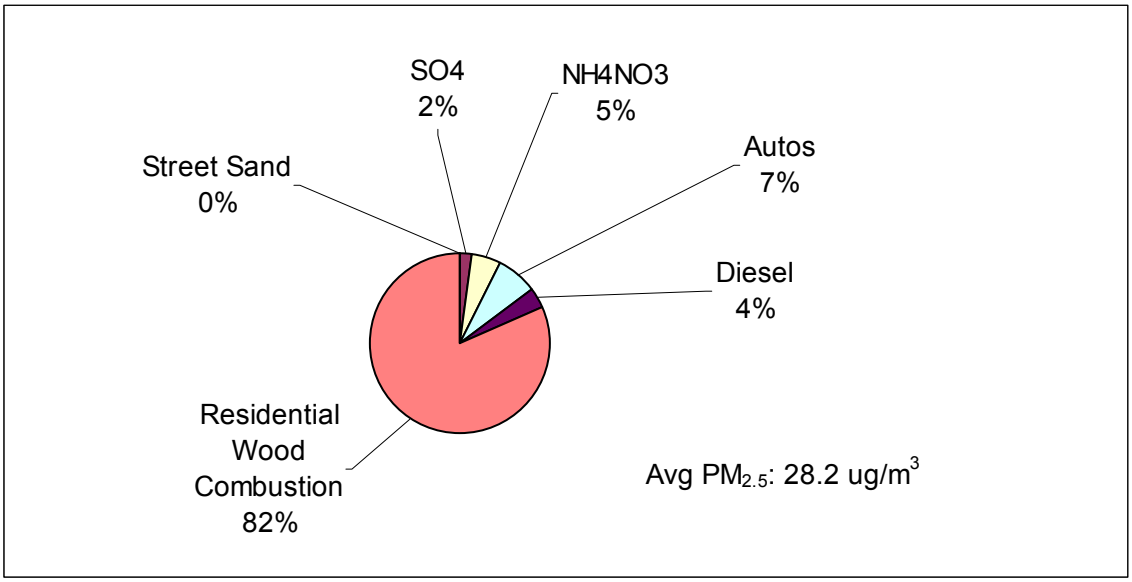


Figure 27.12.3 Libby $PM_{2.5}$ CMB Model Results (11/11/03 – 2/27/04)

27.12.4 Carbon 14 Study Results

Carbon 14 (^{14}C) analyses conducted as part of the CMB study provided further evidence that wood combustion for space heating was the major source of $PM_{2.5}$ emissions in Libby. The University of Arizona analyzed various Libby samples for ^{14}C and the results indicate that wood smoke emissions contributed an average of 82% to the $PM_{2.5}$ concentrations during the 2003-2004 CMB study.

Table 27.12.4 Average Libby ^{14}C Results (11/11/03 – 2/27/04)

Sample ID	Modern Carbon Fraction	Wood Smoke (%)
Wood Stove Source Profile	0.9825	91
Oil-Fired Heater Profile	0.0984	9
Libby ^{14}C Samples – Avg.	0.8804	82

Source: Ward, Tony. The Libby, Montana $PM_{2.5}$ Source Apportionment Research Study, The University of Montana-Missoula, Center for Environmental Health Sciences, 2005, pg. 20.

27.12.5 Libby Base Year $PM_{2.5}$ Emission Inventory

As part of developing the Libby $PM_{2.5}$ control plan, an emission inventory (EI) and technical support documents were developed to quantify the fine particulate emissions from all sources in the Libby airshed. The EI objectives were:

- Accurately quantify the actual $PM_{2.5}$ emissions within the Libby NAA.
- Apportion the actual $PM_{2.5}$ emissions on a seasonal and annual basis.
- Apportion the actual $PM_{2.5}$ emissions on a point and area sources basis.

Normally, the primary reason for inventorying emissions is to develop a database that can serve as inputs to an air pollution dispersion model. However, since dispersion modeling will not be utilized for the Libby annual demonstration of compliance, the EI will support a "roll back" calculation for an emission control plan that will demonstrate attainment in Libby with the annual $PM_{2.5}$ NAAQS.

DEQ used 2005 as the base year for the EI. Critical information such as activity levels for residential wood combustion, as well as other home and commercial fuel use in the Libby NAA was not available for 2002; thus the EI was developed for 2005. That year was also when the State of Montana surveyed residents in the Libby NAA about their wood burning usage as part of the Libby, MT Woodstove Changeout Program. Additionally, DEQ obtained other fuel use data for home heating, and a CMB study was conducted to determine the contribution of various emission sources to the ambient $PM_{2.5}$ concentrations.

27.12.6 Historical PM_{10} Controls

Libby was designated as nonattainment for PM_{10} by operation of law on November 15, 1990 under authority of the 1990 Clean Air Act (CAA) Amendments, Section 107 (d)(4)(B). Libby was classified as 'Moderate' on November 6, 1991. The Libby PM_{10} control plan was approved by EPA on August 30, 1994, 59 FR 44627. The control plan focuses upon re-entrained road dust, outdoor burning, and residential wood stove emissions.

The Lincoln County Environmental Health Department administers the local air pollution control regulations. These regulations are incorporated into the federally-approved PM_{10} control plan (59 FR 44627 on August 30, 1994). PM_{10} emissions were reduced through aggressive street sweeping and flushing, traction sand durability requirements, and implementation of solid fuel burning device (residential wood stove) regulations. Additional controls include federal programs designed to reduce tailpipe emissions from motor vehicle through engine controls and fuel specifications.

27.12.7 $PM_{2.5}$ Control Strategies

The speciation monitoring data indicated that a large portion of the $PM_{2.5}$ samples, especially in the wintertime, was organic carbon. Potential local sources of organic carbon included biogenic emissions, condensable Volatile Organic Compounds (VOC), and the combustion of biomass and fossil fuels. Stimson Lumber was the only large industrial source in Libby (hog fuel boilers & veneer dryers) but when they ceased operation in 2002 there was no appreciable effect on the ambient $PM_{2.5}$ monitoring data. The ambient monitoring continued to indicate that $PM_{2.5}$ concentrations were much higher in the winter months. That information, combined with the results of the 1987-1988 PM_{10} CMB Source Apportionment study strongly suggested that the current wintertime $PM_{2.5}$ problem stems from the combustion of biomass or fossil fuels for space heating.

DEQ funded a follow-up CMB study in 2003-2004 and the results revealed the majority of $PM_{2.5}$ emissions came from wood combustion for space heating followed by motor vehicle tailpipe emissions. Therefore, the $PM_{2.5}$ control plan focuses on reducing emissions from wood burning from space heating (both residential and commercial) and open burning, and the federal programs designed to reduce tailpipe emissions from motor vehicle through engine controls and fuel specifications.

27.12.7.1 Space Heating Wood Combustion Control Program

As part of the earlier PM_{10} SIP, Lincoln County developed regulations to control emissions from wood burning devices used for space heating purposes. The regulations applied to wood burning in both residential and light commercial buildings but both types are commonly lumped together and referred to as residential wood combustion or RWC. For the $PM_{2.5}$ SIP, those original RWC regulations were enhanced and strengthened (see section 27.9.1). Some highlights of the revised regulations included:

- An episodic control (a.k.a. air pollution alert) program operated during the winter months.
- No solid fuel burning devices (a.k.a. 'wood stoves') are allowed to be installed or operated within the Air Pollution Control District unless an operating permit for each individual wood stove has been issued by the local air program.
- Wood stove operating permits are only issued for EPA-certified wood stoves or pellet fuel burning devices.
- During air pollution alerts, only pellet fuel burning devices are allowed to operate.

In addition to the RWC control regulations, Lincoln County, in conjunction with other government agencies and private business entities, completed a wood stove changeout program. From 2005 through 2007, the program swapped out approximately 1,130 uncertified wood burning devices for new, EPA-certified, low emissions wood stoves or pellet fuel burning devices. The uncertified wood burning devices were permanently removed from use by being recycled as scrap metal. The result of the changeout program was a reduction in $PM_{2.5}$ emissions from approximately 138.78 tons/year to 57.46 tons/year, a decrease of approximately 59%. See section 27.12.11.3, $PM_{2.5}$ Annual Demonstration of Compliance.

Source: Cain, Cyra and James Carlin. Libby Annual $PM_{2.5}$ Standard Technical Support Document. Montana Department of Environmental Quality, Helena, 2007.

27.12.7.2 Prescribed Burning Control Program

Originally, any prescribed burning conducted within the Libby Impact Zone had to be approved by the Lincoln County Environmental Health Department. That requirement and the review process for prescribed burning controls have now been expanded to include both the original impact zone and the $PM_{2.5}$ NAA. Since it is difficult to quantify emission reductions due to heightened scrutiny on every proposed prescribed burn, no control credits will be taken for this program.

27.12.7.3 Federal Tailpipe Standards Control Program

As part of the Libby $PM_{2.5}$ control plan, DEQ could claim a small control credit for reductions resulting from existing federal tailpipe standards (not including those mandated by the 1990 CAA) and projected fleet turnover rates. Emission reductions from existing federal tailpipe standards will continue over the next several years due to fleet turnover, which will result in lower $PM_{2.5}$ emission rates. However, the 2004 Libby CMB study identified tailpipe emissions as only representing approximately 7% of the total $PM_{2.5}$ emissions during the winter months. Therefore, no credit will be taken from reductions from federal tailpipe standards because the effort to implement these credits would only result in a minor reduction in $PM_{2.5}$ emissions.

27.12.8 Reasonably Available Control Technology / Reasonably Available Control Measures (RACT/RACM) Analysis

RACT

Unlike the PM_{10} SIP requirements in section 190 of the CAA, there is nothing in Section 172 that requires identification of the sources, either by type or size, for which a RACT analysis must be conducted. There are no major stationary sources located within the Libby $PM_{2.5}$ NAA, so RACT analyses are not needed. Minor stationary sources in Montana with potential emissions above 15 tons/year for portables or 25 tons/year for others are permitted under the requirements of DEQ's minor source program, and those rules require a Best Available Control Technology (BACT) review. Since BACT is more stringent than RACT, any minor air pollution source permitted within the Libby $PM_{2.5}$ NAA complies with RACT.

RACM

EPA's RACM guidance as it applies to $PM_{2.5}$ NAAs is contained in 79 FR 20586 (April 25, 2007) beginning on page 20609. EPA's RACM guidance covers three general source categories: stationary, mobile and area. The Libby $PM_{2.5}$ CMB study did not identify any emissions from local stationary sources, only a minor amount from mobile sources and a significant amount from an area source category – RWC.

RACM for stationary sources is covered under the RACT section above.

Mobile source PM emissions can be divided into two general groups: re-entrained road dust and tailpipe emissions. Re-entrained road dust was not identified in the latest CMB study as a contributor to ambient $PM_{2.5}$ levels in Libby (refer to Figure 27.12.3). However, the road dust control regulations in the existing Libby PM_{10} SIP remain in effect, and as such, constitute RACM for the road dust source category. The CMB study identified motor vehicle tailpipe emissions as contributing approximately 7% with possibly an additional 4% if all

of the diesel emissions were attributed to motor vehicles. As discussed in Section 27.12.7.3, motor vehicle emissions will decrease over the next several years from existing and new federal tailpipe standards for motor vehicles and projected fleet turnover rates. Given the very minor contribution from mobile sources to the ambient $PM_{2.5}$ concentrations in Libby, DEQ believes the federal tailpipe standards and natural turnover rates in the local vehicle fleet constitute RACM for mobile sources.

EPA's area source RACM guidance (79FR20586, 20621) covers four categories:

- Reduced solvent usage or solvent substitution.
- Controls on charbroiling or other commercial cooking operations.
- Controls on woodstoves and fireplaces.
- New or improved regulations on open biomass burning.

DEQ reviewed the solvent and cooking categories, and quickly dismissed them because Libby's small size (a few thousand people) only supports a few commercial businesses in those two categories. In 2005, there were approximately four auto body repair & painting shops and one drycleaner – all very small operations, and no other commercial solvent users in the Libby area. There are approximately 20 eating establishments in Libby, only a few of them use char-broiling grills and there are no commercial cooking operations.

The State of Montana has operated a smoke management program for decades that regulates the open burning of biomass. All RACM regulations for open burning are incorporated into the Montana-Idaho Smoke Management Plan contained in Appendix G-3 of the Montana SIP at 59 FR 2988 dated January 20, 1994. Additionally, the state open burning rules (ARM 17.8.601 et seq.) set forth regulations by which regulated open burning may occur. Furthermore, Lincoln County has adopted local open burning regulations that are more stringent than the state rules (see section 27.9.1). The local regulations apply within the Air Pollution Control District and Impact Zone L (see Figure 27.12.1). Taken together, this suite of regulations constitutes RACM for open burning.

For the Libby PM_{10} SIP, RACM measures were adopted to control emissions from RWC. Those PM_{10} RACM requirements were strengthened and expanded for the $PM_{2.5}$ SIP. The RWC control measures now include:

- Public education measures.
- Episodic control program including a ban on the operation of any solid fuel burning device (except for pellet stoves) during an Air Pollution Alert.
- Operating permits are required for the installation and operation of any solid fuel burning device within the Air Pollution Control District.

In addition to the RWC control regulations, Lincoln County, in conjunction with other government agencies and private business entities, completed a wood stove changeout program. From 2005 through 2007, the program swapped out approximately 1,130 dirty, uncertified wood burning devices for new, EPA-certified, low emissions wood stoves. The result was an annual decrease in $PM_{2.5}$ emissions from approximately 138.78 tons to 57.21 tons, a decrease of approximately 59% (see Section 27.12.11.3). Taken together, the new RWC regulations and the stove changeout program constitute RACM for RWC emissions.

Source: Cain, Cyra and James Carlin. Libby Annual $PM_{2.5}$ Standard Technical Support Document. Montana Department of Environmental Quality, Helena, 2007.

27.12.9 Enforceability

The air pollution control ordinances are legally enforceable by Lincoln County. Violation of any section of the local regulations, except those regulating hazardous materials, can result in a civil penalty not to exceed $200 per offense. Violation of the local regulations regulating combustion of hazardous materials can result in a civil penalty not to exceed $10,000 per day per violation. The Lincoln County air pollution control ordinances are also enforceable by DEQ if Lincoln County fails to administer the local program. Since the program has been approved by the Montana Board of Environmental Review in accordance with Section 75-2-301 of MCA, DEQ has backup enforcement powers. Sections 27.2 and 27.9.1 of this plan provides additional documentation of these regulations.

DEQ also has the authority to enforce all other statewide air pollution control regulations which assist in controlling $PM_{2.5}$ emissions. These regulations are contained in Title 17, Chapter 8, ARM. Violations of these rules are punishable by civil penalties in an amount up to $10,000 per day and criminal penalties in an amount of up to $1,000 per day.

27.12.10 Contingency Plans and Control Effectiveness Evaluation

In the event the NAAQS standards are exceeded after implementing these control strategies, it is necessary to have an additional control measure or measures identified that can be used in conjunction with the existing control measures. These additional control measures are called 'contingency measures'. They are, in a sense, control measures used only in an extreme situation in which the existing control measures fail to clean the air. Once a contingency measure is initiated, it must remain active until the Libby $PM_{2.5}$ control plan demonstration is revised and resubmitted to EPA for approval.

The Libby $PM_{2.5}$ control plan contains one contingency measure for wood burning for space heating purposes. If it is determined that wood burning emissions contributed to an exceedance of the $PM_{2.5}$ NAAQS, then only biomass pellet fuel burners (a.k.a., wood pellet stoves) may operate within the Air Pollution Control District. Refer to Section 27.9.1 for further details of these enforceable contingency measures.

27.12.11 Annual Demonstration of Attainment and Maintenance

The rollback method was determined to be the best tool for demonstrating compliance and maintenance with the annual $PM_{2.5}$ standard. The following sections outline the methodology used to calculate the design value and background concentration.

27.12.11.1 $PM_{2.5}$ Design Value Calculation

Using EPA's calculation method and the monitoring data from the required years of 2001, 2002 and 2003, the annual average design value for Libby was calculated at 15.9 $\mu g/m^3$. This value is 10% over the annual standard of 15.0 $\mu g/m^3$. Figure 27.12.11.1 illustrates the design value calculation method.

2001			
Qtr 1	Qtr 2	Qtr 3	Qtr 4
37.1	13.1	7.0	7.5
47.4	13.6	5.9	11.3
30.6	13.0	7.2	9.9
41.6	6.6	10.0	11.3
13.3	8.7	7.4	7.0
35.7	14.8	4.5	26.1
49.1	9.5	4.8	21.6
16.3	14.1	5.9	10.9
15.7	27.2	7.3	20.9
38.4	5.5	5.0	9.2
29.3	2.8	7.9	9.1
13.8	7.6	5.1	24.3
28.0	10.7	6.3	33.5
33.2	9.3	12.8	45.0
17.0	9.3	23.9	16.9
37.9	3.4	24.6	27.8
43.0	8.9	4.8	29.5
31.6	6.0	5.7	24.8
27.3	9.2	7.0	31.0
32.3	5.0	4.6	18.9
43.3	5.7	4.8	25.8
27.7	6.2	4.0	28.8
17.6	3.3	10.0	21.5
9.2	5.7	6.9	
24.6	2.3	11.3	
16.5	3.8	4.8	
25.2	4.0		
17.1	6.0		
12.7	2.8		
	6.5		
	5.6		

2001 Annual Average	Quarter 1	28.0
	Quarter 2	8.1
	Quarter 3	8.1
	Quarter 4	20.5
	Average:	**16.2**

2002			
Qtr 1	Qtr 2	Qtr 3	Qtr 4
48.0	12.9	3.3	11.9
42.3	13.7	7.5	16.7
42.2	7.5	5.9	13.2
12.9	9.4	6.2	9.2
29.4	13.5	9.8	22.4
21.7	5.3	9.5	21.9
16.8	15.6	12.0	32.6
22.7	14.6	8.8	20.1
16.6	6.7	15.4	27.6
31.0	13.1	6.4	6.8
18.4	10.6	3.5	30.4
3.3	4.4	5.6	46.6
18.4	9.4	7.4	64.1
10.2	4.5	7.2	21.6
17.4	9.5	4.9	32.5
14.6	4.8	4.8	27.7
13.9	3.7	6.8	34.7
25.6	9.5	6.7	13.3
10.8	5.7	8.3	21.8
	5.6	8.0	11.4
	7.9	6.5	39.1
	11.2	4.2	24.0
	10.7	6.3	25.1
	4.1	6.5	16.1
		7.7	21.3
		11.1	8.8
		11.8	36.0
		3.5	28.7
		9.0	37.0
		14.8	
		12.8	

2002 Annual Average	Quarter 1	21.9
	Quarter 2	8.9
	Quarter 3	7.8
	Quarter 4	24.9
	Average:	**15.9**

2003			
Qtr 1	Qtr 2	Qtr 3	Qtr 4
28.7	8.1	10.4	18.1
27.6	12.3	7.8	14.7
47.0	10.9	3.8	8.2
27.0	21.9	5.2	8.6
35.8	8.2	6.7	11.7
35.4	4.3	9.2	16.6
23.4	7.0	9.8	21.9
13.8	5.8	15.8	12.7
28.8	7.0	24.5	29.4
16.1	5.6	5.5	5.4
11.9	6.5	6.2	19.3
8.0	8.2	5.4	25.8
17.7	6.3	9.1	26.0
	5.6	7.8	23.7
	8.5	30.9	18.0
	3.2	6.3	23.2
		31.5	36.8
		9.0	30.7
		4.5	38.6
		3.9	20.8
		5.9	21.4
		7.0	37.3
		9.7	42.5
			21.4
			16.7
			23.9
			33.6

flagged monitoring data due to natural events (wildfire)

The average below was calculated without the flagged data.

2003 Annual Average	Quarter 1	24.7
	Quarter 2	8.1
	Quarter 3	7.0
	Quarter 4	22.5
	Average:	**15.6**

2001-2003 AVERAGE **15.9**

Figure 27.12.11.1 $PM_{2.5}$ Design Value Calculation

27.12.11.2 Calculation of $PM_{2.5}$ Annual Background Concentration

The background $PM_{2.5}$ concentration was determined by reviewing data collected at the U.S. Forest Service's Interagency Monitoring of Protected Visual Environments (IMPROVE) Cabinet Mountains (CAB1) monitoring site. The IMPROVE monitoring program is a cooperative monitoring effort amongst several agencies to collect air quality data used in the development of control plans for visibility protection in Federal Class I areas. As such, these sites are generally sited in remote locations well away from populated areas. IMPROVE monitoring seeks to establish current visibility and aerosol conditions and to identify chemical species and emission sources responsible for existing man-made visibility impairment, and these goals mesh well with the needs of the state and local ambient air monitoring networks. Table 27.12.11.2 compares the 3-year annual average $PM_{2.5}$ concentrations between the Cabinet Mountains site and other IMPROVE sites in western Montana. The average $PM_{2.5}$ concentration at CAB1 is consistent with the data from the other IMPROVE stations in western Montana.

Table 27.12.11.2 Western Montana IMPROVE Sites Annual Averages[1]

Western Montana IMPROVE Site	3-YEAR AVERAGE[2] (ug/m^3)
Cabinet Mountains (CAB1)	3.69
Sula Peak (SULA1)	3.16
Monture (MONT1)	3.98
Gates of the Mountains (GOM1)	2.64

[1] These averages reflect all data, including samples affected by wildland fire smoke.
[2] Calculated by averaging all quarters from 2001 to 2003, not annual averages.

The Cabinet Mountains IMPROVE site is located at Latitude 47.9549, Longitude 115.6709, at an elevation of approximately 4,728 feet. The CAB1 site is located approximately 30 air miles south of the Libby and monitoring began in July 2000. Figure 27.12.11.2 illustrates the location of the CAB1 and Libby monitoring sites.

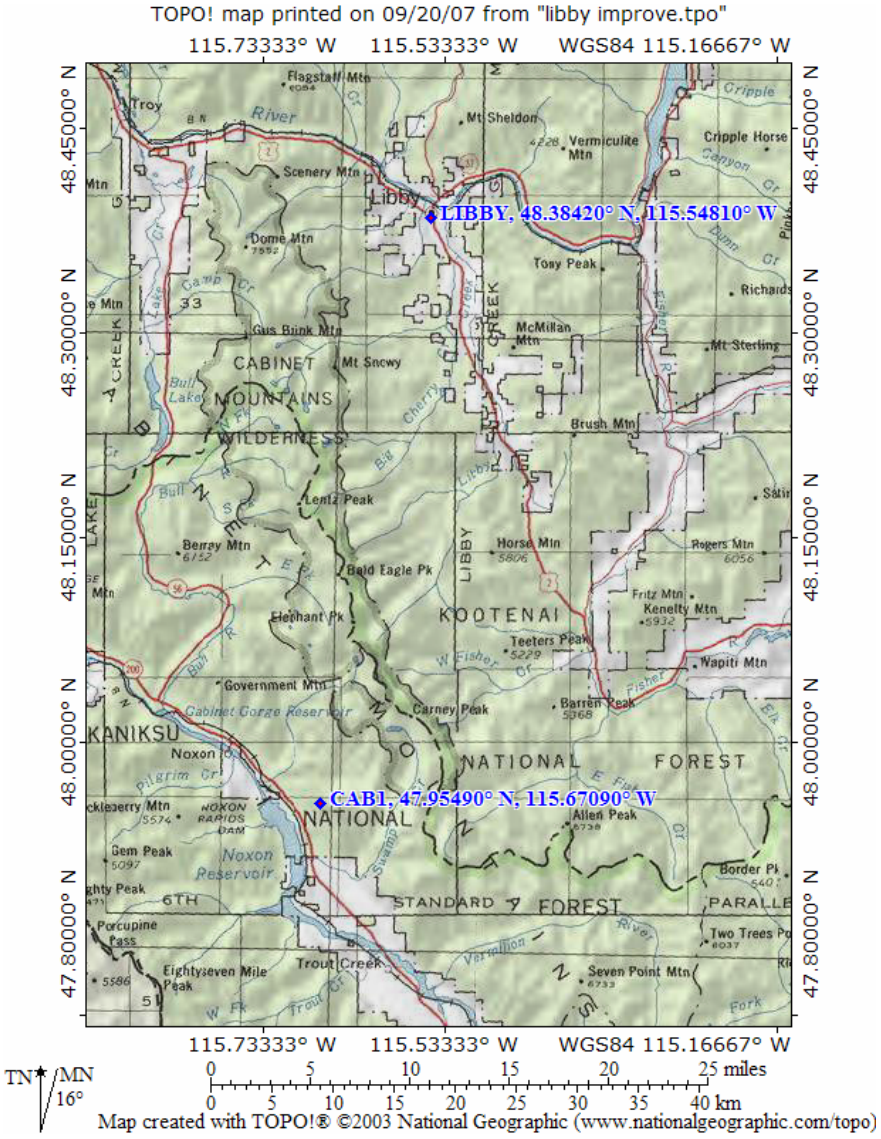


Figure 27.12.11.2 IMPROVE CAB1 and Libby Courthouse Annex Site Locations

For the 3-year period of 2001-2003, the average $PM_{2.5}$ concentration from CAB1 was determined to be 3.7 ug/m^3. However, during that time, some of the CAB1 samples were adversely affected (i.e., concentrations increased) by smoke from local and regional wildland fires. DEQ excluded the data affected by smoke from wildland fires and recalculated a value of 3.0 ug/m^3 for the 2001-2003 period, and selected that value (3.0 ug/m^3) as the appropriate annual background $PM_{2.5}$ concentration for Libby.

27.12.11.3 $PM_{2.5}$ Annual Demonstration of Compliance

I. Assumptions

(1) For the purposes of this compliance demonstration:

- "WINTER" is defined as the first and fourth calendar quarters; i.e., January, February, March, October, November, & December.
- "SUMMER" is defined as the second and third calendar quarters; i.e., April, May, June, July, August, & September.

(2) The ambient data used to calculate the Libby $PM_{2.5}$ annual design value for NAAQS compliance was reapportioned into WINTER and SUMMER seasons and separate, 3-yr averages were calculated for both seasons. (see Table 27.12.11.3A).

Table 27.12.11.3A Calculated Seasonal $PM_{2.5}$ Design Values ($\mu g/m^3$)

SEASON	2001	2002	2003	3-Year Average
WINTER	24.3	23.4	23.6	23.8
SUMMER	8.1	8.4	7.6	8.0

Note: See Section 27.12.11.1 Calculation of $PM_{2.5}$ Design Value (15.9 $\mu g/m^3$). Monitoring data from Lincoln County Courthouse Annex site (AIRS #30-053-0018) with wildfire affected data excluded.

(3) The ambient data used to calculate the annual $PM_{2.5}$ background value was reapportioned into WINTER and SUMMER seasons and separate, 3-yr averages were calculated for both seasons. (see Table 27.12.11.3B).

Table 27.12.11.3B Calculated Seasonal $PM_{2.5}$ Background Values ($\mu g/m^3$)

SEASON	2001	2002	2003	3-Year Average
WINTER	1.7	2.2	1.9	1.9
SUMMER	4.1	4.0	4.1	4.1

Note: See Section 27.12.11.2 Calculation of $PM_{2.5}$ Background Value (3.0 $\mu g/m^3$). Monitoring data from IMPROVE-Cabinet Mountains (CAB1) site with wildfire affected data excluded.

(4) During the winter of 2004-2005, Global Engineering and Technology, PPLC surveyed Libby residents about their wood burning practices. This telephone survey (2004 Survey) queried Libby residents about their wood burning practices in the Libby $PM_{2.5}$ nonattainment area (NAA). Information gathered from the 2004 Survey is considered to be the best information available on the wood burning practices prior to the wood stove changeout program. The 2004 Survey gathered information about the amount of wood burned during the 2004-2005 wood burning season.

Source: Ganesan, Dr. Kumar, Cyra Cain, and James Carlin. $PM_{2.5}$ Emissions from Residential Wood Burning In Libby, Montana, DEQ Contract #505029, Montana Department of Environmental Quality, 2006.

(5) During July, 2007, a telephone survey (2007 Survey) was conducted in Libby by the Montana Department of Environmental Quality (DEQ), Air Resources Management Bureau (ARMB). This survey queried Libby residents about their wood burning practices after the wood stove changeout program. Information gathered from the 2007 Survey is the best available information on the wood burning practices after the wood stove changeout in Libby.

Source: Cain, Cyra and James Carlin. Libby Annual $PM_{2.5}$ Standard Technical Support Document. Montana Department of Environmental Quality, Helena, 2007.

(6) The Libby $PM_{2.5}$ base year for regulatory purposes is 2005. Information regarding wood burning prior to the wood stove changeout was obtained during the winter of 2004-2005. DEQ assumed that the 2004-2005 wood burning data can be applied directly to 2005 base year in a 1:1 ratio as conservative estimates.

(7) Approximately 82% of the WINTER $PM_{2.5}$ emissions within the Libby $PM_{2.5}$ NAA, with the exception of background emissions, result from the operation of solid fuel biomass burning devices (a.k.a. wood stoves).

Source: Ward, Tony. The Libby, Montana $PM_{2.5}$ Source Apportionment Research Study, The University of Montana-Missoula, Center for Environmental Health Sciences, 2005, page 5.

(8) All of the particulate matter emissions from wood burning for space heating in Libby is assumed to be equal to or smaller than 2.5 microns.

Source: STAPPA/ALAPCO/EPA. Emission Inventory Improvement Program, Vol. III, Chapter 2, Residential Wood Combustion, Jan. 2001, pg. 2.4-4. (http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii02_apr2001.pdf)

(9) In this compliance demonstration, all of the $PM_{2.5}$ emissions, excluding background, originate from within the Libby $PM_{2.5}$ NAA where the $PM_{2.5}$ ambient monitor is located. All $PM_{2.5}$ emissions from sources located outside the NAA are considered part of background $PM_{2.5}$ emissions.

II. Summary of Wood Stove Emission Data Before and After The Wood Stove Changeout Program

(1) DEQ determined that before the wood stove changeout program, on the average, 138.78 tons/year of $PM_{2.5}$ were generated during the winter season by wood stoves in the Libby $PM_{2.5}$ NAA.

(2) DEQ ARMB determined that after the wood stove changeout program, on the average, 57.46 tons/year of $PM_{2.5}$ were generated during the winter season by wood stoves in the Libby $PM_{2.5}$ NAA.

Source: Cain, Cyra and James Carlin. Libby Annual $PM_{2.5}$ Standard Technical Support Document. Montana Department of Environmental Quality, Helena, 2007.

III. Rollback Calculation for the Annual $PM_{2.5}$ Mean

(1) The reduction in ambient $PM_{2.5}$ concentrations was calculated using a proportional rollback technique. Since 82% of the $PM_{2.5}$ emissions in Libby are from wood stoves, the rollback only uses wood stove $PM_{2.5}$ emission data calculated from the results of the wood stove changeout program (pre and post, see Table 27.12.11.1C). The remaining 18% of the $PM_{2.5}$ emissions in Libby are assumed to remain practically constant due to very low annual population growth rates in Libby and Lincoln County.

(2) Using seasonally adjusted data from the 2001–2003 time period and prior to the stove changeout, the WINTER Design Average was 23.8 $\mu g/m^3$. This includes the seasonally calculated WINTER background value of 1.9 $\mu g/m^3$. WINTER season $PM_{2.5}$ emissions are projected to permanently decrease as a result of the wood stove change-out program. Refer to Table 27.12.11.3A and Table 27.12.11.3B.

(3) During the SUMMER season, the $PM_{2.5}$ emissions remain the same as they were before the stove changeout program. Using seasonally adjusted data from the 2001 – 2003 time period, the SUMMER Design Average = 8.0 $\mu g/m^3$. This **includes** the seasonally calculated SUMMER background of 4.1 $\mu g/m^3$. Therefore, assume that the SUMMER design average remains unchanged at 8.0 $\mu g/m^3$. Refer to Table 27.12.11.3A and Table 27.12.11.3B.

(4) The 'target' for demonstrating compliance with the annual $PM_{2.5}$ NAAQS is 14.9 µg/m^3, and this value includes the annual $PM_{2.5}$ background of 3.0 µg/m^3. The annual $PM_{2.5}$ background of 3.0 µg/m^3 is assumed to not change, and therefore, the seasonally-calculated background values for WINTER and SUMMER also remain unchanged.

Table 27.12.11.3C Winter Season Rollback Data Relationship

Time Period	WINTER $PM_{2.5}$ Stove Emissions	WINTER $PM_{2.5}$ Ambient Average (without background)
Pre-changeout	138.78 tons	21.9 µg/m^3
Post-changeout	57.21 tons	**X?** µg/m^3

(5) Calculate the average $PM_{2.5}$ concentration for the WINTER season resulting from the 'rolled back' emissions due to the wood stove changeout program, as follows:

Pre-changeout WINTER Stove Emissions divided by Pre-changeout WINTER Ambient $PM_{2.5}$ Average = Post-changeout WINTER Stove Emissions divided by Post-changeout WINTER $PM_{2.5}$ Ambient Average

138.78 tons/21.9 µg/m^3 = 57.46 tons/Post-changeout WINTER $PM_{2.5}$ Ambient Avg. µg/m3

Post-changeout WINTER $PM_{2.5}$ Ambient Average = 9.1 µg/m^3 (without winter background)

(6) Post-changeout WINTER $PM_{2.5}$ Background Concentration = 1.9 µg/m^3 (same as pre-changeout)

(7) Post-changeout WINTER Design Average = 9.0 + 1.9 = 11.0 µg/m^3 (reflects

$PM_{2.5}$ emission reductions from wood stove changeout)

(8) SUMMER Design Average = 8.0 µg/m^3 (pre & post-changeout assumed to be the same due to minor wood stove emissions in SUMMER)

(9) Post-changeout $PM_{2.5}$ Annual Mean = (WINTER + SUMMER)/2 = (11.0 + 8.0)/2 = 9.5 µg/m^3

Therefore, given zero or very little growth in the minor source categories, the Libby area is projected to be in compliance with the annual $PM_{2.5}$ NAAQS (of 15.0 µg/m^3).

27.12.11.4 $PM_{2.5}$ 2010 Demonstration of Compliance

Compliance with the annual standard in the future is demonstrated using a 'roll-forward' technique. The projected increases in human population and housing units for the Libby area are used as the basis to 'roll forward' or grow the emissions in the various area and source categories identified by the CMB model (e.g., RWC, motor vehicle and diesel emissions). Table 27.12.11.4A contains the latest data and growth projections on human population and housing units for Lincoln County obtained from the Census and Economic Information Center (CEIC) of the Montana Department of Commerce. Due to the small size of Libby, there is no data currently available projecting growth forward to 2010.

TABLE 27.12.11.4A Lincoln County Population & Housing Units, 2000 to 2010

Source/Data Type	2000 Census	2005 Estimate	2000 to 2005 Δ%	2010 Projected	2005 to 2010 Δ%
NPA – Pop[1]	18,837	19,193	1.89	19,590	2.07
CEIC – Pop[2]	18,837	19,182	1.83	No data	No data
CEIC – Units[3]	9,319	9,389	0.75	No data	No data

[1] NPA Data Services, Inc., 2006 Regional Economic Projections Series, MT Population Projections.
[2] Montana Dept. of Commerce, Census & Economic Information Center, Table 4. Annual Estimates of Housing Units for Counties in Montana: April 1, 2000 to July 1, 2006 (HU-EST2006-04-30).
[3] Montana Dept. of Commerce, Census & Economic Information Center, Table 1. Annual Estimates of Population for Counties in Montana: April 1, 2000 to July 1, 2006 (CO-EST2006-01-30).

The highest projected Lincoln County growth rate was approximately 2.1% for human population. DEQ used that rate as a conservative estimate for increases in emissions from area and mobile sources in Libby during the 2005 to 2010 time period. Since secondary particles in Libby are predominantly from long range transport, they were assumed not to increase significantly during the 2005 to 2010 time period. Emissions from gasoline-powered motor vehicles and diesel-powered sources were assumed to increase at the same rate as population. In addition, DEQ conservatively did not claim any reduction credits for federal control emission controls on motor vehicles and clean diesel regulations. As discussed in section 27.12.11.3, the greatest change in PM

emissions comes from the wood stove changeout program with emissions from that source category decreasing approximately 59% on an annual basis.

Source: Cain, Cyra and James Carlin. Libby Annual $PM_{2.5}$ Standard Technical Support Document. Montana Department of Environmental Quality, Helena, 2007.

Therefore, based on those assumptions, the data in Table 27.12.11.4B illustrates future compliance in Libby with the annual $PM_{2.5}$ NAAQS.

TABLE 27.12.11.4B $PM_{2.5}$ ANNUAL DEMONSTRATION OF COMPLIANCE

Source Category[1]	2003 – 2004 CMB Source Percents[2]	Design Concentration[3] (µg/m^3)	Percent Reduction in Emissions Due to Control Strategies	Estimated percent growth in emissions over the 2005 – 2010 time period	2010 Compliance Year Contributions with Control Strategies[4] (µg/m^3)
Residential Wood Stoves	82	13.0	-59%	+2.1%	5.44
Motor Vehicle Tailpipe	7	1.1	No credit taken	+2.1%	1.12
Ammonium Nitrate	5	0.8	None assumed	None assumed	0.8
Diesel Exhaust	4	0.7	No credit taken	+2.1%	0.71
Secondary Sulfate	2	0.3	None assumed	None assumed	0.3
TOTALS	100	15.9	Not applicable	Not applicable	**8.37**

[1] Source categories as determined by the 2003-2004 CMB study.
[2] Percent contribution assigned to source categories by 2003-2004 CMB study.
[3] Design concentration multiplied by CMB contribution percent.
[4] 2010 is the designated compliance year for the initial $PM_{2.5}$ SIPs.

27.12.12. Reasonable Further Progress

EPA's Reasonable Further Progress (RFP) guidance as it applies to $PM_{2.5}$ NAAs is contained in 79 FR 20586 (April 25, 2007) beginning on page 20633. The guidance states: [a]n area that demonstrates attainment by 2010 will be considered to have satisfied the RFP requirement and need not submit any additional material to satisfy the RFP requirement. The EPA will view the attainment demonstration as also demonstrating that the area is making reasonable further progress toward attainment.

The Libby control plan demonstrates attainment by 2010, thus no further RFP submittal is required. Progress will be tracked by the ambient air monitoring data which DEQ submits annually into EPA's national air database (i.e., AIRS-AQS).

END OF CONTROL PLAN

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