STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

COLORADO AIR QUALITY CONTROL COMMISSION
http://www.cdphe.state.co.us

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Denver, Colorado 80246-1530
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Colorado Department of Public Health and Environment

NOTICE OF PUBLIC RULEMAKING HEARING BEFORE THE COLORADO AIR QUALITY CONTROL COMMISSION

Regarding proposed revisions to:

Ambient Air Quality Standards Regulation, Regulation Numbers 3, 7, and 11 for the Denver Metropolitan &North Front Range Area Ozone Action Plan

SUBJECT:

The Air Quality Control Commission will consider a proposal from the Denver Metropolitan Area's Regional Air Quality Council, the North Front Range Transportation & Air Quality Planning Council and the Colorado Department of Public Health and Environment Air Pollution Control Division to adopt an ozone action plan for the Denver Metropolitan and North Front Range 8-hour ozone nonattainment area. The ozone action plan proposes to reduce ambient ozone concentrations in the nine county area to meet the requirements of the national ambient air quality standard for ozone averaged over an 8-hour period and to address the directive of Governor Ritter to further reduce ambient ozone concentrations. The ozone action plan proposes to make revisions to the Ambient Air Quality Standards regulation to include mobile source emission budgets for the 8-hour ozone nonattainment area for purposes of conducting transportation conformity analyses. The ozone action plan proposes to revise Regulation Number 3 and Regulation Number 7 to include additional emission reduction, record keeping and emission reporting requirements for stationary sources of volatile organic compounds and for oxides of nitrogen in the nonattainment area and on a statewide basis. The proposed ozone action plan would make revisions to Regulation Number 11 to require the implementation of a vehicle emissions inspection program in the North Front Range portion of the 8-hour ozone nonattainment area and would include a March 2008 action of the Commission to revise the tailpipe emission standards for the program in the State Implementation Plan to make it federally enforceable. The ozone action plan proposes to include some of the proposed new requirements in the federally enforceable State Implementation Plan and would retain some of the new requirements exclusively for state enforcement only. The ozone action plan proposes to modify the provisions of the Interstate Air Pollutant Transport State Implementation Plan element adopted by the Commission in February 2007, by noting that the proposed maintenance plan would prevent the Colorado Front Range from contributing significantly to ozone non-attainment

or interfere with long-term maintenance of the national ozone standard in any other state. The ozone action plan proposes to make typographical, grammatical and formatting revisions to the above identified regulations.

FEDERAL REQUIREMENTS:

The federal act requires the adoption of a State Implementation Plan element with accompanying rules and requirements to demonstrate compliance with the National Ambient Air Quality Standard for ozone averaged over an 8-hour period and the associated technical support documentation to make that demonstration. A proposed Statement of Basis, Specific Statutory Authority, and Purpose and a regulatory analysis (if one has been requested) will be available for inspection no later than five (5) days prior to the hearing. The language of the proposed rule revisions is attached to and made a part of this notice.

HEARING SCHEDULE:

DATE: December 11, 2008
TIME: 9:00 AM
PLACE: Colorado Department of Public Health & Environment
4300 Cherry Creek Drive South, Sabin Conference Room
Denver, Colorado 80246

The hearing may be continued at such places and time as the Commission may announce. Interested parties may contact the Commission Office at 303-692-3476 to confirm meeting dates and times.

PUBLIC COMMENT:

The Commission encourages all interested persons to provide their views either orally at the hearing or in writing prior to or at the hearing. The Commission especially solicits comments and analyses from persons who will incur directly some cost or benefit from the proposed revisions. Public testimony will be taken as close to the start of the hearing as possible and during the hearing as necessary. Written and/or electronic submissions prior to the hearing are requested to allow review prior to presentation at the hearing. Written and/or electronic submissions should be mailed to the Commission Office at least 14 days prior to the hearing.

PARTY STATUS:

In order to obtain party status at the hearing, compliance with several requirements as defined in the Commissions Procedural Rules is necessary. A petition for party status must be filed by electronic mail with the Office of the Air Quality Control Commission no later than close of business on **October 15, 2008.** The petition must: *1) identify the applicant; 2) provide the name, address, telephone and facsimile numbers, and email address of the applicants representative; and 3) briefly summarize what, if any, policy, factual, and legal issues the applicant has with the proposal(s) as of the time of filing the application.* Electronically mailed copies must also be received, by this same date, by the Division staff person and the Assistant Attorneys General representing the Division and the Commission identified below. Any person may petition the Commission to file documents in paper copy format if they are unable for any reason to not comply with the requirements of 1.3.8(2) of the Commissions Procedural Rules. An original and a specified number of paper copies must be filed in the Office of the Air Quality Control

Commission, Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, Colorado 80246.

Individuals may also obtain party status through the submittal of an initial alternative rule to the proposed rule. The submittal of an alternative proposal must be accompanied by an electronic copy of the initial alternative proposed rule and all other associated documents as required by the Commission's procedural rules and must be filed by electronic mail with the Office of the Commission by the date specified for party status requests. Initial alternative rules must also be filed by electronic mail with the Division staff person and with each of the Assistant Attorneys General.

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Requests received beyond the above stated deadline shall only be considered upon a written motion for good cause shown. The Commission reserves the right to deny party status to anyone that does not comply with the Commission's procedural rules.

STATUS CONFERENCE:

A status conference will be held **October 17, 2008 at 9:00 a.m.,** at the Department of Public Health and Environment to ascertain and discuss the issues involved, and to ensure that parties are making all necessary efforts to discuss and resolve such issues prior to the submission of prehearing statements. Attendance at this status conference is mandatory for anyone who has requested party status.

PREHEARING CONFERENCE/PREHEARING STATEMENTS:

Attendance at the prehearing conference is mandatory for all parties to this hearing. A prehearing conference will be held **November 17, 2008 at 1:00 p.m.** in the Commission Offices at 4300 Cherry Creek Drive South, Denver. All parties must submit by electronic mail a prehearing statement to the Commission Office by close of business **November 13, 2008.** In addition, electronically mailed copies of these documents must be delivered by that date to all persons who have requested party status. A copy of the prehearing statement must also be electronically mailed to the Division point of contact and each of the Assistant Attorney's General identified above by close of business **November 13, 2008**. Any exhibit included in the prehearing statements will be electronically mailed to individual Commissioners for review prior

to the hearing, provided the party files electronic copies of such exhibit. Rebuttals to the prehearing statement may be submitted to the Commission Office and all other parties by close of business **November 25, 2008**.

EXCEPTIONS TO FILE DOCUMENTS BY ELECTRONIC MAIL

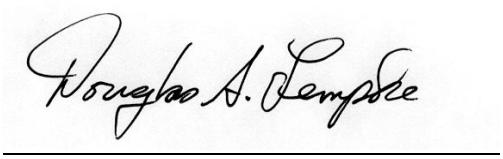
The Commission's Procedural Rules provide for an exception to file documents by electronic mail. If granted an exception to electronic filing pursuant to the provisions of 1.3.8(3) of the Commissions Procedural Rules, the applicant for party status shall file an original and fifteen copies of the prehearing statement in the Office of the Air Quality Control Commission, and shall also deliver copies to each other party, applicant for party status, the Assistant Attorneys General representing the Commission and Division, and the Division staff person for the proceedings, by electronic mail or as otherwise provided by the exception granted under Subsection 1.3.8(3), by that same day.

STATUTORY AUTHORITY FOR THE COMMISSION'S ACTIONS:

The Commission promulgates these regulatory changes pursuant to its authority to 25-7-101, 25-7-103, 25-7-105.1, 25-7-109, 25-7-110.5, 25-7-110.8, 25-7-301 and 42-4-306, C.R.S. The rulemaking hearing will be conducted in accordance with sections 24-4-103 and 25-7-110, C.R.S., as amended, the Procedural Rules of the Commission and as otherwise stated in this notice. This list of statutory authority is not intended as an exhaustive list of the Commission's statutory authority to act in this matter.

Dated this 25th day of September 2008 at Denver, Colorado

Colorado Air Quality Control Commission



Douglas A. Lempke, Administrator

III.D. Greeley Attainment/Maintenance Area for Carbon Monoxide

III.D. Greeley Attainment/Maintenance Area for Carbon Monoxide
IIID_GreeleyCO.jpg

III.E. Longmont Attainment/Maintenance Area For Carbon Monoxide

III.E. Longmont Attainment/Maintenance Area For Carbon Monoxide
IIIE_LongmontCO.jpg

PM10		
Area	Classification	Boundary
Denver Metro (effective 10/16/02)	Attainment/Maintenance #	All of Denver, Jefferson, and Douglas Counties; Boulder County (excluding Rocky Mountain National Park) and the Automobile Inspection and Readjustment Program portions of Adams and Arapahoe Counties. See attached map.
Steamboat Springs	Attainment/Maintenance*	Steamboat Springs Area Airshed as adopted by the Routt County Commissioners May 28, 1991. See attached map.
Pagosa Springs (effective 8/14/01)	Attainment/Maintenance	See attached map.
Telluride/Mt. Village/ San Miguel County (effective 8/14/01)	Attainment/Maintenance	See attached map.
Aspen/Pitkin County (effective 7/14/03)	Attainment/Maintenance	See attached map.
Cañon City/Fremont County (effective 7/31/00)	Attainment/ Maintenance	See attached map.
Lamar	Attainment/Maintenance*	Lamar City Limits as of July 30, 1991. See attached map.
Ozone		
Denver 1-Hour Ozone Attainment/Maintenance Area (effective 10/11/01)	Attainment/Maintenance	The Counties of Jefferson and Douglas, the Cities and Counties of Denver and Broomfield, Boulder County (excluding Rocky Mountain National Park), Adams County west of Kiowa Creek, and Arapahoe County west of Kiowa Creek. See attached map.

~~Denver 1-Hour Ozone Area (effective 10/11/01)~~	~~Attainment/ Maintenance~~	~~All of Denver, Jefferson, and Douglas Counties; Boulder County (excluding Rocky Mountain National Park) and the Automobile Inspection and Readjustment Program portions of Adams and Arapahoe Counties. See attached map.~~
~~8-Hour Ozone Control Area~~	~~Designation Deferred~~	~~All of the Counties of Adams, Arapahoe, Boulder, Douglas, Elbert, Jefferson, Larimer, Morgan, and Weld, and all of the Cities and Counties of Denver and Broomfield. See attached map.~~
Denver Metro Area/North Front Range 8-Hour Ozone Nonattainment ~~Control~~ Area	~~Designation Deferred~~ Nonattainment	The Counties of Adams, Arapahoe, Boulder (includes part of Rocky Mountain National Park), Douglas, and Jefferson; the Cities and Counties of Denver and Broomfield; and the following portions of the Counties of Larimer and Weld: For Larimer County (includes part of Rocky Mountain National Park), that portion of the county that lies south of a line described as follows: Beginning at a point on Larimer County's eastern boundary and Weld County's western boundary intersected by 40 degrees, 42 minutes, and 47.1 seconds north latitude, proceed west to a point defined by the intersection of 40 degrees, 42 minutes, 47.1 seconds north latitude and 105 degrees, 29 minutes, and 40.0 seconds west longitude, thence proceed south on 105 degrees, 29 minutes, 40.0 seconds west longitude to the intersection with 40 degrees, 33 minutes and 17.4 seconds north latitude, thence proceed west on 40 degrees, 33 minutes, 17.4 seconds north latitude until this line intersects Larimer County's western boundary and Grand County's eastern boundary. For Weld County, that portion of the county that lies south of a line described as follows: Beginning at a point on Weld County's eastern boundary and Logan County's western boundary intersected by 40 degrees, 42 minutes, 47.1 seconds north latitude, proceed west on 40 degrees, 42 minutes, 47.1 seconds north latitude until this line intersects Weld County's western boundary and Larimer County's eastern boundary. See attached map.

~~*The designation of asterisked areas as attainment/maintenance shall become effective upon publication in the Federal Register of EPA approval of such designation. Until such approval and publication, the areas remain nonattainment for the respective pollutant.~~

#The classification of the Denver Metro Area as an attainment/maintenance area shall not affect Air Quality Control Commission Regulations ~~No.~~Number 1, 5 CCR 1001-3, ~~section~~ Section VIII; or ~~No.~~Number 3, 5 CCR 1001-5, Part B, ~~section~~Section IV.D.2(d)(i) or (ii). Such provisions shall apply in the Denver Metro Area in the same manner as they would apply if the Denver Metro Area were nonattainment area for PM10.

III.F. Denver PM10 and Ozone Attainment/Maintenance Area

III.F. Denver PM10 and Ozone Attainment/Maintenance Area

IIIF_DenverPM10.jpg

III.G. Steamboat Springs Attainment/Maintenance Area for PM10

III.G. Steamboat Springs Attainment/Maintenance Area for PM10
IIIG_SteamboatPM10.jpg

III.H. Pagosa Springs Attainment/Maintenance Area for PM10

III.H. Pagosa Springs Attainment/Maintenance Area for PM10
IIIH_PagosaSpringsPM10.jpg

III.I. Telluride/Mt. Village/San Miguel County Attainment/Maintenance Area for PM10

III.I. Telluride/Mt. Village/San Miguel County Attainment/Maintenance Area for PM10
IIII_TelluridePM10.jpg

III.J. Aspen/Pitkin County Attainment/Maintenance Area for PM10

III.J. Aspen/Pitkin County Attainment/Maintenance Area for PM10
IIIJ_AspenPM10.jpg

III.K. Cañon City/Fremont County Attainment/Maintenance Area for PM10

III.K. Cañon City/Fremont County Attainment/Maintenance Area for PM10
IIIK_CanonCityPM10.jpg

III.L. Lamar Attainment/Maintenance Area for PM10

III.L. Lamar Attainment/Maintenance Area for PM10
IIIL_LamarPM10.jpg

III.M. Denver Metro Area/North Front Range 8-Hour Ozone ~~Control~~ Nonattainment Area

III.M. Denver Metro Area/North Front Range 8-Hour Ozone ~~Control~~ Nonattainment Area
IIIM_8hrOzone.jpg

IV. Visibility Standard

To be added to the Colorado Air Quality Control Commission document "Ambient Air Standards for Metropolitan Denver Air Quality Control Region, State Air Pollution Control Areas and the State of Colorado."

Visibility Standard for the AIR Program Area

Level: The Visibility Standard for the AIR program area is an atmospheric extinction of.076/km[1], equivalent to a standard visual range of 32 miles[2]

Averaging Time: The Averaging time is four hours. All four hours must be contiguous. No four-hour average in violation of the standard can have hours in common with any other four-hour period in violation of the standard.[3]

Applicability: The visibility standard is applicable in the AIR program area.[4] The visibility standard applies during an eight-hour period from 8:00 a.m. (0800) to 4:00 p.m. (1600) each day Mountain Local Time.

The visibility standard applies only during hours when the hourly average relative humidity is less than 70 percent.[5]

[1]Extinction is a measure of the ability of the atmosphere to attenuate light. It is traditionally expressed in light attenuation per kilometer. It is measured directly with a long-path transmissometer or by other equivalent methods as determined by the Air Pollution Control Division.

[2]Extinction (Bext) can be converted to standard visual range (SVR) in miles as follows:

SVR (Miles) = (3.912/(Bext +.01 km))*.06214

where Bray is the Rayleigh scattering coefficient (.0099/km) for Denver's altitude and the visual range is standardized to a Rayleigh scattering coefficient of.01/km or an altitude of 1.55km. The formula assumes a contrast threshold of two percent.

[3]There are five possible contiguous four-hour periods from 0800 to 1600 each day (0800 to 1200, 0900 to 1300, 1000 to 1500, and 1200 to 1600). Only the periods from 0800 to 1200 and from 1200 to 1600 do not have overlapping hours. Therefore, a maximum of two standard violations are possible each day that have no overlapping hours or hours in common.

[4]The AIR program area is defined in C.R.S. 42-4-307 (8).

[5]Any hour with a relative humidity of 70 percent or over would not be included in the four-hour running averages.

* Visibility: Adopted: 12/21/89 Effective: 1/1/95

V. Emission Budgets for Attainment/Maintenance Areas in the State of Colorado

V.A. Budgets

V.A.1. The following Motor Vehicle Emission Budgets shall be utilized to assess the conformity of Transportation Plans, TIPs, and where appropriate, Projects, for the applicable periods and geographic areas indicated:

Denver Attainment/Maintenance Area (Modeling Domain)	PM10: 2015 through 2021: 54 tons/day; 2022 and beyond: 55 tons/day. Nitrogen Oxides: 2015 through 2021: 70 tons/day; 2022 and beyond: 56 tons/day Trading provisions: Trading of PM10 for NOx, or NOx for PM10 to adjust emission budgets for purposes of demonstrating transportation conformity shall be allowed using the emission trading formula as follows: For trades necessary to increase a primary PM10 budget, 15.0 tons/day of NOx will be taken from the NOx budget to increase the primary PM10 budget by 1.0 tons/day, a ration of 15 to 1. For trades necessary to increase a NOx budget, 1.0 tons/day of primary PM10 will be taken from the primary PM10 budget to increase the NOx budget by 12.0 tons/day, a ratio of 1 to 12. Implementation of trading provisions: In the event the MPO cannot demonstrate consistency with the specific PM10 and NOx mobile source emission budgets, the trading provisions may be utilized only after the MPO has considered all reasonably available local control measures to meet the budgets. The MPO must demonstrate the need for trading through the usual

	consultation procedures for state implementation plan development delineated in Section IV(F) of AQCC Regulation Number 10, Criteria for Analysis of Conformity. If trading is utilized, the MPO shall include the following information in the transportation conformity determination: (1) The budget for primary PM10 and NOx for each required year of the conformity determination, before trading is employed; (2) The portion of the original budget to be used to supplement a wanting budget, for each required year for the conformity determination; (3) The increased budget that results from trading, along with relevant calculations, and (4) the resulting primary PM10 and NOx budgets for each required year of the conformity demonstration. The MPO shall then compare projected emissions to the adjusted PM10 and NOx motor vehicle emission budgets to demonstrate conformity.

Denver Attainment Maintenance Area	Ozone Precursors (attainment/maintenance area boundary) NOx 2002 and beyond 134 tpsd VOC 2002 and beyond 119 tpsd tpsd = tons per summer day Carbon Monoxide (attainment/maintenance area boundary) 2013 through 2020: 1625 tons/day; 2021 and beyond: 1600 tons/day.
Denver Metro Area/North Front Range 8-hour Ozone Nonattainment Area	Regional Emissions Budgets NOx: 122.9 tons/day VOCs: 109.2 tons/day Southern Sub-regional Emissions Budgets NOx: 102.4 tons/day VOCs: 89.7 tons/day Northern Sub-regional Emissions Budgets NOx: 20.5 tons/day VOCs: 19.5 tons/day
Aspen (Modeling Area)	PM10 2015 and Beyond: 16,244 lbs./day

VIII. Statements of Basis, Specific Statutory Authority and Purpose

VIII.VI Denver Metro Area/North Front Range 8-Hour Ozone Emissions Budgets Adopted December 11, 2008

The amendments to the "Ambient Air Quality Standards for the State of Colorado" Regulation adopted by the Commission establish mobile source emissions budgets for the Denver Metro Area/North Front Range 8-Hour Ozone area.

Federal Requirements

Nothing in this rule change exceeds the minimum requirements of the federal act.

Statutory Authority

The authority to establish emissions budgets and to establish criteria for transportation conformity determinations is included in the general authority to adopt a State Implementation Plan set out in Section 25-7-105(1) and in 25-7-107(1), C.R.S. ~~(2001)~~.

Findings pursuant to Section 25-7-110.8

The mobile source emissions budgets are based on EPA's MOBILE6 emissions model and EPA-approved methods for calculating fugitive dust emissions as required by federal regulations. All methodologies and information made available by interested parties have been considered. The emissions budgets reduce the potential for air pollution by capping emissions from mobile sources. In adopting this rule, the Commission chose the most cost-effective alternative.

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Air Quality Control Commission

REGULATION NO. 3

STATIONARY SOURCE PERMITTING AND AIR POLLUTANT EMISSION NOTICE REQUIREMENTS

5 CCR 1001-5

PART A CONCERNING GENERAL PROVISIONS APPLICABLE TO REPORTING AND PERMITTING

II.D. Exemptions from Air Pollutant Emission Notice Requirements

II.D.1. Notwithstanding the exemptions contained in section II.D.1., Air Pollutant Emission Notices must be filed for all emission units specifically identified in the applicability section of any subpart of Part A of Regulation No. 6 (New Source Performance Standards) and/or Regulation No. 8 (Hazardous Air Pollutants), Parts A,C,D, and E. However, Air Pollutant Emission Notices need not be filed for wet screening operations subject to Subpart OOO of the New Source Performance Standards if the exemption in section II.D.1.cccc. is applicable.

Stationary sources having emission units that are exempt from the requirement to file an Air Pollutant Emission Notice must nevertheless comply with all requirements that are otherwise applicable specifically to the exempted emission units, including, but not limited to: Title V, Prevention of Significant Deterioration, nonattainment New Source Review, opacity limitations, odor limitations, particulate matter limitations and volatile organic compounds controls.

An applicant may not omit any information regarding APEN exempt emission units in any permit application if such information is needed to determine the applicability of Title V (Part C of this Regulation No. 3), Prevention of Significant Deterioration (Section VI., Part D of this Regulation No. 3), or nonattainment New Source Review (Section V., Part D of this Regulation No. 3).

The following sources are exempt from the requirement to file Air Pollutant Emission Notices because by themselves, or cumulatively as a category, they are deemed to have a negligible impact on air quality.

II.D.1.a. Individual emission points in nonattainment areas having uncontrolled actual emissions of any criteria pollutant of less than one ton per year, and individual emission points in attainment or attainment/maintenance areas having uncontrolled actual emissions of any criteria pollutant of less than two tons per year, and each individual emission point with uncontrolled actual emissions of lead less than one hundred pounds per year, regardless of where the source is located.

II.D.1.b. Individual emission points of non criteria reportable pollutants having uncontrolled actual emissions less than the de minimis levels as determined following the procedures set forth in Appendix A.

II.D.1.c. Air conditioning or ventilating systems not designed to remove air pollutants generated by or released from other processes or equipment.

II.D.1.d. Fireplaces used for recreational purposes, inside or outside.

II.D.1.e. Fires and equipment used for noncommercial cooking of food for human consumption, or cooking of food for human consumption at commercial food service establishments, except for char broilers and wood fired equipment (but not including campfires) in PM10 nonattainment areas. Charbroiler shall mean a cooking device in a commercial food service establishment, either gas fired or using charcoal or other fuel, upon which grease drips down upon an open flame, charcoal or embers.

II.D.1.f. Safety flares used to indicate danger to the public.

II.D.1.g. Agricultural operations such as farming, cultivating, harvesting, seasonal crop drying, grain handling operations that are below New Source Performance Standards de minimis levels (including milling and grain elevator operations), and animal feeding operations that are not housed commercial swine feeding facilities as defined in Regulation No. 2, Part B. This exemption does not apply to an agricultural operation that: (1) is a major source (as defined in section I.B.23. of this Part); (2) meets or exceeds the storage capacity thresholds of a federal New Source Performance Standard (Regulation No. 6, Part A); or (3) participates in the early reduction program of the Federal Act, section 112. Ancillary operations such as fueling stations located at farms or ranches are not exempt from Air Pollutant Emission Notice and permit requirements unless otherwise below the de minimis emission levels contained in this regulation, and are not exempt from other applicable regulation promulgated by the commission.

II.D.1.h. Emissions from, or construction, or alteration of residential structures, including all buildings or other structures used primarily as a place of residence, and including home heating devices.

II.D.1.i. Laboratories and research & development facilities:

II.D.1.i.(i) Noncommercial (in house) experimental and analytical laboratory equipment that is bench scale in nature including quality control/quality assurance laboratories, process support laboratories, environmental laboratories supporting a manufacturing or industrial facility, and research and development laboratories.

II.D.1.i.(ii) Research and development activities that are of a small pilot scale and that process less than ten thousand pounds of test material per year;

II.D.1.i.(iii) Small pilot scale research and development projects less than six months in duration with controlled actual emissions less than five hundred pounds of any criteria pollutant or ten pounds of any non criteria reportable pollutant.

II.D.1.j. Disturbance of surface areas for purposes of land development, that do not exceed twenty-five contiguous acres and that do not exceed six months in duration. (This does not include mining operations or disturbance of contaminated soil).

II.D.1.k. Each individual piece of fuel burning equipment, other than smokehouse generators and internal combustion engines, that uses gaseous fuel, and that has a design rate less than or equal to five million British thermal units per hour. (See definition of fuel burning equipment, Common Provisions Regulation).

II.D.1.l. Internal combustion engines powering portable drilling rigs.

II.D.1.m. EXEMPTION REPEALED~~Petroleum industry flares, not associated with refineries, combusting natural gas containing no hydrogen sulfide except in trace (less than five hundred parts per million weight) amounts, approved by the Colorado Oil and Gas Conservation commission and having uncontrolled emissions of any pollutant of less than five tons per year.~~

II.D.1.n. Chemical storage tanks or containers that hold less than five hundred gallons, and that have an annual average daily throughput of less than twenty-five gallons.

II.D.1.o. Unpaved public and private roadways, except for haul roads located within a stationary source site boundary.

II.D.1.p. Sanding of streets and roads to abate traffic hazards caused by ice and snow.

II.D.1.q. Open burning activities, except that all reporting and permitting requirements that apply to such operations must be followed (see Regulation No. 9).

II.D.1.r. Brazing, soldering, or welding operations, except those that use lead based compounds. All welding that occurs strictly for maintenance purposes is exempt.

II.D.1.s. Street and parking lot striping.

II.D.1.t. Battery recharging areas.

II.D.1.u. Aerosol can usage.

II.D.1.v. Sawing operations, that is ancillary to facility operations, and is not part of the production process.

II.D.1.w. The process of demolition and re bricking of furnaces and kilns. This does not include subsequent operation of such furnaces or kilns.

II.D.1.x. Road and lot paving operations at commercial and industrial facilities, except that asphalt and cement batch plants require Air Pollutant Emission Notices and permits, unless exempt under some other section.

II.D.1.y. Adhesive use that is not related to production.

II.D.1.z. Fire training activities.

II.D.1.aa. Caulking operations that are not part of a production process.

II.D.1.bb. Landscaping and site housekeeping devices equal to or less than ten horsepower in size (lawnmowers, trimmers, snow blowers, etc.).

II.D.1.cc. Fugitive emissions from landscaping activities (e.g., weeding, sweeping).

II.D.1.dd. Landscaping use of pesticides, fumigants, and herbicides.

II.D.1.ee. EXEMPTION REPEALED~~Crude oil truck loading equipment at exploration and production sites where the loading rate does not exceed 10,000 gallons of crude oil per day averaged on an annual basis. Condensate truck loading equipment at exploration and production sites that splash fill less than 6750 barrels of condensate per year or that submerge fill less than 16308 barrels of condensate per year. Crude oil or condensate loading truck equipment at crude oil production sites where the loading rate does not exceed 10,000 gallons per day averaged over any thirty-day period.~~

II.D.1.ff. Emergency events such as accidental fires.

II.D.1.gg. Smoking rooms and areas.

II.D.1.hh. Plastic pipe welding.

II.D.1.ii. Vacuum cleaning systems used exclusively for industrial, commercial, or residential housekeeping purposes.

II.D.1.jj. Beauty salons.

II.D.1.kk. Operations involving acetylene, butane, propane and other flame cutting torches.

II.D.1.ll. Pharmacies.

II.D.1.mm. Chemical storage areas where chemicals are stored in closed containers, and where total storage capacity does not exceed five thousand gallons. This exemption applies solely to storage of such chemicals. This exemption does not apply to transfer of chemicals from, to, or between such containers.

II.D.1.nn. Architectural painting, roof coating material and associated surface preparation (except for sandblasting and except for volatile organic compound emissions, associated with surface preparation, above Air Pollutant Emission Notice de minimis levels) for maintenance purposes at industrial or commercial facilities.

II.D.1.oo. Emissions that are not criteria (as defined in section I.B.16. of this Part) or non-criteria reportable pollutants (as defined in section I.B.28. of this Part) (These emissions include methane, ethane, and carbon dioxide).

II.D.1.pp. Janitorial activities and products.

II.D.1.qq. Grounds keeping activities and products.

II.D.1.rr. Sources of odorous emissions that do not utilize emission control equipment for control of odorous emissions. This exemption applies to the odor emissions only. All other emissions are subject to other exemptions set forth in this regulation. This exemption does not exempt any source from the requirements of Regulation No. 2.

II.D.1.ss. Truck and car wash units.

II.D.1.tt. Office emissions, including cleaning, copying, and restrooms.

II.D.1.uu. EXEMPTION REPEALED~~Oil production wastewater (produced water tanks), containing less than one percent by volume crude oil on an annual average, except for commercial facilities that accept oil production wastewater for processing.~~

II.D.1.vv. Electrically operated curing ovens, drying ovens and similar activities, articles, equipment, or appurtenances. This exemption applies to the ovens only, and not to the items being dried in the ovens.

II.D.1.ww. Equipment used exclusively for portable steam cleaning.

II.D.1.xx. Blast cleaning equipment using a suspension of abrasive in water and any exhaust system or collector serving them exclusively.

II.D.1.yy. Commercial laundries (except dry cleaners) that do not burn liquid or solid fuel.

II.D.1.zz. Storage of butane, propane, or liquefied petroleum gas in a vessel with a capacity of less than sixty thousand gallons, provided the requirements of Regulation No. 7, section IV. are met, where applicable.

II.D.1.aaa. Storage tanks of capacity less than forty thousand gallons of lubricating oils or used lubricating oils.

II.D.1.bbb. Venting of compressed natural gas, butane or propane gas cylinders, with a capacity of one gallon or less.

II.D.1.ccc. Fuel storage and dispensing equipment in ozone attainment areas operated solely for company owned vehicles where the daily fuel throughput is no more than four hundred gallons per day that is calculated as an annual average. Sources in AN ~~the Denver 1-hour~~ ozone attainment/maintenance area must utilize Stage 1 vapor recovery on all tanks greater than 550 gallons capacity, as required by Regulation No. 7, in order to take this exemption.

II.D.1.ddd. EXEMPTION REPEALED~~Crude oil storage tanks with a capacity of 40,000 gallons or less.~~

II.D.1.eee. Indirect sources are exempt until a permit regulation specific to indirect sources is promulgated by the commission.

II.D.1.fff. Storage tanks meeting all of the following criteria:

- II.D.1.fff.(i) Annual throughput is less than four hundred thousand gallons; and
- II.D.1.fff.(ii) The liquid stored is one of the following:
  - II.D.1.fff.(ii)(A) Diesel fuels 1 D, 2 D, or 4 6;
  - II.D.1.fff.(ii)(B) Fuel oils #1 through #6;
  - II.D.1.fff.(ii)(C) Gas turbine fuels 1 GT through 4 GT;
  - II.D.1.fff.(ii)(D) oil/water mixtures with a vapor pressure equal to or lower than that of diesel fuel (Reid Vapor Pressure of 0.025 pounds per square inch absolute).

II.D.1.ggg. Each individual piece of fuel burning equipment that uses gaseous fuel, and that has a design rate less than or equal to ten million British thermal units per hour, and that is used solely for heating buildings for personal comfort.

II.D.1.hhh. Natural gas vehicle fleet fueling facilities.

II.D.1.iii. Electric motors driving equipment at non-commercial machining shops.

II.D.1.jjj. Recreational swimming pools.

II.D.1.kkk. Forklifts.

II.D.1.lll. Oil and gas exploration and production operations (well site and associated equipment) shall provide written notice to the Colorado Oil and Gas Conservation commission of proposed drilling locations prior to commencement of such operations. Air Pollutant Emission Notices are not required until after exploration and/or production drilling, workovers, completions, and testing are finished.

If production will result in reportable emissions, the owner or operator shall file an Air Pollutant Emission Notice with the division within thirty days after the well completion or recompletion report and log is filed with the appropriate state or federal agency. If production will not occur, or production will not result in reportable emissions, the owner or operator shall submit written notice to the division indicating that the well was plugged, or that emissions are otherwise not reportable. If production will result in reportable emissions, the owner or operator shall file an Air Pollutant Emission Notice with the division within thirty days after the report of first production is filed with the appropriate state or federal agency but no later than ninety days following the first day of production.

II.D.1.mmm. Handling equipment and associated activities for glass that is destined for recycling.

II.D.1.nnn. Fugitive emissions of hazardous air pollutants that are natural constituents of native soils and rock (not added or concentrated by chemical or mechanical processes) from under ground mines or surface mines unless such source is a major source of hazardous air pollutants under Part C of Regulation No. 3.

II.D.1.ooo. The use of pesticides, fumigants, and herbicides when used in accordance with requirements established under the federal Insecticide, Fungicide and Rodenticide Act as established by the U.S. EPA (United States Code Title 7, Section 136 et seq.).

II.D.1.ppp. Ventilation of emissions from mobile sources operating within a tunnel, garage, or building.

II.D.1.qqq. Non-asbestos demolition.

II.D.1.rrr. Sandblast equipment when the blast media is recycled and the blasted material is collected, including small sandblast glove booths.

II.D.1.sss. Stationary Internal Combustion Engines that meet the following specifications:

II.D.1.sss.(i) Less than or equal to 175 horsepower that operate less than 1,450 hours per year; or

II.D.1.sss.(ii) Greater than 175 horsepower and less than or equal to 300 horsepower that operate less than 850 hours per year; or

II.D.1.sss.(iii) Greater than 300 horsepower and less than or equal to 750 horsepower that operate less than 340 hours per year.

II.D.1.ttt. Emergency power generators that:

II.D.1.ttt.(i) Have a rated horsepower of less than 260; or

II.D.1.ttt.(ii) Operate no more than 250 hours per year and have a rated horsepower of less than 737; or

II.D.1.ttt.(iii) Operate no more than 100 hours per year and have a rated horsepower of less than 1,840.

II.D.1.uuu. Surface water storage impoundment of no~~t~~-potable water and storm water evaporation ponds, EXCEPT OIL PRODUCTION WASTEWATER (PRODUCED WATER TANKS) CONTAINING EQUAL TO OR MORE THAN ONE PERCENT BY VOLUME CRUDE OIL ON AN ANNUAL AVERAGE, AND COMMERCIAL FACILITIES THAT ACCEPT OIL PRODUCTION WASTEWATER FOR PROCESSING.

II.D.1.vvv. Non-potable water pipeline vents.

II.D.1.www. Steam vents and safety release valves.

II.D.1.xxx. Deaerator/vacuum pump exhausts.

II.D.1.yyy. Seal and lubricating oil systems for steam turbine electric generators.

II.D.1.zzz. Venting of natural gas lines for safety purposes.

II.D.1.aaaa. Chemical Storage Tanks

II.D.1.aaaa.(i) Sulfuric acid storage tanks not to exceed ten thousand five hundred gallons capacity.

II.D.1.aaaa.(ii) Sodium hydroxide storage tanks.

II.D.1.bbbb. Containers, reservoirs, or tanks used exclusively for dipping operations that contain no organic solvents for coating objects with oils, waxes, greases, or natural or synthetic resins.

II.D.1.cccc. Wet screening operations notwithstanding the applicability of the New Source Performance Standards included in the Code of Federal Regulations, Title 40, Part 60, Subpart OOO.

II.D.1.dddd. Non-road engines as defined in section I.B.29. of this Part A, except certain non-road engines subject to state-only air pollutant emission notice and permitting requirements pursuant to section I.B.29.c. of this Part.

II.D.1.eeee. EXEMPTION REPEALED~~Any condensate storage tank with a production rate of 730 barrels per year or less or condensate storage tanks that are manifold together with a production rate of 730 barrels per year or less that are owned and/or operated by the same person, and are located at exploration and production sites.~~

~~II.D.1.eeee.(i) The need to file APENs for condensate storage tanks at operations located downstream of natural gas exploration and production facilities, but not including natural gas processing plants, shall be evaluated in light of a throughput limit to be established by the division based upon data acceptable to the division that the estimated emissions from such tanks (or manifold tanks) at the specified throughput is equal to or less than the appropriate APEN de minimis level set forth in Part A, section II.D.1.a. of this regulation No. 3. The throughput level may be established for either a particular company's operations, and, if supported, for natural gas gathering operations generally. In the latter case, the division would establish the accepted APEN throughput level by policy.~~

II.D.1.ffff Air Curtain Destructors burning only yard waste, wood waste, and clean lumber, or any mixture thereof generated as a result of projects to reduce the risk of wildfire and are not located at a commercial or industrial facility. Air curtain incinerators that are considered incinerators as defined by the Common Provisions do not meet this exemption.

II.D.2. An Air Pollutant Emission Notice must be filed for all incinerators.

II.D.3. Air Pollutant Emission Notices are required for emergency and backup generators that are ancillary to the main units at electric utility facilities however, these units may be included on the same Air Pollutant Emission Notice as the main unit.

II.D.4. Any person may request the division to examine a particular source category or activity for exemption from Air Pollutant Emission Notice or permit requirements.

II.D.4.a. Such requests shall be made separately from the permit application review procedure.

II.D.4.b. Such requests shall include documentation indicating that emissions from the source category or activity have a negligible impact on air quality and public health in Colorado, based on, but not limited to, the following criteria.

II.D.4.b.(i) Emissions from the source or activity are below the Air Pollutant Emission Notice or permit emission de minimis levels set forth in this Regulation No. 3; or

II.D.4.b.(ii) The existing division emission inventory is sufficient to indicate that the source or activity has a negligible impact; or

II.D.4.b.(iii) For permit exemptions, criteria in sections II.D.4.b.(i) and/or II.D.4.b.(ii), above, are met, and the source or activity has no applicable requirement that applies to it, and the division finds that monitoring or record keeping are not necessary.

II.D.4.b.(iv) Exemptions shall not be granted for any source or activity that is subject to any federal applicable requirement. The division shall determine on a case-by-case basis if sources or activities subject to state only regulations may be granted an exemption.

II.D.4.c. None of the activities submitted as exemption requests to the division may be taken by a source until the commission has duly adopted the exemptions as revisions to this Regulation No. 3 and the U.S. EPA has approved the exemption requests.

II.D.5. Commercial (for hire) laboratories whose primary responsibilities are to perform qualitative or quantitative analysis on environmental, clinical, geological, forensic, or process samples may estimate emissions for purposes of Air Pollutant Emission Notice reporting based upon a mass balance calculation utilizing inventory and purchase records of solvents and reagents. Such laboratories may, at their discretion, group emission points if such grouping meets the grouping criteria outlined in this regulation. All inert samples are exempt from Air Pollutant Emission Notice reporting. Emissions from samples subjected to analysis provided to such laboratories for analysis and testing, and by-products that result from sample testing, are exempt from Air Pollutant Emission Notice

reporting, provided such samples subjected to analysis are less than five gallons for liquids, or five pounds for solids.

II.D.6. Research and development activities that do not fall within the small scale exemption in section II.D.1.i. may estimate emissions for purposes of Air Pollutant Emission Notice reporting based upon either a mass balance calculation utilizing inventory and purchase records, or best engineering judgment. Such facilities may file an Air Pollutant Emission Notice or revised Air Pollutant Emission Notice on an annual basis by April 30 of the year following the project's conclusion for each project that is not exempt under section II.D.1.i., irrespective of section II.C., herein (revised Air Pollutant Emission Notice requirements), such Air Pollutant Emission Notices shall be filed on a per project basis and shall be based on controlled actual emissions.

PART B CONCERNING CONSTRUCTION PERMITS

II.D. Exemption from Construction Permit Requirements

None of the exemptions listed below in sections II.D.1. through II.D.4. shall apply if a source is subject to Part A of Regulation No. 6 (New Source Performance Standards) and/or Regulation No. 8 (Hazardous Air Pollutants), Parts A,C, D, and E. Permit exemptions taken under this section do not affect the applicability of the regulations to the source.

An applicant may not omit any information regarding APEN or permit exempt emission units in any application if such information is needed to determine the applicability of Title V (Part C of this Regulation No. 3), Prevention of Significant Deterioration (section VI. of Part D of this Regulation No. 3), or Nonattainment New Source Review (section V. of Part D of this Regulation No. 3).

II.D.1. The following sources are exempt because by themSELVES, or cumulatively as a category, are deemed to have a negligible impact on air quality:

II.D.1.a. Those sources exempted from the filing of Air Pollutant Emission Notices in section II.D. of Part A, of this regulation.

II.D.1.b. Containers, reservoirs, or tanks used exclusively for dipping operations for coating objects with oils, waxes, greases, or natural or synthetic resins containing no organic solvents.

II.D.1.c. Stationary Internal Combustion Engines that:

II.D.1.c.(i) Power portable drilling rigs; or

II.D.1.c.(ii) Are emergency power generators that operate no more than two hundred and fifty hours per year; or

II.D.1.c.(iii) Have uncontrolled actual emissions in:

II.D.1.c.(iii)(A) Nonattainment areas of less than five tons per year or manufacturer's site-rated horsepower of less than fifty; or

II.D.1.c.(iii)(B) Attainment areas of less than ten tons per year or manufacturer's site-rated horsepower of less than one hundred.

II.D.1.d. The collection, transmission, liquid treatment, and solids treatment processes at domestic wastewater treatment works, or treatment facilities that treat only domestic type wastewater, except for combustion processes.

II.D.1.e. Each individual piece of fuel burning equipment, other than smokehouse generators, that uses gaseous fuel, and that has a design rate less than or equal to ten million British thermal units per hour.

II.D.1.f. Gasoline stations located in ozone attainment areas, except for stations located in the Denver Metropolitan ozone attainment/maintenance area.

II.D.1.g. Surface mining activities that mine seventy thousand tons or fewer of product material per year. A fugitive dust control plan is required for such sources. Crushers, screens and other processing equipment activities are not included in this exemption.

II.D.1.h. Composting piles, however, all odor requirements of Regulation No. 2 must be met.

II.D.1.i. Commercial and product quality control laboratory equipment.

II.D.1.j. Fires and equipment used for noncommercial cooking of food for human consumption and for cooking of food for human consumption at commercial food service establishments.

II.D.1.K. PETROLEUM INDUSTRY FLARES, NOT ASSOCIATED WITH REFINERIES, COMBUSTING NATURAL GAS CONTAINING NO HYDROGEN SULFIDE EXCEPT IN TRACE (LESS THAN FIVE HUNDRED PARTS PER MILLION WEIGHT) AMOUNTS, APPROVED BY THE COLORADO OIL AND GAS CONSERVATION COMMISSION AND HAVING UNCONTROLLED EMISSIONS OF ANY POLLUTANT OF LESS THAN FIVE TONS PER YEAR.

II.D.1.L. CRUDE OIL TRUCK LOADING EQUIPMENT AT EXPLORATION AND PRODUCTION SITES WHERE THE LOADING RATE DOES NOT EXCEED 10,000 GALLONS OF CRUDE OIL PER DAY AVERAGED ON AN ANNUAL BASIS. CONDENSATE TRUCK LOADING EQUIPMENT AT EXPLORATION AND PRODUCTION SITES THAT SPLASH FILL LESS THAN 6750 BARRELS OF CONDENSATE PER YEAR OR THAT SUBMERGE FILL LESS THAN 16308 BARRELS OF CONDENSATE PER YEAR. CRUDE OIL OR CONDENSATE LOADING TRUCK EQUIPMENT AT CRUDE OIL PRODUCTION SITES WHERE THE LOADING RATE DOES NOT EXCEED 10,000 GALLONS PER DAY AVERAGED OVER ANY THIRTY-DAY PERIOD.

II.D.1.M. OIL PRODUCTION WASTEWATER (PRODUCED WATER TANKS), CONTAINING LESS THAN ONE PERCENT BY VOLUME CRUDE OIL ON AN ANNUAL AVERAGE, EXCEPT FOR COMMERCIAL FACILITIES THAT ACCEPT OIL PRODUCTION WASTEWATER FOR PROCESSING.

II.D.1.~~O~~N. CRUDE OIL STORAGE TANKS WITH A CAPACITY OF 40,000 GALLONS OR LESS.

II.D.2. Facilities located in a nonattainment area for any criteria pollutant for which the area is nonattainment; with total facility uncontrolled actual emissions (potential emissions at actual operating hours) that are less than the following amounts:

II.D.2.a. Two tons per year volatile organic compounds.

II.D.2.b. One ton per year PM10.

II.D.2.c. Five tons per year total suspended particulate.

II.D.2.d. Five tons per year carbon monoxide.

II.D.2.e. Five tons per year sulfur dioxide.

II.D.2.f. Five tons per year nitrogen oxides.

II.D.2.g. Two hundred pounds per year lead.

For purposes of calculating total facility uncontrolled actual emissions, only those individual (or grouped) emission points requiring Air Pollutant Emission Notices are to be considered.

II.D.3. Facilities located in attainment areas for all criteria pollutants with total facility uncontrolled actual emissions less (potential emissions at actual operating hours) than the following amounts:

II.D.3.a. Five tons per year volatile organic compounds.

II.D.3.b. Five tons per year PM10.

II.D.3.c. Ten tons per year total suspended particulate.
II.D.3.d. Ten tons per year carbon monoxide.
II.D.3.e. Ten tons per year sulfur dioxide.
II.D.3.f. Ten tons per year nitrogen oxides.
II.D.3.g. Two hundred pounds per year lead.

For purposes of calculating total facility uncontrolled actual emissions, only those individual (or grouped) emission points requiring Air Pollutant Emission Notices are to be considered.

II.D.4. Facilities that emit any other criteria pollutant that is not listed in sections II.D.2. and II.D.3., above (fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, reduced sulfur compounds, and municipal waste combustor emissions), with total facility uncontrolled actual emissions of such pollutants that are less than two tons per year.

II.D.5. When a facility that was previously exempt from permit requirements exceeds one of the permit de minimis levels stated in sections II.D.2. through II.D.4., above, due to the addition of new emission points, the division will issue either a facility-wide permit for all non-grandfathered emission units above Air Pollutant Emission Notice de minimis levels, or individual emission permits for those emission units.

II.D.6. All incinerators require a permit as stated in Regulation No.1, section III.B.1.

II.D.7. Oil and gas exploration and production operations that are addressed under section II.D.1.lll. of this Regulation No. 3, Part A, and that are required to obtain a construction permit, are not required to file an application for a construction permit until they are required to file an Air Pollutant Emission Notice, as set forth in section II.D.1.lll. The application shall include a list of all applicable requirements, and how the requirements will be met until a construction permit is issued.

II.D.8. Any person may request the division to add source categories to the permit exemption list, in accordance with the procedures set forth in section II.D.4. of Part A of this regulation.

II.D.9. Sources with a valid operating permit are not required to obtain a construction permit prior to commencing construction or modification, as set forth in section II.A.6. of this Part B.

PART C CONCERNING OPERATING PERMITS

II.E. Insignificant Activities and Exemptions from Operating Permit Requirements

Sources that are otherwise required to obtain an operating permit are not required to include insignificant activities from the following list in their operating permit applications, except as otherwise provided below.

None of the exemptions listed below, including emission de minimis levels, shall apply if by taking such exemption a source would avoid any specific federal or state applicable requirement, including, but not limited to, New Source Performance Standards, Regulation No. 7, Prevention of Significant Deterioration (section VI., Part D of this Regulation No. 3), nonattainment New Source Review requirements (section V. Part D of this Regulation No. 3), Title III, National Emission Standards for Hazardous Air Pollutants, Title V, and Colorado Maximum Achievable Control Technology or Generally Available Control Technology . (If the potential to emit, taking into account full design rate and continuous operation, triggers Prevention of Significant Deterioration or New Source Review requirements, the source must submit an Air Pollutant Emission Notice and apply for the appropriate permit, or must apply for a permit to limit the physical or operational capacity of the source such that the source is not considered to be a major source as defined in section I.B.24. of Part A of this regulation.).

Sources otherwise required to obtain an operating permit are required to include a list of insignificant activities in their permit applications if the insignificant activities are listed in sections II.E.1. and II.E.2., or marked with an asterisk in section II.E.3. The asterisk denotes an insignificant activity source category based on the size of the activity, emissions levels from the activity or the production rate of the activity. The owner or operator of individual emission points marked with an asterisk in section II.E.3., below, must maintain sufficient record keeping to verify that the exemption applies. Such records shall be made available for division review upon request.

The following sources are exempt from the requirement to obtain an operating permit pursuant to this Part C:

II.E.1. Sources subject to regulation or requirements pertaining to standards of performance for new residential wood heaters pursuant to Regulation No. 6; or

II.E.2. Sources subject to regulation or requirements pertaining to national emissions standards for hazardous air pollutants for asbestos in the course of demolition and renovation pursuant to Regulation No. 8.

II.E.3. Certain categories of sources and activities which are considered to be insignificant contributors to air pollution as listed below. A source solely comprised of one or more of these activities are not required to obtain an operating permit pursuant to this regulation, unless the source's emissions trigger the major source threshold as defined in section I.B.24. of Part A of this Regulation No. 3 (definition of major source):

II.E.3.a. *Individual emission points in nonattainment areas having uncontrolled actual emissions of any criteria pollutant (as defined in section I.B.17. of Part A of this Regulation No. 3) of less than one ton per year, and individual emission points in attainment or attainment/maintenance areas having uncontrolled actual emissions of any criteria pollutant of less than two tons per year, and each individual

emission point with uncontrolled actual emissions of lead less than one hundred pounds per year, regardless of where the source is located.

II.E.3.b. Individual emission points of non criteria reportable pollutants having uncontrolled actual emissions less than the de minimis levels as determined following the procedures set forth in Appendix A.

II.E.3.c. Air conditioning or ventilating systems not designed to remove air pollutants generated by or released from other processes or equipment.

II.E.3.d. Fireplaces used for recreational purposes, inside or outside.

II.E.3.e. Fires and equipment used for noncommercial cooking of food for human consumption, or cooking of food for human consumption at commercial food service establishments, except for char broilers and wood fired equipment (but not including campfires) in PM10 nonattainment areas. Charbroiler shall mean a cooking device in a commercial food service establishment, either gas fired or using charcoal or other fuel, upon which grease drips down upon an open flame, charcoal or embers.

II.E.3.f. Flares used to indicate danger to the public.

II.E.3.g. Agriculture operations such as farming, cultivating and harvesting, seasonal crop drying, grain handling operations that are below New Source Performance Standards de minimis levels (including milling and grain elevator operations), and animal feeding operations that are not housed commercial swine feeding facilities as defined in Regulation No. 2, Part B. This exemption does not apply to an agricultural operation that: (1) is a major source (Regulation No. 3, Part A, section I.B.24.); (2) meets or exceeds the storage capacity thresholds of a federal New Source Performance Standards (Regulation No. 6, Part A); or (3) participates in the early reduction program of the Federal Act, section 112. Ancillary operations such as fueling stations located at farms or ranches are not exempt from Air Pollutant Emission Notice and permit requirements unless otherwise below the de minimis emission levels contained in this regulation, and are not exempt from other applicable regulations promulgated by the commission.

II.E.3.h. Emissions from, or construction, or alteration of residential structures, including all buildings or other structures used primarily as a place of residence, and including home heating devices.

II.E.3.i. Research laboratories

II.E.3.i.(i) Noncommercial (in house) experimental and analytical laboratory equipment that is bench scale in nature including quality control/quality assurance laboratories, process support laboratories, environmental laboratories supporting a manufacturing or industrial facility, and research and development laboratories.

II.E.3.i.(ii) *Research and development activities that are of a small pilot scale and that process less than ten thousand pounds of test material per year;

II.E.3.i.(iii) *Small pilot scale research and development projects less than six months in duration with controlled actual emissions less

than five hundred pounds of any criteria pollutant or ten pounds of any non criteria reportable pollutant.

II.E.3.j. *Disturbance of surface areas for purposes of land development, that do not exceed twenty-five contiguous acres and that do not exceed six months in duration. (This does not include mining operations or disturbance of contaminated soil).

II.E.3.k. *Each individual piece of fuel burning equipment, other than smokehouse generators and internal combustion engines, that uses gaseous fuel, and that has a design rate less than or equal to five million British thermal units per hour. (See definition of fuel burning equipment in the Common Provisions Regulation).

II.E.3.l. Internal combustion engines powering portable drilling rigs.

II.E.3.m. *Petroleum industry flares, not associated with refineries, combusting natural gas containing no hydrogen sulfide except in trace amounts (less than five hundred parts per million weight), approved by the Colorado Oil and Gas Conservation commission and having uncontrolled emissions of any pollutant of less than five tons per year.

II.E.3.n. *Chemical storage tanks or containers that hold less than five hundred gallons, ~~and~~ that have an annual average throughput less than twenty-five gallons per day, AND ARE NOT ASSOCIATED WITH EITHER OIL AND GAS PRODUCTION WASTEWATER OR COMMERCIAL FACILITIES THAT ACCEPT OIL PRODUCTION WASTEWATER FOR PROCESSING.

II.E.3.o. Unpaved public and private roadways, except for haul roads located within a stationary source site boundary.

II.E.3.p. Sanding of streets and roads to abate traffic hazards caused by ice and snow.

II.E.3.q. Open burning activities, except that all reporting and permitting requirements that apply to such operations must be followed (see Regulation No. 9).

II.E.3.r. Brazing, soldering, or welding operations that use lead based compounds. All welding that occurs strictly for maintenance purposes is exempt.

II.E.3.s. Street and parking lot striping.

II.E.3.t. Battery recharging areas.

II.E.3.u. Aerosol can usage.

II.E.3.v. Sawing operations that are ancillary to facility operations and are not part of the production process.

II.E.3.w. The process of demolition and re-bricking of furnaces and kilns. This does not include subsequent operation of such furnaces or kilns.

II.E.3.x. Road and lot paving operations at commercial and industrial facilities, except that asphalt and cement batch plants require Air Pollutant Emission Notices and permits, unless exempt under some other section.

II.E.3.y. Adhesive use that is not related to production.

II.E.3.z. Fire training activities.

II.E.3.aa. Caulking operations that are not part of a production process.

II.E.3.bb. *Landscaping and site housekeeping devices equal to or less than ten horsepower in size (lawnmowers, trimmers, snow blowers, etc.).

II.E.3.cc. Fugitive emissions from landscaping activities (e.g., weeding, sweeping).

II.E.3.dd. Landscaping use of pesticides, fumigants, and herbicides.

II.E.3.ee. *Crude oil loading truck equipment at exploration and production sites where the loading rate does not exceed 10,000 gallons of crude oil per day averaged on an annual basis. Condensate truck loading equipment at exploration and production sites that splash fill less than 6750 barrels of condensate per year or that submerge fill less than 16308 barrels of condensate per year.

II.E.3.ff. Emergency events such as accidental fires.

II.E.3.gg. Smoking rooms and areas.

II.E.3.hh. Plastic pipe welding.

II.E.3.ii. Vacuum cleaning systems used exclusively for industrial, commercial, or residential housekeeping purposes.

II.E.3.jj. Beauty salons.

II.E.3.kk. Operations involving acetylene, butane, propane and other flame cutting torches.

II.E.3.ll. Pharmacies.

II.E.3.mm. *Chemical storage areas where chemicals are stored in closed containers, and where total storage capacity does not exceed five thousand gallons. This exemption applies solely to storage of such chemicals. This exemption does not apply to transfer of chemicals from, to, or between such containers.

II.E.3.nn. Architectural painting, roof coating material and associated surface preparation (except for sandblasting and except for volatile organic compound emissions, associated with surface preparation, above Air Pollutant Emission Notice de minimis levels) for maintenance purposes at industrial or commercial facilities.

II.E.3.oo. Emissions of air pollutants that are not criteria or non-criteria reportable pollutants (see sections I.B.17. and I.B.29. of Part A of this regulation). These emissions include methane, ethane and carbon dioxide.

II.E.3.pp. Janitorial activities and products.

II.E.3.qq. Grounds keeping activities and products.

II.E.3.rr. Sources of odorous emissions that do not utilize emission control equipment for control of odorous emissions. This exemption applies to the odor emissions only. All other emissions are subject to other exemptions set forth in this regulation. This exemption does not exempt any source from the requirements of Regulation No. 2.

II.E.3.ss. Truck and car wash units.

II.E.3.tt. Office emissions, including cleaning, copying, and restrooms.

II.E.3.uu. *Oil production wastewater (produced water tanks), containing less than one percent by volume annual average crude oil, except for commercial facilities that accept oil production wastewater for processing.

II.E.3.vv. Electrically operated curing ovens, drying ovens and similar activities, articles, equipment, or appurtenances. This exemption applies to the ovens only, and not to the items being dried in the ovens.

II.E.3.ww. Equipment used exclusively for portable steam cleaning.

II.E.3.xx. Blast-cleaning equipment using a suspension of abrasive in water and any exhaust system or collector serving them exclusively.

II.E.3.yy. Commercial laundries (except dry cleaners) that do not burn liquid or solid fuel.

II.E.3.zz. Storage of butane, propane, or liquefied petroleum gas in a vessel with a capacity of less than sixty thousand gallons, provided the requirements of Regulation No. 7, section IV. are met, where applicable.

II.E.3.aaa. Storage tanks of capacity less than forty thousand gallons of lubricating oils or waste lubricating oils.

II.E.3.bbb. *Venting of compressed natural gas, butane or propane gas cylinders, with a capacity of one gallon or less.

II.E.3.ccc. *Fuel storage and dispensing equipment in ozone attainment areas operated solely for company-owned vehicles where the daily fuel throughput is no more than four hundred gallons per day, averaged annually. Sources in AN ~~the Denver 1-hour~~ ozone attainment/maintenance area must utilize Stage 1 vapor recovery on all tanks greater than five hundred and fifty gallons capacity, as required by Regulation No. 7, in order to take this exemption.

II.E.3.ddd. *Crude oil storage tanks with a capacity of 40,000 gallons or less.

II.E.3.eee. Indirect sources are exempt until a (permit) regulation specific to indirect sources is promulgated by the commission.

II.E.3.fff. *Storage tanks meeting all of the following criteria:

II.E.3.fff.(i) Annual throughput is less than four hundred thousand gallons; and

II.E.3.fff.(ii) The liquid stored is one of the following:

II.E.3.fff.(ii)(A) Diesel fuels 1-D, 2-D, or 4-6;

II.E.3.fff.(ii)(B) Fuel oils #1 - #6;

II.E.3.fff.(ii)(C) As turbine fuels 1 - GT through 4 - GT;

II.E.3.fff.(ii)(D) An oil/water mixture with a vapor pressure less than or equal to that of diesel fuel (Reid vapor pressure of .025 psia).

II.E.3.ggg. Each individual piece of fuel burning equipment that uses gaseous fuel, and that has a design rate less than or equal to ten million British thermal units per hour, and that is used solely for heating buildings for personal comfort.

II.E.3.hhh. Natural gas vehicle fleet fueling facilities.

II.E.3.iii. Electric motors driving equipment at non-commercial machining shops.

II.E.3.jjj. Recreational swimming pools.

II.E.3.kkk. Forklifts.

II.E.3.lll. Handling equipment and associated activities for glass that is destined for recycling.

II.E.3.mmm. Containers, reservoirs, or tanks used exclusively for dipping operations, that contain no organic solvents, for coating objects with oils, waxes, greases, or natural or synthetic resins.

II.E.3.nnn. Emergency power generators that:

II.E.3.nnn.(i) Have a rated horsepower of less than 260 or;

II.E.3.nnn.(ii) *Operate no more than 250 hours per year and have a rated horsepower of less than 737; or

II.E.3.nnn.(iii) *Operate no more than 100 hours per year and have a rated horsepower of less than 1,840.

II.E.3.ooo. The collection, transmission, liquid treatment, and solids treatment processes at domestic wastewater treatment works, or treatment facilities that treat only domestic type wastewater, except for combustion processes.

II.E.3.ppp. Gasoline stations located in ozone attainment areas.

II.E.3.qqq. *Surface mining activities that mine seventy thousand tons or fewer of product material per year. A fugitive dust control plan is required for such sources. Crushers, screens and other processing equipment activities are not included in this exemption.

II.E.3.rrr. Composting piles, however, all odor requirements of Regulation No. 2 must be met.

II.E.3.sss. Fugitive emissions of hazardous air pollutants that are natural constituents of native soils and rock (not added or concentrated by chemical or mechanical processes) from under ground mines or surface mines unless such source is a major source of hazardous air pollutants under Part C of this Regulation No. 3.

II.E.3.ttt. The use of pesticides, fumigants, and herbicides when used in accordance with requirements established under the federal Insecticide, Fungicide and Rodenticide Act as established by the U.S. EPA (United States Code Title 7, Section 136 et seq.).

II.E.3.uuu. Ventilation of emissions from mobile sources operating within a tunnel, garage, or building.

II.E.3.vvv. Non-asbestos demolition.

II.E.3.www. Sandblast equipment when the blast media is recycled and the blasted material are collected.

II.E.3.xxx. Stationary internal combustion engines:

II.E.3.xxx.(i) *Less than or equal to 175 horsepower which operate less than 1,450 hours per year.

II.E.3.xxx.(ii) *Greater than 175 horsepower and less than or equal to 300 horsepower which operate less than 850 hours per year.

II.E.3.xxx.(iii) *Greater than 300 horsepower and less than or equal to 750 horsepower which operate less than 340 hours per year.

II.E.3.yyy. Surface water storage impoundment of non-potable water and storm water evaporation ponds, EXCEPT OIL PRODUCTION WASTEWATER (PRODUCED WATER TANKS) CONTAINING EQUAL TO OR MORE THAN ONE PERCENT BY VOLUME CRUDE OIL ON AN ANNUAL AVERAGE, AND COMMERCIAL FACILITIES THAT ACCEPT OIL PRODUCTION WASTEWATER FOR PROCESSING.

II.E.3.zzz. Non-potable water pipeline vents.

II.E.3.aaaa. Steam vents and safety release valves.

II.E.3.bbbb. Deaerator/vacuum pump exhausts.

II.E.3.cccc. Seal and lubricating oil systems for steam turbine electric generators.

II.E.3.dddd. Venting of natural gas lines for safety purposes.

II.E.3.eeee. Chemical storage tanks

II.E.3.eeee.(i) *Sulfuric acid storage tanks not to exceed ten thousand five hundred gallons capacity.

II.E.3.eeee.(ii) *Sodium hydroxide storage tanks.

II.E.3.ffff. Wet screening operations notwithstanding the applicability of the New Source Performance Standards included in the Code of Federal Regulations, Title 40, Part 60, Subpart OOO.

II.E.3.gggg. *Any condensate storage tank with a production rate of 730 barrels per year or less or condensate storage tanks that are manifold together with a production rate of 730 barrels per year or less that are owned and operated by the same person, and are located at exploration and production sites.

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Air Quality Control Commission

REGULATION NO. 7

CONTROL OF OZONE VIA OZONE PRECURSORS

(EMISSIONS OF VOLATILE ORGANIC COMPOUNDS

AND NITROGEN OXIDES)

5 CCR 1001-9

OUTLINE OF REGULATION

XVII. STATE-ONLY SSTATEWIDE CCONTROLS FOR OOIL AND GGAS OOPERATIONS AND NNATURAL GGAS-FIRED RRECIPROCATING IINTERNAL CCOMBUSTION EENGINES

XVIII. NATURAL GGAS-ACTUATED PNEUMATIC CCONTROLLERS AASSOCIATED WITH OIL AND GAS OPERATIONS

I. Applicability

I.A.

I.A.1. The provisions of this regulation shall apply as follows:

I.A.1.a. All provisions of this regulation apply to the Denver 1-hourANY ozone NON-ATTAINMENT OR attainment/maintenance ATTAINMENT MAINTENANCE area, and to any non-attainment area, WHICH INCLUDES AREAS DESIGNATED NON-ATTAINMENT for EITHER the 1-hour OR 8-HOUR ozone standard, UNLESS OTHERWISE SPECIFIED IN SECTIONS I.A.1.B. AND C., BELOW. COLORADO'S OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA MAPS AND CHRONOLOGIES OF ATTAINMENT STATUS ARE IDENTIFIED IN APPENDIX A OF THIS REGULATION.

I.A.1.b. The provisions of Sections V, Paragraphs VI.B.1 and 2, Subsection VII.C., and Section XVII, XVIII AND XIX apply statewide. The Provisions of SectionS XII.D.2.B.(III) AND (IV), AND XVII, XVIII AND XIX are not in any State Implementation Plan FEDERALLY ENFORCEABLE.

I.A.1.c. The provisions of Sections XII, and XVI apply in the 8-hour Ozone NON-ATTAINMENT OR ATTAINMENT MAINTENANCE Area.

I.A.2. REPEALED.

I.A.3. REPEALED

I.B. Sources

I.B.1. New Sources

I.B.1.a. New sources, defined ARE as any sources which either (1) submit a complete permit application on or after October 30, 1989, or (2) if no permit is required, commence operation on or after October 30, 1989, must comply with the provisions of this regulation upon commencement of operation.

COMMENCED CONSTRUCTION ON OR AFTER THE DATE ON WHICH THE AREA IS FIRST DESIGNATED AS BEING IN NON-ATTAINMENT FOR OZONE AND ARE LOCATED IN THAT AREA, OR, IF LOCATED IN THE 1-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA, BY OCTOBER 30, 1989.

I.B.1.B. NEW SOURCES SHALL COMPLY WITH THE REQUIREMENTS OF THIS REGULATION BY WHICHEVER DATE COMES LATER:

I.B.1.B.(I) OCTOBER 30, 1989, IF THEY ARE LOCATED IN A WHAT WAS PREVIOUSLY DESIGNATED AS A 1-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA;

I.B.1.B.(II) FEBRUARY 1, 2009, IF THEY ARE LOCATED IN AN 8-HOUR OZONE NON-ATTAINMENT AREANON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA AND

OUTSIDE OF THE 1-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT ~~/~~MAINTENANCE AREA; OR

I.B.1.B.(III) UPON COMMENCEMENT OF OPERATION, IF LOCATED WITHIN AN OZONE NON-ATTAINMENT OR ATTAINMENT ~~/~~MAINTENANCE AREA.

I.B.1.~~b~~C. This section I.B.1 does not apply to oil and gas operations subject to ~~section~~ SECTION XII, ~~or~~ stationary and portable engines subject to SECTION~~section~~ XVI, OR NATURAL GAS ACTUATED PNEUMATIC CONTROLLERS SUBJECT TO SECTION XVIII.

I.B.2. Existing Sources

I.B.2.a. Existing sources are ~~(1) those sources for which a complete permit application was submitted prior to October 30, 1989, or (2)~~ those sources which commenced ~~operation~~ CONSTRUCTION prior to THE DATE ON WHICH THE AREA IS FIRST DE~~I~~SSIGNATED AS BEING IN NON-ATTAINMENT FOR OZONE AND ARE LOCATED IN THAT AREA, OR, IF LOCATED IN THE 1-HOUR ~~O~~OZONE ~~NON-ATTAINMENT AREA~~NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA, BY October 30, 1989.

I.B.2.b. Existing sources shall ~~not~~ be required to comply with requirements of this regulation ~~until on and after October 30, 1991. All existing sources shall comply with the requirements set forth in exhibit A, attached to this regulation, until October 30, 1991.~~ BY WHICHEVER DATE COMES LATER:

I.B.2.B.(I) OCTOBER 30, 1989, IF THEY ARE LOCATED IN A WHAT WAS PREVIOUSLY DESIGNATED AS A 1-HOUR OZONE ~~NON-ATTAINMENT AREA~~NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA;

I.B.2.B.(II) FEBRUARY 1, 2009, IF THEY ARE LOCATED IN AN 8-HOUR OZONE ~~NON-ATTAINMENT AREA~~NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA AND OUTSIDE OF THE DENVER 1-HOUR OZONE ~~NON-ATTAINMENT AREA~~NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA; OR

I.B.2.B.(III) THE DATE ON WHICH THE AREA IS FIRST DESIGNATED AS BEING IN NON-ATTAINMENT FOR OZONE, IF LOCATED WITHIN THAT OZONE NON-ATTAINMENT OR ATTAINMENT ~~/~~MAINTENANCE AREA.

I.B.2.c. ~~On and after October 30, 1991, all existing sources shall comply with the requirements of this regulation, and exhibit A shall no longer be applicable.~~

~~I.B.2.d.~~ On or before October 30, 1990, all existing sources LOCATED IN WHAT WAS PREVIOUSLY DESIGNATED AS THE 1-HOUR ~~O~~OZONE ~~N~~NON-ATTAINMENT OR ATTAINMENT ~~/~~MAINTENANCE ~~A~~AREA shall submit to the Division a report containing the following:

I.B.2.~~d~~C.(~~1~~I) A list of sources of volatile organic compound emissions located at the stationary source. The list shall include a description, potential emissions, and actual emissions of each source.

I.B.2.~~d~~C.(~~2~~II) Identification of each source subject to a Division REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) determination, and when a request for that determination will be made.

I.B.2.~~d~~C.(~~3~~III) The owner or operator's expected RACT for each source and a description of how compliance will be achieved. If a source is subject to

RACT requirements as stated in previous versions of this regulation, the report need only specify how compliance will be achieved for any revised provisions of the regulation.

I.B.2.~~e~~D. On or before October 30, 1991, all existing sources shall update and submit the report required under subparagraph b. above. The updated report shall describe in detail all actions taken to comply with the RACT requirements, and when those actions were taken.

I.B.2.~~f~~E. This section I.B.2 does not apply to oil and gas operations subject to ~~section~~ SECTION XII, or stationary and portable engines subject to ~~section~~ SECTION XVI.

I.C. Once a source subject to this regulation exceeds an applicable threshold limit, the requirements of this regulation are irrevocably effective unless the source obtains a federally enforceable permit limiting emissions to levels below the threshold limit by restricting production capacity or hours of operation.

I.D. The owner or operator of a source not required to obtain a permit by provisions of law other than this section may apply for and shall be required to accept a permit as a condition of avoiding RACT requirements. Such permits shall contain only those conditions necessary to ensure the enforcement of the production capacity or hours of operation.

I.~~D~~E. Materials incorporated by reference in this regulation are available for public inspection during regular business hours at the Commission's Office at 4300 Cherry Creek Drive South, Denver, Colorado. The regulation incorporates the materials as they exist at the date of the promulgation of this regulation and does not include later amendments to or editions of the incorporated materials.

II. General Provisions

II.A. Definitions

II.A.1. "Volatile Organic Compound (VOC)" means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, except those listed in II.B as having negligible photochemical reactivity. VOC may be measured by a reference method, an equivalent method, an alternative method, or by procedures specified under 40 CFR Part 60. A reference method, an equivalent method, or an alternative method, however, may also measure nonreactive organic compounds. In such cases, an owner or operator may exclude the compounds listed in II.B when determining compliance with a standard if the amount of such compounds is accurately quantified, and such exclusion is approved by the Division. As a precondition to excluding such compounds as VOC, or at any time thereafter, the Division may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Division, the amount of negligible-reactive compounds in the source's emissions.

II.A.2. "Capture System" means the equipment used to contain, capture, or transport a pollutant to a control device.

II.A.3. "Carbon Adsorption System" means a device containing adsorbent material, an inlet and outlet for exhaust gases and a system to regenerate the saturated adsorbent.

II.A.4. "Condenser" means any heat transfer device used to liquify vapors by removing their latent heats of vaporization. Such devices include, but are not limited

~~II.A.5.~~ to, shell and tube, coil, surface, or contact condensers.

II.A.~~6~~5. "Gasoline" means a petroleum distillate having a Reid vapor pressure between 208 and l040 torr (4-20 psi), which is used as fuel for internal combustion engines.

II.A.~~7~~6. "Highly Volatile Organic Compound" is defined as a Volatile Organic Compound or mixture of such compounds with a true vapor pressure in excess of 570 torr (11 Psia) at 20 C.

II.A.~~8~~7. "True Vapor Pressure" means the equilibrium partial pressure exerted by petroleum (or other) liquid. This may be determined by the methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962.

II.A.~~9~~8. "Vapor Recovery System" means a system that prevents release to the atmosphere of organic compounds emitted during the operation of any transfer, storage, or processing equipment.

II.A.~~10~~9. "Reid Vapor Pressure" means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases as determined by the American Society for Testing and Materials, Part 17, 1973, D-323-72 (Reapproved 1977).

II.A.~~11~~10. "Control Device" means a carbon adsorber, refrigeration system, condenser, flare, firebox or other device which will reduce the concentration of VOC in a gas stream by adsorption, combustion, condensation, or other means of removal.

II.A.~~12~~11. "Control Device Efficiency" means the percent removal by weight of VOC by a control device; i.e., (mass flow of VOC into control device - mass flow of VOC out of control device)/(mass flow of VOC into control device) x 100%.

II.A.~~13~~12. "Capture System Efficiency (vapor gathering system efficiency)" means the percent by weight of VOC emitted by an operation subject to this regulation, which is captured by the capture system and sent to the control device; i.e., (mass flow of VOC captured)/(mass flow of VOC emitted by the operation) x 100%.

II.A.~~14~~13. "Organic Material" means a chemical compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

II.A.~~15~~14. "Petroleum Refinery" means any facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt, or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.

II.A.~~16~~15. “8-Hour Ozone Control Area” means the Counties of Adams, Arapahoe, Boulder (includes part of Rocky Mountain National Park), Douglas, and Jefferson; the Cities and Counties of Denver and Broomfield; and the following portions of the Counties of Larimer and Weld:

II.A.~~16~~15.a. For Larimer County (includes part of Rocky Mountain National Park), that portion of the county that lies south of a line described as follows: Beginning at a point on Larimer County’s eastern boundary and Weld County’s western boundary intersected by 40 degrees, 42 minutes, and 47.1 seconds north latitude, proceed west to a point defined by the intersection of 40 degrees, 42 minutes, 47.1 seconds north latitude and 105 degrees, 29 minutes, and 40.0

seconds west longitude, thence proceed south on 105 degrees, 29 minutes, 40.0 seconds west longitude to the intersection with 40 degrees, 33 minutes and 17.4 seconds north latitude, thence proceed west on 40 degrees, 33 minutes, 17.4 seconds north latitude until this line intersects Larimer County's western boundary and Grand County's eastern boundary.

II.A.~~16~~15.b. For Weld County, that portion of the county that lies south of a line described as follows: Beginning at a point on Weld County's eastern boundary and Logan County's western boundary intersected by 40 degrees, 42 minutes, 47.1 seconds north latitude, proceed west on 40 degrees, 42 minutes, 47.1 seconds north latitude until this line intersects Weld County's western boundary and Larimer County's eastern boundary.

II.A.~~17~~16. "Denver 1-Hour Ozone Attainment ~~/~~Maintenance Area" means the Counties of Jefferson and Douglas, the Cities and Counties of Denver and Broomfield, Boulder County (excluding Rocky Mountain National Park), Adams County west of Kiowa Creek, and Arapahoe County west of Kiowa Creek.

II.A.17. "Ozone Non-attainment Area" means any area ~~which is~~designated as not in attainment with the ozone National Ambient Air Quality ~~S~~standard as determined by the Environmental Protection Agency.

II.B. Exemptions

Emissions of the organic compounds listed as having negligible photochemical reactivity~~-~~ in the common provisions DEFINITION OF N~~n~~egligibly R~~r~~eactive Volatile Organic Compound ~~definition~~ are exempt from the provisions of this regulation.

II.C. General Emission Limitation

II.C.1. Existing Sources LOCATED IN ANY OZONE NON-ATTAINMENT AREA OR ATTAINMENT ~~/~~MAINTENANCE AREA

II.C.1.a. All existing sources shall comply with the requirements set forth in this regulation.

II.C.1.a.(~~1~~I) Existing sources of VOC which are not subject to specific emission limitations set forth in this regulation, and which have the potential to emit 100 tons per year or more of VOC, shall utilize Reasonably Available Control Technology (RACT).

II.C.1.a.(II~~2~~) The potential to emit of such sources shall be based on design capacity or maximum production rate, whichever is greater, 8760 hours/year operation, and before add-on controls.

II.C.1.a.(III~~3~~) Owners or operators of such sources with potential emissions of 100 tons per year or more, but with actual emissions less than 100 tons per year may obtain a federally enforceable permit limiting emissions to actual rates by restricting production capacity or hours of operation, thus avoiding RACT requirements.

The owner or operator of a source not required to obtain a permit by provisions of law other than this section may apply for and shall be required to accept a permit as a condition of avoiding RACT requirements. Such permits shall contain only those conditions

necessary to ensure the enforcement of the production capacity or hours of operation.

II.C.1.a.(IV4) Such sources with potential emissions of 100 tons per year or more but with actual emissions of less than 50 tons per year, on a rolling 12-month total, may avoid RACT and permit requirements if the following requirements are met:

II.C.1.a.(IV4)(AA) The owner or operator shall submit revised Air Pollutant Emission Notices (APENS) by April 1 of each year which demonstrate that the 50 tons per year threshold has not been exceeded.

II.C.1.a.(IV4)(BB) The owner or operator shall maintain records on site which include monthly VOC use and monthly VOC emissions. The records shall include calculation of total emissions for each rolling 12-month period. The records shall be made available to the Division for inspection upon request.

II.C.1.A.(V) EXISTING SOURCES THAT ARE MODIFIED – UNDERGO ANY PHYSICAL CHANGE IN, OR CHANGE IN THE METHOD OF OPERATION OF A STATIONARY SOURCES WHICH INCREASES VOC OR NOX EMISSIONS – ON OR AFTER MARCH 30, 2008, SHALL UTILIZE RACTCONTROL TECHNOLOGIES PURSUANT TO REGULATION 7 AND REGULATION 3, PART B, SECTION III.D.2.

II.C.1.b. Provided however, that no existing source of VOC emissions employing emission controls on or within the six-month period preceding the effective date of this regulation may reduce its level of control of VOC emissions below that level of control actually achieved, even though such source may otherwise be subject to less stringent control requirements, except that no existing source shall be required to control emissions to an extent greater than that level of control which RACT would achieve.

II.C.1.C. EXISTING SOURCES WITH POTENTIAL EMISSIONS OFEQUAL TO OR GREATER THAN 100 TONS PER YEAR OF VOLATILE ORGANIC COMPOUND EMISSIONS SHALL SUBMIT A PERMIT MODIFICATION APPLICATION THAT INCLUDES A REVISED APEN (OR APENS) AND A RACT ANALYSIS, TO THE DIVISION, AS FOLLOWS:

II.C.1.C.(I) BY OCTOBER 30, 1991 IF LOCATED IN WHAT WAS PREVIOUSLY DESIGNATED AS THE DENVER 1-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA; OR

II.C.1.C.(II) BY APRIL 30, 2009 OR WITHIN ONE YEAR AFTER THE DATE ON WHICH THE AREA IS FIRST DESIGNATED AS BEING IN NON-ATTAINMENT FOR OZONE, WHICHEVER COMES LATER, IF THEY ARE LOCATED IN AN 8-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT/ MAINTENANCE AREA AND OUTSIDE OF THE DENVER 1-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA.

II.C.1.D. EXISTING SOURCES SHALL UTILIZE RACT PURSUANT TO REGULATION 7 AND REGULATION 3, PART B, SECTION II.D.2.,BY WHICHEVER DATE COMES LATER:

II.C.1.D.(I) October 30, 1991, IF THEY ARE LOCATED IN WHAT WAS PREVIOUSLY DESIGNATED AS THE DENVER 1-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA;

IIC.1.D.(II) NOVEMBER 21, 2011, IF THEY ARE LOCATED IN AN 8-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT ~~/~~MAINTENANCE AREA, AND OUTSIDE OF THE DENVER 1-HOUR OZONE NON-ATTAINMENT OR ATTAINMENT ~~/~~MAINTENANCE AREA;

IIC.1.D.(III) THREE YEARS AFTER THE DATE ON WHICH THE AREA IS FIRST DESIGNATED AS BEING IN NON-ATTAINMENT FOR OZONE; OR

II.C. 1.D.(IV) TWO YEARS AFTER DIVISION ~~APPROVAL~~ DETERMINATION OF CASE-BY-CASE RACT PURSUANT TO THIS SECTION II.C.1 . THE DIVISION SHALL BE DEEMED TO HAVE APPROVED THE RACT ANALYSIS FOR PURPOSES OF THIS SECTION II.C.1.D.(1V) IF IT DOES NOT OBJECT AFTER TWO YEARS FROM HAVING RECEIVED A COMPLETE PERMIT APPLICATION.

II.C.2. New Sources

All new sources shall utilize controls representing ~~Reasonably Available Control Technology (RACT)~~RACT, PURSUANT TO REGULATION 7 AND REGULATION 3, PART B, SECTION II.D.2., UPON COMMENCEMENT OF OPERATION.

II.D. REPEALED.

~~II.D.1.~~

II.E. REPEALED.

~~II.E.1.~~

II.F. Provisions for Specific Processes

II.F.1. The Gates Rubber Company PROVISION – REPEALED. ~~is authorized pursuant to Regulation No 3, Part A, Section V and Regulation No. 7, Section II.D.1.a to use up to twelve (12) tons per year of certified emission reduction credits of volatile organic compounds (VOC) as an alternative compliance method to satisfy the general emission limitations of Regulation No. 7 for surface coating operations not specifically listed in Section IX of this regulation in accordance with and upon demonstration of the conditions set forth below:~~

~~II.F.1.a. Certified emission reduction credits for VOCs to be used in this transaction were formerly owned by Coors Brewing Company, registered and issued in Emissions Reduction Credit Permit 91AR120R issued on July 25, 1994;~~

~~II.F.1.b. The emission reduction credits were originally obtained by Coors from Verticel, a company that was located within five (5) miles of Gates.~~

~~II.F.1.c. The use of these VOC emission reduction credits identified above shall be used to satisfy the General Emission Limitation of Reasonably Available Control Technology (RACT) as specific in Regulation No. 7, Section II.C.1 for periods when VOC-based surface coatings are used in lieu of water-based coatings.~~

~~II.F.1.d. Such emission reduction credits identified above will be used by Gates to achieve compliance with Regulation No. 7 to compensate for ozone precursor emission of VOCs in the solvent-based coatings which meet the emission trading requirements of Regulation No. 3. The photochemical reactivity of m-pyrol (the VOC in the non-complaint coating) is similar to that of methanol and will not~~

~~require offset. Additionally, while methanol, the chemical represented by the credits, is a HAP, the m-pyrol found in the Gates' emissions is not. Thus, this trade will provide a reduction in HAPs.~~

~~II.F.1.e. The requirement in Regulation No. 3, Part A, Section V.F.2 shall not apply to this transaction.~~

~~II.F.1.f. This transaction is only valid within the Denver/Boulder nonattainment area as described at 40 CFR 81, Subchapter C - Air Programs, Subpart C - Section 107 Attainment Status Designations, Section 81.306.~~

~~II.F.1.g. This transaction shall be calculated upon a pound for pound basis and averaged over a maximum 24-hour period.~~

~~II.F.1.h. This transaction shall be effective in state regulation immediately, and federally effective upon approval by the U.S. Environmental Protection Agency as a revision to the Colorado State Implementation Plan and after issuance of a State Construction Permit incorporating, but not limited to, the conditions and requirements of this Section.~~

~~II.F.1.i. This transaction may not be used to satisfy any current or future requirements of NSPS, BACT, LAER, or MACT requirements of HAPs which may apply to general surface coating operations.~~

~~II.F.1.j. This transaction shall not interfere with any applicable requirement concerning attainment and reasonable further progress in the Colorado State Implementation Plan or any other applicable requirements of the Clean Air Act.~~

~~II.F.1.k. This transaction shall be registered and enforced through a federally-enforceable permit issued to The Gates Rubber Company containing, but not limited to, the conditions and limitations set forth in this Section.~~

~~II.F.1.l. Such federally-enforceable permit issued to The Gates Rubber Company shall specify, among other things, the necessary monitoring, record keeping, and reporting requirements to insure that the emission reduction credits are applied in accordance with the condition and requirements of this Section.~~

~~II.F.1.m. The federally-enforceable permit shall allow a daily maximum limitation of 400 lbs. of VOC and an annual limitation of no more than 24,000 lbs. of VOC emissions from the use of uncontrolled solvent-based coatings in lieu of water-based coatings on Gates' 10 Cord line (identified as S033, S034, and S035). The limitation shall be calculated on a 12-month rolling total calculated within 30 days of the end of each month using the previous 12 months. None of these incremental emissions allowed in lieu of RACT will be HAPs.~~

~~II.F.1.n. Gates will maintain records of daily and monthly totals of VOC-based surface coatings used in first zone of the 10 Cord coating line and report such usages on an annual basis to the Division or as otherwise requested.~~

III. General Requirements for Storage and Transfer of Volatile Organic Compounds

III.A. Maintenance and Operation of Storage Tanks and Related Equipment

All storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable

vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.

Detectable vapor loss shall be determined visually, by touch, by presence of odor, or using a portable hydrocarbon analyzer. When an analyzer is used, detectable vapor loss means a VOC concentration exceeding 10,000 ppm. Testing and monitoring shall be conducted as in Section VIII.C.3.

III.B. Transfer (excluding Petroleum Liquids)

Except as otherwise provided in this regulation, all volatile organic compounds transferred to any tank, container, or vehicle compartment with a capacity exceeding 212 liters (56 gallons), shall be transferred using submerged or bottom filling equipment. For top loading, the fill tube shall reach within six inches of the bottom of the tank compartment. For bottom-fill operations, the inlet shall be flush with the tank bottom.

III.C. Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA actual conditions are exempt from the provisions of Section III.B, above.

IV. Storage of Highly Volatile Organic Compounds

IV.A. Highly volatile organic compounds shall be stored:

IV.A.1. In a pressure tank which is at all times capable of maintaining working pressures sufficient to prevent vapor loss to the ambient air; or

IV.A.2. With methods and/or equipment approved by the Division in writing pursuant to the request of the person owning or operating the storage facility.

IV.B. Vapor loss shall be determined visually, by presence of frost or condensation at the point of leakage, or using a portable hydrocarbon analyzer. When an analyzer is used, vapor loss means a VOC concentration exceeding 10,000 ppm and testing and monitoring procedures shall be conducted as in Section VIII.C.3.

V. Disposal of Volatile Organic Compounds

V.A. No person shall dispose of volatile organic compounds by evaporation or spillage unless RACT is utilized.

V.B. No owner or operator of a bulk gasoline terminal, bulk gasoline plant, or gasoline dispensing facility as defined in Section VI.C.2., VI.C.3. AND XV.A.3., shall permit gasoline to be intentionally spilled, discarded in sewers, stored in open containers, or disposed of in any other manner that would result in evaporation.

VI. Storage and Transfer of Petroleum Liquid

VI.A. General Requirements

VI.A.1. No person shall build, install, or permit the building or installation of any rotating pump or compressor handling any type of petroleum liquid unless said pump or compressor is equipped with mechanical seals or other equipment of equal efficiency. If reciprocating-type pumps and compressors are used, they shall be equipped with packing glands properly installed, in good working order, and properly maintained so that no detectable emissions occur from the drain recovery systems.

VI.A.2. Definitions

For the purpose of this section, the following definitions apply:

VI.A.2.a. Repealed.

VI.A.2.b. "Crude Oil" means a naturally occurring mixture which consists of hydrocarbons, sulfur, nitrogen or oxygen derivatives of hydrocarbons, and which is a liquid at standard conditions.

VI.A.2.c "Custody Transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

VI.A.2.d. "EFR Tank" means a storage vessel having an external floating roof.

VI.A.2.e. "External Floating Roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

VI.A.2.f. Liquid-Mounted Seal" means a primary seal mounted in continuous contact with the contained liquid and which occupies an annular space between the inner tank wall and the perimeter of the floating roof.

VI.A.2.g. "Petroleum Liquid" means crude oil, condensate and any finished or intermediate product manufactured or extracted in a petroleum refinery.

VI.A.2.h. "Shoe Seal" means a primary seal employing a metallic band (called a shoe) which is held against the vertical inner-wall of the tank, concentric with the perimeter of the floating roof.

VI.A.2.i. "Vapor-Mounted Seal" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the liquid surface, the floating roof, and the tank wall (thus excluding shoe seals).

VI.A.2.j. "Waxy, Heavy Pour Crude Oil" means a crude oil with a pour point of 10°C (50°F) or higher as determined by the American Society for Testing and Materials Standard D97-66, "Test for Pour Point of Petroleum Oils."

VI.A.2.k. "Vapor Balance System" means a combination of pipes or hoses which creates a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

VI.B. Storage of Petroleum Liquid

VI.B.1. Exemptions

VI.B.1.a. Tanks or other containers used to store the following liquids are exempt from the provisions of subparagraphs VI.B.2., and 3. below:

VI.B.1.a.(1) Diesel Fuels 1-D, 2-D, and 4-D as defined in ASTM D975-78.

VI.B.1.a.(2) Fuel Oils #1, #2, #3, #4, and #5, as defined in ASTM D396-78.

VI.B.1.a.(3) Gas Turbine Fuels 1-GT through 4-GT as defined in ASTM D2880-78.

VI.B.1.b. The following underground storage facilities are exempt from subpart VI.B.2. below:

VI.B.1.b.(1) Underground tanks if the annual sum total of the volume of liquid removed from the tank plus the sum of the volume of liquid added to it does not exceed twice the operational volume of the tank (i.e., a maximum of one turnover per year is allowed).

VI.B.1.b.(2) Subsurface caverns or porous rock reservoirs.

VI.B.1.b.(3) Horizontal underground tanks storing JP-4 Jet Fuel.

VI.B.2. Storage of petroleum liquid in tanks greater than 151,412 liters (40,000 gallons)

VI.B.2.a. Storage of petroleum liquid in fixed-roof tanks.

VI.B.2.a.(1) The owner or operator of a fixed-roof tank used for storage of petroleum liquids which have a true vapor pressure greater than 33.6 torr (0.65 psia) at 20°C (or, alternatively, a Reid vapor pressure greater than 1.30 pounds - (67.2 torr) but not greater than 570 torr (11.0 psia) at 20°C, and which are stored in any tank or other container of more than 151,412 liters (40,000 gallons) shall ensure that the tank at all times meets the following conditions:

VI.B.2.a.(1)(A) The tank has been equipped with a pontoon-type, or double-deck type, floating roof or an internal floating cover which rests on the surface of the liquid contents and which is equipped with a closure seal or seals to close the space between the edge of the floating roof (or cover) and tank walls; or

VI.B.2.a.(1)(B) The tank has been equipped with a vapor gathering system capable of collecting the petroleum liquid vapors discharged, together with a vapor recovery or disposal system capable of processing such vapors so as to prevent their emission into the atmosphere.

VI.B.2.a.(1)(C) Control devices shall meet the applicable requirements, including recordkeeping, of subsections IX.A.3.a,b,c, and e, and IX. A.8.a and b.

VI.B.2.a.(1)(D) The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.B.2.a.(1)(E) The owner or operator shall maintain records for at least two years of the type, average monthly storage temperature, and true vapor pressure of all petroleum liquids stored in tanks not equipped with an internal floating roof or cover or other control pursuant to Regulation 7.VI.B.2.a.i (A) or (B) or 7.II.D.

VI.B.2.a.(2) No owner or operator of a fixed-roof tank equipped with an internal floating roof or cover shall permit the use of such tank unless:

VI.B.2.a.(2)(A) The tank is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; and

VI.B.2.a.(2)(B) All openings, except stub drains, are equipped with covers, lids, or seals such that:

VI.B.2.a.(2)(B)(i) The cover, lid, or seal is in the closed position at all times except when in actual use;

VI.B.2.a.(2)(B)(ii) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

VI.B.2.a.(2)(B)(iii) and Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

VI.B.2.a.(3) The operator of a fixed-roof tank equipped with an internal floating roof shall:

VI.B.2.a.(3)(A) Perform a routine inspection through the tank roof hatches at least once every six months;

VI.B.2.a.(3)(A)(i) During the routine inspection, the operator shall measure for detectable vapor loss inside the hatch. Detectable vapor loss means a VOC concentration exceeding 10,000 ppm, using a portable hydrocarbon analyzer.

VI.B.2.a.(3)(B) Perform a complete inspection of the cover and seal whenever the tank is out of service, whenever the routine inspection required in subclause (A) above reveals detectable vapor loss, and at least once every ten years, and shall notify the Division in writing before such an inspection.

VI.B.2.a.(3)(C) Ensure during inspections that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; that the cover is floating uniformly on or above the liquid surface; that there are no visible defects in the surface of the cover or liquid accumulated on the cover; and that the seal is uniformly in place around the circumference of the cover between the cover and the tank wall. If these items are not met, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Division in writing. Such a request must document that alternative storage capacity is unavailable and specify a schedule of actions the owner or operator will take that will

assure that the items will be repaired or the vessel will be emptied as soon as possible;

VI.B.2.a.(3)(D) Maintain records for at least two years of the results of all inspections.

VI.B.2.b. Above ground storage tanks used for the storage of petroleum liquid shall have all external surfaces coated with a material which has a reflectivity for solar radiation of 0.7 or more. Methods A or B of ASTM E424 shall be used to determine reflectivity. Alternatively, any untinted white paint may be used which is specified by the manufacturer for such use.

This provision shall not apply to written symbols or logograms applied to the external surface of the container for purposes of identification provided such symbols do not cover more than 20% of the exposed top and side surface area of the container or more than 18.6 square meters (200 square feet), whichever is less.

VI.B.2.c. Seals on External Floating Roof Tanks

VI.B.2.c.(1) General Provisions

VI.B.2.c.(1)(A) Applicability

This section applies to all petroleum liquid storage vessels equipped with external floating roofs, having capacities greater than 150,000 liters (40,000 gallons), that are located in ozone non-attainment areas.

VI.B.2.c.(1)(B) Exemptions

VI.B.2.c.(1)(B)(i) Total Exemption

The following categories of EFR tanks are exempt from the requirement of subparagraph VI.B.2.c., except for the applicable recordkeeping requirements of subparagraph VI.B.2.c (ii)(C).

VI.B.2.c.(1)(B)(i)(a) EFR tanks which store any material whose true vapor pressure as stored never exceeds 67 torr (1.3 psia).

VI.B.2.c.(1)(B)(i)(b) Tanks less than 1,600,000 liters (10,000 barrels) which are used to store crude oil and condensate prior to custody transfer.

VI.B.2.c.(1)(B)(ii) Limited Exemptions

The following are exempt from both secondary seal and secondary seal inspection requirements but shall meet the equipment/procedure provisions in subclause (ii)(A), the semi-annual inspection provisions of subclause (ii)(B), and the record keeping provisions of subclause (ii)(C).

VI.B.2.c.(1)(B)(ii)(a) Those tanks storing petroleum liquid between 67 and 207 torr (1.3 to 4.0 psia) maximum true vapor pressure (as stored) which are of welded

construction and which have one of the following primary seals:

VI.B.2.c.(1)(B)(ii)(a)(I) metallic shoe seal

VI.B.2.c.(1)(B)(ii)(a)(II) liquid mounted, resilient seal

VI.B.2.c.(1)(B)(ii)(a)(III) liquid mounted, liquid filled seal

VI.B.2.c.(1)(B)(ii)(b) Any tank storing waxy, heavy-pour crude oil.

VI.B.2.c.(2) General Requirements

VI.B.2.c.(2)(A) An operator of an EFR tank storing petroleum liquids with true vapor pressure (as stored) above 67 torr (1.3 psia) shall equip the tank as follows and observe the following procedures:

VI.B.2.c.(2)(A)(i) Equipment

VI.B.2.c.(2)(A)(i)(a) Drains: roof drains which are designed to empty directly into the stored product shall be provided with slotted-membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.

VI.B.2.c.(2)(A)(i)(b) Openings: except for automatic bleeder vents, rim space vents, and leg sleeves, all openings shall be equipped with:

VI.B.2.c.(2)(A)(i)(b)(I) Projections into the tank which remain below the liquid surface at all times; and

VI.B.2.c.(2)(A)(i)(b)(II) Covers, seals, or lids.

VI.B.2.c.(2)(A)(ii) Procedures

VI.B.2.c.(2)(A)(ii)(a) Covers, seals and lids shall be kept closed except when the openings are in actual use.

VI.B.2.c.(2)(A)(ii)(b) Automatic bleeder vents shall be kept closed at all times except when the roof is floated off or landed on roof leg supports.

VI.B.2.c.(2)(A)(ii)(c) Rim vents shall be set to open at the manufacturer's recommended setting or, alternatively, only when the roof is being floated off the leg supports.

VI.B.2.c.(2)(B) Inspections

The operator of an EFR tank subject to this subparagraph (VI.B.2.c.) shall:

VI.B.2.c.(2)(B)(i) Perform routine inspections AT LEAST ONCE EVERY 6 MONTHS ~~semi-annually~~ in order to

ensure compliance with part (2) below. The inspections shall include a visual inspection of the secondary seal gap if equipped with a secondary seal.

VI.B.2.c.(2)(B)(ii) Ensure that all seal closure devices meet the following requirements:

VI.B.2.c.(2)(B)(ii)(a) There are no visible holes, tears, or other openings in the seal(s) or seal fabric; and

VI.B.2.c.(2)(B)(ii)(b) The seal(s) are intact and uniformly in place around the circumference of the floating roof and the tank wall.

VI.B.2.c.(2)(C) Records

VI.B.2.c.(2)(C)(i) Operators shall:

VI.B.2.c.(2)(C)(i)(a) Maintain records of the average monthly storage temperature, the Reid vapor pressure of the liquid and the type of liquid stored for all EFR tanks lacking secondary seals and receiving petroleum liquids with a true vapor pressure of 1.0 psi (7.0kPa) or greater; and

VI.B.2.c.(2)(C)(i)(b) Maintain records of the results of the inspections required herein.

VI.B.2.c.(2)(C)(ii) Copies of all records specified by this subclause (C) shall be retained by the operator for a minimum of two years after the date on which the record was made.

VI.B.2.c.(3) Secondary Seal Requirements

VI.B.2.c.(3)(A) General

No owner or operator of an EFR tank (storing petroleum liquids) not specifically exempted in subsection VI.B.2.c.(i).(B) above shall store that petroleum liquid unless such vessel is equipped with a continuous secondary seal extending from the rim of the floating roof to the tank wall (i.e., a rim-mounted secondary seal).

VI.B.2.c.(3)(B) Vapor-Mounted Seals

For EFR tanks required to have a secondary seal and which have a vapor-mounted primary seal:

VI.B.2.c.(3)(B)(i) An annual inspection shall be made of the total gap area between the secondary seal and the wall of the tank in accordance with the method in (3) below.

VI.B.2.c.(3)(B)(ii) This total gap area shall not exceed 21.2 cm2/meter diameter (1.0 in2/ft. diameter).

VI.B.2.c.(3)(B)(iii) Method to determine gap area:

VI.B.2.c.(3)(B)(iii)(a) Physically measure the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall; and,

VI.B.2.c.(3)(B)(iii)(b) Sum the area of the individual gaps.

VI.B.3. Storage of petroleum liquid in tanks of or less than 151,412 liters (40,000 gallons) capacity

VI.B.3.a. Tanks or containers used to store liquids with true vapor pressure at 20°C of less than 78 torr (1.5 psia) or greater than 570 torr (11.0 psia) at 20°C are exempt from the provisions of this Paragraph VI.B.3.

VI.B.3.b. The owner or operator of storage tanks at a gasoline dispensing facility (service station) or other facility not addressed in Subsections VI. C.2 OR VI.C.3, which receives and stores petroleum liquid, shall not allow the transfer of petroleum liquid from any delivery vessel into any tank unless the tank is equipped with a submerged fill pipe and the vapors displaced from the storage tank during filling are processed by a vapor control system, if the tank:

VI.B.3.b.(1) has a rated manufacturer's capacity of 2,082 liters (550 gallons) or more and was installed after November 7, l973, (except for storage tanks below 550 gallon capacity used exclusively for agricultural use; however, these must have a submerged fill pipe), or

VI.B.3.b.(2) has a rated manufacturer's capacity of 7,571 liters (2,000 gallons) or more and was installed before November 7, 1973.

VI.B.3.b.(3) a vapor balance system shall be deemed "approved" if its design and operation are in accordance with the applicable provisions of Appendices A and B.

VI.B.3.c. Tanks equipped with a submerged fill pipe shall meet the specifications of Appendix ~~A~~B.

VI.B.3.d. The vapor control system shall include one or more of the following:

VI.B.3.d.(1) a vapor-tight line from the storage tank to delivery vessel (i.e. an approved control system).

VI.B.3.d.(2) a refrigerator-condensation system or equivalent designed to recover at least 90 percent by weight of the organic compounds in the displaced vapor.

VI.B.3.e. The owner or operator shall ensure that operating procedures are used so that gasoline cannot be transferred into the tank unless the vapor control system is in use.

VI.B.3.f. The vapor balance system shall meet the specifications of Appendix ~~A~~B.

VI.B.3.g. The vapor balance system and the vapor control system shall meet the requirements of Section XV.

VI.B.3.h. Control devices shall meet the applicable requirements, including recordkeeping, of subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VI.B.3.i. The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.C. Transfer of Petroleum Liquid

VI.C.1. Exemptions

Transfer operations involving petroleum liquid with true vapor pressures at 20°C of less than 78 torr (1.5 psia) or greater than 570 torr (11.0 psia) shall be exempt from the provisions of this subsection C.

VI.C.2. Loading Facilities Classified as Terminals

VI.C.2.a. A terminal is defined as a petroleum liquid storage and distribution facility that has an average daily throughput of more than 76,000 liters of gasoline (20,000 gallons), which is loaded directly into transport vehicles. A rolling, 30-day average of throughput shall be used to determine the applicability of this subsection VI.C.2.

VI.C.2.b. The owner or operator of a terminal subject to this subsection shall equip the terminal with proper loading equipment and shall follow the loading procedures listed below:

VI.C.2.b.(1) Install dry-break loading couplings to prevent petroleum liquid loss during uncoupling from vehicles.

VI.C.2.b.(2) Install a vapor collection and disposal system which gathers vapor transferred from vehicles being loaded. The system shall include devices to prevent the release of vapor from vapor recovery hoses not in use.

VI.C.2.b.(3) Use operating procedures to ensure that petroleum liquid cannot be transferred unless the vapor collection equipment is in use.

VI.C.2.b.(4) Provide for the prevention of overfilling of transport vehicles with loading pump shut-offs, set stop meters, or comparable equipment.

VI.C.2.b.(5) Operate all recovery and disposal equipment at a back pressure less than the pressure relief valve setting of transport vehicles.

VI.C.2.b.(6) Prevent the release of petroleum liquid on the ground from transport vehicles. Provision shall be made to remove any undelivered petroleum liquid with closed drainage devices.

VI.C.2.b.(7) Maintain and operate final recovery and disposal equipment or devices in the vapor control system (i.e., control devices) so as to emit no more than 80 milligrams of volatile organic compounds per liter of gasoline being loaded. Such disposal devices shall be approved by the Division.

VI.C.2.b.(8) Prevent loading of petroleum liquid into transport vehicles which do not have valid leak-tight certification as required in Section VI.D. No truck shall be loaded unless a valid certification sticker is displayed, or a certification letter is carried in the truck.

VI.C.2.b.(9) Follow all control procedures to prevent leaks as specified in Section XV.

VI.C.2.c. Control devices shall meet the applicable requirements, including recordkeeping of subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VI.C.2.d. The applicable methods of 40 CFR 60. 503, or EPA reference methods 1 through 4, 25A, and 25B of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.C.2.e. The method set forth in Appendix A of EPA-450/2-77-026, "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals" shall be used to test emission points other than control devices.

VI.C.3. Loading Facilities Classified as Bulk Plants

VI.C.3.a. A bulk plant is defined as a petroleum liquid storage and distribution facility that has an average daily throughput of 76,000 liters of gasoline (20,000 gallons) or less, which is loaded directly into transport trucks. (As used herein, "bulk plant" does not include service stations nor separate operations within petroleum liquid distribution facilities which pump only into fuel tanks fueling motor vehicles. Both such operations are regulated by paragraph VI.B.3. of this Regulation). A rolling 30-day average of throughput shall be used to determine the applicability of this regulation.

VI.C.3.b. The owner or operator of a bulk storage plant subject to this subsection shall install an approved vapor balance system to return vapors to the incoming transport trucks during the filling of tanks controlled under paragraph VI.B.3. (A vapor balance system shall be deemed "approved" if its design and operation is in accord with the provisions of Appendix ~~B~~ C of this Regulation.)

VI.C.3.c. The owner or operator of a bulk plant which serves storage tanks which are required to collect and recover vapor as prescribed in paragraph VI.B.3. shall:

VI.C.3.c.(1) Install and operate vapor collection and return equipment on any transport vehicles used to deliver to controlled tanks, and

VI.C.3.c.(2) Install and operate vapor collection and return equipment at loading facilities to collect vapors during loading of tank compartments of outbound transport trucks and return these vapors to the bulk plant storage tanks, using an approved vapor balance system.

VI.C.3.c.(3) Assure that transport trucks and loading facilities conform to the applicable provisions of C.2. and C.4. of this Section VI.

VI.C.3.d. The owner or operator of a bulk plant which serves only storage tanks exempted from the provisions of subparagraph VI.B.3.b. by reason of their small size or location in an attainment area shall load outbound transport trucks using equipment that provides for top loading of the petroleum liquid into the vehicle

tank compartments through an extended fill tube which reaches within 15.24 cm (6 in.) of the bottom of the tank compartment.

VI.C.3.e. The owner or operator of a bulk plant subject to this subsection shall ensure that petroleum liquid cannot be transferred unless the vapor collection equipment is in use.

VI.C.3.f. The owner or operator of a bulk plant subject to this subsection shall follow all procedures to prevent leaks as specified in Section XV.

VI.C.4. Transport Vehicles

VI.C.4.a. Rail cars shall be loaded only at facilities which allow for the following:

VI.C.4.a.(1) A submerged fill pipe which reaches within 15.24 cm (6 in.) of the bottom of the tank.

VI.C.4.a.(2) Vapor collection and/or disposal equipment designated and operated to recover vapors displaced during the loading of the rail car.

VI.C.4.a.(3) A vapor-tight seal around the tank car hatch and the loading equipment.

VI.C.4.b. The owner or operator of petroleum transport trucks which serve locations required to be equipped with vapor recovery equipment shall load only at facilities capable of disposing of collected vapors. The owner or operator shall assure that such vehicles possess the proper equipment and that work practices are followed so that:

VI.C.4.b.(1) Dry-break loading and unloading nozzles are used and are compatible with those required at loading facilities.

VI.C.4.b.(2) Vapor recovery hoses are connected at all times during unloading or loading of petroleum distillate.

VI.C.4.b.(3) Transport trailers and vehicle tanks are operated and maintained to prevent detectable hydrocarbon vapor loss during loading, transport and delivery.

VI.C.4.b.(4) Compartment dome lids are closed and locked during transfers of petroleum liquid. Such lids may be opened for the purpose of certifying the accuracy of a delivery only prior to and after such delivery.

VI.C.4.b.(5) Hoses, couplings, and valves are maintained to prevent dripping, leaking, or other liquid or vapor loss during loading or unloading.

VI.D. Control of Volatile Organic Compound Leaks from Gasoline Transport Trucks

VI.D.1. General Provisions

VI.D.1.a. Applicability

This subsection is applicable to all gasoline transport trucks equipped for gasoline vapor collection which receive or dispense gasoline at terminals, bulk plants, or gasoline dispensing facilities located in the non-attainment areas.

VI.D.1.b. Definitions

For the purpose of this subsection, the following definitions apply:

VI.D.1.b.(1) "Gasoline Transport Truck" means a tank truck or tank trailer equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities (e.g., service stations), bulk gasoline plants, or gasoline terminals.

VI.D.1.b.(2) "Vapor Collection System" means a vapor transport system which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into a vessel being unloaded or into a vapor control system or vapor holding tank.

VI.D.1.b.(3) "Vapor Control System" means a system that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

VI.D.2. Provisions for Specific Processes

VI.D.2.a. No terminal operator, when monitoring the gasoline loading operation and no owner or operator of a gasoline transport truck shall allow a gasoline transport truck subject to this subsection VI.D. to be filled with a VOC with Reid Vapor Pressure of 4.0 or greater unless the gasoline tank truck:

VI.D.2.a.(1) Is tested annually according to the test procedure referenced in Appendix ~~D~~E. Testing shall be completed prior to the onset of the summer ozone season (test October through April). In addition, the visual inspection detailed in Appendix ~~D~~E, Part B, shall be performed at least once every six months. Trucks which have not been previously certified (new gasoline transport trucks) may be tested May through September as set forth in VI.D.4.d (iv).

VI.D.2.a.(2) Sustains a combined absolute pressure change of no more than 5.6 torr (3 inches of H2O) in five-minute test periods when pressurized to a gauge pressure of 33.6 torr (18 inches of H2O), then evacuated to a gauge pressure of minus 11.2 torr (minus 6 inches of H2O), during the testing required in subparagraph a.(i), above (i.e., the sum of the absolute pressure change determined by the pressure test plus the absolute pressure change determined by the vacuum test shall not exceed 3 inches of water); and

VI.D.2.a.(3) (iii) Sustains a leak rate of no more than 5.6 torr (3 inches H2O) in five minutes when the internal vapor valves are tested according to procedures in Part E., Appendix ~~D~~E.

VI.D.2.a.(4) (iv) Passes a retest within twenty (20) days if it does not meet the criteria of a.(ii) and (iii) above.

VI.D.2.a.(5) (v) At all times carries an unexpired certification sticker (pursuant to subparagraphs D.4.c. and d.).

VI.D.2.b. Monitoring

VI.D.2.b.(1) (i) The Division may, at any time, monitor a gasoline tank truck vapor collection system, or vapor control system, by the method referenced in subparagraph D.3.c to confirm continued compliance with subparagraph 2.a. above.

VI.D.2.b.(2) (ii) Within fifteen (15) days after an exceedance is detected a tank shall pass:

VI.D.2.b.(2)(A) A pressure/vacuum test per Appendix ~~D~~E; or

VI.D.2.b.(2)(B) A test with combustible gas detector using procedures referenced in sub- paragraph 3.c such that no leak over 60% of the propane lower explosive limit (LEL) exists.

VI.D.3. Testing and Monitoring

VI.D.3.a. The owner or operator of a gasoline transport truck shall at their own expense, demonstrate compliance with paragraph 2, by methods of Appendix ~~D~~E. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing or gasoline transport truck maintenance.

VI.D.3.b. The owner or operator of a gasoline transport truck subject to this regulation must notify the Division of the date and location of a certification test at least forty-eight (48) hours before an anticipated test date, except that for the first truck tested by a given transport company and for the first test by a given testing facility, five (5) days notice must be given the Division: or alternatively, a designated individual within the Division may orally waive the above notice requirements and allow a shorter notice period before the test.

VI.D.3.c. Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B of "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051.

VI.D.4. Recordkeeping and Reporting

VI.D.4.a. The owner or operator of a gasoline transport truck subject to this subsection D. shall maintain records of all certification testing and repairs. The records shall identify the gasoline transport truck, the date of the test or repairs and, if applicable, the type of repair and the date of retest. The written record shall include entries of any pre-test repairs, adjustments, or modifications. These shall also include the part name, number, and vendor name of any part removed and of any part installed. The records shall be maintained in legible, readily available form for at least two (2) years after the date the testing or repair was completed and shall be made available to the Division for inspection upon request.

VI.D.4.b. The records of certification tests required by subparagraph 2.a. of this subsection D. shall, as a minimum, contain all of the following entries:

VI.D.4.b.(1) The gasoline transport truck/tank identification number;

VI.D.4.b.(2) The following data for each test trial:

VI.D.4.b.(2)(A) The initial test pressure and the time of the reading.

VI.D.4.b.(2)(B) The final test pressure and the time of the reading.

VI.D.4.b.(2)(C) The initial test vacuum and the time of the reading.

VI.D.4.b.(2)(D) The final test vacuum and the time of the reading.

VI.D.4.b.(2)(E) For the vapor valve test, the initial test-pressure and time of reading; and

VI.D.4.b.(2)(F) The final test-pressure and the time of the reading.

VI.D.4.b.(3) The size of each of the compartments within the tank and whether such compartment was manifolded or was tested separately during pressure and vacuum tests.

VI.D.4.b.(4) At the top of each report page shall be the company name and the date and location of the test results recorded on that page; and

VI.D.4.b.(5) Name and title of the person conducting the test.

VI.D.4.c. The owner or operator of a gasoline transport truck subject to this regulation must annually certify to the Division that the gasoline transport truck has been tested by an applicable method referenced in Paragraph 3. The application for certification shall include:

VI.D.4.c.(1) The name and address of the company and the name and telephone number of responsible company representative over whose signature the certification is submitted; and,

VI.D.4.c.(2) A copy of the information recorded to comply with subparagraph 4.b. above.

VI.D.4.d. Certification

VI.D.4.d.(1) Except as stated in Paragraphs (ii), (iii), and (iv) below, upon receipt of an application for certification that meets the above requirements, the Division shall issue a sticker and a letter of certification to be valid for 380 days after the most recent, successfully completed pressure/vacuum test, except that the expiration date shall not fall within the months of May through September. The certification shall be valid for less than 380 days if necessary to remain within the allowable test period of October through April.

VI.D.4.d.(2) Owners or operators of gasoline transport trucks with certificates that expire May 1, 1990 (1991) through July 31, 1990 (1991) shall renew their certificates in March or April, 1990 (1991).

VI.D.4.d.(3) Owners or operators of gasoline transport trucks with certificates that expire August 1, 1990 (1991) through September 30, 1990 (1991) shall renew their certificates in October or November 1990 (1991). Certificates which expire August 1, 1990 (1991) through September 30, 1990 (1991) shall be valid until November 30, 1990 (1991).

VI.D.4.d.(4) Owners or operators of previously uncertified trucks (new gasoline transport trucks) subject to this subsection may obtain initial certification May 1 through September 30, if necessary. Certification for such trucks certified May 1 through July 31 shall be valid for 270 days. Certification for such trucks certified August 1 through September 30 shall be valid for 430 days. All expiration dates for such certificates shall fall within the allowable testing period of October through April.

VI.D.4.d.(5) This certification shall be revoked if monitoring detects an exceedance which is not corrected within fifteen (15) days of initial detection, or if the exceedence is judged so severe as to warrant immediate revocation (i.e., no seal is maintained during transfer).

VI.D.4.e. The certification letter shall be kept with the tank or at the transport company office at all times and shall be shown to Division personnel upon their request. Copies of all records and reports required by the provisions of this subsection D. shall be made available to the Division upon oral or written request. The tank shall at all times prominently display a valid sticker when containing gasoline in the ozone non-attainment area.

VII. Crude Oil

VII.A. General Exemptions

VII.A.1. Storage tanks of 151,412 liters (40,000 gallons) or less used to store crude oil are exempt from the provisions of this section.

VII.A.2. Storage tanks with capacities of less than 1,590 cubic meters (10,000 barrels) used to store crude oil and condensate prior to lease custody transfer are exempt from the provisions of this Regulation No. 7 other than ~~sections~~ SECTIONS XII AND XVII.

VII.B. Equipment

Pumps and compressors handling crude oil shall be subject to the provisions of subsection VI.A.

VII.C. Storage

Except as provided in VII.A.2. above, crude oil stored in tanks greater than 151,412 liters (40,000 gallons) shall be subject to the provisions of subparagraph B.1.b. and paragraph B.2. of Section VI.

VIII. Petroleum Processing and Refining

VIII.A. Wastewater (Oil/Water) Separators

VIII.A.1. Definitions

VIII.A.1.a. "Forebays" mean the primary sections of a wastewater separator.

VIII.A.1.b. "Wastewater (oil/water) separator" means any device or piece of equipment which utilizes the difference in density between oil and water to remove oil and associated chemicals from water, or any device, such as a flocculation tank, clarifier, etc., which removes petroleum derived compounds from wastewater.

VIII.A.2. The owner or operator of any wastewater (oil/water) separators at a petroleum refinery shall:

VIII.A.2.a. Equip the forebays and separator sections of the wastewater separators with one or more of the following emission control devices, ensuring that such device is properly installed, in good working order and properly maintained:

VIII.A.2.a.(1) a solid cover with all openings sealed and the liquid contents totally enclosed.

VIII.A.2.a.(2) a pontoon-type or double-deck type floating roof, or internal floating cover. The floating roof or cover must rest on the surface of the liquid contents and be equipped with a closure seal or seals to close the space between the edge of the floating roof (or cover) and the wall(s) of the compartment.

VIII.A.2.a.(3) a vapor recovery system consisting of a vapor gathering device capable of collecting the volatile organic compound vapors discharged and a vapor disposal device capable of processing such volatile organic vapors so as to prevent their emission into the atmosphere.

VIII.A.2.a.(3)(A) Control devices shall meet the applicable requirements, including recordkeeping, of subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VIII.A.2.a.(3)(B) The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VIII.A.2.b. Equip all openings in covers, separators, and forebays with lids or seals such that the lids or seals are in the closed position at all times except when in actual use. Access for gauging and sampling shall be minimized.

VIII.B. Emissions from Petroleum Refineries

VIII.B.1. Definitions

VIII.B.1.a. "Firebox" means the chamber or compartment of a boiler or furnace in which materials are burned but does not mean the combustion chamber of an incinerator.

VIII.B.1.b. "Turnaround" means the procedure of shutting a refinery unit down after a run to do necessary maintenance and repair work and then putting the unit back on stream.

VIII.B.2. Process unit turnarounds

The owner or operator of a petroleum refinery shall develop and submit to the Division for approval a detailed procedure for minimization of volatile organic compound emissions during process unit turnaround. As a minimum, the procedure shall provide for:

VIII.B.2.a. Depressurization venting of the process unit or vessel to a vapor recovery system, or to a flare or firebox which assures at least 90% combustion efficiency;

VIII.B.2.b. No emission of volatile organic compounds from a process unit or vessel until its internal pressure is 17.2 psia or less; and

VIII.B.2.c. Recordkeeping of the following items. Records shall be kept for at least two years and shall be made available to the Division for review upon request.

VIII.B.2.c.(1) Every date that each process unit is shut down,

VIII.B.2.c.(2) The approximate vessel volatile organic compound concentration when the volatile organic compounds were first discharged to the atmosphere, and

VIII.B.2.c.(3) The approximate total quantity of volatile organic compounds emitted to the atmosphere.

VIII.B.3. Venting of blowdown systems and safety pressure relief valves

All blowdown systems, process equipment vents, and pressure relief valves shall be vented to a vapor recovery system, or to a flare or firebox which assures at least 90% combustion efficiency.

VIII.B.4. Vacuum-Producing Systems

VIII.B.4.a. The owner or operator of any vacuum-producing system at a petroleum refinery shall not permit the emission of any noncondensible volatile organic compounds from the condensers, hot wells or accumulators of the system. This emission limit shall be achieved by:

VIII.B.4.a.(1) Venting the noncondensible vapors to a flare or other combustion device, or,

VIII.B.4.a.(2) Compressing the vapors and adding them to the refinery fuel gas.

VIII.B.5. All sampling, testing, and measuring ports, hatches, and access openings shall be kept in a closed sealed position except during actual sampling or access.

VIII.B.6. Control devices shall meet the applicable requirements, including recordkeeping, of subsections IX.A.3.a, b, c, and e, and IX.A.8.a and b.

VIII.B.7. The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60, shall be used to determine the efficiency of control devices.

VIII.C. Petroleum Refinery Equipment Leaks

VIII.C.1. Definitions

For the purpose of this subsection, the following definitions apply:

VIII.C.1.a. "Accessible Component" means a component which can be reached, if necessary, by safe and proper use of portable ladders such as are acceptable to OSHA, as well as by built-in ladders and walkways. "Accessible" also includes components which can be reached by the safe use of an extension on the monitoring probe.

VIII.C.1.b. "Component" means any piece of equipment which has the potential to leak volatile organic compounds when tested in the manner described in paragraph 3. These sources include, but are not limited to, pumping seals, compressor seals, seal oil degassing vents, pipeline valves, flanges and other connections, pressure relief devices, process drains, and open ended pipes. Excluded from these sources are valves which are not externally regulated.

VIII.C.1.c. "In Light Liquid VOC Service" Equipment is in light liquid service if the following conditions apply:

VIII.C.1.c.(1) the true vapor pressure of one or more of the components is greater than 0.3 kPa at 20°C. True vapor pressures may be obtained from standard reference texts or may be determined by ASTM D-2879.

VIII.C.1.c.(2) the total concentration of the pure components have a true vapor pressure greater than 0.3 kPa at 20°C, is equal to or greater than 20 percent by weight; and

VIII.C.1.c.(3) the fluid is a liquid at operating conditions.

VIII.C.1.d. "Gaseous Service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the gaseous phase.

VIII.C.1.e. "Refinery Unit" means a set of components which are a part of a basic process operation, such as, distillation, hydrotreating, cracking, or reforming of hydrocarbons.

VIII.C.1.f. "Water Draw" means a routinely used valve or system employing a valve which allows non-VOC material (usually water) to be separated from VOC.

VIII.C.1.g. "In Heavy VOC Liquid Service" means that the piece of equipment is not in gaseous service or in light VOC liquid service.

VIII.C.2. Provisions for Specific Processes

VIII.C.2.a. The owner or operator of a petroleum refinery complex subject to this regulation shall:

VIII.C.2.a.(1) Develop a monitoring program consistent with the provisions in paragraph 3.

VIII.C.2.a.(2) Conduct a monitoring program consistent with the provisions in subparagraph 4.a.

VIII.C.2.a.(3) Record all leaking components which have a voc concentration exceeding 10,000 ppm when tested according to paragraph 3., and place an identifying tag on each component consistent with the provisions in clause 4.a (iii).

VIII.C.2.a.(4) Repair and retest leaking components, as defined in clause (iii) above, as soon as possible, but no later than fifteen (15) days after the leak is found, excepting those specified in (v) and (vi) below.

VIII.C.2.a.(5) Identify all leaking components (as defined in clause (iii) above), which cannot be repaired until the unit is shut down for turnaround, and repair and retest as in clause (iv) when the unit is back on stream.

VIII.C.2.a.(6) When a component leak cannot be fixed within fifteen (15) working days solely because parts are not available, the following shall be noted in an "awaiting parts log:"

VIII.C.2.a.(6)(A) component identification and tag number

VIII.C.2.a.(6)(B) date part was ordered

VIII.C.2.a.(6)(C) date part was received

VIII.C.2.a.(6)(D) date repair was made

VIII.C.2.b. Except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing volatile organic compounds unless the pipe or line is sealed with a second valve, a blind flange, a plug, or a cap. The sealing device may be removed only when a sample is being taken or when the valve is otherwise in use.

VIII.C.2.c. The Division, at its discretion, may require early unit turnaround based on the number and severity of tagged leaks awaiting turnaround provided:

VIII.C.2.c.(1) the requirement does not exceed reasonable available control technology due to cost per ton of emissions reduction achieved by the early turnaround or other reasonable analysis.

VIII.C.2.c.(2) the Division provides the owner or operator of a petroleum refinery with written notification at least 180 days before requiring an early turnaround. The owner or operator will have 30 days from the date of the Division's notification to contest the requirement by submitting a demonstration that the requirement is beyond reasonable available control technology. If no demonstration is made, it will be assumed the requirement is reasonable. If a demonstration is submitted by the owner or operator, the Division will either approve the demonstration or disapprove the demonstration with a justification regarding the disapproval within 30 days of the date the demonstration is submitted to the Division.

VIII.C.2.c.(3) The requirement is not contested by the owner or operator. Should the requirement be contested, the requirement for early unit turnaround will be delayed until 180 days after the demonstration discussed in item (ii) above is disapproved by the Division.

VIII.C.2.d. Piping valves and pressure relief valves in gaseous VOC service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and the Division, to identify them as components which are monitored quarterly.

VIII.C.3. Testing and Monitoring Procedures

Testing and calibration procedures to determine compliance with this regulation shall be consistent with EPA reference method 21 of 40 CFR Part 60. The reference compound may be methane or hexane. A leak is defined as a reading of 10,000 ppmv of the reference compound.

VIII.C.4. Monitoring, Recordkeeping, Reporting

VIII.C.4.a. Monitoring

VIII.C.4.a.(1) The owner or operator of a petroleum refinery subject to this regulation shall conduct a monitoring program consistent with the following provisions:

VIII.C.4.a.(1)(A) Monitor yearly by the method referenced in paragraph 3., above, all:

VIII.C.4.a.(1)(A)(i) Pump seals; and

VIII.C.4.a.(1)(A)(ii) Piping valves in light liquid VOC service; and

VIII.C.4.a.(1)(A)(iii) Process drains; and

VIII.C.4.a.(1)(A)(iv) Heat-exchanger body flanges; and

VIII.C.4.a.(1)(A)(v) Other accessible flanges in VOC service.

VIII.C.4.a.(1)(A)(vi) Components in heavy liquid VOC service are exempt from requirements of this subclause (A).

VIII.C.4.a.(1)(B) Monitor quarterly by the method referenced in paragraph 3., above, all:

VIII.C.4.a.(1)(B)(i) Compressor seals; and

VIII.C.4.a.(1)(B)(ii) Piping valves in gaseous service; and

VIII.C.4.a.(1)(B)(iii) Pressure relief valves in gaseous service.

VIII.C.4.a.(1)(C) Monitor at least weekly by visual methods all pump seals.

VIII.C.4.a.(1)(D) Monitor within 24 hours with a VOC detector and make record of any component from which VOC liquids are observed leaking.

VIII.C.4.a.(1)(E) Components in heavy liquid VOC service shall be monitored by the method referenced in Paragraph 3. above within five days if evidence of a potential leak is found by visual, audible, olfactory, or any other detectable method.

VIII.C.4.a.(2) Inaccessible valves and flanges shall be monitored annually or, as a minimum, at unit shutdown using the procedures of VIII.C.2.a (v).

Pressure relief devices which are connected to an operating flare header or vapor recovery device, storage tank valves, and valves that are not externally regulated are exempt from the monitoring requirements in Paragraph (i) of this section.

VIII.C.4.a.(3) The owner or operator of a petroleum refinery, upon the detection of a leaking component as defined in clause 2.a (iii), shall affix a weatherproof and readily visible tag, bearing an identification number and the date the leak is located, to the leaking component. This tag shall remain in place until the leaking component is repaired. In addition, the owner or operator shall log the leak (including those leaks immediately repaired), per the requirements of 7.VIII.C.4.b (i)-(iii).

VIII.C.4.b. Recordkeeping

VIII.C.4.b.(1) The owner or operator of a petroleum refinery shall maintain a leaking components monitoring log which shall contain at a minimum, the following data:

VIII.C.4.b.(1)(A) The name of the process unit where the component is located.

VIII.C.4.b.(1)(B) The type of component (e.g., valve, seal).

VIII.C.4.b.(1)(C) The tag number of the component.

VIII.C.4.b.(1)(D) The date on which a leaking component is discovered.

VIII.C.4.b.(1)(E) The date on which a leaking component is repaired.

VIII.C.4.b.(1)(F) The date and instrument reading found during the recheck procedure subsequent to repairing a leaking component.

VIII.C.4.b.(1)(G) A record of the calibration of the monitoring instrument.

VIII.C.4.b.(1)(H) Those leaks that cannot be repaired until turnaround.

VIII.C.4.b.(1)(I) The total number of components checked and the total number of components found leaking.

VIII.C.4.b.(1)(J) The total number of components subject to Section VIII.C.2.a (v) which upon retest were still leaking as defined in Paragraph 3 above.

VIII.C.4.b.(2) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two (2) years after the date on which the record was made or report prepared.

VIII.C.4.b.(3) Copies of the monitoring log shall be made available to the Division upon oral or written request.

VIII.C.4.c. Reporting

The owner or operator of a petroleum refinery, upon the completion of each yearly and/or quarterly monitoring procedure, shall:

VIII.C.4.c.(1) Submit a report to the Division by the 15th day of February, May, August, and November that lists all leaking components that were located during the previous three (3) calendar months (quarter), but not repaired within fifteen (15) working days, all leaking components awaiting unit turnaround, the total number of components inspected, and the total number of components found leaking.

VIII.C.4.c.(2) Submit a signed statement with the report attesting to the fact that, with the exception to those leaking components listed in clause 4.b.(i)(H), all monitoring and repairs were performed as stipulated in the monitoring program.

IX. Surface Coating Operations

IX.A. General Provisions

IX.A.1. Definitions

IX.A.1.a. "Coating" means a protective, functional or decorative film applied in a thin layer to a surface. This term often applies to paints such as lacquers or enamels, but is also used to refer to films applied to paper, plastics, or foils.

IX.A.1.b. "Coating Applicator" means an apparatus used to apply a surface coating.

IX.A.1.c. "Coating Line" means an operation which includes both (1) a coating applicator and (2) device(s) and/or area(s) to accomplish one or more of the following processes: flash-off, drying, curing, heat-setting and/or polymerization.

IX.A.1.d. "Coating-Solids" means that portion of a surface coating which remains after volatile components have escaped.

IX.A.1.e. "Final Repair Application" means that application of surface coating specifically intended to repair damage and imperfections in existing surface coats.

IX.A.1.f. "Finished Coating-Solids" means those coating-solids that remain on a coated substance after completion of all production processes.

IX.A.1.g. "Flash-off Area" means the space between the application area and the oven.

IX.A.1.h. "Prime Coat" (also termed "primer") means the first film of coating applied in a multiple-coat operation.

IX.A.1.i. "Single Coat" means a single film of coating applied directly to the metal substrate, omitting the primer application.

IX.A.1.j. "Surface Coating" means a liquid, liquifiable, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application as a thin layer or by impregnation.

In a machine which has both coating and printing units, all units shall be considered as performing a printing operation. Such a machine is subject to the standards governing graphic arts, and thus is not covered by coating standards.

IX.A.1.k. "Surface-Coating Oven" means a chamber within which heat is used to bake, cure, polymerize, and/or dry a surface coating.

IX.A.1.l. "Topcoat" means the final film of coating applied in a multiple-coat operation.

IX.A.2. Abbreviations

IX.A.2.a. Kg/lc shall be the abbreviation for: kilograms of solvent VOC per liter of coating (minus water and "exempt" solvents, as defined in Section II.B.).

IX.A.2.b. Lb/gc shall be the abbreviation for: (avoirdupois) pounds of solvent VOC per gallon of coating (minus water and "exempt" solvents, as defined in Section II. B.).

IX.A.3. Test Methods and Procedures

IX.A.3.a. The owner or operator of any VOC source required to comply with this section shall, at their own expense, demonstrate compliance using EPA reference method 24 of 40 CFR part 60 for surface coatings, and reference method 25 and reference methods l through 4 for add-on controls.

IX.A.3.b. The test protocol should be in accordance with the requirements of the Air Pollution Control Division Compliance Test Manual and shall be submitted to the Division for review and approval at least thirty (30) days prior to testing. No test shall be conducted without prior approval from the Division.

IX.A.3.c. The Division may use independent tests to verify test data submitted by the source operator or owner. The test methods shall be those listed in subclause a above and the Division test results shall take precedence.

IX.A.3.d. The Division may accept, instead of the testing required in this subsection, a certification by the manufacturer of the composition of the coatings if supported by actual batch formulation records. The owner or operator of the VOC source required to comply with this section shall obtain certification from the coating manufacturer(s) that the test method(s) used for determination of VOC content meet the requirements specified in subsection IX.A.3.a. The owner or operator shall have this certification readily available to Division personnel, in order to allow the results to be used in the daily compliance calculations specified in subsection IX.A.10.

IX.A.3.e. The performance of add-on control device equipment shall be established with the required test methods of IX.A.3.a at equipment startup, and after major modification to the control equipment. Baseline operating parameters shall be established during the satisfactory (i.e. in-compliance) operation of the control equipment, including operation during all anticipated ranges of process throughput. During subsequent process operation, the owner or operator shall maintain the operating conditions of the add-on controls as close to these baseline conditions as possible. If serious operational problems with an add-on control system are evidenced from the daily monitoring required by subsection IX.A.8.b. (such problems may be indicated by changes from baseline conditions), repeat performance tests may be required by the Division, as necessary.

IX.A.4. Sampling

To determine compliance with applicable surface coating standards, samples shall be taken from the coating as freshly delivered to the reservoir of the coating applicator.

IX.A.5. Alternative compliance methods for processes and operations

For each process specified in Sections IX.B through IX.N, the emission limits designated for that process shall be achieved by:

IX.A.5.a. use of coatings with proportions of VOC less than or equal to the maximums specified by the applicable subsection of this regulation; or

IX.A.5.b. use of the specified equipment and procedures prescribed by the applicable subsection of this regulation; or

IX.A.5.c. use of an alternative means of control which satisfies the requirements of 5.e and f below and section II.D; or

IX.A.5.d. use of crossline averaging. The emission trading requirements of Regulation 3.V shall be met. In addition, the following requirements apply:

IX.A.5.d.(1) The actual reduction shall be equivalent to the actual reduction that would be achieved on a line-by-line basis.

IX.A.5.d.(2) Credit shall not be received for downtime, however, credit is allowed for enforceable production limits.

IX.A.5.d.(3) Crossline averaging shall be used only across lines in the same control technique guidance group.

IX.A.5.d.(4) The emission trading policy shall be met on a daily weighted average.

IX.A.5.d.(5) Sources subject to best available control technology (BACT) and lowest achievable emission rate (LAER) requirements shall not use cross line averaging.

IX.A.5.d.(6) VOC emissions shall be expressed as lbs/gallons solids to determine reduction over baseline (lb VOC/lb solids for graphic arts).

IX.A.5.d.(7) Organisol and plastisol coatings shall not be used to bubble emissions from vinyl surface or automobile topcoating operations.

IX.A.5.d.(8) Before crossline averaging may be used, the control methodology shall be approved as a revision to the State Implementation Plan.

IX.A.5.e. The design, operation and efficiency of any capture system used in conjunction with any emission control system shall be certified in writing by the source owner or operator and approved by the Division. Unless the capture system meets the requirements for a total enclosure as specified in the New Source Performance Standard for the Magnetic Tape Manufacturing Industry, 53FR38892, October 3, 1988, or unless Division approved material balance techniques are used to adequately determine overall VOC capture and destruction/recovery efficiency, the efficiency of the capture system shall be determined by test methods approved as a revision to the State Implementation

Plan. Testing for capture efficiency shall be performed on a case-by-case basis as required by the Division. The requirements of subsections IX.A.3.e and IX.A.8.b. shall apply to the capture and control device system. When capture and control device efficiency must be independently determined, the overall VOC emission reduction rate equals the (percent capture efficiency X percent control device efficiency)/100.

IX.A.5.f. Sources which use add-on controls, crossline averaging, or an approved alternative control strategy instead of low solvent technology to meet the applicable emission limit shall meet the equivalent VOC emission limit, on the basis of solids applied (lb VOC/gal solids applied, or lb VOC/lb solids applied, for graphic arts sources). Appendix ~~E~~ F sets forth the procedure for converting emission limits and lists equivalent limits for various coating operations.

IX.A.5.g. Owners or operators of sources which use a carbon adsorption system shall provide for the proper disposal or reuse of all VOC recovered.

IX.A.6. Exemptions

IX.A.6.a. The requirements of this Section IX do not apply to sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance, provided;

IX.A.6.a.(1) the operation of the source is not an integral part of the production process; and

IX.A.6.a.(2) the emissions from the source do not exceed 363 kilograms (800 lbs.) in any calendar month; and

IX.A.6.a.(3) the exemption is approved in writing by the Division.

IX.A.6.b. The requirements of Sections 7.IX.C, D,E,F,G,H,I,L and M are not applicable to sources whose actual emissions, including fugitive emissions, before add-on controls, are less than 6.8 kilograms (15 lbs.) per day and less than 1.4 kilograms (3 lbs.) per hour. Emissions from all sources within the same control technique guidance group shall be totaled to determine actual emissions.

IX.A.7. Fugitive emission control

IX.A.7.a. Control techniques and work practices shall be implemented at all times to reduce VOC emissions from fugitive sources. Control techniques and work practices include, but are not limited to:

IX.A.7.a.(1) tight-fitting covers for open tanks;

IX.A.7.a.(2) covered containers for solvent wiping cloths;

IX.A.7.a.(3) proper disposal of dirty cleanup solvent.

IX.A.7.b. Emissions of organic material released during clean-up operations, disposal, and other fugitive emissions shall be included when determining total emissions, unless the source owner or operator documents that the VOCs are collected and disposed of in a manner that prevents evaporation to the atmosphere.

IX.A.8. Recordkeeping, Reporting, and Monitoring

IX.A.8.a. If add-on control equipment is used, continuous monitors of the following parameters shall be installed, calibrated, and operated at all times that the associated control equipment is operating:

IX.A.8.a.(1) exhaust gas temperature of all incinerators;

IX.A.8.a.(2) temperature rise across a catalytic incineration bed;

IX.A.8.a.(3) breakthrough of VOC on a carbon adsorption unit;

IX.A.8.a.(4) any other monitoring and/or recording device, maintenance and/or control-media-replacement schedule(s) specified on a case-by-case basis by the Division.

IX.A.8.b. If add-on control equipment is used, in addition to the requirements of subsection IX.A.8.a, the following information and any other necessary information, as determined applicable for each source by the Division, shall be monitored and recorded daily in order to assure continuous compliance. The substitution of continuous recordings for daily recording may be allowed by the Division.

IX.A.8.b.(1) For the capture system: fan power use, duct flow, duct pressure.

IX.A.8.b.(2) For carbon adsorbers: bed temperature, bed vacuum pressure, pressure at the vacuum pump, accumulated time of operation, concentration of VOC in the outlet gas, solvent recovery.

IX.A.8.b.(3) For refrigeration systems: compressor discharge and suction pressures, condenser fluid temperature, solvent recovery.

IX.A.8.b.(4) For incinerator systems: exhaust gas temperature, temperature rise across a catalytic incinerator bed, flame temperature, accumulated time of incinerator.

IX.A.8.c. Recordkeeping procedures shall follow the guidance in "Recordkeeping Guidance Document for Surface Coating Operations and the Graphic Arts Industry," July 1989, EPA 340/1-88-003.

IX.A.9. Required and Prohibited Acts

IX.A.9.a. No owner or operator of a source of VOCs subject to this section shall operate, cause, allow or permit the operation of the source, unless:

IX.A.9.a.(1) For each category of surface coating as specified in sections IX.B. through IX.M, the owner or operator of a surface coating line or facility subject to that section does not cause, allow or permit the discharge into the atmosphere of any VOCs in excess of the specified emission limit, calculated as delivered to the coating applicator or as applied to the substrate, whichever is greater.

IX.A.10. Compliance Calculation Procedures

IX.A.10.a. Compliance with this section shall be determined on a daily basis. Sources may request a revision to the State Implementation Plan for longer times for compliance determination.

IX.A.10.b. Compliance calculation procedures shall follow the guidance in "Procedure for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84/019. In addition, for add-on controls or other compliance alternatives, calculation procedures shall follow the guidance of Section 7.IX.A.5.f of this regulation.

IX.A.11. The requirements of Subsections IX.A.1 through IX.A.10 of this regulation apply to each category of surface coating as specified in Sections IX.B through IX.M. The requirements of IX.A.7 through 10 apply to the category of IX.N.

IX.A.12. The Division shall approve utilization of alternative compliance methods to the following sources pursuant to this section IX.

IX.A.12.a. Lexmark International, Inc. shall be allowed to utilize the alternative compliance method of crossline averaging for processes and operations within the Manufactured Metal Parts and Metal products (Subgroup L) and within the Plastic Film Coating Operations (Subgroup J). The emission trading requirements of Regulation No. 3. Part A, Section V shall be met , and utilization of the alternative compliance method shall be subject to the following generic conditions, which shall be written and specifically described as enforceable permit terms and conditions in its permits:

IX.A.12.a.(1) The alternative compliance method shall result in an actual reduction that is equivalent to the actual reduction that would otherwise be achieved on a line by line basis pursuant to this Regulation No. 7.

IX.A.12.a.(2) Credit shall not be received for downtime; however, credit is allowed for emission reductions from enforceable production limits.

IX.A.12.a.(3) Cross line averaging shall be used only across lines of the same control technique guidance group. Lexmark shall use cross line averaging between Metal Parts and Metal Products lines or between Plastic Film Coating lines. Lexmark shall not use cross line averaging where the emissions from Plastic film coating lines are averaged with Metal Parts and Metal Products lines.

IX.A.12.a.(4) The emission trading policy set forth in Regulation No. 3, V, Part A, shall be met on a daily weighted average.

IX.A.12.a.(5) Sources subject to Best Available Control Technology (BACT), and Lowest Achievable Emission Rate (LAER) shall not use cross line averaging.

IX.A.12.a.(6) To determine reduction over baseline, VOC emissions shall be expressed according to Regulation No. 7, Section IX.(A).(5).(f), as lbs/gallons solids.

IX.A.12.a.(7) Monthly records shall be kept at the source to verify ongoing compliance with these conditions. The recordkeeping format shall be approved by the Division.

IX.A.12.a.(8) An annual report demonstrating ongoing compliance with this regulation and all permit terms shall be filed with the Division. The report format shall be approved by the Division and specifically described in the permit.

IX.A.12.a.(9) The Division shall issue a permit with Federally enforceable terms and conditions to Lexmark limiting Lexmark's alternative compliance method emissions to those allowable under Subpart L or J as appropriate, of this Regulation No. 7.

IX.A.12.a.(10) Commercial and Product quality control laboratory equipment are exempt from APEN filing and construction permit requirements under Regulation No. 3, Part A. II. D. 1(i), and Regulation No. 3 Part B, III.D.1.a; and from construction permit requirements under Regulation No. 3, Part B, III.D.1(i). Qualifying sources shall be exempt from Reg 7 IX. A. 6.

IX.A.12.a.(11) Nothing in the alternative compliance method is intended to relax any emissions limitation of this Regulation No. 7.

IX.B. Automobile and Light-Duty Truck Assembly Plants

IX.B.1. Definitions

IX.B.1.a. "Application Area" means the area where the surface coating is applied by spraying, dipping or flow coating.

IX.B.1.b. "Automobile" means a passenger motor-vehicle or a derivative of same, capable of seating twelve (12) or fewer passengers, and having at least two driven wheels.

IX.B.1.c. "Automobile Assembly Facility" means a facility where parts (including assembled or partially assembled components) of automobiles are received, and finished automobiles are produced, partially or wholly by an assembly line.

IX.B.1.d. "Light-Duty Truck" means any motor vehicle rated at 8,500 pounds (3,855 kilograms) gross vehicle weight or less, and having at least two driven wheels, which is designed primarily for purposes of transportation of property or is a derivative of such vehicles. It includes, but is not limited to, pickup trucks, vans, and window vans rated at 8,500 pounds gross vehicular weight or less.

IX.B.1.e. "Light-Duty Truck Assembly Facility" means a facility where parts (including assembled or partially assembled components) of light-duty trucks are received, and finished light-duty trucks are produced, partially or wholly by an assembly line.

IX.B.2. Applicability

This subsection applies to all assembly and subassembly lines in an automobile or light-duty truck assembly facility, including those for frames, small parts, wheels, and main body parts. This subsection applies only to the manufacture of new vehicles.

IX.B.3. Emission Limitations

	Kg/lc	Lb/gc
Prime application, flashoff area, and oven	0.23	1.9
Topcoat application area, flashoff area, and oven	0.34	2.8
Final repair application, flashoff area and oven	0.58	4.8

IX.B.4. Coatings other than primer, surfacer (guidecoat), topcoat and final repair shall be considered under the miscellaneous metal parts subsection IX.L.

IX.B.5. For topcoat application, if a complying coating is not used to meet the emission limit of subsection IX.B.3, then:

IX.B.5.a. the alternate method shall meet an emission limit of 15.1 lb VOC/gal. solids deposited on the coated part; and

IX.B.5.b. compliance shall be determined on a daily weighted average basis.

IX.B.6. Topcoat operation shall include all spray booths, flash-off areas and ovens in which topcoat is applied, dried and cured, except for final offline repair.

IX.C. Can Coating Operations

IX.C.1. Definitions

IX.C.1.a. "Can Coatings" means any coatings containing organic materials and applied -- or intended for application -- by spray, roller, or other means onto the inside and/or outside surfaces of formed cans and components of cans.

IX.C.1.b. "End Sealing Compound" means a substance which is coated onto can ends and which functions as a seal when the end is assembled onto the can.

IX.C.1.c. "Exterior Base Coat" means a coating applied to the exterior of a can to provide protection to the metal and/or to provide background for any lithographic or printing operation.

IX.C.1.d. "Interior Base Coat" means the initial coating applied to the interior surface of a can by roller coater or spray.

IX.C.1.e. "Interior Body Spray" means a coating sprayed onto the interior surface of the can body to provide a protective film between the can and its contents.

IX.C.1.f. "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, provide gloss, protect against abrasion, enhance product quality, and protect against corrosion.

IX.C.1.g. "Three-Piece Can Side Seam Spray" means a coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.

IX.C.1.h. "Two-Piece Can Exterior End Coat" means a coating applied to the exterior of the bottom end of a two-piece can.

IX.C.2. Applicability

This subsection applies to coating applicator(s), and oven(s) of sheet can or end coating lines involved in sheet basecoat (exterior and interior) and over varnish, two-and three-piece can interior body spray, two-piece can exterior end (spray or roll coat), three-piece can side-seam spray, and end sealing compound operations.

IX.C.3. Emission Limitations

Can Coating	Kg/lc	Lb/gc
Sheet base coat (exterior and interior) and overvarnish two-piece can exterior (base coat and overvarnish)	0.34	2.8
Two and three-piece can interior body spray, two-piece can exterior end (spray or roll coat)	0.51	4.2
Three-piece can side-seam spray	0.66	5.5
End sealing compound	0.44	3.7
Any additional coats	0.51	4.2

IX.D. Coil Coating Operations

IX.D.1. Definitions

IX.D.1.a. “Coil Coating” means any surface coating applied by spray, roller, or other means onto one or both surfaces of flat metal sheets or strips that come in rolls or coils.

IX.D.1.b. “Quench Area” means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

IX.D.2. Applicability

This subsection applies to the coating applicator(s), oven(s), and quench area(s) of coil coating operations involved in primer, intermediate, top-coat or single-coat operations.

IX.D.3. Emission Limitations:

Coil Coating	Kg/lc	Lb/gc
Any coat (primer, intermediate coat, topcoat, single coat)	0.31	2.6

IX.E. Fabric Coating Operations

IX.E.1. Definitions

IX.E.1.a. “Fabric Coating" means the process of coating or impregnating the full, usable surface of a fabric web or sheet to impart properties that are not initially present such as strength, stability, water or acid repellency, or appearance. "Fabric Coating" excludes those processes normally included under fabric finishing (e.g. dyeing, treating for stain and wrinkle resistance, etc.).

IX.E.2. Applicability

This subsection applies to fabric coating lines which includes, but is not limited to, coaters and drying ovens.

IX.E.3. Emission Limitations

	Kg/lc	Lb/gc
Fabric Coating Line	0.35	2.9

IX.F. Large Appliance Coating Operations

IX.F.1. Definition

IX.F.1.a. "Large Appliances" includes doors, cases, lids, panels, interior support parts, and any other large (greater than one square decimeter (15.5 square inches)) coated surfaces of residential and commercial washers, dryers, ovens, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, and all other products under SIC Code 363 according to the "Standard Industrial Classification Manual", Executive Office of the President, Office of Management and Budget, designated by convention of the industry as large appliances.

IX.F.2. Applicability

This subsection applies to all large appliance coating lines.

IX.F.3. Emission Limitations

	Kg/lc	Lb/gc
	0.34	
Large Appliance Coating Line; prime, single or topcoat application area, flashoff area, and oven		2.8

IX.G. Magnet Wire Coating Operations

IX.G.1. Definition

IX.G.1.a. "Magnet Wire Coating" means those operations which apply a coating of electrically insulating varnish or enamel (or similar substance) to wire which is known as "magnet wire." Magnet wire is usually copper or aluminum, and is used for electric motors, generators, transformers, magnets, and related products.

IX.G.2. Applicability

This subsection applies to, but is not limited to, coaters and drying ovens of magnet wire coating operations.

IX.G.3. Emission Limitations

	Kg/lc	Lb/gc
Magnetic wire coating operation	0.20	1.7

IX.H. Metal Furniture Coating Operations

IX.H.1. Definitions

IX.H.1.a. "Metal Furniture" means furnishings commonly considered furniture, for domestic, business, and/or institutional use, which have one or more essential, major components made of metal. "Metal furniture" includes, but is not limited to, tables, chairs, wastebaskets, beds, desks, lockers, shelving, cabinets, room dividers, clothing racks, chests of drawers, and sofas.

IX.H.1.b. "Metal Furniture Coating" means applying a "surface coating" to "metal furniture" as defined above. It excludes coating of non-metal components.

IX.H.2. Applicability

This subsection applies to all metal furniture coating lines.

IX.H.3. Emission Limitations

	Kg/lc	Lb/gc
Metal Furniture Coating Line: All coats (including prime, single, and topcoat)	0.36	3.0

IX.I. Paper Coating Operations

IX.I.1. Definition

"Paper Coating" means impregnating or applying a uniform layer of "surface coating" to paper. It includes, but is not limited to, the production of: coated, glazed, decorated, and varnished paper; carbon and pressure-sensitive copy papers; paper adhesive-labels and tapes; blue-print; photographic and copier paper. It also includes coating of metal foil such as gift wrap and packaging. Paper coating does not include impregnation using a batch dipping process.

IX.I.2. Applicability

This subsection applies to paper coating lines, which includes, but is not limited to, coaters and drying ovens.

IX.I.3. Emission Limitations

	Kg/lc	Lb/gc
Paper Coating Line	0.35	2.9

IX.J. Plastic-Film Coating Operations

IX.J.1. Definition

IX.J.1.a. "Plastic-Film Coating" means applying a uniform layer of "surface coating" to a flexible web or sheet of thin plastic substance, excluding all rubbers and vinyls* (polyvinyl chloride) except for the following two categories of vinyl products: (1) vinyl tapes and (2) vinyls coated with an adhesive or pressure-sensitive coating. It includes, but is not limited to: plastic typewriter ribbons, photographic film, adhesive tapes, and magnetic recording tapes. (*see subsection K.)

IX.J.2. Applicability

This subsection applies to, but is not limited to, coaters and drying ovens of plastic-film coating lines.

IX.J.3. Emission Limitations

	Kg/lc	Lb/gc
Plastic-Film Coating Line	0.35	2.9

IX.K. Vinyl Coating Operations

IX.K.1. Definition

"Vinyl Coating" means applying a uniform layer, decorative or protective topcoat to a vinyl (polyvinyl chloride) coated fabric or vinyl sheet. It includes printing of same. Excluded are*: (1) the coating of same with adhesive or pressure-sensitive coatings and (2) vinyl tapes. (*see subsection J).

IX.K.2. Application

This subsection applies to vinyl coating lines which includes, but is not limited to, coaters and drying ovens.

IX.K.3. Emission Limitations

	Kg/lc	Lb/gc
Vinyl Coating Line	0.45	3.8

IX.L. Manufactured Metal Parts and Metal Products

IX.L.1. General Provisions

IX.L.1.a. Applicability

This subsection applies to the application area(s), flashoff area(s), oven(s), and drying areas including (but not limited to) air and forced air drier(s) used in the surface coating of the metal parts and products listed below. This section applies to prime coat, top coat, and single coat operations. This section is applicable to surface coating of manufactured metal parts and metal products which include:

IX.L.1.a.(1) Large farm machinery (harvesting, fertilizing, and planting machines, tractors, combines, etc.);

IX.L.1.a.(2) Small-farm, lawn and garden machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

IX.L.1.a.(3) Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

IX.L.1.a.(4) Commercial machinery (office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

IX.L.1.a.(5) Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

IX.L.1.a.(6) Fabricated metal products (metal covered doors, frames, etc.);

IX.L.1.a.(7) Furniture hardware made of metal for use with non-metal furniture; and

IX.L.1.a.(8) Any other industrial category which coats metal parts or products under the standard industrial classification code of major group 33 (primary metal industries), major group 34 (fabricated metal products), major group 35 (non-electric machinery), major group 36 (electrical machinery), major group 37 (transportation equipment), major group 38 (miscellaneous instruments), and major group 39 (miscellaneous manufacturing industries), according to the "Standard Industrial Classification Manual" Executive Office of the President, Office of Management and Budget.

IX.L.1.b. Exemptions

IX.L.1.b.(1) This subsection L is not applicable to the surface coating of the following metal parts and products inasmuch as these are previously covered in subsections IX.B., C., D., F, G, and H., respectively:

IX.L.1.b.(1)(A) Automobiles and light-duty trucks

IX.L.1.b.(1)(B) Metal cans

IX.L.1.b.(1)(C) Flat metal sheets and strips in the form of rolls or coils

IX.L.1.b.(1)(D) Large appliances

IX.L.1.b.(1)(E) Magnet wire for use in electrical machinery

IX.L.1.b.(1)(F) Metal furniture

IX.L.1.b.(2) This subsection L is not applicable to the following special purpose coatings:

IX.L.1.b.(2)(A) Division-approved exemptions for high performance coatings on a case-by-case basis.

IX.L.1.b.(2)(B) Full exterior repainting of automobiles and light-duty trucks if fewer than 18 vehicles are painted per day.

IX.L.1.c. Definitions

For the purpose of this subsection, the following definitions apply:

IX.L.1.c.(1) "Air Dried Coating" means coatings which are dried by the use of air or forced warm air at temperatures up to 90°C (194°F);

IX.L.1.c.(2) "Clear Coat" means a coating which lacks color and opacity or a coating which is transparent;

IX.L.1.c.(3) "Extreme Performance Coatings" means coatings designed for extreme environmental conditions;

IX.L.1.c.(4) "Coating Application System" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, flashoff areas, air dryers and ovens;

IX.L.1.c.(5) "Extreme Environmental Conditions" means exposure to any of the following: temperatures consistently above 95°C, detergents, abrasive and scouring agents, solvents, corrosive environments.

IX.L.2. Provisions for Specific Processes

IX.L.2.a. No owner or operator of a facility or operation engaging in the surface coating of manufactured metal parts or metal products may operate a coating application system subject to this regulation that emits VOC in excess of:

IX.L.2.a.(1) Clear coatings:

0.52 kg/1c(4.3 lb/gc)

IX.L.2.a.(2) Extreme Performance Coatings:

0.42 kg/1c (3.5 lb/gc)

IX.L.2.a.(3) Air-Dried Coatings

0.42 kg/1c (3.5 lb/gc)

IX.L.2.a.(4) Other coatings and systems:

0.36 kg/1c (3.0 lb/gc) delivered to a coating applicator for all other coatings and coating application systems.

IX.L.2.b. If more than one emission limitation in subparagraph 2.a. applies to a specific coating, then the least stringent emission limitation shall be applied.

IX.L.2.c. Pioneer Metal Finishing, Inc., a surface coating operation, is authorized pursuant to Regulation No. 3, Part A, Section V and Regulation No. 7, Section II.D.1.a to use up to twenty (20) tons of certified emission reduction credits of volatile organic compounds (VOC) as an alternative compliance method to satisfy the surface coating emission limitations of Regulation No. 7 in accordance with and upon demonstration of the conditions set forth below:

IX.L.2.c.(1) Certified emission reduction credits for VOCs (methanol) to be used in this transaction were formerly owned by the Coors Brewing Company, registered and issued in Emissions Reduction Credit Permit 91AR120R on July 25, 1994;

IX.L.2.c.(2) Those emission reduction credits were originally obtained by Coors from Verticel, a company that produced honeycomb packaging material and was located within five miles of the PMF facility;

IX.L.2.c.(3) The use of these VOC emission reduction credits identified above shall be used to satisfy VOC limitations of certain specified surface coatings in excess of Control Technique Guidance as specified in Regulation No. 7, Section IX.L.2.a and Section IX.A.6.b, and applicable to the Pioneer Metal finishing operations;

IX.L.2.c.(4) Such emission reduction credits identified above will be used by PMF to achieve compliance with Regulation No. 7 to compensate for ozone precursor emission of VOCs from non-compliant coatings which meet the emission trading requirements of Regulation No. 3. In order to satisfy the photochemical reactivity equivalency requirement of VOC trades, the methanol VOC ERCs will be reduced on a ratio of 1.1:1 for VOCs of toluene, ethylbezene, xylene and ketones emitted from non-compliant coatings. All other VOCs involved in this transaction are considered to be of the same degree of photochemical reactivity;

IX.L.2.c.(5) The requirement in Regulation No. 3, Part A, Section V.F.2 shall not apply to this transaction;

IX.L.2.c.(6) This transaction is only valid within the Denver/Boulder nonattainment area as described at 40 CFR 81, Subchapter C-Air Programs, Subpart C-Section 107 Attainment Status Designations, Section 81.306;

IX.L.2.c.(7) This transaction shall be calculated upon a pound for pound basis and averaged over a maximum 24-hour period.

IX.L.2.c.(8) This transaction shall be effective upon approval by the U.S. Environmental Protection Agency as a revision to the Colorado State Implementation Plan and after issuance of a State Construction Permit incorporating, but not limited to, the conditions and requirements of the Section;

IX.L.2.c.(9) This transaction may not be used to satisfy any current or future requirements of NSPS, BACT, LAER, or MACT requirements of HAPs which may apply to PMF, except that this transaction may be used to satisfy control technique guidance or RACT requirements contained in Regulation No. 7 which are applicable to PMF;

IX.L.2.c.(10) This transaction shall not interfere with any applicable requirement concerning attainment and reasonable further progress in the Colorado State Implementation Plan or any other applicable requirements of the Clean Air Act;

IX.L.2.c.(11) This transaction shall be registered and enforced through a State Construction Permit issued to Pioneer Metal Finishing, Inc. containing, but not limited to the conditions and limitations set forth in this Section;

IX.L.2.c.(12) Such state Construction Permit issued to Pioneer Metal Finishing, Inc. shall specify, among other, things the necessary monitory, recordkeeping and reporting requirements to insure that the emission

reduction credits are applied in accordance with the conditions and requirements of this Section;

IX.L.2.c.(13) The state Construction Permit shall allow a daily maximum limitation of 160 lbs. of VOC emissions from non-compliant surface coatings and an annual limitation of 40,000 lbs. of non-compliant VOC emissions. The annual limitation shall be calculated on a 12-month rolling total calculated on the first day of each month using the previous 12 months.

IX.L.2.c.(14) The state Construction Permit shall limit the VOC-HAP emissions to less than ten (10) per year of any one HAP or twenty-five (25) tons per year of any combination of HAP emissions; and

IX.L.2.c.(15) PMF will maintain records of daily and monthly totals of non-compliant surface coatings used in its operation and report such usages on an annual basis to the Division or as otherwise requested.

IX.M. Flat Wood Paneling Coating.

IX.M.1. Definitions

IX.M.1.a. "Class II Hardboard Paneling Finish" means finishes which meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

IX.M.1.b. "Hardboard" is a panel manufactured primarily from inter-felted ligno-cellulosic fibers which are consolidated under heat and pressure in a hot press.

IX.M.1.c. "Hardboard Plywood" is plywood whose surface layer is a veneer of hardwood.

IX.M.1.d. "Natural Finish Hardwood Plywood Panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

IX.M.1.e. "Thin Particleboard" is a manufactured board 1/4 inch or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

IX.M.1.f. "Printed Interior Panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

IX.M.1.g. "Tileboard" means paneling that has a colored waterproof surface coating.

IX.M.1.h. "Coating Application System" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, conveyers, flashoff areas, air dryers and ovens.

IX.M.2. Applicability

This subsection applies to all flat wood manufacturing and surface finishing facilities that manufacture printed interior panels made of hardwood plywood and thin particle board; natural

finish hardwood plywood panels, or hardboard paneling with Class II finishes. This subsection does not apply to the manufacture of exterior siding, tileboard, or particleboard used as a furniture component.

IX.M.3. Emission Limitations

IX.M.3.a. 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 sq. ft) from printed interior panels, regardless of the number of coats applied;

IX.M.3.b. 5.8 kg per 100 square meters of coated finished product (12.0 lb/1,000 sq. ft.) from natural finish hardwood plywood panels, regardless of the number of coats applied; and

IX.M.3.c. 4.8 kg per 100 square meters of coated finished product (10.0 lb/1,000 sq. ft.) from Class II finishes on hardboard panels, regardless of the number of coats applied.

IX.N. Manufacture of Pneumatic Rubber Tires

IX.N.1. Definitions

IX.N.1.a. "Pneumatic Rubber Tire Manufacture" means the production of pneumatic rubber, passenger type tires on a mass production basis.

IX.N.1.b. "Passenger Type Tire" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires with a bead diameter up to 20.0 inches and cross section dimension up to 12.8 inches.

IX.N.1.c. "Undertread Cementing" means the application of a solvent based cement to the underside of a tire tread.

IX.N.1.d. "Bead Dipping" means the dipping of an assembled tire bead into a solvent based cement.

IX.N.1.e. "Tread End Cementing" means the application of a solvent based cement to the tire tread ends.

IX.N.1.f. "Green Tires" means assembled tires before holding and curing have occurred.

IX.N.1.g. "Green Tire Spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the tire during molding and prevent the tire from sticking to the mold after curing.

IX.N.1.h. "Water Based Sprays" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for organic solvents.

IX.N.2. Applicability

This section applies to VOC emissions from the following operations in all pneumatic rubber tire facilities: undertread cementing, tread end cementing, bead dipping, and green tire spraying.

The provisions of this section do not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs. This exemption

applies only to tires produced on equipment separate from normal production lines for passenger type tires.

IX.N.3. Provisions for Specific Processes

IX.N.3.a. The owner or operator of an undertread cementing, tread end cementing, or bead dipping operation subject to this regulation shall:

IX.N.3.a.(1) Install and operate a capture system, designed to achieve maximum reasonable capture, up to 85 percent by weight of VOC emitted, from all undertread cementing, tread end cementing and bead dipping operations. Maximum reasonable capture shall be consistent with the following documents:

IX.N.3.a.(1)(A) Industrial Ventilation, A Manual of Recommended Practices, l7th Edition, American Federation of Industrial Hygienists, 1982.

IX.N.3.a.(1)(B) Recommended Industrial Ventilation Guidelines, U.S. Department of Health, Education and Welfare, National Institute of Occupational Safety and Health, January 1976.

IX.N.3.a.(2) Install and operate a control device that meets the requirements of one of the following:

IX.N.3.a.(2)(A) A carbon adsorption system designed and operated in a manner such that there is at least a 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

IX.N.3.a.(2)(B) An incineration system that oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator to carbon dioxide and water.

IX.N.4. The owner or operator of a green tire spraying operation subject to this regulation must implement one of the following means of reducing volatile organic compound emissions:

IX.N.4.a. Substitute water-based sprays for the normal solvent-based mold release compound; or,

IX.N.4.a.(1) Install a capture system designed and operated in a manner that will capture and transfer at least 90.0 percent of the VOC emitted by the green tire spraying operation to a control device; and,

IX.N.4.a.(2) In addition to Part (i), install and operate a control device that meets the requirements of one of the following:

IX.N.4.a.(2)(A) a carbon adsorption system designed and operated in a manner such that there is at least 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

IX.N.4.a.(2)(B) an incineration system that oxidizes at least 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) to carbon dioxide and water.

IX.N.5. Testing of capture system efficiency shall meet the requirements of subsection IX.A.5.e.

IX.N.6. Control devices shall meet the applicable requirements, including recordkeeping, of subsections IX.A.3.a, b, c, and e, and IX.A.8.a and b.

IX.N.7. The applicable EPA reference methods I through 4, and 25, of 40 CFR Part 60, shall be used to determine the efficiency of control devices.

X. Use of Solvents for Degreasing and Cleaning

X.A. General Provisions

X.A.1. Applicability

The provisions of this section apply to cold cleaners, non-conveyorized vapor degreasers, and conveyorized degreasers. Open top vapor degreasers are a subset of non-conveyorized vapor degreasers. The owner or operator of a unit subject to this section shall ensure that no such unit is used unless the requirements of this section are satisfied.

X.A.2. Definitions

X.A.2.a. "Cold-cleaner" means a container of non-aqueous liquid solvent held below its boiling point which is designed, used, or intended for cleaning solid objects in a batch-loaded process. A "cold-cleaner" may have provisions for heating the solvent. It does not include vapor degreasers or continuously loaded conveyorized degreasers.

X.A.2.b. "Non-conveyorized vapor degreaser" means an apparatus which uses non-aqueous solvent vapors within some type of container to degrease or otherwise clean solid objects in a batch-loaded process. It excludes continuously loaded conveyorized degreasers.

X.A.2.c. "Conveyorized Degreaser" means an apparatus that performs degreasing or other cleaning functions through the use of non-aqueous liquid solvent and/or solvent vapors within a container, and which has a conveyor mechanism allowing continuous loading of items conveyed into and out of the solvent.

X.A.2.d. "Freeboard" in a vapor degreaser means the vertical distance from the top of the vapor zone (as established by normal operations within the specifications of the degreaser manufacturer) to the top of the degreaser.

For cold-cleaners "freeboard" means the vertical distance from the surface of the solvent liquid to the top of the degreaser.

If all sides are not even, the vertical distance to the top of the lowest side shall be used to make the determination of freeboard.

X.A.2.e. "Freeboard ratio" means the ratio of the freeboard to the width of the solvent surface.

X.A.2.f. "Solvent Metal Cleaning" means the process of cleaning soils from metal surfaces by cold-cleaning, conveyorized degreasing, or non-conveyorized vapor degreasing.

X.A.3. Transfer of waste solvent and used solvent

In any disposal or transfer of waste or used solvent, at least 80 percent by weight of the solvent/waste liquid shall be retained (i.e., no more than 20 percent of the liquid solvent/solute mixture shall evaporate or otherwise be lost during transfers).

X.A.4. Storage of waste solvent and used solvent

Waste or used solvent shall be stored in closed containers unless otherwise required by law.

X.A.5. Any control device shall meet the applicable requirements of subsections IX.A.3.a, b, c, e and IX.A.8 a and b.

X.B. Control of Solvent Cold-Cleaners

X.B.1. Control Equipment

X.B.1.a. Covers

X.B.1.a.(1) All cold-cleaners shall have a properly fitting cover.

X.B.1.a.(2) Covers shall be designed to be easily operable with one hand under any of the following conditions:

X.B.1.a.(2)(A) Solvent true vapor pressure is greater than 15 torr (0.3 psia) at 38°C (100°F).

X.B.1.a.(2)(B) The solvent is agitated by an agitating mechanism.

X.B.1.a.(2)(C) The solvent is heated.

X.B.1.b. Drainage Facility

X.B.1.b.(1) All cold-cleaners shall have a drainage facility that captures the drained liquid solvent from the cleaned parts.

X.B.1.b.(2) For cold-cleaners using solvent which has a vapor pressure greater than 32 torr (0.62 psia) measured at 38°C (100°F) either:

X.B.1.b.(2)(A) There shall be an internal drainage facility within the confines of the cold-cleaner, so that parts are enclosed under the (closed) cover to drain after cleaning, or if such a facility will not fit within;

X.B.1.b.(2)(B) An enclosed, external drainage facility that captures the drained solvent liquid from the cleaned parts.

X.B.1.c. A permanent, clearly visible sign shall be mounted on or next to the cold-cleaner. The sign shall list the operating requirements.

X.B.1.d. Solvent spray apparatus shall not have a splashing, fine atomizing, or shower type action but rather should produce a solid, cohesive stream. Solvent spray shall be used at a pressure that does not cause excessive splashing.

For solvents with a true vapor pressure above 32 torr (0.62 psia) at 38°C (100°F), or, for solvents heated above 50°C (120°F), one of the following techniques shall be used:

X.B.1.d.(1) a freeboard ratio greater than or equal to 0.7.

X.B.1.d.(2) a water or a non-volatile liquid cover. The cover liquid shall not be soluble in the solvent and shall not be more dense than the solvent and the depth of the cover liquid shall be sufficient to prevent the escape of solvent vapors.

X.B.2. Operating requirements

X.B.2.a. The cold-cleaner cover shall be closed whenever parts are not being handled within the cleaner confines.

X.B.2.b. Cleaned parts shall be drained for at least 15 seconds and/or until dripping ceases. Any pools of solvent shall be tipped out on the clean part back into the tank.

X.C. Control of Non-Conveyorized Vapor Degreasers

X.C.1. Control Equipment

X.C.1.a. The non-conveyorized vapor degreaser shall have a cover which shall be designed and operated so that it can be easily opened and closed through the use of mechanical assists such as spring loading, counterweights, etc.; opening and closing the cover shall not disturb the vapor zone.

X.C.1.b. Safety Switches

The following two types of switches shall be installed on vapor degreasers:

X.C.1.b.(1) Condenser flow switch and thermostat - (shuts off sump heat if the condenser coolant is either not circulating or is too warm); and

X.C.1.b.(2) Spray safety switch - (shuts off spray pump if the vapor level drops more than four (4) inches).

X.C.1.c. Control Device

X.C.1.c.(1) For non-conveyorized vapor degreasers with an open area (with the cover open) of one square meter (10.8 ft_2) or less, either the freeboard ratio shall be greater than or equal to 0.75, or one of the control devices in (ii) below shall be used.

X.C.1.c.(2) For non-conveyorized vapor degreasers with an open area (with the cover open) greater than one (1) square meter, (10.8 ft_2), at least one of the following control systems shall be used:

X.C.1.c.(2)(A) Both a powered cover and a freeboard ratio greater than or equal to 0.75.

X.C.1.c.(2)(B) A refrigerated chiller with a cooling capacity equivalent to or greater than the applicable specifications in Appendix ~~C~~ED.

X.C.1.c.(2)(C) An enclosed design: A system where the cover(s) or door(s) opens only when a dry part is entering or exiting the degreaser.

X.C.1.c.(2)(D) A carbon adsorption system with ventilation greater than or equal to 15 cubic meters each minute per square meter (50 cfm/ft_2) of air/vapor area (when the cover(s) is [are] open), exhausting less than 25 parts per million (by volume) of solvent averaged over one complete adsorption cycle.

X.C.1.d. A permanent, clearly visible sign shall be mounted on or next to the degreaser. The sign shall list the operating requirements.

X.C.2. Operating Requirements

X.C.2.a. Keep cover closed at all times except when processing work loads into or out of the degreaser.

X.C.2.b. The following operations shall be performed to minimize solvent carry-out:

X.C.2.b.(1) Rack parts to allow full drainage.

X.C.2.b.(2) Move parts as slowly as is practicable in and out of the degreaser. A maximum of one foot every five seconds by hand or a maximum of 5.5 cm/sec. (10.8ft/min) for a mechanically operated system.

X.C.2.b.(3) Allow the workload to clean in the vapor zone at least 30 seconds or until condensation ceases.

X.C.2.b.(4) Tip out any pools of solvent that remain on the cleaned parts before removal from the vapor zone.

X.C.2.b.(5) Allow parts to dry within the degreaser at least 15 seconds and/or until visually dry.

X.C.2.c. Solvents shall not be used to clean porous or absorbent materials; for example, cloth, leather, wood, rope, etc.

X.C.2.d. Work loads shall not occupy more than half of the degreaser's open top area.

X.C.2.e. Spraying shall not be done above the vapor level.

X.C.2.f. Solvent leaks shall be repaired immediately, or the degreaser shall be shut down.

X.C.2.g. Exhaust ventilation shall not exceed twenty (20) cubic meters per minute per square meter (65.6 cfm per sq. ft.) of degreaser open area, unless greater exhaust rates are necessary to meet Occupational and Safety Health Act requirements. Ventilation fans shall not be used near the degreaser opening, unless necessary to meet Occupational and Safety Health Act requirements.

X.C.2.h. The water separator shall function so that no visible water is present in the solvent exiting the separator.

X.D. Control of Conveyorized Degreasers

X.D.1. Control Equipment

X.D.1.a. Control Device

For all conveyorized degreasers with a solvent surface area greater than two (2) square meters (21.5 square feet), the degreasing shall be controlled by at least one of the following:

X.D.1.a.(1) Carbon adsorption system, with ventilation greater or equal to 15 cubic meters per minute per square meter (49.2 cf/m ft_2) of air/vapor interface for vapor degreasers (of air/liquid interface for non-vapor types) when down-time covers are open, and exhausting less than 25 parts per million of solvent (by volume) averaged over a complete adsorption cycle.

X.D.1.a.(2) For vapor degreasers only: a refrigerated chiller with a cooling capacity equivalent to or greater than the applicable specifications in Appendix ~~C~~D.

X.D.1.b. Prevention of Carry-out

A drying tunnel, tumbling basket(s), or other demonstrably effective method(s) shall be employed to prevent cleaned parts from carrying out solvent liquid or vapor.

X.D.1.c. Safety Switches

X.D.1.c.(1) The following two (2) switch-circuits (or equivalent) shall be installed.

X.D.1.c.(1)(A) A spray safety switch shall shut off the spray pump and/or the conveyor if the vapor level drops more than four (4) inches.

X.D.1.c.(1)(B) A vapor level control thermostat shall shut off sump heat when the vapor level rises too high.

X.D.1.c.(2) All conveyorized degreasers shall have a condenser thermostat and flow-detector switch (or equivalent) which shuts off sump heat if coolant is too warm or is not circulating.

X.D.1.d. Minimized Openings: Degreaser entrance and exit openings shall silhouette work loads so that the average clearance between parts (or parts-and the edge of the degreaser opening) is either:

X.D.1.d.(1) less than 10 centimeters (4 inches) or;

X.D.1.d.(2) less than 10 percent of the width of the opening

X.D.1.e. Covers shall be provided to close off all the entrance(s) and exit(s) when the conveyor is not in use.

X.D.1.f. A permanent, clearly visible sign shall be mounted on or next to the degreaser. The sign shall list the operating requirements.

X.D.2. Operating Requirements

X.D.2.a. Exhaust ventilation shall not exceed 20 m^3/minute per square meter of degreaser opening (65.6 cf/m per square foot), unless necessary to meet OSHA requirements. Work place fans shall not be located near, nor directed at degreaser openings, unless necessary to meet OSHA requirements. Exhaust flow shall be measured by EPA reference methods 1 and 2 of 40 CFR Part 60.

X.D.2.b. Carry-out emissions shall be minimized by:

X.D.2.b.(1) Racking parts in such a manner to achieve best drainage.

X.D.2.b.(2) Maintaining the vertical component of conveyor speed at less than 3.3 meters per minute (10.8 feet per minute).

X.D.2.c. Repair solvent leaks immediately, or shut down the degreaser.

X.D.2.d. The water separator shall function with an efficiency sufficient to prevent water from being visible in the solvent exiting the separator.

X.D.2.e. Down-time cover(s) shall be placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shut down. Covers shall be retained in position until immediately before start-up.

XI. Use of Cutback Asphalt

XI.A. Definitions

XI.A.1. Asphalt or Asphalt Cement: The dark-brown to black cementatious material (solid, semi-solid, or liquid in consistency) of which the main constituents are bitumens which occur naturally or as a residue of petroleum refining.

XI.A.2. Emulsified Asphalt: Asphalt emulsions produced by combining asphalt and water with emulsifying agent.

XI.A.3. Cutback Asphalt or Cutback Asphalt Cement: Any asphalt which has been liquified by blending with a VOC, such as a petroleum solvent diluent or, in the case of some slow cure asphalts (Road Oils), which has been produced directly from the distillation of petroleum.

Emulsified Asphalt or any other coating or sealant, including but not limited to those produced from petroleum or coal, which contain more than five (5) percent of oil distillate as determined by ASTM Method D-244 is included in this definition.

XI.A.4. Penetrating Prime Coat: An application of low-viscosity liquid asphalt to an absorbent surface in order to prepare it for overlaying with a layer or layers of asphalt cement or asphalt emulsion and mineral aggregate paving materials.

XI.A.5. Asphalt Concrete: A waterproof and durable paving material composed of dried aggregate which is evenly coated with hot asphalt cement.

XI.B. Limitations

XI.B.1. Applicability

The provisions of this Section XI. apply to the use and storage of cutback asphalt for the paving and maintenance of all public roadways (including alleys), private roadways, parking lots, and driveways only within ozone non-attainment areas.

XI.B.2. Storage

Stockpiles of aggregate mixed with cutback asphalt are permitted October 1 through February 28 (29). Such storage is not permitted March 1 through September 30 except where it can be demonstrated to the Division that such storage is necessary.

XI.B.3. Use

Cutback asphalt may be used for any paving purpose October 1 through February 28 (29). No person shall use cutback asphalt or any coating included in the definition of cutback asphalt in Subsection IX.A.3. March 1 through September 30 except as provided below:

XI.B.3.a. If used solely as a penetrating prime coat, or

XI.B.3.b. If the user can demonstrate to the Division that under the conditions of its intended use, there will be no emissions of volatile organic compounds to the ambient air.

XI.C. Recordkeeping

During the months of March through September, the person responsible for the use or storage of any cutback asphalt as permitted in subparagraph 3.a. and b. and paragraph 2. shall keep records of same, including type and amount of solvent(s) used.

XII. VOLATILE ORGANIC COMPOUND EMISSIONS FROM OIL AND GAS OPERATIONS

XII.A. APPLICABILITY

~~Emission reductions at oil and gas exploration and production operations, natural gas compressor stations and natural gas drip stations.~~

XII.A.1 Except as provided in ~~section~~ SECTION XII.A.2. THROUGH 4., XII.~~A.8~~D.1.A., AND XII.D.2.A.(I)~~AND~~ ~~[]~~ ~~AND XII.A.2. THROUGH 4.~~, this ~~section~~ SECTION XII.A. applies to oil and gas exploration and production operations, natural gas compressor stations and natural gas drip stations:

XII.A.1.a that collect, store, or handle condensate in ~~the 8-hour~~AN ~~Ozone~~ OZONE ~~Control~~ NON-ATTAINMENT OR ATTAINMENT ~~/~~MAINTENANCE ~~Area~~AREA,

XII.A.1.b. that are located upstream of a natural gas plant, and

XII.A.1.c. for which ~~the owner or operator filed, or was required to file, an APEN pursuant to Regulation No. 3~~UNCONTROLLED ACTUAL ~~VOC~~VOLATILE ORGANIC COMPOUND EMISSIONS FROM THE ATMOSPHERIC CONDENSATE STORAGE TANKS ARE EQUAL TO OR GREATER THAN TWO TONS PER YEAR, WITH THE FOLLOWING EXCEPTIONS.

XII.A.1.C.(I) ~~THAT V~~VOLATILE ORGANIC COMPOUNDS EMITTED DURING THE FIRST 90 DAYS FROM THE DATE OF FIRST PRODUCTION OF THE NEWLY DRILLED, RE-COMPLETED, RE-FRACTURED OR OTHERWISE STIMULATED WELL FOR NEW AND MODIFIED CONDENSATE STORAGE TANKS AS DEFINED IN SECTION XII.B. SHALL BE EQUIPPED WITH A CONTROL DEVICE PURSUANT TO SECTIONS XII.D., AND

COMPLY WITH MONITORING RECORDKEEPING AND REPORTING REQUIREMENTS PURSUANT TO SECTIONS XII.C., XII.F. AND XII.E.; AND.

XII.A.1.C.(II) ALL DEHYDRATORS REGARDLESS OF UNCONTROLLED ACTUAL EMISSIONS ARE SUBJECT TO XII.H.

XII.A.2. OIL REFINERIES ARE NOT SUBJECT TO THIS sSECTION XIIOF THE RULE.

XII.A.3. GAS-PROCESSING PLANTS LOCATED IN AN OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA ARE ONLY SUBJECT TO SECTIONS XII.B., XII.G., AND XII.H., AND XVI.

XII.A.4. GLYCOL NATURAL GAS DEHYDRATORS LOCATED AT AN OIL AND GAS EXPLORATION AND PRODUCTION OPERATION, NATURAL GAS COMPRESSOR STATION, DRIP STATION OR GAS PROCESSING PLANT IN AN OZONE NON-ATTAINMENT OR ATTAINMENT /MAINTENANCE AREA ARE ONLY SUBJECT TO SECTION XII.B. AND XII.H.

XII.B. DEFINITIONS SPECIFIC TO SECTION XII.

XII.B.1. AFFECTED OPERATIONS MEANS OIL AND GAS EXPLORATION AND PRODUCTION OPERATIONS, NATURAL GAS COMPRESSOR STATIONS AND NATURAL GAS DRIP STATIONS TO WHICH THIS SECTION XII APPLIES PURSUANT TO SECTION XII.A.1.

XII.B.2. -AIR POLLUTION CONTROL EQUIPMENT, AS USED IN THIS SECTION XII, MEANS A COMBUSTION DEVICE OR VAPOR RECOVERY UNIT. AIR POLLUTION CONTROL EQUIPMENT ALSO MEANS ALTERNATIVE EMISSIONS CONTROL EQUIPMENT, AND POLLUTION PREVENTION DEVICES AND PROCESSES THAT COMPLY WITH THE REQUIREMENTS OF SECTION XII.D.2.A.(II) THAT ARE APPROVED BY THE DIVISION.

XII.B.3. -ATMOSPHERIC STORAGE TANKS OR ATMOSPHERIC CONDENSATE STORAGE TANKS MEANS A TYPE OF CONDENSATE STORAGE TANK THAT VENTS, OR IS DESIGNED TO VENT, TO THE ATMOSPHERE.

XII.B.4. -AUTO-IGNITER MEANS A DEVICE WHICH WILL AUTOMATICALLY ATTEMPT TO RELIGHT THE PILOT FLAME IN THE COMBUSTION CHAMBER OF A CONTROL DEVICE IN ORDER TO COMBUST VOCVOLATILE ORGANIC COMPOUND EMISSIONS.

XII.B.5. -CONDENSATE STORAGE TANK SHALL MEAN ANY TANK OR SERIES OF TANKS THAT STORE CONDENSATE AND ARE EITHER MANIFOLDED TOGETHER OR ARE LOCATED AT THE SAME WELL PAD.

XII.B.6. -ELECTRONIC SURVEILLANCE SYSTEM MEANS A MONITORING SYSTEM WHICH CONTINUOUSLY MONITORS PILOT FLAME PRESENCE IN A COMBUSTION DEVICE. THE MONITORING SYSTEM SHALL RECORD TIMES AND DURATIONS OF ALL PERIODS WHERE A PILOT FLAME IS NOT DETECTED.

XII.B.7. EMISSION THRESHOLD, WHEN USED TO REFER TO EMISSIONS AND EMISSION REDUCTIONS IN SECTION XII.D.2.B., SHALL MEAN EMISSIONS AND EMISSION REDUCTIONS FROM EACH INDIVIDUAL ATMOSPHERIC CONDENSATE STORAGE TANK AT AFFECTED OPERATIONS WITHIN AN OZONE NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA FOR WHICH UNCONTROLLED ACTUAL VOLATILE ORGANIC COMPOUND EMISSIONS ARE EQUAL TO OR GREATER THAN TWO TONS PER YEAR.

XII.B.78. -EXISTING SHALL MEAN ANY CONDENSATE TANK THAT BEGAN OPERATION BEFORE FEBRUARY 1, 2009, AND HAS NOT SINCE BEEN MODIFIED.

XII.B.~~8~~9. -GLYCOL NATURAL GAS DEHYDRATOR MEANS ANY DEVICE IN WHICH A LIQUID GLYCOL (INCLUDING, ETHYLENE GLYCOL, DIETHYLENE GLYCOL, OR TRIETHYLENE GLYCOL) ABSORBENT DIRECTLY CONTACTS A NATURAL GAS STREAM AND ABSORBS WATER.

XII.B.~~9~~10. -NEW SHALL MEAN ANY CONDENSATE TANK THAT BEGAN OPERATION ON OR AFTER FEBRUARY 1, 2009.

XII.B.1~~0~~1. -MODIFIED OR MODIFICATION SHALL MEAN ANY PHYSICAL CHANGE OR CHANGE IN OPERATION THAT RESULTS IN AN INCREASE IN ACTUAL UNCONTROLLED VOC EMISSIONS FROM THE PREVIOUS CALENDAR YEAR THAT OCCURS ON OR AFTER FEBRUARY 1, 2009. FOR CONDENSATE TANKS, A PHYSICAL CHANGE OR CHANGE IN OPERATION INCLUDES DRILLING NEW WELLS AND RE-COMPLETING, RE-FRACTURING OR OTHERWISE STIMULATING EXISTING WELLS.

XII.B.1~~1~~2. -STABILIZED, WHEN USED TO REFER TO STORED CONDENSATE, MEANS THAT THE CONDENSATE HAS REACHED SUBSTANTIAL EQUILIBRIUM WITH THE ATMOSPHERE AND THAT ANY EMISSIONS THAT OCCUR ARE THOSE COMMONLY REFERRED TO WITHIN THE INDUSTRY AS "WORKING AND BREATHING LOSSES.

XII.B.1~~2~~3. -SYSTEM-WIDE, WHEN USED TO REFER TO EMISSIONS AND EMISSION REDUCTIONS IN ~~THIS~~ SECTION XII.D.2.A., SHALL MEAN COLLECTIVE EMISSIONS AND EMISSION REDUCTIONS FROM ALL ATMOSPHERIC CONDENSATE STORAGE TANKS AT AFFECTED OPERATIONS WITHIN AN OZONE NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA FOR WHICH UNCONTROLLED ACTUAL ~~VOC~~VOLATILE ORGANIC COMPOUND EMISSIONS ~~FROM THE ATMOSPHERIC CONDENSATE STORAGE TANKS~~ ARE EQUAL TO OR GREATER THAN TWO TONS PER YEAR.

XII.C. GENERAL PROVISIONS TO SECTION XII.

XII.C. GENERAL REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT – PREVENTION OF LEAKAGE

XII.C.1.A. ALL AIR POLLUTION CONTROL EQUIPMENT REQUIRED BY THIS SECTION XII SHALL BE OPERATED AND MAINTAINED CONSISTENT WITH MANUFACTURER SPECIFICATIONS AND GOOD ENGINEERING AND MAINTENANCE PRACTICES. THE OWNER OR OPERATOR SHALL KEEP MANUFACTURER SPECIFICATIONS ON FILE. IN ADDITION, ALL SUCH AIR POLLUTION CONTROL EQUIPMENT SHALL BE ADEQUATELY DESIGNED AND SIZED TO ACHIEVE THE CONTROL EFFICIENCY RATES REQUIRED BY THIS SECTION XII AND TO HANDLE REASONABLY FORESEEABLE FLUCTUATIONS IN EMISSIONS OF VOLATILE ORGANIC COMPOUNDS. FLUCTUATIONS IN EMISSIONS THAT OCCUR WHEN THE SEPARATOR DUMPS INTO THE TANK ARE REASONABLY FORESEEABLE.

XII.C.1.B. ALL CONDENSATE COLLECTION, STORAGE, PROCESSING AND HANDLING OPERATIONS, REGARDLESS OF SIZE, SHALL BE DESIGNED, OPERATED AND MAINTAINED SO AS TO MINIMIZE LEAKAGE OF VOLATILE ORGANIC COMPOUNDS TO THE ATMOSPHERE TO THE MAXIMUM EXTENT PRACTICABLE.

XII.C.1.C. IF A COMBUSTION DEVICE IS USED TO CONTROL EMISSIONS OF VOLATILE ORGANIC COMPOUNDS TO COMPLY WITH SECTION XII~~,~~.D. IT SHALL BE ENCLOSED, HAVE NO VISIBLE EMISSIONS, AND BE DESIGNED SO THAT AN OBSERVER CAN, BY MEANS OF VISUAL OBSERVATION FROM THE OUTSIDE OF THE ENCLOSED COMBUSTION DEVICE, OR BY OTHER ~~CONVENIENT~~ MEANS~~, SUCH AS A CONTINUOUS MONITORING DEVICE (WHICH INCLUDES AUTO-IGNITORIGNITERS AND CONTINUOUS ELECTRONIC SURVEILLANCE SYSTEMS),~~ APPROVED BY THE DIVISION, DETERMINE WHETHER IT IS OPERATING PROPERLY. ADDITIONALLY, ALL COMBUSTION DEVICES USED TO CONTROL EMISSIONS OF VOLATILE ORGANIC COMPOUNDS TO COMPLY WITH SECTION XII.D. SHALL BE

EQUIPPED WITH AND OPERATE AN AUTO-IGNITER AND ELECTRONIC SURVEILLANCE SYSTEM AS FOLLOWS:

XII.C.1.C.(I) FOR ALL NEW AND MODIFIED CONDENSATE STORAGE TANKS CONTROLLED BY A COMBUSTION DEVICE, AUTO-IGNITERS SHALL BE INSTALLED AND OPERATIONAL, BEGINNING THE DATE OF FIRST PRODUCTION AFTER BEING NEWLY DRILLED, RE-COMPLETED, RE-FRACTURED OR OTHERWISE STIMULATED WELL. ELECTRONIC SURVEILLANCE SYSTEMS SHALL BE INSTALLED AND OPERATIONAL BEGINNING 180 DAYS FROM THE DATE OF FIRST PRODUCTION OF THE NEWLY DRILLED, RE-COMPLETED, RE-FRACTURED OR OTHERWISE STIMULATED WELL, IF UNCONTROLLED ACTUAL EMISSIONS PROJECTED FOR THE FIRST TWELVE MONTHS BASED ON DATA FROM THE FIRST 90 DAYS OF OPERATION FROM THE CONDENSATE STORAGE TANK WILL BE ~~LESS~~MORE THAN TWO TONS PER YEAR OF VOLATILE ORGANIC COMPOUNDS.

XII.C.1.C.(II) FOR ALL EXISTING CONDENSATE STORAGE TANKS CONTROLLED BY A COMBUSTION DEVICE IN ORDER TO COMPLY WITH THE EMISSIONS CONTROL REQUIREMENTS OF SECTIONS XII.D.2., AUTO-IGNITERS AND ELECTRONIC SURVEILLANCE SYSTEMS SHALL BE INSTALLED AND OPERATIONAL BEGINNING MAY 1, 2009 OR WITHIN 180 DAYS FROM FIRST HAVING INSTALLED THE COMBUSTION DEVICE, WHICHEVER DATE COMES FIRST.

XII.C.2. ~~-~~THE EMISSION ESTIMATES AND EMISSION REDUCTIONS REQUIRED BY THIS SECTION XII.D. SHALL BE DEMONSTRATED USING ONE OF THE FOLLOWING EMISSION FACTORS:

XII.C.2.A. ~~-~~FOR ATMOSPHERIC STORAGE TANKS AT OIL AND GAS EXPLORATION AND PRODUCTION OPERATIONS, THE SOURCE SHALL USE A DEFAULT UNCONTROLLED VOLATILE ORGANIC COMPOUND EMISSION FACTOR ~~OF 13.7~~ESTABLISHED BY THE DIVISION FOR THE NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA ~~POUNDS OF VOLATILE ORGANIC COMPOUNDS PER BARREL OF CONDENSATE SHALL BE USED~~ UNLESS A MORE SPECIFIC EMISSION FACTOR HAS BEEN ESTABLISHED PURSUANT TO SECTION XII.C.2.B.(II).~~, OR THE DIVISION HAS NOT ESTABLISHED A DEFAULT VOLATILE ORGANIC COMPOUND EMISSION FACTOR~~ IF NO DEFAULT EMISSION FACTOR HAS BEEN ESTABLISHED BY THE DIVISION, OR IF THE DIVISION DEEMS IT OTHERWISE NECESSARY, ~~T~~THE DIVISION MAY REQUIRE A MORE SPECIFIC EMISSION FACTOR THAT COMPLIES WITH SECTION XII.C.2.B.(I) AND (II).

XII.C.2.B. ~~-~~FOR ATMOSPHERIC CONDENSATE STORAGE TANKS AT NATURAL GAS COMPRESSOR STATIONS AND NATURAL GAS DRIP STATIONS, AND GAS-CONDENSATE-GLYCOL SEPARATORS, THE SOURCE SHALL USE A VOLATILE ORGANIC COMPOUND SPECIFIC EMISSION FACTOR ESTABLISHED PURSUANT TO THIS SECTION XII.C.2.B.(I) OR (II).~~ SHALL BE USED~~. ~~A VOLATILE ORGANIC COMPOUND SPECIFIC EMISSION FACTOR DEVELOPED PURSUANT TO SECTION XII.C.2.B.(II) MAY ALSO BE USED FOR ATMOSPHERIC STORAGE TANKS AT OIL AND GAS EXPLORATION AND PRODUCTION OPERATIONS AND MAY BE REQUIRED TO BE DEVELOPED BY THE DIVISION., O~~ONCE ~~ESTABLISHED, OR REQUIRED BY THE DIVISION, THAT VOLATILE ORGANIC COMPOUND SPECIFIC EMISSION FACTOR SHALL BE USED FOR SUCH OPERATIONS.~~

XII.C.2.B.(I) ~~-~~FOR ATMOSPHERIC STORAGE TANKS AT NATURAL GAS COMPRESSOR STATIONS AND NATURAL GAS DRIP STATIONS, AND GAS-CONDENSATE-GLYCOL SEPARATORS A SOURCE MAY USE A SPECIFIC EMISSIONS FACTOR THAT WAS USED FOR REPORTING EMISSIONS FROM THE SOURCE ON APENS FILED ON OR BEFORE FEBRUARY 28, 2003. THE DIVISION MAY, HOWEVER, REQUIRE THE SOURCE TO DEVELOP AND USE A MORE RECENT SPECIFIC EMISSION FACTOR PURSUANT TO SECTION XII.C.2.B.(II), IF SUCH ~~A MORE RECENT~~ EMISSION FACTOR WOULD BE MORE RELIABLE OR ACCURATE.

XII.C.2.B.(II) -EXCEPT AS OTHERWISE PROVIDED IN XII.C.2.B.(I) A VOLATILE ORGANIC COMPOUND-SPECIFIC EMISSIONS FACTOR SHALL BE ONE FOR WHICH THE DIVISION HAS NO OBJECTION, AND WHICH IS BASED ON COLLECTION AND ANALYSIS OF A REPRESENTATIVE SAMPLE OF CONDENSATE PURSUANT TO A TEST METHOD APPROVED BY THE DIVISION AND EPA. THE DIVISION SHALL CONSULT WITH AND PROVIDE EPA 30 DAYS IN WHICH TO COMMENT ON THE TEST METHOD. EPA SHALL BE DEEMED TO HAVE APPROVED THE TEST METHOD FOR PURPOSES OF THIS SECTION XII.C.2.B. IF IT DOES NOT OBJECT DURING SUCH 30-DAY PERIOD.

XII.D. EMISSION CONTROLS

~~XII.A.2.~~ The owners and operators of affected operations shall employ air pollution control equipment to reduce emissions of volatile organic compounds from atmospheric CONDENSATE storage tanks associated with affected operations by the dates and amounts listed below. Emission reductions shall ~~not~~ be required for each NEW, MODIFIED AND EXISTING ATMOSPHERIC CONDENSATE STORAGE TANK ~~and every unit, but instead shall be based on overall reductions in uncontrolled actual emissions from all the atmospheric storage tanks associated with the affected operations for which the owner or operator filed, or was required to file, an APEN pursuant to Regulation No. 3. The dates and requisite reductions are~~ as follows:

XII.D.1. NEW AND MODIFIED CONDENSATE TANKS

XII.D.1.A. BEGINNING~~,~~ FEBRUARY 1, 2009, OWNERS OR OPERATORS OF ANY ATMOSPHERIC CONDENSATE STORAGE TANK AT EXPLORATION AND PRODUCTION SITES SERVING WELLS THAT ARE DRILLED, RE-COMPLETED, RE-FRACTURED OR OTHERWISE STIMULATED AFTER FEBRUARY 1, 2009, SHALL COLLECT AND CONTROL EMISSIONS ~~ROUTE EMISSIONS TO, AND OPERATE, AIR POLLUTION CONTROL EQUIPMENT~~ PURSUANT TO SECTION XII.C. THE AIR POLLUTION CONTROL EQUIPMENT SHALL HAVE A CONTROL EFFICIENCY OF AT LEAST 95%, AND SHALL CONTROL VOLATILE ORGANIC COMPOUNDS ~~ON SUCH TANKS~~ DURING THE FIRST 90 CALENDAR DAYS AFTER THE DATE OF FIRST PRODUCTION OF THE NEWLY DRILLED, RE-COMPLETED, RE-FRACTURED OR OTHERWISE STIMULATED WELL. ~~AFTER THIS 90-DAY PERIOD, T~~THE AIR POLLUTION CONTROL EQUIPMENT AND ASSOCIATED MONITORING EQUIP~~L~~MENT MAY BE REMOVED AFTER THE FIRST 90 DAYS IF THE FOLLOWING CONDITIONS ARE MET:

XII.D.1.A.(I) PROJECTED UNCONTROLLED ACTUAL EMISSIONS ~~PROJECTED~~ (BASED ON INFORMATION FROM THE FIRST 90 CALENDAR DAYS AFTER THE DATE OF FIRST PRODUCTION OF THE NEWLY DRILLED, RE-COMPLETED, RE-FRACTURED OR OTHERWISE STIMULATED WELL) FOR THE FIRST TWELVE MONTHS OF OPERATION ~~BASED ON DATA FROM THE FIRST 90 DAYS OF OPERATION FROM THE CONDENSATE STORAGE TANK~~ WILL BE LESS THAN TWO TONS PER YEAR OF ~~VOC~~VOLATILE ORGANIC COMPOUNDS. ~~IF THE OWNER OR OPERATOR DETERMINES THAT EMISSIONS OF VOCVOLATILE ORGANIC COMPOUNDS WILL BE LESS THAN TWO TONS PER YEAR OF VOCVOLATILE ORGANIC COMPOUNDS,~~

XII.D.1.A.(II) ~~T~~THE OWNER OR OPERATOR SHALL NOTIFY THE DIVISION OF THIS DETERMINATION IN WRITING AND INCLUDE AN EXPLANATION OF THE METHODOLOGY USED TO MAKE THIS DETERMINATION.

XII.D.1.B. BEGINNING FEBRUARY 1, 2009, ALL NEW AND MODIFIED ATMOSPHERIC CONDENSATE STORAGE TANKS HAVING PROJECTED (BASED ON INFORMATION FROM THE FIRST 90 CALENDAR DAYS AFTER THE DATE OF FIRST PRODUCTION OF THE NEWLY DRILLED, RE-COMPLETED, RE-FRACTURED OR OTHERWISE STIMULATED WELL), OR ACTUAL UNCONTROLLED ANNUAL EMISSIONS EQUAL TO OR GREATER THAN TWO TONS PER YEAR

OF ~~VOC~~VOLATILE ORGANIC COMPOUNDS MUST CONTROL A MINIMUM OF 95% OF UNCONTROLLED ACTUAL EMISSIONS.

XII.D.2. EXISTING CONDENSATE TANKS

XII.D.2.A. SYSTEM-WIDE CONTROL STRATEGY (TO BE PHASED OUT AS OF MAY 1, 2010)

XII.D.2.A.(I) THE REQUIREMENTS OF SECTION XII.D.2.A. SHALL NOT APPLY TO ANY OWNER OR OPERATOR IN ANY CALENDAR YEAR IN WHICH ~~THE APENS FOR ALL OF THE~~ALL -ATMOSPHERIC CONDENSATE STORAGE TANKS EMITTING A COMBINED TOTAL OF ~~ACTUAL UNCONTROLLED VOLATILE ORGANIC COMPOUND EMISSIONS OF TWO TONS PER YEAR OR MORE AND ARE ASSOCIATED WITH THE AFFECTED OPERATIONS OWNED OR OPERATED BY SUCH PERSON REFLECT A TOTAL OF~~ LESS THAN 30 TONS PER YEAR OF ACTUAL UNCONTROLLED EMISSIONS OF ~~VOC~~VOLATILE ORGANIC COMPOUNDS IN AN OZONE ~~NON-ATTAINMENT AREA~~NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA. TO DETERMINE IF AN OWNER OR OPERATOR EXCEEDS THE 30 TONS PER YEAR THRESHOLD, EMISSIONS SHALL BE INCLUDED FROM ALL ATMOSPHERIC CONDENSATE STORAGE TANKS EMITTING ACTUAL UNCONTROLLED VOLATILE ORGANIC COMPOUND EMISSIONS OF TWO TONS PER YEAR OR MORE. SUCH REQUIREMENTS SHALL~~, HOWEVER,~~ APPLY ~~TO SUCH OWNER OR OPERATOR~~ IN ANY SUBSEQUENT CALENDAR YEAR IN WHICH THE ~~APENS FOR~~ ATMOSPHERIC CONDENSATE STORAGE TANKS EMITTING ACTUAL UNCONTROLLED VOLATILE ORGANIC COMPOUND EMISSIONS EXCEED~~OF TWO TONS PER YEAR OR MORE AND ARE ASSOCIATED WITH SUCH AFFECTED OPERATIONS REFLECT A TOTAL OF~~ 30 TONS PER YEAR OR MORE OF ACTUAL UNCONTROLLED EMISSIONS OF ~~VOC~~VOLATILE ORGANIC COMPOUNDS IN AN OZONE ~~NON-ATTAINMENT AREA~~NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA. THIS ~~30 TONS PER YEAR OF ACTUAL UNCONTROLLED EMISSIONS OF VOC~~VOLATILE ORGANIC COMPOUNDS IN AN OZONE ~~NON-ATTAINMENT AREA~~NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA EXEMPTION IS NO LONGER VALID BEGINNING MAY 1, 2010.

XII.D.2.A.(II) THE OWNERS AND OPERATORS OF AFFECTED OPERATIONS SHALL EMPLOY AIR POLLUTION CONTROL EQUIPMENT TO REDUCE EMISSIONS OF VOLATILE ORGANIC COMPOUNDS FROM ATMOSPHERIC CONDENSATE STORAGE TANKS BY THE DATES AND AMOUNTS LISTED BELOW. EMISSION REDUCTIONS SHALL NOT BE REQUIRED FOR EACH AND EVERY UNIT, BUT INSTEAD SHALL BE BASED ON OVERALL REDUCTIONS IN UNCONTROLLED ACTUAL EMISSIONS FROM ALL THE ATMOSPHERIC CONDENSATE STORAGE TANKS ASSOCIATED WITH THE AFFECTED OPERATIONS FOR WHICH UNCONTROLLED ACTUAL ~~VOC~~VOLATILE ORGANIC COMPOUND EMISSIONS ARE EQUAL TO OR GREATER THAN TWO TONS PER YEAR. THE DATES AND REQUISITE REDUCTIONS ARE AS FOLLOWS:

XII.A.2.a.(II)(A) For the period May 1 through September 30, 2005 such emissions shall be reduced by 37.5% from uncontrolled actual emissions on a daily basis;

~~XII.A.~~XII.D.2.~~b~~A.(II)(B) For the period of May 1 through September 30 of 2006, such emissions shall be reduced by 47.5% from uncontrolled actual emissions on a daily basis.

~~XII.A.~~XII.D.2.~~c~~A.(II)(C) For the period of May 1 through September 30 of ~~each year from~~ 2007 ~~through~~AND ~~2011~~2008, such emissions shall be reduced by 75% from uncontrolled actual emissions on a weekly basis.

XII.A.XII.D.2.dA.(II)(D) For the period of May 1 through September 30 of each year beginning with 2012, such emissions shall be reduced by 78% from uncontrolled actual emissions on a weekly basis.

XII.A.XII.D.2.e. A.(II)(E) Emission reductions achieved between January 1 and April 30, 2005 shall be averaged with emission reductions achieved between October 1 and December 31, 2005. For these two time periods, emissions shall be reduced by 30% from uncontrolled actual emissions and shall be calculated as an average of the emission reductions achieved during the seven months covered by the two periods.

XII.A.XII.D.2.f.A.(II)(D) Emission reductions achieved between January 1 and April 30, 2006 shall be averaged with emission reductions achieved between October 1 and December 31, 2006. Emissions shall be reduced by 38% from uncontrolled actual emissions, calculated as an average of the emission reduction achieved during the seven months covered by the two periods.

XII.A.XII.D.2.g.A.(II)(EF) For the period between January 1, 2007 and April 30, 2007, such emissions shall be reduced by 38% from uncontrolled actual emissions , For the period between October 1, 2007, and December 31, 2007, such emissions shall be reduced by 60% from uncontrolled actual emissions, calculated for each period as an average of the emission reduction achieved during the months covered by each period.

XII.D.2.-A.(II)(G) FOR THE PERIOD MAY 1 THROUGH SEPTEMBER 30, 2009, SUCH EMISSIONS SHALL BE REDUCED BY 80% FROM UNCONTROLLED ACTUAL EMISSIONS ON A CALENDAR WEEKLY BASIS.

XII.A.XII.D.-2.-A.(II)(FH)h.Beginning with BEGINNING JANUARY 1,For calendar years 2008 THROUGH MAY 1, 2010the year 2008, and each year thereafter, emission reductions achieved between January 1 and April 30 shall be averaged with emission reductions achieved between October 1 and December 31. Emissions shall be reduced by 70% from uncontrolled actual emissions, calculated as an average of the emission reduction achieved during the seven months covered by the two periods.

XII.D.2. A.(II)(G) FOR THE PERIOD MAY 1 THROUGH SEPTEMBER 30, 2009, SUCH EMISSIONS SHALL BE REDUCED BY 80% FROM UNCONTROLLED ACUTAL EMISSIONS ON A WEEKLY BASIS.

XII.D.2.A.(III) ALTERNATIVE EMISSIONS CONTROL EQUIPMENT AND POLLUTION PREVENTION DEVICES AND PROCESSES INSTALLED AND IMPLEMENTED AFTER JUNE 1, 2004, SHALL QUALIFY AS AIR POLLUTION CONTROL EQUIPMENT, AND MAY BE USED IN LIEU OF, OR IN COMBINATION WITH, COMBUSTION DEVICES AND/OR VAPOR RECOVERY UNITS TO ACHIEVE THE EMISSION REDUCTIONS REQUIRED BY THIS SECTION XII.D.2.A., IF THE FOLLOWING CONDITIONS ARE MET:

XII.D.2.A.(III)(A) THE OWNER OR OPERATOR OBTAINS A CONSTRUCTION PERMIT AUTHORIZING SUCH USE OF THE ALTERNATIVE EMISSIONS CONTROL EQUIPMENT OR POLLUTION PREVENTION DEVICE OR

PROCESS. THE PROPOSAL FOR SUCH EQUIPMENT, DEVICE OR PROCESS SHALL COMPLY WITH ALL REGULATORY PROVISIONS FOR CONSTRUCTION PERMIT APPLICATIONS AND SHALL INCLUDE THE FOLLOWING:

XII.D.2.A.(III)(A)(I) A DESCRIPTION OF THE EQUIPMENT, DEVICE OR PROCESS;

XII.D.2.A.(III)(A)(II) A DESCRIPTION OF WHERE, WHEN AND HOW THE EQUIPMENT, DEVICE OR PROCESS WILL BE USED;

XII.D.2.A.(III)(A)(III) SUPPORTING DOCUMENTATION ADEQUATE TO DEMONSTRATE CLAIMED CONTROL EFFICIENCY MEETS THE CURRENTLY REQUIRED CONTROL EFFICIENCY SPECIFIED IN SECTION XII.D.2.A.(II) ON A SYSTEM-WIDE BASIS, OR IF COMMENCE CONSTRUCTION DATE IS ON OR AFTER FEBRUARY 1, 2009, 95% CONTROL EFFICIENCY PER ATMOSPHERIC CONDENSATE STORAGE TANK;

XII.D.2.A.(III)(A)(IV) AN ADEQUATE METHOD FOR MEASURING ACTUAL CONTROL EFFICIENCY; AND

XII.D.2.A.(III)(A)(V) DESCRIPTION OF THE RECORDS AND REPORTS THAT WILL BE GENERATED TO ADEQUATELY TRACK EMISSION REDUCTIONS AND IMPLEMENTATION AND OPERATION OF THE EQUIPMENT, DEVICE OR PROCESS, AND A DESCRIPTION OF HOW SUCH MATTERS WILL BE REFLECTED IN THE SPREADSHEET AND ANNUAL REPORT REQUIRED BY SECTIONS XII.F.4 AND XII.F.5.

XII.D.2.A.(III)(B) PUBLIC NOTICE OF THE APPLICATION IS PROVIDED PURSUANT TO REGULATION NO. 3, PART B, SECTION III.C.4.

XII.D.2.A.(III)(C) EPA APPROVES THE PROPOSAL. THE DIVISION SHALL TRANSMIT A COPY OF THE PERMIT APPLICATION AND ANY OTHER MATERIALS PROVIDED BY THE APPLICANT, ALL PUBLIC COMMENTS, ALL DIVISION RESPONSES AND THE DIVISION'S PERMIT TO EPA REGION 8. IF EPA FAILS TO APPROVE OR DISAPPROVE THE PROPOSAL WITHIN 45 DAYS OF RECEIPT OF THESE MATERIALS, EPA SHALL BE DEEMED TO HAVE APPROVED THE PROPOSAL.

XII.D.2.B. EMISSION THRESHOLD CONTROL STRATEGY (PHASED IN BEGINNING MAY 1, 2010)

XII.D.2.B.(I) AS OF APRIL 30, 2010, EXISTING CONTROLLED TANKS EQUIPPED WITH CONTROLS IN ORDER TO COMPLY WITH THE SYSTEM-WIDE CONTROL REQUIREMENTS OF SECTION XII.D.2.A. ~~AS OF APRIL 30, 2010~~, SHALL CONTINUE TO OPERATE SUCH CONTROLS AND BECOME SUBJECT TO THIS EMISSION THRESHOLD CONTROL STRATEGY, SUBJECT TO 95% CONTROL EFFICIENCY REQUIREMENTS PER TANK BASED ON A ROLLING TWELVE-MONTH TOTAL BASIS, AND ASSOCIATED MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS OF SECTIONS XII.E. AND F.

XII.D.2.B.(II) ~~FOR~~ E~~E~~XISTING UNCONTROLLED TANKS HAVING ACTUAL EMISSIONS EQUAL TO OR GREATER THAN 10 TONS PER YEAR, ON A ROLLING TWELVE-MONTH TOTAL BASIS~~,~~ ~~SUCH EMISSIONS~~ SHALL ~~BE~~ REDUCE~~D~~ VOLATILE ORGANIC

COMPOUND EMISSIONS BY 95% FROM UNCONTROLLED ACTUAL EMISSIONS BY MAY 1, 2010.

XII.D.2.B.(III) FOR EXISTING UNCONTROLLED TANKS HAVING ACTUAL EMISSIONS EQUAL TO OR GREATER THAN 5 TONS PER YEAR, ON A ROLLING TWELVE-MONTH TOTAL BASIS, SHALL ,REDUCE VOLATILE ORGANIC COMPOUND EMISSIONSBY 95% FROM UNCONTROLLED ACTUAL EMISSIONS BY MAY 1, 2011.

XII.D.2.B.(IV) FOR EXISTING UNCONTROLLED TANKS HAVING ACTUAL EMISSIONS EQUAL TO OR GREATER THAN 2 TONS PER YEAR, ON A ROLLING TWELVE-MONTH TOTAL BASIS, , SHALL , REDUCE VOLATILE ORGANIC COMPOUND EMISSIONS BY 95% FROM UNCONTROLLED ACTUAL EMISSIONS BY MAY 1, 2012.

~~XII.D.3. EACH COMBUSTION DEVICE AND VAPOR RECOVERY UNIT USED TO COMPLY WITH SECTION XII.D. SHALL HAVE A CONTROL EFFICIENCY OF AT LEAST 95% FOR VOCS.~~

XII.~~A.3~~E. –Monitoring

~~:~~ The owner or operator of any condensate storage tank that is being controlled pursuant to ~~this~~ Section XII.D. shall inspect or monitor the Air Pollution Control Equipment at least weekly to ensure that it is operating PROPERLY. ~~The inspection shall include the following:~~

XII.E.1. TANKS CONTROLLED BY AN AIR POLLUTION CONTROL DEVICE OTHER THAN A COMBUSTION DEVICE SHALL FOLLOW MANUFACTURER'S RECOMMENDED MAINTENANCE OF WHICH THE AIR POLLUTION CONTROL DEVICE SHALL BE PERIODICALLY INSPECTED TO ENSURE PROPER MAINTENANCE ACCORDING TO THE DIVISION-APPROVED OPERATION AND MAINTENANCE PLAN.

XII.E.2. NEW AND MODIFIED TANKS ~~SUBJECT TO SECTION XII.D.1.A.~~ CONTROLLED BY A COMBUSTION DEVICE ~~IGNITORIGNITERAND, IF UNCONTROLLED ACTUAL EMISSIONS PROJECTED FOR THE FIRST TWELVE MONTHS BASED ON DATA FROM THE FIRST 90 DAYS OF OPERATION FROM THE CONDENSATE STORAGE TANK WILL BE TWO TONS PER YEAR OF VOLATILE ORGANIC COMPOUNDS OR GREATER, HAVE AN ELECTRONIC SURVEILLANCE SYSTEM INSTALLED AND OPERATIONAL WITHIN 180 DAYS FROM STARTUP. NEW AND MODIFIED TANKS~~ SHALL BE INSPECTED ON A ~~CALENDAR~~ WEEKLY BASIS AS FOLLOWS:

XII.E.2.A. ~~AND~~ THE OWNER OR OPERATOR SHALL ~~C~~C~~C~~HECK AND DOCUMENT THAT THE AUTO-IGNITER IS PROPERLY FUNCTIONING BY EITHER VISIBLE OBSERVATION OR OTHER MEANS APPROVED BY THE DIVISION AND CHECK AND DOCUMENT THAT THE VALVES FOR PIPING OF GAS TO THE PILOT LIGHT ARE OPEN; AND

XII.E.2.B. THE OWNER OR OPERATOR SHALL C~~C~~HECK AND DOCUMENT THAT THE CONTINUOUS ELECTRONIC SURVEILLANCE SYSTEM IS PROPERLY FUNCTIONING.~~.~~

XII.E.3. THE OWNER OR OPERATOR ~~T~~OF TANKS SUBJECT TO THE SYSTEM-WIDE CONTROL STRATEGY UNDER SECTION XII.D.2.A. THAT HAVE INSTALLED COMBUSTION DEVICES SHALL CHECK FOR AND DOCUMENT ON A WEEKLY BASIS THAT THE PILOT LIGHT IS LIT BY EITHER VISIBLE OBSERVATION OR OTHER MEANS APPROVED BY THE DIVISION AND CHECK FOR AND DOCUMENT THAT THE VALVES FOR PIPING OF GAS TO THE PILOT LIGHT ARE OPEN.

XII.E.~~3~~4. THE OWNER OR OPERATOR OF ~~T~~TANKS SUBJECT TO THE EMISSION THRESHOLD CONTROL STRATEGY UNDER SECTION XII.D.2.B. THAT HAVE INSTALLED COMBUSTION DEVICES~~,~~ SHALL CHECK FOR AND DOCUMENT ON A ~~CALENDAR~~ WEEKLY BASIS THAT THE AUTO-IGNITER AND THE

ELECTRONIC SURVEILLANCE SYSTEM ARE PROPERLY FUNCTIONING BY EITHER VISIBLE OBSERVATION OR OTHER MEANS APPROVED BY THE DIVISION.

XII.E.~~4~~5. ALL TANKS SUBJECT TO SECTION XII.D. SHALL COMPLY WITH THE FOLLOWING:

XII.~~A.3.A~~E.~~4~~5.A. ~~For combustion devices, a check that the pilot light is lit by either visible observation or other means approved by the division. For devices equipped with an auto-igniter that do not have a pilot light, a check that the auto-igniter is properly functioning;~~

~~XII.A.3.b. For combustion devices, a check that the valves for piping of gas to the pilot light are open;~~

~~XII.A.3.c.~~ For combustion devices, ~~a visible emission~~ THE OWNER OR OPERATOR SHALL VISUALLY check for AND DOCUMENT, ON A ~~CALENDAR~~ WEEKLY BASIS, the presence or absence of smoke;

XII.~~A.3.D~~E.~~4~~5.B. For vapor recovery units, ~~a~~ THE OWNER OR OPERATOR SHALL check FOR AND DOCUMENT ON A ~~CALENDAR~~ WEEKLY BASIS that the unit is operating and that vapors from the condensate tank are being routed to the unit;

XII.~~A.3.E~~E.~~4~~5.C. For all control devices, ~~a~~ THE OWNER OR OPERATOR SHALL check FOR AND DOCUMENT ON A ~~CALENDAR~~ WEEKLY BASIS that the valves for the piping from the condensate tank to the air pollution control equipment are open;

XII.~~A.3.f.~~E.~~4~~5.D. FOR ALL ATMOSPHERIC CONDENSATE STORAGE TANKS, ~~A~~ THE OWNER OR OPERATOR SHALL check FOR AND DOCUMENT ON A ~~CALENDAR~~ WEEKLY BASIS that the thief hatch is closed and latched.

XII.~~A.4~~F. Recordkeeping~~:~~ AND REPORTING

THE OWNER OR OPERATOR OF ANY CONDENSATE STORAGE TANK THAT IS BEING CONTROLLED PURSUANT TO SECTION XII.D. SHALL MAINTAIN RECORDS AND SUBMIT REPORTS TO THE DIVISION, AS FOLLOWS:

XII.F.1. THE AIRS NUMBER ASSIGNED BY THE DIVISION SHALL BE MARKED ON ALL CONDENSATE STORAGE TANKS REQUIRED TO FILE AN APEN.

XII.F.2. IF AIR POLLUTION CONTROL EQUIPMENT IS REQUIRED TO COMPLY WITH SECTION XII.D. VISIBLE SIGNAGE SHALL BE LOCATED WITH THE CONTROL EQUIPMENT IDENTIFYING THE AIRS NUMBER FOR EACH CONDENSATE STORAGE TANK THAT IS BEING CONTROLLED BY THAT EQUIPMENT.

XII.F.3. TANKS SUBJECT TO THE 90-DAY CONTROL REQUIREMENT OF SECTION XII.D.1. SHALL TRACK THE REDUCTIONS IN EMISSIONS ON A ~~CALENDAR~~ WEEKLY BASIS AND MAINTAIN INSPECTION RECORDS REQUIRED PURSUANT TO SECTION XII.E. AND E.1.

XII.F.4. RECORDKEEPING FOR TANKS SUBJECT TO THE SYSTEM-WIDE CONTROL STRATEGY UNDER SECTION XII.D.2

BETWEEN MAY 1 AND SEPTEMBER 30 OF EACH YEAR, THE ~~Each~~ owner or operator shall, at all times, ~~maintain a spreadsheet~~TRACK THE EMISSIONS AND SPECIFICALLY ~~VOC~~VOLATILE ORGANIC COMPOUND EMISSIONS REDUCTIONS ON A ~~CALENDAR~~ WEEKLY BASIS, BY MAINTAINING A SPREADSHEET of information describing the affected operations, the air pollution control equipment being used, and the emission reductions achieved, as follows:

XII.~~A~~F.4.a The spreadsheet shall list all condensate storage tanks subject to this ~~section~~ SECTION XII by name and AIRS number~~,~~. THE SPREADSHEET ~~and~~ ALSO shall list the production volumes for each tank. The spreadsheet shall list the most recent measurement of such production at each tank, and the time period covered by such measurement of production.

XII.~~A~~F.4.b The spreadsheet shall list the emission factor used for each tank. The emission factors shall comply with ~~section~~ SECTION XII.~~D~~C.~~3~~2.

XII. F~~A~~.4.c The spreadsheet shall list the location and control efficiency value for each unit of air pollution control equipment. EACH ~~, and shall identify the~~ ATMOSPHERIC CONDENSATE STORAGE tank~~s~~ being controlled SHALL BE IDENTIFIED by each by name and AIRS number.

XII. F~~A~~.4.d ~~Between May 1 and September 30 of each year, the spreadsheet shall track the reductions in emissions of volatile organic compounds on a weekly basis, as follows:~~

~~XII.A.4.d.i~~ The spreadsheet shall list the production volume for each tank, expressed as a weekly average based on the most recent measurement available. The weekly average shall be calculated by averaging the most recent measurement of such production, which may be the amount shown on the receipt from the refinery purchaser for delivery of condensate from such tank, over the time such delivered condensate was collected. The weekly average from the most recent measurement will be used to estimate weekly volumes of controlled and uncontrolled actual emissions for all weeks following the measurement until the next measurement is taken.

XII. F~~A~~.4.~~d.ii~~E. The spreadsheet shall show the weekly uncontrolled actual emissions and the weekly controlled actual emissions for each tank.

XII. F~~A~~.4.~~d.iii~~F. The spreadsheet shall show the total system-wide weekly uncontrolled actual emissions and the total system-wide ~~daily~~WEEKLY controlled actual emissions PER INDIVIDUAL ATMOSPHERIC CONDENSATE STORAGE TANK.

XII. F~~A~~.4.~~d.iv~~G. The spreadsheet shall show the total system-wide ~~daily~~WEEKLY percentage reduction of emissions.

XII.~~A~~F.4.~~E~~ H. The spreadsheet shall note any shutdown of air pollution control equipment, and shall account for such shutdown in the weekly emission reduction totals. The notations shall include the date, time and duration of any scheduled shutdown. For any unscheduled shutdown, the spreadsheet shall record the date and time the shutdown was discovered and the date and time the air pollution control equipment was last observed to be operating.

XII. F.4.I.~~A.4.f~~ The spreadsheet shall be maintained in a manner approved by the D~~d~~ivision and shall include any other information requested by the division that is reasonably necessary to determine compliance with this section of the regulation.

XII. F.4.J.~~A.4.g~~ An up-to-date spreadsheet shall be promptly provided by e-mail or fax to the division upon its request. The U.S. mail may also be used if acceptable to the DIVISION~~division~~.

XII. F.4.K.~~A.4.h~~ Failure to properly install, operate, and maintain air pollution control equipment at the locations indicated in the spreadsheet shall be a violation of this regulation.

XII. F.4.L.~~A.4.i.~~ A copy of each weekly spreadsheet shall be retained for three years. A spreadsheet may apply to more than one week if there are no changes in any of the required data and the spreadsheet clearly identifies the weeks it covers. The spreadsheet may be retained electronically, however, any loss of data may be treated by the ~~division~~ DIVISION as if the data were not collected.

XII. F.4.M.~~A.4.j.~~ In addition to the spreadsheet, each owner or operator shall maintain records of the inspections required pursuant to Section XII.~~A.3~~E. These records shall include the time and date of the inspection, the person conducting the inspection, a notation that each of the checks required under Section XII.C.3. were completed and a description of any problems observed during the inspection, AND DESCRIPTION AND DATE OF ANY CORRECTIVE ACTIONS TAKEN.

XII.F.5. RECORDKEEPING FOR TANKS SUBJECT TO THE THRESHOLD CONTROL STRATEGY UNDER SECTION XII.D.2.B.

XII.F.5.A. BEGINNING FEBRUARY 1, 2009, EACH OWNER OR OPERATOR SHALL~~, AT ALL TIMES,~~ TRACK ACTUAL UNCONTROLLED AND CONTROLLED ~~IN~~ EMISSIONS OF ~~VOC~~VOLATILE ORGANIC COMPOUNDS ON A ROLLING 12-MONTH (CALENDAR MONTH) TOTAL BASIS. IN ADDITION, RECORDS SHALL BE MAINTAINED OF ANY SHUTDOWN OR MALFUNCTION OF AIR POLLUTION CONTROL EQUIPMENT~~,~~. ~~AND THE~~E ~~E~~MISSIONS ESTIMATES SHALL ACCOUNT FOR SUCH SHUTDOWN OR MALFUNCTION IF THE WELL WAS PRODUCING AT THE TIME OF THE EVENT(S). THE NOTATIONS SHALL INCLUDE THE DATE, TIME AND DURATION OF ANY SCHEDULED SHUTDOWN. FOR ANY UNSCHEDULED SHUTDOWN OR MALFUNCTION, RECORDS SHALL BE MAINTAINED OF THE DATE AND TIME THE SHUTDOWN OR MALFUNCTION WAS DISCOVERED, THE DATE AND TIME THE AIR POLLUTION CONTROL EQUIPMENT WAS LAST OBSERVED TO BE OPERATING, AND WHETHER OR NOT THE WELL WAS PRODUCING ~~FOR THE DURATION OF~~ DURING THE SHUTDOWN OR MALFUNCTION.

XII.F.5.B. FAILURE TO PROPERLY INSTALL, OPERATE, AND MAINTAIN AIR POLLUTION CONTROL EQUIPMENT ~~AT THE~~ SHALL BE A VIOLATION OF THIS REGULATION.

XII.F.5.C. IN ADDITION, EACH OWNER OR OPERATOR SHALL MAINTAIN RECORDS OF THE:

XII.F.5.C.(I) MONITORING~~-~~-RELATED INSPECTIONS REQUIRED PURSUANT TO SECTION XII.E. SHALL INCLUDE THE TIME AND DATE OF THE INSPECTION, THE PERSON CONDUCTING THE INSPECTION, A NOTATION THAT EACH OF THE CHECKS REQUIRED UNDER SECTION XII.E. WERE COMPLETED, A DESCRIPTION OF ANY PROBLEMS OBSERVED DURING THE INSPECTION, DESCRIPTION AND DATE OF ANY CORRECTIVE ACTIONS TAKEN;

XII.F.5.C.(II) DATE AND DURATION OF ANY WELL DRILLING, RECOMPLETION, REFRACTURING OR STIMULATION;

XII.F.5.C.(III) DETERMINATIONS REGARDING CONTROL REQUIREMENT APPLICABILITY; AND

XII.F.5.C.(IV) DATE, TIME, AND DURATION OF ANY SHUTDOWN OF AIR POLLUTION CONTROL EQUIPMENT.

XII.F.5.D. A COPY OF THESE RECORDS SHALL BE RETAINED FOR THREE YEARS. THE RECORDS MAY BE RETAINED ELECTRONICALLY~~.~~; HOWEVER, ANY LOSS OF DATA ~~MAY~~SHALL ~~-~~BE TREATED BY THE DIVISION AS IF THE DATA WERE NOT COLLECTED.

XII.~~A.5~~F.6. Reporting ~~:~~ FOR ~~T~~TANKS ~~S~~SUBJECT TO THE ~~S~~SYSTEM-WIDE ~~C~~CONTROL ~~S~~STRATEGY UNDER SECTION XII.D.2.A.

On or before April 30, 2006, and semi-annually by April 30 and November 30 of each year thereafter, each owner or operator shall submit a report describing the air pollution control equipment used during the preceding calendar year (for the April 30 report) and during the preceding ozone season (for the November 30 report) and how it complied with the emission reductions required by ~~section~~ SECTION XII.~~A.2~~D. during those periods. Such reports shall be submitted to the DIVISION~~division~~ on a form provided by the DIVISION~~division~~ for that purpose.

XII.~~A.5.a~~F.6.A. The report shall list all condensate storage tanks subject to ~~this section~~ SECTION XII and the production volumes for each tank. PRODUCTION VOLUMES MAY BE ESTIMATED BY~~, which amounts may be~~ the amounts shown on the receipt from ~~the~~ refinery purchasers for delivery of condensate from such tanks.

XII. F.6.B.~~A.5.b~~ The report shall list the emission factor used for each tank. The emission factors shall comply with ~~section~~ SECTION XII.~~D~~C.~~3~~2.

XII. F.6.C~~A.5.c~~ The report shall list the location and control efficiency value for each unit of air pollution control equipment, and shall identify the tanks being controlled by each.

XII. F.6.D.~~A.5.d~~ The April 30 report shall show the uncontrolled actual emissions and the controlled actual emissions for each tank for January 1 through April 30, May 1 through September 30 and October 1 through December 31 of the previous year. The November 30 report shall show such information for the May 1 through September 30 period only.

XII. F.6.E.~~A.5.e~~ The April 30 report shall show the total system-wide uncontrolled actual emissions and the total system-wide controlled actual emissions for January 1 through April 30, May 1 through September 30 and October 1 through December 31 of the previous year. The November 30 report shall show such information for the May 1 through September 30 period only.

XII. F.6.F.~~A.5.f.~~ The April 30 report shall show the total system-wide percentage reduction of emissions for May 1 through September 30 of the previous year, and for the combined periods of January 1 through April 30 and October 1 through December 31 of the previous year. The November 30 report shall show such information for the May 1 through September 30 period only.

XII. F.6.G.~~A.5.g~~ The report shall note any shutdown of air pollution control equipment and shall account for such shutdown in the emission reduction totals. The notations shall include the date, time and duration of any scheduled shutdown. For any unscheduled shutdown, the date and time the shutdown was discovered, the last date the air pollution control equipment was observed to be operating and the date the source believes the shutdown occurred, including the basis for such belief, shall be recorded in the report.

XII. F.6.H.~~A.5.h~~ The report shall state whether the required emission reductions were achieved during the preceding year or preceding ozone season for the November 30 report, and whether the required emission reductions were achieved on a weekly basis during the preceding ozone season (May 1 through September 30). If the required emission reductions were not achieved, the report shall state why not, and shall identify steps being taken to ensure subsequent compliance.

XII. F.6.I.~~A.5.i~~ The report shall include any other information requested by the division that is reasonably necessary to determine compliance with this section of the regulation.

XII. F.6.J.~~A.5.j~~ A copy of each semi-annual report shall be retained for three years.

XII. F.6.K.~~A.5.k.~~ In addition to submitting the semi-annual reports, on or before the 30th of each month commencing in June 2007, the owner or operator of any condensate storage tank that is required to control volatile organic compound emissions pursuant to section XII.A. shall notify the division of any instances where the air pollution control equipment was not properly functioning during the previous month. The report shall include the time and date that the equipment was not properly operating, the time and date that the equipment was last observed operating properly, and the date and time that the problem was corrected. The report shall also include the specific nature of the problem, the specific steps taken to correct the problem, the AIRS number of each of the condensate tanks being controlled by the equipment and the estimated production from those tanks during the period of non-operation.

XII. F.6.L.~~A.5.l.~~ Commencing in 2007, on or before April 30 of each year, the owner or operator shall submit a list identifying by name and AIRS number each condensate storage tank that is being controlled to meet the requirements set forth in this section XII.A. On the 30th of each month during ozone season (May through September) and on November 30 and February 28, the owner or operator shall submit a list identifying any condensate storage tank whose control status has changed since submission of the previous list.

~~XII.A.6 The record-keeping and reporting required in sections XII.A.4 and XII.A.5 above shall not apply to the owner or operator of any natural gas compressor station or natural gas drip station that is authorized to operate pursuant to a construction permit or Title V operating permit issued by the division if the following criteria are met:~~

~~XII.A.6.a such permits are obtained by the owner or operator on or after the effective date of this provision and contain the provisions necessary to ensure the emissions reductions required by this section XII.A;~~

~~XII.A.6.b the owners and operators of such natural gas compressor stations or natural gas drip stations do not own or operate any exploration and production operation(s); and~~

~~XII.A.6.c total emissions from atmospheric condensate storage tanks associated with such natural gas compressor stations or drip stations subject to APEN reporting requirements under Regulation No. 3 owned or operated by the same person do not exceed 30 tons per year in the 8-hour Ozone Control Area.~~

~~XII.A.7 Each combustion device and vapor recovery unit used to comply with section XII.A shall have a control efficiency of at least 95% for volatile organic compounds.~~

~~XII.A.8 The requirements of this section XII.A shall not apply to any owner or operator in any calendar year in which the APENs for all of the atmospheric condensate storage tanks associated with the affected operations owned or operated by such person reflect a total of less than 30 tons-per-year of actual uncontrolled emissions of VOCs in the 8-hour Ozone Control Area. Such requirements shall, however, apply to such owner or operator in any subsequent calendar year in which the APENs for atmospheric condensate storage tanks associated with such affected operations reflect a total of 30 tons-per-year or more of actual uncontrolled emissions of VOCs in the 8-hour Ozone Control Area.~~

~~XII.A.9 Alternative emissions control equipment and pollution prevention devices and processes installed and implemented after June 1, 2004 shall qualify as air pollution control equipment, and may be used in lieu of, or in combination with, combustion devices and vapor recovery units to achieve the emission reductions required by this section XII, if the following conditions are met:~~

~~XII.A.9.a The owner or operator obtains a construction permit authorizing such use of the alternative emissions control equipment or pollution prevention device or process. The proposal for such equipment, device or process shall comply with all regulatory provisions for construction permit applications and shall include the following:~~

~~XII.A.9.a.i a description of the equipment, device or process;~~

~~XII.A.9.a.ii. a description of where, when and how the equipment, device or process will be used;~~

~~XII.A.9.a.iii the claimed control efficiency and supporting documentation adequate to demonstrate such control efficiency;~~

~~XII.A.9.a.iv an adequate method for measuring actual control efficiency; and~~

~~XII.A.9.a.v a description of the records and reports that will be generated to adequately track emission reductions and implementation and operation of the equipment, device or process, and a description of how such matters will be reflected in the spreadsheet and annual report required by sections XII.A.4 and XII.A.5.~~

~~XII.A.9.b Public notice of the application is provided pursuant to Regulation No. 3, Part B, Section III.C.4.~~

~~XII.A.9.c EPA approves the proposal. The division shall transmit a copy of the permit application and any other materials provided by the applicant, all public comments, all division responses and the division's permit to EPA Region 8. If EPA fails to approve or disapprove the proposal within 45 days of receipt of these materials, EPA shall be deemed to have approved the proposal.~~

~~XII.A.10. The AIRS number assigned by the Division shall be marked on all condensate storage tanks required to file an Air Pollution Emission Notice.~~

~~XII.A.11. If air pollution control equipment is required to comply with Section XII.A. visible signage shall be located with the control equipment identifying the AIRS number for each condensate storage tank that is being controlled by that equipment.~~

~~XII.F.7. REPORTING FOR TANKS SUBJECT TO THE EMISSION-THRESHOLD CONTROL STRATEGY UNDER SECTION XII.D.2.B..~~

~~BEGINNING FEBRUARY 1, 2009, EACH OWNER OR OPERATOR SHALL NOT BE REQUIRED TO SUBMIT ANY ADDITIONAL REPORTS THAN OTHERWISE REQUIRED PURSUANT TO FEDERAL OR STATE REQUIREMENTS. REPORT ANNUALLY INCLUDING THE INFORMATION AS FOLLOWS:~~

~~XII.F.7.A. DATE AND DURATIONOF WELL DRILLING, RECOMPLETION, REFRACTURING OR STIMULATION;~~

~~XII.F.7.B. DETERMINATIONS REGARDING CONTROL REQUIREMENT APPLICABILITY; AND~~

~~XII.F.7.C. DATE, TIME, AND DURATION OF ANY SHUTDOWN OF AIR POLLUTION CONTROL EQUIPMENT.~~

~~XII.F.98. THE RECORD-KEEPING AND REPORTING REQUIRED IN SECTION XII.F. SHALL NOT APPLY TO THE OWNER OR OPERATOR OF ANY NATURAL GAS COMPRESSOR STATION OR NATURAL GAS DRIP STATION THAT IS AUTHORIZED TO OPERATE PURSUANT TO A CONSTRUCTION PERMIT OR TITLE V OPERATING PERMIT ISSUED BY THE DIVISION IF ALL OF THE FOLLOWING CRITERIA ARE MET:~~

~~XII.F.78.CA.(I) SUCH PERMITS ARE OBTAINED BY THE OWNER OR OPERATOR ON OR AFTER THE EFFECTIVE DATE OF THIS PROVISION AND CONTAIN THE PROVISIONS NECESSARY TO ENSURE THE EMISSIONS REDUCTIONS REQUIRED BY SECTION XII.D.;~~

~~XII.F.78.CB.(II) OWNERS AND OPERATORS OF SUCH NATURAL GAS COMPRESSOR STATIONS OR NATURAL GAS DRIP STATIONS DO NOT OWN OR OPERATE ANY EXPLORATION AND PRODUCTION OPERATION(S); AND~~

~~XII.F.78.C.(III) TOTAL EMISSIONS FROM ATMOSPHERIC CONDENSATE STORAGE TANKS ASSOCIATED WITH SUCH NATURAL GAS COMPRESSOR STATIONS OR DRIP STATIONS HAVING UNCONTROLLED ACTUAL EMISSIONS OF GREATER THAN OR EQUAL TO TWO TONS PER YEAR, OWNED OR OPERATED BY THE SAME PERSON DO NOT EXCEED 30 TONS PER YEAR IN AN OZONE NON-ATTAINMENT AREANON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA.~~

XII.~~B~~G. Gas-processing plants located in the 8-hour Ozone ~~Control~~ Non-attainment or Attainment/Maintenance Area shall comply with requirements of this ~~section~~ SECTION XII.~~B~~G., as well as the requirements of ~~sections~~ SECTIONS XII.C~~-~~., XII.H. and XVI.

XII. G~~B~~.1 For fugitive ~~VOC~~volatile organic compound emissions from leaking equipment, the leak detection and repair (LDAR) program as provided at 40 C.F.R. Part 60, Subpart KKK (see Regulation No. 6, Part A, Subpart KKK) shall apply, regardless of the date of construction of the affected facility.

XII. G~~B~~.2 Air pollution control equipment shall be installed and properly operated to reduce emissions of volatile organic compounds from any atmospheric condensate storage tank (or tank battery) used to store condensate that has not been stabilized ~~and with a throughput that exceeds the APEN de minimis levels specified in Regulation No. 3, Part~~THAT HAS UNCONTROLLED ACTUAL EMISSIONS OF GREATER THAN OR EQUAL TO TWO TONS PER YEAR. ~~A, Section II.D.~~ Such air pollution control equipment shall have a control efficiency of at least 95%.

XII. G~~B~~.3 Existing natural gas processing plants within the 8-hour Ozone NON-ATTAINMENT OR ATTAINMENT/MAINTENANCE ~~CONTROL~~ Area shall comply with the requirements of this ~~section~~ SECTION XII.~~B~~ G. by May 1, 2005.

XII. G~~B~~.4 The provisions of this ~~section~~ SECTION XII.G. ~~XII.B~~, and ~~sections~~ SECTIONS XII.C., XII.H. and XVI, shall apply upon the commencement of operations to any natural gas

processing plant that commences operation in the 8-hour Ozone NON-ATTAINMENT OR ATTAINMENT/MAINTENANCE ~~Control~~ Area after the effective date of this subsection.

XII.~~C~~H. On or after May 1, 2005, any still vent and vent from any gas-condensate-glycol (GCG) separator (flash separator or flash tank), if present, on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant in the 8-hour Ozone NON-ATTAINMENT OR ATTAINMENT/MAINTENANCE ~~Control~~ Area shall reduce uncontrolled actual emissions of volatile organic compounds by at least 90 percent through the use of a condenser or air pollution control equipment. This ~~section~~ SECTION XII.~~C~~ H. shall not apply to any single natural gas dehydrator, or grouping of dehydrators at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant, with uncontrolled actual emissions of volatile organic compounds of less than 15 tons per year. TO DETERMINE IF A GROUPING OF DEHYDRATORS EXCEEDS THE 15 TONS PER YEAR THRESHOLD INCLUDE EMISSIONS FROM EACH DEHYDRATOR IN THE GROUPING REGARDLESS OF ACTUAL UNCONTROLLED EMISSIONS. The control requirement in this SECTION~~section~~ XII.~~C~~H. shall ~~not~~ apply to ~~a~~ each natural gas dehydrator withIN A GROUPING THAT HAS ACTUAL UNCONTROLLED emissions below ~~the APEN reporting thresholds in Regulation No. 3, Part A, Section II.D TWO~~ONE TON~~S~~ PER YEAR. ~~that is part of a grouping of dehydrators, but the emissions from such dehydrator shall be included in the calculation used to determine whether the grouping of dehydrators exceeds the 15 tons per year threshold.~~

~~XII.D Definitions and general provisions~~

~~XII.D.1 A "glycol natural gas dehydrator" means any device in which a liquid glycol (including, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water.~~

~~XII.D.2 General requirements for air pollution control equipment, prevention of leakage, and flares and combustion devices.~~

~~XII.D.2.a All air pollution control equipment required by this section XII shall be operated and maintained consistent with manufacturer specifications and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications on file. In addition, all such air pollution control equipment shall be adequately designed and sized to achieve the control efficiency rates required by this Section XII and to handle reasonably foreseeable fluctuations in emissions of volatile organic compounds. Fluctuations in emissions that occur when the separator dumps into the tank are reasonably foreseeable.~~

~~XII.D.2.b All condensate collection, storage, processing and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of volatile organic compounds to the atmosphere to the maximum extent practicable.~~

~~XII.D.2.c If a flare or other combustion device is used to control emissions of volatile organic compounds to comply with section XII, it shall be enclosed, have no visible emissions, and be designed so that an observer can, by means of visual observation from the outside of the enclosed flare or combustion device, or by other convenient means, such as a continuous monitoring device, approved by the division, determine whether it is operating properly.~~

~~XII.D.3 The emission estimates and emission reductions required by this section XII shall be demonstrated using one of the following emission factors:~~

~~XII.D.3.a For atmospheric storage tanks at oil and gas exploration and production operations, a default emission factor of 13.7 pounds of volatile organic compounds per barrel of condensate shall be used unless a more specific emission factor has been established pursuant to section XII.D.3.b.ii. The division may require a more specific emission factor that complies with section XII.D.3.b.ii.~~

~~XII.D.3.b For atmospheric storage tanks at natural gas compressor stations and natural gas drip stations, and gas-condensate-glycol separators, a specific emission factor established pursuant to this section XII.D.3.b shall be used. A specific emission factor developed pursuant to section XII.D.3.b.ii may also be used for atmospheric storage tanks at oil and gas exploration and production operations and, once established, or required by the division, shall be used for such operations.~~

~~XII.D.3.b.i For atmospheric storage tanks at natural gas compressor stations and natural gas drip stations, and gas-condensate-glycol separators a source may use a specific emissions factor that was used for reporting emissions from the source on APENs filed on or before February 28, 2003. The division may, however, require the source to develop and use a more recent specific emission factor pursuant to section XII.D.3.b.ii if such a more recent emission factor would be more reliable or accurate.~~

~~II.D.b.3.ii Except as otherwise provided in XII.D.3.b.i, a specific emissions factor shall be one for which the division has no objection, and which is based on collection and analysis of a representative sample of condensate pursuant to a test method approved by the division and EPA. The division shall consult with and provide EPA 30 days in which to comment on the test method. EPA shall be deemed to have approved the test method for purposes of this section XII.D.3.b if it does not object during such 30-day period.~~

~~XII.D.4 Oil refineries are not subject to this section of the rule.~~

~~XII.D.5 When used in this section XII, the term "affected operations" means oil and gas exploration and production operations, natural gas compressor stations and natural gas drip stations to which this section XII applies pursuant to section XII.A.1.~~

~~XII.D.6 "Atmospheric", when used to modify the term "condensate storage tanks", means a type of condensate storage tank that vents, or is designed to vent, to the atmosphere.~~

~~XII.D.7 "Stabilized", when used to refer to stored condensate, means that the condensate has reached substantial equilibrium with the atmosphere and that any emissions that occur are those commonly referred to within the industry as "working and breathing losses."~~

~~XII.D.8 "Air pollution control equipment," as used in this section XII, means a combustion device or vapor recovery unit. Air pollution control equipment also means alternative emissions control equipment and pollution prevention devices and processes that comply with the requirements of section XII.A.9.~~

~~XII.D.9 "System-wide" when used to refer to emissions and emission reductions in this section XII shall mean emissions and emission reductions from all atmospheric storage tanks at affected operations within the 8-hour Ozone Control Area for which the owner or operator filed, or was required to file, an APEN.~~

XIII. GRAPHIC ARTS

XIII.A. General Provisions

XIII.A.1. Definitions

For the purpose of this section, the following definitions apply:

XIII.A.1.a. "Packaging Rotogravure Printing" means rotogravure printing upon paper, paper board, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.

XIII.A.1.b. "Publication Rotogravure Printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.

XIII.A.1.c. "Flexographic Printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.

XIII.A.1.d. "Rotogravure Printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique which involves an intaglio or recessed image areas in the form of cells.

XIII.A.1.e. "Roll Printing" means the application of words, designs, and pictures to a substrate usually by means of a series of hard rubber or steel rolls each with only partial coverage.

XIII.A.2. Applicability

XIII.A.2.a. This section applies to all packaging rotogravure, publication rotogravure, and flexographic printing facilities whose potential emissions of ~~VOC~~volatile organic compounds before control (determined at design capacity and 8760 hrs/year, or at maximum production, and accounting for any capacity or production limitations in a federally-enforceable permit) are equal to or more than 90,000 Kg per year (100 tons/year). Potential emissions are to be estimated by extrapolating historical records of actual consumption of solvent and ink. (e.g., the historical use of 20 gallons of ink for 4,000 annual hours would be extrapolated to 43.8 gallons for 8760 hours.)The before-control ~~VOC~~volatile organic compound emissions calculations shall be the summation of all ~~VOC~~volatile organic compounds in the inks and solvents (including cleaning liquids) used.

XIII.B. Provisions for Specific Processes

XIII.B.1. No owner or operator of a facility subject to this section and employing VOC-containing ink shall operate, cause, allow, or permit the operation of the facility unless:

XIII.B.1.a. The volatile fraction of ink, as it is applied to the substrate, contains 25.0 percent or less (by volume) of VOC and 75.0 percent or more (by volume) of water; or

XIII.B.1.b. The ink (minus water) as it is applied to the substrate, contains 60.0 percent or more (by volume) non-volatile material; or

XIII.B.1.c. The owner or operator installs and operates a control device and capture system in accordance with paragraphs XIII.B.2. and 3; or

XIII.B.1.d. A combination of solvent-borne inks and low solvent inks that achieve a 70% (volume) overall reduction of solvent usage (compared to an all solvent borne ink usage) is used; or

XIII.B.1.e. Flexographic and packaging rotogravure printing facilities limit emissions to 0.5 pounds of VOC per pound of solids in the ink. The limit includes all solvent added to the ink: solvent in the purchased ink, solvent added to cut the ink to achieve desired press viscosity, and solvent added to ink on the press to maintain viscosity during the press run. (Publication rotogravure facilities shall not use this option); or

XIII.B.1.f. Crossline averaging is used. The requirements of Section IX.A.5.d apply.

XIII.B.2. A capture system shall be used in conjunction with the emission control system in subparagraph B.l.c. (above). The design and operation of a capture system shall be consistent with good engineering practice, and in conjunction with control equipment shall be required to provide for an overall reduction in volatile organic compound emissions of at least:

XIII.B.2.a. 75.0 percent where a publication rotogravure process is employed;

XIII.B.2.b. 65.0 percent where a packaging rotogravure process is employed; or

XIII.B.2.c. 60.0 percent where a flexographic printing process is employed.

XIII.B.3. The design, operation, and efficiency of any capture system used in conjunction with any emission control system shall be certified in writing by the source owner or operator and approved by the Division. Testing of any capture system may be required by the Division on a case-by-case basis, in cases where a total enclosure is not used or when material balance results are questionable. Testing of capture system efficiency shall meet the requirements of subsection IX.A.5.e.

XIII.B.4. The overall reduction in VOC emissions specified in subsection B.2 above shall be calculated by material balance methods approved by the Division, or by determination of capture and control device efficiencies. The overall VOC emission reduction rate equals the (percent capture efficiency X percent control device efficiency)/100.

XIII.C. Testing and Monitoring

The owner or operator of a source subject to the requirements of this section is also subject to the requirements of Section IX.A.3., IX.A.7, IX.A.9, and IX.A.10. In Section IX.A.3., EPA reference method 24A shall be the test method used for publication rotogravure inks, while EPA Reference method 24 data is acceptable for all other inks. Test methods as set forth in Appendix A, Part 60, Chapter I, Title 40, of the Code of Federal Regulations (CFR), in effect July 1, 1993.

XIII.D. The owner or operator of a source subject to the requirements of this section is also subject to the requirements of Section IX.A.8. "A Guideline for Graphic Arts Calculations" shall be used for compliance determination.

XIV. Pharmaceutical Synthesis

XIV.A. General Provisions

XIV.A.1. Applicability

This section applies to all sources of volatile organic compounds associated with pharmaceutical manufacturing activities, including, but not limited to, reactors, distillation units, dryers, storage of VOCs, extraction equipment, filters, crystallizers, and centrifuges.

XIV.A.2. Exemptions

Extraction of organic substances from animal or vegetable material; fermentation and culturing; formulation and packaging of pharmaceutical or medicinal products.

XIV.A.3. Definitions

For the purpose of this section, the following definitions apply:

XIV.A.3.a. "Control System" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of VOC emitted to the atmosphere.

XIV.A.3.b. "Pharmaceutical" means a medicine or drug which appears in the United States Pharmacopoeia National Formulary, or which is so designated by the National Drug Code of the United States FDA Bureau of Drugs.

XIV.A.3.c. "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.

XIV.A.3.d. "Separation Operation" means a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include, but are not limited to, extraction, centrifugation, filtration, distillation, and crystallization.

XIV.A.3.e. "Synthesized Pharmaceutical Manufacturing" means manufacture of pharmaceutical products by chemical synthesis. It includes the manufacture of chemical intermediates (of sufficient purity) which are typically used by the pharmaceutical industry as precursors to finished mixtures of chemicals. (Thus, it excludes those chemical processes which are not directed at creating finished pharmaceutical or chemical intermediates to finished pharmaceuticals.)

XIV.A.3.f. "Production Equipment Exhaust System" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.

XIV.B. Provisions for Specific Processes

XIV.B.1. The owner or operator of a facility subject to this section shall control the volatile organic compound emissions from each vent which has the potential to emit 6.80 kg/day (l5 lb./day) or more of VOC from reactors, distillation operations, crystallizers, centrifuge and vacuum dryers. Surface condensers or equivalent controls shall be used, provided

that, if surface condensers are used, the condenser outlet gas temperature shall not exceed the following values:

VOCs True Vapor Pressure* at 20° in torr (and psia) from (minimum) up to ** (maximum)	Maximum temperature of Gas Stream immediately exiting the condenser
0-26(0-0.5)	35°C (95°F)
26-52(0.5-1.0)	25°C(77°F)
52-78(1.0-1.5)	10°C(50°F)
78-150(1.5-2.9)	0°C(32°F)
150-300(2.9-5.8)	-15°C(5°F)
Greater than 300(Greater than 5.8)	-25°C(-13°F)

*The calculation methods for gases containing more than one condensible component are complex. As a simplification, the temperature necessary for control by condensation can be roughly approximated by the weighted average of the temperatures necessary for condensation of each VOC considered separately but at concentrations equal to the total organic concentration.

**But not including the maximum value of the range.

XIV.B.2. Division approval shall be required for control equipment used to control VOCs of 570 torr (11 psia) and above.

XIV.B.3. The owner or operator of a facility subject to this section shall reduce the VOC emissions from each air dryer and production equipment exhaust system:

XIV.B.3.a. By at least 90 percent if emissions are 150 kg/day (330 lbs/day) or more of VOC, or,

XIV.B.3.b. To 15.0 kg/day (33 lb/day) or less if emissions are less than 150 kg/day (330 lb/day) of VOC.

XIV.B.4. The owner or operator of a facility subject to this section shall:

XIV.B.4.a. Provide a vapor balance system or equivalent control that is at least 90.0 percent effective in reducing emissions from truck or railcar deliveries to storage tanks with capacities greater than 7,570 liters (2,000 gallons) that store VOC with true vapor pressure greater than 210 torr (4.1 psia) at 20°C; and,

XIV.B.4.b. Install pressure/vacuum conservation vents set at plus or minus 0.2 kPa on all storage tanks that store VOC with true vapor pressures greater than 10.0 kPa (1.5 psi) at 20°C.

XIV.B.5. The owner or operator of a facility subject to this section shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface, where the liquid contains VOC and exerts a total VOC true vapor pressure of 26 torr (0.5 psia) or more at 20°C.

XIV.B.6. The owner or operator of a synthesized pharmaceutical facility subject to this section shall install covers on all in-process tanks containing a volatile organic compound

at any time. These covers shall remain closed unless sampling, maintenance, short-duration production procedures or inspection procedures require access.

XIV.B.7. The owner or operator of a facility subject to this section shall repair all leaks from which a liquid, containing VOC, can be observed running or dripping. The repair shall be completed the first time the equipment is off-line for a period of time long enough to complete the repair, except that no leak shall go unrepaired for more than 14 days after initial detection unless the Division issues written approval.

XIV.B.8. Each surface condenser shall have at least one temperature indicator with its sensor located in the outlet gas stream.

XIV.C. Testing and Monitoring

XIV.C.1. Sources subject to the requirements of this section are also subject to the requirements of Section 7.IX.A.3, IX.A.7., IX.A.8., and IX.A.9.

XV. CONTROL OF VOLATILE ORGANIC COMPOUND LEAKS FROM VAPOR COLLECTION SYSTEMS AND VAPOR CONTROL SYSTEMS LOCATED AT GASOLINE TERMINALS, GASOLINE BULK PLANTS, AND GASOLINE DISPENSING FACILITIES

XV.A. General Provisions

XV.A.1. Applicability

This section is applicable to all gasoline terminals, gasoline bulk plants and gasoline dispensing facilities (e.g., service stations) which are located in ozone non-attainment areas and which must have a vapor collection and/or a vapor control system pursuant to section VI. and other applicable rules.

XV.A.2. Exemptions

This section is not applicable to those operations involving transfer of gasoline from gasoline dispensing facilities to motor vehicle fuel tanks nor to other dispensing operations at such facilities.

XV.A.3. Definitions

For the purpose of this section, the following definitions apply:

XV.A.3.a. "Gasoline Dispensing Facility" means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks, (e.g., service stations, fleet pumps, etc.)

XV.A.3.b. "Gasoline Transport Truck" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities (e.g., service stations), bulk gasoline plants or gasoline terminals.

XV.A.3.c. "Vapor Collection System" means a vapor transport system which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

XV.A.3.d. "Vapor Control System" means a system that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

XV.B. Specific Provisions

XV.B.1. The operator of a vapor collection or vapor control system at a facility subject to the provisions of this section shall operate the vapor collection system and the gasoline loading equipment in a manner that prevents:

XV.B.1.a. Gauge pressure from exceeding 33.6 torr (18 inches of H2O) and vacuum from exceeding gauge pressure of minus 11.2 torr (minus 6 inches of H2O) at the point where the vapor return line on the truck connects with the vapor collection line of the facility.

XV.B.1.b. A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from a known or potential leak source when measured by the procedures described in Appendix B of "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051, during loading or unloading operations at gasoline dispensing facilities, bulk plants and terminals.

XV.B.1.c. Avoidable liquid leaks from the system during loading or unloading operations at gasoline dispensing facilities, bulk plants, and terminals.

XV.B.1.d. Division representatives shall monitor for excessive back pressure and vapor leakage as is defined by 1.a. and l.b. above.

XV.B.2. Repairs and Modifications

XV.B.2.a. The operator shall within fifteen (15) days, repair and retest a vapor collection or control system that exceeds the pressure limits (subparagraph 1.a. of this subsection B.), excepting that;

XV.B.2.b. Should an applicable facility require modification or repairs that will take longer than fifteen (15) days to complete, the operator shall submit to the Division for approval a schedule which includes dates of commencement and completion.

XVI. Control of Eemissions from Sstationary and Pportable Eengines in the 8-hour ozone Ozone control Control Aarea

XVI.A Requirements for new and existing engines.

XVI.A.1 The owner or operator of any natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower commencing operations in the 8-hour Ozone Control Area on or after June 1, 2004 shall employ air pollution control technology to control emissions, as provided in section XVI.B.

XVI.A.2 Any existing natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower, which existing engine was operating in the 8-hour Ozone Control Area prior to June 1, 2004, shall employ air pollution control technology on and after May 1, 2005, as provided in section XVI.B.

XVI.B. Air pollution control technology requirements

XVI.B.1 For rich burn reciprocating internal combustion engines, a non-selective catalyst reduction and an air fuel controller shall be required. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume.

XVI.B.2 For lean burn reciprocating internal combustion engines, an oxidation catalyst shall be required. A lean burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of 2% by volume, or greater.

XVI.B.3 The emission control equipment required by this section XVI.B shall be appropriately sized for the engine and shall be operated and maintained according to manufacturer specifications.

XVI.C The air pollution control technology requirements in this section XVI shall not apply to:

XVI.C.1 Non-road engines, as defined in Regulation No. 3.

XVI.C.2 Reciprocating internal combustion engines that the division has determined will be permanently removed from service or replaced by electric units on or before May 1, 2007. The owner or operator of such an engine shall provide notice to the division of such intent by May 1, 2005 and shall not operate the engine identified for removal or replacement in the 8-hour Ozone Control Area after May 1, 2007.

XVI.C.3 Any emergency power generator exempt from APEN requirements pursuant to Regulation No. 3.

XVI.C.4 Any lean burn reciprocating internal combustion engine operating in the 8-hour Ozone Control Area prior to June 1, 2004, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than $ 5,000 per ton of VOC emission reduction. Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by May 1, 2005. Any reciprocating internal combustion engine qualifying for this exemption shall not be moved to any other location within the 8-hour Ozone Control Area.

XVII. STATE-ONLY Statewide Cc~~c~~ontrols for Oo~~o~~il and Gg~~g~~as Oo~~o~~perations and Nn~~n~~atural Gg~~g~~as-fired Rr~~r~~eciprocating Ii~~i~~nternal Cc~~c~~ombustion Eengines

XVII.A. Definitions

XVII.A.1 ~~"~~Air Pp~~p~~ollution Cc~~c~~ontrol Ee~~e~~quipment,~~"~~ as used in this ~~section~~SECTION XVII, means a combustion device or vapor recovery unit. Air pollution control equipment also means alternative emissions control equipment and pollution prevention devices and processes intended to reduce uncontrolled actual emissions that comply with the requirements of ~~section~~SECTION XVII.B.2.

XVII.A.2. ~~"~~Atmospheric~~"~~, when used to modify the term "condensate storage tank", means a type of condensate storage tank that vents, or is designed to vent, to the atmosphere.

XVII.A.3. ~~"~~Condensate Storage Tank~~"~~ means any production tank or series of production tanks that are manifolded together that store condensate.

XVII.A.4 ~~A "glycol~~ GLYCOL N~~n~~atural G~~g~~as D~~d~~ehydrator~~"~~ means any device in which a liquid glycol (including ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water.

XVII.B. General Provisions

XVII.B.1. General requirements for air pollution control equipment, prevention of leakage, and flares and combustion devices.

XVII.B.1.a. All air pollution control equipment required by this ~~section~~SECTION XVII shall be operated and maintained pursuant to manufacturer specifications or equivalent to the extent practicable, and consistent with technological limitations and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications or equivalent on file. In addition, all such air pollution control equipment shall be adequately designed and sized to achieve the control efficiency rates required by this ~~section~~SECTION XVII and to handle reasonably foreseeable fluctuations in emissions of volatile organic compounds during normal operations. Fluctuations in emissions that occur when the separator dumps into the tank are reasonably foreseeable.

XVII.B.1.b. All condensate collection, storage, processing and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of volatile organic compounds to the atmosphere to the extent reasonably practicable.

XVII.B.1.c. If a flare or other combustion device is used to control emissions of volatile organic compounds to comply with ~~section~~SECTION XVII, it shall be enclosed, have no visible emissions during normal operations, and be designed so than an observer can, by means of visual observation from the outside of the enclosed flare or combustion device, or by other convenient means approved by the division, determine whether it is operating properly.

XVII.B.1.d. Any of the effective dates for installation of controls on condensate tanks dehydrators and/or internal combustion engines may be extended at the air pollution control division's discretion for good cause shown

XVII.B.2. Alternative emissions control equipment shall qualify as air pollution control equipment, and may be used in lieu of, or in combination with, combustion devices and vapor recovery units to achieve the emission reductions required by this ~~section~~SECTION XVII, if the Division approves the equipment, device or process As part of the approval process the Division, at its discretion, may specify a different control efficiency than the control efficiencies required by this ~~section~~SECTION ~~-~~XVII.

XVII.B.3. Oil refineries are not subject to this ~~section~~SECTION ~~of the rule~~XVII.

XVII.B.4. Condensate tanks, dehydrators and internal combustion engines that are subject to AN EMISSIONS CONTROL REQUIREMENT IN a federal maximum achievable control technology ("MACT") standard under 40 CFR Part 63, a Best Available Control Technology ("BACT") limit, or a New Source Performance Standard under 40 CFR Part 60 are not subject to this ~~section~~SECTION ~~of the rule~~XVII.

XVII.C. Emission reduction from condensate storage tanks at oil and gas exploration and production operations, natural gas compressor stations, natural gas drip stations and natural gas processing plants.

XVII.C.1. Beginning May 1, 2008, owners or operators of all atmospheric condensate storage tanks with uncontrolled actual emissions of volatile organic compounds equal to or greater than 20 tons per year based on a rolling twelve-month total shall operate air pollution control equipment that has an average control efficiency of at least 95% for VOCs on such tanks.

XVII.C.2. For condensate storage tanks with past uncontrolled actual emissions of volatile organic compounds of less than 20 tons per year based on a rolling twelve-month total that may become subject to ~~section~~SECTION XVII.C.1. by virtue of the addition of a newly drilled well or the recompletion or stimulation of an existing well, owners or operators of such tanks shall have until 90 days after the date of 1st production of the newly drilled, recompleted or stimulated well to install and operate any required air pollution control equipment. If the owner or operator determines that emissions of volatile organic compounds will be below the 20 ton per year threshold, the owner or operator shall notify the Division of this determination in writing and include an explanation of the methodology used to make this determination.

XVII.C.3. Monitoring: The owner or operator of any condensate storage tank that is required to control volatile organic compound emissions pursuant to this ~~section~~SECTION XVII.C. shall visually inspect or monitor the Air Pollution Control Equipment to ensure that it is operating at least as often as condensate is loaded out from the tank, unless a more frequent inspection or monitoring schedule is followed. In addition, if a flare or other combustion device is used, the owner or operator shall visually inspect the device for visible emissions at least as often as condensate is loaded out from the tank.

XVII.C.4. Recordkeeping: The owner or operator of each condensate storage tank shall maintain the following records for a period of five years:

XVII.C.4.a. Monthly condensate production from the tank.

XVII.C.4.b. For any condensate storage tank required to be controlled pursuant to this ~~section~~SECTION XVII.C., the date, time and duration of any period where the air pollution control equipment is not operating. The duration of a period of non-operation shall be from the time that the air pollution control equipment was last observed to be operating until the time the equipment recommences operation.

XVII.C.4.c. For tanks where a flare or other combustion device is being used, the date and time of any instances where visible emissions are observed from the device.

XVII.D. Emission reductions from glycol natural gas dehydrators

Beginning May 1, 2008, any still vent and vent from any gas-condensate-glycol (GCG) separator (flash separator or flash tank), if present, on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant shall reduce uncontrolled actual emissions of volatile organic compounds by an average of at least 90 percent through the use of air pollution control equipment. This ~~section~~SECTION XVII.D shall not apply to any single natural gas dehydrator, or several dehydrators at a single oil and gas exploration and production operation/site, natural gas compressor station, drip station or gas-processing plant, with uncontrolled actual emissions of volatile organic compounds of less than 15 tons per year based on a rolling twelve-month total. The control requirement in this ~~section~~SECTION XVII.D. shall not apply to a natural gas dehydrator with emissions below the APEN reporting thresholds in Regulation No. 3, Part A, Section II.D that is part of a grouping of dehydrators, but the emissions from such dehydrator shall be included in the calculation used to determine whether the grouping of dehydrators exceeds the 15 tons per year threshold.

XVII.E. Control of emissions from new, MODIFIED, EXISTING and relocated natural gas fired reciprocating internal combustion engines.

XVII.E.1. THE REQUIREMENTS OF THIS SECTION XVII.H. SHALL NOT APPLY TO ANY ENGINE HAVING ACTUAL UNCONTROLLED EMISSIONS BELOW PERMITTING THRESHOLDS LISTED IN REGULATION NO.3, PART B.

XVII.E.2. NEW, MODIFIED AND RELOCATED NATURAL GAS FIRED RECIPROCATING INTERNAL COMBUSTION ENGINES

XVII.E.2.A. E-~~e~~xcept as provided IN SECTION XVII.E.2.B., below, the owner or operator on any natural gas fired reciprocating internal combustion engine that is either constructed or relocated to the state of Colorado from another state, ON OR after the date listed in the table below shall operate and maintain each engine according to the manufacturer's written instructions or procedures to the extent practicable and consistent with technological limitations and good engineering and maintenance practices over the entire life of the engine so that it achieves the emission standards required in SECTION XVII.E.2.B.'S ~~the~~ T~~t~~able 1 below:

XVII. E.2.B. ACTUAL EMISSIONS FROM NATURAL GAS FIRED RECIPROCATING INTERNAL COMBUSTION ENGINES SHALL NOT EXCEED THE EMISSION PERFORMANCE STANDARDS IN TABLE 1 BELOW AS EXPRESSED IN UNITS OF GRAMS PER HORSEPOWER-HOUR (G/HP-HR).

~~Maximum Engine Hp~~	~~Construction or Relocation Date~~	~~Emission Standards is G/hp-hr~~		
		~~NOx~~	~~CO~~	~~VOC~~
~~100<Hp<500~~	~~January 1, 2008~~ ~~January 1, 2011~~	~~2.0~~ ~~1.0~~	~~4.0~~ ~~2.0~~	~~1.0~~ ~~0.7~~
~~500<Hp~~	~~July 1, 2007~~ ~~July 1, 2010~~	~~2.0~~ ~~1.0~~	~~4.0~~ ~~2.0~~	~~1.0~~ ~~0.7~~

~~The requirements of this section shall not apply to any engine that is exempt from obtaining a construction permit under Regulation No. 3, Part B.~~

TABLE 1

MAXIMUM ENGINE HP	CONSTRUCTION OR RELOCATION DATE	EMISSION STANDARDS (G/HP-HR)		
		NOX	CO	VOC
< 100 HP	ANY	NA	NA	NA
>100 HP AND < 500 HP	ON OR AFTER JANUARY 1, 2008	2.0	4.0	1.0
	ON OR AFTER JANUARY 1, 2011	1.0	2.0	0.7

> 500 HP	ON OR AFTER JULY 1, 2007	2.0	4.0	1.0
	ON OR AFTER JULY 1, 2010	1.0	2.0	0.7

XVII.E.3. EXISTING NATURAL GAS FIRED RECIPROCATING INTERNAL COMBUSTION ENGINES

XVII.E.3.A. RICH BURN RECIPROCATING INTERNAL COMBUSTION ENGINES

XVII.E.3.A.(I) EXCEPT AS PROVIDED IN SECTION XVII.E.3.A.(II), ALL RICH BURN RECIPROCATING INTERNAL COMBUSTION ENGINES WITH A MANUFACTURER'S NAME PLATE DESIGN RATE GREATER THAN 500 HORSEPOWER SHALL INSTALL AND OPERATE BOTH A NON-SELECTIVE CATALYST REDUCTION AND AN AIR FUEL CONTROLLER BY MAY 1, 2010. A RICH BURN RECIPROCATING INTERNAL COMBUSTION ENGINE IS ONE WITH A NORMAL EXHAUST OXYGEN CONCENTRATION OF LESS THAN 2% BY VOLUME.

XVII.E.3.A.(II) ANY RICH BURN RECIPROCATING INTERNAL COMBUSTION ENGINE OPERATING PRIOR TO JUNE 1, 2004, FOR WHICH THE OWNER OR OPERATOR DEMONSTRATES TO THE DIVISION THAT RETROFIT TECHNOLOGY CANNOT BE INSTALLED AT A COST OF LESS THAN $ 5,000 PER TON OF COMBINED VOLATILE ORGANIC COMPOUND AND NITROGEN OXIDES EMISSION REDUCTIONS (THIS VALUE SHALL BE ADJUSTED FOR FUTURE APPLICATIONS ACCORDING TO THE CURRENT DAY CONSUMER PRICE INDEX) IS EXEMPT COMPLYING WITH SECTION XVII.E.3.A. INSTALLATION COSTS AND THE BEST INFORMATION AVAILABLE FOR DETERMINING CONTROL EFFICIENCY SHALL BE CONSIDERED IN DETERMINING SUCH COSTS. IN ORDER TO QUALIFY FOR SUCH EXEMPTION, THE OWNER OR OPERATOR MUST SUBMIT AN APPLICATION MAKING SUCH A DEMONSTRATION, TOGETHER WITH ALL SUPPORTING DOCUMENTS, TO THE DIVISION BY AUGUST 1,2009.

XVII.E.3.B. LEAN BURN RECIPROCATING INTERNAL COMBUSTION ENGINES

XVII.E.3.B.(I) EXCEPT AS PROVIDED IN SECTION XVII.E.3.B.(II), ALL LEAN BURN RECIPROCATING INTERNAL COMBUSTION ENGINES WITH A MANUFACTURER'S NAME PLATE DESIGN RATE GREATER THAN 500 HORSEPOWER SHALL INSTALL AND OPERATE AN OXIDATION CATALYST BY MAY 1, 2010. A LEAN BURN RECIPROCATING INTERNAL COMBUSTION ENGINE IS ONE WITH A NORMAL EXHAUST OXYGEN CONCENTRATION OF 2% BY VOLUME, OR GREATER.

XVII.E.3.B.(II) ANY LEAN BURN RECIPROCATING INTERNAL COMBUSTION ENGINE OPERATING PRIOR TO JUNE 1, 2004, FOR WHICH THE OWNER OR OPERATOR DEMONSTRATES TO THE DIVISION THAT RETROFIT TECHNOLOGY CANNOT BE INSTALLED AT A COST OF LESS THAN $ 5,000 PER TON OF VOLATILE ORGANIC COMPOUND EMISSION REDUCTION (THIS VALUE SHALL BE ADJUSTED FOR FUTURE APPLICATIONS ACCORDING TO THE CURRENT DAY CONSUMER PRICE INDEX) IS EXEMPT COMPLYING WITH SECTION XVII.E.3.B.(I). INSTALLATION COSTS AND THE BEST INFORMATION AVAILABLE FOR DETERMINING CONTROL EFFICIENCY SHALL BE CONSIDERED IN DETERMINING SUCH COSTS. IN ORDER TO QUALIFY FOR SUCH EXEMPTION, THE OWNER OR OPERATOR MUST SUBMIT AN APPLICATION MAKING SUCH A DEMONSTRATION, TOGETHER WITH ALL SUPPORTING DOCUMENTS, TO THE DIVISION BY AUGUST 1, 2009.

XVIII. NATURAL G~~G~~AS-ACTUATED PNEUMATIC C~~C~~ONTROLLERS A~~A~~SSOCIATED WITH OIL AND GAS OPERATIONS

XVIII.A. APPLICABILITY

-THIS SECTION APPLIES TO ~~P~~PNEUMATIC CONTROLLERS THAT ARE ACTUATED BY UNPROCESSED GAS AND ARE LOCATED AT OIL AND GAS EXPLORATION AND PRODUCTION OPERATIONS, NATURAL GAS COMPRESSOR STATIONS, NATURAL GAS DRIP STATIONS AND NATURAL GAS PROCESSING PLANTS.~~EXPLORATION AND PRODUCTION (E&P) AND MID-STREAM FACILITIES LOCATED~~ IN AN OZONE NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREA.

XVIII.B. DEFINITIONS

XVIII.B.1. ~~A~~AFFECTED OPERATIONS SHALL MEAN OIL AND GAS EXPLORATION AND PRODUCTION OPERATIONS, NATURAL GAS COMPRESSOR STATIONS, ~~AND~~ NATURAL GAS DRIP STATIONS AND NATURAL GAS PROCESSING PLANTS.

XVIII.B.2. *ENHANCED MAINTENANCE* IS SPECIFIC TO HIGH-BLEED DEVICES AND SHALL INCLUDE BUT IS NOT LIMITED TO CLEANING, TUNING, AND REPAIRING LEAKING GASKETS, TUBING FITTINGS, AND SEALS~~,~~; ~~AND INCLUDES~~ TUNING TO OPERATE OVER A BROADER RANGE OF PROPORTIONAL BAND; AND ELIMINATING UNNECESSARY VALVE POSITIONERS.

XVIII.B.3. *HIGH-BLEED PNEUMATIC CONTROLLER* SHALL MEAN A PNEUMATIC CONTROLLER THAT IS DESIGNED TO HAVE A CONSTANT NON-ACTUATING BLEED RATE ~~EMITS~~ IN EXCESS OF 6 STANDARD CUBIC FEET PER HOUR (SCFH) OF NATURAL GAS TO THE ATMOSPHERE.

XVIII.B.4. *LOW-BLEED PNEUMATIC CONTROLLER* SHALL MEAN A PNEUMATIC CONTROLLER IS DESIGNED TO HAVE A CONSTANT NON-ACTUATING BLEED RATE LESS THAN OR EQUAL TO 6 SCFH OF NATURAL GAS TO THE ATMOSPHERE~~,~~.

XVIII.B.~~5~~6. *PNEUMATIC CONTROLLER* SHALL MEAN AN INSTRUMENT THAT IS ACTUATED USING NATURAL GAS PRESSURE AND USED TO CONTROL OR MONITOR PROCESS PARAMETERS SUCH AS LIQUID LEVEL, GAS LEVEL, PRESSURE, VALVE POSITION, LIQUID FLOW, GAS FLOW AND TEMPERATURE.

XVIII.C. EMISSION REDUCTION REQUIREMENTS

THE OWNERS AND OPERATORS OF AFFECTED OPERATIONS SHALL REDUCE EMISSIONS OF VOLATILE ORGANIC COMPOUNDS FROM PNEUMATIC CONTROLLERS ASSOCIATED WITH AFFECTED OPERATIONS ~~BY THE DATES LISTED BELOW. EMISSION REDUCTIONS SHALL BE REQUIRED FOR NEW, MODIFIED AND EXISTING PNEUMATIC CONTROLLERS~~ AS FOLLOWS:

XVIII.C.1. ALL NEW PNEUMATIC CONTROLLERS ~~INSTALLED~~COMMENCING CONTRUCTION ON OR AFTER FEBRUARY 1, 2009, SHALL BE THE EQUIVALENT OF A LOW-BLEED PNEUMATIC CONTROLLER~~S OR BETTER~~ (CAPABLE OF REDUCING VOLATILE ORGANIC COMPOUND EMISSIONS TO LEVELS AS STRINGENT AS A LOW BLEED CONTROLLER, ~~(~~INCLUDING CONTROLLERS THAT ARE NOT ACTUATED VIA NATURAL GAS AND DO NOT EMIT VOLATILE ORGANIC COMPOUND~~VOC~~S), UNLESS ALLOWED PURSUANT TO SECTION XVIII.C.3.

XVIII.C.2. ALL HIGH-BLEED PNEUMATIC CONTROLLERS IN PLACE PRIOR TO FEBRUARY 1, 2009 SHALL BE REPLACED WITH THE EQUIVALENT OF A LOW-BLEED PNEUMATIC CONTROLLERS (CAPABLE OF REDUCING VOLATILE ORGANIC COMPOUND EMISSIONS TO LEVELS AS STRINGENT AS A LOW BLEED CONTROLLER, ~~OR BETTER (~~INCLUDING CONTROLLERS THAT ARE NOT ACTUATED VIA NATURAL GAS AND DO NOT EMIT VOCS), BY MAY 1, 2009, UNLESS ~~SUBJECT~~ ALLOWED PURSUANT TO SECTION XVIII.C.~~2~~3.

XVIII.C.~~2~~3. ALL HIGH-BLEED PNEUMATIC CONTROLLERS THAT MUST REMAIN IN SERVICE ~~OR BE NEWLY PLACED IN SERVICE~~ DUE TO~~IF WARRANTED BY~~ SAFETY AND/OR PROCESS PURPOSES MUST HAVE ~~D~~DIVISION APPROVAL AND COMPLY WITH ~~S~~SECTIONS XVIII.D. AND XVIII.E.

XVIII.C.3.A. FOR HIGH-BLEED PNEUMATIC CONTROLLERS IN PLACE PRIOR TO FEBRUARY 1, 2009, THE OWNER/OPERATOR SHALL SUBMIT JUSTIFICATION FOR HIGH-BLEED PNEUMATIC CONTROLLERS TO REMAIN IN SERVICE DUE TO SAFETY AND /OR PROCESS PURPOSES BY MARCH 1, 2009. THE DIVISION SHALL BE DEEMED TO HAVE APPROVED THE JUSTIFICATION IF IT DOES NOT OBJECT TO THE OWNER/OPERATOR WITHIN 30-DAY UPON RECEIPT.

XVIII.C.3.B. FOR HIGH-BLEED PNEUMATIC CONTROLLERS COMMENCING CONTRUCTION ON OR AFTER FEBRUARY 1, 2009, THE OWNER/OPERATOR SHALL SUBMIT JUSTIFICATION FOR HIGH-BLEED PNEUMATIC CONTROLLERS TO BE INSTALLED DUE TO SAFETY AND /OR PROCESS PURPOSES PRIOR TO INSTALLATION. THE DIVISION SHALL BE DEEMED TO HAVE APPROVED THE JUSTIFICATION IF IT DOES NOT OBJECT TO THE OWNER/OPERATOR WITHIN 30-DAY UPON RECEIPT.

XVIII.D. MONITORING

THIS SECTION APPLIES ONLY TO HIGH-BLEED PNEUMATIC CONTROLLERS IDENTIFIED IN SECTION XVIII.C.3.

XVIII.D.1. EACH HIGH-BLEED PNEUMATIC CONTROLLER ~~SUBJECT TO SECTION XVIII.C.2.~~ SHALL BE PHYSICALLY TAGGED BY THE OWNER/OPERATOR IDENTIFYING IT WITH A UNIQUE HIGH-BLEED PNEUMATIC CONROLLER NUMBER THAT IS ASSIGNED AND MAINTAINED BY THE OWNER/OPERATOR EFFECTIVE MAY 1, 2009.

XVIII.D.2. EACH NEW HIGH-BLEED PNEUMATIC CONTROLLER ~~SUBJECT TO SECTION XVIII.C.2.~~ SHALL BE INSPECTED ON A MONTHY BASIS. ENHANCED MAINTENANCE AS DEFINED IN SECTION XVIII.B.2. SHALL BE PERFORMED BY MANUFACTURER SPECIFICIATIONS AS NECESSARY EFFECTIVE MAY 1, 2009.

XVIII.E. RECORDKEEPING

THIS SECTION APPLIES ONLY TO HIGH-BLEED PNEUMATIC CONTROLLERS IDENTIFIED IN SECTION XVIII.C.3.

XVIII.E.1. THE OWNER OR OPERATOR SHALL MAINTAIN A LOG OF THE TOTAL NUMBER OF HIGH-BLEED PNEUMATIC CONTROLLERS PER FACILITY, THE TOTAL NUMBER OF HIGH-BLEED PNEUMATIC CONTROLLERS PER COMPANY AND THE ASSOCIATED REASONING THAT THE HIGH-BLEED PNEUMATIC CONTROLLERS MUST BE USED PURSUANT TO SECTION XVIII.C.~~2~~3. THE LOG SHALL BE UPDATED ON A MONTHLY BASIS.

XVIII.E.2. THE OWNER OR OPERATOR SHALL MAINTAIN A LOG OF RECORDS OF ENHANCED MAINTENANCE WHICH SHALL INCLUDE, AT A MINIMUM, INSPECTION DATES, THE DATE OF THE MAINTENANCE ACTIVITY, HIGH-BLEED PNEUMATIC CONTROLLER NUMBER, DESCRIPTION OF THE MAINTENANCE PERFORMED, RESULTS AND DATE OF ANY CORRECTIVE ACTION TAKEN, AND THE PRINTED NAME AND SIGNATURE OF THE INDIVIDUAL PERFORMING THE MAINTENANCE. THE LOG SHALL BE UPDATED ON A MONTHLY BASIS.

XVIII.E.3. RECORDS OF ENHANCED MAINTENANCE OF PNEUMATIC CONTROLLERS SHALL BE MAINTAINED FOR A MINIMUM OF THREE YEARS AND READILY MADE AVAILABLE TO THE DIVISION UPON REQUEST.

~~XVIII~~XIX. Statements of Basis, Specific Statutory Authority and Purpose

~~XVIII~~XIX.A. December 21, 1995 (Section II.B)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedures Act, section 24-4-103, C.R.S. and the Colorado Air Pollution Prevention and Control Act, section 25-7-110.5, C.R.S.

Basis

Regulations 3, 7 and the Common Provisions establish lists of Negligibly Reactive Volatile Organic Compounds (NRVOCs). The revisions adopted consolidate the list of NRVOCs into the Common Provisions, assuring that the same list of NRVOCs apply to all the Colorado Regulations. This provides more consistency in those chemicals regulated as VOCs.

Specific Statutory Authority

The Colorado Air Pollution Prevention and Control Act provides the authority for the Colorado Air Quality Control Commission to adopt and modify Regulations pertaining to organic solvents and photochemical substances. Section 25-7-109(2)(f) and 25-7-109(2)(g), C.R.S., grant the Commission the authority to promulgate regulations pertaining to Organic solvents and photochemical substances. The Commission's action is taken pursuant to authority granted and procedures set forth in sections 25-7-105, 25-7-109, and 25-7-110, C.R.S.

Purpose

These revisions to Regulations No. 3, 7, and the Common Provisions are intended to clarify substances that are negligibly reactive VOCs, which are reflected in the EPA list of non-photochemically reactive VOCs. By consolidating the list (which consists of the EPA list of non-photochemically VOCs), and adopting the EPA definition by reference, a single list of negligibly reactive VOCs will apply uniformly to all Colorado Air Quality Control Commission Regulations.

This revision will also include EPA's recent addition of acetone to the negligibly reactive VOC list. The addition of acetone to the list of negligibly reactive VOC's provides additional flexibility to sources looking for an alternative to more photochemically reactive VOCs. Because the EPA has added acetone to their list of non-photochemically reactive VOCs many industries, which make and supply products to Colorado industries, are planning to substitute acetone for more reactive VOCs. This change in the content of products purchased by industry for use in Colorado would adversely effect industries in Colorado if acetone remains a regulated VOC in Colorado. By adopting acetone as a negligibly reactive VOC industries will be able to take advantage of and benefit from this possible shift in product contents.

~~XVIII~~XIX.B. March 21, 1996 (Sections I.A.1-4; II.D; II.E)

The changes to Regulation No. 7 were adopted as part of the Commission's decision to redesignate the Denver metro area as an attainment and maintenance area for ozone, together with the relevant amendments to the Ambient Air Quality Standards regulation and Regulation No. 3. The Ozone Maintenance Plan, also adopted by the Commission on March 21, 1996 as part of the redesignation, based part of its demonstration of maintenance on the continued existence of rules regulating VOC emissions. Such rules include the application of the permit requirements of Regulation No. 3 to gasoline stations, and the continued application of Regulation No. 7 for the control of VOC in nonattainment areas. The VOC controls in Regulation No. 7 were adopted into the SIP in May 1995, after Denver attained the ozone standard. The maintenance demonstration was based on future inventories that assumed the continuance of existing VOC controls in the Denver Metro area.

Pursuant to Section 25-7-107(2.5), C.R.S., the Commission is required to take expeditious action to redesignate the area as an attainment area for ozone. The CAA requires the submittal of a maintenance plan demonstrating maintenance of the ozone standard for any such redesignation request. The changes to Regulation No. 7 are consistent with continued maintenance of the ozone standard and are not otherwise more stringent than the relevant federal requirements.

The purpose of the revisions to Regulation 7, § I.A is to provide a de minimis source with an opportunity to obtain an exemption from the requirements of Regulation No. 7 through rule-making. This revision will be submitted to the EPA for inclusion in the State Implementation Plan (SIP). Upon inclusion of this revision in the SIP, exemptions from Regulation No.7 adopted by the Commission shall apply for purposes of both federal and state law, pending review by the state legislature pursuant to § 25-7-133(2), C.R.S. The rule revision includes several limitations on the scope of such exemptions:

1. The aggregate of all emissions from de minimis sources may not exceed five tons of emissions per day. The purpose of this limitation is to protect the projections contained in the emissions inventory, and to prevent growth in such emissions from exceeding the National Ambient Air Quality Standard (NAAQS) for ozone.

2. An exemption may not be granted if the Division demonstrates that such exemption will cause or contribute to air pollution levels that exceed the NAAQS, even if the total aggregate emissions from such sources is less than five tons per day.

3. The Commission rule prohibits more than one rule-making hearing per year to consider potential de minimis exemptions in the aggregate. The purpose of this provision is to prevent the granting of case-by-case exemptions, and to conserve agency resources. The granting of exemptions on a case-by-case basis would grant an unfair advantage for those sources that are able to have their case heard by the commission before other, similarly situated sources, submit a request for a de minimis exemption. However, upon a showing of an emergency, and at the discretion of the Commission, the Commission may always grant an exemption on a case-by-case basis.

4. The Commission rule provides that the growth in emissions due to such de minimis exemptions may not exceed the growth that was included in the emissions inventory in the SIP.

5. The Commission rule requires the de minimis exemptions to be included in a permit that is subject to review and comment by the public and by EPA.

The rule revision proposed by the Regional Air Quality Council (RAQC) did not include these limitations. However, the Commission may not have used the rule as proposed by RAQC to grant unlimited exemptions from the requirements of Regulation No. 7 because such an action would undermine the regulation and the maintenance demonstration contained in the SIP. The limitations adopted by the Commission were the subject of an alternative proposal submitted by the Division. The purpose of the limit is to ensure that the de minimis exemption provision cannot be used to jeopardize attainment of the NAAQs. Such a limit is necessary in order to obtain EPA approval of this SIP revision. The alternative proposal submitted by the Division and adopted by the Commission will have no regulatory impact on any person, facility, or activity. Even without an express provision limiting the de minimis exemptions to five tons per day, the Commission generally would not have granted de minimis exemptions in excess of that amount because such emissions are not accounted for in the emissions inventory and would undermine the maintenance demonstration. Furthermore, the alternative proposed by the Division does not, by itself, create an exemption from any regulatory requirement. The alternative simply limits the scope of the exemptions that may become fully effective without a SIP revision. However, the rule does not in any way limit the Commission's authority to amend the SIP.

The emissions inventory submitted to EPA anticiapted growth in emissions in both the area source and minor source categories, as well as the major source category. In order to ensure that any growth in emissions due to the granting of de minimis exemptions will not cause total emissions to exceed the growth projections for these categories, the Division will keep track of the permitted allowable emissions that may result from sources and source categories entitled to such exemptions. In addition, the growth in emissions from area, major and minor source categories will be tracked when the Division performs the periodic inventories described in the SIP for the years 1999, 2002 and 2003. Any permitted growth in emissions due to de minimis exemptions will be added to the emissions for the source categories as reflected in the most recent periodic inventory. No further de minimis exemptions will be granted if the

total growth in emssions exceeds the growth projections contained in the SIP. In addition, if the total growth exceeds the growth projections contained in the SIP, one or more of the contingency measures will be implemented to offset such growth, or the SIP will be revised as necessary to ensure continued maintenance of the standard.

The purpose of the addition of Regulation No. 7, § II.E is to provide sources with a process to obtain approval of an alternative emission control plan, compliance method, test method, or test procedure without waiting for EPA to approve of a site-specific SIP revision. The rule provides that any such alternative must be just as effective as the relevant regulatory provision, and that such effectiveness must be demonstrated using equally effective test methods and procedures. The changes to this section delegate the authority to the Division to approve of such alternatives. Since rule-making is not required under paragraph E, the language allowing a source to assert that the relevant regulatory provision does not represent RACT has been omitted from this section. Such a change to the substantive requirements of Regulation No. 7 would require a rule change.

The rule revision proposed by the RAQC provided that alternative emissions control plans and compliance methods must be just as effective as those contained in the rule, but did not describe the test methods to be used to demonstrate such effectiveness. The Division proposed an alternative rule requiring such effectiveness to be demonstrated using test methods and procedures that are just as effective as those set out in the rule, or that have otherwise been approved by EPA. Such criteria for test methods and procedures are necessary in order to obtain EPA approval of this SIP revision. However, even without this language in the rule the Division would have required approved test methods and procedures in order to approve of proposed alternatives. The Division's alternative proposal provides the needed certainty in the most flexible manner possible. Furthermore, the alternative proposed by the Division does not impose any new regulatory requirement. Instead, it merely establishes criteria for allowing persons subject to the regulation to propose, in their discretion, an alternative means of complying with the existing regulatory requirements. Therefore, the alternative proposal submitted by the Division and adopted by the Commission will have no regulatory impact on any person, facility, or activity.

The rule revisions provide that no permit may be issued based on the provisions allowing for the creation of de minimis exemptions and the approval of alternative compliance plans without first revising the SIP unless EPA first approves of such regulatory revisions as part of the State Implementation Plan. The purpose of this condition is to address the possible disapproval of these revisions by EPA. In the event these changes are not approved by EPA, the remaining regulatory provisions of Regulation No. 7 will remain in full force and effect, and therefore, the EPA may approve of the maintenance plan and the redesignation request.

The revisions to Regulation No. 7 are procedural changes that are not intended to reduce air pollution.

For clarification, the Commission adopted these regulation revisions as follows:

REGULATION REVISION	OZONE SIP AND MAINTENANCE PLAN
Section I.A.1	Exists in Appendix C of the Ozone Maintenance Plan to become a part of that document approved March 21, 1996
Sections I.A.2, 3, 4; Section II.D, II.E	Adopted as subsequent regulation revisions to be submitted to the Governor and EPA separately and concurrently as a revision to the Ozone SIP (and Maintenance Plan)

The specific statutory authority to promulgate the rules necessary for redesignation is set out in § § 25-7-105(1)(a)(I) and (2); -106(1)(a); -107 (1) and (2.5); and -301. The authority to adopt such rules includes the authority to adopt exceptions to the rules, and the process for applying for any such exemptions.

~~XVIII~~XIX.C. November 21, 1996 (Section XII)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedures Act, section 24-4-103, C.R.S. and the Colorado Air Pollution Prevention and Control Act, section 25-7-110.5, C.R.S.

Basis

Regulations 3, 7 and the Common Provisions establish lists of Negligibly Reactive Volatile Organic Compounds (NRVOCs). The revisions adopted update the list of NRVOCs so that the state list remains consistent with the federal list. Additionally because perchloroethylene will no longer be listed as a VOC in Regulation No. 7, Section XII, Control of VOC Emissions from Dry Cleaning Facilities using Perchloroethylene as a Solvent, is being deleted.

Regulation No. 8 and 3 list the federal Hazardous Air Pollutants (HAPs). In the June 8, 1996 Federal Register the EPA removed Caprolactam (CAS 105-60-2) from the federal list of Hazardous Air Pollutants. The conforming changes in Regulation No. 3 Appendices B, C and D have been made to keep the list of federal HAPs in Regulation No. 3 consistent with the federal list. The list of HAPs in Regulation No. 8 has been removed and a reference to the list in Regulation No. 3 has been added.

Specific Statutory Authority

The Colorado Air Pollution Prevention and Control Act provides the authority for the Colorado Air Quality Control Commission to adopt and modify Regulations pertaining to organic solvents and photochemical substances. Section 25-7-109(2)(f) and 25-7-109(2)(g), C.R.S., grant the Commission the authority to promulgate regulations pertaining to organic solvents and photochemical substances. Sections 25-7-105(1)(I)(b) and 25-7-109(2)(h) provide authority to adopt emission control regulations and emission control regulations relating to HAPs respectively. The Commission's action is taken pursuant to authority granted and procedures set forth in sections 25-7-105, 25-7-109, and 25-7-110, C.R.S.

Purpose

These revisions to Regulations No. 3, 7, 8 and the Common Provisions are intended to update the state lists of NRVOCs, the Ozone SIP, and HAPs for consistency with the federal lists.

~~XVIII~~XIX.D. October 15, 1998 (Section II.F)

The Gates Rubber Co. Site-specific Revision

The Gates Rubber Co. (Gates), by and through its attorney, submitted this Statement of Basis, Specific Statutory Authority and Purpose for amendments to Regulation No. 7, Control of Emissions of Volatile Organic Compounds.

Basis

Regulation No. 3 contains a certification and trading of emission reduction credits section (Section V), which sets forth the definitions and process for obtaining emission credits and using those credits. This section was amended to permit the use of emission reduction credits (ERC) to satisfy reasonably available control technology (RACT) requirements. The criteria for approval of ERC transactions specifies that they must involve like pollutants (for volatile organic compounds, the same degree of toxicity and photochemical reactivity), must be within the same nonattainment area, may not be used to

satisfy Federal technology control requirements and may not be inconsistent with standards or regulations or to circumvent new source performance standards, best available control technology, lowest available emission rate technology controls or NESHAPs.

Regulation No. 7 sets forth CTG and RACT emission limitations, equipment requirements and work practices intended to control emission of volatile organic compounds (VOC) from new and existing stationary sources. The control measures specified in Regulation No. 7 are designed to reduce the ambient concentrations of ozone in ozone nonattainment areas and to maintain adequate air quality in other areas.

Specific Statutory Authority

The provisions of C.R.S. §§ 25-7-105 and 25-7-109 to 110 provide the specific statutory authority for the amendments to this regulation adopted by the Commission. The Commission has also adopted in compliance with C.R.S. § 24-4-103(4), this Statement of Basis, Specific Statutory Authority and Purpose.

Purpose

The purpose of this amendment to Regulation No. 7 is to establish a source specific rule for Gates to allow the use of emission reduction credits to satisfy the RACT requirements for VOC emissions pursuant to Regulation No. 7 for surface coatings operations not specifically listed in Section IX of Regulation No. 7. Regulation No. 3 provides specific authorization to use emission reduction credit transactions as an alternative compliance method to satisfy CTG and RACT requirements.

Specifically, the VOC certified emissions reduction credits to be used in this emission credit transaction in an amount up to 12 tons per year are from Coors Brewing Company pursuant to their emissions reduction credit Permit. The emission reduction credits will be used to satisfy the general requirements that all sources apply RACT. These emission reduction credits will be used by Gates so that Gates can use solvent-based surface coatings which contain VOCs periodically in lieu of the water-based coatings normally used on its 10 Cord coating line (S033, S034, and S035). these credits will allow Gates to meet RACT requirements without applying control technology to the 10 Cord line, other than the currently installed catalytic incinerator on the emissions from the drying oven from the fourth dip, which reduces those emissions by at least 90%.

The relevant portion of Regulation No. 3, which applies to the Gates credit transaction is Section V.F., entitled "Criteria for Approval of all Transactions." The first requirement is that the transaction involve like pollutants. In the present case, the emission credit transaction involves the exchange of VOC pollutants. Coors credits for methanol will be exchanged for m-pyrol. Exhaust from the catalytic incinerator, which contains unconverted toluene and xylene, is routed to the curing ovens of the other zones of the 10 Cord line, including the first zone. The Division has previously found that, excluding the emissions from the non-compliant coatings addressed in this rule, the 10 Cord line has met RACT standards. The use of the non-compliant coatings adds no HAPs to the Gates emissions. Other non-criteria reportable pollutants are present at well below APEN de minimis quantities under scenario 2, which is applicable to the 10 Cord line. Regulation No. 3 further requires that toxic or VOC pollutants involve the same degree of toxicity and photochemical reactivity or else a greater reduction may be required. Since these pollutants are both toxics and VOCs (except that m-pyrol is not a toxic), both have been addressed.

All of these compounds are commonly used in the surface coating industry with appropriate safeguards during their use. With respect to toxicity of the Gates compounds, m-pyrol is not listed as a toxic compound on either the federal or state lists. Methanol, the VOC in the Coors credit, is a Bin C HAP. Because the m-pyrol in the non-compliant coatings is not a HAP, the Gates VOCs have equal or lower toxicity than those being purchased from Coors. Therefore, HAP emissions will be reduced in the airshed.

The photochemical reactivities of VOCs are important because of their impact on the ozone formation process in an airshed. The Air Pollution Control Division relied upon the work of Dr. William P.L. Carter, Professor at the University of California, whose article entitled "Development of Ozone Reactivity Scales for Volatile Organic Compounds" describes relative photochemical reactivity scales and comparisons. Dr. Carter notes that there are a number of ways to quantify VOC reactivities, but the most relevant measure of VOC effects on ozone is the actual change in ozone formation in an airshed. This results from changing the emissions of the VOC in that airshed which depends not only on how rapidly the VOC reacts and the nature of its atmospheric reaction mechanism, but also the nature of the airshed where it is emitted, including the effects of other pollutants which are present.

Dr. Carter further states that the VOC effect on ozone in the atmosphere can only be estimated using computer airshed models. The effect of changing the emissions of a given VOC on ozone formation in a particular episode will, in general, depend on the magnitude of the emissions change and on whether the VOC is being added to, subtracted from, or replacing a portion of the base case emissions.

Dr. Carter's derived relative reactivity scale includes reactive organic gases whose indices for maximum incremental reactivity (MIR) range from 0.004 to 6.5. The MIR values were updated in 1997. The VOCs and their respective MIR involved with this exchange are as follows:

Methanol0.16
m-Pyrol0.57

The pending emission credits of VOCs being used in the proposed emissions credit transaction are for methanol. The VOCs emitted from uncontrolled use of solvent-based coatings at Gates are from m-pyrol. Regulation No. 3 provides that if the VOCs are not of the same photochemical reactivity, a greater offset may be required. The Commission required that, based on a past ERC trade for Pioneer Metal Finishing, that methanol credits in a 1.1:1 offset ratio be exchanged for toluene and xylenes. Here, however, the Commission finds that m-pyrol and methanol have similar photochemical reactivities, so no offset will be required.

The second requirement states that the transaction must not result in an increased concentration, at the point of maximum impact of hazardous air pollutants. This provision was derived from the EPA Emissions Trading Policy Statement and referred to NESHAP requirements involved in bubble transactions. If this provision is interpreted to apply generally to a facility which is limited by an existing permit to some level of VOC emissions on a twenty-four hour basis, any additional VOCs allowed pursuant to an emission transaction would by its application increase the concentration of VOCs at the maximum point of impact. Since it appears to have been intended to limit NESHAP offsets in bubble transactions, and no NESHAPs are applicable in the Gates transaction, and recognizing the earlier action of the Commission in approving the use of ERC transactions to satisfy CTG requirements and in approving a previous ERC transaction for Pioneer Metal Finishing, the Commission determined that this requirement should not apply to this transaction.

The next requirement states that no transaction may be approved which is inconsistent with any standard established by the Federal Act, the state Air Quality Control Act or the regulations promulgated under either, or to circumvent NSPS requirements or BACT or LAER, although the Commission may approve a transaction using a certified emission reduction credit in lieu of a specified CTG method or RACT. The emissions involved in this transaction at Gates are not subject to NSPS, BACT, or LAER. Regulation No. 7 applies only RACT to the Gates operations involved. Regulation No. 3 clearly permits the use of emission reduction credits to satisfy RACT.

The emission must involve sources which are located within the same nonattainment area. In the present case, both Gates, whose operations are located at 900 S. Broadway, Denver, Colorado, who is proposing to use the credits, and the source of the credits, Verticel, whose operations were located at 4607 South Windermere Street, Englewood, Colorado, are located in the Denver nonattainment area, less than five miles apart.

The next requirement prohibits the use of emission reduction credits to meet applicable technology-based requirements for new sources, such as NSPS, BACT, or LAER. As stated above, the Gates operations involved in this transaction are not subject to NSPS, BACT, or LAER or any other technology-based requirement except for RACT requirements for which an ERC transaction may be used to satisfy such requirements.

The next requirement states that VOC trades will be considered equal in ambient effect where the trade is a pound for pound trade in the same control strategy demonstration area. It appears that this requirement, which was taken from the EPA Emissions Trading Policy Statement, made the assumption that the "pound for pound" trend would have an equal impact on the ambient environment, with respect to ozone. Since there was no independent photochemical reactivity equivalency requirement in the 1986 Policy Statement, this requirement appears to be redundant with the requirement for insuring the same degree of photochemical reactivity among traded pollutants.

For VOC trades involving surface coating, the requirements state that emissions must be calculated on a solids-applied basis and must specify the maximum time period over which the emissions may be averaged, not to exceed 24 hours. The proposed emissions credit transaction is based on a 24-hour period. With respect to the solids-applied basis calculation, this transaction will be calculated on the basis of the pounds of VOCs from uncontrolled solvent-based coatings.

The emissions credit transaction will require a SIP revision. The source specific rule for Gates will be forwarded to EPA for approval. The state emission permit for Gates pursuant to the emissions credit transaction will be state effective (but not federally effective) until the SIP revision is approved by EPA.

Gates proposed the following VOC emissions limitation in its state permit taking into consideration the pounds per year VOC emissions allowed by this emissions credit transaction:

1. A daily maximum limitation of 400 lbs. of VOC emissions from uncontrolled solvent-based surface coatings, calculated on a monthly basis for compliance purposes. Calculations will be performed by the 30th of the following month.

2. An annual limitation of no more than 24,000 lbs. (12 tons) of VOC emissions from uncontrolled solvent-based surface coatings.

Gates proposes to calculate the annual total VOC limitation on a rolling 12-month basis. Gates further proposes to keep monthly totals of non-compliant surface coatings used and to calculate daily usage based on monthly usage divided by the number of days non-compliant surface coatings were used. Records of usages and calculations will be kept and produced at the Division's request.

This source-specific rule has a negligible or no effect upon the other provisions of the ozone SIP.

It is contemplated that a State construction permit will be issued to Gates upon final approval by the Commission. Should the approval come after the issuance of Gates' Title V operating permit, the terms of the construction permit will be added to the operating permit.

~~XVIII~~XIX.E January 11, 2001 (Sections III.C, IX.L.2.c (1), and X.D.2 through XI.A.3.)

Re-adoption of Changes to Regulation No. 7 that were not printed in the Regulation or the Colorado Code of Regulations.

Background

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Administrative Procedures Act, C.R.S. (1988), Sections 24-4-103(4) and (12.5) for adopted or modified regulations.

Basis

During a review of the version of Regulation No. 7 adopted by the Air Quality Control Commission and the version of Regulation No. 7 published in the Colorado Code of Regulations, several significant discrepancies have been identified. This rule making will clarify the Commission's intent to adopt the following revisions to Regulation No. 7:

1. Section III.C regarding General Requirements for Storage of Volatile Organic Compounds omits the following revision:

   "Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA at actual conditions are exempt from the provisions of Section III.B, above."

2. Section IX.L2.c.i contains discrepancies in reference to the permit number of Coors Brewing Company Emissions Reduction Credit Permit issued on July 25, 1994.

3. Section X.D.2 through Section XI.A.3 was omitted from the CCR as published in the current version of Regulation No. 7.

Authority

Sections 25-7-109, C.R.S. (1997) authorize the Commission to adopt emission control regulations.

Purpose

Re-adoption of the proposed rule will eliminate the discrepancies between the Commission's adopted provisions within Regulation No. 7 and those contained within the Colorado Code of Regulations. Adoption of the amendments will benefit the regulated community by providing sources with consistent information.

~~XVIII~~XIX.F. November 20, 2003 (Sections I.A.2 through I.A.4, II.D and II.E).

The Commission repealed the provisions establishing a procedure for granting exemptions for de minimis sources, and the procedure for approving alternative compliance plans without source-specific SIP revisions. The Commission had adopted the repealed provisions in March 1996, but had delayed the effective date pending EPA approval through the SIP revision process. Earlier this year, EPA informed the Commission of its intent to disapprove the provisions unless they were withdrawn. Thus, the provisions that are the subject of this rulemaking action never took effect. The Commission hereby repeals such provisions in order to avoid disapproval of the earlier SIP submittal, and to remove extraneous provisions from Regulation No. 7. Such repeal is required in order to comply with federal requirements, and is not otherwise more stringent than the requirements of the federal act.

Sections 25-7-105(1)(a)(I) and 25-7-301 authorize the Commission to adopt and revise a comprehensive SIP, and to regulate emissions from stationary sources, as necessary to maintain the national ambient air quality standard for ozone in accordance with the federal act.

~~XVIII~~XIX.G. (March 2004, sections I.A, I.B., XII, and XVI

The March 2004 revisions were adopted in conjunction with the Early Action Compact Ozone Action Plan, which is a SIP revision for attainment of the 8-hour ozone standard by December 31, 2007. The Commission adopted four new control measures in Regulation No. 7 to reduce emissions of volatile organic compounds (VOC). The control measures require the installation of air pollution control technology to control: (1) VOC emissions from condensate operation at oil and gas (E&P) facilities; (2)

emissions from stationary and portable reciprocating internal combustion engines; (3) certain VOC emissions from gas-processing plants; and, (4) emissions from dehydrators at oil and gas operations.

The new requirements in sections XII, and XVI apply to a larger geographic area than the pre-existing requirements of Regulation No. 7, as set out in section I.A. of the rule. The reference to the "Denver Metro Attainment Maintenance Area", which is not a defined term, in section I.A was changed to refer to the "Denver 1-hour ozone attainment/maintenance area", which is defined in the Ambient Air Quality Standards Rule. Similarly, the reference to the "Denver Metropolitan Nonattainment Area Ozone Maintenance State Implementation Plan" was changed to the "Ozone Redesignation Request and Maintenance Plan for the Denver Metropolitan Area," which is the correct name of the document submitted to EPA in May 2001.

Regarding VOC emissions from condensate operations, the Commission has determined that an overall reduction of 47.5% VOCs is required of each E&P operation so as to meet the requirements of the SIP. Further the Commission decided not to take a unit-by-unit approach, but rather, the amendments take a more flexible approach to regulating such emissions by requiring sources that have filed, or were required to file, APENs to choose emission controls and locations for applying those controls. This approach also minimizes the risk that sources may reconfigure tanks to avoid implementing the regulation.

Section XII.A.6 provides an exemption for owners and operators with less than 30 tpy of flash emissions subject to APEN reporting requirements. Regulation No. 7 previously included more general exemptions for emissions from condensate operations, but such pre-existing exemptions should have been repealed as part of this revision to Regulation No. 7. To the extent any pre-existing exemption for condensate operations remains, such pre-existing exemption shall not be construed to supercede the requirements of Section XII.

The rule also requires annual reports describing how E&P sources will achieve the requisite emission reductions. Such reports are necessary so that the Division can determine whether or not the emission reductions are being achieved.

Section XII.B of Regulation No. 7 is required to ensure that existing and new natural gas processing plants employ air pollution control technology to control emissions from leaking equipment, and atmospheric condensate storage tanks (and tank batteries). The Commission is specifically requiring a leak detection and repair (LDAR) program for all gas plants, according to the provisions of 40 C.F.R. Part 60, Subpart KKK, regardless of the date of construction of the affected facility. This is necessary to ensure these large facilities are well controlled and VOC emissions minimized.

Section XII. C. pertains to control of VOC emissions from natural gas dehydration operations. The Commission determined that, in order to meet the requirements of the SIP, emissions must be reduced from all dehydration operations located in the 8-hour Ozone Control Area if such operations produce emissions above the minimum threshold specified in the rule. Further the Commission decided that flexibility should be allowed in how emissions are reduced, so several options are listed from which a source owner or operator may choose. If other equally effective measures or control devices are available, the Division may, on a case-by-case basis, approve the use of such alternatives.

Similarly, section XVI establishes controls for reciprocating internal combustion engines. Both "lean" and "rich" burn engines are addressed and though the Commission has specified the default control technology to be applied to each engine type, the Division is allowed to approve alternative technology if a demonstration can be made that the alternative is at least as effective as the listed device in reducing VOC emissions. Parties to the rulemaking hearing provided evidence that suitable, cost-effective control equipment may not be available for some existing engines. The rule adopted by the Commission includes an exemption for lean burn engines if the owner demonstrates that such emissions controls would cost $5,000 or more per ton of VOC removed. In calculating such costs, the Division shall use an appropriate amortization period and current discount rate. The Commission directs the Division to further investigate the question of whether controls are available and suitable for lean burn engines, and to recommend any revisions necessary for the regulation applicable to such engines. New engines locating

in the control area must comply with the requirements effective June 1, 2004, but existing engines have until May 1, 2005 to come into compliance. Since the rule provides an exemption for existing engines that cannot be controlled for less than $5,000 per ton, the rule must make the distinction between new and existing engines so that engines will not be moved into the area during prior to May 2005 and subsequently apply for such an exemption.

The Commission recognizes that, at this point in time, the controls required by the rule amendments constitute Reasonably Available Control Technology (RACT), at a minimum, and in some cases, the controls mandated by this regulation may, in fact, constitute Best Available Control Technology (BACT). This means that this regulation shall not be used: (a) to preclude a source from asserting that one of the controls mandated herein constitutes BACT or Lowest Achievable Emissions Rate (LAER) for a new source or major modification, (b) require the Division or Commission to mandate different control technologies as BACT, or (c) preclude the Division or Commission from requiring additional or more stringent air pollution control technologies as necessary or appropriate to comply with applicable BACT or LAER requirements for new sources and major modifications.

By its terms, the New Source Performance Standard (NSPS) applicable to leaking equipment at onshore natural gas processing plants (40 C.F.R. Part 60, Subpart KKK) applies to “affected facilities” and “process units” at such facilities as those terms are defined in the standard. In general, plants that were constructed prior to January 20, 1984 are exempt from the standard, unless subsequently modified or reconstructed, or newly constructed after that date. Since process units at a single gas plant can be distinct, certain gas plants may contain equipment that is not presently subject to the NSPS because of its date of construction. The control requirement in Section XII.B would extend leak detection and repair program requirements to such equipment.

The statutory authority for the revisions to regulation No. 7 is set out in sections 25-7-105(1)(a) and (1)(b); 25-7-106(1)(c), (5) and (6); and 25-7-109(1)(a) and (2), C.R.S.

The March 2004 revisions to Regulation No. 7 are based on reasonably available, validated, reviewed, and sound scientific methodologies. All validated, reviewed and sound scientific methodologies and information made available by interested parties has been considered. Evidence in the record supports the finding that the rule shall result in a demonstrable reduction in air pollution. The Commission chose the most cost-effective mix of control strategies available to comply with the 8-hour ozone NAAQS. Where possible, the regulations provide the regulated community with flexibility to achieve the necessary reductions. The Commission chose the regulatory alternative that will maximize the air quality benefits in the most cost-effective manner.

~~XVIII~~XIX.H (December 2004, SECTIONS I.A., II.A, XII and XVI)

The December 2004 revisions were adopted to respond to U.S. EPA comments on the Ozone Action Plan the commission adopted in March 2004. EPA required the rule revision in order to make the control measures incorporated into the State Implementation Plan practically enforceable as required by the federal Clean Air Act. The Federal Act requires all of the regulatory provisions adopted in this rulemaking action, and none of the provisions are more stringent than the requirements of the federal act.

The revised rule includes a process for obtaining emission reduction credit for pollution prevention measures. In order to qualify for emission reduction credit a pollution prevention measures must, among other things, be included in a permit even if it does not involve the construction of an air pollution source and would not otherwise trigger a requirement for a permit. The revisions to the regulation do not, however, create a requirement for sources to obtain a permit for pollution prevention measures for which the source will not take emissions reduction credit.

The commission has the statutory authority to adopt the revisions pursuant to sections 25-7-105(1)(a) and (1)(b); 25-7-106(1)(c), (5) and (6); and 25-7-109(1)(a) and (2), C.R.S.

The control measures necessary to achieve the 8-hour ozone standard were adopted in March 2004. The December 2004 rule changes do not impose new emission control requirements or emission reduction requirements on industry. Instead, the December 2004 rule revisions are intended to make the previously adopted requirements more enforceable, and to make sure that the requisite emission reductions occur during the ozone season when they are needed. Thus, the December 2004 are administrative in nature in that they are intended to assist with the administration and enforcement of the previously adopted controls. The Commission recognizes that the December 2004 rule amendments impose additional recordkeeping and reporting requirements, and therefore costs, on the regulated community. The changes, however, are not intended to achieve further reduction in emissions of volatile organic compounds beyond the reduction requirements adopted in March 2004. They are instead intended to make the March 2004 revisions fully enforceable and acceptable to EPA. Since the December 2004 rule changes are administrative in nature, the requirements of section 25-7-110.8 C.R.S. do not apply.

~~XVIII~~XIX.I. December 17, 2006 (Section XII)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), C.R.S. for new and revised regulations.

Basis

Regulation No. 7, Section XII imposes emission control requirements on oil and gas condensate tanks located in Adams, Arapahoe, Boulder, Douglas and Jefferson Counties, the Cities and Counties of Broomfield and Denver and parts of Larimer and Weld Counties ("8-Hour Ozone Control Area"). The condensate tank requirements, along with other requirements applicable to oil and gas operations and natural gas fired reciprocating internal combustion engines, were initially promulgated in March 2004, and later revised in December 2004, in connection with an Early Action Compact Ozone Action Plan ("EAC") entered into between the State of Colorado and the United States Environmental Protection Agency. The purpose of the EAC is to prevent exceedances of the 8-Hour Ozone Standard and avoid a non-attainment designation for the area. Pursuant to the EAC, Colorado committed to limiting Volatile Organic Compound ("VOC") emissions from condensate tanks located in the 8-Hour Ozone Control Area to 91.3 tons per day ("TPD") as of May 1, 2007 and 100.9 TPD as of May 1, 2012. Because of unanticipated growth of condensate tank emissions since 2004, the control requirements for condensate tanks adopted during the 2004 rulemaking are insufficient to meet these daily emission numbers. The current revisions require a greater level of control of condensate tank emissions in the 8-Hour Ozone Control Area in order to meet the commitments set forth in the EAC and to prevent future exceedances of the 8-Hour Ozone Standard. These revisions are based on reasonably available, validated, reviewed and sound scientific methodologies. All validated, reviewed and sound scientific methodologies made available by interested parties have been considered. Evidence in the record supports the finding that the rule shall result in a demonstrable reduction in air pollution, and will reduce the risk to human health or the environment or otherwise provide benefits justifying the costs. Among the options considered, the regulatory option chosen will maximize the air quality benefits in the most cost-effective manner.

Specific Statutory Authority

The specific statutory authority for these revisions is set forth in Section, 25-7-105(1)(a), C.R.S., which gives the Air Quality Control Commission authority to promulgate rules and regulations necessary for the proper implementation of a comprehensive state implementation plan that will assure attainment of national ambient air quality standards. Additional authority for these revisions is set forth in Sections, 25-7-106 and 25-7-109, which allow the Commission to promulgate emission control regulations and recordkeeping requirements applicable to air pollution sources. Specifically, Section 25-7-106(1)(c) authorizes the commission to adopt emission control regulations that are applicable to specified areas within the state. Section 25-7-109(1)(a) authorizes the commission to adopt emission control regulations. Section 25-7-109(3)(b) authorizes the commission to adopt emission control regulations for the storage and transfer of petroleum products and any other volatile organic compounds.

Purpose

The Revisions to Section XII were adopted in order to meet the commitments with respect to condensate tank emissions set forth in the Early Action Compact Ozone Action Plan entered into between the State of Colorado and U.S. EPA, prevent exceedances of the 8-Hour Ozone Standard, and simplify recordkeeping and reporting requirements.

To accomplish these goals the revised regulation raises the system-wide control requirements for the ozone season from the current 47.5% to 75% commencing in 2007 and 78% in 2012. While the rule establishes a higher percentage reduction in 2012 the Commission recognizes that given the uncertainty of emissions growth over the next 6 years, this reduction requirement may be too high and may need to be revisited as the 2012 deadline approaches. For the non-ozone season the required reduction has been raised from 38% to 60% commencing October 2007, and 70% commencing January 1, 2008. Determination of compliance during the ozone season under the revisions will be on a weekly basis instead of a daily basis, in recognition of the fact that condensate production is not typically measured on a daily basis. Under the previous version of the Rule, production could be tracked on something greater than a daily basis and the total divided by the number of days to obtain a daily number. As such, the prior rule did not truly give a daily average and thus the move to a weekly average is of little substance. Apart from this change, calculation of emissions for compliance purposes will remain the same as under the previous version of the rule.

In addition to raising the system-wide reduction requirements, the current rule adds significant new monitoring, record-keeping and reporting requirements, and a “backstop” threshold requirement to have emission controls on all condensate storage tanks with uncontrolled actual emissions of 20 tpy or more of VOC flash emission, as a state-only requirement within the EAC area pursuant to section XVII.C.1. of Regulation No. 7. Owners and operators will continue to keep a spreadsheet that tracks emission reductions and submit an Annual Report as required under the previous version of the rule. Owners and operators are now also required to submit a semi-annual report on November 30 of each year detailing their emissions during the preceding ozone season. Additional record keeping has been added so as to require that a weekly checklist be maintained detailing inspections of control devices. This checklist will assist operators in the inspection and maintenance practice and provide a record that proper inspections have been done. If the inspections show a problem with the control device, the owner or operator will be required to notify the Division of problems on a monthly basis. This requirement will allow the division to track problems on a more timely basis and ensure compliance with the rule. Finally, a provision has been added to require owners or operators to submit a list of all their controlled tanks on April 30 of each year and notify the division monthly during ozone season if the control status of any tank changes.

~~XVIII~~XIX.J. December 17, 2006 (Sections I.A.1.b. and XVII)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), C.R.S. for new and revised regulations.

Basis

The Air Quality Control Commission has adopted these state-only provisions as a means of reducing air emissions from oil and gas operations throughout Colorado. Due to the large growth in oil and gas production in a number of regions of the state emissions from oil and gas operations have rapidly increased over the past few years and are expected to increase further in the foreseeable future. These revisions are a proactive measure designed to eliminate air emissions that could threaten attainment of ambient air quality standards and adversely affect visibility in Class I Areas. These revisions are based on reasonably available, validated, reviewed and sound scientific methodologies. All validated, reviewed and sound scientific methodologies made available by interested parties have been considered. Evidence in the record supports the finding that the rule shall result in a demonstrable reduction in air pollution, and will reduce the risk to human health or the environment or otherwise provide benefits justifying the costs. Among the options considered, the regulatory option chosen will maximize the air quality benefits in the most cost-effective manner.

Specific Statutory Authority

The specific statutory authority for these revisions is set forth in Sections 25-7-106 and 25-7-109 of the Colorado Air Pollution Prevention and Control Act ("Act"), which allow the Commission to promulgate emission control regulations and recordkeeping requirements applicable to air pollution sources. Additional authority is set forth in Section 25-7-105.1, which allows the Commission to adopt state-only standards. Specifically, Section 25-7-106(1)(c) authorizes the commission to adopt emission control regulations that are applicable to the entire state. Section 25-7-109(1)(a) authorizes the commission to adopt emission control regulations. Section 25-7-109(3)(b) authorizes the commission to adopt emission control regulations for the storage and transfer of petroleum products and any other volatile organic compounds.

Purpose

The Revisions to Section XVII were adopted in order to reduce air emissions from oil and gas operations and natural gas fired reciprocating internal combustion engines in Colorado. These revisions constitute a forward-looking approach to deal with a rapidly growing source of air emissions, and are designed to reduce the possibility of future problems with respect to the attainment of National Ambient Air Quality Standards and state and federal Class I Area visibility goals. Since the requirements are not mandated under federal law and are not currently necessary to meet National Ambient Air Quality Standards they are being adopted as a state-only requirement in accordance with the Act and as provided for under the Federal Clean Air Act.

These revisions establish emission control requirements for condensate storage tanks, glycol dehydrators and natural gas fired reciprocating internal combustion engines in Colorado. These provisions require that condensate tank and dehydrator controls meet a 95% percent control efficiency. As in the EAC Area, this requirement does not contemplate stack testing in order to verify the control efficiency. The insertion of the word average allows operators some downtime without a violation occurring so long as the downtime does not result in an average control efficiency of less than 95% considering the actual engineered control efficiency. For the purposes of XVII.C.4.b. observed operation of flare auto-igniters can include telemetric monitoring systems, physical on-site function tests or auditory confirmation of the auto-igniter function.

The requirements applicable to glycol dehydrators mirror the requirements applicable in the 8-Hour Ozone Control Area set forth in Section XII, and should be interpreted consistently with those provisions notwithstanding the addition of clarifying language. For example, language has been added clarifying that grouping of dehydrators is limited to dehydrators at a single site. Similarly, the word "production" has been added to the definition of condensate tank to clarify that the requirements, as within the EAC, do not apply to produced water tanks.

Determination of whether a condensate tank's emissions are at or above the threshold is based on the emissions from the tank during the preceding twelve-month period. If a tank has been in service for less than twelve months, applicability shall be based on uncontrolled actual emissions over the service period of the tank multiplied out to twelve months. Accordingly, if a tank has been in service for three months, applicability of the control requirements will be based on the uncontrolled actual emissions from the tank for those three months multiplied by four. If emissions from a controlled tank decrease, operators may remove the controls when emissions from the previous twelve-month period falls below the applicable threshold. Operators will remain responsible, however, for controlling a tank if a subsequent emission increase results in emissions being over the applicable threshold during the preceding twelve months. For tanks serving newly drilled, recompleted or restimulated wells (including refrac'd wells) the owner or operator will have 90 days to determine anticipated production and, if necessary install a control device. In determining anticipated production the owner or operator may use an appropriate decline factor to determine expected emissions over the first 12 months after the new drilling, recompletion or re-stimulation. If the owner or operator determines that emissions will be below the 20 tpy threshold following the new drilling, recompletion or restimulation, the owner or operator shall notify the Division of this determination.

Certain differences with the requirements applicable to the 8-Hour Ozone Control Area have been included in order to provide greater flexibility to operators in other areas of the state and in light of the fact that the regulation represents a proactive attempt to avoid future impacts from oil and gas emissions. Specifically, the standards for obtaining approval of an alternative pollution control device have been relaxed to promote innovative control strategies. Additionally, a provision has been added to allow an extension of the control requirement deadlines at the Division's discretion for good cause shown. This provision allows the Division to extend a deadline where shortages of control equipment, and crews may prevent an operator from meeting the deadlines, particularly in areas where access is limited by the weather or other issues. With respect to Section VII.B.1.c. of the General Provisions, the Commission has determined that as a general rule during normal operations no emissions should be visible from the air pollution control equipment. Normal operations include reasonably foreseeable fluctuations in emissions from the condensate tank, including the fluctuations that occur during a separator dump. However, a transient (lasting less than 10 seconds) "puff" of smoke when the main burner ignites or shuts down would not be considered a violation of the "no visible emission" standard. Finally, a provision has been included that exempts units subject to the rule if such units are also subject to a control standard under the MACT, BACT or NSPS Programs. This exception is of most importance for new and newly relocated engines that may become subject to a currently pending NSPS Standard under Subpart JJJJ.

The engine provisions only apply to engines that are constructed or relocated into Colorado after the applicability date and do not impose requirements on units that are currently located in the state.

The Commission recognizes that the adopted emission control requirements represent a first step in addressing rapidly growing emissions from oil and gas operations throughout the state. Accordingly the Commission directs the Division to provide an annual update on emission growth trends, environmental impacts, modeling and monitoring efforts, the adequacy of emission controls to protect the NAAQS and the health impacts of emissions from the oil and gas sector.

APPENDIX ~~F~~A COLORADO OZONE NON-ATTAINMENT OR ATTAINMENT MAINTENANCE AREAS

I: CHRONOLOGY OF ATTAINMENT STATUS

DENVER METROPOLITAN AREA ONLY

[DATE[1977] DENVER 1-HOUR O~~O~~ZONE N~~N~~ON-ATTAINMENT AREA DESIGNATION FIRST BECOMES EFFECTIVE IN 7-COUNTY DENVER METROPOLITAN AREA

10/11/01 DENVER 1-HOUR OZONE A~~A~~TTAINMENT M~~M~~AINTENANCE A~~A~~REA DESIGNATION REPLACES NON-ATTAINMENT DESIGNATION AND BECOMES EFFECTIVE IN 7-COUNTY DENVER METROPOLITAN AREA

9/2/05 1-HOUR OZONE NATIONAL AMBIENT AIR QUALITY STANDARD IS REVOKED IN COLORADO EXCEPT FOR THE DENVER 1-HOUR OZONE ATTAINMENT MAINTENANCE AREA.

DENVER METROPOLITAN AREA AND NORTH FRONT RANGE

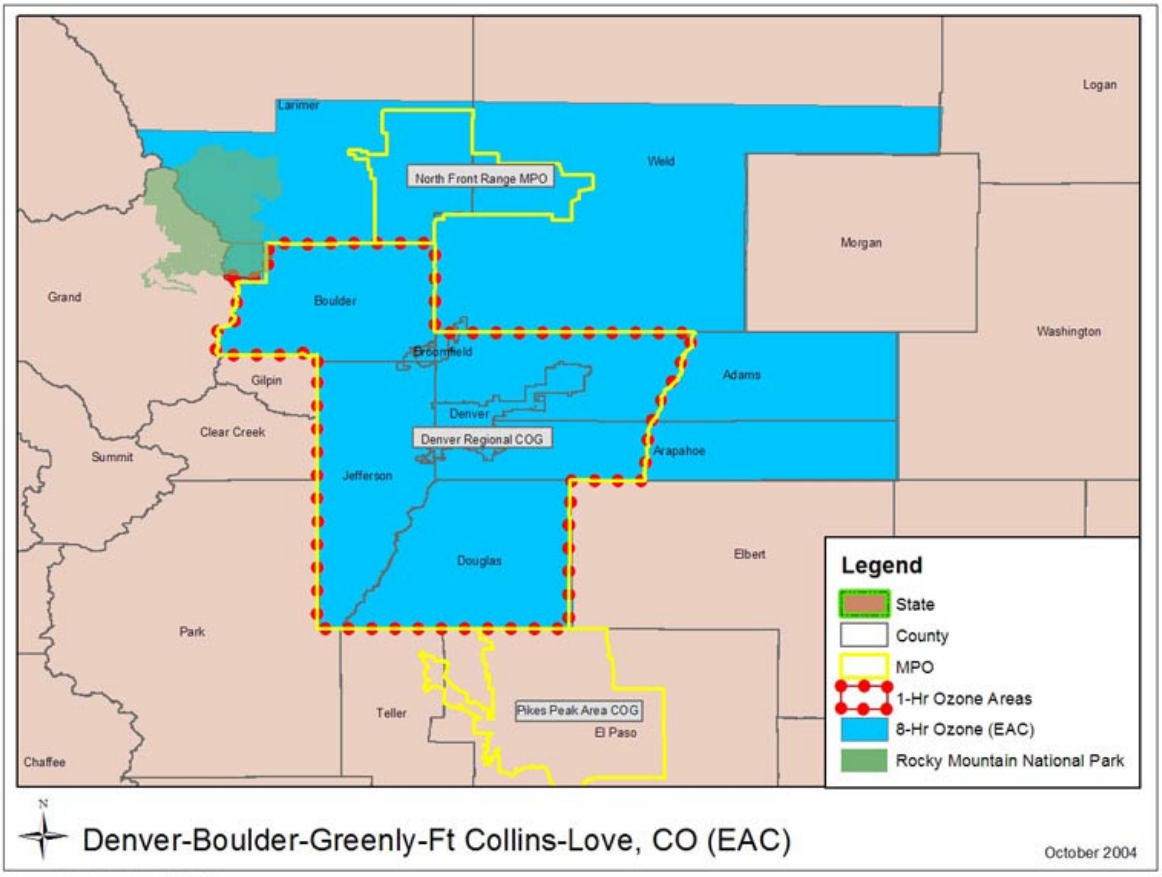
10/11/01 1-HOUR ATTAINMENT MAINTENANCE AREA REPLACES NON-ATTAINMENT DESIGNATION FOR THE DENVER METRO AREA/NORTH FRONT RANGE AREA

4/15/04 EPA DESIGNATES THE DENVER METRO AREA/NORTH FRONT RANGE REGION AS AN 8-HOUR OZONE NON-ATTAINMENT AREA, DESIGNATION DEFERRED DUE TO THE IMPLEMENTATION OF THE EARLY ACTION COMPACT

11/20/07 DENVER 8-HOUR OZONE NON-ATTAINMENT DESIGNATION BECOMES EFFECTIVE IN 9 COUNTY DENVER METROPOLITAN AREA

II. MAPS

DENVER METROPOLITAN AREA AND NORTH FRONT RANGE



Appendix ~~A~~B Criteria for Control of Vapors from Gasoline Transfer to Storage Tanks

I. Drop Tube Specifications. Submerged fill is specifically required. The drop tube must extend to within 15.24 cm (6 in.) of the tank bottom.

II. Vapor Hose Return. Vapor return line and any manifold must be minimum 7.6 cm (3 in.) ID. All tanks must be provided with individual overfill protection. (Liquid must not be allowed in the vent line or vapor recovery line.) Disconnect on liquid line should assure that all liquid in the hose is drained into the storage tank. The requirements for overfill protection as specified may be waived for existing storage tanks when it is demonstrated to the satisfaction of the appropriate local Fire Marshal, and where applicable, the State Oil Inspection Office that the installation of overfill protection devices on existing tanks is physically not possible.

III. Size of Vapor Line Connections. For separate vapor lines, nominal three inch (7.6 cm) or larger connections must be utilized at the storage tank and truck. However, short lengths of 2-inch (5.1

cm) vertical pipe no greater than 91.4 cm (3 ft.) long are permissible if the fuel delivery rate is less than 400 gallons per minute.

Where concentric (coaxial) connections are utilized, a 45 cm2 (7 sq. in.) area for vapor return shall be provided. Four-inch concentric designs are acceptable only when using a venturi-shaped outer tube or where normal drop rate of 1,700 liters per minute (450 gpm) is reduced by at least 25%. Six-inch (15.24 cm) risers should be installed in new stations with concentric connections.

IV. Type of Liquid Fill Connection. Vapor tight caps are required for the liquid fill connection for all systems. A positive closure utilizing a gasket is necessary to prevent vapors from being emitted at ground level. Cam-lock closures meet this requirement. Dry break closures are preferred.

V. Tank Truck Inspection. Tank trucks are specifically required to be vapor-tight and to have valid leak-tight certification. The visual inspection procedure must be conducted at least once every six months to ensure properly operating manifolding and relief valves, using the test procedure of Appendix ~~D~~E~~,~~ AND C.

VI. Dry Break on Underground Tank Vapor Riser. Dry-break closures are required to assure transfer of displaced vapors to the truck and to prevent ground-level, gasoline-vapor emissions caused by failure to connect the vapor return line to the underground tanks (closure on riser to mate with opening on hose). These devices keep the tank sealed until the hose is connected to the underground tank. Concentric couplers without dry-breaks are required to have a dry-break on the vapor line connection to the coupler itself, rather than on the rise pipe from the storage tank. The liquid fill riser should be provided with a gap having a positive closure (threaded or latched).

VII. Equipment Ensuring Vapor-Hose Connection During Gasoline Deliveries. An equipment system aboard the tank truck shall insure (barring deliberate tampering) that a vapor return hose is connected from the truck's vapor return line to the tank receiving gasoline.

VIII. Vent Line Restriction Devices. Vent line restriction devices are required. They both improve recovery efficiency and, as an integral part of any system, assure that the vapor return line is connected during transfer. If the liquid fill line were attached to the underground tank and the vapor return line were disconnected, then dry break closures would seal the vapor return path to the truck, forcing all vapors out the vent line. In such instances, a restriction device on this vent line greatly reduces fill rate, warning the operator that the vapor line is not connected. Both of the following devices must be used.

(a) An orifice of one-half to three-fourth inch (1.25 - 1.9 cm) ID.

(b) A pressure/vacuum relief valve set to open at (1) a positive gauge-pressure greater or equal to five inches of water (9 torr) and at (2) a negative gauge-pressure greater or equal to five inches of water (9 torr).

IX. Fire and Safety Regulations. All new or modified installations must comply in their entirety with all code requirements including NFPA, Pamphlet 30 (fiberglass is preferred for new manifold lines). For any questions concerning compliance, please contact State Oil Inspection or your local Fire Marshal.

X. State Oil Inspection. Requirements of the State Oil Inspection office make accurate measurements of the liquid in the underground tank necessary. Vapor-tight gauging devices will be required in all systems designed such that a pressure other than atmospheric will be held or maintained in the storage tank. The volume of liquid in the tanks maintained at atmospheric pressure may be determined with a stick through the submerged drop tube or through a separate submerged gauging tube extending to within 15.24 cm (6 in.) of the tank bottom.

Appendix ~~B~~C Criteria for Control of Vapors From Gasoline Transfer at Bulk Plants (Vapor Balance System)

I. Storage Tank Requirements:

A. Drop Tube Specification: Underground tanks must contain a drop tube that extends to within six inches (15.24 cm) of the tank bottom. All top loaded above-ground tanks must contain a similar drop tube. Above-ground tanks using bottom loading, where the inlet is flush with the tank bottom, must meet the submerged fill requirement.

B. Size of Vapor Lines from Storage Tanks to Loading Rack: See nomograph (Attachment 1). NOTE: Affected sources are free to choose a pipe diameter different from the one suggested by the nomograph if sufficient justification and documentation is presented.

C. Pressure Relief Valves: All pressure relief valves and valve connections must be checked periodically for leaks, and be repaired as required. The relief valve pressures should be set in accordance with Sections 2-2.5.1 and 2-2.7.1 inclusive of the current National Fire Protection Agency Pamphlet No. 30.

D. Liquid Level Check Port: Access for checking liquid level by other than a vapor-tight gauging system shall be vapor-tight when not being used. Tank level shall be checked prior to filling to avoid overfills.

E. Miscellaneous Tank Openings: All other tank openings, e.g., tank inspection hatches, must be vapor tight when not being used, and must be closed at all times during transfer of fuel.

F. Storage Tank Overfill Protection: Except for concentric (coaxial) delivery systems, underground tanks must have ball check valves (stainless steel ball). Tanks with concentric delivery systems must have Division-approved overfill protection, (e.g., cutoff pressure-switch in vent line).

II. Loading Rack Requirements:

A. Loading Specification: A vapor-tight bottom-loading or top-loading system using submerged fill with a positive seal, e.g., the Wiggins (tm) system, is required. NOTE: Bulk plants delivering solely to exempt accounts are required to have submerged fill, but loading need not be vapor-tight.

B. Dry-Break on Storage Tank Vapor Return Line: A dry-break is required to prevent ground-level gasoline vapor emissions during periods when gasoline transfer is not being made. This device keeps the tank sealed until the vapor return hose is connected.

III. Tank Truck* Requirements:

A. Vapor Return Modification: Tank trucks must be modified to recover vapors during loading and unloading operations. NOTE: Tank trucks making deliveries solely to exempt accounts do not require this modification. However, 97% submerged fill is required when top loading.

B. Loading Specifications: Bottom loading or top loading using submerged fill with a positive seal is required for tank trucks modified for vapor recovery. NOTE: When loading a tank truck with this modification without the vapor return hose connected (this is allowed at bulk plants servicing exempt accounts returning without collected vapors in the tank), the requirements of National Fire Protection Agency Pamphlet No. 385, "Loading and

Unloading Venting Protection in Tank Vehicles, Section 2219, Paragraph c", must be met.

C. Vapor Return Hose Size: A minimum three-inch (7.6 cm) ID vapor return hose is required.

D. Tank Truck Inspection: Tank trucks are required to be vapor-tight and have valid leak-tight certification. Periodic visual inspection is necessary to insure properly operating manifolding and relief valves.

* The term "tank truck" is meant to include all trucks with tanks used for the transport of gasoline, such as tank wagons, account trucks and transport trucks.

Appendix ~~C~~D Minimum Cooling Capacities for Refrigerated Freeboard Chillers on Vapor Degreasers

The specifications in this Appendix apply only to vapor degreasers that have both condenser coils and refrigerated freeboard chillers. (The coolant in the condenser coils is normally water.) The amount of refrigeration capacity is expressed in Calories/Hour per meter of perimeter. This perimeter is measured at the air/vapor interface.

For refrigerated chillers operated below 0°C., the following requirements apply:

DEGREASER WIDTH	*CALORIES/HR METER OF PERIMETER	BTU/HR FOOT OF PERIMETER
Less than 1.1 meters (3.5 ft.)	165	200
1.1 - 1.8 meters (3.5 - 6.0 ft.)	250	300
1.8 - 2.4 meters (6.0 - 8.0 ft.)	335	400
2.4 - 3.0 meters (8.0 - 10.0 ft.)	145	500
Greater than 3.0 meters (10 ft.)	500	600

* Kilocalories (1 Kilocalorie = 4184.0 joules)

For refrigerated chillers operating above 0°C., there shall be at least 415 Calories/Hr. - meter of perimeter (500 BTU/Hr-ft.), regardless of size.

Definition:

"Air/Vapor Interface" - means the surface defined by the top of the solvent vapor layer within the confines of a vapor degreaser.

Appendix ~~D~~E Test Procedures for Annual Pressure/Vacuum Testing of Gasoline Transport Tanks

A. Testing

The delivery tank, mounted on either the truck or trailer, is pressurized isolated from the pressure source, and the pressure drop recorded to determine the rate of pressure change. A vacuum test is to be conducted in a similar manner. The Division shall provide forms which designate all required information to be recorded by the testing agency.

B. Visual Inspection

The entire tank, including domes, dome vents, cargo tank, piping, hose connections, hoses and delivery elbows, shall be inspected for wear, damage, or misadjustment that could be a potential leak source. Inspect all rubber fittings except those in piping which are not accessible. Any part found to be defective shall be adjusted, repaired, or replaced as necessary. (Safety note: it is strongly recommended that testing be done outside, unless tank is first degassed (e.g., steamcleaned). No "hot work" or spark-producing procedures should be undertaken without first degassing).

C. Equipment Requirements

1. Necessary equipment.

a. Source of air or inert gas of sufficient quantity to pressurize tanks to 27.7 inches of water (1.0 psi; 52 torr) above atmospheric pressure.

b. Water manometer with 0 to 25 inch range (0-50 torr); with scale readings of 0.1 inch (or 0.2 torr).

c. Test cap for vapor line with a shut-off valve for connection to the pressure and vacuum supply hoses. The test cap is to be equipped with a separate tap for connecting with manometer.

d. Cap for the gasoline delivery hose.

e. Vacuum device (aspirator, pump, etc.) of sufficient capacity to evacuate tank to ten (10) inches of water (20 torr).

2. Recommended equipment

a. In-line, pressure-vacuum relief valve set to activate at one (1) psi (52 torr) with a capacity equal to the pressurizing or evacuating pumps. (Note: This is a safety measure to preclude the possibility of rupturing the tank).

b. Low pressure (5 psi (250 torr) divisions) regulator for controlling pressurization of tank.

D. Vacuum and Pressure Tests of Tanks

1. Pressure Test

a. The dome covers are to be opened and closed.

b. The tank shall be purged of gasoline vapor and tested empty. The tank may be purged by any safe method such as flushing with diesel fuel, or heating oil. (For major repairs it is recommended that the tank be degassed by steam cleaning, etc.)

c. Connect static electrical ground connections to tank. Attach the delivery and vapor hoses, remove the delivery elbows and plug the liquid delivery fittings. (The latter can normally be accomplished by shutting the delivery valves).

d. Attach the test cap to the vapor recovery line of the delivery tank.

e. Connect the pressure (or vacuum) supply hose and, optionally, the pressure-vacuum relief valve to the shut-off valve. Attach a manometer to the pressure tap on the vapor-hose cap. Attach pressure source to the hose.

f. Connect compartments of the tank internally to each other if possible.

g. Open shut-off valve in the vapor recovery hose cap. Applying air pressure slowly, pressurize the tank, or alternatively the first compartment, to 18 inches of water (35 torr).

h. Close the shut-off valve, allow the pressure in the delivery tank to stabilize (adjust the pressure if necessary to maintain 18 inches of water (35 torr), record the time and initial pressure; begin the test period.

i. At the end of five (5) minutes, record the final time, pressure, and pressure change. Disconnect the pressure source from the pressure/vacuum supply hose, and slowly open the shut-off valve to bring the tank to atmospheric pressure.

j. Repeat for each compartment if they were not interconnected.

2. Vacuum Test

a. Connect vacuum source to pressure and vacuum supply hose.

b. Slowly evacuate the tank, or alternatively the first compartment, to six (6) inches of water (12 torr). Close the shut-off valve, allow the pressure in the delivery tank to stabilize (adjust the pressure if necessary to maintain six (6) inches of water (12 torr) vacuum), record the initial pressure and time; begin the test period. At the end of five (5) minutes, record the final pressure, time, and pressure change.

c. Repeat for each compartment if they were not interconnected.

E. Leak Check of Vapor Return Valve

1. After passing the vacuum and pressure tests, by making any needed repairs, pressurize the tank as in D.1. above to eighteen (18) inches of water (35 torr).

2. Close the internal valve(s) including the vapor valve(s) and "fire valves."

3. Relieve the pressure in the vapor return line to atmospheric pressure, leaving relief valve open to atmospheric pressure.

4. After five (5) minutes, seal the vapor return line by closing relief valve(s). Then open the internal valves including the vapor valve(s) and record the pressure, time, and pressure change. (To trace a leaking vapor valve it may be advantageous to open each vapor valve one at a time and record the pressure after each.)

5. The leak rate attributed to the vapor return valve shall be calculated by subtracting the pressure change in the most recent pressure test per D.1.i. above from the pressure change in E.4.

Appendix ~~E~~F Emission Limit Conversion Procedure

The following procedure shall be used to convert emission limits expressed as lb VOC/gallon coating less water and exempt solvents to limits expressed as lb VOC/gallon solids. This example uses the emission limit of 3.7 lb VOC/gallon coating.

Assume VOC density of the `Presumptive' RACT coating is 7.36 pounds per gallon because this same value was used to determine the "Presumptive" recommended RACT emission limits from volume solids data.

(3.7) LB VOC / GAL COATING LESS WATER x l GAL VOC x 100 / 7.36 LB VOC = (50) V0L% VOC

100 - (50) V0L% VOC = (50) V0L% SOLIDS

(3.7) LB VOC / GAL COATING LESS H2O x 100 GAL COATING / (50) GAL SOLIDS = (7.4) LB VOC / GAL SOLIDS

See "A Guideline For Surface Coating Calculations" EPA - 340/1-86-0l6 for additional examples.

The following table lists equivalent mass VOC/volume solids emission limits for various coating operations.

Equivalency Data for Surface Coating Processes

(VOC Density = 7.36 lb/gal)

Industrial Finishing Categories	Lb VOC per Gallon Coating less water	Lb VOC per Gallon of Solids	Kg VOC per Liter of Solids
Can Industry			
Sheet Basecoat (Exterior and Interior) and over-varnish; two-piece can exterior (base-coat and over-varnish)	2.8	4.5	0.55
Two- and three-piece can interior body spray, two-piece can exterior end spray or roll coat	4.2	9.8	1.19
Three-piece can side-seam spray	5.5	21.7	2.61
End sealing compound	3.7	7.4	0.88
Any additional coats	4.2	9.8	1.19
Coil Coating			
Any coat	2.6	4.0	0.48
Fabric Coating			
Fabric coating line	2.9	4.8	0.58
Vinyl coating line	3.8	7.9	0.93

Paper Coating			
Coating line	2.9	4.8	0.58
Automotive and Light-Duty Truck Assembly Plant			
Primer (electrodeposition) application, flashoff area and oven	1.9	2.6	0.31
Topcoat application, flashoff area and oven	2.8	4.5	0.55
Final repair application, flashoff area and oven	4.8	13.8	1.67
Metal Furniture			
Coating line	3.0	5.1	0.61
Magnet Wire			
Wire coating operation	1.7	2.2	0.26
Large Appliances			
Prime, single, or topcoat application area, flashoff area and oven	2.8	4.5	0.55
Miscellaneous Metal Parts and Products			
Air-dried items	3.5	6.7	0.80
Clear-coated items	4.3	10.3	1.25
Extreme performance coatings	3.5	6.7	0.80
Other coatings and systems	3.0	5.1	0.61
Plastic Film Coating			
Plastic film coating line	2.9	4.8	0.58

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Air Quality Control Commission

REGULATION NO. 11

MOTOR VEHICLE EMISSIONS INSPECTION PROGRAM

5 CCR 1001-13

REGULATION NO. 11

PART A: General Provisions, Area of Applicability, Schedules for Obtaining Certification of Emissions Control, Definitions, Exemptions, and Clean Screen/Remote Sensing

PART B: Standards and Procedures for the Approval, Operations, Gas Span Adjustment, Calibration and Certification of the Division Approved Test Analyzer Systems for Use in the Basic and Enhanced Program Areas, Test Analyzer Systems for Licensed Dealers in the Enhanced Area, and Clean Screen Test Analyzer Systems

PART C: Inspection Procedures and Requirements for Exhaust Emissions, Fuel Evaporation Control, Visible Smoke Emissions, Emissions Control Systems, Chlorofluorocarbon Leak Detection, Clean Screening; and Practices to Ensure Proper Emissions Related Adjustments and Repairs

PART D: Qualification and Licensing of Emissions Mechanics, Emissions Inspectors, and Clean Screen Inspectors; Licensing of Emissions Inspection and Readjustment Stations, Inspection-Only Stations, Inspection-Only Facilities, Fleets, Motor Vehicle Dealer Test Facilities and Enhanced Inspection Centers, Clean Screen Inspection Sites; and Registration of Emissions Related Repair Facilities and Technicians

PART E: Prohibited Acts and Penalties to Ensure Proper Inspection Procedures, Adherence to Prescribed Procedures and Effective Emissions Related Repairs

PART F: Maximum Allowable Emissions Limits for Motor Vehicle Exhaust, Evaporative and Visible Emissions for Light-Duty and Heavy-Duty Vehicles

PART G: High Emitting Vehicle Identification Pilot Project

PART H~~G~~: Statements of Basis, Specific Statutory Authority and Purpose

REFERENCES

Pursuant to Section 24-4-103 (12.5), C.R.S., material incorporated by reference is available during normal working hours, or copies may be obtained at a reasonable cost, from the Technical Secretary of the Air Quality Control Commission c/o the Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530 or material incorporated by reference within

this regulation may be examined at any state publications depository library. References do not include later amendments to or additions of incorporated material

PART A General Provisions, Area of Applicability, Schedules for Obtaining Certification of Emissions Control, Definitions, Exemptions, and Clean Screening/Remote Sensing

I. APPLICABILITY

Subject to the provisions described in sections I.A and I.B of this Part A and pursuant to the schedule in sections I.C and V.B. of this Part A, all non-diesel fueled motor vehicles which are registered in the AIR Program area or which motor vehicle is owned or operated by a non-resident who meets the requirements of Section, 42-4-310(1)(c)(I), C.R.S., will be subject to an exhaust and evaporative emissions, chlorofluorocarbon, smoke opacity and emissions control, equipment inspection as a prerequisite to initial or renewal of the vehicle registration. Any person owning or operating a business and any post-secondary educational institution located in the program area as defined in subsection A of this section shall annually inform by written notice all persons employed by such business or attending classes that they are required to comply with the provisions of this regulation. The provisions of this regulation applicable to Larimer and Weld counties shall not be included in the state implementation plan. ~~after January 1, 2004. The provisions of this regulation applicable to El Paso County shall not be included in the State Implementation Plan upon approval by the United States Environmental Protection Agency.~~

I.A. Geographic Areas of Applicability

This regulation shall apply to the AIR Program area as defined in Section 42-4-304(20), C.R.S.

I.B. Vehicles Eligible for AIR Program Inspection Procedures.

This regulation shall apply to all motor vehicles as defined in Section 42-4-304(18), C.R.S.

Vehicles that are registered in a program area and are being operated outside such area but within another program area shall comply with the requirements of the area where such vehicles are being operated. Vehicles registered in a program area that are being temporarily operated outside the state at the time of registration or registration renewal may apply to the department of revenue for a temporary exemption from program requirements. Upon return to the program area, such vehicles must be in compliance with all requirements within fifteen days. A temporary exemption shall not be granted if the vehicle will be operated in an emissions testing area in another state unless proof of emissions from that area is submitted.

Pursuant to Section, 42-4-310(1)(c)(I), C.R.S. motorists operating vehicles in the enhanced program area shall comply with the provisions of the enhanced program.

The burden of proof in establishing an exemption from inclusion in all or any part of the AIR Program inspection requirements is on the vehicle owner.

I.C. Schedules for Obtaining Certifications of Emissions Control

I.C.1. REPEALED

I.C.2. Inspection schedules during calendar year 1995 and thereafter, vehicles are to be inspected according to the schedules established in Sections, 42-4-304(3)(b)(II), and, 42-4-310(1)(b)(II), C.R.S. as amended.

I.C.3. On or after October 1,1989, no used vehicle which is required to be registered in the program area shall be registered, unless such vehicle has a Certification of Emissions Control, or of Emissions Exemption. The seller of a used vehicle is required to obtain a Certification of Emissions Control for the new owner at the time of sale. This paragraph (3) does not apply to the sale of a motor vehicle that is inoperable or otherwise cannot be tested in accordance with this regulation if the seller of the motor vehicle provides a written notice to the purchaser pursuant to Section 42-4-310(4), C.R.S. If a motor vehicle is being registered for the first time in the program area, the owner shall obtain the certification and submit it with the application for registration to the Department of Revenue or an authorized agent of the Department of Revenue.

I.C.3.a. On or after October 1,1989, no used vehicle which is required to be registered in the program area shall be registered, unless such vehicle has a Certification of Emissions Control, or of Emissions Exemption. The seller of a used vehicle is required to obtain a Certification of Emissions Control for the new owner at the tune of sale. This paragraph (3) does not apply to the sale of a motor vehicle which is inoperable or otherwise cannot be tested in accordance with this regulation or that is being sold pursuant to part 18 (Vehicles Abandoned on Public Property) or part 21 (Vehicles Abandoned on Private Property) of article 4 of title 42, C.R.S. if the seller of the motor vehicle provides a written notice to the purchaser pursuant to Section 42-4-310(4), C.R.S. If a motor vehicle is being registered for the first time in the program area, the owner shall obtain the certification and submit it with the application for registration to the Department of Revenue or an authorized agent of the Department of Revenue.

I.C.3.b. An inspection is not required prior to the sale of a motor vehicle with at least twelve months remaining before the vehicle's certification of emissions compliance expires if such certification was issued when the vehicle was new. This subparagraph I.C.3.b. shall take effect upon the completion of necessary computer software changes or on January 1,2004, whichever comes first.

I.C.3.c. A motor vehicle being registered in the program area for the first time may be registered without an inspection or certification if the vehicle has not yet reached its fourth model year pursuant to 42-4-310(1)(a)(II)(C)C.R.S.

I.C.4. On or after October 1, 1989, and thereafter, any motor vehicle may be voluntarily inspected and a Certification of Emissions Control obtained which shall be valid as specified in section I.C.2. of this part A.

I.C.5. (Reserved)

I.C.5.a. As it pertains specifically to federally owned or leased vehicles; tactical military vehicles are not required to be inspected.

I.C.5.b. Federal installation managers are to declare all federal employee-owned vehicles operated on the installation and demonstrate that these vehicles have complied with periodic inspection requirements pursuant to 40 CFR Section 51.356(A)(4). Inspection results shall be reported to the Department of Revenue AIR Program section and up-dated based on inspection cycles.

I.C.6. (Reserved)

I.C.7. On or after January 1, 1995 fleets of twenty or more eligible vehicles shall be periodically inspected, comply with inspection provisions and obtain a Certification of Emissions Control.

I.C.7.a. Fleets may pursue licensing as a fleet inspection station under part D of this Regulation No. 11 pursuant to Section, 42-4-309, C.R.S. and comply with the provisions of that section.

I.C.7.b. Fleets may elect to comply with periodic inspection requirements under the provisions of Section 42-4-309 (2)(a), C.R.S. to include the inspection schedules of Sections 42-4-304(3)(b)(II) and 42-4-310(1)(b)(II)(a), C.R.S.

I.C.7.c. As it pertains to the fleet vehicles provisions pursuant to Section, 42-4-309, C.R.S. and this subpart 7, municipal fleets of twenty vehicles or more may comply with periodic inspection requirements as specified in Section 42-4-309(2)(a), C.R.S. to include inspection schedule of Sections 42-4-304(3)(b)(II) and 42-4-310 (1)(b)(II)(a), C.R.S.

I.C.8. New motor vehicles being registered with a Manufacturer's Statement of Origin (MSO), Manufacturer's Certificate of Origin (MCO) or similar document shall be issued a registration without a Certificate of Emissions Control.

Such new motor vehicles are to be issued a Verification of Emissions Test exemption windshield sticker at the time of sale and valid for up to four (4) years. The selling dealer is responsible for obtaining the Verification of Emissions Test.

New vehicles under this section shall also include those new vehicles leased under an MSO or MCO or similar document and four years without an inspection. After the fourth year or a transfer of ownership, such vehicles shall be issued a registration only with a Certificate of Emissions Control. The inspection schedule for these vehicles shall then revert to a biennial cycle.

I.C.9.a. Compliance with AIR Program inspection requirements will not be required for wholesale transactions between motor vehicle dealers licensed pursuant to Article 6 of Title 12, C.R.S.

I.C.9.b. Effective January 1, 2004, or upon the completion of necessary computer software changes, whichever comes first, motor vehicle dealers shall have motor vehicles inventoried or consigned for retail sale inspected annually. A further inspection is not required at the time of sale if:

i. For a 1982 or later motor vehicle, there are at least twelve months remaining before the vehicle's certification of emission compliance expires and the dealer has had the vehicle inspected since acquiring it. Such a vehicle purchased from a licensed motor vehicle dealer may be registered in the program area without an inspection if, on the date of vehicle registration, at least twelve months remain before the expiration of such certification.

ii. For a 1981 or earlier motor vehicle, the vehicle has a valid certification of emission compliance and the dealer has had the vehicle inspected since acquiring it. Such a vehicle purchased from a licensed motor vehicle dealer may be registered in the program area without an inspection if, on the date of vehicle registration, at least nine months remain before the expiration of such certification.

I.C.10. For purposes of Sections 42-4-304(3), 42-4-309(3) and 42-4-310, C.R.S., a certificate of emissions Control shall be considered to be issued at the time of sale or transfer of a vehicle if such certificate is issued pursuant to an inspection conducted no later than the date of such sale or transfer, and no earlier than one hundred twenty calendar days prior to such sale or transfer.

I.C.11. Eligible fleets as defined in Section 42-4-309, C.R.S. that declare not to self-inspect shall be inspected according to the same schedules, subject to the same emissions related repair requirements and waiver provisions as non-fleet vehicles.

I.C.12. For the purposes of 42-4-309(6)(B) if a vehicle fails the test or is untestable due to mechanical and/or electrical/electronic problem, the motorist shall have the same recourse as that of not passing an inspection. However, Section 42-4-309(6), C.R.S. and the regulations implementing such provision, shall not be federally enforceable, and shall not be incorporated into the State Implementation Plan.

II. DEFINITIONS

1. “Accreditation” means certification that the instrument and instrument manufacturer meet the operating criteria specifications and requirements of the Colorado Department of Health, Air Quality Control Commissions as specified in Part B of this regulation.

2. “Air Intake Systems” are those systems that allow for the induction of ambient air (to include preheated air) into the engine combustion chamber for the purpose of mixing with a fuel for combustion.

3. “AIR Program Station” is an Automobile Inspection and Readjustment (AIR) Station that qualifies and is licensed to operate as an emissions inspection and readjustment station.

4. “Air System” is a system for providing supplementary air into the vehicle's exhaust system to promote further oxidation of HC and CO gases and to assist catalytic reaction.

5. “BAR 90” refer to the California Bureau of Automotive Repair specifications for Exhaust Gas Test Analyzer Systems (TAS) that became effective in 1990.

6. “Basic Engine Systems” are those parts or assemblies which provide for the efficient conversion of a compressed air/fuel charge into useful power to include but not limited to valve train mechanisms, cylinder head to block integrity, piston-ring-cylinder sealing integrity and post-combustion emissions control devise integrity.

7. “Calibration” is the process of establishing or verifying the total response curve of an exhaust gas analyzer. Calibration is a laboratory procedure using several different calibration gases having precisely known concentrations.

8. “Calibration Gases” are gases of precisely known concentration that are usually used in the laboratory as references for establishing or verifying the calibration curve of an exhaust gas analyzer.

9. “Catalytic Converter” is a post-combustion device that oxidizes HC and CO gases and/or reduces oxides of nitrogen.

10. “Certification” means assurance by the authorized source, whether it is a laboratory, the manufacturer, or the State, that a specific product or statement is in fact true and meets all required accreditation requirements.

11. “Certification of Emissions Control” shall have the same meaning as set forth in Section 42-4-304(3)(a), C.R.S.

12~~1~~. “Chlorofluorocarbon” (CFC) is a class I stratospheric ozone depleting compound as listed in appendix A, final rule vol.57.mp 147 Federal Register, 40 CFR part 82.

13~~2~~. “Clean Screen Inspection Site” is that location within the program area as defined in Section 42-4-304(20)(a), C.R.S., approved by the Division and the Department of Revenue.

14~~3~~. “Clean Screen Inspector” is a person found qualified by the Division, and licensed by the Executive Director to operate Clean Screen Inspection equipment.

15~~4~~. “Clean Screen Program” is that program as defined in Section 42-4-304(3.5), C.R.S.

16~~5~~. “Clean Screened Vehicle” is a vehicle that is eligible for inspection, has at least two consecutive passing remote sensing emissions readings performed on different days or at different approved Clean Screen Inspection Sites prior to its registration renewal date, or for vehicles identified as low emitters on the low emitting vehicle index, one passing remote sensing reading prior to its registration date, and has otherwise complied with the provisions of section IV of this Part A, section XII of Part C and section VI of Part F.

176. “Clean Screen Data Manager” is that person or entity that contracts with the state to provide clean screen data management functions. This same person or entity may also act as general contractor in conducting and facilitating clean screen inspections.

187. “Colorado '94” refers to those test analyzer systems that are based on BAR '90 but modified as specified by the Division for use in the AIR Program for the period of time after January 1,1994.

198. Colorado Automobile Dealer Transient Mode Test Analyzer System is a dynamometer based inspection system capable of performing an inspection grade (I/G 240) emissions inspection procedure under simulated driving conditions. The procedure is intended for determining the compliance status for used vehicles prior to retail sale.

2019. “Compliance” means verification that certain submission data and hardware submitted by a manufacturer for accreditation consideration, meet all required accreditation requirements.

210. “Division” is the Air Pollution Control Division of the Colorado Department of Public Health and Environment.

221. “Electrical, Electronic, or Electro-mechanical Span” is the adjustment of an exhaust gas analyzer using an electronic signal rather than a calibration or span gas as a reference source.

222. “Emissions Control Systems” are those parts, assemblies or systems originally installed by the manufacturer in or on a vehicle for the purpose of reducing emissions.

243. “Executive Director of the Department of Revenue” or “Executive Director” is the representative of the Department of Revenue or designee responsible for the field enforcement of the AIR Program, licensing of emissions mechanics, clean screen inspectors and inspection stations.

254. “Fuel Control Systems” are those mechanical, electro-mechanical, galvanic or electronic parts or assemblies that regulate the air/fuel ratio in an engine for the purpose of providing a combustible charge.

265. “Fuel Filler Neck Restrictor system” is the orifice and obstruction (“Flapper Door”) in the gas tank filler neck that prevents the insertion of a “leaded gasoline” nozzle and deters the introduction of “leaded fuel”.

276. “Gas Span” is the adjustment of an exhaust gas analyzer to correspond with known concentrations of span gases.

287. “Gas Span Check” is a procedure using known concentrations of span gases to verify the gas span adjustment of an analyzer.

298. “Gross Vehicle Weight (GVW) Rating” is the maximum recommended combined weight of the motor vehicle and its load as prescribed by the manufacturer and expressed on a permanent identification label affixed to the motor vehicle.

30~~29~~. "Heavy Duty Vehicles (HDV)" are those motor vehicles for model years 1978 and earlier having a GVW rating of greater than 6000 pounds and for model years 1979 and newer, having a GVW rating of greater than 8,500 pounds.

31~~0~~. "Idle Mode" means a condition where the vehicle engine is warm and running at the rate specified by the manufacturer's curb idle, where the engine is not propelling the vehicle, and where the throttle is in the closed or idle stop position.

32~~1~~. "Ignition Systems" are those parts or assemblies that are designed to cause and time the ignition of a compressed air/fuel charge.

33~~2~~. "Inspection Area" is the area that is occupied by the analyzer, sample hose and the vehicle being inspected.

34~~3~~. "Inspection-only station" is that licensed station within the ~~basic~~ enhanced program area as defined in Section 42-4-304(20), C.R.S., which meets the requirements of Section 42-4-308, C.R.S., which facility the operator is licensed to operate by the Executive Director as an inspection-only station.

35~~4~~. "Instrument" is the complete system that samples and reads out the concentration of pollutant HC and CO gas plus CO_2 gas. The instrument includes the sample handling system, the exhaust gas analyzer and the enclosure cabinet.

36~~5~~. "Light Duty Vehicles (LDV)" are those motor vehicles (to include trucks) for model years 1978 and earlier having a GVW rating of 6,000 pounds or less and for model years 1979 and newer having a GVW rating of 8,500 pounds or less.

37~~6~~. "Low Emitting Vehicle Index" refers to a statistical table summarizing the probability of vehicles passing the IM240 inspection. The statistical table will be updated annually by each July 1st. The low emitting vehicle index must meet the requirements of Part F, VI.B. based on a tabulation of the previous calendar year's IM240 inspection program results.

38~~37~~. "Malfunction Indicator Light (MIL)" is a warning light located on the dash of vehicles equipped with On-Board-Diagnostic (OBD) systems that notifies the motorist that a malfunction to the vehicle's emissions control system has been detected.

39~~37~~. "Motor Vehicle Emissions Compliance Inspectors (ECI)" are those persons employed and authorized by the Department of Revenue for licensing and enforcement of the AIR Program.

40. "North Front Range Area" is the portion of the Program Area located in Larimer and Weld Counties as set forth in Section 42-4-304(20).

41~~38~~. "Original Condition" means the condition as installed by the manufacturer but not necessarily to the original level of effectiveness.

42~~39~~. "Program Area" is that geographic area defined in Section 42-4-304(20), C.R.S.

4~~0~~. “Registration Renewal Date” is the last day of the month in which the vehicle registration expires as defined in Section 42-3-103, C.R.S.

~~4~~4~~1~~. “Span Gases” are gases of known concentration used as references to adjust or verify the adjustment of an exhaust gas analyzer's span settings.

45. “State Emissions Technical Center Personnel” are those persons employed by or authorized by the Department of Health for technical or administrative support of the AIR Program.

46~~43~~. “Test Analyzer Systems” (TAS) in the context of this regulation is that analytical instrumentation used to measure automotive emissions and prompt the operator through other elements of an emissions inspection.

47~~44~~. “True Concentration” is the concentration of the gases of interest as measured by a standardized instrument which has been calibrated with 1% precision gases traceable to the National Institute for Standards and Technology.

48~~45~~. “Zero Gas” is a gas, usually air or nitrogen, which is used as a reference for establishing or verifying the zero point of an exhaust gas analyzer.

III. EXEMPTION FROM SECTION 42-4-314, C.R.S. FOR DEPARTMENT OF DEFENSE PERSONNEL PARTICIPATING IN THE PRIVATELY OWNED VEHICLE IMPORT CONTROL PROGRAM

III.A. U.S. Department of Defense (DOD) personnel participating in the DOD POV (privately owned vehicle) Import Control Program operating a 1975 or subsequent model year automobile, are exempt from the prohibition of C.R.S., 42-4-314(2), C.R.S. insofar as it pertains to filler neck restrictors, catalytic converter systems, and, if applicable, exhaust gas oxygen (O_2) sensor(s), if one of the following conditions are met:

III.A.1. The automobile will be driven to the port and surrendered for exportation under said program within ten (10) working days of disconnection, deactivation, or inoperability of the restrictor, catalytic converter systems, or exhaust gas oxygen (O_2) sensor(s); or

III.A.2. The reconnection, reactivation, or reoperability of the restrictor, catalytic converter systems, and, if applicable, exhaust gas oxygen (0_2) sensor(s), is made within ten (10) working days from the time the owner picked up the automobile at the port.

III.B. Persons disconnecting, deactivating, or rendering inoperable any filler neck restrictor, catalytic converter system, exhaust gas oxygen (O_2) sensor(s) on 1975 or subsequent model year automobile of DOD personnel participating in the DOD POV Import Control Program which will be driven to the port and surrendered for exportation under said program within ten (10) working days are exempt from the prohibition of 42-4-314, C.R.S.

III.C. Unless otherwise exempt under this section III of part A, vehicles shall be required to be configured as a vehicle certified by the EPA for sale and use within the United States pursuant to 40 CFR, Part 86, Subpart A.

IV. CLEAN SCREEN/REMOTE EMISSIONS SENSING

IV.A. Geographic Area of Applicability

IV.A.1. ~~The Clean Screen Program shall initiate as established in Section 42-4-306(23), C.R.S., in the Larimer and Weld County elements of the basic program area as defined in Section 42-4-304(2), C.R.S.~~ Reserved

IV.A.2. The division shall implement an expanded clean screen program in the enhanced program area.

IV.A.3. ~~The El Paso county portion of the basic emissions program area shall be excluded from the clean screen program.~~Reserved

IV.B. Vehicles Eligible to participate in the Clean Screen/Remote Emissions Sensing Program

IV.B.1. The clean screen program established in this subpart IV of Part A shall apply to eligible motor vehicles as defined in 42-4-310(5)(a), C.R.S., for which registration will expire within twelve months, a certificate of emissions control is a prerequisite to renewal and which are registered in a clean screen program county.

IV.B.2. The counties of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Weld are clean screen counties.

IV.C. REPEALED

IV.D. Enhanced program area phase-in schedule

Based upon the schedule specified below, remote emissions sensing procedures shall be introduced in the enhanced program area as defined in Section 42-4-304(20)(c)(I) and (II) only to the extent such phase-in schedule is consistent with, and made possible by, the schedule promulgated by the Commission pursuant to Section ~~42-4-134(26.5)(a)~~ 42-3-304(19)(a), C.R.S.

IV.D.1. For purposes of the clean-screen program, no more than twenty percent of the fleet of gasoline vehicles in the enhanced program area will be evaluated with remote sensing between March 1,2002 and February 28,2003.

IV.D.2. For purposes of the clean-screen program, no more than forty percent of the fleet of gasoline vehicles in the enhanced program area will be evaluated with remote sensing between March 1,2003 and February 29,2004.

IV.D.3. For purposes of the clean-screen program, no more than sixty percent of the fleet of gasoline vehicles in the enhanced program area will be evaluated with remote sensing between March 1,2004 and February 28,2005.

IV.D.4. For purposes of the clean-screen program, no more than eighty percent of the fleet of gasoline vehicles in the enhanced program area will be evaluated with remote sensing during any twelve-month period after February 28,2005.

IV.E. Schedule for collection of emissions inspection fees by county clerks and recorders.

IV.E.1. Beginning with motor vehicles with registration renewals coming due in November 2002, the clerks and recorders for the counties of Larimer and Weld shall collect an emissions inspection fee in the amount specified pursuant to Section ~~42-3-134(26.5)(a)(I)~~42-3-304(19)(a)(I), C.R.S., at the time of registration of a motor vehicle that the Department of Revenue has determined to have been clean screened, unless a valid certification of emissions compliance has already been issued for the vehicle being registered indicating that the vehicle passed the applicable emissions test at an enhanced inspection center, inspection and readjustment station, motor vehicle dealer test facility, or fleet inspection station.

This section IV.E.1. shall not apply until the Colorado Department of Revenue and the Air Pollution Control Division determine that all requisite computer-programming changes necessary for the functioning of the pay-upon-registration system have been completed, and that the pay-upon-registration system will function properly in such counties.

Effective January 1, 2007 this subpart IV.E.1 of Part A is repealed.

IV.E.2. Beginning with motor vehicle registration renewals coming due in April 2003, the clerks and recorders for the counties of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson shall collect an emissions inspection fee in the amount specified pursuant to Section ~~42-3-134(26.5)(a)(I)~~42-3-304(19)(a)(I), C.R.S. at the time of registration of a motor vehicle that the Department of Revenue has determined to have been clean screened, unless a valid certification of emissions compliance has already been issued for the vehicle being registered indicating that the vehicle passed the applicable emissions test at an enhanced inspection center, motor vehicle dealer test facility or fleet inspection station.

This Section IV.E.2. shall not apply until the Colorado Department of Revenue and the Air Pollution Control Division determine that:

I. All requisite computer-programming changes necessary for the functioning of the pay-upon-registration system have been completed;

II. The test equipment is in place and its reliability has been verified; and

III. A test run demonstrates that the system will accurately send notices to the correct vehicles.

V. Expansion of the Enhanced Emissions Program to the North Front Range Area

V.A. Program Commencement

Commencing January 1, 2012, motor vehicles registered in the North Front Range Area, and vehicles operating in the North Front Range Area that meet the requirements of Section 42-4-310(1)(c)(I), C.R.S. shall be subject to an Enhanced emissions inspection as defined in Section 42-4-304(8.5). Such inspection shall be the same as the inspection required in the Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson county portions of the Program Area.

V.B. Requirement to Obtain Certification of Emission Control and Emissions Inspection Schedule

V.B.1. Except as otherwise provided in Title 42, Article 4, Part 3, C.R.S. and this Regulation No. 11, a motor vehicle that is subject to the North Front Range Area Inspection and Maintenance Program pursuant to subsection V.A. above may not be registered or sold without a valid Certification of Emissions Control. In order to obtain a Certification of Emissions Control the vehicle must either pass the applicable emissions inspection or obtain a waiver from the Department of Revenue under this Regulation No. 11.

V.B.2. Subject to the phase-in provision in Subsection V.B.3. below, emissions inspections shall be conducted and Certification of Emissions Controls shall remain valid in accordance with the schedules set forth in Section 42-4-304(3), C.R.S., Section 42-4-310(1)(b)(II), C.R.S. and Part A, Section I.C. of this Regulation No. 11.

V.B.3. In order to better balance the number of inspections from year to year, odd number model year motor vehicles that require biennial inspections under Subsection V.B.2. above, shall be inspected commencing January 1, 2013. This phase-in shall not excuse a vehicle from an inspection in 2012 that is required due to the sale or transfer of the motor vehicle.

PART B Standards and Procedures for the Approval, Operation, Gas Span Adjustment, Calibration and Certification of the Division Approved Test Analyzer Systems, for Use in the Basic and Enhanced Areas and Test Analyzer Systems for Licensed Dealers in the Enhanced Area

I. APPROVAL OF THE COLO '94 TEST ANALYZER SYSTEMS

I.A. From January 1, 1995 and thereafter no emissions inspection required by the AIR Program ~~in the basic program area or inspection-only facilities~~ in the enhanced program area shall be performed unless the instrument used for measuring exhaust gases from motor vehicles is identified as a Colorado AIR Program COLO '94 exhaust gas analyzer. Sources of vendors for the approved analyzers may be obtained from the Program Administrator, Mobile Sources Section, Air Pollution Control Division, Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver CO 80246-1530.

I.B. As an element of accreditation, the Division will accept a Certification statement for the exhaust gas analytical and sampling system portion of the Colorado AIR. Program COLO'94 exhaust gas analyzer from the California Bureau of Automotive Repair (BAR) or a recognized laboratory. The Division or its designee will determine the manufacturers' compliance with the revisions and additions to the specifications necessary for use of the instrument within the AIR Program. Those testing procedures are to be included with the bid specifications.

I.C. The following statement is a requirement of the AIR Program for approval of an exhaust gas analyzer and is included to make manufacturers and purchasers of exhaust gas analyzers aware of the warranty requirements of Section 207(b) of the federal Clean Air Act, as amended 1981.

207(b) Warranty Requirements:

Unless an exhaust gas analyzer has been certified by the manufacturer as having met the specifications of 40 CFR Part 85, Subpart W as published in part IX of the May 22, 1980 Federal Register, an inspection performed using that analyzer may not qualify a 1982 or later model year vehicle for warranty repair coverage according to the provisions of the Emission Control System Performance Warranty (Section 207(b) of the federal Clean Air Act).

II. APPLICATIONS FOR APPROVAL OF COLO'94 TEST ANALYZER SYSTEMS EQUIPMENT MANUFACTURERS

Those manufacturers wishing to participate in the open bid process shall make application with the Air Pollution Control Division, Mobile Sources Section, of the Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, CO 80246-1530 on forms provided thereby. All manufacturers making application shall meet the requirements as specified by the Department of Administration and the Procurement Code, Articles 101-112 of Title 24, C.R.S.

A manufacturer requesting the approval of an instrument for the measurement of exhaust gases for use in the AIR Program station shall make application therefore with the Air Pollution Control Division, 4300 Cherry Creek Drive South, Denver, CO 80246-1530 on forms provided thereby. All manufacturers making application shall meet the technical specifications and administrative requirements specified by the Air Pollution Control Division.

III. PERFORMANCE AND DESIGN SPECIFICATIONS FOR THE COLO'94 EXHAUST GAS ANALYZERS

Pursuant to Section 42-4-306(3)(a), C.R.S the specifications for the exhaust gas analyzer required for inspections conducted July 1,1987 and thereafter are attached to this regulation as appendix A. These specifications include but are not limited to the provisions of California BAR'90, data collection, service/maintenance, requirements for replacement or loan instruments and warranty for the period of the agreement. These specifications are described in a separate document entitled “Colorado Department of Public Health and Environment Specifications for Colorado '94 Analyzer - Hardware Specifications” March 17, 1994 as adopted by the Commission. This information is available from the Air Pollution Control Division, Mobile Sources Section, 4300 Cherry Creek Drive South, Denver, CO 80246-1530. Those manufacturers making application should refer to section II of this Part B.

The Division in its discretion may accept substitute specifications for Test Analyzer Systems provisions that such substitute specifications are equivalent to those contained in Appendix A.

IV. SPAN GASES FOR USE WITH COLO'94 TEST ANALYZER SYSTEMS

IV.A. General

The instrument manufacturer and his designated marketing vendors shall, supply span gases approved by the Division to any ultimate purchaser of his unit. The instrument manufacturer shall also provide the analyzer purchaser with a comprehensive, up-to-date list (with addresses and phone numbers) of gas blenders approved by the Division. Each new or used instrument sold by the instrument manufacturer or marketing vendor shall have full span gas containers installed and operational at time of delivery.

IV.B. Span Gas Blends

The span gas concentrations supplied to the AIR Program stations shall conform to the specifications contained in section VI. of this Part B.

Only gas blends supplied by Division approved blenders selected pursuant to Section 42-4-306(3)(a)(I)(C) shall be offered for sale in Colorado.

Pursuant to Section 42-4-306(3)(a)(I)(C), the Division shall select blenders authorized to provide span gases that comply with the standards and specifications set out in Appendix B. The requirement to use gases procured pursuant to the standards and specification in Appendix B shall not be federally enforceable, and shall not be part of the State Implementation Plan.

IV.C. Optical Correction Factor [also referred to as “C” factor, propane to hexane conversion factor” (P.E.F.)].

Each instrument shall be permanently labeled with its correction factor visible from the outside of its cabinet. The correction factor shall be carried to at least two decimal places eg., (0.52). Factor confirmation shall be made on each assembled analyzer by measuring both N-hexane and propane on assembly line quality checks. P.E.F. limitations are described in the specifications document attached to this regulation as Appendix A.

IV.D. Running Changes and Equipment Updates

The Commission must approve any changes to design or performance characteristics of component specifications that may affect instrument performance. It will be the instrument manufacturer's responsibility to confirm that such changes have no detrimental effect on analyzer performance. All Colorado COLO'94 exhaust gas analyzers will be updated as needed and as specified in the specifications document.

V. DOCUMENTATION, LOGISTICS, AND WARRANTY REQUIREMENTS

V.A. Instruction Manual

The instruction manual accompanying each analyzer shall contain at least the following:

V.A. 1. Complete technical description.

V.A.2. If available, functional schematics (mechanical and electrical).

V.A.3. Accessories and options (included and/or available).

V.A.4. Model number, identification markings and location.

V.A.5. Operating maintenance to include periodic recommendations, i.e., daily, weekly, monthly, and procedure for maintaining sample system integrity (leaks, hang-up, calibration, filters, etc.).

V.A.6. Required service schedule identifying the items needing maintenance and the procedures to be followed by the purchaser. The services to be performed only by the manufacturer shall be clearly identified.

V.A.7. Warranty provisions to include listing of warranty repair stations by name, address, and phone number.

V.A.8. The name, address, and phone number of the permanent Colorado representative offering training, service, warranties, etc.

V.A.9. Information and terms of manufacturers service contract clearly stating the coverage including but not limited to each party's obligation, period of coverage, cost, service response times, availability of loaner units. Manufacturer or designee performed service/maintenance provisions and costs shall be so stated for the duration of the program and annually up-dateable costs.

VI. CALIBRATION OF COLO'94 TEST ANALYZER SYSTEMS

The Division shall use and require for use in the calibration and spanning of exhaust gas analyzers span gases and containers supplied by authorized blenders meeting the following parameters, blends, and specifications:

VI.A. Standardizing Instruments

The calibration gases for standardizing instruments shall conform to the provisions outlined in 40 CFR, Section 86.114 (July 1, 1992) (EPA) for automotive exhaust emissions testing. Those gases shall be of “precision” quality, certified to be within ±1% of the labeled concentration, and traceable to the National Institute for Standards and Technology (NIST).

VI.B. AIR Program Station Instruments

The span gases supplied to AIR Program stations shall conform to the following:

VI.B.1. Tri-blends of HC, CO, CO_2 in a carrier gas of nitrogen (N_2). The hydrocarbon (HC) gas will be propane.

VI.B.2. The concentrations) of the span gas blends (two) shall be within limits established by the Division to provide for uniform exhaust gas analyzer spanning.

The Division may establish such limits to ensure gasses are measurable based upon the ranges or scales of the equipment.

VI.B.3. The accuracy of the AIR Program station span gas blend shall be certified by the blender to be ±2% of labeled concentration and traceable to the NIST.

VI.C. AIR Program stations will gas calibrates the exhaust gas instrument once every 72 hours as determined by the instrument or as needed in order to maintain accuracy.

VI.D. All AIR Program exhaust gas analyzers will be calibrated only with span gases bearing a Colorado approval label.

VI.E. Additional specifications related to calibration requirements are described in the specifications document attached to this document as Appendix A.

VII. APPROVAL OF THE COLORADO AUTOMOBILE DEALERS TRANSIENT MODE TEST ANALYZER SYSTEM

Any applicable emissions inspection required by the AIR Program performed by a licensed Motor Vehicle Dealers Test Facility pursuant to Section 42-4-304 (19), C.R.S., in the enhanced program area, shall be performed utilizing a Colorado Automobile Dealer Transient Mode (I/G 240) test analyzer system approved by the state open bid process. Sources of vendors for the approved test system may be obtained from the Program Administrator, Mobile Sources Section, Air Pollution Control Division, Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver Colorado 80246-1530.

This section VII, and the associated design and performance specifications set out in Appendix A, attachment III, shall not be federally enforceable and shall not be part of the State Implementation Plan.

VIII. APPLICATIONS FOR APPROVAL OF THE COLORADO AUTOMOBILE DEALERS TRANSIENT MODE TEST ANALYZER SYSTEM

Those manufacturers wishing to participate in the open bid process shall make application with the Air Pollution Control Division, Mobile Sources Section, of the Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver Colorado 80246-1530 on forms provided thereby. All manufactures making application shall meet the requirements as specified by the Department of Administration and Procurement Code, Articles 101-112 of Title 24, C.R.S.

The design and performance specifications for the Colorado Automobile Dealers Transient Mode Test Analyzer System Technical and Hardware Specification Document of January 27. 1997 attached as Appendix A, attachment III. Pursuant to 42-4-306 (3)(a)(I)(C), the Division shall let bids for the procurement of instruments that comply with such specifications. In addition to the specifications set out in Appendix A, attachment III, qualifying bids shall:

Include a bid for the procurement of any working/support and span gases necessary for the operation of such Colorado Automobile Dealers Transient Mode Test Analyzer System, unless all such gases are already subject to a contract issued pursuant to 42-4-306 (3) (a) (I) (C). Any bid for the procurement of such gases shall comply with the relevant requirements of Part B, IV of the Regulation 11 and relevant requirements of Standards and Specifications for Calibration and Span Gas Suppliers, attached as

Appendix B, including the “Gas Requirements for the Basic and Enhanced Inspection Test Programs, 1997” as set out in section 5 of Appendix B.

Include a comprehensive and up-to-date list of working/support and span gas suppliers subject to a contract issued pursuant to 42-4-306(3) (a) (I) (C). A copy of such list shall be provided to each purchaser.

Provide for the Division-approved calibration gases for calibration of the Colorado Automobile Dealers Transient Mode Test Analyzer System.

A service and maintenance plan, including a description of services, service response times, periodic maintenance schedules and annual service agreement costs inclusive of all services necessary to comply with the Colorado Automobile Dealers Transient Mode Test Analyzer System Technical and Hardware Specification Document of January 27, 1997. Service agreement costs are to be listed annually and shall be for the remaining period of the AIR Program.

IX. REQUESTS FOR APPROVAL OF CLEAN SCREEN TEST ANALYZER SYSTEMS

IX.A. REPEALED

IX.B. Calibration gas blends intended for Clean Screen Test Analyzer Systems shall be verified and approved subject to the requirements of Standards and Specifications for Calibration and Span Gas Suppliers including Gas Requirements for the Basic and Enhanced Inspection Test Programs. 1997, (Appendix B).

Concentrations of calibration gases noted above are to be determined pending system configuration, operating ranges and expected emissions readings.

State audit blends for Clean Screen Test Analyzer Systems shall be of varying concentrations of and shall conform to the above gas blending standards.

PART C Inspection Procedures and Requirements for Exhaust Emissions, Fuel Evaporation Control, Visible Smoke Emissions, Emissions Control Systems, Chlorofluorocarbon Leak Detection; and Practices to Ensure Proper Emissions Related Adjustments and Repairs

I. PRE-INSPECTION REQUIREMENTS

I.A. A licensed emissions mechanic, licensed emissions inspector or authorized emissions inspector must perform all aspects of the inspection. It is the responsibility of emissions mechanics and emissions inspectors to notify the Department of Revenue of their current place of employment and any subsequent transfer, and place of residence. The Contractor shall be responsible for its personnel and notifying the Department of all personnel assignments and adjustments in those assignments.

The emissions mechanic not employed by an “Inspection-Only Station” shall notify the customer prior to initiating an emissions inspection if he/she is unable to perform the required adjustments and/or repairs for that particular vehicle should that vehicle fail the inspection. Otherwise the emissions mechanic shall not conduct an inspection on a motor vehicle unless that emissions mechanic so notifies the customer or is able to perform the adjustment and/or repair procedures for that particular vehicle as prescribed by the manufacturer and specified by subpart IV of this part.

I.B. Inspections may only be performed on the premises of the licensed address as prescribed in Part D section (I)(A)(2). The entire inspection shall take place within the reach of the analyzer hose.

I.C. In consideration of maintaining inspection integrity:

I.C.1. The temperature of the inspection area when utilizing one or more test analyzer systems as specified in Part B of this regulation shall be between 41°F and 110°F (50°C and 43°C) during the inspection. Inspection area temperatures must be accurately recorded, and monitored in a well-ventilated location away from vehicle engine and exhaust heat sources and out of direct sunlight. The inspection area includes the vehicle being inspected.

I.C.2. The test analyzer system and other inspection equipment shall be kept in an area within the facility that affords adequate protection from the weather.

I.C.3. A permanent location that meets all applicable requirements of this rule to provide for the inspection of vehicles is required. Electrical supply must be public utility designated for that area and meeting the analyzer manufacturer's requirements for to the test analyzer system is to be dedicated to this purpose. A dedicated phone service with dial-up back up is required to facilitate operation of the data-communications system.

I.D. Upon a physical verification of the vehicle identification number (VIN) and license plate number, the emissions mechanic or emissions inspector will enter this information into the program database in order to match this information with the state registration record. In the case of a match, the emissions mechanic or emissions inspector shall proceed. If no match is found, a new inspection record will be created. All non-Colorado registered vehicles and first time registrations with the State of Colorado will require the creation of a new inspection record by the emissions mechanic or emissions inspector.

I.E. The emissions mechanic or emissions inspector shall ascertain from the inspection record data base if an initial inspection or an after-repairs inspection is to be conducted. If an after-repairs inspection is to be conducted, previous inspection data is required for comparison. Specific emissions related repair information as specified in section VII (B) of this Part C shall be entered to the database. Inspections conducted within 60 days of the initial inspection date are to be considered an after-repairs inspection. Inspections conducted greater than 60 days from the initial inspection date are to be considered initial inspections. The emissions mechanic or emissions inspector shall accurately enter vehicle, and last inspection information as required for vehicle emissions inspection records.

I.F. The emissions mechanic or emissions inspector shall perform a cursory safety assessment of the motor vehicle prior to inspection. If in the opinion of the emissions mechanic or emissions inspector the vehicle is unsafe to inspect due to engine/drive-line metallic noises, or leaking fluids, the request for inspection may be refused.

II. EXHAUST EMISSIONS INSPECTION PROCEDURES

II.A. All model year vehicles to be inspected at licensed ~~emissions inspection stations within the basic program area and at~~ inspection-only facilities in the enhanced program area shall be administered an EPA approved idle short test as specified in 40 CER, Part 51, Subpart S, Appendix B.

The emissions mechanic or emissions inspector will use a certified TAS to select the appropriate idle short test cycle based upon the make, model year engine family and vehicle classification. These idle short tests include, but may not be limited to, a standard single speed idle test; the pre-idle 30-second pre-conditioning idle test with the high speed (2500 ± 300 RPM) pre-conditioning cycle before the idle mode; a standard two speed (3 - mode) idle test with the raised idle segment at 2500 ± 300 RPM; second chance raised idle pre-conditioning for 30 seconds just prior to the idle mode after an initial failure, and second chance restart in which the ignition is turned off for ten (10) seconds and then restarted to complete the emissions inspection procedure. All sampling modes shall (each) be thirty seconds in duration and raised engine speed modes be it for pre-conditioning or sampling, shall be 2500 RPM ± 300 RPM. As a pass/fail determination, the vehicle's emissions levels must be the same as or less than applicable limits at the designated engine speed(s) in order to pass.

II.B. The entire vehicle shall be in normal operating condition and at normal operating temperature, which shall be determined by carefully feeling the top radiator hose while the engine is not operating, by checking the temperature gauge, and/or operating the vehicle prior to performing the idle emissions inspection. Vehicles are not to be idled for extended periods of time but rather inspected in an expeditious manner as soon as normal operating temperature is achieved. The vehicle shall be inspected in an as-received condition.

The inspection shall be performed with the transmission in park or neutral and with all accessories off.

II.B.1. The analyzer probe shall be inserted at least twelve (12) inches or as recommended by the analyzer manufacturer for a quality sample whichever is greater.

II.B.2. For all vehicles equipped with a multiple exhaust system, the analyzer's dual exhaust procedure must be used.

II.B.3. If a baffle or screen prevents probe insertion to an adequate depth, a suitable probe adapter or snug fitting hose that effectively lengthens the exhaust pipe may be used.

II.B.4. The appropriate emissions limits specified in Part F of this regulation would be utilized by the certified test analyzer system. In selecting appropriate emissions limits, for motor vehicles of model years 1978 and earlier having a gross vehicle

weight (GVW) rating of greater than 6000 lbs., or of model years 1979 and newer having a gross vehicle weight rating of greater than 8500 lbs.: the emissions mechanic or emissions inspector shall identify that particular vehicle's GVW rating by examining the vehicle information (metal) plate or sticker. These motor vehicles will be subject to the applicable emissions limits as listed in Part F of this regulation. If the vehicle information plate or sticker is missing, illegible or the GVW rating information is not otherwise available, the emissions mechanic or emissions inspector shall examine the engine exhaust emissions control information label which is permanently affixed to the engine and determine heavy-duty engine/vehicle federal certification status. Vehicle engines not labeled as having complied with applicable U.S. EPA heavy-duty regulations by the manufacturer are assumed to be light-duty vehicles and subject to the emissions limits listed in Part F of this regulation. Emissions limits for vehicles in which the engine has been changed shall be based upon whichever is newest, the vehicle or the replacement engine, as specified on a vehicle evaluation form (DR2365) or bar coded label generated by emissions technical center staff or designee.

II.C. In the event the tachometer over-ride mode must be utilized to inspect a vehicle, an accurate auxiliary tachometer must be used to verify engine speeds mandated in subpart A of this section.

II.D. The vehicle will be evaluated for the presence of visible smoke emissions. The evaluation is to be performed during all (engine) operating conditions of the inspection procedures prescribed in subparts A through G of this section II.

II.E. A Certification of Emissions Compliance shall be issued if the vehicle passes the emissions control systems inspection (for 1975 and newer model year vehicles only), the exhaust and evaporative emissions inspection, and there is no evidence of visible smoke emissions.

II.F. If the vehicle fails the initial emissions inspection the owner is to have appropriate emissions related repairs or adjustments made and may return the vehicle to an AIR Program station, facility or center, as appropriate, for reinspection. Within ten (10) calendar days of the initial test, one free reinspection shall be provided to the motorist if the vehicle is returned to the same station or facility at which the initial test was performed. A motorist shall be entitled to one free after-repairs test at any contractor operated center within ten (10) calendar days of the initial test performed at a contractor operated center. If during repairs, it is determined the necessary parts are not available, the motorist may be issued a temporary Certificate of Emissions Control by Department of Revenue personnel. Proof of part(s) non-availability as described in subpart III.E. of this part is required. Motorists pursuing a temporary Certificate of Emissions Control must facilitate final vehicle inspection and compliance with adopted regulation.

II.G. Model year 1982 and newer light-duty vehicles to be inspected at licensed enhanced inspection centers within the enhanced program area shall be administered an EPA approved transient loaded mode inspection procedure as specified in 40 CFR, Part 51 Subpart S Federal Register Volume 57, Number 215, November 5,1992.

II.G.1. Vehicles shall be inspected in an as-received condition.

II.G.2. The inspection shall be performed with all accessories off.

II.G.3. The appropriate emissions limits as specified in Part F of this regulation shall be selected by the TAS based upon the model year and vehicle classification.

II.G.4. Light-duty vehicles found to be safe but unable to be dynamometer tested shall be administered an idle short test as specified in 40 CFR, Part 51, Subpart S, Appendix B. Eligibility for an alternative test procedure shall be determined by the Division based upon:

II.G.4.a. The vehicle wheelbase greater than 125 inches

II.G.4.b. The vehicle wheelbase less than 92 inches

II.G.4.c. The vehicle driveline, traction control system, and/or brake system, which have not been modified from the original configuration, cannot be accommodated on the dynamometer.

II.G.4.d. The vehicle is “Handicapped” plated and fitted with hand controls or similar apparatus to facilitate operation of the vehicle.

II.G.5. Heavy-duty vehicles to be inspected at licensed enhanced inspection centers within the enhanced program area shall be administered an appropriate EPA approved idle short test as specified in Section II (A) of this Part C.

II.G.6. The inspector may refuse to conduct the transient driving cycle dynamometer inspection procedure if the tires on the drive wheels are worn such that the cords are visible or sidewalls are peeling or blistered.

III. EMISSIONS CONTROL SYSTEMS INSPECTION PROCEDURES

The emissions mechanic or emissions inspector shall inspect model year 1975 and newer vehicles and assess the integrity of the emissions control systems. Motor vehicles shall be configured as required for sale or use within the United States pursuant to 40 CFR, Part 86, Subpart A; unless specific documentation in the form of a state issued vehicle evaluation form (DR 2365) or an EPA (EPA form 3520) or DOT exemption is submitted. The inspection shall include, based upon the TAS display of appropriate equipment:

III.A. Visually inspect for the presence and operability of the air system, catalytic converter(s) system(s), oxygen (O_2) sensor(s) system, “check engine” dash indicator light, other emissions control system malfunction service-maintenance indicators), fuel filler neck restrictor(s) and gasoline cap(s). If these parts or systems are not operating as designed, inoperable, or have been removed, the vehicle will not qualify for a Certification of Emissions Control. The absence or inoperability of the fuel filler neck restrictor system “Flapper Door” would not constitute a failure at the time of inspection.

III.B. In circumstances under which the systems/components specified above are not present, examine the emissions control information decal (sticker) within the engine compartment appropriate for that specific vehicle for a listing of manufacturer installed emissions control equipment to determine if the vehicle, as manufactured and/or certified for sale or

use within the United States, contained a catalytic converter, air injection reaction system, oxygen (O_2) sensor system, “check engine dash indicator light” and/or other emissions control system malfunction/service-maintenance indicators, or requires the use of unleaded fuel. The emissions mechanic or emissions inspector shall also refer to the certified TAS emissions control look-up table to verify application requirements. A vehicle's emissions control information decal always takes precedence over a reference look-up table.

Vehicles in which the emissions control information decals are missing, incomplete, are not appropriate to that specific vehicle, or are no longer legible are to be failed for the questionable system(s) and referred to a state operated emissions technical center or technical assistance lane for an evaluation. Pending the results of an evaluation by emissions technical center personnel or designee, a supplemental inspection document, “AIR Program Vehicle Evaluation” (DR2365) may be issued further clarifying specific emissions control inspection requirements for the specific vehicle in question. This information is to be followed by the emissions inspector or emissions mechanic.

III.C. Assessment of System Malfunction/Service Indicators

An assessment of the emissions control system malfunction/service-maintenance indicator(s) performance shall be conducted by the emissions mechanic or emissions inspector on those vehicles so equipped.

For those vehicles equipped with “check engine” dash indicator lights, or similar emissions control systems malfunction or service-maintenance indicator(s), the following procedure if applicable will be performed to assess the integrity of the system:

● Ignition Off, Engine Off = indicator(s) off

● Ignition On, Engine Off = indicator(s) on or displayed

● Ignition On, Engine Running = indicator(s) off

The revisions to the malfunction indicator light emissions test criteria contained in Section III.C. and adopted by the Commission on October 17, 2002 shall take effect on April 1, 2003. Thereafter, the failure of the system to respond as described above shall be reported to the motorist, but shall not be used to fail the vehicle.

Light-duty vehicles to include light-duty trucks of model year 1996 and newer equipped with California on-board diagnostic (OBDII) or EPA on-board diagnostic systems (EPA, OBD) shall be evaluated to determine operability and integrity of the applicable system(s). The OBD system will be connected to the TAS and interrogated. Fault codes and diagnostics shall be reported to the motorist with other emissions inspection information but shall not be used to fail the vehicle.

III.D. If the vehicle failed the initial inspection for the fuel filler neck restrictor inspection; the fuel filler neck restrictor(s) must be replaced.

The repair/replacement of catalytic converters must incorporate the same type, style and location on the exhaust system relative to engine as originally designed by the vehicle manufacturer. If a new original equipment manufacturer (OEM) part is not used, only an EPA “accepted” after-

market component appropriate to that application may be used. Verification of the correct application and certification status must be performed at the time of reinspection. The submittal and review of repair receipts as specified in subsection VII.B of this section is required in order to substantiate proper repairs of applicable emissions control system.

III.E. If the necessary part(s) will not be available prior to the month of expiration of the present vehicle registration, and the owner obtains a signed form or statement to that effect from a manufacturer's dealer for that make vehicle, or from an automotive parts supplier which in the normal course of business supplies part(s) for that vehicle, Department of Revenue personnel after verification may issue a temporary Certification of Emissions Control. The form or statement provided must specifically identify by part numbers and description, the necessary part(s). The owner then has until the expiration of the temporary certification to complete the necessary repairs or replacement.

IV. EVAPORATIVE FUEL CONTROL INSPECTION PROCEDURES

Model year 1975 and newer vehicles shall be inspected for the presence and integrity of the gasoline cap(s). The gasoline cap(s) of such vehicles inspected in the six county metro Denver enhanced program area as defined in Section 42-4-304(9)(a)., shall also be inspected for sealing integrity as specified in Part F (IV) of this regulation.

Vehicles with a missing gasoline cap(s) shall not qualify for issuance of a Certificate of Emissions Control. Motorists whose vehicles have gasoline cap(s) demonstrating excessive leakage shall be notified of the deficiency, repair/replacement shall be voluntary. Repair/replacement of defective cap(s) shall be required on and after January 1,1999. The gas cap sealing integrity procedure shall be effective January 1,1998.

V. DETECTION OF CHLOROFLUOROCARBONS

V.A. All pre 1995 model year vehicles equipped with passenger compartment air conditioning systems shall be inspected for chlorofluorocarbons (CFC) leakage.

V.B. Chlorofluorocarbon detection will be performed with leak detection equipment designated by the Division.

V.C. The Division shall designate any equipment reasonably designed to detect CFC.

V.D. The CFC leak detection procedure will be limited to the vehicle engine compartment and include but not limited to such components as the compressor, condenser, receiver/dryer (accumulator) and associated lines and hoses.

V.E. Motorists are to be notified of any detection of CFC leakage within the vehicle engine compartment.

V.F. Repairs to correct CFC leakage are voluntary.

VI. FREE REINSPECTION

Vehicles which fail any or all elements of an emissions inspection are eligible for one free reinspection within ten (10) calendar days if presented to the same station or facility as initially inspected and failed. In the case of the contractor operated enhanced inspection center network, the ten (10) day free reinspection shall be honored at any enhanced inspection center.

VII. REPAIR INFORMATION

Any after-repairs reinspection of a vehicle initially failed calls for the submittal of a completed official AIR Program emissions repair form.

VIII. CERTIFICATION OF EMISSIONS CONTROL

In order to obtain a Certificate of Emissions Control, the vehicle must meet the following conditions:

VIII.A. Certification of Emissions Compliance may be issued if:

VIII.A.1. The vehicle emissions levels are the same as or less than the applicable emissions limits; and

VIII.A.2. There are no smoke emissions visible from the vehicle engine crankcase and/or tailpipe, and

VIII.A.3. For 1975 and newer model year vehicles, the vehicle passes the emissions control systems inspection, and

VIII.A.4. Under enhanced inspection requirements, the vehicle owner/operator of a 1995 or newer model year vehicle shall demonstrate compliance with any federal emissions recall-pursuant to 40 CFR Part 85.1902 (d) or remedial repair plan pursuant to Section 207 (C) of the federal Clean Air Act for which owner notification occurs after 01 January 1995.

VIII.B. A Certification of Emissions Waiver may be issued if:

VIII.B.1. The vehicle passes the emissions control systems inspection (1975 and newer model year vehicles only) required by subpart III. A, B and C.; and

VIII.B.2. Basic Program: Effective January 1,1995

For model year 1981 and earlier at least seventy-five dollars ($75) has been spent on emissions related adjustments and repairs as specified in subpart IX and X provided that proof of repair costs for that specific vehicle has been provided to Department of Revenue personnel or designee in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts and/or repairs, are specifically identified.

For model years 1982 and newer, at least two hundred dollars ($200) has been spent on emissions related adjustments and repairs as specified in subpart IX and X, provided that proof of repair costs for that specific vehicle has been provided to Department of

Revenue personnel or their designee in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts and/or repairs, are specifically identified.

VIII.B.3. Enhanced Program: Effective January 1,1995

For model year 1968 and newer, at least four hundred and fifty dollars ($450) or as adjusted annually by the Consumers Price Index for Urban Consumers (CPIU) of the previous year as compared to 1989 has been spent on emissions related adjustments and repairs as specified in subpart IX and X, provided that proof of repair costs for that specific vehicle has been provided to Department of Revenue personnel or their designee in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts and/or repairs, are specifically identified. The Division shall adjust the amount that must be expended by the motorist in order to qualify for a Certificate of Emissions Waiver, which amount shall be established for each calendar year through 2004 by the Division pursuant to the criteria specified in Section 42-4-310(1)(d)(VI),C.R.S.

For model year 1967 and earlier at least seventy-five dollars ($75) has been spent on emissions related adjustments and repairs as specified in subpart IX and X provided that proof of repair costs for that specific vehicle has been provided to and verified by the emissions inspector in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts and/or repairs, are specifically identified.

If no emissions reduction is achieved, the motorist is to be referred to the Department of Revenue or its designee pursuant to Sections IX. G. and X. of this Part C.

VIII.B.4. An emissions reduction as determined by the Division-approved COLO'94 Test Analyzer System has resulted due to emissions related repairs and the applicable cost limit has been met. Proof of these emissions related repairs is required and to be retained by the AIR Program station, facility or center until purged by state program personnel. The vehicle must have passed the emissions control systems inspection and there are no smoke emissions visible from the vehicle engine crankcase or exhaust system.

VIII.B.5. Engine operational parameter verification.

VIII.B.5.a. All engine parameter adjustments for idle speed, proper air/fuel ratio and cold enrichment, as well as proper ignition dwell and timing (if applicable), have been set to or verified as being set to manufacturers specification by a licensed mechanic or registered repair facility/technician.

VIII.B.5.b. For those 1981 and newer vehicles equipped with computer based, engine management systems, also known as closed loop, feedback controls shall have the following additional sensors/systems verified to be operating within vehicle manufacturer specifications.

VIII.B.5.b.(1) As applicable to the vehicle being inspected, the oxygen sensor, throttle position sensor, coolant temperature sensor, manifold absolute pressure sensor.

VIII.B.5.b.(2) The engine management control system will be scanned for default/malfunction codes with those systems or components identified corrected.

VIII.B.5.b.(3) Primary and secondary ignition system integrity shall be verified for correct operation.

VIII.B.5.b.(4) A fuel delivery system utilizing a carburetor will be inspected for leaks, idle speed control adjustments, float operation and cold enrichment. A fuel delivery system utilizing fuel injection be it throttle body or multiport configuration, shall be checked for injector function, cold enrichment and injector spray patterns. Fuel injectors shall also be evaluated for proper volume and injection pulse width. Fuel system pressure shall be checked for residual and running pressure.

VIII.B.5.b.(5) A cylinder leak down procedure shall be performed on all cylinders of the engine with the results reported to the motorist.

VIII.B.5.b.(6) With the exception of item (5) above, component/system deficiencies found to be out of manufacturer's operational specification(s) will be corrected. The cost of such repairs shall be creditable towards issuance of a waiver.

VIII.C. If in the opinion of a registered emissions repair facility/technician, a vehicle which is properly adjusted to all manufacturers emissions related specifications and all emissions control systems appear to be operating as required, yet the vehicle continues to exceed one or more emissions limits and the repair expenditure limits have not been met, a waiver shall be issued upon physical verification of systems operation and vehicle performance by emissions technical center personnel.

VIII.D. Upon verification by a Department of Revenue Motor Vehicle Emissions Compliance Inspector, a waiver not to exceed one inspection cycle may be granted to obtain necessary emissions related repairs on a vehicle in the case of economic hardship when the Certificate of Emissions Waiver requirements of this section have not been met. It must be verified that the vehicle owner in question is participating in an established and recognized public assistance program as adopted by the Department of Revenue. The provisions of this paragraph D shall only apply to a vehicle once. In order to apply, the motor vehicle owner shall also comply with those applicable regulations of the Department of Revenue.

VIII.E. A Certificate of Emissions Waiver will not be issued to a vehicle that is eligible for the Emissions Control Systems Performance Warranty, 207(b) of the federal Clean Air Act. Per the provisions of the 207(b) Performance Warranty, the repair costs necessary for compliance with AIR Program emissions limits specified in Part F of this regulation will be borne by the vehicle manufacturer or his authorized dealer representative.

VIII.F. The emissions mechanic or emissions inspector shall generate the appropriate vehicle inspection report forms, electronic records, Certificate of Emissions Control, as required by the Department of Revenue or the Division and distribute to the motorist and the Departments of Health and Revenue. The emissions mechanic or emissions inspector will remove all expired Verification of Emissions Test windshield stickers. The vehicle inspection report is to be electronically identified by the issuing emissions mechanic or emissions inspector.

IX. ADJUSTMENT PROCEDURES

The emissions mechanic is to secure high altitude specifications for idle speed, idle mixture, ignition timing, dwell, and fast idle speed for the purpose of adjustment. If no high altitude specifications are available through the Department of Health or other reference sources refer to the emissions decal, other applicable specifications guide, or sea level specifications for proper specifications.

IX.A. With a dwell meter, check to determine if the ignition dwell is within the recommended tolerance of ±2° of specifications. Reset if the ignition dwell is not within tolerance.

IX.B. Connect tachometer to determine if idle speed is correct. If not, set to manufacturer's specifications with a tolerance of ±50 rpm.

IX.C. With the engine idling at the correct speed, check ignition timing to determine if it is within +4° to -2° of the recommended setting, if no high altitude specifications are available.

IX.D. Using an infrared analyzer, propane enrichment kit, and/or tachometer, adjust the idle air/fuel ratio using manufacturer's suggested procedures and specifications, if applicable.

IX.E. After completing the preceding steps, readjust idle speed to manufacturer's specifications, if not within tolerance.

IX.F. Using the manufacturer's suggested procedure, check the fast idle speed and adjust to manufacturer's specifications.

IX.G. If the vehicle continues to exceed applicable emissions limits, the vehicle must undergo specific emissions related adjustments and repairs. Adjustments and repairs must be accomplished to the point of compliance, or the applicable cost ceiling must have been met. If the applicable emissions related adjustment and repair requirements have been met but an emissions reduction has not resulted, the vehicle owner may be referred to a Department of Revenue Motor Vehicle Emissions Compliance Inspector to get a waiver. Repairs must have been reasonably calculated to achieve a reduction in emissions of those components of the inspection the vehicle failed, pursuant to manufacture's specifications as required by Sections 42-4-306(7)(a)(II)(A) and 42-9-111,C.R.S.

X. EMISSIONS RELATED REPAIRS

X.A. Emissions related repairs generally include only those adjustments to and maintenance and repair of the motor vehicle that are directly related to the reduction of exhaust emissions necessary to comply with the applicable emissions limits and procedures. The expenditure for emissions related repairs does not include the inspection fee as specified in Section 42-4-311, C.R.S. or expenses associated with the adjustments to and

maintenance, replacement, and repair of air pollution control equipment on the vehicle if the need for such adjustment, maintenance, or repair pursuant to subpart III is due to disconnection of, tampering with, or abuse to such air pollution control equipment. Air pollution control equipment is any part, assembly or system originally installed by the manufacturer for the sole or primary purpose of reducing emissions.

X.B. Repairs and maintenance to the following systems shall qualify as emissions related repairs insofar as the purpose is to reduce exhaust emissions:

— Air Intake Systems

— Ignition Systems

— Fuel Control Systems

— Emissions Control Systems

— Basic Engine Systems

— For microprocessor (0_2) based air/fuel control systems, cooling systems.

X.C. Within the basic program, emissions related adjustments and repairs must have been performed by a licensed emissions mechanic or repair facility/technician registered with the Division pursuant to Part D of this regulation in order to be creditable to the repair cost waiver limits.

In order to be creditable to the enhanced repair cost limits, adjustments and repairs must have been performed by a repair facility/technician registered with the Division pursuant to Part D of this regulation.

Only the appropriate emissions failure related parts costs should apply to applicable waiver limits for repairs not performed at a licensed emissions inspection station or registered repair facility/technician.

XI. ENGINE CHANGES

XI.A. For those vehicles in which the original engine has been replaced, the emissions limits and applicable emissions control equipment for the year and model of the vehicle body/chassis, as per registration/title or replacement engine, whichever is newest, shall apply. For those diesel powered vehicles which have been converted to operate on fuel(s) other than diesel; the emissions limits and applicable emissions control equipment for the year, make and model of the gasoline powered engine equivalent as originally manufactured, for the vehicle body/chassis, per the registration or replacement engine, whichever is newest, shall apply as determined by emissions technical center personnel or designee and specified on an official AIR Program vehicle evaluation form (DR2365).

XI.B. For 1975 and newer vehicles in which the original engine has been replaced, if either the vehicle body/chassis original engine, as per registration/title or replacement engine as manufactured had a catalytic converter system, air injection reaction system, microprocessor based air/fuel control system, and/or fuel filler neck restrictor(s), these

emission control systems must be present, intact and operational before a Certification of Emissions Control may be issued.

XI.C. For those vehicles titled/registered as model year 1975 and newer, that were assembled by other than a licensed manufacturer such as kit-cars, registered/titled according to Section(s) 42-6-108 and/or 42-5-205, C.R.S. and assigned a state or manufacturer specific identification number, the applicable emissions control equipment and standards will be based upon a determination by technical center personnel of the vintage of the vehicle engine. The technical center personnel may issue an affidavit and the year of the engine shall be presumed to be that stated by the vehicle owner unless it is determined by state emissions technical center personnel or designee, after physical inspection of the vehicle engine, that the year of the engine is other than stated by the owner.

XII. CLEAN SCREEN INSPECTION PROGRAM PROCEDURES

XII.A. Eligibility to participate

XII.A.1. Vehicles specified in Part A, Section IV.B., are eligible for participation in the Clean Screen Program.

XII.A.2. Clean Screen inspections applicable to the program are those performed within twelve months prior to an individual vehicle's registration renewal date.

XII.A.3. Vehicles are eligible for participation in the Clean Screen Program when the two most recent consecutive emissions readings observed during the 12-months prior to its registration date comply with the standards specified in Part F (VI) and: the most recent passing emissions reading occurred on a different day or at a different site location from the prior reading. Additionally, vehicles that are identified as low emitters on the low emitting vehicle index are eligible for participation in the clean screen program when the most recent emissions reading observed during the 12-months prior to their registration date complies with the standard specified in Part F, Section VI.

XII.A.4. The following vehicles are ineligible for participation in the Clean Screen Program:

XII.A.4.a. New Vehicles as specified in Section 42-4-310(b)(II)(A), C.R.S.

XII.A.4.b. Vehicles involved in a change of ownership.

XII.A.4.c. Vehicles owned by the United States government or any agency thereof or by the State of Colorado or any agency or political subdivision thereof, pursuant to Section 42-4-310(l)(b)(I), C.R.S.

XII.B. All aspects of inspection must be performed by a licensed Clean Screen Inspector.

XII.C. Clean Screen Test Analyzer Systems

XII.C.1. Vehicles participating in the Clean Screen Program shall be tested as specified in this Part C utilizing a Clean Screen Test Analyzer System recognized by the

Division as having complied with the performance and design requirements specified in Part B (IX) of this regulation.

XII.C.2. Clean Screen Test Analyzer Systems will be periodically calibrated and maintained as required in Part B (IX) of this regulation.

XII.C.3. The inspection data processing system(s) used by the Data Manger and Clean Screen Inspector will be that approved by the Division, and the Department of Revenue.

XII.D. Vehicle owners participating in the Clean Screen Program are not subject to the provisions of Part C (I) through (XI).

XII.E. Certification of Emissions Control.

In order to obtain a Certificate of Emissions Control the following conditions must be met:

XII.E.1. The vehicle emissions levels are the same as or less than the limits specified in Part F(VI).

XII.E.2. The most recent two consecutive emissions readings were observed within twelve months of the registration renewal date provided that the most recent passing emissions reading must have occurred on a different day or at a different site location from the prior reading.

XII.E.3. No non-complying emissions readings are observed between or subsequent to the last pair of complying readings.

XII.E.4. For vehicles that are identified as low emitters on the low emitting index the most recent emission reading was observed within 12-months of the registration renewal date. For these vehicles, identification as a low emitter on the low emitting vehicle index shall take the place of the second remote sensing reading otherwise required under Section XII.E.2., above.

PART D Qualification and Licensing of Emissions Mechanics, Emissions Inspectors, and Clean Screen Inspectors; Licensing of Emissions Inspection and Readjustment Stations, Inspection-Only Stations, Inspection-Only Facilities, Fleets, Motor Vehicle Dealer Test Facilities, Enhanced Inspection Centers; Qualification of Clean Screen Inspection Sites; and Registration of Emissions Related Repair Facilities and Technicians

I. LICENSING OF EMISSIONS INSPECTION AND READJUSTMENT STATIONS, INSPECTION-ONLY STATIONS, INSPECTION-ONLY FACILITIES, ENHANCED INSPECTION CENTERS, FLEET INSPECTION STATIONS AND MOTOR VEHICLE DEALER TEST FACILITIES

I.A. Emissions Site Requirements for the Licensing of Emissions Inspection and Readjustment Stations, Inspection-Only Stations, Inspection-Only Facilities, Fleet Inspection Stations and Motor Vehicle Dealer Test Facilities:

I.A.1. Applicability

All emissions inspection and readjustment stations, inspection-only stations, inspection-only facilities, fleet inspection stations, and motor vehicle dealer test facilities are required to meet all applicable standards pursuant to this Part D and the Department of Revenue's adopted regulations in order to qualify for licensing for operation in Colorado's AIR Program.

To achieve the uniformity and security needed in test site locations; in order to meet federal EPA regulations contained in Federal Register vol. 57, no. 215, of the Federal Register and meet the statutory requirements contained in Sections 42-4-301 through 42-4-316, C.R.S.; the Air Quality Control Commission adopts this standard for emissions site requirements.

I.A.2. Standards for emissions inspection sites:

I.A.2.a. All facilities shall be a permanent type of structure.

I.A.2.b. All sites must be capable of receiving mail.

I.A.2.c. All test facilities shall have a minimum of two off-street parking spaces for staging to accommodate additional vehicles.

I.A.2.d. All test site facilities shall have a customer waiting area that provides for observation of the entire emissions inspection process. Observation can be, direct observation, observation by electronic equipment, or other methods that prove to be as effective with prior approval of the Department of Revenue.

I.A.2.e. All test sites shall be capable of conducting all aspects of the inspection process within the confines of a building or structure, and maintaining ambient air temperatures between 41 degrees and 110 degrees Fahrenheit in the inspection area as defined in subpart I (C)(1) of Part C of this regulation. Inspections are not required to be performed within the confines of a structure or building provided ambient temperatures are within such parameters.

I.A.2.f. All test site facilities shall have an adequate exhaust removal system which shall be designed so as to not alter the inspection results and to assure safe ambient air quality of the inspection area as established by the Occupational Safety and Health Administration pursuant to 29 CFR, Part 1910, subpart Z.

I.A.3. Pursuant to Sections 42-4-306(4)(a) and 42-4-307 (8)(a), C.R.S. as amended, the Division shall develop or contract for the development of a training program for emissions mechanics and emissions inspectors. The training program shall be comprehensive in nature and address all aspects of vehicle inspection procedures specified for this regulation.

I.A.3.a. Participation by emissions inspectors intending to operate in the enhanced program area shall be required.

I.A.3.b. Participation by emissions mechanics intending to operate in the basic program area shall be voluntary.

I.A.3.c. Training classes shall be funded by tuition charged to the participants.

I.A.3.d. The following tuition rates and fees shall apply

I.A.3.d.(1) The training class fee shall be no greater than $150 per participant.

I.A.3.d.(2) The instructor's fee for presenting a class shall not exceed $400.

I.A.3.d.(3) The training manual for those emissions mechanics who choose not to participate in a training class shall be no greater than $25.

I.A.3.e. These same training provisions shall be applicable to the requalification provisions of subpart II.B. of this Part D.

I.B. The following tools, reference manuals and diagnostic equipment shall be available for performance of inspections; and within the basic program, emissions related adjustments and repairs.

I.B.1. Division approved calibrated and spanned Test Analyzer System (TAS).

I.B.1.a. As a provision of continued license to perform AIR Program inspections, the TAS must be updated as required, pursuant to this regulation.

I.B.1.b. The station or facility owner or operator shall maintain a full service/maintenance contract with the equipment manufacturer or equipment manufacturer's designee valid for the duration of the program but renewable on an annual basis

I.B.2. Rules for the operation of AIR Program inspection stations provided by the Colorado Department of Revenue.

I.B.3. Tachometer capable of reading 4,6 and 8 cylinders, 0-6,000 RPM minimum at no greater than 10 RPM of actual speed.

I.B.4. Emissions control systems applications guide as incorporated into the TAS, and oxygen sensor/check engine light, systems maintenance guide in either printed or electronic medium.

I.B.5. Dwell meter.

I.B.6. Ignition timing light.

I.B.7. Propane enrichment kit for idle mixture adjustment and diagnostics.

I.B.8. Commercially available reference manuals giving idle speed, idle mixture, mixture control dwell or fuel injection duration, timing, dwell, fast idle speed specification, high altitude specifications and information covering the emissions control systems description, diagnostic and repair procedures for the year models of vehicles involved in the AIR Program. In either printed or electronic medium.

I.B.9. Sufficient hand tools including but not limited to suitable computer scanner diagnostic link, digital volt/ohm meter, vacuum pump and other automotive diagnostic equipment for proper performance of the inspections, adjustments and emissions related repairs as applicable to the licensed entity.

I.B.10. Division approved span gas and equipment for performing gas span checks and calibrations.

I.B.11. Suitable non-reactive tail pipe extenders or probe adapter for inspecting vehicles with screened or baffled exhaust systems, or exhaust systems with multiple tail pipes.

I.B.12. The analyzer manufacturer's maintenance and calibration manual must be retained in the inspection area.

I.B.13. A Division approved, calibrated and spanned chlorofluorocarbon detection device.

I.B.14. Items #5, 6, 7, 8 and 9 above are not required for licensing as an inspection-only station or inspection-only facility.

I.C. A licensed emissions mechanic or emissions inspector who has successfully completed a hands-on proficiency check administered by the Department of Revenue in accord with the Commission regulations and those of the Department of Revenue, and the criteria specified in Part D of this regulation is or will be available to make a proper inspection. Enhanced inspection centers shall be open 8:30 am - 7:30 p.m. weekdays, and Saturday 8:00 a.m. -1:00 p.m.

I.D. An emissions inspection-only station and inspection-only facility, must so indicate same by posting a sign in a readily visible location, and that no emissions related adjustments or repair services are available should the vehicle fail the inspection procedure.

I.E. A person to whom there are twenty (20) or more vehicles registered, or to whom said number of vehicles are leased for not less than six continuous months, or are consigned for sale, may be licensed as a “fleet inspection station” or as a dealer licensed under Article 6 of Title 12, C.R.S., a motor vehicle dealers test facility and conduct inspections of that fleet or those vehicles inventoried or consigned for retail sale. As a fleet inspection station or motor vehicle dealer test facility, no inspections may be conducted for the employees or general public, but only on vehicles owned, leased by the business, or consigned or held in inventory for sale. A Certificate of Emissions Control issued by a fleet emissions inspection station will be valid for 12 months, one vehicle registration cycle.

I.E.1. Under the self-inspection provisions of Section 42-4-309, C.R.S. for fleets of twenty (20) or more vehicles, the retail sale of a fleet vehicle within the enhanced program area requires full compliance with applicable inspection procedures as performed by an enhanced inspection center or an (enhanced) inspection-only facility.

I.E.2. At the time of initial licensing and annually thereafter, the vehicle fleet shall be declared by completing a listing of all eligible vehicles by make, model year, light-heavy duty classification, vehicle identification number, license plate number, and if applicable unit number and state of registration on forms provided by the Division.

I.F. All AIR Program inspection stations, facilities and centers are required to post in a conspicuous location in a clearly legible fashion a sign indicating the fees charged for inspections and in the basic program area, and maximum fees for emissions related adjustments and repairs required for the issuance of a Certificate of Emissions Control.

I.G. All AIR Program inspection stations, facilities and centers are required to be linked via dedicated service line to the program data/communications network.

I.G.1. Basic program inspection services providers and independent inspection-only facilities in the enhanced area shall be linked to the data network via dedicated voice quality telephone lines with a dial-up back-up telephone line.

I.G.2. Enhanced inspection centers shall be linked via dedicated data quality lines with dedicated voice quality lines as dial-up back-up.

I.H. All sites must provide for reasonable access in order for Departments of Revenue (or if applicable, Health) staff to conduct periodic quality control and audit functions as necessary.

I.I. Upon request for a license as an emissions inspection and readjustment station, inspection-only station, fleet inspection station, motor vehicle dealer test facility, or inspection-only facility, applicants shall complete forms approved by the Department of Revenue which shall include but not be limited to a declaration of any past violations of AIR Program statute Section 42-4-301 through 42-4-316, C.R.S. as amended or any rule or regulation pursuant to such law.

II. QUALIFICATION AND LICENSING OF EMISSIONS MECHANICS, AND EMISSIONS INSPECTORS

II.A. Qualification of Emissions Mechanics and Emissions Inspectors

II.A.1. Application for qualification as an emissions mechanic and emissions inspector shall be filed with the Air Pollution Control Division. The Division shall administer issuance of letters of qualification. Applications for such letters of qualification shall be completed on forms provided by the Division. Before an applicant may be given a letter of qualification, he must comply with the requirements of this section II. The Division will notify applicants of the evaluation requirements prior to testing.

II.A.2. An applicant must demonstrate knowledge, skill, and competence concerning the conduct of emissions inspections, and within the basic program area the adjustment and repair of vehicles to manufacturers' specifications. Such knowledge, skill and competence will be shown by passing a written and skills proficiency qualification test including, but not limited to, knowledge of the following:

II.A.2.a. Operation and purpose of emissions control systems.

II.A.2.b. Relationship of exhaust and evaporative HC and CO to timing and air/fuel ratio control.

II.A.2.c. Adjustment and repair to manufacturers' and applicable high altitude specifications.

II.A.2.d. Rules and regulations of AIR Program and proper inspection procedures.

II.A.2.e. Contemporary diagnostic and engine tune-up procedures.

II.A.2.f. The provisions of the Emissions Control Systems Performance Warranty pursuant to Section 207 (A) and (b) of the federal Clean Air Act as it applies to the AIR Program.

II.A.2.g. Visual inspection of the required emissions control equipment for 1975 and newer vehicles.

II.A.2.h. Operation of and proper use, care maintenance, calibration and gas span checking of the Division-approved inspection equipment.

II.A.2.j. Proper use of, security, and distribution of inspection forms, Certificates of Emissions Control, and supplemental inspection documents.

II.A.2.k. Emissions related adjustment and repair requirements for all vehicles failing the initial emissions inspection.

II.A.2.l. Inspecting for visible smoke emissions.

II.A.2.m. Inspecting for chlorofluorocarbon (CFC) emissions.

II.A.2.n. Cause and effect of air pollution.

II.A.2.o. Purpose, goal and function of the AIR Program.

II.A.2.p. Exhaust and evaporative emissions inspection procedures and rationale for use.

II.A.2.q. Public relations and motorist assistance.

II.A.2.r. Safety procedures in the inspection lane or bay.

II.B. Requalification Requirements for all Emissions Mechanics and Emissions Inspectors

II.B.1. Upon the determination by the Commission of the necessity of technically updating the qualifications for emissions mechanics or emissions inspectors and, upon development or approval of retraining courses and retesting requirements for emissions mechanics to demonstrate said qualification, emissions mechanics, or holders of certificates of qualification, shall be required to requalify biennially.

II.B.2. Emissions mechanics and emissions inspectors shall be required to requalify within ninety days from the date of written notification by the Department of Revenue. Said notice shall be mailed to the address of record in the office of the Department of Revenue charged with licensing of emissions mechanics and inspectors, which notice shall inform the person of the necessity of requalification and the nature of such skills, systems, and procedures requiring the retraining for the continued performance of the emissions inspection. The notice shall give the name and location of training sources approved or accredited for purposes of retraining, the necessity of requalification by a certain date, and the nature and evidence of documentation to be filed with the Department of Revenue evidencing such requalification, and state that failure to requalify within said period of time shall result in suspension or revocation of the emissions mechanic's or emissions inspector's license or certification as described in the Department of Revenue rules and regulations.

II.B.3. The Division shall issue a letter of requalification to any person who has requalified to the satisfaction of the Division and according to the requalification regulation of the Department of Revenue.

II.C. Transmittal of Letters of Qualification and Issuance of Emissions Mechanic's and Emissions Inspector's Licenses

The Division shall provide a listing of all letters of qualification or letters of requalification for emissions mechanics or emissions inspectors to the Department of Revenue, and, upon application by any person qualified, the Department of Revenue shall issue an emissions mechanic's or emissions inspector's license or renewal license in accord with the regulations of that department.

II.D. Lapse of Certificate of Qualification for Emission Mechanic.

A person to whom the Division has issued a letter of qualification, who has not been issued an emissions mechanic's or emissions inspector's license within six (6) months from the date of issuance of the most recently issued letter of qualification shall be deemed to have forfeited said qualification and shall be required to reapply if a new letter of qualification is requested.

II.E. Program License Application Performance Review Criteria

II.E.1. Applicability

Pursuant to Sections 42-4-306(4)(c) and 42-4-308(1)(b), C.R.S. the Commission is authorized to establish minimum performance criteria for licensed emissions inspectors, mechanics, and stations. Based on these performance criteria, Section 42-4-312, C.R.S. grants authority to the Executive Director of the Department of Revenue to suspend or revoke a license on a finding of a pattern of violations.

In order to meet federal act requirements and to provide a consistent criteria for the Department of Revenue's review of performance based evaluations that may result in a denial of the license application, the Executive Director of the Department of Revenue or the designee shall apply criteria contained in this section E.

II.E.2. Standards

The following criteria shall be used by the Department of Revenue's Executive Director or his designee in the review of any emissions license application for a mechanic, inspector, inspection and readjustment station, inspection-only station, inspection-only facility, fleet station, or motor vehicle dealer test facility.

Performance

Based on violations and penalties provided in Section 42-4-313(4)(b)(1), C.R.S. the following criteria will be used for the review of any emissions license application listed in this section:

II.E.2.a. Any substantiated violation of intentional passing of a failing vehicle.

II.E.2.b. Any substantiated violation of performance of emissions tests by an unlicensed mechanic, inspector, or station.

II.E.2.c. Any substantiated violation of performance of an emissions test on falsified emissions test equipment.

II.E.2.d. Any substantiated violation of failing of passing vehicles.

II.E.2.e. Any substantiated violation of flagrant misuse of emissions program control documents.

II.E.2.f. Any substantiated pattern of non-compliance with AIR Program regulations.

II.E.2.g. Any substantiated violation of false statements on any emissions license application in an attempt to conceal problems such as: administrative hearings held for program violations, any probation of any emissions license held previously or currently held, any suspension or revocation of any emissions license held previously or currently.

For the purposes of emissions license application review, past performance may entail complete program history review of any person, persons, or officers of a corporation, or partners of any partnership that hold or held a license with the AIR Program.

II.E.2.h. As a prerequisite to licensing of an emissions mechanic or emissions inspector, a hands-on proficiency check to address the criteria described in section II. A. 2. of this Part D will be administered by the Department of Revenue in accord with the regulations of the Commission. This evaluation will be conducted at the emissions mechanic's or emissions inspector's place of employment and on an exhaust gas analyzer or test analyzer system that would be used to conduct inspections.

In order to provide for continuity and consistency with training, testing and licensing activities conducted per this Part D, the development and maintenance of the hand-on proficiency check will be coordinated between the Department of Revenue and the Division.

III. REGISTRATION OF EMISSIONS RELATED REPAIR FACILITIES

III.A. Automotive Emissions Related Repair Facilities May Voluntarily Register with the Division.

III.A.1. The repair facility/technicians agree to have the effectiveness of their emissions related repairs and repair costs monitored by the Division on an on-going basis.

III.A.2. Repair facility/technicians agree to have repair effectiveness listing provided to those motorists whose vehicles fail any element of the inspection procedures specified in Part C of this regulation.

III.A.3. The facility shall complete and process AIR Program repair report forms as approved by the Division. Repair report form processing equipment may incorporate PC based bar code technology such that one-dimensional “3 of 9″ and two dimensional “PDF 417” symbology can be read and written. The system must be capable of supporting form generation software provided by the state. The printer shall be an ink jet printer or equivalent capable of printing the bar code symbology stated. Refer to section 2.14 of the TAS specifications attached as Appendix A of this regulation for microcomputers specifications. The Division shall determine performance equivalence.

III.B. As an aid to motorists seeking emissions related repair assistance, a means will be established whereby a listing of registered repair facilities whose repair effectiveness would be made available and presented to the motorist at the time of inspection failure. Repair effectiveness shall include but may not be limited to:

a. Number of vehicles repaired and retested

b. Percent passing on first retest

c. Percent requiring additional repairs and retests

d. Percent issued waivers

The listing shall document any recognized professional automotive accreditation or memberships that may include but not be limited to the National Institute for Automotive Service Excellence, or

Automotive Service Association. The listing may also indicate the vehicle make(s) or vehicle classification that the repair facility specializes in.

III.C. Repair facilities may request removal form the listing or temporary placement on an inactive listing while measures are being taken to improve repair effectiveness.

III.D. It is further suggested that:

III.D.1. The repair facility/technicians will seek out appropriate training when repair effectiveness deficiencies are identified.

III.D.2. Repair facilities will hire and retain technicians certified under “Automotive Service Excellence” tests number A-1, A-6, A-8, and L-1 and that technicians will maintain these levels of certifications.

Ill.D.3. That the repair facility be adequately equipped and maintain a level of diagnostic and repair equipment necessary to perform emissions related repairs based upon the criteria set forth by the Automotive Service Association of Colorado, Incorporated.

III.D.4. The Department of Revenue performs a site evaluation of facilities that apply to assess compliance and confirm qualifications.

III.D.5. The facility has or could comply with the provisions established in Part D of this regulation and have not been subject to the penalties prescribed by Section 42-9-111, C.R.S.

III.E. The Division will monitor and periodically report to individual repair facilities their repair effectiveness and average costs as compared to other registered repair facilities.

III.F. The Division shall make repair effectiveness data available to the general public upon request as well as periodically to the Department of Revenue.

III.G. The Division may request a site evaluation of any registered repair facility by the Department of Revenue for reasons of diminished repair effectiveness or noted consumer complaints.

III.H. The Division shall identify the level(s) of repair effectiveness that would result in inadequate emission(s) reductions and negatively impact consumer protection.

IV. REQUIREMENTS FOR CLEAN SCREEN/REMOTE SENSING SITES

IV.A. Applicability

Clean Screen Inspection Sites must meet all applicable standards pursuant to this Part D and the Department of Revenue's regulations in order to qualify for operating in Colorado's Clean Screen Program.

IV.B. Standards for emissions inspection sites

All sites shall comply with all applicable state and local codes/ordinances and maintain appropriate permits for that specific municipality and location.

IV.C. All Clean Screen Sites must provide reasonable access in order for Department of Revenue (and if applicable, Division) staff to conduct periodic quality control and audit functions as necessary.

IV.D. Applicants for a license as a Clean Screen Emissions Inspector shall complete forms approved by the Department of Revenue which shall include, but not be limited to, a declaration of any past violations of AIR Program statute Sections 42-4-301 through 42-4-316, C.R.S., as amended or any rule or regulation pursuant to such law.

V. QUALIFICATION OF CLEAN SCREEN EMISSIONS INSPECTORS

V.A. Clean Screen Emissions Inspector applicants shall apply for letters of qualification on forms provided by the Division. The Division shall issue letters of qualification to applicants who comply with the requirements of this section V. The Division will notify applicants of the evaluation requirements specified in subsection B. below prior to testing.

V.B. An applicant for a letter of qualification or requalification must demonstrate knowledge, skill, and competence concerning the operation of Clean Screen emissions inspections. Such knowledge, skill and competence will be demonstrated on actual Clean Screen equipment and by passing a skills proficiency qualification test including, but not limited to, knowledge of the following:

V.B.1. Operation of and proper use, care, maintenance, calibration and gas span checking of the Division-approved Clean Screen Test Analyzer System.

V.B.2. Safety procedures for the Clean Screen Inspection Site.

V.B.3. Proper setup and breakdown of the Clean Screen equipment

VI. REQUALIFICATION REQUIREMENTS FOR ALL CLEAN SCREEN EMISSIONS INSPECTORS

VI.A. Upon the determination by the Division of the necessity of updating the technical qualifications for Clean Screen Emissions Inspectors, holders of certificates of qualification shall be required to requalify biannually. The Division may waive this requirement should it be unnecessary.

VI.B. Clean Screen Emissions Inspectors shall be required to requalify within ninety days from the date of electronic notification by the Department of Revenue.

VI.C. The Division shall issue a letter of requalification to any licensed Clean Screen Emissions Inspector who meets the requirements of section V.B.

VII. TRANSMITTAL OF LETTERS OF QUALIFICATION AND ISSUANCE OF CLEAN SCREEN INSPECTOR LICENSES

The Division shall provide a listing of all letters of qualification or letters of requalification for Clean Screen Inspectors to the Department of Revenue, and upon application by any person qualified, the Department

of Revenue may issue a Clean Screen Inspector's license or renewal license in accordance with the regulations of that department.

VIII. LAPSE OF CERTIFICATE OF QUALIFICATION FOR CLEAN SCREEN INSPECTOR

A person to whom the Division has issued a letter of qualification, who has not been issued a Clean Screen Inspector license within six (6) months from the date of issuance of the most recently issued letter of qualification shall be deemed to have forfeited said qualification and shall be required to reapply if a new letter of qualification is requested.

IX. PROGRAM LICENSE APPLICATION PERFORMANCE REVIEW CRITERIA

IX.A. Applicability

Pursuant to Sections 42-4-306(4)(c) and 42-4-308(1)(b), C.R.S., the Commission is authorized to establish minimum performance criteria for licensed Clean Screen Inspectors and Data Management Contractor(s). Based on these performance criteria, Section 42-4-312, C.R.S., grants authority to the executive director of the Department of Revenue to suspend or revoke a license.

In order to provide consistent criteria for the Department of Revenue's review of performance based evaluations that may result in a denial of a license application, or revocation of a license, the executive director of the Department of Revenue or the designee shall apply criteria contained in sections IV through VII of this Part D.

IX.B. Requirements

The Department of Revenue’s executive director or his designee in the review of any emissions license application shall use the following criteria for a Clean Screen Inspector, or Clean Screen Data Manager.

Performance

Based on violations and penalties provided in Section 42-4-313(4)(b)(1), C.R.S., the following criteria will be used for the review of any license application listed in the section:

IX.B.1. Any violation of intentional passing of a failing vehicle.

IX.B.2. Any violation of performance of Clean Screen inspections by an unlicensed inspector, or at a unapproved/unlicensed site.

IX.B.3. Any violation of performance of a Clean Screen inspection on a falsified Clean Screened Test Analyzer System.

IX.B.4. Any violation of flagrant misuse of Clean Screen inspection data, control documents, vehicle owner information, or vehicle registration data.

IX.B.5. Any pattern of non-compliance with AIR Program regulations, including Clean Screen provisions.

IX.B.6. Any violation of false statements on any license application.

IX.B.7. As a prerequisite to licensing of a Clean Screen Inspector, a hands-on proficiency check to address the criteria described in section V of this Part D will be administered by the Department of Revenue in accord with the regulations of the Commission. This evaluation will be conducted at a mutually agreed upon location and on an approved Clean Screen Test Analyzer System that would be used to conduct inspections.

In order to provide for continuity and consistency with qualifying and licensing activities conducted per this Part D, the development and maintenance of the hands-on proficiency check will be coordinated between the Department of Revenue and the Division.

PART E Prohibited Acts and Penalties to Ensure Proper Inspection Procedures, Adherence to Prescribed Procedures and Effective Emissions Related Repairs

I. THIS PART E DESCRIBES THE GROUNDS UPON WHICH THE LICENSE OF AN EMISSIONS MECHANIC, EMISSIONS INSPECTOR OR ANY TYPE OF AIR PROGRAM INSPECTION BUSINESS MAY BE SUSPENDED, FOR A PERIOD OF TIME NOT LESS THAN SIX MONTHS, OR REVOKED.

I.A. Pattern of Violations

The license of an emissions mechanic, emissions inspector, inspections and readjustment station, inspection-only station, inspection-only facility, fleet inspection facility, motor vehicle dealer test facility, or contractor's contract may be revoked or suspended, as appropriate pursuant to Sections 42-4-312 and, 42-4-313, C.R.S., if such mechanic, inspector or facility has engaged in a pattern of violations of the provisions of this Regulation 11, or other applicable statutes or regulations, including, but not limited to:

I.A.1. AIR Program inspection business, and/or emissions inspector or emissions mechanic is involved in any unauthorized entry into the analyzer or inspection system that results in a fraudulent inspection report and/or emissions certificate being issued.

I.A.2. AIR Program inspection business, and/or emissions inspector or emissions mechanic caused an inspection report and/or emissions certificate to be issued to a vehicle that did not at the time of issue comply with the laws, rules or regulations.

I.A.3. AIR Program inspection business, and/or emissions inspector or emissions mechanic makes, issues, or knowingly uses any imitation or deceptively similar or counterfeit inspection report and/or emissions certificate.

I.A.4. AIR Program inspection business, and/or emissions inspector or emissions mechanic possesses an inspection report and/or emissions certificate which is known to be fictitious, or was issued for another vehicle, or was issued without an emissions inspection test having been performed when required.

I.A.5. Exercising licensing privilege other than those granted by the Department of Revenue and the Commission.

I.A.6. AIR Program inspection(s) have not or are not being made in accordance with applicable laws and the rules and regulations of the Department or the Commission.

I.A.7. Vehicles have not or are not being repaired in accordance with applicable laws and the rules and regulations of the Department or the Commission.

I.A.8. Emissions mechanic or emissions inspector failed to a post-valid license.

I.A.9. AIR Program inspection business, and/or emissions inspector or emissions mechanic failed to post AIR Program license(s) in a location available and conspicuous to the public.

I.A.10. AIR Program inspection business, and/or emission inspector or emissions mechanic failed to use the correct inspection report form issued by the Department.

I.A.11. AIR Program inspection business, and/or emissions inspector or emissions mechanic used an inspection report form for a purpose other than permitted by the Department.

I.A.12. AIR Program inspection business, and/or emissions inspector or emissions mechanic failed to complete the correct inspection report form or.

I.A.13. AIR Program inspection business, and/or emissions inspector or emissions mechanic loaned, sold, gave or transferred inspection report forms to another AIR Program inspection business or mechanic.

I.A.14. Repealed.

I.A.15. AIR Program inspection business, and/or emissions inspector or emissions mechanic performed air tests with an analyzeror test system that was not certified.

I.A.16. AIR Program inspection business, and/or emissions inspector or emissions mechanic used span gas that was not approved.

I.A.17. AIR Program inspection business, and/or emissions inspector or emissions mechanic, failed to have tools, supplies and records available for inspection by the Department of Revenue.

I.A.18. AIR Program inspection business, and/or emissions inspector or emissions mechanic used “escape” mode in analyzer without valid reason.

I.A.19. AIR Program inspection business, and/or emissions inspector or emissions mechanic failed to properly identify and record a vehicle that fails the air test.

I.A.20. AIR Program inspection business, and/or emissions inspector or emissions mechanic failed to properly identify and record a vehicle that passes the emissions inspection.

I.A.21. AIR Program inspection business, emissions inspector or emissions mechanic falsely reports an (incorrect) vehicle identification number or vehicle information on a DR2411 form supplied by the Department of Revenue.

I.A.22. AIR Program inspection business, and/or emissions inspector or emissions mechanic performed inspections while under suspension or administrative hold.

I.A.23. AIR Program inspection business, and/or emissions inspector or emissions mechanic continued using an analyzer knowing it was malfunctioning.

I.A.24. AIR Program inspection business, emissions inspector or emissions mechanic charged more than posted fee for service.

I.A.25. AIR Program inspection business, through its agent denied the issue of a vehicle inspection report and/or Certificate of Emissions Compliance when at the time of inspection the vehicle did comply with the laws, rules and regulations for the issuance of such a certificate.

I.A.26. AIR Program inspection business was not open and available to perform inspection services during normal business hours.

I.A.27. AIR Program inspection business, through its agent, failed to issue a Certificate of Waiver to a vehicle that met all the requirements.

I.A.28. AIR Program inspection business, through its agent, issued a Certificate of Waiver to a vehicle that was eligible pursuant to Section 207(b) of the federal Clean Air Act

I.A.29. AIR Program inspection business, through its agent, performed repairs to the emissions control systems of a vehicle that are eligible for any manufacturer's warranties without informing the owner of said warranties.

I.A.30. AIR inspection business failed to display all required signs and post fees for inspection services.

I.A.31. Electrical supply fails to meet voltage and frequency requirements of 110V (±) 10% 60HZ, or is not publicly supplied as appropriate to that area.

I.A.32. AIR Program inspection business, through its agent, performed an inspection when the temperature of the inspection area was not between 41 degrees and 110 degrees Fahrenheit.

I.A.33. AIR Program inspection business could not account for controlled documents.

I.A.34. Emissions mechanic or emissions inspector failed to keep their access code secure which resulted in an inspection conducted by an unlicensed person.

I.A.35. Emissions mechanic or emissions inspector failed to keep his current mailing address on file with the Department of Revenue.

I.A.36. A licensed emissions mechanic or emissions inspector is not employed at the facility.

I.B. Conditions Under Which a Station, Facility or Center License may be Denied, Suspended or Revoked.

In addition to the grounds listed in section A, the license of any inspection and readjustment station, inspection-only station, inspection-only facility, fleet inspection facility, motor vehicle dealer test facility or the Contractor, may be suspended or revoked as appropriate pursuant to Sections 42-4-312 and, 42-4-313, C.R.S. for any of the following violations:

I.B.1. AIR Program inspection business, and/or its agent have engaged in a pattern of violation of any provision of the applicable laws, rules or regulations.

I.B.2. AIR Program inspection business, through its agent issued a vehicle inspection report and/or Certificate of Emissions Waiver when at the time of issue the vehicle did not comply with the laws, rules and regulations for the issuance of such a certificate.

I.B.3. AIR Program inspection business, through its agent issued a vehicle inspection report and/or Certificate of Emissions Control without an air test having been performed.

I.B.4. Adjustments or repairs were performed when such adjustments or repairs were not authorized or required.

I.B.5. AIR Program inspection business is not equipped as required.

I.B.6. AIR Program inspection business was not operating from the location for which the license was issued.

I.B.7. Emissions mechanic or emissions inspector made false statements on official forms.

I.B.8. Facilities of applicant for an AIR Program license are not properly equipped for the type of license applied for.

I.B.9. The AIR Program inspection business flagrantly misuses control documents by committing any of the violations described in sections A.10, A.11, A. 12, A.13, or A.14 in a flagrant manner.

I.B.10. An unlicensed person performed all or any part of an inspection procedure.

I.B.11. Within the enhanced program area, Motor Vehicle Dealer Test Facility inspections are limited to one per vehicle (consecutively) such that no vehicle shall be inspected twice consecutively. Following an inspection at a Motor Vehicle Dealer Test Facility, that vehicle's inspection for the next cycle must be

performed in the inspection-only network of enhanced inspection centers or decentralized inspection-only facilities; as applicable to the model year of the vehicle.

I.C. Conditions Under Which an Emissions Mechanic or Emissions Inspector License may be Denied, Suspended or Revoked.

I.C.1. Emissions mechanic or emissions inspector caused a passing Certificate of Emissions Compliance to be issued to a failing vehicle.

I.C.2. Emissions mechanic or emissions inspector made false statements on official forms.

I.C.3. The emissions inspector or emissions mechanic performed two or more emissions inspections using a test analyzer system that was not updated as required by Part B or Appendix A of this regulation.

I.D. Any action to suspend or revoke the license for any enhanced emissions center, or to revoke the contractor's agreement pursuant to this Part E, shall be subject to the terms of the agreement entered into pursuant to Section 42-4-304(5), C.R.S.

PART F Maximum Allowable Emissions Limits for Motor Vehicle Exhaust, Evaporative and Visible Emissions for Light-Duty and Heavy-Duty Vehicles

In order for a vehicle (owner) to obtain a Certificate of Emissions Compliance, the exhaust and evaporative emissions from the motor vehicle subject to an EPA approved emissions test as specified in Part C of this regulation may not exceed the applicable maximum concentrations or if applicable, maximum mass for exhaust carbon monoxide (CO), hydrocarbons (HC) and oxides of nitrogen (NOx); and the integrity requirements specified for fuel evaporation control and visible smoke.

I. LIGHT-DUTY VEHICLES (INCLUDING LIGHT-DUTY TRUCKS) SUBJECT TO IDLE SHORT TEST(S)

I.A. Maximum Concentration Limits for Light-Duty Vehicles (Includes Light-Duty Trucks)

Model Year	Percent Carbon Monoxide	Parts/million Hydrocarbon
1970 and earlier	3.5	1000
1971	3.0	1000
1972	3.0	1000
1973	3.0	1000
1974	3.0	1000
1975	2.0	600

Model Year	Percent Carbon Monoxide	Parts/million Hydrocarbon
1976	2.0	600
1977	1.5	400
1978	1.5	400
1979	1.5	400
1980	1.5	400
1981 and newer	1.2	220

II. HEAVY-DUTY VEHICLES (1978 AND EARLIER GREATER THAN 6000 LBS. GVWR) SUBJECT TO IDLE SHORT TEST(S)

II.A. Maximum Concentration Limits for Heavy-Duty Vehicles

Model Year	Percent Carbon Monoxide	Parts/million Hydrocarbon
1967 and earlier	7.0	1500
1968	6.5	1200
1969	6.5	1200
1970	5.5	1000
1971	5.5	1000
1972	5.5	1000
1973	5.5	1000
1974	5.5	1000
1975	5.5	1000
1976	5.5	1000
1977	5.5	1000
1978	5.5	1000

Model Year	Percent Carbon Monoxide	Parts/million Hydrocarbon
Heavy-Duty Vehicles (1979 and Newer Greater Than 8500 lbs. GVWR) Subject to Idle Short Test(s)		
1979	4.0	800
1980	3.5	800
1981	3.0	600
1982	3.0	600
1983	3.0	600
1984	3.0	600
1985	3.0	600
1986 and newer	2.0	300

III. TRANSIENT TEST MASS EMISSIONS LIMITS IN GRAMS/MILE (GPM)

III.A. Light-duty vehicles (excluding light-duty trucks)

MODEL YEAR	HC	CO	NOx
1982	3.5	45.0	5.0
1983	3.5	30.0	4.5
1984	3.0	30.0	4.5
1985	2.5	20.0	4.5
1986	2.5	20.0	4.5
1987	2.5	20.0	4.0
1988	2.0	20.0	4.0
1989	2.0	20.0	4.0
1990	2.0	20.0	3.5
1991	1.5	20.0	3.5

MODEL YEAR	HC	CO	NOx
1992	1.5	15.0	3.5
1993	1.5	15.0	3.5
1994	1.2	15.0	3.0
1995	1.2	15.0	2.5
1996	1.2	15.0	2.0
1997	1.2	15.0	2.0
1998	1.2	15.0	1.5
1999 and newer	1.2	15.0	1.5

III.B. Light-Duty Trucks (equal to or less than 8,500 lbs. G.V.W.R.)

MODEL YEAR	HC	CO	NOx
1982	6.0	65.0	6.0
1983	6.0	65.0	6.0
1984	5.0	55.0	6.0
1985	4.5	45.0	6.0
1986	4.0	40.0	6.0
1987	3.5	30.0	5.5
1988	3.0	25.0	5.0
1989	3.0	25.0	5.0
1990	3.0	25.0	5.0
1991	2.5	25.0	4.5
1992	2.5	25.0	4.5
1993	2.5	25.0	4.5

MODEL YEAR	HC	CO	NOx
1994	2.0	20.0	4.0
1995	2.0	20.0	4.0
1996	1.2	15.0	3.5
1997	1.2	15.0	3.0
1998	1.2	15.0	2.5
1999 and newer	1.2	15.0	2.0

III.C. REPEALED

IV. EVAPORATIVE EMISSIONS CONTROL STANDARDS

System Integrity - A gas cap integrity check to assess the degree of leakage between the fuel filler neck sealing surface and the gasoline cap sealing surface shall be performed on all model year 1975 and newer vehicles.

IV.A. Pressure decay of the gasoline cap to filler neck sealing surfaces shall not exceed six (6) inches of water over a ten (10) second period, or

IV.B. The gasoline cap flow rate shall be compared to an orifice with a National Institute of Standards and Technology (NIST) traceable flow rate that will result in a pass/fail flow rate threshold of 60 cc/minute of air at 30 inches of water (column).

V. VEHICLES SHALL NOT EXHIBIT ANY CONTINUOUS GRAY, BLUE, BLUE-BLACK, OR BLACK SMOKE OF GREATER THAN 5% OPACITY FROM THE ENGINE CRANKCASE AND/OR TAILPIPE(S) DURING ANY ENGINE OPERATING CONDITION OF APPLICABLE INSPECTION PROCEDURES.

VI. CLEAN SCREEN PROGRAM MAXIMUM ALLOWABLE EMISSIONS LIMITS

VI.A. In order to obtain a Certificate of Emissions Control through the Clean Screen Program, vehicles must not exceed maximum emissions concentrations of 0.50 percent carbon monoxide (CO) and 200 parts per million hydrocarbon (HC) as reflected in remote sensing emissions readings.

VI.B. Vehicle owners who participate in the Clean Screen Program shall not be subject to the provisions of this Part F other than this section VI.

VI.B.1. On or before July 1st of each year the Air Pollution Control Division shall develop a low emitting vehicle index based on a tabulation of the previous calendar year's IM240 inspection program results for specified make, model and model year of vehicles.

VI.B.2. A 98% passing rate for exhaust emissions shall be set as the minimum allowable passing criteria for the low emitting vehicle index.

VI.B.3. In developing the low emitting vehicle index, the Division may use passing criteria greater than 98% if necessary to ensure that the use of the low emitting vehicle index is equivalent to or better than the use of a second remote sensing measurement in terms of air quality benefits.

PART G High Emitting Vehicle Identification Pilot Project

I. Applicability

The provisions of this Part G shall apply to the following:

I.A. All Motor Vehicles that are registered in the Enhanced Program Area and;

I.B. All Motor Vehicles that regularly operate within the Enhanced Program Area but are registered outside the Enhanced Program Area. For the purposes of this Part G, a Motor Vehicle is regularly operated within the Enhanced Program Area if it is identified by a Remote Sensing Device on four or more separate days within any consecutive 12-month period.

II. Definitions

II.A. "Clean Screen Test" means the emission test conducted under the Clean Screen Program.

II.B. "Compliance Test" means the emission tests and inspection procedures conducted under section VI.

II.C. "Contractor" shall have the same meaning as set forth in section 42-4-304(5), C.R.S.

II.C. "Enhanced Inspection Center" shall have the same meaning as set forth in section 42-4-304(10), C.R.S.

II.D. "Enhanced Program Area" means the area as identified in section 42-4-304(20)(c), C.R.S.

II.E. "High Emitting Vehicle" means a vehicle that exceeds the Remote Sensing Standards set forth in section IV and subsequently fails the Compliance Test Standards set forth in section VI.

II.F. "Motor Vehicle" shall have the same meaning as set forth in section 42-4-304(18), C.R.S.

II.G. "Periodic Inspection Test" means the emission tests and inspection procedures required as part of the vehicle registration process under this Regulation No. 11 and conducted at

an Enhanced Inspection Center or Inspection-only Facility. The term Periodic Inspection Test does not include Clean Screen Tests.

II.H. "Remote Sensing Device" means an apparatus, portable or permanent, used for collection of on-road vehicle emissions data and other data used to identify the vehicle as a potential high emitting vehicle.

III. General Provisions

In addition to any other inspection and repair requirements under this Regulation No. 11, Motor Vehicles operating in the Enhanced Program Area shall be subject to inspection, repair and enforcement requirements in accordance with the provisions of this Part G.

III.A. All Motor Vehicles operating in the Enhanced Program Area may be inspected using a Contractor operated Remote Sensing Device. Such Remote Sensing Devices shall be operated in accordance with the provisions of section V.

III.B. All Motor Vehicles registered in or regularly operating in the Enhanced Program Area shall meet the remote sensing standards set forth in section IV.

III.C. When a Motor Vehicle exceeds the remote sensing standards, the owner of that vehicle shall bring the vehicle to an Enhanced Inspection Center or other Division approved facility for compliance testing within thirty days after receiving notice that the Motor Vehicle exceeded the remote sensing standards. compliance testing shall be conducted in accordance with the provisions of section VI. To pass, the Motor Vehicle must meet the Compliance Test standards set forth in section VI. Owners that fail to bring the vehicle in for compliance testing within the thirty day time period shall be subject to the penalty provisions of section VIII.

III.D. A Motor Vehicle that fails the Compliance Test shall be considered a High Emitting Vehicle and the owner of that vehicle shall be subject to the maintenance and repair and, as applicable, penalty provisions set forth in sections VII and VIII.

IV. Remote Sensing Standards

IV.A. A Motor Vehicle's emissions must not exceed 3.0% Carbon Monoxide (CO) or 550 ppm Hydrocarbons (HC), reported as hexane, as measured by a remote sensing reading for that Motor Vehicle. For those vehicles that have been previously inspected, only readings conducted since the Motor Vehicle's last passing Periodic Inspection Test, last passing Clean Screen Test or last passing Compliance Test, whichever is later, may be considered.

IV.B. The Division may require that additional criteria beyond the emission concentration standards set forth in section IV.A. be met before a Motor Vehicle is identified as having exceeded the remote sensing standards and required to undergo compliance testing under this Part G. These criteria may include, but are not limited to, requiring a minimum number of remote sensing readings, higher CO and/or HC concentration levels, ambient temperature criteria, vehicle specific power criteria, restricted time scope for valid remote sensing readings, use of high or low emitter indexes and consideration of a vehicle's emissions inspection history.

V. Remote Sensing Procedures

For the purposes of this Part G, remote sensing readings shall be conducted in accordance with the specifications, procedures, quality assurance requirements, calibration requirements and licensing standards applicable to Clean Screen Tests under 42-4-301 *et. seq.,* C.R.S., Regulation No. 11, the contract between the Colorado Department of Public Health and Environment, Colorado Department of Revenue and the Contractor and the Division approved Remote Sensing Device Operators Manual.

VI. Compliance Test Procedures and Standards

VI.A. The Compliance Test for a Motor Vehicle shall be conducted at an Enhanced Inspection Center or other Division approved facility in accordance with the specifications, procedures, quality assurance requirements, calibration requirements and licensing standards that are applicable during a Periodic Inspection Test for that Motor Vehicle as set forth in this Regulation No. 11.

VI.B. The Compliance Test standards for a Motor Vehicle shall be the same as the Periodic Inspection Test standards and limits applicable to that vehicle as set forth in this Regulation No. 11. If a Motor Vehicle fails to meet any of the Periodic Inspection Test standards and limits it shall be deemed to have failed the Compliance Test.

VII. Maintenance and Repair Requirements

Motor Vehicles that fail the Compliance Test standards set forth in section VI. shall have ninety days to repair and re-test the vehicle. The re-test shall be conducted in accordance with the procedures and standards set forth in section VI.

VIII. Penalties

VIII.A. When a Motor Vehicle exceeds the remote sensing standards, the owner of that vehicle shall bring the vehicle to an Enhanced Inspection Center or other Division approved facility for compliance testing within thirty days after receiving notice that the Motor Vehicle exceeded the remote sensing standards.

VIII.A.1. The registration for any vehicle that fails to appear at an Enhanced Inspection Center or other Division approved facility for compliance testing within thirty days after receiving notification of the exceedance of the remote sensing standards shall be subject to administrative suspension in accordance with rules and procedures established by the Department of Revenue. The registration may not be reinstated until the vehicle owner provides proof that the Motor Vehicle has either passed a Compliance Test that meets the requirements of section VI, or has obtained a waiver from the Department of Revenue in accordance with the waiver requirements applicable to Periodic Inspection Tests, and pays any fine assessed under section VIII.A.2.

VIII.A.2. The owner of a Motor Vehicle that fails to appear at an Enhanced Inspection Center or other Division approved facility for compliance testing within thirty days after receiving notice that the Motor Vehicle exceeded the remote sensing standards shall be subject to a one hundred dollar fine assessed in accordance with rules and procedures established by the Department of Revenue.

VIII.B. When a Motor Vehicle fails the Compliance Test standards set forth in section VI., the owner of that vehicle shall have ninety days after receiving notification of the test failure to either pass a subsequent Compliance Test, or obtain a waiver from the Department of Revenue in accordance with the waiver requirements applicable to Periodic Inspection Tests.

VIII.B.1. The registration for any vehicle that does not pass a subsequent Compliance Test within the ninety-day time period, or obtain a waiver from the Department of Revenue in accordance with the waiver requirements applicable to Periodic Inspection Tests, shall be subject to administrative suspension in accordance with rules and procedures established by the Department of Revenue. The registration may not be reinstated until the vehicle owner provides proof that the Motor Vehicle has either passed a Compliance Test that meets the requirements of section VI, or has obtained a waiver, and pays any fine assessed under section VIII.B.1.

VIII.B.2. The owner of a Motor Vehicle that does not pass a subsequent Compliance Test or obtain a waiver within ninety days after receiving notification of the initial Compliance Test failure shall be subject to a one hundred dollar fine assessed in accordance with rules and procedures established by the Department of Revenue.

IX. Repeal

This Part G shall be repealed effective July 1, 2010.

PART H Statements of Basis, Specific Statutory Authority and Purpose

I. AMENDMENTS To PART A - E, ADOPTED MARCH 21,1996

The amendments to Regulation No. 11 were adopted by the Air Quality Control Commission (Commission) of the State of Colorado. This Statement of Basis, Specific Statutory Authority and Purpose is required by Sections 24-4-103(4), C.R.S. The specific statutory authority for these changes is Sections 42-4-301 through 42-4-316, C.R.S. (1995 Supplement).

The revisions to Regulation No. 11 address the effects of recodifying Title 42 of Colorado's Revised Statutes. This regulatory action is necessary to correct statutory references within the regulation in order to be consistent with the renumbered statute. The only other change to the rule is to clarify that “licensed emissions inspectors” are eligible to perform an emissions inspection pursuant to Part C, section I.A. The previous rule referred only to “authorized emissions inspectors”. The purpose of this change is to avoid confusion between emissions inspectors authorized to perform an inspection at an enhanced inspection center and emissions inspectors licensed to do so at an inspection-only facility, fleet inspection station, or motor vehicle dealer test facility. This rule amendment does not change the rights or obligations of any person because the term “authorized emissions inspector” has been applied to include “licensed emissions inspectors” for purposes of Part C section I. A. The specific statutory authority for this rule amendment is set out at Section 42-4-304 (7), C.R.S.

For the reasons noted, the Commission has adopted amendments to Regulation No. 11, Parts A-E. These rule revisions are administrative in nature; do not apply to stationary sources; and will have no regulatory impact on any person, facility or activity. Furthermore, the Commission has no discretion not to adopt the changes to the numbering scheme for the statutory provisions, and these revisions will have no significant fiscal impact. These revisions are not more stringent than the relevant federal requirements.

II. AMENDMENTS To PARTS A, B, C, F, G, AND APPENDICES A AND B, ADOPTED JULY 17,1997

The amendments to Regulation No. 11 were adopted by the Air Quality Control Commission (Commission) of the State of Colorado. This Statement of Basis, Specific Statutory Authority and Purpose is required by Sections 24-4-103(4), C.R.S. The specific statutory authority for these changes is Sections 42-4-301 through 42-4-316, C.R.S. (1995 Supplement).

1. Changes to Part A(I) (C) (9) and (11) address statutory amendments to Section 42-4-309 (6) enacted by the 1996 session of the General Assembly which make provision for an inspection voucher system for retail sale of used motor vehicles into the enhanced emissions inspection program area by licensed dealers. The rule revisions ensure that such dealers are not required to have the vehicle inspected prior to the sale provided they comply with the requirements of Section 42-4-309 (6). Further more, the revisions allow sellers to have a vehicle inspected up to one hundred twenty days prior to the sale. The specific authority for these changes is set out in Sections 42-4-309 (6) and 42-4-306 (7). This provision is necessary to implement state law, but is not required by federal law. The rule specifically provides that the provisions of 42-4-309 (6) are not federally enforceable, and are not included in the SIP. The Department of Revenue, may however, enforce such requirements, subject to the adoption of any regulations that may be necessary. Such administrative enforcement is necessary to ensure compliance with the statutory requirements. The revisions to Regulation No. 11, Part A(I)(C)(13) make it clear that a vehicle will fail the inspection for purposes of 42-4-309 (6) if the vehicle has any defect that makes it impractical or unsafe to test the vehicle.

2. The revisions to Part A(I)(B) clarify motorist compliance requirements For those persons that live in the basic program area yet commute into and have complied with enhanced program requirements. The specific statutory authority for these changes is set out in Sections 42-4-306 (7) and 42-4-310 (1) (c) (V). This provision is consistent with, and does not exceed, federal requirements.

3. The revisions to Part C (II)(G)(4) make it clear that vehicles with excessively long or short wheelbases, and specially designed vehicles equipped with hand controls or similar apparatus, are exempt from testing on the I/M 240 dynamometer. The I/M 240 dynamometer system is not designed to handle such vehicles, and the population of such vehicles is so small that this exemption will have no effect on emissions reductions. This provision is consistent with, and does not exceed, federal requirements. The specific statutory authority for this exemption is set out in Section 42-4-306 (6) (d).

4. The revisions to Part C (III) (D) eliminate the previous requirement to repair or replace the catalytic converter and exhaust gas oxygen sensor if the fuel inlet restrictor has become enlarged. Leaded fuels, which damaged these components, have not been available for several years and this rule is no longer necessary. This provision is consistent with, and

does not exceed, federal requirements. The specific statutory authority for this exemption is set out at Section 42-4-306 (6) (a).

5. The revisions to Part C (XI) allow inspection stations to use vehicle identification numbers (VINs) issued by kit car manufacturers and by other states. The rule previously required inspection stations to use a VIN assigned by Colorado for kit cars, custom cars and home-built vehicles. Under the previous rule, such specialized vehicles were often required to comply with inspection criteria applicable to later model vehicles. As a result the inspection criteria were unreasonably stringent. This change will ensure that vehicles are inspected pursuant to the appropriate procedure, This provision is consistent with, and does not exceed, federal requirements. The specific statutory authority for this provision is set out at Section 42-4-306 (6).

6. The revisions to Parts C (IV) and F (IV) provide a pressure integrity or leak check for gas caps in order to reduce emissions of volatile organic compounds, an ozone precursor. The gas cap pressure check requirements is based on established demonstrated methodologies, and will provide an estimated 40% reduction in VOC, an ozone precursor, to escape into the atmosphere. Such evidence supports the finding that the rule will result in a demonstrable reduction in air pollution. Because the Denver area is in the inspection and maintenance program due to carbon monoxide, rather than ozone problems, federal law does not require such a pressure check. The state did not take credit for such a pressure check in the maintenance plan for ozone, and associated redesignation request, recently adopted by the AQCC. Therefore, this provision is not required by federal law, and will not be incorporated into the State implementation Plan. An evaporative emissions inspection procedure is required pursuant to Sections 42-4-310 (2) (a) and 42-4-306 (6) (a), C.R.S. for those vehicles inspected in the metro Denver enhanced program area.

7. The revisions to Part B (IV)(B&C), (VI)(C&D) and Appendix B propose standards and specifications consistent with EPA and recognized industry standards for the manufacturer and “naming” of precision calibration gases for use in test analyzer systems. Consistent protocol reduces the burden to the gas manufacturer, those regulated parties that are end users of the calibration gases, and improves overall quality control. Additionally, revisions to Appendix B address specific program administrative needs such as the bar code tracking system necessary for tracking certified test analyzer system gases which have been placed into service. The revisions to Appendix B are consistent with guidance documents issued by EPA. Federal law requires span gases to be accurate within a tolerance of 2%, but federal law does not specifically require the state to establish requirements for manufacturers. Therefore, the requirements set out in Appendix B shall not be included in the SIP, and shall not be federally enforceable. The specific statutory authority for this action is Section 42-4-306 (3)(a)(l).

8. The revisions to Appendix A, attachment III establish equipment design and performance specifications for a “Motor Vehicle Dealer Transient Mode Test Analyzer System (I/G 240)” to be used at Motor Vehicle Dealer Test Facilities (MVDTFs). Equipment that meets these specifications will allow MVDTFs to conduct emissions inspections on their used vehicle inventory prior to its retail sale. This provision provides increased convenience and reduced costs for affected automobile dealers that currently utilize the contractor operated I/M 240 system in the enhanced program area. Use of this system is not mandated. Federal law does not require specifications for an I/G 240, and the state did

not take credit for inspections conducted at the time of sale or transfer of used vehicles sold by motor vehicle dealers. Therefore, the specifications applicable to MVDTFs and the I/G 240 are not included it the SIP. The specific statutory authority for this revision is Sections 42-4-304 (19) and 42-4-306 (3)(a)(l)(A-C).

9. Revisions to Part A(l)(9) delete the present exemption that vehicles sold as “tow-away” by licensed dealers are not required to comply with applicable emissions inspection requirements at the time of sale. The proposal would eliminate present confusion within the regulated community. Part A (l)(9) is now consistent with Section 42-4-309(3)(a). The Commission is not required to create a specific exemption for tow-away vehicles and therefore has the authority to remove the existing exemption. Additional statutory authority is set out at Sections 42-4-306 (1) and 42-4-309 (3)(A).

The Department of Revenue is the state agency charged with the regulation of motor vehicle dealers, and for the titling and registration of motor vehicles. The tow-away exemption has hampered the Department of Revenue's enforcement actions. Therefore, the Commission is repealing this exemption and deferring this issue to the Department of Revenue. The Department of Revenue should handle this issue through rule making or otherwise, as appropriate.

10. Revisions to Part A (V) amends the notice to interested parties that materials incorporated into the rule by reference may be examined at any state publications depository library, as required by Section42-4-103 (12.5)(d). The revision expands the text of the existing notice of availability to be consistent with. prescriptive state requirements.

For the reason noted, the Commission has adopted amendments to Regulation No.11, Parts A, B, C, F, G and Appendices A and B. Revisions implement and/or clarify statutory provisions for the vehicle emissions inspection program pursuant to Sections 42-4-301 through 42-4-316, C.R.S. Rule revisions amend existing inspection procedures consistent with State Implementation Plan commitments.

III. NOVEMBER 19,1998, REVISIONS TO PART C (VIII) AND PART F (III)

Basis and Purpose

The November 19, 1998 revisions to regulations Part C (VIII) (b.4) (b.5) and (c.-g.) reinstate, with some minor clarifications, text addressing compliance waivers and related inspection provisions regarding specific circumstances involving certain participating motorists and the repair of vehicles that had failed one or more emissions inspections. This text was inadvertently omitted during the last publication of the regulation, August 1997. The omitted text was initially adopted by the Commission immediately prior to implementing the improved basic program and enhanced inspection and maintenance program January 1995, pursuant to Sections 42-4-301 through 42-4-316, C.R.S. (1998). Reinstating this text results in the regulation being consistent with state statute and the federal program. The November 19,1998 revisions to regulations Part F (III) reconcile the emissions limits used by enhanced inspection centers for motor vehicle emissions inspections with the emissions limits that were used for purposes of demonstrating attainment of the National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO) and for particulate matter less than ten microns in diameter (PM10). The rule change only applies to the enhanced emissions program and only affects the standards used for testing 1982 and newer vehicles.

The emissions limits adopted by the Commission are more stringent than the emissions limits that were being implemented prior to the hearing, but are less stringent than the emissions limits that were scheduled to take effect on January 1,1999 under the previous version of Regulation No. 11.

The emissions limits adopted by the Commission must go into effect by the end of December 1998 in order to comply with the minimum federal requirement to show attainment of the NAAQS for CO by December 31,2000.

The emissions limits contained in the previous rule for 1999 and beyond were more stringent than necessary to comply with federal law and were so stringent that many vehicles would not be able to comply with the standards even when repaired. Such emissions limits were based on EPA guidance issued in 1993. Experience with the program since then has demonstrated that such standards are unreasonable.

Federal Requirements

There are several federal requirements that are relevant to the emissions limits used in the AIR Program. 40 CFR Part 51 establishes specific emissions limits for the AIR Program. In addition, the AIR Program was used to demonstrate attainment of the NAAQS for CO and PM10. Therefore, the emissions limits must be included as enforceable control measures in the State Implementation Plan.

For purposes of CO, 40 CFR section 51.351 requires the AIR Program to achieve at least as much reduction in fleet emissions, measured in grams per mile, as the model federal program. The modeling results that were used to demonstrate compliance with the requirements of 40 CFR Part 51 were also used to demonstrate attainment of the NAAQS for CO in the Denver CO SIP. The emissions limits for CO and hydrocarbons implement the assumptions that were made in the modeling to show compliance with 40 CFR 51.351 and to show attainment of the CO NAAQS. The emissions limits for hydrocarbons are a necessary component of an effective CO control program and, therefore, are being included in the State Implementation Plan.

The emissions limits for NOx for the years 1999 through 2014 established in the rule are necessary to achieve the NOx reductions that were assumed for the AIR Program in the Denver PM10 SIP. Thus, such emissions limits are necessary to implement the control measures contained in the Denver PM10 SIP as required by federal law.

For the foregoing reasons, the Commission concludes that the emissions limits in Regulation No. 11 for the years 1999 through 2014 are necessary to comply with federal law and do not otherwise exceed the minimum federal requirements. However, the rule revision also includes an emissions limit for NOx for the year 2015 and beyond that is more stringent than the minimum federal requirements. Such more stringent NOx limit is necessary beginning in the year 2015 in order for the Denver Regional Council of Governments (DRCOG) to demonstrate that the transportation network for the Denver metropolitan area will remain below the emissions budget for NOx in the State Implementation Plan. Pursuant to federal law, the Commission must adopt such a control measure before DRCOG makes its conformity determination. 40 CFR 93.122(a)(3)(l). However, federal law does not require the more stringent emissions limit for NOx to be included in the State Implementation Plan. Therefore, the emissions limit for NOx established in Part F, sections III.A.2 and III.B.2 shall not be included in the State Implementation Plan.

Statutory Authority

The specific statutory authority for the adoption of emissions limits for carbon monoxide, hydrocarbons and oxides of nitrogen is set out at Section 42-4-306(6), C.R.S. (1998).

Effective date of rule changes

Pursuant to Section 24-4-103(5), C.R.S. (1998), the standards or cut-points established by the Commission on November 19,1998 shall take effect on December 30, 1998; provided the rule revisions are published in the Code of Colorado Regulations on December 10, 1998. Such an effective date is consistent with the relevant SIP demonstrations. For purposes of Section 42-4-306(6)(b)(II), C.R.S. (1998), the standards established by this rule revision were established on November 19,1998 even though such standards shall not become effective until December 30,1998.

Findings pursuant to § 25-7-110.8. C.R.S. (1998).

The revisions to Regulation No. 11 are based on reasonably available, validated, reviewed and sound scientific methodologies. The Commission has considered all scientific and other information made available by interested parties.

Evidence in the record supports the finding that the revised emissions limits will result in a demonstrable reduction in air pollution when compared to the emissions limits that were in effect prior to the rule change.

The rule adopted by the Commission is the most cost-effective alternative, and will maximize the air quality benefits of the regulation in the most cost-effective manner.

IV. FEBRUARY 19,1999, REVISIONS TO PARTS A, B, C, D, AND F

Basis and Purpose

The February 19,1999 revisions implement Sections 42-4-304 through 42-4-307 and 42-4-310, C.R.S. as amended, pursuant to S.B. 98-182. Additionally, the revisions codify the provisions of Sections 42-4-304 and 42-4-310, C.R.S. as amended, pursuant to S.B. 98-182.

Explanation of the Provisions

The revisions implement a “Clean Screen Program” as an operating element of Colorado's AIR Program as established in Sections 42-4-301 through 42-4-316, C.R.S. The Clean Screen Program is designed and intended to improve participating motorist convenience and reduce costs when complying with a periodic inspection requirement Screening clean vehicles out of the vehicle population subject to inspection requirements reduces the burden of compliance on vehicle owners. One program premise is that these vehicles would have passed a traditional inspection and that air quality would not necessarily benefit from using traditional inspection procedures on these vehicles. Clean Screened vehicles would be exempt from complying with what would normally be mandatory inspection, for one inspection cycle.

Participation by owners of vehicles registered in the program areas specified, i.e., Larimer County and metro Greeley, Weld County as well as by owners of vehicles registered else where but required to obtain a certification of emissions compliance by Section 42-4-310 (I)(c)(I), C.R.S., is voluntary. Provisions within the enabling legislation allow for participation by other program areas or for other areas of the state based upon a request by respective lead air quality planning agencies, and approval by the Commission.

As proposed for implementation in the Larimer County and Weld County program areas, Clean Screening is an appropriate application of remote emissions sensing technology. Based on the Greeley Pilot Study conducted by the Division, implementing this technology as an alternate inspection procedure brings with it an estimated maximum 4-7% loss in emissions reduction compared to traditional inspection procedures. The Environmental Protection Agency's modeling projects a 1% loss. The Commission concludes that this loss of emissions reductions will have no negative impact on compliance with the National Ambient Air Quality Standards for the areas included.

Reducing the number of vehicles seeking an inspection each cycle will reduce business for licensed inspection providers serving these program areas.

The Division is committed to continuously evaluating the performance of the program especially as it pertains to the specific emissions thresholds used in the program, impacts on air quality, and may request the Commission to consider revisions to elements of the program. Additionally, the Division has committed to evaluating the feasibility of low emission(s) profiling as a supplementary inspection criteria to a Clean Screen Program.

Statutory Authority

Sections 42-4-304 through 42-4-307, and Section 42-4-310, C.R.S., as amended, authorize adoption of a Clean Screen Program.

Federal Requirements

There are no specific federal requirements requiring a Clean Screen Program. This program is not a federal mandate. The United States Environmental Protection Agency has published general guidance that is reflected in the revised regulations. A revision of the SIP for the applicable program areas is necessary to reflect the potential emissions reduction impact associated with Clean Screen Program procedures.

Explanation of Additional Revisions to Regulation for February 19,1999.

The revisions to the regulation also implement the provisions of Sections 42-4-304 and 42-4-310, C.R.S., as amended, pursuant to SB 98-046 as it pertains to the responsibility of compliance with emissions inspection requirements for vehicles in the process of being sold. The provisions require the seller to obtain an emission inspection when the vehicle is operable and can be tested. Where the vehicle is deemed inoperable or otherwise cannot be tested, the seller must provide written notice to the purchaser prior to completion of the sale on specific forms prepared by the Department of Revenue.

Statutory Authority

The specific statutory authority for the provisions discussed above is set out at Sections 42-4-304 and 42-4-310, C.R.S. as amended. The Department of Revenue adopted and implemented regulations to address these provisions. Regulation 11 is now consistent with state statute.

Federal Requirements

There are no federal requirements as it pertains to these provisions.

Effective Date of Rule Changes

The effective date for the revisions to Regulation 11 shall be April 30,1999.

V. AMENDMENTS TO PARTS A, C AND F(lll), ADOPTED JANUARY 10,2000

Basis and Purpose

Regulation No. 11 requires periodic emissions tests for vehicles registered or operating within the program area, which covers most of the Front Range. The purpose of the program is to reduce the amount of carbon monoxide, oxides of nitrogen, and hydrocarbons emitted by automobiles. The purpose of the January 2000 revisions to Regulation No. 11 is to make the program more cost-effective and more convenient for motorists, and to do so in a manner that protects air quality.

This rule revision makes two changes to the motor vehicle emissions inspection program. First, it extends the clean screen program to the Denver metropolitan area. The dean screen program uses remote sensing technology to identify vehicles that do not need to be tested at an emissions inspection station. Beginning in the year 2002, the revised rule will allow a motorist that passes the requisite remote sensing test to obtain a certification of emissions compliance through the mail without taking the vehicle to an inspection station for a test.

Second, the rule-revisions amend the emissions standards for 1996 and later motor vehicles, beginning in the year 2002. The revisions make the standards consistent with the air pollution control technology on new vehicles.

Federal Requirements

The revisions to Regulation No. 11 were developed in conjunction with the redesignation of the Denver metropolitan area as an attainment area for carbon monoxide. Section 175 a of the federal Clean Air Act requires the State to demonstrate that the region will remain within the national ambient air quality standard (NAAQS) for carbon monoxide for ten years after EPA takes action on the maintenance plan. EPA may not take action on the maintenance plan until 2002. Thus, federal law requires the maintenance plan to show compliance with the NAAQS for carbon monoxide through the year 2013.

Air quality analyses performed for the maintenance plan indicate that the region will remain within the NAAQS for carbon monoxide through the year 2010, even with the clean screen program. The tools currently available for predicting air quality in the future suggest, however, that the clean screen program may be inconsistent with maintenance of the NAAQS for carbon monoxide after 2010. The rule revisions provide for the expiration of the clean screen program in the year 2010 in order to demonstrate maintenance of the NAAQS through 2013.

The rule revisions codify the emissions standards that were used to perform the computer modeling to demonstrate maintenance of the NAAQS. In performing the requisite computer modeling, the Air Pollution Control Division (APCD) used emissions standards that are more stringent than appeared in Regulation No. 11 prior to these amendments. The APCD used the more stringent standards in order to maximize the air quality benefits of the program for purposes of the computer model. Although the revisions make more stringent the emissions standards in the rule, the changes do not necessarily make the program as a whole more stringent. This is because, as a practical matter, more stringent standards will automatically apply under pre-existing state and federal law. The federal rules require vehicle manufacturers to equip all 1996 and later light-duty vehicles with on-board diagnostic systems that will cause vehicles with emissions in excess of the revised standards to display fault codes (40 CFR section 86.094-17). Regulation No. 11 already provides that a vehicle will fail the emissions test if the on-board diagnostic

system displays such a fault code (Regulation No. 11, Part C, Section III.C). The result is that the federal standards for the on-board diagnostic systems (which are more stringent than even the revised standards) already apply as a practical matter. The rule change is necessary to allow the APCD to take credit for more stringent standards when performing the computer modeling exercise. The revision merely make the standards consistent with improved technology that vehicle manufacturers are using to meet the on-board diagnostic requirements and to meet the Tier-1 standards mandated by federal law. the revised standards do not exceed the requirements of federal law.

The air quality impacts of the revisions to Regulation No. 11 were analyzed using the computer models approved by EPA, as is required by federal rules. Regulation No. 11, as revised, is necessary to comply with the requirements of the federal act and is not more stringent than the requirements of the federal act.

Statutory Authority

Specific statutory authority for the extension of the clean screen program to the Denver area is provided in section 42-4-306(23), C.R.S. (1999). Specific statutory authority to establish emissions standards is provided in section 42-4-306(6)(a), C.R.S. (1999).

Findings pursuant to section 25-7-110.8

The primary intent of the January 2000 changes to Regulation No. 11 is to make the motor vehicle emissions inspection program more convenient and less costly, rather than achieving further reductions in emissions of air pollution. In addition, the rules establish more stringent emissions standards for automobiles in order to make the standards consistent with technology mandated by federal law.

The revisions are based on the computer model currently approved by the EPA. The computer model used to develop the revised rule overstates the carbon monoxide problem the Denver area will face in the future. The EPA is currently updating and improving the computer model but the revised computer model has not been approved by EPA and may not be used for federal regulatory purposes. In spite of the problems with the computer model used to develop this regulation, the regulation is based on the most reasonably available, validated, reviewed and sound scientific methodologies currently available under federal law. All methodologies and information made available by interested parties have been considered.

The alternative chosen by the Commission provides the regulated community flexibility and achieves the necessary reduction in air pollution. The evidence is insufficient for the Commission to determine that the alternative chosen by the Commission is the most cost-effective alternative. The cost analysis developed by the Division indicates that it may be more cost-effective to eliminate the oxygenated fuels program instead of implementing a clean-screen program, but there is considerable uncertainty in that cost estimate. The impact of oxygenates on gasoline prices varies from year to year depending on the cost of ethanol and gasoline. Thus, reducing the oxygen content of gasoline does not ensure lower consumer gasoline prices. The Commission chose the alternative proposed by the Regional Air Quality Council (RAQC) for several reasons. First the RAQC's proposal is a balanced proposal that was developed through an inclusive stakeholder process. Second, it will establish a remote-sensing network, which is a necessary first step to establish a cost-effective high-emitter program in the future. Finally, the selection of a different option could delay the redesignation of the Denver area and would delay any cost-savings associated with such alternative.

VI. AMENDMENTS TO PARTS C AND D ADOPTED NOVEMBER 16, 2000

Basis and Purpose

This rule revision makes two changes to the motor vehicle emissions inspection program. First, the change to Part C, section XII.E.2 extends the time period for taking valid emissions readings for purposes of the clean screen program. This section previously required a reading within 90 days of the registration renewal date for the relevant motor vehicle. Since it often takes 90 days just to correlate the data, make the necessary communications and receive payment for the motorist, this time period was too restrictive and made the clean screen program impractical. The time period was extended by a minimum of 30 days to allow more time for emissions readings.

Second, the provision on licensing requirements for clean screen inspectors in Section IX.B.7 erroneously required such inspectors to demonstrate proficiency with the criteria in Section II.A.2 (qualifications for emissions mechanics and emissions inspectors) rather than Section V (qualifications for dean screen inspectors). The rule revision corrects this citation error.

Federal Requirements

The federal act and EPA regulations do not mention clean screen programs. *See,* 40 CFR Part 51, Subpart S. EPA has, however, developed a draft guidance document that authorizes the use of dean screen programs to exempt certain vehicles from the federally-required automobile inspection program. EPA document 420-P-98-008 (May 1998). The draft guidance document requires two remote-sensing readings, but does not require the readings to be any more recent than twelve months prior to the vehicle's regularly scheduled emissions test.

The clean screen program is voluntary and is designed to reduce the burden of the federally based automobile inspection program described at 40 CFR Part 51, subpart S. Overall, the dean screen program results in an automobile inspection program that is less stringent than the program described in the federal regulations. Thus, the amendments will result in a motor vehicle inspection program that is less stringent than the program described in the federal regulations, but that requires more recent test results than is required by the draft federal guidance. Because EPA does not expressly require such a cutoff date, the revised rule will not be part of the federally enforceable SIP.

Although not expressly required by draft federal guidance, the requirement for a recent emission reading is necessary and reasonable to ensure that the emission test is representative of vehicle emissions near the time of registration. Motor vehicle emissions deteriorate over time. It follows that emission readings should be considered valid for a limited period of time. The General Assembly intended for 1982 and newer vehicles to be inspected every twenty-four months. Section 42-4-310(1)(b)(ll)(C), C.R.S. A vehicle that passes a clean screen test based on a reading taken 120 days prior to the registration renewal date can go twenty-eight months without inspection (or even twenty-nine months if the motorist takes full advantage of the one month grace-period allowed by the Department of Revenue following the registration renewal date). The requirement for an emissions reading within 120 days of the registration renewal date strikes a reasonable balance between the requirement to implement a clean screen program and the legislative intent for emissions tests every two years.

The federal requirements for the licensing or certification of inspectors are set out at 40 CFR 51.367. The criteria established in Regulation No. 11, Part D, Section V are not more stringent than the federal requirements.

Statutory Authority

Specific statutory for the authority to promulgate regulations governing the operation of the clean screen program is set out at 42-4-306(23), C.R.S.

Findings Pursuant to 25-7-110.8. C.R.S.

The primary intent of the November 2000 changes to Regulation No. 11 is not to achieve further reductions in emissions of air pollution, but rather to make more practical the administration of the clean screen program. Thus, the rule revision is administrative in nature.

The expanded time period allows additional time for taking emission measurements, analyzing the data, and communicating with motorist and the Clerk and Recorder. The revision to the time period does not change the standards or technology used in the program. The revision is consistent with all relevant, reasonably available, validated, reviewed, and sound scientific methodologies. All validated, reviewed, and sound scientific methodologies and information made available by interested parties has been considered.

The rule revision makes the dean screen program more cost-effective, provides the contractor and motorists with greater flexibility, will achieve the necessary reduction in air pollution, and will maximize the air quality benefits of the automobile inspection program in the most cost-effective manner.

VII. DECEMBER 20, 2001 AMENDMENTS

Basis and Purpose

The December 2001 revisions to Regulation No 11 do three things: First, the rule revisions expand the clean screen program to include the enhanced emissions program area. However, the Commission did not, at this time, establish an implementation schedule pursuant to section 42-3-134, C.R.S. This rule change is necessary to establish the clean screen authority pursuant to section 42-4-307.5(1), C.R.S. The creation of the clean screen authority is necessary so that the Colorado Department of Revenue may receive and expend funds pursuant to sections 42-4-307(10.5)(a) and section 13 of House Bill 2001 - 1402 (“HB1402”). Thus, this portion of the rule change has no regulatory effect other than :he creation of the clean screen enterprise. The Commission intends to hold a subsequent rulemaking hearing to establish an implementation schedule.

Second, the rule change excludes the El Paso county portion of the basic emissions program area from the clean screen program pursuant to section 42-4-306(23)(a), C.R.S.

Third, the revisions conform Regulation No. 11 to the provisions of HB 1402 which repealed the Verification of Emissions Test requirements.

Federal Requirements

Although federal rules establish minimum performance requirements for the basic and enhanced emissions programs, nothing in the federal rules bear directly on the rule changes that were the subject of the December 2001 rulemaking hearing. The revised rule does not exceed the minimum requirements of federal law.

Statutory Authority

The specific statutory authority to expand the clean screen program to enhanced emissions program area is set out at 42-4-306(23)(b), C.R.S. The specific statutory authority to exclude the El Paso county portion of the basic emissions program area from the clean screen program is set out at 42-4-306(23)(a), C.R.S. The statutory authority to conform the Regulation to the applicable statutory provision is set out at 42-4-306(1), C.R.S.

Findings Pursuant to 25-7-110.8. C.R.S.

The requirement for findings set out in section 25-7-110.8, C.R.S. does not apply to this rulemaking hearing. The creation of the clean screen authority is merely an administrative change; it is not intended to reduce air pollution. Similarly, the exclusion of El Paso County from the clean screen program is exempt from the requirements of 25-7-110.8 because it makes no change to the program applicable in that area because El Paso County was already exempt from the clean screen program. This rule change merely formalizes the area's status in the wake of HB 1402. Finally, the Commission has no discretion concerning the repeal of the provisions related to the verification of emissions tests. For these reasons, 25-7-110.8 does not apply to this matter.

VIII. AMENDMENTS TO PART A, ADOPTED JULY 18, 2002

Basis and Purpose

This rulemaking action removes the Fort Collins area component of the Automobile Inspection and Maintenance Program ("AIR Program") from the State Implementation Plan (SIP), but does not make any change in the state laws implementing the program. This means that the AIR Program will remain in full force and effect under state laws, but it will not be federally enforceable after January 1, 2004. The continuation of the AIR Program as a state-only program will afford the Division and the City of Fort Collins an opportunity to work together to identify feasible options to replace the AIR Program in the Fort Collins area.

The maintenance plan adopted by the Commission in conjunction with these rule changes includes a commitment to begin implementing the AIR Program in the Fort Collins area in the year 2026. Such a commitment is necessary to authorize state and local transportation planning agencies to take emissions reduction credit for such a program when such agencies make transportation conformity determinations 40 CFR 93.122(a)(iii). The Commission intends to reevaluate this commitment when it revises the maintenance plan, as it is required to do within eight years pursuant to as required by 42 USC 750 a (b), and may, in compliance with all applicable state and federal laws, revise the commitment as necessary and appropriate.

Federal Requirements

After January 1,2004, the basic AIR Program will no longer be necessary to maintain the National Ambient Air Quality Standards for carbon monoxide in the Fort Collins area through the year 2015. Therefore, the program is no longer a federal requirement for the Fort Collins area. The Commission is removing the program from the State Implementation Plan, but is not repealing the program. The basic AIR Program will continue to apply in the Fort Collins area. Thus, the provisions of Regulation No. 11 applicable to motorists registered in the Fort Collins area are not required by federal law and are more stringent than the minimum federal requirements.

IX. AMENDMENTS TO PARTS A AND C ADOPTED AUGUST 15, 2002

Basis and Purpose

The primary purpose of this rulemaking action is to switch Larimer and Weld counties to a pay-upon-registration system for the Clean Screen Program. The purpose of the Clean Screen Program is to make the Automobile Inspection and Readjustment Program ("the AIR program") more convenient, although not necessarily less expensive. The intent behind the pay-upon-registration system is to make it easier for motorists to pay for dean screen tests. Motorists were previously required to make a separate payment to the contractor by mail before a dean screen test could be used to register a motor vehicle. With the change adopted by the Commission, motorists will be able to pay for dean screens tests at the time of registration. This change should make the Clean Screen Program, and therefore the AIR Program, more convenient for motorists. This rule change is intended merely to give motorists an option.

Clean screen motorists will have the choice of paying for the clean screen test and using it to register the vehicle, or having the vehicle tested at a conventional inspection and readjustment station and paying for such test at the testing station.

The rule amendments include a change to the timing requirements for remote sensing readings to make the Clean Screen Program more flexible. As amended, the regulation requires two valid remote sensing readings within a twelve-month period in order to clean screen a vehicle. The regulation previously required the most recent reading to be within 120 days of the registration renewal date. The 120-day requirement exceeded the minimum federal requirement. The rule has been revised rule to reflect EPA guidance and to maximize the use of the Clean Screen Program. The contract provides for adequate quality assurance by requiring the contractor to return to the same remote sensing locations on a frequent basis. Such rotation of the remote sensing units should minimize the number of vehicles that are dean screened based solely on readings taken early in the twelve-month period.

In addition, the rule changes include several minor, housekeeping changes such as:

> The elimination of a requirement for the agencies to develop the equivalent of a windshield sticker for clean screened vehicles. Such a rule was inconsistent with the change in statute eliminating the windshield sticker requirements.
>
> The elimination of a provision requiring annual inspections for government vehicles. Such a rule was inconsistent with a change in statute establishing biennial inspections for such vehicles.
>
> The repeal of provisions establishing a method to mail payments to the contractor.

Federal Requirements

There are no federal requirements relevant to the payment mechanism for the Clean Screen Program. As indicated above, the purpose of this change is to make the program more convenient and to provide motorists with an option. Although the AIR Program may not be federally required in Larimer or Weld county after January 1,2004 federal law requires the continued implementation of the AIR program in such areas until removed from the SIP through the SIP revision process. In the meantime, motorists must pay for emissions tests. Therefore such payment requirements do not exceed minimum federal requirements.

For clean screen programs, federal guidelines require two remote sensing readings within twelve months. The rule change makes the Colorado rule identical to the federal guideline.

For these reasons, this rule change does not exceed minimum federal requirements and is not otherwise more stringent than federal law.

Statutory Authority

The statutory authority to establish the specific dates for county clerks and recorders to begin collecting emissions inspection fees is set out at Section 42-3-134(26.5)(a), C.R.S. The Commission expressed the start date as the month in which motor vehicle registrations come due in order to effectively coordinate the Commission rules with the motorist notification process used by the County Clerks and Recorders.

In addition Section 42-4-306(1) grants the Commission the authority to promulgate such regulations as may be necessary to implement the Automobile Inspection and Readjustment Program, which authority extends to all the relevant rule changes.

Findings Pursuant to 25-7-110.8. C.R.S.

The requirements of 25-7-110.8 do not apply to the August 15,2002 rule revisions because such revisions were not adopted for the purpose of reducing air pollution. Section 25-7-110.8 requires the Commission to make express findings whenever it imposes new regulatory requirements to improve air quality. The changes are administrative in nature and that are designed to implement the Clean Screen Program and the pay-upon-registration program in an efficient and cost-effective manner. Therefore, the requirements of Section 25-7-110.8 do not apply here.

X. AMENDMENTS TO PARTS A AND C ADOPTED OCTOBER 17, 2002

Basis and Purpose

This rulemaking action implements the Clean Screen Program in the enhanced emissions program area. The purpose of the Clean Screen Program is to make the Automobile Inspection and Readjustment Program (“the AIR program”) more convenient, although not necessarily less expensive. This rule change is intended merely to give motorists the option of using the Clean Screen Program. Clean screened motorists will have the choice of paying for the clean screen test and using it to register the vehicle, or paying to have the vehicle tested at a conventional inspection and readjustment station and paying for such test at the testing station.

The rule was also changed so that the malfunction indicator light (MIL) and on-board diagnostic (“OBD II”) fault codes will not be used as the basis for test failures. Data provided by the Division reveals that MIL and OBD II requirements are not cost effective test criteria.

Federal Requirements

There are no relevant federal requirements to the payment mechanism for the Clean Screen Program. As indicated above, the purpose of this change is to make the program more convenient and to provide motorists with an option.

Nothing in federal law requires MIL or OBD tests for pre-1996 vehicles. The rule change eliminates a pre-existing state requirement for such vehicles to pass MIL tests. The rule change also eliminates the requirement for 1996 and newer vehicles to pass MIL and OBD tests. Although federal law requires OBD tests on such newer vehicles registered in certain carbon monoxide and ozone nonattainment areas,

such federal requirement no longer applies in Colorado because all carbon monoxide and ozone areas have been redesignated to attainment.

For these reasons, this rule change does not exceed minimum federal requirements and is not otherwise more stringent than federal law.

Statutory Authority

The statutory authority to establish the specific dates for County Clerks and Recorders to begin collecting emissions inspection fees is set out at Section 42-3-134(26.5)(a), C.R.S. The Commission expressed the start date as the month in which motor vehicle registrations come due in order to effectively coordinate the Commission rules with the motorist notification process used by the County Clerks and Recorders.

The authority to revise the OBD and MIL requirements is set out in Section 42-4-306((i)(a).

Findings Pursuant to 25-7-110.8. C.R.S.

The requirements of 25-7-110.8 do not apply to the October 2002 rule revisions. Section 25-7-110.8 requires the Commission to make express findings only when it imposes new or amended regulatory requirements intended to reduce air pollution. Essentially, the statute requires the Commission to determine that the costs and burdens imposed by the new or more stringent requirements are justified by the air quality benefits. The purpose of the October 2002 rule changes is to reduce the burden of Automobile Inspection and Readjustment Program. Therefore, the requirements of Section 25-7-110.8 do not apply to such revisions.

XI. AMENDMENTS TO PART C ADOPTED NOVEMBER 21, 2002

This rule change requires the Division to make annual adjustments to the minimum expenditure required to qualify for a certification of emissions waiver, based on the consumer price index for all urban consumers for the Denver-Boulder metropolitan statistical area as authorized by Section 42-4-310(1)(d)(VI), C.R.S. The rule adopted by the Commission requires the Division to make such annual adjustments through the year 2004. The Commission intends to re-evaluate the waiver amount in 2004. At such time, the Division shall submit to the Commission an analysis of cost and emission reduction benefit, if any, associated with the adjustments to the waiver amount.

In addition, the rule was also modified so that changes adopted by the Commission at their October 17,2002 hearing, concerning malfunction indicator light (MIL) requirements, will be delayed until April 1,2003 to provide an opportunity to complete necessary computer software changes.

Federal Requirements

The federal requirements for an emissions waiver is set out in 40 CFR 51.360(a)(7). The federal rule requires a minimum expenditure of $450, which amount is to be adjusted annually, beginning in 1998, based on the consumer price index. However, the federal requirement applies only in certain carbon monoxide nonattaiinment areas. The federal requirement no longer applies to the Denver area since it has been redesignated as an attainment area for carbon monoxide, provided the waiver rate does not exceed 3% of the failed vehicles. Arguments can be made both ways on the question of whether the rule change exceeds minimum federal requirements. Arguably, it does not because the revised rule is

consistent with the intent of the federal law to annually adjust the waiver amount based on the consumer price index.

Statutory Authority

The authority to revise the waiver amount is set out in Section 42-4-310(1)(d)(VI), C.R.S.

The authority to delay the effective date of the rule change concerning the MIL is set out in Section 24-4-103(5), C.R.S.

Findings Pursuant to 25-7-110.8. C.R.S

The revision of emissions repair waiver limits brings the waiver limits in line with the customer cost index. The rule revision is based on reasonably available, validated, reviewed, and sound scientific methodologies. All validated, reviewed, and sound scientific methodologies and information made available by interested parties has been considered. Evidence in the record supports the finding that the rule shall result in a demonstratable reduction in air pollution. The rule revision is the most cost-effective alternative, provides the regulated community flexibility, and achieves the necessary reduction in air pollution. The revised rule will maximize the air quality benefits of the regulation in the most cost-effective manner.

The requirements of 25-7-110.8 do not apply to the rule revision delaying repeal of the MIL test requirement. Section 25-7-110.8 requires the Commission to make express findings only when it imposes new or amended regulatory requirements intended to reduce air pollution. Essentially, the statute requires the Commission to determine that the costs and burdens imposed by the new or more stringent requirements are justified by the air quality benefits. The rule revision concerning delay of the MIL test requirement make implementation of the Commission revisions of October 17,2002 possible, and thus reduce the cost and burden of the Automobile Inspection and Readjustment Program. Therefore, the requirements of Section 25-7-110.8 do not apply to such revisions.

XII. AMENDMENTS ADOPTED DECEMBER 19, 2002

Basis and Purpose

This rulemaking action removes the Greeley component of the Automobile Inspection and Maintenance Program (“AIR Program”) from the State Implementation Plan (“SIP”), effective January 1,2004. The AIR Program would remain a state-only program while the lead air quality planning agency for the Greeley area evaluates options for discontinuing the program altogether or retaining it as a local program. The AIR Program for the Greeley area has been removed from the SIP because it is no longer necessary for the Greeley area to meet the ambient air quality standards.

The maintenance plan adopted by the Commission in conjunction with these rule changes includes a commitment to begin implementing the AIR Program in the Greeley area anew in the year 2026. Such a commitment is necessary to authorize state and local transportation planning agencies to take emissions reduction credit for such a program when such agencies make transportation conformity determinations, 40 CFR 93.122 (a) (iii). The Commission intends to reevaluate this commitment when it revises the maintenance plan, as it is required to do within eight years pursuant to as required by 42 USC § 750 a (b), and may, in compliance with all applicable state and federal laws, revise the commitment as necessary and appropriate. The rule resulting from this rule change exceeds minimum federal

requirements because air quality modeling shows that the AIR Program is not necessary to maintain the national ambient air quality standard for carbon monoxide in the Greeley area after 2003.

Specific Statutory Authority

The application of the Basic AIR Program to the Greeley area is prescribed in state statute, Section 42-4-304(20)(a)(V). The Commission has the statutory authority to adopt a comprehensive State Implementation Plan (SIP) and to decide which control measure should be included in such SIP, Section 25-7-105, C.R.S. The Commission is required to exclude from the SIP rules that exceed the minimum requirements of federal law, and has the authority to adopt regulations exclusively under state authority, Section 25-7-105.1(1), C.R.S. Thus, the Commission has the statutory authority to maintain the AIR Program as a state-only rule in the Greeley area, but remove the program from the SIP for such area.

Findings Pursuant to 25-7-110.8. C.R.S.

The December 2002 changes to Regulation No. 11 merely change the federal status of the regulation; this rule change does no have any effect on air quality or motor vehicle emission. Thus, the rule change is administrative in nature, and is not based on scientific evidence demonstrating that it will improve air quality.

In evaluating the available options, the Commission considered the option of repealing the AIR Program for the Greeley area. Such an option would likely comply with the minimum federal requirements in a more cost-effective manner.

Notwithstanding the cost effectiveness of the repeal of the program, the Commission has retained the AIR Program as a state-only program. This is the same approach the Commission took for the City of Ft. Collins in July 2002. The retention of the regulation as a state-only rule will provide an opportunity for the North Front Range Transportation and Air Quality Planning Council to explore planning options for the region as a whole.

XII. AMENDMENTS ADOPTED SEPTEMBER 18, 2003.

Basis and Purpose

The purpose of this rulemaking action is to implement House Bill 2003-1016 and House Bill 2003-1357. The bills revised sections 42-4-309 and 42-4-310, C.R.S. to allow the sale and registration of used motor vehicles without an emissions inspection if the motor vehicle is less than three years old, and to provide that motor vehicle dealers shall not be required to have vehicles inspected more than once a year.

Federal Requirements

The federal rules do not require an inspection upon vehicle sale or transfer. The relevant federal requirement is the general requirement for the state implementation plan to contain the control measures necessary to demonstrate maintenance of the national ambient air quality standards. Although the pre-existing requirement for an emissions test upon sale or transfer of a vehicle is included in the state implementation plan, Colorado did not take any emissions reduction credit for such a requirement. Thus, we may revise the state implementation plan to implement HB03-1016 and HB03- 1357.

Statutory Authority

The Commission promulgates these regulatory changes pursuant to its authority to promulgate such regulations as may be necessary to implement the program set out in section 42-4-306(1), C.R.S.

Findings Pursuant to 25-7-110.8. C.R.S.

The requirements of 25-7-110.8 do not apply to the September 2003 rule revisions because these revisions do not establish new requirements intended to reduce air pollution. Instead, the rule revisions relax pre-existing requirements as provided in HB03-1016 and HB03-1357.

XIII. AMENDMENTS ADOPTED DECEMBER 18, 2003.

The purpose of this revision is to postpone the change in emissions standards scheduled to take effect on January 1, 2004 for 1996 and newer light-duty vehicles. The standards scheduled to take affect on January 1, 2004 were overly stringent, and were likely to result in an unacceptable number of “false failures”. A false failure occurs when a vehicle fails the emissions test even though there is nothing wrong with the vehicle. The effect of the rule change is to maintain the *status quo* pending a SIP revision based on MOBILE6. The Commission will reconsider the standards appropriate for 1996 and newer light-duty vehicles when it revises the carbon monoxide maintenance plan for the Denver metropolitan area.

The specific authority to establish emissions standards is set out at section 42-4-306(6)(b), C.R.S.

The requirements of section 25-7-110.8, C.R.S. do not apply to the November 2003 rule revision because the revision does not establish new requirements intended to reduce air pollution. Instead, the rule revision relaxes the emissions standards for 1996 and newer vehicles.

XV. AMENDMENTS ADOPTED DECEMBER 18, 2003.

Basis and Purpose

The purpose of this rulemaking action is to remove the El Paso County component of the automobile inspection and maintenance program (“AIR Program”) from the federally enforceable state implementation plan (SIP). Although the AIR Program will continue to apply in El Paso County as state law, the Commission will schedule another hearing to consider terminating the program in El Paso County once the Division has evaluated the impact such termination may have on ozone concentrations.

The AIR program is no longer necessary to comply with minimum federal requirements in El Paso County. The retention of a state-only program is arguable more stringent than the minimum federal requirements, but it is reasonable and appropriate to retain the program while the Division evaluates the impacts the program may have on ozone concentrations.

Statutory Authority

Section 25-7-105, C.R.S. grants the Commission the authority to adopt a comprehensive SIP. In addition, section 25-7-105.1(1), C.R.S. authorizes the Commission to adopt rules exclusively under state authority that shall not be part of the SIP.

Findings Pursuant to 25-7-110.8. C.R.S.

The December 2003 changes to Regulation No. 11 merely change the federal status of the regulation. This rule change is administrative in nature and will not have any effect on air quality or motor vehicle emissions.

XVI. AMENDMENTS ADOPTED MARCH 12, 2004.

Basis and Purpose

The revisions to Regulation No. 11 reduce the maximum number of vehicles that may be exempted from conventional emissions testing at an inspection station through the use of the Clean Screen Program. The Clean Screen Program, beginning February 28, 2005, may evaluate regulation No. 11 previously provided that up to 80% of the fleet. However, it appeared at the hearing the goal of screening 80% of the vehicle fleet with the Clean Screen Program was unrealistic; a more realistic goal would be to screen 50% of the vehicle fleet. Revising the Regulation and the SIP to reflect this reality will result in an emission reduction benefit for purposes of the attainment demonstration.

The Commission also repealed provisions stating that the NOx standards and gas cap test requirements were not to be included in the State Implementation Plan. Previously, such requirements were not necessary to the SIP because the State took no credit for the measures for SIP modeling purposes. The requirements are, however, necessary for the attainment demonstration set out in the Early Action Compact Ozone Action Plan for the 8-hour Ozone Control Area. Therefore, these requirements must now be incorporated into the SIP.

The statutory authority for the rule change is set out at section 42-4-306(23)(a), C.R.S. This rule revision is based on the recognition that practical and technical hurdles make it unlikely that the clean screen program will achieve the 80% level previously authorized by the regulation. The amendment is not intended to reduce pollution, rather the change is necessary so that the SIP will reflect the true nature of the clean screen program. Since this change is not intended to reduce air pollution, the requirements of 25-7-110.8 do not apply.

XVII. AMENDMENTS ADOPTED FEBRUARY 18, 2005.

Basis and Purpose

The purpose of this rulemaking is to specify that the AIR program will no longer apply in El Paso, Larimer, and Weld counties.

Federal Requirements

Federal law no longer requires the basic program in El Paso, Larimer, and Weld counties because the Commission has submitted carbon monoxide maintenance plans for such areas showing maintenance of the NAAQS without the AIR program.

Statutory Authority

The Commission promulgates these regulatory changes pursuant to its authority to promulgate such regulations as may be necessary to implement the program set out in section 42-4-306(1), C.R.S. Specific statutory authority to specify that the AIR program no longer apply in El Paso, Larimer, and Weld counties is set out in section 42-4-316(1), C.R.S.

Findings Pursuant to 25-7-110.8, C.R.S.

The requirements of 25-7-110.8 do not apply to the February 2004 rule revisions because these revisions do not establish new requirements intended to reduce air pollution. Instead, these revisions terminate the program in El Paso, Larimer, and Weld counties.

XVIII. AMENDMENTS ADOPTED NOVEMBER 17, 2005.

The purposed of this rulemaking is to implement provisions contained in HB05-1214 that eliminate the inspection requirement for vehicles that have not yet reached their fourth model year registering in the IM Program area for the first time. Another purpose of this revision is to prevent a change in emissions standards scheduled to take effect on January 1, 2006 for 1996 and newer light-duty vehicles. The standards scheduled to take affect on January 1, 2006 were overly stringent, and were likely to result in an unacceptable number of "false failures". A false failure occurs when a vehicle fails the emissions test even thought there is nothing wrong with the vehicle. The effect of the rule change is to maintain the status quo. The provisions amended in this rule change are not more stringent than federal requirements.

Statutory Authority

The Commission promulgates these regulatory changes pursuant to its authority to promulgate such regulations as may be necessary to implement the program set out in section 42-4-306(1), C.R.S. and the authority to set emissions standards provided by section 42-4-306(6)(b).

Findings Pursuant to 25-7-110.8, C.R.S.

The requirements of 25-7-110.8 do not apply to the November 2005 rule revisions because these revisions do not establish new requirements intended to reduce air pollution. Instead, these revisions implement state statute and lessen the cost and burden of the automobile inspection and readjustment program.

XIX. AMENDMENTS ADOPTED JUNE 21, 2007

The purpose of this rulemaking is to allow the option of using a low emitting vehicle index in place of a second remote sensing clean screen measurement for clean screen program eligibility.

Federal Requirements

Federal requirements allow substitution of program elements or criteria contained in a State Implementation Plan when such new program element or criteria gives equal or greater air quality benefits than the program element or criteria replaced. Rule modifications adopted at this rule making are intended to produce similar air quality benefits as the old rule.

Statutory Authority

The Commission promulgates these regulatory changes pursuant to its authority to promulgate such regulations as may be necessary to implement the clean screen and high emitter programs set out in sections 42-4-306(23), 42-4-307(12), and 42-4-310(5) C.R.S. Specific statutory authority for this rule change is set out in section 42-4-306(23), C.R.S. General authority for this regulation is contained in the Colorado Air Pollution and Control Act (Colorado Act) sections 25-7-105, and 25-7-109, C.R.S., which

authorize the Commission to promulgate air emission control regulations to control air pollutants and to implement a State Implementation Plan (SIP) for maintenance of air quality.

Findings Pursuant to 25-7-110.8, C.R.S.

This rule modification is intended to make the Clean Screen Program more convenient to the public and increase the cost effectiveness of the program. It is administrative in nature, and is not intended to be more stringent than existing rule. Therefore requirements of 25-7-110.8 do not apply to the April 2007 rule revisions because these revisions do not establish new requirements intended to reduce air pollution.

Factual and Policy issues For Commission To Decide

The requested rulemaking action is designed as a step to implement HB1302 requirements to increase the use of remote sensing to clean screen vehicles in the IM Program. The requested rulemaking is not anticipated to raise any significant factual, policy or legal issues, but rather to improve the efficiency of the IM Program, to reduce its regulatory burden, and to help facilitate the eventual implementation of a high-emitter program as required by statute.

Scientific/Technical Rationale

The proposed rule is designed to implement the requirements in HB06-1302 for increasing the use of remote sensing in the IM Program and for building a framework for a high-emitter program. The scientific and technical basis for the specific revisions in this rulemaking are generally accepted results found in reports developed under the direction of the Colorado Air Quality Control Commission and the Air Pollution Control Division, including reports conducted by the state contractor, Envirotest, for the State of Colorado, such as the Greeley Study Report which EPA relied upon in developing its guidance for remote sensing programs.

Rule Portions Not Specifically Required by the Federal Act

The Federal Act does not specifically require this rule, nor is it more stringent than requirements of the federal act. rather, it provides a means to more efficiently meet current requirements of the state implementation plan as now required under the federal act. In addition, as addressed above, this rule meets requirements under state law to improve the clean screen program.

Further, these revisions will include any typographical and grammatical errors throughout the regulation.

XX. AMENDMENTS ADOPTED OCTOBER 18, 2007

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), C.R.S. for new and revised regulations.

Basis and Purpose

The Air Quality Control Commission has adopted these state-only provisions as a means of implementing the legislative direction set forth in HB06-1302. The specific purpose of the amendments is to establish the regulatory requirements for a mandatory remote sensing based High Emitting Vehicle Identification Program on a limited pilot scale basis as an add-on to the existing vehicle inspection and maintenance program and to continue the Clean Screen Program as contemplated by HB06-1302. These revisions reflect the Commission's determination that the goals of HB06-1302 can be achieved in the most cost

effective way by first enacting a High Emitting Vehicle Identification Pilot Project, that can be used to test the effectiveness of using remote sensing technology to identify high emitting vehicles prior to establishing a full scale High Emitting Vehicle Identification Program. In the establishing the pilot Program the Commission has concluded that while the program should be independent of the existing inspection and maintenance programs, the testing procedures and requirements should, for the most part, mirror the procedures and requirements applicable to the existing I/M programs. Additional requirements have been added, however, to make the Pilot Project more useful in studying the effectiveness of remote sensing technology in identifying high emitting vehicles without unduly burdening the motoring public, while still enacting the specific legislative directives set forth in HB06-1302.

These revisions are not specifically required by the Federal Clean Air Act and are not intended to be included in any State Implementation Plan

Specific Statutory Authority

The specific statutory authority for these revisions is set forth in Sections 42-4-307, 42-4-307.7, and 42-4-313 C.R.S, which direct the Commission to develop and implement a remote sensing based high emitting vehicle identification program, and to expand the existing Clean Screen Program.

Scientific/Technical Rationale

The proposed rule is designed to implement the requirements in HB06-1302 for increasing the use of remote sensing in the IM Program and for building a framework for a high-emitter program. The scientific and technical basis for the specific revisions in this rulemaking are generally accepted results found in reports developed under the direction of the Colorado Air Quality Control Commission and the Air Pollution Control Division, including reports conducted by the state contractor, Envirotest, for the State of Colorado, such as the Greeley Study Report which EPA relied upon in developing its guidance for remote sensing programs. Evidence in the record supports the finding that the High Emitter Pilot Project will result in a reduction of air emissions though the identification and repair of high emitting vehicles.

XXI. AMENDMENTS ADOPTED MARCH 20, 2008.

Basis and Purpose

The purpose of this rulemaking is to implement revised, more stringent, model year emissions standards. It is expected that this revision will result in increased air quality benefits generated by the inspection and maintenance program. Another purpose of this revision is to delete obsolete language and correct minor typographic errors.

The effect of the rule change is to identify more high emitting motor vehicles. Emissions reductions generated by the repair of these vehicles are expected to assist in reducing summertime ozone concentrations. The state this summer violated the national ambient air quality standards for ozone, making necessary these modifications. The provisions amended in this rule change are not more stringent than federal requirements.

Specific Statutory Authority

The Commission promulgates these regulatory changes pursuant to its authority to authority to set emissions standards as provided by section 42-4-306(6)(b)(I), C.R.S. Additional authority is set forth in

section 42-4-306(1), C.R.S., which gives the Commission the authority to adopt regulations as may be necessary to implement the emissions testing program.

Scientific/Technical Rationale

The rule is based on reasonably available, validated, reviewed, and sound scientific methodologies including analysis of existing emission testing data and EPA approved mobile source emissions modeling. It will result in demonstratable reductions in ozone precursor emissions, and should help reduce the risk to human health or the environment from high ozone levels in the Denver Metro Area. Among the options considered, the regulatory option chosen will maximize the air quality benefits in the most cost-effective manner.

APPENDIX A

(Technical Specifications)

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

SPECIFICATIONS FOR COLORADO 94 ANALYZER

HARDWARE SPECIFICATIONS

Revised Sept 09, 1994

INTRODUCTION

The Colorado A.I.R. Program is in the process of modifying its current automotive inspection and maintenance program to comply with the Clean Air Amendments of 1990. Colorado's current program is based upon BAR 84 inspection technology utilizing a decentralized program format encompassing nine front range counties. In order to achieve compliance with the Clean Air Amendments of 1990, Colorado will change to a program format that will have a contractor based operation conducting the I/M 240 emissions test and a population of independent inspectors conducting inspections utilizing a new Colo-94 emissions analyzer. The contractor is based in the “enhanced” program area, basically the Denver metropolitan area and will inspect 1982 and newer vehicles. Independent inspection facilities will inspect vehicles of all years within the “basic” program area as well as being able to inspect 1981 and older vehicles within the “enhanced” area.

The demands for more accurate analytical information as well as a more automated inspection process with real-time data transfer has superceded the capabilities of BAR 84 technology. Current BAR 90 analytical technology is acceptable, but other system enhancements are necessary to meet Colorado’s inspection needs. These enhancements and other technical details are described in the remainder of this document.

1.0 GENERAL

1.1 Design Goals

The specifications that have been developed are designed utilizing a personal computer system. The analyzer system must be capable of performing uniform and consistent emission tests for Colorado's Automotive Inspection and Readjustment (A.I.R.) Program. Features of the analyzer

include: vehicle emissions measurements of hydrocarbon (HC), carbon monoxide (CO), carbon dioxide (CO_2)and oxygen(O_2); engine RPM measurements, exhaust dilution determinations, pressure test system for EVAP; data entry; data retrieval tables; a dedicated printer (for vehicle inspection certificates) and an additional printer for diagnostics and general purpose printouts; data recording on double sided high density 1.44 megabyte (Mb) 3.5′ floppy diskette and a 120Mb (or greater) hard drive; modem for “on-line real time” data transmission; CRT information display to the inspector; bar code (2D) reader and printing capabilities; and fully menu driven, interactive simple microprocessor controlled operation.

Additional, automatic features required include: gas calibrations, zero and span checks, pressure calibrations, gas auditing procedure; leak checks, HC hang-up checks, audit menus (i.e., data read system), test sequencing, and low-flow checks. The analyzer shall be designed and constructed to provide reliable and accurate service in the automotive environment. The software used in the analyzer shall consist of a process control system as well as data look-up files. Security shall be provided to prevent unauthorized modifications to the software or test data and recording unauthorized entry (tampering) and locking out of the inspection process when detected.

The emissions analyzer software shall be designed for maximum operational simplicity.

It shall also be capable of providing emission-reading characteristics, independent of the inspection function, which can be used for vehicle diagnostic.

1.2 Useful Life

The useful life of the analyzer shall be a minimum of five years.

1.3 Nameplate Data

A nameplate including the following information shall be permanently affixed to the housing of the analyzer:

Name and Address of Manufacturer

Model Description

Serial Number

Date of Assembly

The manufacturer shall affix a stick-on type label to the analyzer that contains a toll-free telephone number for customer service. This number can also be included in a service software message.

1.4 Manuals

Each analyzer shall be delivered with the following manuals:

A. Reference Operating Instructions

B. Operation Instruction Manual

C. Maintenance Instruction Manual (limited)

D. Initial Start-up Instructions

Colorado 94 Analyzer manufacturers may consolidate manuals. The manuals shall be constructed of durable materials and shall not deteriorate as a result of normal use over a five-year period. The analyzer housing shall provide convenient storage for each manual in a manner that will:

E. Allow easy use.

F. Prevent accidental loss or destruction.

1.5 Certification Documentation

The analyzer software shall be fully documented. Two copies of the documentation listed below shall be submitted to the Colorado Department of Public Health and Environment as part of the certification application.

A. Complete program listings. Program listings may be on diskette. They are not required to be submitted with the application for certification.

B. Functional specifications.

C. Functional flowcharts of the software.

D. Example inputs and outputs from all processes.

E. Detailed interface information on system components including the identification of protocol and output specifications.

F. All DOS file layouts with file names, file types, file security, field names, field types, field sizes, and field editing criteria.

Documentation provided by the vendor to meet this requirement will be treated as proprietary information by the Colorado Department of Public Health and Environment.

Prior to certification of any Colorado 94 emissions analyzer for sale in Colorado, the manufacturer of such analyzer shall provide the Division with software source codes and all other technical information (including, but not limited to all working codes, schematics and drawings) necessary to operate, maintain, calibrate and repair such analyzer in the event that the manufacturer or its agent ceases providing adequate maintenance, calibration and repair services in Colorado. The manufacturer shall keep such information current, and will provide the Division with copies of any and all changes. So long as such maintenance, calibration and repair, services are available from the manufacturer or its agent, the Division shall protect such information as confidential commercial data if it is clearly marked as such. In the event that the manufacturer becomes insolvent or stops providing adequate maintenance, repair or calibration services in Colorado all such

information shall be the property of the Division and may be released to a third party as necessary to repair, calibrate and maintain the analyzers.

1.6 Warranty Coverage/Mandatory Service Contract

A written warranty coverage agreement, signed by an authorized representative of the equipment manufacturer and the vehicle inspection station owner, which provides a complete description of coverage for all systems and components and all manufacturer provided services listed in section 1.8, must accompany the sale or lease of each Colorado 94 emissions analyzer.

An extended service contract must be available upon the expiation of the manufacturers original warranty period. Original manufacturers warranty shall be a minimum of one year from the date of purchase. The “service contract” shall be offered in one-year increments and is a mandatory condition of inspection station operation. The “service contract” agreement shall include the inspection station owner's name, inspection station address, telephone number, inspection station identification number, analyzer serial number and detailed terms of the agreement. The agreement must extend for at least one year with the expiration date entered to software file and monitored by the system clock. Approaching expiration messages must be displayed at daily system start-up beginning thirty days prior to expiration and massaging “30 days until expiration, 29 days etc.” Failure to renew the “service contract agreement” will cause the analyzer to automatically “lock-out” from any official inspection process. Renewals shall be offered at the inspection station owner’s request and governed by “good business” practices between the parties involved. Service contract agreements must be available by the manufacturer for the mandated life of the Colorado A.I.R. Program. Cost disclosures and detailed descriptions of coverage’s must be available in printed form and distributed to all Colorado 94 users. Cost disclosure shall also be made for “consumable” inventory items 1.8B. This information would most appropriately be presented with the original manufactures warranty.

1.7 Tampering Resistance

Controlled access design shall be the responsibility of the manufacturer and is subject to approval by the Colorado Department of Public Health and Environment. Analyzer service personnel, inspectors or others shall be prohibited, to the Colorado Department of Public Heath and Environment satisfaction, from creating or changing any test results, programs or data files contained in the analyzer. Manufacturers shall utilize special BIOS partitions, or other appropriate software and hardware provisions, deemed necessary to protect the I/M files and programs. The protection features shall prevent access to the secured floppy disk drive and those portions of the hard disk containing I/M programs and test data or files.

The emission analyzer and the sampling system shall be made tamper-resistant to the Colorado Department of Public Health and Environment satisfaction. At a minimum, the manufacturer shall develop tamper-resistant features to prevent unauthorized access though the cabinet. Microswitches, keyed locks, or software algorithms requiring the use of a password, which can be changed by the Colorado Department of Public Health and Environment would all be acceptable provided the physical or logical design effectively prevents unauthorized access.

Manufacturers may offer analyzers with additional floppy disk drives that can run optional software application programs.

If tampering occurs, a software lockout algorithm shall be activated which aborts any existing test sequence and prevents further inspections until an authorized A.I.R. Program official clears the lockout.

The lockout system shall be designed so that an A.I.R. Program official from the audit menu can activate it. Only A.I.R Program Auditors may remove lockouts put in place from the audit menu. Manufacturers shall develop a system by which their service technicians shall be prevented from clearing “tamper” lockouts.

Optional software packages shall not interfere with the normal operation of the I/M inspection and testing software, and shall not compromise the tamper-resistant features of the analyzer.

Manufacturer field service representatives will not have access to DOS, unless assurances acceptable to the Colorado Department of Public Health and Environment have been provided that insure, integrity of the system will not be jeopardized.

1.8 Manufacturer Provided Services

The manufacturer shall agree to provide the following services to the inspection station as part of the manufacturers original warranty and thereafter as a portion of the service contract agreement. The cost of a service agreement is to be listed on a year-by-year basis. Future charges cannot exceed the amount published.

A. Delivery, installation, calibration, and verification of the proper operating condition of a Colorado 94 emissions analyzer.

B. Quarterly (90 days) examination, calibration, and routine maintenance of the analyzer and sampling systems. Full systems support and repair, including loaner units. Upon initial sale or loan, provide “extra” printer medium (1 ea.) sample filter(s)(2), sample hose (1) and sample probes (1). Maintain the “extra” consumable inventory upon examination and provide a software history file for the replacement of consumables accessible to A.I.R. Program officials. Consumables and the cost(s) there of must be disclosed in the service agreement.

C. Instruct all certified inspectors employed by the inspection station at the time of installation in the proper use, maintenance, and operation of the analyzer. The analyzer shall contain a feature that will allow an inspector to go through the complete inspection procedure without generating an official inspection record. This function will be used for evaluating inspector performance, by A.I.R. Program officials, or by the manufacturer for demonstration purposes. The “training mode” shall not require the use of an inspector’s access code or allow access to secured areas of hardware or software. The display shall show a message throughout the inspection that this is not an official inspection. Vehicle inspection reports shall indicate to the satisfaction of the Colorado Department of Public Health and Environment that they are for training only. No official Certificate of Compliance will be generated during the training exercise.

D. On-site service response by a qualified repair technician within two (2) business days, (48 hours) excluding Sundays and national holidays, of a request from the

inspection station. The names, toll-free telephone numbers, and service facility addresses of all manufacturer representatives responsible for equipment service shall be provided to the inspection station. A service representative shall be available at all times during normal working hours. Sundays and national holidays are not included. All system repairs, component replacements, and/or analyzer adjustments, shall be accomplished on-site within 48 hours after a service request has been initiated. If the completion of this work is not possible within this time period, a Colorado 94 loaner unit shall be provided until the malfunctioning unit is properly repaired and returned to service. Service representatives shall have a software driven menu option that allows the transfer of inspection station, inspector information and other applicable data files from one analyzer to another without manual inputs and without transfer of previous test files.

E. Updates of the “Functional” software will be limited to once per year at no cost.

Updates of operational software i.e., file based information will be on an “as required” basis. All forms of software updating will utilize modem technology for the updating process. File updates are at no cost and every effort will be made to minimize them.

F. The analyzer software shall be designed so that A.I.R. Program officials can insert a floppy disk, prepared by the manufacturer, into the Program system host, and update the existing software version, via modem. A system of manual updating by program officials utilizing the auditor’s menu shall also be available. Look-up up tables and message screens shall be designed sufficiently separate from the main operations software so that it is not possible, to interfere in any way with the operations of the analyzer.

The Colorado Department of Public Health and Environment will require the manufacturer to render updates as necessary in the first year of the program to ensure the program meets all design criteria. Thereafter software updates will be limited to once per year at no cost. Since modem software updating will be utilized, there are no costs to the analyzer owner. A software version number, consisting of a four character alpha-numeric code made up of the last two digits of the year followed by a two character version number, shall be recorded in the analyzer and included on each vehicle test record. The analyzer manufacturer shall not modify any existing software version without obtaining written approval from the Colorado Department of Public Health and Environment.

The Colorado Department of Public Health and Environment may require the manufacturers to conduct on-site or laboratory testing of in-use analyzers in order to document continued compliance. When an analyzer is removed from the field, for repair or testing, manufacturers shall supply the inspection station from which it was removed with a temporary replacement unit meeting all program requirements. Manufacturers shall pay for all necessary shipping and transfer costs for the replacement of the analyzer selected for compliance testing. Manufacturers shall also pay for any required testing performed by their personnel or by an independent company.

The manufacturers shall provide training to A.I.R. Program officials on all operational, maintenance, and quality control features of the analyzers, including full access to and use of inspection menus, audit menus and calibration menus, as well as optional

programs offered to inspectors. Such training shall be conducted at the manufacturer's expense as a condition of certification and thereafter at reasonable intervals upon written request by the Colorado Department of Public Health and Environment

1.9 Certification Requirements

The manufacturer shall submit a formal certificate to the Colorado Department, of Public Health and Environment that states that any analyzer sold or leased by the manufacturer or its authorized representatives for use in the Colorado A.I.R Program will satisfy all design and performance criteria described in these specifications. The manufacturer shall also provide sufficient documentation to demonstrate conformance with these criteria including a complete description of all hardware components, the results of appropriate performance testing, and a point-by-point response to specific requirements. Previous certification by the California Bureau of Automotive Repair (BAR) is necessary for the analytical bench.

In addition, a full description of the company's service procedures and policies, as well as sample contracts, warranties, and extended service agreements, shall be provided as part of the certification application to ensure proper maintenance of all analyzers throughout their useful life. One fully functional analyzer shall be presented for evaluation and one additional fully functional analyzer for the certification process. If certified these units will remain in A.I.R. Program possession for continued in-use evaluation for the life of the A.I.R. Program. In the event that 1 % of overall unit sales exceed this two-unit base, in-use evaluation will require 1 % of overall unit sales for in use evaluation.

2.0 CONSTRUCTION DESIGN

2.1 Materials

All materials used in the fabrication of the analyzer and the appropriate housing assembly shall be new and of industrial quality and durability. Contact between non-ferrous and ferrous metals shall be avoided where possible. Suitable protective coatings shall be applied where galvanic action is likely. All mechanical fasteners shall have appropriate locking features. Use of self-tapping screws shall be limited. All parts subject to adjustment or removal and reinstallation shall not be permanently deformed by the adjustment or removal-reinstallation process and this process shall not cause deformations to adjoining parts. Only materials that are not susceptible to deterioration when in contact with automobile exhaust gases shall be used.

2.2 Construction

The analyzer shall be complete and all necessary parts and equipment required for satisfactory operation shall be furnished. A suitable means of storing the probes and sample hose shall be provided. A means of storing the “spares” inventory shall be included. All parts shall be manufactured and assembled to permit the replacement and/or adjustment of components and parts without requiring the modification of any parts or the basic equipment design. Where practical, components and/or subassemblies shall be modularized. The analyzer cabinet finish shall be baked enamel or another durable finish.

2.3 Mobility

The analyzer unit shall be designed for easy and safe movement over rough surfaces and/or graded surfaces (15° incline). The center of gravity and wheel design shall be such that the analyzer can negotiate a vertical grade separation of one-half inch (1/2") without overturning when being moved in a prescribed manner. Industrial grade, swivel casters shall be used to permit 360° rotation of the unit. The caster wheels shall be equipped with oil resistant tires and foot operated brakes capable of preventing movement on a 15° incline.

2.4 Electrical Materials/Construction

Unless otherwise specified, all electrical components and wiring shall conform to standards established by the Underwriters Laboratories, Standard for Electrical and Electronic Measuring and Testing Equipment (U.L-1244).

The analyzer shall operate from an 115VAC, 60 hertz (Hz) supply. An input voltage variation of ±12 volts shall not change analyzer performance more than 1 % of full scale. The analyzer must operate on a 15 AMP breaker. The power cable shall be equipped with a standard three-prong connector at the inlet, and shall have a National Electrical Code rating of SO, SJO or better with an overall length not to exceed 25 feet. Each emissions analyzer shall incorporate safety devices to prevent conditions hazardous to personnel or detrimental to equipment. The system shall be grounded to prevent electrical shock, and adequate circuit overload protection shall be provided. The analyzer shall incorporate an internal surge protector.

2.5 Sampling System

The sampling system consists of two subsystems: (1) external sampling system; and (2) internal sampling system. The external system shall include a sample probe, sample hose twenty-five feet (25') in length, a water trap, and a filtration system. The internal subsystem shall include but not necessarily be limited to, a sample pump and bypass pump, or an equivalent system approved by the Colorado Department of Public Health and Environment.

The sample probe shall incorporate a positive means of retention to prevent it from slipping out of the tailpipe when in use. A thermally insulated, securely attached handgrip shall be provided on the probe in such a manner that easy probe insertion using one hand is ensured.

The probe shall also have a smooth surface near the probe tip before the flexible portion of the probe to be used for sealing of the span gas adaptor necessary for field or on-board leak checking (vacuum or gas) or response time checking equipment. For standardization, it is recommended that the sealing surface be one-half inch (1/2") in outside diameter and one-half to one inch (1/2′ to 1′) long. A probe tip cap shall be provided for the sample system leak check. A probe tip adapter or assembly shall be included for use with spark arrester type tail pipes.

The interconnecting hose shall be of such design and weight that the inspector can easily handle it. The hose shall be of non-kinking construction and fabricated of materials that will not be affected by or react with the exhaust gases. Molecular HC hang-up shall be minimized. The hose connection to the analyzer shall be reinforced at the point of maximum bending. The system shall be designed with a water trap in the bypass sample stream. The water trap shall be continually self-draining. The trap bowl shall be constructed of a durable transparent material. The water trap should be located as low as possible on the analyzer so that condensed water in the sample hose will drain into them. However, the trap must be placed in a position readily visible to the inspector. The sample for the analyzer shall be obtained from the top of the water trap. The sampling

system shall be equipped with a suitable particulate filter upstream of the optical bench. There may be a secondary filter located in the sample hose, serviceable by the inspector. This filter must have sufficient capacity to filter the samples obtained during the routine testing of vehicles in the inspection station. Threaded connections must be used to attach the filter to the sample hose. A prompt shall be provided to the inspector indicating when the filter should be changed based on an indication of low flow (automatic lock-out) or other criteria approved by the Colorado Department of Public Health and Environment

The pumps shall contain corrosion resistant internal surfaces. The pumps shall have a minimum operational life of 2,000 hours without failure.

The sample pump system may be a single pump, multiple pumps, or a multiple stage pump or an equivalent system approved by the Colorado Department of Public Health and Environment. The sample pump shall have integral motor overload protection and be permanently lubricated. The bypass system shall be connected in the sample system so that any water condensed in the water trap is removed and dumped outside the system.

2.6 Storage Temperature

While in storage, the analyzer and all components thereof shall be undamaged from ambient air temperatures ranging from 0° F to 120° F.

2.7 Operating Temperature

The analyzer and all components shall operate within calibration limits in ambient air temperatures ranging from 41° F to 110° F.

2.8 Humidity Conditions

The analyzer shall be designed for use inside a building that is vented or open to outside ambient humidity. The analyzer, including all components of the analytical, sampling, and computer systems, shall operate within the required performance specifications at ambient conditions of up to 80% percent noncondensing relative humidity throughout the required temperature range, assuming the components are reasonably protected by the inspector from direct contact with water, or other condensing moisture. Failure of any component due to exposure to temperature and humidity extremes within this limits specified during actual use shall be corrected at the manufacturer's expense.

2.8.1 Temperature Control

Analyzer components that affect sensitivity and calibration shall have their internal temperatures controlled to maintain design temperature. when exposed to prevailing ambient conditions. If internal operating temperatures are exceeded the analyzer will automatically lockout from any official inspection process.

2.9 Barometric Pressure Compensation

Barometric pressure compensation shall be provided. Compensation shall be made for elevations up to 6,000 feet (mean sea level). At any given altitude and temperature, errors due to barometric pressure changes of ±two inches (2") of mercury shall not exceed the accuracy limits specified in

this specification. Manufacturers shall describe in writing how compensation will be accomplished. The method used shall be acceptable if approved by the Colorado Department of Public Health and Environment.

2.10 Operational Design

A. Analytical System

These analyzers shall utilize nondispersive infrared systems for measuring hydrocarbons (HC), carbon monoxide (CO), carbon dioxide (CO_2). Oxygen (O_2) shall also be measured and ambient air will be used for calibration purposes.

B. Readout Display/CRT Screen

The screen shall contain numerical HC (as hexane), CO, CO_2 and O_2 displays and a pass/fail indication at the completion of the inspection process. Pressure purge shall be a pass/fail indication, with pressure/time values recorded to file.

The numerical display shall be of a digital format. The resolution of the emissions display shall be as follows:

HC: XXXX ppm (as hexane)

CO: XX.XX%

CO_2: XX.X%

O_2: XX.X%

The **MINIMUM** display increments shall be 1 ppm HC, 0.01 % CO, 0.1% CO_2, and 0.1% O_2. The displays shall be capable of full-scale readings of 2000 ppm HC (as hexane), 9.99% CC, 16.0% CO_2 and 25.0% O_2.

CRT display is to be employed for an exhaust sample validity (sample dilution). This indication will signal excess dilution in the exhaust system based upon measurement of CO + CO_2 emissions.

The analyzer shall be capable of selecting the pass/fail values (limits) based on vehicle model year, vehicle type, or other criteria. The system shall be designed in such a manner that the standards and vehicle groups may be readily revised by a modem software update.

Specific emissions limits and vehicle model year groupings are available in this Regulation NO.11, part F: maximum allowable emissions limits for motor vehicle exhaust, evaporative and visible emissions for Light-Duty and Heavy-Duty vehicles.

2.11 Automatic Calibrations

The analyzer shall be designed to require an automatic two-point gas calibration for HC, CO, and CO_2, and an automatic electrical zero and span check. (O_2 shall be measured by ambient air.)

The automatic gas calibration shall be conducted every 24 or 72 hours, activated by the internal clock. The option of 24 HOUR calibration will be software selectable, with the default @ 72 hours. Electrical zero and span check (automatic) shall be required prior to each test sequence. User-friendly prompts shall be provided to the inspector to indicate every step needed to properly perform the required gas calibration (including when it is necessary to turn the gas cylinder valve on and off).

If the system is not calibrated, or the system fails the calibration or the zero and span check, an error message or fault indication shall be displayed and the analyzer shall be locked out to prevent the performance of an emissions inspection. Lockout will remain until the system is property calibrated and passes a calibration check and zero and span check.

The calibration record will contain before and after calibration readings. The gas calibration shall ensure that accuracy specifications are satisfied and that linearity is correct at the required span points. The gas calibration and leak check procedures shall require no more than five (5) minutes to complete. The analyzer shall provide adequate prompts on the display to guide the inspector through the calibration procedure in a manner that minimizes the amount of calibration gas used.

The system shall have the capability of printing historical calibration data for specified date ranges by the A.I.R Program Auditor. (Audit menu, calibration history)

For HC, CO and CO_2, analyzer manufacturers shall limit gas usage during the gas calibration procedure to two liters per point. The analyzer shall also be designed to keep the loss of calibration gas to an absolute minimum (less than 0.5 liters in 24 hours) if the calibration gas valve(s) is/are not shut off. Manufacturers shall provide an evaluation of this capability, consisting of at least four (4) analyzers, with their certification application materials and shall demonstrate this feature during certification.

The analyzer shall be equipped with a gas calibration port for the purpose of performing a probe to calibration port comparison for audit purposes. Gas auditing shall be accomplished by introducing standard gases into the analyzer either through the calibration port or through the probe. Span gases utilized for calibration shall be within two percent (2%) of the following points: Ambient air may be used to calibrate the O_2 sensor.

(HC)	300	ppm propane
	1.0	% carbon monoxide (CO)
	6.0	% carbon monoxide (CO_2)
	Bal.	Nitrogen (N_2)
(HC)	1200	ppm propane
	4.0	% carbon monoxide (CO)
	12.0	% carbon monoxide (CO_2)

	Bal.	Nitrogen (N2)

The standard gases used to calibrate, and audit the analyzers shall satisfy the criteria included in the Federal Clean Air Act, section 207 (b) and described in Subpart W of Part 85 of Chapter I, Title 40 of the Code of Federal Regulations. In order to ensure that the quality of the standard gases used in the program meet these specifications, all standard gases purchased by the inspection facility for use in the analyzer must conform to the requirements established in 1990 by the California BAR for Test Analyzer System Calibration Gases. Calibration gases must be purchased from a vendor that has Colorado gas blender certification, REF. Colorado Regulation No. 11, Appendix B. These requirements include the testing and certification of the concentration, accuracy, precision, and purity of the standard gases to within the referenced limits and the labeling of individual gas canisters describing these and other specified parameters.

Automatic EVAP Pressure Calibration

The pressure test system is to be calibrated every 24 or 72 hours and zero/span checked before each inspection. Pressure calibration checks should be performed simultaneously with the gas calibration procedure. Calibration and/or zero span checks must pass or the analyzer must lockout from further testing until the discrepancies are corrected. All calibrations will be stored to the Cal.Dat Dat file. Pressure system calibrations shall be performed in a maximum time period of 5 minutes, calculated independently from the gas calibration and leak check. The optional 24-hour option shall be selectable and defaulted to 72 hours.

A. Automatic Leak Check

An automatic leak checking system shall be provided that will allow the vacuum side of the system to be checked for leakage. Appropriate valves lines, and switches shall be installed to permit this operation. Minimal activity by the inspector, such as setting the probe in a holder or capping the probe, is permitted, provided errors resulting from improper inspector action would be identified by the computer and would require corrective actions. Improper action would cause the system to fail a leak check, and automatically lockout. User-friendly prompts shall be provided to the inspector to indicate every step needed to properly perform the required leak check (including when it is necessary to turn the gas cylinder valve on and off).

A system leak check shall be accomplished every 4 or 24 hours and in conjunction with the gas calibration performed every 24/72 hours, activated by the internal clock. The 4-hour option shall be software selectable with the 24 hours as the default value. Four-hour leak checks are required only for those facilities performing more than 4000 inspections per year. The analyzer shall not allow an error of more than ±3% of reading using mid-range Colorado certified span gas to perform the leak check. Fittings and connectors used on the sample hose and probe shall be constructed to inhibit the bypass of the leak check. A maximum of two liters of calibration gas may be used to perform the leak check. If the system is not leak checked, or the system fails a leak check, an error message or fault indication shall be displayed, and the analyzer will be locked out to prevent the performance of an emission inspection, until the system is properly leak checked and passes.

B. Automatic HC Hang-Up Check

The analyzer shall be designed for using ambient air induced through the sample probe, prior to each test sequence. The analyzer shall have a CRT prompt/indicator. “Hang-up” activation shall cause the analyzer to automatically sample ambient air through the sample line and probe. The system shall continue to sample room air for a maximum of ***150*** seconds or until the HC response is below 20-ppm hexane.

If the HC hang-up does not drop below 20 ppm within ***150*** seconds, a message shall be displayed indicating possible dirty filters or sample line. If after ***150*** seconds HC levels are not below specified values, the test shall be discontinued until HC hang-up is corrected. When the level stabilizes below this value, an indication that testing may begin shall be displayed. The analyzer shall be locked out from operating until the HC level is met.

C. Vehicle Diagnostics

During analyzer warm-up, emissions diagnostics and other gas reading functions shall be prohibited. After successful warm-up and for the purpose of vehicle diagnosis or repairs, the analyzer shall have a menu selection that will allow the analyzer to continuously monitor the vehicle exhaust.

The automatic data collection system shall be prevented from operating anytime the analyzer is not being used in the official emissions inspection mode.

D. Dilution

The analyzer manufacturer shall document to the satisfaction of the Colorado Department of Public health and Environment that the flow rate on the analyzer shall not cause more than 10% dilution during sampling of the exhaust at normal idle (10% dilution defined as sample of 90% exhaust and 10% ambient air). Manufacturers shall utilize the procedures specified by the BAR for demonstrating this dilution criterion. The analyzer shall be equipped with a feature to identify vehicle exhaust system leaks and sample dilution. The preferred method for identifying leaks is monitoring the CO & CO_2 levels in the exhaust. Other additional techniques that can demonstrate improved sensitivity to leaks may also be used.

DILUTION VALUES:

All light duty vehicles: 6%

All heavy-duty vehicles: 5%

If the CO + CO_2 reading is less than the limit, the inspector shall be prompted to check the exhaust system for leaks and to make sure that the sample probe is all the way into the tailpipe. If the excessive dilution is detected after the initiation of the test sequence, the analyzer output shall display “SAMPLE DILUTION”. If dilution continues the inspector shall be required to “Abort Test”. The system shall store the “Abort Test” indication.

E. Engine Tachometer

A digital display tachometer shall be CRT displayed for the purpose of measuring engine speed. The tachometer operation shall be by two means; (1) radio frequencies “RF” type transmitter/receiver that requires no direct vehicle connection and can detect engine RPM on vehicles utilizing “DIS” systems. (2) a cable type connection capable of detecting engine RPM from all forms of current O.E.M. ignition technology. Tachometer performance shall be no less than; RPM with a 0.5 second response time and an accuracy of ±3.0% of actual RPM. During an official inspection process, the software will prompt the inspector to shut the engine off while connecting the RPM probe (only if a cable connection is being made). A software “HELP” screen will be available to assist the inspector in locating an RPM signal. This information may be supplied or reviewed by the Colorado Department of Public Health and Environment. Based on the vehicle identification information available to the inspector, the analyzer will prompt the inspector as to which vehicles require a specific type or method of connection of the tachometer pick-up. Analyzers shall be provided with all the software and hardware that is necessary to make them capable of reading engine RPM from all O.E.M. ignition technologies in use at the time of certification, Possible updates may be required to enable future ignition systems to be monitored for engine RPM.

F. Analytical Bench Accuracy

Each analyzer shall meet the following analytical accuracy requirement:

Channel	Range	Accuracy
HC ppm	0-400	±12 ppm
	401-1000	±30 ppm
	1001-2000	±80 ppm
CO%	0-2.00	±0.15 %
	2.01-5.00	2.040%
CO_2%	04.0%	±0.6
	4.1-14.0	±0.5%
	14.1-16.0	±0.6%
O_2%	0-10.0	±0.5%
	0-10	±1.3%

The analyzer display resolution electronics shall have sufficient resolution and accuracy to achieve the following:

HC	1 ppm	HC
CO	0.01 %	CO
CO_2	0.1%	CO_2
O_2	0.1%	O_2

G. Drift

If zero and/or calibration drift cause the infrared signal levels to move beyond the adjustment range of the analyzer, the inspector shall be locked out from testing and instructed to call for service.

H. Warm-Up

The analyzer shall reach stabilized operation in an inspection station environment within 15 minutes at ° 41 degrees Fahrenheit from “power on”. The instrument shall be considered “warmed-up” when the zero and span readings for HC, CO, and CO_2 have stabilized, within ± 3% of full range of low scale, for five minutes without adjustment.

Functional operation of the gas-sampling unit shall remain disabled through a system lockout until the instrument meets stability and warm-up requirements. If the analyzer does not achieve stability with 15 minutes, from “power-on”, it shall be locked out from I/M testing and a message shall be displayed instructing the inspector to call for service.

During the warm-up, the Main Menu shall be displayed unless an optional functional menu or menus are offered. The analyzer system shall lock out all bench related functions during warm-up. During warm-up, a message under the main menu shall be prominently displayed as follows: “Warm-up in progress - checking for stability”. During the initial entry into the “warm-up” period, and before any other menu can be selected, the software will automatically enter a “bulletin display” function and display any messages or bulletins forwarded from the A.I.R. Program host system via modem transfer in the past 72 hours. This screen will reference the inspector.dat file and require each inspector to enter their access code as verification of receipt, before allowing that inspector to Proceed with an inspection. No inspector can enter into an official inspection without having “logged on” as having seen the Bulletin screen. When stability is achieved and the warm-up requirements are satisfied, access to gas bench functions shall be permitted.

I. System Response Time Requirements

The response time from the probe to the display shall not exceed eight (8) seconds to 90% of a step change in input, nor will it exceed 12 seconds to 95% of a step change in input. For the O_2 sensor, the response time shall be no more than fifteen (15) seconds to 90% of full scale.

J. Optical Correction Factors

The hexane/propane equivalency factor (PEF) shall be limited to values between 0.49 and 0.52. If an optical bench is used that can demonstrate accuracy of propane/hexane identification within specification, using a range greater or lessor than indicated, it will be considered. Factor confirmation shall be made on each analyzer assembly by measuring both N-hexane and propane on assembly line quality checks. The PEF shall be permanently stored in non-volatile memory. The PEF shall be displayed on the monitor on request by inquiry through the menu system. The optical bench shall he marked with a permanent “stamped” type tag identifying its P.E.F..

The signal strength from the source to the detector for all channels shall be monitored such that when the signal degrades beyond the adjustment range of the analyzer, the analyzer shall be locked out from operation, i.e. fail calibration.

K. Interference Effects

The effect of extraneous gas interference on the HC, CO, and CO_2 analyzers shall not exceed ±10 ppm HC, ± 0.05% CO, and ±0.20% for CO_2.

The instrument design shall insure that readings do not vary as a result of electromagnetic radiation and induction devices normally found in the inspection environment (including high energy vehicle ignition systems, RF transmission radiation sources, and building electrical systems). In addition, the manufacturer shall ensure that the analyzer processor and memory components are sufficiently protected to prevent the loss of programs and test records.

2.12 Gas Calibration File

At the conclusion of each gas calibration the required data shall be placed in the CAL.DAT file.

2.13 Microcomputer Specifications

A. A standard microcomputer must be included in the analyzer and is to be used to control all analyzer functions. Each vendor is to develop DOS executable programs for each required function. These programs shall:

1. control each of the analyzer functions and time of function;

2. examine and obtain values from all of the analyzer sensors;

3. read and write information to diskette in standard DOS format; and

4. copy the analyzer, inspection station identification information from the hard disk onto each new floppy diskette when formatted.

The Colorado Department of Public Health and Environment reserves the right to add additional programs and functional performance requirements, up to the technical limits of the hardware, to improve the I/M program.

Sufficient flexibility shall be provided in the design of the microcomputer system to allow expansion of the analyzer to include, but not be limited to, the following additional capabilities:

1. connect and recover data from vehicle on-board diagnostic systems (OBD) meeting SAE specifications when they become available;

2. monitor vehicle recall data; identify, record and process data as required when an official EPA/SAE format is identified.

3. accommodate additional input channels in both analog and digital form. Two free slots, 16 bit capability.

The manufacturer may offer additional features that utilize the microcomputer as a stand-alone personal computer by providing optional software to perform various non-I/M functions. Such offerings must not interfere with the inspection requirements, or in any manner affect or allow the inspector to tamper with the inspection-related computer programming or data files.

The analyzer shall be equipped with an internal clock that operates independently from the power source and will provide accurate and automatic date and time information for the following functions:

a. each test performed;

b. automatic gas calibration and pressure test check (72 hours); (24 hour) optional

c. automatic leak check (4 or 24 hours and every 24/72 hours for automatic gas calibration), and leak check combination.

d. audit sequence:

All equipment and software submitted for Colorado certification must be the full and current configuration proposed for sale. Partial, dated, or incomplete models are not acceptable.

Acceptance of the microcomputer portion of the Colorado 94 Analyzer system will be dependent upon the satisfactory performance of the full-proposed configuration meeting all the requirements of this specification.

The proposed hardware configuration must be fully supported by all software and/or operating systems listed in the acceptance requirements or elsewhere in these specifications. Performance tests to prove compatibility will be conducted. The vendor will

bear all shipping and equipment preparation charges for the certification testing.

2.14 Standard Hardware: Minimum Required Configuration

1. Operating System

DOS Version 6.2 or most current

2. Processor

The microprocessor must be fully compatible with the Intel 80486 microprocessor. Upgradable to Pentium technology.

3. RAM Memory

The system must contain at least 2 MB of user available RAM. (expandable to 16 MB)

4. Power Up Sequence

The system must include a power up sequence that provides a self-diagnostic routine to check the on-line presence of critical PC components (including, at a minimum, the processor, firmware ROM, hard disk controller, keyboard, clock, modem, printers, bar code reader I/O ports, setup RAM and memory).

5. Video

The CRT display must be at least 12′ in diagonal measure and operate in a VGA mode.

The software shall automatically blank the screen or use a screen saver mode, if no keyboard entry is made for 10 minutes. The display shall return when the inspector strikes any key.

6. Floppy Disk

Each unit must come with an IBM compatible floppy disk drive that will permit full usage of 2sHD 1.44 Mb 3.5′ removable media. The drive must be located in a secured area accessible only to authorized A.I.R Program Service representatives. That secured drive must also include an approved method to limit logical access. Colorado Department of Public Heath and Environment will test the system for drive security and it should not provide access to the secured floppy except through the approved security procedure. The secured floppy drive shall be designated the “A” drive.

7. Hard Disk

Each unit must come with at least 120 megabytes of hard disk storage. The vendor may use up to 40 megabytes for their programs and data provided at least a full 80 megabytes of usable storage is available for Colorado Department o1 Public Health and Environment and user information. The hard disk is to be self-parking (where applicable), shock mounted, and able to operate reliably in the inspection environment. The hard disk must

also include a Colorado Department of Public Health and Environment approved method of limiting access to data and programs. The hard disk containing programs and data files shall be designated the “C” drive.

8. I/O Ports

The unit must include sufficient I/O ports of proper configuration to allow the connection of all required options and the capability to add additional I/O boards.

9. Keyboard

The Colorado 94 Analyzer keyboard must be fully interfaced with the microcomputer and have all of the necessary normal, numeric, cursor, control, shift, alternate, and function keys needed to operate a standard IBM PC compatible microcomputer, preferably 101 keys should be provided.

10. Bar Code Scanner

The bar code scanner shall be equivalent to the PDF 1000 “HV” (High Visibility) Scanner from Symbol Technologies. Performance specifications are included in Technical Specification Appendix A. The PDF 1000 “HV” is a scanner capable of reading both 1 -D and PDF-417(2-D) bar codes.

11. Hard Disk Expansion

System must include a hard disk interface that will fully support a second internal disk drive of the same type as the original type drive or a functional equivalent approved by the Colorado Department of Public Health and Environment that does not compromise tamper-resistance.

12. Additional Storage

3.5′ 1.44 Mb Floppy Disk Drive IBM Optical disk drive, floptical, CD ROM reader etc., these options would be for manufacturer offered look up tables, service information or other options requiring additional storage capability.

13. Communications

Hayes compatible modem at 14,400B, M.N.P. Level 5. Error correction: Microcom networking protocol (M.N.P.) levels 1-4 and V.42 data compression: M.N.P. level 5 and V.32BIS/V.42BIS. Protocol will be provided within the operational software package. Modem communications will be necessary during the inspection process for V.I.N. verification, multiple “I” Test Control, vehicle recall etc., from the Network System Host Computer.

2.15 Required Printers

A. Diagnostic printer:

A 24 pin impact printer shall be supplied which is dedicated to the task of printing designated information on a VEHICLE DIAGNOSTIC FORM, or other repair type information. Continuous, fanfold, preprinted (ghost printed certificates) will be used. The printer shall print information on the certificate using 12 characters per inch and 80 characters per line.

B. Certificate Printer:

The certificate printer is to be a “thermal transfer” technology printer, capable of producing PDF 417, two dimensional bar code and Code 39, one-dimensional bar code. As of date, Standard Register produces a model of printer that meets or exceeds all requirements necessary to print upon the required certificate. This model is a PT650 Thermal/Thermal Transfer Printer. Specifications of the certificate printer shall be Standard Register. FT650 or equivalent. With equivalency being defined as successful completion of printing, security, storing and dispensing of the required certificate. Final acceptance of alternative printers lies with written State approval.

Standard Register. PT650 technical specifications are included in the Technical Specification Appendix B.

PHYSICAL SPECIFICATIONS OF CERTIFICATE:

Physical specifications of the certificate, to include print fields, physical design, materials and sizing are to be determined by the Department of Revenue.

C. Certificate Security:

The inspection certificate printer and certificate storage area shall be located in a secured area. Access to the area securing the printer and certificates shall be available only to the licensed inspector at the station. The certificate storage area shall have a redundant security system utilizing both a hardware lock and a software lock that meets Colorado Department of Public Health and Environment approval. Certificates will be prevented from being “pulled” through the printer. A form of printer locking must be utilized. The secured area containing certificates and the certificate printer, shall be designed so that the same key can be used to open any access doors that secure any optional storage media. If any of these doors are opened, a microswitch (or equivalent) shall be used which prevents the printing of certificates and records each event with time and date to an entry.dat file.

The purpose of the software lock is to restrict access to the printer with the following exceptions: loading and aligning certificates prior to printing, clearing paper misfeed or jam problems, etc., and to provide a record of the personnel performing those functions.

The area containing the certificates shall be located so that proper routing is maintained on the certificates as they are fed through the printer.

If tampering occurs, a software lockout algorithm shall be activated which aborts any existing test sequence and prevents further emission testing until an A.I.R. Program official clears the lockout.

There shall be easy access to the vehicle diagnostic report printer so that the inspector can easily replace paper, clear paper jams and change ribbons.

2.16 Clock/Calendar

The analyzer unit shall have a real time clock/calendar which shall make available the current date and time. Date will be in month, day, year format and time will be in 24-hour format. The A.I.R. Program system host computer shall update both time and date during each transfer of data via the system modem.

The date/time, along with the time the test started and when it ended, is to be included on the test record. The start time is when the inspector's access code is entered and the end time is when the analyzer data is written to the test file.

If the clock/calendar fails or becomes unstable (as referenced to the program host system during modem data transfer), the analyzer unit shall be locked out from I/M testing and a message shall be displayed indicating that service is required.

Resetting of the clock, independent of the host updating, shall require controlled access.

2.17 Lockout Notification

The analyzer shall alert the inspector of any lockout situation by prominently displaying a message on the CRT. Any lockout condition will be stored to file.

2.18 Vehicle Diagnosis

The analyzer shall be capable of menu selection that will allow the analyzer to be used as an ordinary garage type emissions analyzer for general automotive repair work and diagnostics.

2.19 Software Loading

The inspector shall not have to load the microcomputer's operating or applications software to operate the analyzer. On each POWER ON of the analyzer, the analyzer shall automatically do all microcomputer component self-diagnostics, memory checking, and loading of all necessary operating software without inspector intervention. Upon satisfactory computer component check out, the applications software is to present a menu of available analyzer operations. All offered features are to be menu-driven. For each feature, a context sensitive, on-line help facility is to be provided which can be accessed preferably with a single keystroke.

3.0 DISPLAY PROMPTS AND PROGRAMMING CRITERIA REQUIREMENTS

Operational software requirements will be available from the Division upon request.

ATTACHMENT I

TO THE TECHNICAL SPECIFICATION

APPENDIX A

PDF 1000 SCANNER

PERFORMANCE CHARACTERISTICS

Type:	Raster scanning, retro-collective
Scan Element	Low mass, single mirror, resonant
Light Source:	675 nm. Laser diode
Pattern Size:	At 9 in. (22.8 cm) from the nose of the scanner, the pattern is 7 in. (17.8 cm) horizontally and 2.6 in. (6.6 cm) vertically
Scan Rate:	560 scans/sec. 280 Hz ± 10 Hz (horizontal)
Frame Rate:	22 frames/sec. 11 Hz ± 1 Hz (vertical)
Optical Resolution	Can decode a 6.6 mil X-dimension symbol (PDF417); Y-dimension must be 3X
Haz Size of PDF 417:	5.9 in. (15cm) wide x 2.3 in. (5.8 cm) high (928 code words, at security level 0-8)

PHYSICAL CHARACTERISTICS

Pitch Tolerance:	± 30” (“front and back”)
Skew:	± 15” plane parallel to symbol (“side to side”)
Rotational Tolerance:	± 3” (assuming 3:1 codeword module aspect ratio)
Dead Zone/Optical Throw Print:	± 2” (1 D symbologies) or ± 9” (PDF417) from beam direction
Print Contrast Resolution (min):	25% (1-D symbologies) or 35% (PDF417) absolute dark/light reflectance differential, measured at 675 nm
Ambient Light Immunity:	8000 ft-candles (86100 LUX) of sunlight
Humidity:	5 to 95% relative humidity (non-condensing)
Shock:	Unit functions normally after 4ft (1.2m) drop to concrete
Environmental Scaling:	MIL-STD-810d windblown dust and rain
Operating Temperature:	14° to 104° F (-10° to 40°C)
Storage Temperature:	-40° to 140° F (-40° to 60°C)
Coil Cable Length:	6 ft. (183cm)

Weight	10.4 oz (295gm) without cable
Dimensions:	7.2 in. (18.2 cm) H x 4.2 in. (10.7cm) Lx L7 in. (4.3 cm) W
Laser Class:	CDRH Class II, IEC 825 Class II

PL 140 Decoder/Interface

Decode Capabilities:	2-D symbologyPDF417 (up to 928 code words at security level 0-8). 1-D Symbologies: UPC-A, UPC-E, EAN-8, EAN-13, Code 39, Code 39 Full ASCII, Code 128, Interleaved 2 of 5, Codabar.
Memory:	64K x 32-bit PROM; 32K x32-bit RAM (128K ram OPTION); 256 X 16 bits EEPROM for system parameters
Humidity:	5-95% relative humidity (non-condensing)
Shock:	4-ft. (1.2m) drop to concrete
Environmental Sealing:	Environmentally sealed against dust and rain (with battery pack attached)
Operating Temperature:	14° to 104° F (-10° to 40° C)
Storage Temperature:	-40° to 140° F (-40° to 60°C)
Weight:	11.2 oz. (318 gm) With batter pack 27.8 oz. (788.13 gm)
Dimensions:	4.0 in. (10.2 cm) high x 4.0 in. (10.2cm) long x 1.4 in. 13.6 cm wide (2.8 in (7.1 cm wide with batter pack)
Agency Approvals:	FCC Class A, UL, CSA, VDE
Power Requirements:	DC Power: 11 VDC from wall transformer or 6 VDC from Battery Pack. Wall transformer power requirements: 115 VAC @ .15A, 220/240 VAC @ .075A, 100V @ .15A. Pack will support several thousand scans per 8-hour shift. Actual number depends on PDF417 symbol size and mix of 1D bar codes scanned.

ATTACHMENT II

TO THE TECHNICAL SPECIFICATION

APPENDIX A

THERMAL TRANSFER PRINTER

STANDARD FEATURES

● On line/Off line Operation

● Thermal/Thermal Transfer

● Extremely High doc density (203 dots/inch. 8 dots/mm

● Print speed 6 inches plus per second

● Media width 5.25

● Print width 5.10"

● Large maximum media size 5.25-W X 60 L

● User-selectable bar code ratios

● Internal take-up mechanism

● External rewind mechanism

● Print material. Label and lag stock

● Label presentation

● Print head temperatures software selectable

● Easy - load ribbon

● Alpha-numeric keypad

● LCD Display 2X20

● 512K of on board Ram Expandable to 8 MB

● Rotation of text and bar codes 90. 18O and 270 including human readable

● Date and Time Clock

● Label back feed for cutting and dispensing modes

● Intelligent Formats

PRINT MODES

Three print modes are standard

● Batch - printing one or more labels with or without backing paper

● Rewind - printing a batch of labels and rewinding

● Present Mode - Present sensor stops each label for presentation before delivering the next label

BAR CODES

● Code 39

● Interleave 2 of 5

● Codabar

● Code 128 A. B, and C subsets

● UPC-A and E

● UPC addendum codes 2 and 5 digit

● UPC random weight

● EAN 13 and 8

● Code93

● Universal shipping contained symbology (with fixed or random weight codes) code 39 variations to produce all industry standards such as LOGMARS. HIBCC. and AIAG

● Bar code modulus (“x” dimensions): 5 mil to 10 mil in picket or ladder orientation

● Bar codes printed with or without human readable interpretation

FONT STYLES

● 12 Scalable Fonts On-Board

● Downloadable font support

● Downloadable graphics

● Inverse text support

● International language support different language character sets

● Inverse image support

MEDIA SPECIFICATIONS

● Media type: Roll-fed, die-cut continuous or fan-fold labels, tags or tickets

● Material: plain paper thermal transfer or thermal sensitive paper

● Sensing: adjustable transmissive sensor for die cut labels or tags.

● Reflective sensor for use with black marks

● Programmable top of form

● Maximum media width: 5.25

● Minimum media width: 0. 50′

● Maximum media length: 60.0′

● Minimum media length: 0.50′

● Thickness: 0.0023′ to 0.012′ (including liner)

● Supply roll capacity. 8"(203mm)

● Internal rewind capacity: 6"(152mm)

● External rewind capacity: 8"(203mm)

● Fanfold stock internal and external capabilities

PRINT HEADS

● Standard width: 5.1"(128mm) 8 dot/mm (203 dots/inch. 8 dots/M)

● Optional widths available

● Optional Dot Densities available

PRINT SPEED

● Standard speed :6"(152mm) plus per second

● Programmable print speeds of 1.5″ (38 mm) 3"(72mm) up to 6"*(1.52mm)* plus per second

COMMUNICATION INTERFACE

● RS-232C.RS-422. RS-185

● Centronics parallel interface

● Robust XON/XOFF. CTS, DTR handshake

● Programmable 7 or 8 bit length

● Multidrop protocol

● Bidirectional Printer to Host

OPTIONS

● Ribbon Saver

● Cutter mechanism and Tray

● Font Data Cards (up to 1MB)

● Application Cards (up to 1 MB)

● Graphics Display

● Full Alphanumeric keyboard

● Scanner Support

● User Data Support Cards (up to 1MB)

● Twinax & Coax IBM Inter faces

MECHANICAL

● Height: 10"(254mm)

● Width: 11"(279mm)

● Depth: 16"(406mm)

● Weight: 35 lbs. (16 kg)

ELECTRICAL

● Power 110/220 VAC + or - 10% 5O/60 Hz at 2 amps maximum 100 VAC on request

● Built to ULCSA and TUV-GS safety standards and VDE Class B and FCC Class A emissions standard

ENVIRONMENTAL

● Operating Temperature: 32° F to 100° F (0° to40° C)

● Storage Temperature:-40F to 140° F (-40° Cto60° C)

● Humidity. 10% to 90% non-condensing

● Ventilation: Free air movement

● Dust: non-conducting, non-corrosive

ATTACHMENT III TO TECHNICAL SPECIFICATION, APPENDIX A

COLORADO AUTOMOBILE DEALERS TRANSIENT MODE TEST ANALYZER SYSTEM

TRANSIENT MODE TEST SYSTEM TECHNICAL AND HARDWARE SPECIFICATIONS

COLORADO AUTOMOBILE DEALERS TRANSIENT MODE TEST ANALYZER SYSTEM

(I/G 240)

TEST SYSTEM TECHNICAL AND HARDWARE SPECIFICATIONS

JANUARY 27, 1997

Introduction

This document contains technical specifications for a Colorado Automobile Dealers Transient Mode I/G 240 Test Analyzer System. The technical specifications of the system are based upon the Environmental Protection Agency High-Tech I/M Test Procedures dated June 1996, Emission Standards, Quality Control Requirements and Equipment Specifications: IM240 and Functional Evaporative System Tests technical guidance document EPA-AA-RSPD-IM-96-1, dated June 1996. The technical concept allows for the use of technologies of similar application but of a lower monetary cost. Utilizing lower cost technologies and identifying equipment required to directly address the requirements of the Colorado Enhanced Inspection Program, the system can perform transient loaded mode testing in the Motor Vehicle Dealer Test Facility pursuant to section 42-4-309 (3)(B), C.R.S.

In review of these specifications, sections may indicate that they are *not applicable.* Not applicable indicates that the content of that section does not apply to the Colorado system. Not applicable sections remain within this specification, as they provide insight into the systems total capability with hardware often sharing functionality with another test process. This specification is intended to act as a guide to hardware requirements, provide insight into the application of the hardware, and provide testing and quality control requirements and to provide a general overview of the operating system software requirements. Numerical references to methodology or procedures refer to sections so indicated within the code of federal regulations (40 CFR 85.2 July 1996) (EPA).

This attachment III establishes equipment specifications, test procedures and test standards. In order to qualify for the Colorado Automobile Dealers Transient Mode I/G 240 Test Analyzer System must comply with the equipment specifications, must be capable of performing all applicable elements of the test procedure, and must be capable of measuring, calculating, displaying and recording each test standard.

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EMISSIONS LIMITS

M/Y	CO	HC	NO_x
LDV:			
1982	65	5	8
1983-84	50	5	8
1985	25	5	8
1986-90	25	4	6
1991-94	20	4	6
1995 & newer	20	4	4

M/Y	CO	HC	NO_x
LDT 1-2:			
1982-83	107	8	12
1984-85	80	8	12
1986-90	67	6	9
1991 & newer	53	6	9

Emissions limits are subject to periodic revision and as such provisions must be made for ease of adjustments

(b) Transient Test Score Calculations

(1) Composite Scores. The composite scores for the test shall be determined by dividing the sum of the mass of each exhaust component obtained in each second of the test by the number of miles driven in the test. The first data point is the sample taken from t=0 to t=l. The composite test value shall be calculated by the equation in (b)(l)(i):

(i)

Transient Test Score Calculations - Composite Scores

$$\text{Composite gpm} = \frac{\sum_{sec=0}^{s} \text{grams of emissions}}{\sum_{sec=0}^{s} \text{miles traveled}}$$

Where: s = duration of test in seconds for fast pass
= 239 seconds for complete IM240

(2) Second-by-Second Mass Calculations. The mass of each exhaust component shall be calculated to five significant digits for each second of the test using the following equations:

(i) Hydrocarbon mass: $HC_{MASS} = \frac{V_{MIX} * DENSITY_{HC} * HC_{conc}}{1000000}$

(ii) Carbon Monoxide mass: $CO_{MASS} = V_{MIX} * DENSITYco * \frac{CO_{conc}}{1000000}$

(iii) Oxides of Nitrogen mass: $NOx_{MASS} = V_{MIX} * DENSITY_{NO2} * K_H \frac{NO_{xconc}}{1000000}$

(iv) Carbon Dioxide mass: $CO_{2MASS} = V_{MIX} * DENSITY_{CO2} * \frac{CO_{2conc}}{100}$

(3) Meaning of Terms.

(i) HC_{mass} = Hydrocarbon emissions in grams per second.

(ii) $Density_{HC}$ = Density of hydrocarbons is 16.33 grams per cubic foot assuming an average carbon to hydrogen ratio of 1:1.85 at 68° F and 760 mm Hg pressure.

(iii) HC_{conc} = Average hydrocarbon concentration per second of the dilute exhaust sample measured as described in §85.2226(c)(4), and corrected for background, in ppm carbon equivalent, i.e., equivalent propane * 3.

(A) $HC_{conc} = HC_e - HC_d(1-)$ Where:

(B) HC_e = Hydrocarbon concentration of the dilute exhaust sample as measured in ppm carbon equivalent.

(C) HC_d = Background hydrocarbon concentration of the dilution air, sampled as described in §85.2221(b)(5), as measured in ppm carbon equivalent.

(D) $DF = \frac{13.4}{CO2_e + (HC_e + CO_e)*10^{-4}}$ calculated on a second-by-second basis

(iv) V_{mix} = The CVS flow rate in cubic feet per second corrected to standard temperature and pressure.

(v) CO_{mass} = Carbon monoxide emissions in grams per second.

(vi) $Density_{CO}$ = Density of carbon monoxide is 32.97 grams per cubic foot at 68 °F and 760 mm Hg pressure.

(vii) CO_{conc} = Average carbon monoxide concentration per second of the dilute exhaust sample measured as in §85.2226(c)(4), and corrected for background, water vapor, and CO_2 extraction, in ppm.

(A)

$$CO_{conc} = CO_e - CO_d \left(1- \frac{1}{\text{-----}}\right)$$

DF

(B) CO_e = Carbon monoxide concentration of the dilute exhaust in ppm.

(C) CO_d = Background carbon monoxide concentration of the dilution air, sampled as described in §85.12221(b)(5), in ppm.

(viii) NO_{xmass} = Oxides of nitrogen emissions in grams per second.

(ix) $Density_{N02}$ = Density of oxides of nitrogen is 54.16 grams per cubic foot assuming they are in the form of nitrogen dioxide at 68 °F and 760 mm Hg pressure.

(x) NO_{xconc} = Average concentration of oxides of nitrogen per second of the dilute exhaust sample measured as described in §85.2226(c)(4), and corrected for background in ppm.

(A)

$$NOx_{conc} = NOx_e - NOx_d \left(1 - \frac{1}{DF}\right)$$

(B) NOx_e = Oxides of nitrogen concentration of the dilute exhaust sample as measure in ppm.

(C) NOx_d = Background oxides of nitrogen concentration of the dilution air, sampled as described in §85.2221(b)(5), measured in ppm.

(xi) K_H = humidity correction factor.

(A)

$$K_H \frac{1}{1 - 0.0047 (H - 75)}$$

(B) H = Absolute humidity in grains of water per pound of dry air.

(C)

$$H = \frac{(43.478)R_a * P_d}{P_B - \left(P_d * \frac{R_a}{100}\right)}$$

(D) R_a = Relative humidity of the ambient air, percent.

(E) P_d = Saturated vapor pressure, mm Hg at the ambient dry bulb temperature. If the temperature is above 86° F, then it shall be used in lieu of the higher temperature, until EPA supplies final correction factors.

(F) P_B = Barometric pressure, mm Hg.

(xii) CO_{2mass} = Carbon dioxide emissions in grams per second.

(xiii) $Density_{CO2}$ = Density of carbon dioxide is 51.81 grams per cubic foot at 68°F and 760 mm Hg.

(xiv) CO_{2conc} = Average carbon dioxide concentration per second of the dilute exhaust sample measured as described in §85.2226(c), and corrected for background in percent.

(A)

$$CO_{2conc} = CO_{2e} - CO_{2d}\left(1 - \frac{1}{DF}\right)$$

(B) CO_{2d} = Background carbon dioxide concentration of the dilution air, sampled as described in §85.2221(b)(5), measured in percent.

(C)(d) **Evaporative System Pressure Test Standards**

(1) Visual Check. The vehicle shall fail the evaporative system visual check if any part of the system is missing, damaged, improperly connected, or disconnected as described in §85.2222(b).

(2) Canister End Pressure Test Standards. **NOT APPLICABLE** The vehicle shall fail the pressure test if the system cannot maintain a pressure above eight inches of water for up to two minutes after being pressurized to 14 ± 0.5 inches of water. The vehicle shall also fail if it does not possess a check valve, as identified in the Look-up Table, and if no pressure drop is detected when the fuel cap is loosened as described in §85.2222(c)(4).

(3) Fuel Inlet Pressure Test. **NOT APPLICABLE**

(i) Pass/Fail Determination. Flow rate, fill pressure, and decay pressure shall be measured at 2 Hz, averaged over 1 second intervals, and curve fitted using a least squares technique. If the volume compensated pressure drop is more than the pressure loss determined from starting and ending pressures in the Pressure Decay Reference Equation in §85.22C5(c)(3)(ii), the vehicle shall fail. Otherwise the vehicle shall pass. If not using volume compensation, the vehicle shall fail if the loss in pressure exceeds 6 inches of water.

(ii) Pressure Decay Reference Equation. This equation provides pressure loss values equivalent to a loss of pressure from 14 to 8 inches of water when the starting pressure is other than 14 inches of water.

$$P = 40 * (0.9967 - 2.7 * 10^{-6} * t)^{t}$$

Where:

P = Starting or ending pressure, in inches of water,

t = Time, in seconds.

(iii) Fast-Pass. Fast-pass determinations may be made anytime during the pressure decay between 20 and 120 seconds if the measured pressure exceeds the corresponding Pressure Test Reference Equation cut point, from §85.2205 (c)(3)(ii), by 1 inch of water pressure. The cut point is determined by adding 1 inch of water to the pressure value at a. time t. The pressure at time t corresponds to the pressure at the equivalent "start time" plus the time in seconds between 20 and 120 when the fast pass determination is made. The State may propose and the Division may approve other fast pass algorithms provided they minimize false results.

(iv) Pressure Drop. For vehicles without vapor control valves (burp valves), the clamp(s) shall be removed from the hose(s) and the system shall be monitored for a gradual pressure drop. If no pressure drop is detected, the vehicle shall fail the test. If the Pressure Test Look-up Table identifies the vehicle as possessing a vapor control valve, the system shall not be monitored for a loss of pressure.

(4) Fuel Cap Test. (Part F, Subpart IV of Regulation No. 11)

(i) Pressure Decay Method. If pressure decays by 6 inches of water or more during the 10-second period, the vehicle shall fail the fuel cap integrity test.

(ii) Flow Rate Method. The fuel cap leak rate shall be compared 1:0 an orifice with a National Institute of Standards and Technology traceable flow rate which will result in a pass/fail flow rate threshold of 60 cubic centimeters per minute of air at 30 inches of water column. If the leak rate exceeds 60 cubic centimeters per minute at a pressure of 30 inches of water column, the cap shall fail the test.

Transient Mode and Evaporative System Purge Test Procedures

(a) General Requirements

(1) Data Collection. The following information shall be determined for the vehicle being tested and used to automatically select the dynamometer inertia and power absorption settings:

(i) Vehicle type: LDGV, LDGT1, LDGT2, and others as needed,

(ii) Chassis model year,

(iii) Make,

(iv) Model,

(v) Number of cylinders, or cubic inch displacement of the engine

(vi) Transmission type.

(2) Ambient Conditions. The ambient temperature, absolute humidity, and barometric pressure shall be recorded continuously during the transient or as a single set of readings up to 4 minutes before the start of the transient driving cycle.

(3) Restart. If shut off, the vehicle shall be restarted as soon as possible before the test and shall be running at least 30 seconds prior to the transient driving cycle.

(b) Pre-inspection and Preparation

(1) Accessories. All accessories (air conditioning, heat, defogger, radio, automatic traction control if switchable, etc.) shall be turned off (if necessary, by the inspector).

(2) Leaks. The vehicle shall be inspected for exhaust leaks. Gas measurement of carbon dioxide or other gases shall be acceptable. Vehicles with leaking exhaust systems shall be rejected from testing.

(3) Operating Temperature. The vehicle temperature gauge, if equipped and operating, shall be checked to assess temperature. If the temperature gauge indicates that the engine is not at normal operating temperature, the vehicle shall be inspected and shall get a second-chance emission test if it fails the initial test for any criteria exhaust component. Vehicles in overheated condition shall be rejected from testing.

(4) Tire Condition. Vehicles shall be rejected from testing if the tire cords, bubbles, cuts, or other damage are visible. Vehicles shall be rejected that have space-saver spare tires on the drive axle. Vehicles may be rejected that do not have reasonably sized tires. Vehicle tires shall be visually checked for adequate pressure level. Drive wheel tires that appear low shall be inflated to approximately 30 psi, or to tire sidewall pressure, or manufacturer's recommendation.

(5) Ambient Background. Background concentrations of hydrocarbons, carbon monoxide, oxides of nitrogen, and carbon dioxide (HC, CO, NOx, and CO_2, respectively) shall be sampled as specified in §85.2226(b)(2)(iv) to determine background concentration of constant volume sampler dilution air. The sample shall be taken for a minimum of 15 seconds within 120 seconds of the start of the transient driving cycle, using the same analyzers used to measure tailpipe emissions except as provided in §85.2221(f)(3). Average readings over the 15 seconds for each gas shall be recorded in the test record. Testing shall be prevented until the average ambient background levels are less than 20 ppm HC, 30 ppm CO, and 2 ppm NOx, or outside ambient air levels (not influenced by station exhaust), which ever are greater.

(6) Sample System Purge. While a system is in operation, the CVS shall continuously purge the CVS hose between tests, and the sample system shall be continuously purged when not taking measurements.

(7) Negative Values. Negative gram per second readings shall be integrated as zero and recorded as such.

(c) Equipment Positioning and Settings

(1) Purge Equipment. **NOT APPLICABLE** If an evaporative system purge test is to be performed:

(i) The evaporative canister shall be checked unless the canister is inaccessible. A missing or obviously damaged canister shall result in failure of the visual evaporative system check.

(ii) The evaporative system shall be visually inspected for the appearance of proper hose routing and connection of hoses, unless the canister is inaccessible. If any evaporative system hose is disconnected, then the vehicle shall fail the visual evaporative system check. All hoses disconnected for the test shall be reconnected after a purge flow test is performed.

(iii) The purge flow measurement equipment shall be connected in series between the evaporative canister and the engine, preferably on the canister end of the hose. For vehicles equipped with a service port for evaporative functional testing, the measurement equipment shall be connected to the port.

(2) Roll Rotation. The vehicle shall be maneuvered onto the dynamometer with the drive wheels positioned on the dynamometer rolls. Prior to test initiation, the rolls shall be rotated until the vehicle laterally stabilizes on the dynamometer. Drive wheel tires shall be dried if necessary to prevent slippage during the initial acceleration.

(3) Cooling System. Testing shall not begin until the test-cell cooling system is positioned and activated. The cooling system shall be positioned to direct air to the vehicle cooling system, but shall not be directed at the catalytic converter.

(4) Vehicle Restraint. Testing shall not begin until the vehicle is restrained. Any restraint system shall meet the requirements of §85.2226(a)(5)(ii). In addition, the parking brake shall be set for front wheel drive vehicles prior to the start of the test.

(5) Dynamometer Settings. Dynamometer power absorption and inertia weight settings shall be automatically chosen from a Division supplied electronic look-up table that will be referenced based upon the vehicle identification information obtained in (a)(l). Vehicles not listed shall be tested using default power absorption and inertia settings as follows:

DYNAMOMETER DEFAULT SETTINGS

vehicle type	number of cylinders	track road load horsepower	test inertia weight
All	3	12:1	2000
All	4	12.8	2500
All	5	14.5	3000
All	6	14.5	3000
LDGV	8	16.2	3500
LDGT	8	17.7	4000

vehicle type	number of cylinders	track road load horsepower	test inertia weight
LDGV	10	16.2	3500
LDGT	10	19.2	4500
LDGV	12	17.7	4000
LDGT	12	20.7	5000

(6) Exhaust Collection System. The exhaust collection system shall be positioned to insure complete capture of the entire exhaust stream from the tailpipe during the transient driving cycle. The system shall meet the requirements of §85.2226(b)(2).

(d) Vehicle Conditioning

(1) Second-chance Retest. A vehicle shall get a second-chance emission test if it fails the initial test and all criteria exhaust components are at or below 2.0 times the applicable standards.

(2) Program Evaluation. **NOT APPLICABLE** Vehicles being tested for the purpose of program evaluation under §51.353(c) shall receive two full transient emission tests (i.e., a full 240 seconds each). Results from both tests and the test order shall be separately recorded in the test record. Emission scores and results provided to the motorist may be from either test.

(3) Discretionary Preconditioning. Any vehicle may be preconditioned using any of the following methods:

(i) Non-loaded Preconditioning. Increase engine speed to approximately 2500 rpm, for up to 4 minutes, with a tachometer.

(ii) Loaded Preconditioning. Drive the vehicle on the dynamometer at 30 miles per hour for up to 240 seconds at road-load.

(iii) Transient Preconditioning. After maneuver the vehicle onto the dyno, drive a transient cycle consisting of speed, time, acceleration, and relative load as determined by the division.

(e) Vehicle Emission Test Sequence

(1) Transient Driving Cycle. The vehicle shall be driven over the following cycle:

Time	Speed	Time	Speed	Time	Speed	Time	Speed	Time	Speed

Time	Speed	Time	Speed	Time	Speed	Time	Speed	Time	Speed
0	0	48	25.7	96	0	144	24.6	192	54.6
1	0	49	26.1	97	0	145	24.6	193	54.8
2	0	50	26.7	98	3.3	146	25.1	194	55.1
3	0	51	27.5	99	6.6	147	25.6	195	55.5
4	0	52	28.6	100	9.9	148	25.7	196	55.7
5	3	53	29.3	101	13.2	149	25.4	197	56.1
6	5.9	54	29.8	102	16.5	150	24.9	198	56.3
7	8.6	55	30.1	103	19.8	151	25	199	56.6
8	11.5	56	30.4	104	22.2	152	25.4	200	56.7
9	14.3	57	30.7	105	24.3	153	26	201	56.7
10	16.9	58	30.7	106	25.8	154	26	202	56.3
11	17.3	59	30.5	107	26.4	155	25.7	203	56
12	18.1	60	30.4	108	25.7	156	26.1	204	55
13	20.7	61	30.3	109	25.1	157	26.7	205	53.4
14	21.7	62	30.4	110	24.7	158"	27.3	206	51.6
15	22.4	63	30.8	111	25.2	159	30.5	207	51.8
16	22.5	64	30.4	112	25.4	160	33.5	208	52.1
17	22.1	65	29.9	113	27.2	161	36.2	209	52.5
18	21.5	66	29.5	114	26.5	162	37.3	210	53
19	20.9	67	29.8	115	24	163	39.3	211	53.5
20	20.4	68	30.3	116	22.7	164	40.5	212	54
21	19.8	69	30.7	117	19.4	165	42.1	213	54.9

Time	Speed	Time	Speed	Time	Speed	Time	Speed	Time	Speed
22	17	70	30.9	118	17.7	166	43.5	214	55.4
23	14.9	71	31	119	17.2	167	45.1	215	55.6
24	14.9	72	30.9	120	18.1	168	46	216	56
25	15.2	73	30.4	121	18.6	169	46.8	217	56
26	15.5	74	29.8	122	20	170	47.5	218	55.8
27	16	75	29.9	123	20.7	171	47.5	219	55.2
28	17.1	76	30.2	124	21.7	172	47.3	220	54.5
29	19.1	77	30.7	125	22.4	173	47.2	221	53.6
30	21.1	78	31.2	126	22.5	174	47.2	222	52.5
31	22.7	79	31.8	127	22.1	175	47.4	223	51.5
32	22.9	80	32.2	128	21.5	176	47.9	224	50.5
33	22.7	81	32.4	129	20.9	177	48.5	225	48
34	22.6	82	32.2	130	20.4	178	49.1	226	44.5
35	21.3	83	31.7	131	19.8	179	49.5	227	41
36	19	84	28.6	132	17	180	50	228	37.5
37	17.1	85	25.1	133	17.1	181	50.6	229	34
38	15.8	86	21.6	134	15.8	182	51	230	30.5
39	15.8	87	18.1	135	15.8	183	51.5	231	27
40	17.7	88	14.6	136	17.7	184	52.2	232	23.5
41	19.8	89	11.1	137	19.8	185	53.2	233	20
42	21.6	90	7.6	138	21.6	186	54.1	234	16.5
43	23.2	91	4.1	139	22.2	187	54.6	235	13

Time	Speed	Time	Speed	Time	Speed	Time	Speed	Time	Speed
44	24.2	92	0.6	140	24.5	188	54.9	236	9.5
45	24.6	93	0	141	24.7	189	55	237	6
46	24.9	94	0	142	24.8	190	54.9	238	2.5
47	25	95	0	143	24.7	191	54.6	239	0

(2) Driving Trace. The inspector shall follow an electronic, visual depiction of the time/speed relationship of the transient driving cycle (hereinafter, the trace). The visual depiction of the trace shall be of sufficient magnification and adequate detail to allow accurate tracking by the driver and shall permit the driver to anticipate upcoming speed changes. The trace shall also clearly indicate gearshifts as specified in §85.2221(e)(3).

(3) Shift Schedule. For vehicles with manual transmissions,. inspectors shall shift gears according to the following shift schedule:

Shift Sequence *gear*	*Speed miles per hour*	Nominal Cycle Time *seconds*
1- 2	15	9.3
2-3	25	47.0
De-clutch	15	87.9
1-2	15	101.6
2-3	25	105.5
3-2	17	119.0
2-3	25	145.8
3-4	40	163.6
4-5	45	167.0
5-6	50	180.0
De-clutch	15	234.5

Gearshifts shall occur at the points in the driving cycle where the specified speeds are obtained. For vehicles with fewer than six forward gears the same schedule shall be followed with shifts above the highest gear disregarded.

(4) Speed Excursion Limits. Speed excursion limits shall apply as follows:

(i) The upper limit is 2 mph higher than the highest point on the trace within 1 second of the given time.

(ii) The lower limit is 2 mph lower than the lowest point on the trace within 1 second of the given time.

(iii) Speed variations greater than the tolerances (such as may occur luring gear changes) are acceptable provided they occur for no more than 2 seconds on any occasion.

(iv) Speeds lower than those prescribed during accelerations are acceptable provided the vehicle is operated at maximum available power during such accelerations until the vehicle speed is within the excursion limits.

(v) Exceedances of the limits in §85.2221(i) through §85.2221(iii) shall automatically result in a void test. Tests shall be aborted if the upper excursion limits are exceeded. Tests may be aborted if the lower limits are exceeded.

(5) Speed Variation Limits.

(i) A linear regression of feedback value on reference value shall be performed on each transient driving cycle for each speed using the method of least squares, with the best fit equation having the form: $y = mx + b$, where:

(A) y = The feedback (actual) value of speed;

(B) m = The slope of the regression line;

(C) x = The reference value; and

(D) b = The y-intercept of the regression line.

(ii) The standard error of estimate (SE) of y on x shall be calculated for each regression line. A transient driving cycle lasting the full 240 seconds that exceeds the following criteria shall be void and the test shall be repeated:

(A) SE = 2.0 mph maximum.

(B) m = 0.96-1.01.

(C) r^2 = 0.97 minimum.

(D) b = ± 2.0 mph.

(iii) A transient driving cycle that ends before the full 240 seconds that exceeds the following criteria shall be void and the test shall be repeated:

(A) SE **= (NOT APPLICABLE)**

(B) m **= (NOT APPLICABLE)**

(C) r^2 **= (NOT APPLICABLE)**

(D) b **= (NOT APPLICABLE)**

(6) Distance Criteria. The actual distance traveled for the transient driving cycle and the equivalent vehicle speed (i.e., roll speed) shall be measured. If the absolute difference between the measured distance and the theoretical distance for the actual test exceeds 0.05 miles, the test shall be void.

(7) Vehicle Stalls. Vehicle stalls during the test shall result in a void and a new test. More than 3 stalls shall result in test failure.

(8) Dynamometer Controller Check. For each test, the measured horsepower, and inertia if electric simulation is used, shall be integrated from 55 seconds to 81 seconds (divided by 26 seconds), and compared with the theoretical road-load horsepower (for the vehicle selected) integrated over the same portion of the cycle. The same procedure shall be used to integrate the horsepower between 189 seconds to 201 seconds (divided by 12 seconds). The theoretical horsepower shall be calculated based on the observed speed during the integration interval. If the absolute difference between the theoretical horsepower and the measured horsepower exceeds 0.5 hp, the test shall be void. Alternate error checking methods may be used if shown to be equivalent and approved by the division.

(9) Inertia Weight Selection. Operation of the inertia weight selected for the vehicle shall be verified as specified in §85.2226(a)(4)(iii). For systems employing electrical inertia simulation, an algorithm identifying the actual inertia force applied during the transient driving cycle shall be used to determine proper inertia simulation. For all dynamometers, if the observed inertia is more than 1 % different from the required inertia, the test shall be void.

(10) CVS Operation. The CVS operation shall be verified for each test for a CFV-type CVS by measuring either the absolute pressure difference across the venturi or measuring the blower vacuum behind the venturi for minimum levels needed to maintain choke flow for the venturi design. The operation of an SSV-type CVS shall be verified throughout the test by monitoring the difference in pressure between upstream and throat pressure. The minimum values shall be determined from system calibrations. Monitored pressure differences below the minimum values shall void the test.

(11) Fuel Economy. For each test, the health of the overall analysis system shall be evaluated by checking a test vehicle's fuel economy for reasonableness, relative to upper and lower limits, representing the range of fuel economy values normally encountered for the test inertia and horsepower selected. For each inertia selection, the upper fuel economy limit shall be determined using the lowest horsepower setting typically selected for the inertia

weight, along with statistical data, test experience, and engineering judgment. A similar process for the lower fuel economy limit shall be used with the highest horsepower setting typically selected for the inertia weight. For test inertia selections where the range of horsepower settings is greater than 5 horsepower, at least two sets of upper and lower fuel economy limits shall be determined and appropriately used for the selected test inertia. Tests with fuel economy results in excess of 1.5 times the upper limit shall result in a void test.

(f) **Emission Measurements**

(1) Exhaust Measurement. The emission analysis system shall sample and record dilute exhaust HC, CO, CO_2, and NOx during the transient driving cycle as described in §85.2226(c).

(2) Purge Measurement. **NOT APPLICABLE** The analysis system shall sample and record the purge flow in standard liters per second and total volume of flow in standard liters over the course of the actual driving cycle as described in - §85.2227(b).

(3) Integrity Measurement. The analysis system shall measure and record the integrity of the fuel cap as described in §85.2227(c).

Evaporative System Pressure Test Procedures NOT APPLICABLE

(a) General Requirements

(1) The on-vehicle pressure tests described in §85.2222(c) and (d) shall be performed after any tailpipe emission test to be performed on a vehicle. Fuel cap tests described in §85.2222(e).and (f) may be performed before or after the tailpipe emission test.

(2) The pressure test shall be conducted in a manner that minimizes changes in temperature, since pressure measurements are affected by changes in the vapor space temperature.

(3) The Look-up Table identifies which cm-vehicle pressure test to perform on a given vehicle. Vehicles receiving the canister end pressure test specified in §85.2222(c) do not need to receive any other pressure tests. Vehicles receiving the feel inlet pressure test specified in §85.2222(d) should also be given one of the fuel cap pressure tests specified in §§85.2222(e) and (f).

(4) Alternative procedures may be used if they are shown to be equivalent or better to the satisfaction of the Division. Any damage done to the evaporative emission control system during this test shall be repaired.

(b) Pre-inspection and Preparation

(1) The evaporative canister(s) shall be visually checked to the degree practical. A missing or obviously damaged canister(s) shall fail the visual evaporative system check.

(2) The evaporative system hoses shall be visually inspected for the appearance of proper routing, connection, and condition, to the degree practical. If any evaporative system

hose is misrouted, disconnected, or damaged, the vehicle shall fail the visual evaporative system check.

(3) If the fuel cap is missing, obviously defective or the wrong style cap for the vehicle, the vehicle shall fail the visual evaporative system check.

(c) Canister-End Pressure Test NOT APPLICABLE

(1) Equipment Set-up. Test equipment shall be connected to the fuel tank canister hose at the canister end. The fuel cap shall be checked to ensure that it is properly, but not excessively tightened, and shall be tightened if necessary.

(2) Pressure Value. The system shall be pressurized to 14 ± 0.5 inches of water without exceeding 26 inches of water system pressure.

(3) Stability. Close off the pressure source, seal the evaporative system and monitor pressure decay for up to two minutes.

(4) Depressurization. Loosen the fuel cap after a maximum of two minutes and monitor for a sudden pressure drop, indicating that the fuel tank was pressurized.

(5) Reconnection. The inspector shall carefully ensure that all items disconnected or loosened in the course of the test are properly reconnected at the conclusion of the test.

(d) Fuel Inlet Pressure Test NOT APPLICABLE

(1) Equipment Set-up. The vapor vent line(s) from the fuel tank to the canister(s) shall be clamped off as close to the canister(s) as practical without damaging evaporative system hardware. If the line(s) cannot be clamped (for example a rigid line), they shall be removed at the canister(s) and capped or plugged. Dual fuel tanks shall be checked individually if pressurizing from the fill pipe interface of only one fuel tank cannot access the complete vapor control system. A fuel inlet adapter, as specified in §85.2227(c), appropriate to the style of fuel inlet on the vehicle (not the fuel cap on the vehicle) shall be selected based on a software prompt and shall be installed on the vehicle's fuel inlet.

(2) Pressure Value. The fuel tank shall be pressurized to a value at or slightly above the minimum test pressure specified in the Look-up Table.

(3) Stability. Pressure stability shall be maintained for a period of 10 seconds prior to the start of the pressure decay measurement. Pressure shall not increase by more than 0.5 inches of water during the first 20 seconds of the decay measurement. Alternate definitions of stability may be proposed by the state and approved by the Administrator provided they minimize the risk of false results.

(4) Volume Compensation. (Optional) Pressure decay measurements are affected by the vapor volume (fuel tank level) in the fuel tank. Volume-compensated pressure decay measurements will increase test repeatability, and are therefore recommended. Measure the volume-compensated pressure decay for up to 120 seconds after stability is achieved, using the equation in §85.2222(d)(5) This equation is based on normalizing the

pressure decay measurements to a vapor volume of 50 liters. The Division may approve other methods of compensation for differences in fuel tank vapor volume.

(5)

$$P = P_0 * K \left(t * \frac{V}{V_S} \right)$$

Where:

P = Pressure, in inches of water at time t, compensated for differences in fuel tank vapor space volume.

P_0 = The stabilized pressure at the start of the decay portion of the pressure test, in niches of water.

k = A constant derived from curve fitting the pressure/time data from the decay portion of the pressure test, using the equation:

P = $P_0 * k^t$

t = Time measured from the start of the decay portion of the pressure test, in seconds.

V_s = Reference volume of the fuel vapor space, 50 liters.

V = Volume of the fuel vapor space, in liters, calculated using the following equation:

$$V = \left(P_b * 13.6 + \frac{ÆP}{2} \right) * \frac{ÆV}{(ÆP + ÆP_l)}$$

Where:

P_b = Barometric pressure, in inches of Hg.

ÆP = Pressure increase during the fill period, in inches of water.

ÆV = The flow meter measured volume of gas which pressurizes the vapor space, in liters at 20 C and 1 atmosphere.

ÆPL = The loss in pressure due to the presence of a leak during the fill process, in inches of water.

Evaporative System Pressure Test Procedures – Fuel Inlet Pressure Test Equation

$$\text{ÆP}_L = \sum_{t=0}^{t} P_0\, k^{\left(\frac{\ln P_t - \ln P_0}{\ln k} - 1\right)} - P_0 * k^{\left(\frac{\ln P_t - \ln P_0}{\ln k} - 1\right)}$$

Where:

_ = Summation of the second-by-second pressure loss during the fill period.

P_0 = The stabilized pressure at the start of the decay portion of the pressure test, in inches of water.

k = A constant derived from curve fitting the pressure/time data from the <u>decay</u> portion of the pressure test, using the equation:

P = $P_0 * k^t$

P_t = Pressure values reported in one second intervals during the <u>fill</u> period, in inches of water.

(e) Fuel Cap Leak Test - Pressure Decay Method

(1) The fuel cap shall be removed from the fuel Met and installed on a test rig with a nominal 1 liter head space and be pressurized to 28+1.0 inch of water.

(2) The pressure decay shall be monitored as specified in this Regulation Part F Subpart IV.

(3) The fuel cap shall be replaced on the fuel inlet and tightened appropriately.

(f) **Fuel Cap Leak Test - Flow Rate Method**

(1) The fuel cap shall be removed from the fuel inlet and installed on the flow test device using the adapter appropriate for the fuel cap, as specified in §85.2227(c).

(2) The fuel cap flow rate shall be monitored as specified in this Regulation Part F, Subpart IV.

(3) The fuel cap shall be replaced on the fuel inlet and tightened appropriately.

Colorado Automobile Dealers Transient Mode Test Analyzer System Equipment Specifications

(a) Dynamometer Specifications

(1) <u>General Requirements</u>.

(i) The dynamometer structure (e.g., bearings, rollers, pit plates, etc.) shall accommodate all light-duty vehicles and light-duty trucks up to 8500 pounds GVWR.

(ii) Road load horsepower and inertia simulation shall be automatically selected based on the vehicle parameters in the test record.

(iii) Alternative dynamometer specifications or designs may be proposed to the state and approved based upon a determination that, for the purpose of properly conducting an approved Transient Mode inspection, the evidence supporting such deviations will not cause improper vehicle loading.

(2) Power Absorption.

(i) Coefficients. The coefficients A_V, B_V, and C_V, from vehicle track coast down testing, and referenced in the equations in this section are those specified during new car certification, or as specified by a vehicle class designator determined by the Division. Coefficients shall be calculated to a minimum of five (5) significant digits by the equations specified in §85.2226(a)(2)(i)(A) through §85.2226(a)(2)(i)(C). Power fractions determined from track coast-down data shall be calculated to a minimum of two (2) significant digits as specified in §85.2226(a)(2)(i). In the absence of new car certification coefficients information or a vehicle class designator identifying a power fraction, the default power fractions in §85.2226(a)(2)(i)(J) shall be used.

(A) $A_v = * (TRLHP_{@\ 50\ mph})$ hp/mph

(B) $B_v = * (TRLHP_{@\ 50\ mph})$ hp/mph^2

(C) $C_v = * (TRLHP_{@\ 50\ mph})$ hp/mph^3

(D) Where A_VPF, B_vPF, and C_vPF are power fractions (PF), and indicate the fraction of the total power reflected by each coefficient A_v, B_v, and C_v.

(E) $A_vPF + B_vPF + C_vPF = 1$

(F) Derivation of A_VPF, B_VPF, and C_VPF from known track coast-down curves shall be computed as follows:

(1)

$$A_VPF = \frac{A_V\ (50)}{\{A_V\ (50) + B_V\ (2500) + C_V\ (125{,}000)\}}$$

(2)

$$B_VPF = \frac{B_V\ (2500)}{\{A_V\ (50) + B_V\ (2500) + C_V\ (125{,}000)\}}$$

(3)

$$C_V PF = \frac{C_V\ (125{,}000)}{\{A_V\ (50) + B_V\ (2500) + C_V\ (125{,}000)\}}$$

(4) Default values:

$A_V PF = 0.35$

$B_V PF = 0.10$

$C_V PF = 0.55$

(ii) Vehicle Loading. The true vehicle loading used during the transient driving cycle shall follow the equation in §85.2226(a)(2)(iii) between 10 and 60 mph. The dynamometer

controls shall set the dynamometer loading to achieve the coast-down target time (± 1 second) with the vehicle on the dynamometer using the vehicle-specific inertia test weights. A conversion equation or table of target time versus horsepower for the dynamometer design shall be used. Target time shall be converted to horsepower by the equation §85.2226(a)(2)(iv) or pre-defined horsepower values may be used.

(iii) $TRLHP_{@\ Obmph} = \{A_v * Obmph\} + \{B_v * Obmph^2\} + \{C_v * Obmph^3\}$

Av, Bv, Cv = Coefficients specified in §85.2226(a)(2)(i) for vehicle track coast down curves.

Obmph = Observed mph

TRLHP = Track Road Load Horsepower, which includes loading contributions from the power absorber, parasitic losses, and tire/roll interface losses.

(iv)

Colorado Automobile Dealers Transient Mode Equipment Specifications – Dynamometer Specifications

$$\text{Track Road-Load Horsepower} = \frac{\left[\frac{0.5 * ETW}{32.2}\right] * (V_1^2 - V_2^2)}{550 * ET)}$$

ET = Elapsed time for the vehicle on the road to coast down from 55 to 45 mph, and from 22 to 18 mph

ETW = Inertia weight in pounds

V_1 = Initial velocity in feet/second (i.e., velocity at either 55 or 22 mph)

V_2 = Final velocity in feet/second (i.e., velocity at either 45 or 18 mph)

(v) In practice, the true vehicle loading is derived from equations of "force" (i.e., F=MA). In determining vehicle load on a dynamometer, applied loads in units of force tangential to the roll surface are not dependent on the roll diameter used, whereas applied loads in units of torque of horsepower are dependent on the roll diameter. The equation in §85.2226(a)(2)(vi) may *be* used to convert track road-load horsepower values in §85.2226(a)(2)(iii) to units of force.

(vi) $TRLF_{@\ Obmph} = \{A_f\} + \{B_f * Obmph\} + (C_f * Obmph^2\}$

TRLF = Track Road-Load Force (in units of pounds)

$A_f = 375 * A_V$ (A_V in HP/mph^2 units)

$B_f = 375 * B_V$ (B_V in HP/mph^3 units)

$C_f = 375 * C_V$ (C_V in HP/mph units)

A_f, B_f, C_f = Equivalent force coefficients to the coefficients specified in §85.2226(a)(2)(i) for vehicle track coast down curves.

(vii) Range and Curve of Power Absorber. The range of power absorber at 50 mph shall be sufficient to cover track road-load horsepower (TRLHP) values between 4 and 35 horsepower. The absorption shall be adjustable across the required horsepower range at 50 mph in 0.1 horsepower increments. The accuracy of the power absorber shall be ± 0.25 horsepower or ± 2% of point whichever is greater.

(viii) Parasitic Losses (General Requirements). The parasitic losses in each dynamometer system (such as windage, bearing friction, and system drive friction) shall be characterized between 10 and 60 mph upon initial acceptance. There shall be no sudden discontinuities in parasitic losses below 10 mph. Further, when added to the lowest possible loading of the power absorber (dynamometer motoring is considered a negative load), the parasitic losses must be sufficiently small such that proper loading will occur between 10 and 60 mph for a vehicle with a 50 mph track road-load horsepower value of 4 horsepower. The parasitic horsepower losses shall be characterized either digitally in five mph increments and linearly interpolated in-between, or the data at 10 mph increments shall fit the equation in §85.2226(a)(2)(ix) to within 2 percent of point.

(ix) $PLHP = \{A_p * (Obmph)\} + \{(B_p) * (Obmph)^2\} + \{(C_p) * (Obmph)^3\}$

PLHP = Dynamometer parasitic losses.

A_p, B_p, and C_p are curve coefficients necessary to properly characterize the dynamometer parasitic losses for the inertia weight(s) used.

(x) Parasitic Losses (Low Speed Requirements). The coast down time of the dynamometer between 8 and 12 mph shall be greater than or equal to the value calculated by the equation in §85.2226(a)(2)(xi) when the dynamometer is set for a *2000*-pound vehicle with a track road-load horsepower of 4 horsepower at 50 mph.

(xi) Low Speed Loading. The following procedure is used to determine if a dynamometer system is correctly loading a vehicle with an ETW of 2000 pounds and a TRLHP of 6.0 horsepower at low speeds. Use “default” coefficients from §85.2226(a)(2)(i)(F)(4). Dynamometer must be warmed up prior to this procedure.

(A) Select vehicle with a driven axle weight between 1200 and 1300 pounds (sandbags or other ballast may be used to achieve this weight). Record vehicles driven axle weight to the nearest pound.

(B) Calculate the actual tire/roll interface losses (ATRL) using the following sub procedure.

(1) Determine PLHP for dynamometer system being tested.

(2) Calculate GTRL using equations from §§85.2226(a)(2)(xiii) and (xv) or (xvi).

(3) Calculate IHP using the following formula:

IHP = TRLHP-PLHP-GTRL

(4) Set dynamometer based on IHP calculated is step C above.

(5) Perform dynamometer coast down with vehicle selected in step 1 correctly positioned on rolls. Record coast down time from 12 mph to 8 mph.

(6) Calculate new TRLHP based on 12 mph to 8 mph coast

(7) Calculate actual tire/roll interface losses (ATRL) using the following equation.

ATRL = TRLHP-PLHP-IHP

(C) Using calculated ATRL determine new IHP using the following formula:

IHP = TRLHP-PLHP-ATRL

(D) Set dynamometer based on IHP calculated is step 3 above.

(E) Perform dynamometer coast down with vehicle selected in step 1 correctly positioned on rolls. Record coast down tune from 12 mph to 8 mph.

(F) The maximum, average, and minimum time limits for the on-dynamometer coast-down window at 10 mph shall be calculated by the following equations.

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$$DT_{Maximum\ @10\ mph} = \frac{\left[\frac{0.5 * ETW}{32.17405}\right] * (V_{12}^2 - V_8^2)}{550 * (TRLHP_{@10\ mph})}$$

$$DT_{Average\ @10\ mph} = \frac{\left[\frac{0.5 * ETW}{32.17405}\right] * (V_{12}^2 - V_8^2)}{550 * (TRLHP_{@10\ mph} - 0.088\ HP)}$$

$$DT_{Minimum\ @10\ mph} = \frac{\left[\frac{0.5 * ETW}{32.17405}\right] * (V_{12}^2 - V_8^2)}{550 * (TRLHP_{@10\ mph} + 0.088\ HP)}$$

(xii) Tire/Roll Interface Losses. Generic tire/roll interface losses shall be determined for each dynamometer design used, and applied to obtain proper vehicle loading. A means to select or determine the appropriate generic tire/roll interface loss for each test vehicle shall be employed. Dynamometer design parameters include roll diameter, roll spacing, and roll surface finish. Generic tire/roll interface losses may be determined by the acceptance procedures in §85.2234(b)(4). Alternatively, generic values determined by the division, or by a procedure accepted by the division, may be used. The equation in §85.2226(a)(2)(xiii) may be used to quantify tire/roll interface losses. Coefficients for equation in §85.2226(a)(2)(xiii) shall be calculated to a minimum of five (5) significant digits by the equations specified in §85.2226(a)(2)(xiii)(A) through §85.2226(a)(2)(xiii)(I). Tire loss power fractions determined from track coast-down data shall be calculated to a minimum of two (2) significant digits as specified in §85.2226(a)(2)(xiii)(J). In the absence of new car certification information or a vehicle class designator identifying a tire loss power fraction, the default tire loss power fractions indicated equations §85.2226(a)(2)(xiii)(E) through §85.2226(a)(2)(xiii)(I) shall be used as specified in §85.2226(a)(2)(xiii)(J).

(xiii) $GTRL_{@\ Obmph} = \{A_t * (Obmph)\} + \{B_t * (Obmph)^2\} + \{C_t * (Obmph)^3\}$

$GTRL_{@\ Obmph}$ = Generic Tire/Roll Interface losses at the observed mph

Where: A_t, B_t, and C_t are curve coefficients necessary to properly characterize the tire/roll interface losses.

(A) A_t = * ($GTRL_{@\ 50\ mph}$) hp/mph

(B) B_t = * ($GTRL_{@\ 50\ mph}$) hp/mph2

(C) C_t = * ($GTRL_{@\ 50\ mph}$) hp/mph^3

(D) A_{t8}= * ($GTRL_{@\ 50\ mph}$) hp/mph

(E) B_{t8}= * ($GTRL_{@\ 50\ mph}$) hp/mph2

(F) C_{t8}= * ($GTRL_{@\ 50\ mph}$) hp/mph^3

(G) A_{t20}= * ($GTRL_{@\ 50\ mph}$) hp/mph

(H) B_{t20}= * ($GTRL_{@\ 50\ mph}$) hp/mph2

(I) C_{t20}= * ($GTRL_{@\ 50\ mph}$) hp/mph^3

(J) Where:

(1) A_t, B_t, and C_t are curve coefficients necessary to properly characterize the tire/roll interface losses.

(2) A_{t8}, B_{t8}, and C_{t8} are curve coefficients when using twin 8.625 inch diameter rolls.

(3) A_{t20}, B_{t20}, and C_{t20} are curve coefficients when using twin 20.0 inch diameter rolls.

(4) A_tPF, B_tPF, and C_tPF indicate the fraction of the total tire loss power fraction reflected by each coefficient A_t, B_t, and C_t.

(5) $A_tPF + B_tPF + C_tPF = 1$

(6) Derivation of AtPF, BtPF, and CtPF from known track or dynamometer data shall be computed as follows:

Colorado Automobile Dealers Transient Mode Equipment Specifications – Dynamometer Specifications

$$A_c PF = \frac{A_c (50)}{\{ A_c (50) + B_c (2500) + C_c (125{,}000)\}}$$

$$B_c PF = \frac{B_c (2500)}{\{ A_c (50) + B_c (2500) + C_c (125{,}000)\}}$$

$$C_c PF = \frac{C_c (125{,}000)}{\{ A_c (50) + B_c (2500) + C_c (125{,}000)\}}$$

(xiv) In the absence of new car certification $GTRL_{@\ 50\ mph}$ or a vehicle class designator, the $GTRL_{@\ 50\ mph}$ shall be calculated

(A) by the equation in §85.2226(a)(2)(xv) when using twin 8.625-inch diameter rolls

(B) by the equation in §85.2226(a)(2)(xvi) when using twin 20.0-inch diameter rolls

(xv) For 8.625” dynamometers:

$GTRL_{@\ 50\ mph}$ = (-0.378193) + {(0.0033207) * (DAXWT)}

Where: DAXWT = Axle weight on the drive tires

$GTRL_{@\ 50\ mph}$ = Losses for 8.625 inch diameter roll

(xvi) For 20” dynamometers:

$GTRL_{@\ 50\ mph}$ = (0.241645) + {(0.0020844) * (DAXWT)}

Where: DAXWT = Axle weight on the drive tires

$GTRL_{@\ 50\ mph}$ = Losses for 20.0 inch diameter roll

(xvii) Indicated Horsepower. The power absorption for each test shall be selected at 50 mph. The indicated power absorption (IHP) at 5C mph after accounting for parasitic and generic tire losses shall be determined by the equation in §85.2226(a)(2)(xv).

(xviii) $IHP_{@\ 50\ mph} = TRLHP_{@\ 50\ mph} - PLHP_{@\ 50\ mph} - GTRL_{@\ 50\ mph}$

(xix) In systems where the power absorption is actively controlled, the indicated horsepower at each speed between 0 and 60 mph shall conform 1:0 the equation in §85.2226(a)(2)(xvii). Approximations for a smooth curve with no discontinuities may be used between 0 and 10 mph.

(xx) $IHP_{@\ 0mph} = TRLHP_{@\ 0mph} - PLHP_{@\ 0mph} - GTRL_{@\ 0mph}$

(3) Rolls.

(i) Size and Type. The dynamometer shall be equipped with twin rolls. The rolls shall be coupled side to side. In addition, the front and rear rolls shall be coupled. The dynamometer roll diameter shall be between 8.5 and 21.0 inches. The spacing between the roll centers shall comply with the equation in §85.2226(a)(3)(ii) to within +0.5 inches and *-0.25* inches. The parasitic and generic tire/roll interface losses for the specific roll diameter, spacing, and surface finish used shall be determined as indicated in §85.2226(a)(2)(viii), (a)(2)(ix), and §85.2226(a)(2)(xii) as necessary to properly load vehicles as defined in §85.2226(a)(2)(ii) and §85.2226(a)(2)(iii). The dynamometer rolls shall accommodate an inside track width of 30 inches and an outside track width of at least 100 inches.

(ii) Roll Spacing = (24.375 + D) * SIN 31.5153_

D = dynamometer roll diameter.

Roll spacing and dynamometer roll diameter are expressed in inches.

(iii) Design. The roll size, surface finish, and hardness shall be such that tire slippage on the first acceleration of the transient driving cycle is minimized under all weather conditions; that the specified accuracy of the distance measurement is maintained; and that tire wear and noise are minimized.

(4) Inertia.

(i) Mechanical Inertia Simulation. **NOT APPLICABLE** The dynamometer shall be equipped with mechanical flywheels providing test inertia weights between at least 2000 to 5500 pounds, in increments of no greater than 500 pounds. The tolerance on the base inertia weight and the flywheels shall be within 1 % of the specified test weights. The proper inertia weight for any test vehicle shall be selectable.

(ii) Electric Inertia Simulation. Electric inertia simulation, or a combination of electric and mechanical simulation may be used in lieu of mechanical flywheels, provided that the performance of the electrically simulated inertia complies with the following specifications. Exceptions to these specifications may be allowed upon a determination by the Division that such exceptions would not significantly increase vehicle loading or emissions for the purpose of properly conducting an approved IG 240 test.

(A) System Response. The torque response to a step change shall be at least 90% of the requested change within 100 milliseconds after a step change is commanded by the dynamometer control system, and shall be within 2 percent of the commanded torque by 300 milliseconds after the command is issued. Any overshoot of the commanded torque value shall not exceed 25 percent of the torque value.

(B) Simulation Error. An inertia simulation error (ISE) shall be continuously calculated any time the actual dynamometer speed is above 10 MPH and below 60 MPH. The ISE shall be calculated by the equation in §85.2226(a)(4)(ii)(C), and shall not exceed 1 percent of the inertia weight selected (IWS) for the vehicle under test.

(C) $ISE = (IW_S - I_t) / (IW_S) * 100$

(D) $I_t = I_m +$

Where:

I_t = Total inertia being simulated by the dynamometer (kg)

I_t (lb force) = I_t (kg) * 2.2046

I_m = Base (mechanical inertia of the dynamometer (kg)

V = Measured roll speed (m/s)

F_m = Force measured by the load cell (translated to the roll surface) (N)

F_{rl} = Road load force (N) required by IHP at the measured roll speed (V)

t = Time (sec)

(iii) Inertia Weight Selection. **NOT APPLICABLE** For dynamometer systems employing mechanical inertia flywheels, the test system shall be equipped with a method, independent from the flywheel selection system, that identifies which inertia weight flywheels are actually rotating during the transient driving cycle.

(5) Other Requirements.

(i) Test Distance and Vehicle Speed. The total number of dynamometer roll revolutions shall be used to calculate the distance traveled. Pulse counters may be used to calculate the distance directly if there are at least 16 pulses per revolution. The measurement of the actual roll distance for the composite and each phase of the transient driving cycle shall be accurate to within ±0.01 mile. The measurement of the roll speed shall be accurate to within ±0.1 mph. Roll speed measurement systems shall be capable of accurately measuring a 3.3 mph per second acceleration rate over a one second period with a starting speed of 10 mph.

(ii) Vehicle Restraint. The vehicle shall be restrained during the transient driving cycle. The restraint system shall be designed to minimize vertical and horizontal force on the drive wheels such that emission levels are not significantly affected.

(iii) Vehicle Cooling. The test system shall provide for a method to prevent overheating of the vehicle. The cooling method shall direct air to the cooling system of the test vehicle. The cooling system capacity shall be 5400 ±300

SCFM within 12 inches (30.5 cm) of the intake to the vehicle's cooling system. The cooling system design shall avoid improper cooling of the catalytic converter.

(iv) Four-Wheel Drive. **OPTIONAL** If used, four-wheel drive dynamometers shall insure the application of correct vehicle loading as defined in §85.2226(a)(2) and shall not damage the four-wheel drive system of the vehicle. Front and rear wheel rolls shall maintain speed synchronization within 0.2 mph.

(v) Augmented Braking. **NOT APPLICABLE** Fully automatic augmented braking shall be used from seconds 85 through 95 and after second 223 of the driving cycle. Fully automatic augmented braking may be used in other deceleration periods of the driving cycle with the approval of the Division. During the periods of augmented braking the operator shall be made aware that augmented braking is occurring and shall be trained not to use the vehicle accelerator during these periods. It shall be automatically interlocked such that it can be actuated only while the vehicle brakes are applied. Simultaneous engine acceleration is systematically prevented through periodic quality assurance.

(b) **Constant Volume Sampler**

(1) General Design Requirements.

(i) Venturi Type. A constant volume sampling (CVS) system of the critical flow venturi (CFV), sub-sonic venturi (SSV), or square edged orifice (SEO) type shall be used to collect vehicle exhaust samples. The CVS system and components shall generally conform to the specifications in §86.109-90.

(ii) CVS Flow Size. The CVS system shall be sized in a manner that prevents condensation in the dilute sample over the range of ambient conditions to be encountered during testing. A minimum 325 SCFM CVS system and heated lines or sample conditioning system (dryer) may be used to eliminate condensation and to increase measured concentrations for better resolution. Should the heated sample lines be used, the sample line and components (e.g., filters, etc.) shall be heated to a minimum of 120° F and a maximum of 250°F, which shall be monitored during the transient driving cycle.

(iii) CVS Compressor. The CVS compressor flow capacity shall be sufficient to maintain proper flow in the main CVS venturi with an adequate margin. For CFV CVSs the margin shall be sufficient to maintain choke flow. The capacity of the blower relative to the CFV flow capacity shall not be so large as to create a limited surge margin.

(iv) Materials. All materials in contact with exhaust gas shall be unaffected by and shall not affect the sample (i.e., the materials shall not react with the sample, and neither shall they taint the sample as a result of out gassing). Acceptable materials include stainless steel, Teflon, silicon rubber, and Tedlar.

(v) Alternative Approaches. Alternative CVS specifications, materials, or designs may be allowed upon a determination by the Division, that for the purpose of

properly conducting an approved short test, the evidence supporting such deviations will not significantly affect the proper measurement of emissions.

(2) Sample System.

(i) Sample Probe. The sample probe within the CVS shall be designed such that a continuous and adequate volume of sample is collected for analysis. The system shall have a method for determining if the sample collection system has deteriorated or malfunctioned such that an adequate sample is not being collected, or that the response tune has deteriorated such that the tune correlation for each emission constituent is no longer valid.

(ii) CVS Mixing Tee.

(A) Design and Effect. The mixing tee for diluting the vehicle exhaust with ambient air shall be at the vehicle tailpipe exit as in §86.109-90(a)(2)(iv). The dilution-mixing tee shall be capable of collecting exhaust from all light-duty vehicle and light-duty truck exhaust systems. The design used shall not cause static pressure in the tailpipe to change such that the emission levels are significantly affected. A change of ±1.0 inch of water, or less, shall be acceptable.

(B) Locating Device. The mixing tee shall have a device for positively locating the tee relative to the tailpipe with respect to distance from the tailpipe, and with respect to positioning the exhaust stream from the tailpipe(s) in the center of the mixing tee flow area. The locating device, or the size of the entrance to the tee shall be such that if a vehicle moves laterally from one extreme position on the dynamometer to the other extreme, that mixing tee will collect all of the exhaust sample.

(iii) Dual Exhaust. For dual exhaust systems, the design used shall insure that each leg of the sample collection system maintains equal flow. Equal flow will be assumed if the design of the “Tee” intersection for the dual CVS hoses is a “Y” that minimizes the flow loss from each leg of the “Y,” if each leg of the dual exhaust collection system is approximately equal in length (± 1 foot), and if the dilution area at the end of each leg is approximately equal. In addition, the CVS flow capacity shall be such that the entrance flow velocity for each leg of the dual exhaust system is sufficient to entrain all of the vehicle's exhaust from each tailpipe.

(iv) Background Sample. The mixing tee shall be used to collect the background sample. The position of the mixing tee for taking the background sample shall be within 12 lateral and 12 longitudinal feet of the position during the transient driving cycle, and approximately 4 vertical feet from the floor.

(v) Integrated Sample. A continuous dilute sample shall be provided for integration by the analytical instruments in a manner similar to the method for collecting bag samples as described in §86.109.

(c) **Analytical Instruments**

(1) General Requirements.

(i) The emission analysis system shall automatically sample, integrate, and record the specified emission values for HC, CO, CO_2, and NOx. Performance of the analytical instruments with respect to accuracy and precision, drift, interferences, noise, etc. shall be similar to instruments used for testing under §86 Subparts B, D, and N. Analytical instruments shall perform in this manner in the full range of operating conditions in the system environment.

(ii) Alternative analytic equipment specifications, materials, designs, or detection methods may be allowed upon a determination by the Division, that for the purpose of properly conducting an approved short test, the evidence supporting such deviations will not significantly affect the proper measurement of emissions.

(2) Detection Methods and Instrument Ranges.

(i) Total Hydrocarbon Analysis. A flame ionization detector shall determine total hydrocarbon analysis. If a 325 SCFM CVS is used, the analyzer calibration curve shall cover at least the range of 0 ppmC to 4,000 ppmC. Use of a different CVS flow capacity shall require an adjustment to these ranges. Appropriate documentation supporting any adjustment in ranges shall be available. Such documentation shall also address the ability of any altered ranges to accurately measure all cutpoints, including cutpoints for vehicles older than those specified in §85.2205(a) that may be used in the specific I/M program for which the altered ranges are proposed to be used. The calibration curve must comply with the quality control specifications in §85.2234(d).

(ii) Carbon Monoxide Analysis. CO analysis shall be determined using a non-dispersive infrared analyzer. If a 325 SCFM CVS is used, CO analysis shall cover at least the range of 0 ppm to 20,000 ppm (2%). ppm. Use of a different CVS flow capacity shall require an adjustment to these ranges. Appropriate documentation supporting any adjustment in ranges shall be available. Such documentation shall also address the ability of any altered ranges to accurately measure all cutpoints, including cutpoints for vehicles older than those specified in §85.2205(a) that may be used in the specific I/M program for which the altered ranges are proposed to be used. The calibration curve must comply with the quality control specifications in §85.2234(d).

(iii) Carbon Dioxide Analysis. CO_2 analysis shall be determined using an NDIR analyzer. If a 325 SCFM CVS is used, CO_2 analysis shall cover at least the range of 0 ppm to 80,000 ppm (8%). Use of a different CVS flow capacity shall require an adjustment to these ranges. Appropriate documentation supporting any adjustment in ranges shall be available. Such documentation shall also address the ability of any altered ranges to accurately measure all cutpoints, including cutpoints for vehicles older than those specified in §85.2205(a) that may be used in the specific I/M program for which the altered ranges are proposed to be used. The calibration curve must comply with the quality control specifications in §85.2234(d).

(iv) Oxides of Nitrogen Analysis. NOx analysis shall be determined using chemiluminescence. The NOx measurement shall be the sum of nitrogen oxide and nitrogen dioxide. If a 325 SCFM CVS is used, the NOx analysis shall cover at least the range of 0 ppm to 1000 ppm. Use of a different CVS flow capacity shall require an adjustment to these ranges. Appropriate documentation supporting any adjustment in ranges : shall be available. Such documentation shall also address the ability of any altered ranges to accurately measure all cutpoints, including cutpoints for vehicles older than those specified in this Regulation Part F, that may be used for which the altered ranges are proposed to be used. The calibration curve must comply with the quality control specifications in §85.2234(d).

(3) System Response Requirements. The governing requirement for system response is the ability of the integration system to measure vehicle emissions to within ±5 % of that measured from a bag sample simultaneously collected over the same integration period, on both clean and dirty vehicles. Historically, continuously integrated emission analyzers have been required to have a response time of 1.5 seconds or less to 90% of a step change, where a step change was 60% of full scale or better. System response tunes between a step change at the probe and reading 90% of the change have generally been less than 4-10 seconds. Systems proposed that exceed these historical values shall provide an engineering explanation as to why the slower system response of the integrated system will compare to the bag reading within the specified 5 %.

(4) Integration Requirements.

(i) The analyzer voltage responses, CVS pressure(s), CVS temperature(s), dynamometer speed, and dynamometer power shall be sampled as a frequency of no less than 5 Hertz, and the voltage levels shall be averaged over 1 second intervals.

(ii) The system shall properly tune correlate each analyzer signal, CVS signals and dynamometer signals to the driving trace (test time). The driving trace update rate from the computer shall be at a rate to produce a smooth transition from one data point to another.

(iii) The one-second average analyzer voltage levels shall be converted to concentrations by the analyzer calibration curves. Corrected concentrations for each gas shall be derived by subtracting the pre-test background concentrations from the measured concentrations, according to the method in §85.2205(b). The corrected concentrations shall *be* converted to grams for each second using the equations specified in §85.2205(b) to combine the concentrations with the CVS flow over the same interval. The grams of emissions per test phase shall be determined using the equations in §85.2205(b).

(iv) When multiple analyzers are used for any constituent, the integration system shall simultaneously integrate both analyzers. The integrated values for the lowest analyzer in range shall be used for each second.

(v) For all constituents, the background concentration levels from the lowest range analyzer shall be used, including the case where multiple analyzers may have been used.

(5) Analytical System Design.

(i) Materials. All materials in contact with exhaust gas prior to and throughout the measurement portion of the system shall be unaffected by and shall not affect the sample (i.e., the materials shall not react with the sample, and neither shall they taint the sample as a result of out gassing). Acceptable materials include stainless steel, Teflon, silicon rubber, and Tedlar.

(ii) Bag Ports. All analysis systems shall have provisions for reading a sample bag. A portable pump for sampling such bags is permitted.

(iii) System Filters. The sample system shall have an easily replaceable filter element to prevent particulate matter from reducing the reliability of the analytical system. The filter element shall provide for reliable sealing after filter element changes. If the sample line is heated, the filter system shall also be heated.

(iv) Availability of Intermediate Calculation Variables. Upon request prior to a test, all intermediate calculation variables shall be available to be downloaded to electronic files or hard copy. These variables shall include those that calculate the vehicle emission test results, perform emission analyzer and dynamometer function checks, and perform quality assurance and quality control measurements.

(d) Colorado Automobile Dealers Transient Mode Test Analyzer System Specific Hardware

General Design Requirements.

(i) Computer System. Minimum CPU system to include; 90MHZ Pentium processor, Memory 16MB, Secondary Cache 256 KB, Video Type SVGA, Video Card 2 MB memory, 15′ Color Monitor (drivers aid), Diskette drive A 1.44 MB, Hard-disk drive C 1.6 GB, Parallel Port (1), Serial Port (1), Mouse Port (1), 104 Key Keyboard, Expansion Slots (4). Port configurations noted may not reflect the necessary number or type to support subsystem requirements or options.

(ii) Modem. Minimum requirement. Hayes compatible able to operate at 14.400B M.N.P. level 5. Error correction, Microcom networking protocol (M.N.P.) levels 1-4 with V.42 data compression. M.N.P. level 5 - V.32BIS/V.42BIS.

(iii) Printer. Vehicle Inspection Report. 24 pin impact printer operating at 12 characters per inch and 80 characters per line.

(iv) Printer. Diagnostic Report, (customer option) 24-pin impact printer operating at 12 characters per inch and 80 characters per line.

(v) Printer. Certificate/Sticker. A Standard Register PT-640, thermal transfer printer.

(vi) Barcode Scanner. Symbol Technologies PDF 1000 HV or equivalent.

(1) Fuel cap Tester. An internal or external unit capable of performing either the pressure decay method or flow rate method of fuel cap testing as defined in Evaporative System Test Procedures, sections (e) and (f).

(2) System Security. Access to the analytical system, computer system, official state documents shall be prevented by locked enclosure and monitored by micro switches or other similar means to assure that unauthorized access is denied. Detection of unauthorized access shall result in automatic inspection system lock out.

(3) Manufacturer Options installed to operate independent of an official inspection processes may be utilized and configured into the hardware as necessary. An example would be a CD-ROM for vehicle diagnostics or software supported programs.

Evaporative System Inspection Equipment

(a) General Requirements

(1) Equipment Design. Automated and computerized test systems shall be used for the evaporative system tests. Pass/fail decisions shall be made automatically. The systems shall be tamper resistant and designed to avoid damage to the vehicle during installation, testing, and removal.

(2) Alternative Systems. Alternative purge or pressure test equipment, specifications, materials, or designs, may be proposed and approved upon a determination by the division that, for the purpose of properly conducting an approved Transient Mode test, the evidence supporting such deviations will not appreciably or adversely affect the proper determination of system integrity, the proper measurement of purge, or the proper operation of the vehicle.

(b) Evaporative Purge System NOT APPLICABLE

(1) General Requirements. The evaporative purge analysis system shall measure the instantaneous purge flow in standard liters/minute, and shall compute the total volume of the flow in standard liters over the transient driving cycle.

(2) Specifications. The purge flow measuring system shall comply with the following requirements.

(i) Flow Capacity. A minimum of 50 liters per minute.

(ii) Pressure Drop. Maximum of 16 inches of water at 50 liters per minute for the complete system including hoses necessary to connect the system to the vehicle.

(iii) Totaled Flow. 0 to 100 liters of volume

(iv) Response Time. 410 milliseconds maximum to 90% of a step change between approximately 2 and 10 liters per minute measured with air.

(v) Accuracy.

(A) ±2.0 liters per minute between 10 and 50 liters per minute (rate)

(B) ±0.15 liters per minute between 0 and 10 liters per minute (rate)

(C) ±4% of 50 standard liters total flow volume between 10 and 50 liters total flow volume over one minute.

(D) ±1.5% of 10 standard liters between 0 and 10 liters total volume flow over one minute.

(vi) Noise. The maximum noise shall be less than 0.001 liters per second

(vii) Calibration Gas.Air

(3) Automatic Operation.Vehicle purge flow shall be monitored with a computerized system at a minimum sample rate of 1 Hz, shall automatically capture average (if sampled faster than 1 Hz) second-by-second readings, and shall automatically derive a pass/fail decision. In determining the total volume of flow, the monitoring system shall not count signal noise as flow volume. The test sequence shall be automatically initiated when the transient driving cycle test is initiated.

(4) Adaptability.The purge flow system shall have sufficient adapters to connect in a leak-tight manner with the variety of evaporative systems and hose deterioration conditions in the vehicle fleet. The purge measurement system shall not substantially interfere with purge flow.

(c) Evaporative System Pressure Test Equipment ITEMS 1-4 NOT APPLICABLE

(1) General Requirements.

(i) Pressure Gas. Nitrogen (N2), or equivalent non-toxic, non-greenhouse, inert gas, shall be used for pressurizing the evaporative system.

(ii) Automatic Operation. The process for filling the evaporative system, monitoring compliance, recording data, and making a pass/fail decision shall be automatic. After the determination that the evaporative system has been filled to the specific pressure level, and upon initiation of the test, the pressure level in the evaporative system shall be recorded at a frequency of no less than 1 Hertz until the conclusion of the test.

(iii) Test Abort. The system shall be equipped with an abort system that positively shuts off and relieves pressure. The abort system shall be capable of being activated quickly and conveniently by the inspector should the need arise.

(2) Adapters and Clamps.

(i) Canister Hose Adapters. The system shall have sufficient adapters to connect in a leak-tight manner with the variety of evaporative systems and hose deterioration conditions in the vehicle fleet.

(ii) Fuel Inlet Adapters. Fuel inlet adapters that fit on the vehicles fuel inlet in a manner similar to the fuel cap and designed to admit a pressurized source of gas into the fuel tank shall be used for the fuel inlet pressure test specified in 85.222(d). Inlet specific adapters shall be available for at least 95 percent of the fuel inlets that are used on U.S. light duty vehicles and light duty trucks for the model years Specified in Part F of this Regulation. Varying internal volumes of the adapter assemblies shall not affect the accuracy of the test results. Adapters shall be made available within two years of the introduction of new model year vehicles.

(iii) Hose Clamp. The hose clamp used for the fuel inlet pressure test shall be designed to apply only enough pressure to close the hose without damaging it. The nose of the clamp shall be smooth-surfaced or otherwise designed to avoid abrasion of the vehicle hose.

(3) Pressure Gauge. The device for measuring pressure in the vehicle's evaporative system shall have a minimum range of 0 to 50 inches of water and an accuracy of +-0.3 inches of water (2 % of 15) or better.

(4) Flow Meter. A flow meter with a range of at least 0 to 10 liters per minute and +-5% accuracy shall be used for the measurement of flow.

(5) Fuel Cap Tester. The tester shall provide a visual or digital signal that the required air supply pressure is within the acceptable range and the flow comparison test is ready to be conducted. The tester shall incorporate an upstream maintainable filter. If the tester is battery powered, it must be equipped with an automatic shutoff and a low-battery indicator. A NIST traceable reference passing fuel cap of nominal 52-56 cubic centimeters per minute, and a NIST traceable reference failing fuel cap of nominal 64-68 cubic centimeters per minute shall be supplied with the tester for daily test verification. Leak rate measurements shall be accurate to ±3 cubic centimeters per minute.

(6) Flow Standard. The flow standard shall be a square edged circular orifice with a NIST traceable flow rate that in combination with the comparison circuitry will produce a pass/fail threshold of 60 cubic centimeters at 30 inches of water column. Transducers used in the comparison circuitry shall have accuracy traceable to NIST. The supply pressure may be obtained using room air and any convenient low-pressure source. The tester shall control the supply pressure and prevent over pressurization.

Quality Control Requirements and Acceptance Testing Procedures

(a) General Requirements

(1) Minimums. The frequency and standards for quality control specified here are minimum requirements, unless modified as specified in §85.2234(2). Greater frequency or tighter standards may be used as determined by the Division.

(2) Statistical Process Control. Reducing the frequency of the quality control checks, modifying the procedure or specifications, or eliminating the quality control checks altogether may be allowed if the Division determines, for the purpose of properly conducting an approved short test, that sufficient Statistical Process Control (SPC) data exist to make a determination, that the SPC data support such action, and that taking such action will not significantly reduce the quality of the emission measurements. Should emission measurement performance or quality deteriorate as a result of allowing such actions, the approval shall be suspended, and the frequencies, procedures, specifications, or checks specified here or otherwise approved shall be reinstated, pending further determination by the Division.

(3) Modifications. The Division may modify the frequency and standards contained in this section if found to be impractical.

(b) Dynamometer

(1) Coast Down Check.

(i) The calibration of each dynamometer shall be checked on a weekly basis by a dynamometer coast-down equivalent that in §86.118-78 (for reference see EOD Test Procedures TP-302A and TP-202) between the speeds of 55 to 45 mph, and between 22 to 18 mph. All rotating dynamometer components shall be included in the coast-down check for the inertia weight selected.

(ii) The base dynamometer and the base plus each prime inertia weight flywheel, if any, shall be checked with at least two horsepower settings within the normal range of the inertia weight. For dynamometers that use electrical inertia simulation and have a base inertia outside of the range of 3000 pounds to 4500 pounds, the coast-down check shall be conducted with at least two horsepower settings at the base inertia, and two settings at either 2500 pounds or 4500 pounds, whichever is furthest from the base inertia weight. For both mechanical flywheel dynamometers and electrical inertia simulation dynamometers, the horsepower settings selected shall correspond to a vehicle/engine category that matches the inertia weight selected for the coast-down test. Where the base inertia, or the base inertia plus the smallest flywheel results in a coast-down inertia of less than 2250 pounds, only one horsepower setting is required for the check.

(iii) The coast-down procedure shall be of a self-motoring method. If the difference between the measured coast-down tune and the theoretical coast-down time is greater than ±1 second on the 55 to 45 mph coast-down as calculated by §85.2234(b)(l)(iii)(A) or (B), official testing shall automatically be prevented, and corrective action shall be taken to bring the dynamometer into calibration. Official testing shall also automatically be prevented, and corrective action shall be taken to bring the dynamometer into calibration, if the difference between the measured coast-down time and the theoretical coast-down time for 22 to 18 mph is outside of the time window calculated by §85.2234(b)(l)(iii)(C) or (D). For tests using inertia weights of 8500 lbs. and above, if the difference between the measured coast-down time and the theoretical coast-down time is outside of the time window calculated by §85.2234(b)(l)(iii)(O) or (D) for the 22 mph to the 18 mph

coast-down when substituting 0.27 HP for the allowable force-error (equivalent to 5.0 pounds-force at 20 mph), official testing shall automatically be prevented, and corrective action shall be taken to bring the dynamometer into calibration.

(A) The off-dynamometer target coast-down time at 50 mph ($DBT_{@50\ mph.g}$) for dynamometers with 8.265-inch rolls shall be calculated as follows.

Transient Mode Test Quality Control Requirements and Acceptance Testing Procedures

$$DET_{@\ 50\ mph\ -\ 8} = \frac{\left(\frac{0.5\ *\ ETW}{32.2}\right) * (V_{55}^2 - V_{45}^2)}{550\ *\ (TRLHP_{@\ 50\ mph} - GTRL_{@\ 50\ mph\ -\ 8})}$$

(B) The off-dynamometer target coast-down time at 50 mph ($DBT_{@50\ mph\text{-}2o}$) for dynamometers with 20.0-inch rolls shall be calculated as follows.

Transient Mode Test Quality Control Requirements and Acceptance Testing Procedures

$$DET_{@\ 50\ mph\ -\ 20} = \frac{\left(\frac{0.5\ *\ ETW}{32.2}\right) * (V_{55}^2 - V_{45}^2)}{550\ *\ (TRLHP_{@\ 50\ mph} - GTRL_{@\ 50\ mph\ -\ 20})}$$

(C) The maximum and minimum time limits for the off-dynamometer coast-down window at 20 mph ($DTMax_{@20\ mph\text{-}8}$, $DTMin_{@20\ mph\text{-}8}$) for dynamometers with 8.265-inch rolls shall be calculated by the following equations. The TRLHP and GTRL used in these calculations shall be determined from the same vehicle/engine category used to determine the 50 mph off-dynamometer target coast-down time. If the calculated maximum value ($DTMax_{@20\ mph\text{-}8}$) exceeds twice the target value calculated for a specific vehicle/engine category ($DT\ Ave_{@20\ mph\text{-}8}$),or if the maximum value is a negative number, a value equal to twice the target value shall be substituted for the maximum time limit.

Transient Mode Test Quality Control Requirements and Acceptance Testing Procedures

$$DT_{Max\,@\,20\,mph\,-\,8} = \frac{\left[\dfrac{0.5 * ETW}{32.2}\right] * (V_{22}^2 - V_{18}^2)}{550 * (TRLHP_{@\,20\,mph} - GTRL_{@\,20\,mph\,-\,8} - 0.17\,HP)}$$

$$DT_{Ave\,@\,20\,mph\,-\,8} = \frac{\left[\dfrac{0.5 * ETW}{32.2}\right] * (V_{22}^2 - V_{18}^2)}{550 * (TRLHP_{@\,20\,mph} - GTRL_{@\,20\,mph\,-\,8})}$$

$$DT_{Min\,@\,20\,mph\,-\,8} = \frac{\left[\dfrac{0.5 * ETW}{32.2}\right] * (V_{22}^2 - V_{18}^2)}{550 * (TRLHP_{@\,20\,mph} - GTRL_{@\,20\,mph\,-\,8} + 0.17\,HP)}$$

(D) The maximum and minimum time limits for the off-dynamometer coast-down window at 20 mph ($DTMax_{@20mph-20}$, $DTMin_{@20\,mph-20}$) for dynamometers with 20.0-inch rolls shall be calculated by the following equations. The TRLHP and GTRL used in these calculations shall be determined from the same vehicle/engine category used to determine the 50 mph off-dynamometer target coast-down time.

Transient Mode Test Quality Control Requirements and Acceptance Testing Procedures

$$DT_{Max\ @\ 20\ mph\ -\ 20} = \frac{\left[\frac{0.5\ *\ ETW}{32.2}\right] * (V_{22}^2 - V_{18}^2)}{550\ *\ (TRLHP_{@\ 20\ mph} - GTRL_{@\ 20\ mph\ -\ 20} - 0.17\ HP)}$$

$$DT_{Min\ @\ 20\ mph\ -\ 20} = \frac{\left[\frac{0.5\ *\ ETW}{32.2}\right] * (V_{22}^2 - V_{18}^2)}{550\ *\ (TRLHP_{@\ 20\ mph} - GTRL_{@\ 20\ mph\ -\ 20} + 0.17\ HP)}$$

(E) Where:

$DET_{@\ 50\ mph\text{-}dd}$ = Off-dynamometer target coast-down time (seconds) at 50 mph for a dynamometer with a roll diameter corresponding to the designator “dd”

$DT_{Max@20\ mph\text{-}dd}$ = Upper off-dynamometer target coast-down time limit (seconds) at 20 mph for a dynamometer with a roll diameter corresponding to the designator “dd”

$DT_{Ave\ @20\ mph\text{-}dd}$ = Off-dynamometer target coast-down time (seconds) at 20 mph for a dynamometer with a roll diameter corresponding to the designator “dd”

$DT_{Min\ @\ 20\ mph\text{-}dd}$ = Lower off-dynamometer target coast-down time limit (seconds) at 20 mph for a dynamometer with a roll diameter corresponding to the designator “dd”

$TRLHP_{@\ 50\ mph}$ = Track Road Load Horsepower at 50 mph for a specific vehicle engine category selected for the coast down check.

$TRLHP_{@\ 20\ mph}$ = Track Road Load Horsepower at 20 mph for the corresponding specific vehicle engine category selected for the 50 mph coast down check.

$GTRL_{@\ 50\ mph\text{-}dd}$ = Generic Tire/Roll Horsepower loss at 50 mph for a dynamometer with “dd” roll size, and corresponding to the specific vehicle engine category selected for the 50 mph coast down check.

$GTRL_{@\ 20\ mph\text{-}dd}$ = Generic Tire/Roll Horsepower loss at 20 mph for a dynamometer with “dd” roll size, and corresponding to the specific vehicle engine category selected for the 50 mph coast down check.

ETW = Equivalent Test Weight (i.e., inertia weight) in pounds corresponding to the specific vehicle engine category selected for the 50 mph coast down check.

Vxx^2 = Velocity in feet per second corresponding to the mph value “xx”

0.17 HP = Horsepower representation of an allowable force-error of 3.3 pounds-force at 20 mph. This allowable force-error is approximately equivalent to a ± 2-second tolerance in the off-dynamometer target coast-down time at 50 mph for a dynamometer with 8.625” rolls when using a TRLHP computed from the EPA on-dynamometer target coast-down time. This force-error is approximately equivalent 1:0 a ± 1.25-second tolerance in the off-dynamometer target coast-down time at 50 mph for a dynamometer with 20.0' rolls.

(iv) The clock used to check the coast-down time shall be accurate to 0.1 percent of reading between 10 and 1000 seconds with a resolution of 0.01 seconds.

(v) The results of each dynamometer coast-down check performed shall be automatically computed and recorded on electronic media with a date and time stamp.

(2) Roll Speed. Roll speed and roll counts shall be checked each operating day by an independent means (e.g., photo tachometer). Deviations of greater than ±0.2 mph or a comparable tolerance in roll counts shall require corrective action. Alternatively, a redundant roll speed transducer independent of the primary transducer may be used in lieu of the daily comparison. Accuracy of redundant systems shall be checked monthly.

(3) Warm-Up. Dynamometers shall be in a warmed up condition for use in official testing. Warm-up is defined as sufficient operation that allows the dynamometer to meet the coast down time (within 3 seconds) identified for the specific dynamometer during calibration. The reference coast-down time shall be the value for 55 to 45 mph with the lightest inertia weight and lowest horsepower for that weight used during weekly calibrations. Alternatively, the reference coast-down time shall be the value for 22 to 18 mph with the lightest inertia weight and lowest horsepower for that weight used during weekly calibration, with a time standard of +20%. Comparing the measured parasitic losses at least 25 mph to reference values established during calibration may check warm-up.

(4) Acceptance Testing. Upon initial installation and prior to beginning official testing, the performance of each dynamometer and dynamometer design shall be verified for compliance with the requirements in §85.2226(a). Specific acceptance verification requirements are described in §85.2234(b)(4)(i) through §85.2234(b)(4)(v).

(i) Coast Down/Vehicle Loading Check Following Installation. The coast down performance of each dynamometer shall be checked to verify the ability of the

dynamometer and dynamometer load setting system to meet dynamometer target coast down times prior to beginning official testing. The performance shall be checked by the procedure defined in §85.2234(b)(4)(i)(A) through §85.2234(b)(4)(i)(J), or by a comparable procedure approved by the Division.

(A) The dynamometer shall be warmed-up by the dynamometer manufacturer's procedure.

(B) At least three vehicle/engine categories shall be selected from the Look-Up table for vehicle loading. The vehicle/engine categories should cover the range of expected test vehicles.

(C) The dynamometer shall be set for the first vehicle/engine category selected based on the variables used to uniquely index the vehicle engine category (e.g., model year, manufacturer, model, number of cylinders, engine size, and transmission type).

(D) The dynamometer shall be coasted down from 65 mph to 5 mph with the settings pre-selected in §85.2234(b)(4)(i)(C).

(E) The 55 mph to 45 mph, and the 22 mph to 18 mph coast down tunes shall be recorded for the data collected in §85.2234(b)(4)(i)(D).

(F) The dynamometer shall be coasted down from 65 mph to 5 mph after having been adjusted for each of the other two vehicle engine categories, and the 55 mph to 45 mph, and the 22 mph to 1 mph coast down times shall be recorded for each coast-down.

(G) The coast-downs specified in §85.2234(b)(4)(i)(C) through §85.2234 (b)(4)(i)(F) shall be replicated for a total of three coast-down tests for each vehicle inertia category. The replications of the coast-downs for each vehicle engine category shall be run in random sequence.

(H) The off-dynamometer target coast-down tune at 50 mph ($DET_{@\ 50\ mph\text{-}dd}$) for each vehicle/engine category shall be calculated as specified in §85.2234(b)(l)(iii)(A) or (B) for the applicable dynamometer roll size.

(I) The upper and lower off-dynamometer coast-down time limits at 20 mph ($DT_{Max\ @\ 20\ mph\text{-}dd}$, $DT_{Min\ @\ 20\ mph\text{-}dd}$) for each vehicle/engine category shall be calculated as specified in §85.2234(b)(l)(iii)(C) or (D) for the applicable dynamometer roll size.

(J) The dynamometer vehicle loading is considered acceptable if each measured 55 mph to 45 mph coast-down tune for each vehicle/engine category tested is within ±1 second of the off-dynamometer target coast-down time determined in (b)(4)(i)(H) above, and if each measured 22 mph to 18 mph coast-down tune for each vehicle/engine category tested is within the off-dynamometer target coast-down time limits determined in (b)(4)(i)(I) above.

(ii) Vehicle Loading Check of Dynamometer Design. For each dynamometer design used, the Division shall obtain and maintain a report verifying the ability of the dynamometer design to properly load vehicles as specified in §85.2226(a). The dynamometer manufacturer may prepare the report. The report shall identify how each requirement in §8.5.2226(a) is performed by the specific dynamometer design used. In addition, where specific performance levels or characterizations are specified {e.g., §85.2226 (a)(2)(viii), §85.2226(2)(x), §85.2226(4)(ii) and §85.2226(a)(5)}, test data with supporting analysis verifying compliance shall be included. At a minimum, the test data shall include a comparison and analysis of the expected coast-down times versus the actual vehicle on-dynamometer coast-down times for at least three vehicles spanning the range of drive axle weights and horsepower. Actual track coast-down data and curves shall be available for the makes and models of vehicles selected from which the expected coast-down times shall be derived. The analysis shall also graphically compare the track horsepower curves to curves generated from the on-dynamometer coast-down testing. Reasons for variations in time, equivalent to one horsepower, between the expected coast-down times and the actual vehicle on-dynamometer coast-down times, or variations between the curves of more than one horsepower shall be explained in the report.

(iii) Alternative Coast Down/Vehicle Loading Check. This procedure may be used in lieu of the procedures in §85.2234(b)(4)(i). The coast down performance of each dynamometer shall be checked with at least two categories of vehicles to verify the ability of the dynamometer and dynamometer load setting system to meet dynamometer target coast down times. The coast down performance of each dynamometer design used shall be checked with at least 6 categories of vehicles to determine the ability of the dynamometer design to properly load the vehicle over the required speed range as defined in §85.2226(a)(2). The performance of the design shall be checked by the procedure defined §85.2234(b)(4)(ii)(A) through §85.2234(b)(4)(ii)(L), or by a comparable procedure proposed by the Division.

(A) The dynamometer shall be warmed-up by the dynamometer manufacturer's procedure, and the tires and drive train on the test car shall be warmed-up by operating the vehicle at 50 mph for 20 minutes. The tire pressure in the test vehicles shall be at 45 psi.

(B) The dynamometer indicated power (IHP) and inertia weight for the vehicle should be selected for the test vehicle.

(C) The test vehicle shall be coasted down from 65 mph to 5 mph on the dynamometer with the settings pre-selected in §85.2234(b)(4)(i)(B).

(D) The 55 mph to 45 mph, and the 22 mph to 18 mph coast down times shall be recorded for the data collected in §85.2234(b)(4)(i)(C).

(E) The test vehicle shall again be coasted down from 65 mph to *5* mph on the dynamometer with the dynamometer power absorber reset to a load of zero.

(F) A speed versus horsepower equation of the form in §85.2226(a)(2)(iii) shall be determined for the data collected in §85.2234(b)(4)(i)(E).

(G) The test vehicle shall be removed from the dynamometer, and the dynamometer shall be coasted down from 65 mph to 5 mph with the dynamometer power absorber set to a load of zero.

(H) A speed versus horsepower equation of the form in §85.2226(a)(2)(ix) for parasitic losses (PLHP) shall be determined for the data collected in §85.2234(b)(4)(i)(G).

(I) The tire/roll interface losses shall be determined by subtracting the horsepower curve determined in §85.2234(b)(4)(i)(H) from the horsepower curve determined in §85.2234(b)(4)(i)(F). The tire loss curve (GTRL) shall be in the form specified in §85.2226(a)(2)(xiii).

(J) Repeat the steps in §85.2234(b)(4)(i)(B) through §85.2234(b)(4)(i)(I) to obtain a total of three sets of data for each test vehicle. The dynamometer and vehicle may be warmed-up as needed to meet the requirements in §85.2234(b)(4)(i)(A).

(K) For each test vehicle, compute the average 55 mph to 45 mph coast down tune, the average 22 mph to 18 mph coast down time, and the average tire/roll interface loss curve as measured in §85.2234(b)(4)(i)(B) through §85.2234(b)(4)(i)(J).

(L) The dynamometer vehicle loading is considered acceptable if, for each test vehicle, the average values determined in §85.2234(b)(4)(i)(K) are within ±1 second of the 55 mph to 45 mph for the target time specified in §85.2226(a)(2)(ii), are within ±7 percent of the 22 mph to 18 mph that is calculated from §85.2226(a)(2)(iii) and §85.2226(a)(2)(iv), and within ±15 percent of a generic tire/roll loss curve for the category of vehicle.

(iv) Load Measuring Device Check. The load measuring device on each dynamometer shall be checked by a dead-weight method (or equivalent) at least six points across the range of loads used for vehicle testing. Physical checking weights shall be traceable to NIST standards to within ±0.5 percent. Equivalent methods shall document the method used to verify equivalent accuracy. The accuracy of the interpreted value used for calculation or control shall be within ±1 percent of full scale.

(v) Vehicle Inertia Loading. The actual inertia applied to the vehicle by each inertia weight, in combination with the base inertia, shall be verified for each dynamometer to insure compliance with the requirements in §85.2226(a)(4)(i) or §85.2226(a)(4)(ii) as applicable.

(vi) Parasitic loss check between 8 and 12 mph. The coast down tune of each dynamometer between 8 and 12 mph shall be verified for compliance with the requirements of §85.2226(a)(2)(x).

(vii) Speed and Distance Check. The performance of the speed and distance measuring system of each dynamometer shall be verified for compliance with the requirements of §85.2226(a)(5)(i). The ability to resolve acceleration as specified in §85.2226(a)(5)(i) need only be generically verified for the design used. If more than one design is used, each design shall be verified.

(viii) Warm-up System Check. The dynamometer warm-up system shall be checked for compliance with the requirements in §85.2234(b)(3) by conducting a coast down check immediately following completion of the warm-up specified by the dynamometer manufacturer or the system. The design of the warm-up system should be checked across the range of temperatures experience in-use, and particularly at the lower speeds.

(5) Coast-down Times. Following acceptance, 55 to 45 mph, and 22 to 18 mph coast-down times shall be determined for quality control purposes with the vehicle off the dynamometer for each inertia weight and for at least 2 horsepower settings within the normal range of the inertia weight as required in §85.2234(b)(l)(ii). These quality control values shall be determined when the dynamometer has been set to meet either the coast-down target times with the vehicle on the dynamometer (i.e., 55 to 45 mph and 22 to 18 mph), or the equation coefficients. The Division, may however, select different vehicle/engine categories to check coast-down times as in §85.2234(b)(4)(i) for audit purposes.

(c) Constant Volume Sampler

(1) Flow Calibration. The flow of the CVS shall be calibrated at six flow rates upon initial installation, 6 months following installation, and every 12 months thereafter. The flow rates shall include the nominal rated flow-rate and a rate below the rated flow-rate for both critical flow Venturis and subsonic Venturis, and a flow-rate above the rated flow for sub-sonic Venturis. The flow calibration points shall cover the range of variation in flow that typically occurs when testing. A complete calibration shall be performed following repairs to the CVS that could affect flow.

(2) System Check. CVS flow calibration at the nominal CVS design flow shall be checked once per operating day using a procedure that identifies deviations in flow from the true value. A procedure equivalent to that in §86.119(c) shall be used. Deviations greater than ±4% shall result in automatic lockout of official testing until corrected.

(3) Cleaning Flow Passages. The sample probe shall be checked at least once per month and cleaned if necessary to maintain proper sample flow. CVS venturi passages shall be checked once per year and cleaned if necessary.

(4) Probe Flow. The indicator identifying the presence of proper probe flow for the system design (e.g., proportional flow for CFV systems, minimum flow for time correlation of different analyzers) shall be checked on a daily basis. Lack of proper flow shall require corrective action.

(5) Leak Check. The vacuum portion of the sample system shall be checked for leaks on a daily basis and each time the system integrity is violated (e.g., changing a filter).

(6) Bag Sample Check. On a quarterly basis, vehicle exhaust shall be collected in sample bags with simultaneous integrated measurement of the sample. At least one bag each for Phase 1 and for Phase 2 of the transient test cycle shall be conducted. Differences between the two measurement systems greater than 10% shall result in system lockout until corrective action is taken. For the purposes of acceptance testing, the differences shall be no greater than 5 %.

(7) Response Time Check. The response time of each analyzer shall be checked upon initial installation, during each check for compliance with §85.2234(c)(6), after each repair or modification to the flow system that would reasonably be expected to affect the response time, and as determined by the division. The check shall include the complete sample system from the sample probe to the analyzer. Statistical process control shall be used to monitor compliance and establish fit for use limits based on the requirements in §85.2226(c). At a minimum, response time measurements that deviate significantly from the average response time for all CVS systems designed to the same specification in the program shall require corrective action before testing may resume.

(8) Mixing Tee Acceptance Test.

(i) The design of the mixing tee shall be evaluated by running the transient driving cycle on at least two vehicles, representing the high and low ends of engine displacement and inertia. Changes in the static tailpipe pressure with and without CVS, measured on a second-by-second basis within 3 inches of the end of the tailpipe, shall not exceed ±1.0 inch of water.

(ii) The ability of the mixing tee design to capture all of the exhaust as a vehicle moves laterally from one extreme position on the dynamometer to the other extreme shall be evaluated with back-to-back testing of three vehicles, representing the high and low ends of engine displacement and inertia. The back-to-back testing shall be done with the mixing tee at the tailpipe and with an airtight connection to the tailpipe (i.e., the mixing tee will be effectively moved downstream, as in typical FTP testing). The difference in carbon-balance fuel economy between the mixing tee located at the vehicle and the positive connection shall be no greater than 6%.

(iii) The design of the dual exhaust system shall be evaluated with back-to-back testing of three vehicles, representing the high and low ends of engine displacement and inertia, with an airtight connection to the tailpipe (i.e., the mixing tee will be effectively moved downstream, as in typical FTP testing, for these qualification tests). The difference in carbon-balance fuel economy between the two methods shall be no greater than 5%.

(d) Analysis System

(1) Calibration Curve Generation.

(i) Upon initial installation, calibration curves shall be generated for each analyzer. If an analyzer has more than one measurement transducer, each transducer shall be considered as a separate analyzer in the analysis system for the purposes of curve generation and analysis system checks.

(ii) The calibration curve shall consider the entire range of the analyzer as one curve.

(iii) A ten (10)-point equal distribution calibration curve is required of each analyzer. The calibration zero gas shall be used to set the analyzer to zero.

(iv) Gas dividers may be used to obtain the intermediate points for the general range classifications specified.

(v) The calibration curves generated shall be a polynomial of the best fit and no greater than 4th order, and shall fit the data within 2.0% at each calibration point as specified in §86.121-90, §86.122-78, §86.123-78, and §86.124-78.

(vi) Each curve shall be verified for each analyzer with a confirming calibration standard between 40-80% of full scale that is not used for curve generation. Each confirming standard shall be measured by the curve within 2.5%.

(2) Spanning Frequency. The zero and up-scale span points shall be checked at 2 hour intervals following the daily mid-scale curve check specified in §85.2234(d)(4) and adjusted if necessary. If the up-scale span point drifts by more than 2.0% from the previous check or, for the first check performed after the daily calibration check described in §85.2234(d)(4), from the daily check official testing shall be prevented and corrective action shall be taken to bring the system into compliance. If the zero point drifts by more than 2 ppm HC, 1 ppm NOx, 10 ppm CO, or 40 ppm CO_2, official testing shall be prevented and corrective action shall be taken to bring the system into compliance. Or, the unit may be zeroed prior to each test.

(3) Limit Check. The tolerance on the adjustment of the up-scale span point shall be 0.4% of point. A software algorithm to perform the zero and span adjustment and subsequent calibration curve adjustment shall be used. Cumulative software up-scale zero and span adjustments greater than ±10% from the latest calibration curve shall cause official testing to be prevented and corrective action shall be taken to bring the system into compliance.

(4) Daily Calibration Checks. The curve for each analyzer shall be checked and adjusted to correctly read zero using a working zero gas, and an up-scale span gas within the tolerance in §85.2234(d)(3), and then by reading a mid-scale span gas within 2.5% of point, on each operating day prior to vehicle testing. If the analyzer does not read the mid-scale span point within 2.5% of point, the analyzer shall automatically be prevented from official testing. The up-scale span gas concentration for each analyzer shall correspond to approximately 80% of full scale, and the mid-point concentration shall correspond to approximately 15% of full scale.

(5) Weekly NOx Converter Checks. The converter efficiency of the NO_2 to NO converter shall be checked on a weekly basis or as determined by the division. The check shall be equivalent to §86.123-78 (for reference see EOD Form 305-01) except that the concentration of the NO gas shall be in the range of 100-300 ppm. Alternative methods may be used if approved by the Division.

(6) Weekly NO/NOx Flow Balance. The flow balance between the NO and NOx test modes shall be checked weekly or as determined by the division. The check may be combined with the NOx converter check as illustrated in EPA NVFEL Form 305-01.

(7) Monthly Calibration Checks. The basic calibration curve shall be verified monthly by the same procedure used to generate the curve in §85.2234(d)(l), and to the same tolerances.

(8) FID Check.

(i) Upon initial operation, and after maintenance to the detector, each FID shall be checked, and adjusted if necessary, for proper peaking and characterization using the procedures described in SAE Paper No. 70141 or by analyzer manufacturer recommended procedures.

(ii) The response of each FID to a methane concentration of approximately 50 ppm CH4 shall be checked once per month. If the response is outside of the range of 1.00 to 1.30, corrective action shall be taken to bring the FID response within this range. The response shall be computed by the equation in §85.2234(d)(9)(iii).

(iii) Ratio of Methane Response =

(9) Integrator Checks. Upon initial operation, emissions from a vehicle with transient cycle test values between 60% and 400% of the 1984 LDGV standard shall be simultaneously sampled by the normal integration method and by the bag method in each system. The data from each method shall be put into a historical database for determining normal and deviant performance for each test system. Specific deviations between the integrator and bag readings exceeding ±10% shall require corrective action.

(10) Cross-Checks. **NOT APPLICABLE** On a quarterly basis, and whenever gas bottles are changed, each analyzer in a given facility shall analyze a sample of a test gas. The test gas shall be independent of the gas used for the daily calibration check in §85.2234(d)(4), in independent bottles. The same test gas, or gas mixture shall be used for all analyzers. The concentration of the gas shall be one of three values corresponding to approximately 0.5 to 3 times the cut point (in gpm) for 1984 and later model year vehicles for the constituent. One of the three values shall be at the lower end of the range, another shall be at the higher end of the range, and the other shall be near the middle of the range. The values selected shall be rotated in a random manner for each crosscheck. A gas divider may determine the value of the checking sample. The deviation in analysis from the concentration of the checking sample for each analyzer shall be recorded and compared to the historical mean and standard deviation for the analyzers at the network and at all facilities. Any reading exceeding 3 sigma shall cause the analyzer to be placed out of service.

(11) Interference, Laboratory Testing. The design of each CO, CO_2, and NOx analyzer shall be checked for water vapor interference prior to initial service. The interference limits in this paragraph shall apply to analyzers used with a CVS of 700 SCFM or greater. For analyzers used with lower flow rate CVS units, the allowable interference response shall be proportionately adjusted downward.

(i) CO Analyzer. A gas mixture of 4% CO_2 in N_2 bubbled through water with a saturated-mixture temperature of 40°C shall produce a response on the CO analyzer of no greater than 15 ppm at 40°C. Also, a gas mixture of 4 percent CO_2 in N_2 shall produce a response on the CO analyzer of no greater than 10 ppm at 40°C.

(ii) CO_2 Analyzer. A calibration zero gas bubbled through water with a saturated-mixture temperature of 40°C shall produce a response on the CO_2 analyzer of no greater than 60 ppm.

(iii) NOx Analyzer. A calibration zero gas bubbled through water with a saturated-mixture temperature of 40°C shall produce a response on the NOx analyzer of no greater than 1 ppm. Also, a gas mixture of 4 percent CO_2 in either N_2 or air shall produce a response on the NOx analyzer of no greater than 1.0 ppm at 40°C.

(12) Interference — Field Testing. Each CO, CO_2, and NOx analyzers shall be checked for water vapor interference prior to initial service, and on a yearly basis thereafter. The in-field check prior to initial service and the yearly checks shall be performed on a high ambient temperature summer day (or simulated conditions). For analyzers used with lower flow rate CVS units, the allowable interference response shall be proportionately adjusted downward. The allowable interference level shall be adjusted to coincide with the saturated-mixture temperature used. For the CO analyzer, a rejection ratio of 9,000 to 1 shall be used for this calculation. A ratio of 2000 to 1 shall be used for CO_2 analyzers. A ratio of 90,000 to 1 shall be used for NOx analyzers.

(e) **Gases**

Calibration, Working and Span Gases Shall Conform to Regulation 11 Appendix B

(f) **Quality Control Data Files for Individual Test** Systems. In general, quality files control for individual test systems shall include parameters that will. allow the cause for abnormal performance of a test system to be pinpointed to individual systems or components. Test system control charts shall include at a minimum:

(i) Overall number of voided tests

(ii) Number of voided tests by type

(iii) Level of difference between theoretical and measured coast-down times

(iv) Level of difference between theoretical and measured CVS flow

(v) Level of up-scale span change from last up-scale span (not required if software corrections are tracked)

(vi) Level of mathematical or software correction to the calibration curve as a result of an up-scale span change (if used)

(vii) Level of difference between the analyzer response to the daily crosscheck, and the test gas concentration

(viii) Level of difference between the integrated measurements 2nd the bag measurements

(ix) The system response time

(x) Level of the FID CH4 response ratio

(xi) Level of the ambient background concentrations

(xii) The average, median, 10th percentile and 90th percentile of the composite emissions (HC, CO, CO_2, and NOx) measured over the defined periodic basis

(xiii) Average number of passing vehicles, and average number of failing vehicles over the defined periodic basis

(xiv) Level of difference between theoretical or measured values for other parameters measured during quality assurance procedures

Test Report

(a) Acceptance Test Reporting for System Evaluation

(1) Test Types and Standards. The test report shall indicate the types of tests performed on the vehicle and the test standards for each. Test standards shall be displayed to the appropriate number of significant digits as in §85.2205(a). The reported standards shall be the composite test standards.

(2) Test Scores. The test report shall show the scores for each test performed. Test scores shall be displayed to the same number of significant digits as the standards.

(3) Transient Mode Test Scores. The reported score for the Transient Mode shall be in units of grams per mile and shall be selected based upon the following:

(i) If the emissions of any exhaust component of the composite Transient Test are below the applicable standard in Pan F of this regulation, then the vehicle shall pass for that constituent and the composite score shall be reported.

(ii) If the emissions of any exhaust component on the composite Transient Test exceed the applicable standard in Part F of this regulation, but are below the Phase 2 standard, then the vehicle shall pass for that component and the Phase 2 score shall be reported.

Terms

(a) Definitions

(1) Track coast-down target time: The new vehicle certification track coast-down time between 55 and 45 mph.

(2) Road load horsepower: The power required for a vehicle to maintain a given constant speed taking into account power losses due to such things as wind resistance, tire losses, bearing friction, etc.

(3) Tier 1: New gaseous and particulate tailpipe emission standards for use in certifying new light duty vehicles and light duty trucks phased in beginning with the 1994 model year.

(1) CVS hose: The hose, connecting to the tailpipe of the vehicle that carries exhaust and dilution air to the stationary portion of the CVS system.

(1) The Division: Colorado Department of Public Health and Environment, Air Pollution Control Division.

(5)(b) Abbreviations

(1) CFV: Critical flow venturi

(2) CH_4: Methane

(3) CO_2: Carbon dioxide

(4) CO: Carbon monoxide

(5) CRM: Certified reference material

(6) CVS: constant volume sampler

(7) FID: Flame ionization detector

(8) gpm: Grams per mile

(9) GVWR: Gross Vehicle Weight Rating

(10) HC: Hydrocarbons

(11) HDGT: Heavy-Duty Gasoline-powered Truck greater than 8500 pounds GVWR

(12) hp: horsepower

(13) Hz: cycles per second (Hertz)

(14) I/M: Inspection and Maintenance

(15) IW: Inertia weight

(16) LDGT1: Light-Duty Gasoline-powered Truck from 0 to 6000 pounds GVWR

(17) LDGT2: Light-Duty Gasoline-powered Truck from 6001 to 8500 pounds GVWR

(18) LDGV: Light-Duty Gasoline-powered Vehicle

(19) LVW Loaded Vehicle Weight

(20) mph: Miles per hour

(21) NDIR: non-dispersive infrared

(22) NIST: National Institute for Standards and Technology

(23) NO_2: Nitrogen dioxide

(24) NO: Nitrogen oxide

(25) NOx: Oxides of nitrogen

(26) NVFEL: National Vehicle and Fuel Emissions Laboratory

(27) Obmph: Observed dynamometer speed in mph of the loading roller, if rolls are not coupled

(28) PLHP: Parasitic horsepower loss at the observed dynamometer speed in mph

(29) ppm: parts per million by volume

(30) ppmC: parts per million, carbon

(31) psi: Pounds per square inch

(32) RFP: Request for Proposal

(33) RLHP Road Load Horsepower

(34) rpm: revolutions per minute

(1) SCFM: standard cubic feet per minute

(1) SEO: square edged orifice

(37) SPC: Statistical process control

(38) SRM: Standard reference material

(39) SSV: Subsonic venturi

(40) TRLHP: Track road-load horsepower

REGULATION NO. 11

APPENDIX B

STATE OF COLORADO

DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT

COLORADO A.I.R. PROGRAM

STANDARDS AND SPECDICATIONS FOR CALIBRATION/SPAN GAS SUPPLIERS

INCLUDING

GAS REQUIREMENTS FOR THE BASIC AND ENHANCED INSPECTION

TEST PROGRAMS

1997

INTRODUCTION

This appendix B describes the standards and specifications for the suppliers of span and calibration gases to the Colorado A.I.R. Program, including facility requirements and documentation required of potential suppliers.

CONTENTS

“Colorado Approved” Label Samples

SECTION 1 DEFINITIONS

A.I.R.: Colorado's “Automotive Inspection & Readjustment” Program.

ANALYTICAL ACCURACY: The relative percent deviation of the stated concentration of the components of a gas blend from the “true” value as determined by comparison with Colorado A.I.R. Program standards.

(% DEV = STATED CONC - “TRUE” CONC/“TRUE” CONC X 100)

AUDIT GAS: Reference gas standards with direct traceability to NIST and/or EPA, to be used by A.I.R. Program QA/QC personnel.

APCD: Colorado “Air Pollution Control Division”.

AUTHORIZED GAS BLENDER: A blender of precision gas products selected to provide such products pursuant to the requirements of 42-4-306(3)(A)(I)(C).

BALANCE GAS: The balance or makeup gas for Colorado A.I.R. Program gases shall be as follows: for basic program tri-blend span gases, nitrogen shall be the balance gas. For the enhanced I/M240 program standards and span gases, air shall be the balance gas. The balance gas for mixtures containing nitric oxide (NO) shall be nitrogen.

B.A.R.: California “Bureau of Automotive Repair”

BLEND TOLERANCE: Deviation between the requested or nominal concentration and the measured or certified concentration of a gas mixture.

CALIBRATION STANDARD: A precision blended gas used to generate calibration curves, with an analytical accuracy of +/- 1%, traceable to NIST gas standards. (Enhanced Program)

CALIBRATION/SPAN GAS: A blend of carbon monoxide (CO), carbon dioxide (CO_2), and propane, with a balance gas of nitrogen (NO_2), which is used to calibrate the Colorado 94 test analyzers. (Basic program)

CALIBRATION ZERO AIR: The gas used as a diluent for gas dividers or to establish analyzer zero during calibration curve generation. Impurities shall not exceed 0.1 ppm carbon response, 0.5 ppm CO, 1 ppm CO_2, 0.1 ppm NOx, and 1 ppm moisture. Blended air shall have oxygen content between 20.6% and 21%

CALIBRATION ZERO NITROGEN: The gas used as a diluent for gas dividers or to establish analyzer zero during calibration curve generation shall have a minimum purity of 99.997% with impurities not to exceed 0.1 ppm carbon response, 0.5 ppm CO, 1 ppm CO_2, 0.1 ppm NOx, 1 ppm moisture and 0.5 ppm O_2.

CAPSL: Colorado AIR Program Standards Lab.

CDPHE: Colorado Department of Public Health & Environment.

CERTIFIED GAS BLENDER: A blender of precision gas products, approved by the Colorado AIR Program. A certified blender has met or exceeded the requirements set forth by the CDPHE to provide a consistently high quality calibration and span gas to both the Basic and Enhanced Air Program.

CGA: Compressed Gas Association

CRM: Certified Reference Material

DOT: Department of Transportation

FID: HC analyzer using a flame ionization detector

FED FUEL: A mixture of 40% hydrogen (+/- 2%) and 60% helium

FID OXIDIZER: Zero grade air with oxygen content between 20.6% And 21 %

GOLD STANDARDS: NIST traceable air program standards named by EPA at the National Vehicle Fuels and Emission lab (NVFEL), Ann Arbor, Michigan

NIST: National Institute of Standards and Technology

STATE: The State of Colorado

SRM: Standard reference material. The highest integrity gas standard, prepared by, and only available from, NIST.

VETC: Vehicle Emission Technical Center, 15608 East 18th Avenue, Aurora, Colorado 80011.

WORKING SPAN GAS: Gases used in the enhanced I/M240 Air Program for high and mid-scale span checks and/or adjustments as well as analyzer cross-checks. These gases shall have an analytical accuracy of +/- 2%.

WORKING ZERO GAS: Air or nitrogen used in the daily zeroing of enhanced program analyzers. Impurities shall not exceed 1 ppm carbon response, 2 ppm CO, 0.04% C02, 0.3 ppm NOx, and 1% moisture. Air shall have oxygen content between 20.6% and 21%. Nitrogen shall contain a maximum of 0.5% O_2.

SECTION 2 BASIC & ENHANCED IDLE AIR PROGRAM/TECHNICAL REQUIREMENTS

2.0 GENERAL

This section describes the calibration/span gas requirements, specifications for these gases, and types of cylinders allowed. Such specifications shall be included in any request for bids issued pursuant to 42-4-306(3)(a)(I)(c).

2.1 GAS REQUIREMENTS

The following identifies the calibration/span gas blends required for the Colorado basic & enhanced idle AIR Program:

CALIBRATION/SPAN GASES

AIR94LOW

300 ppm	Propane (as THC)
1.0 %	Carbon Monoxide
6.0 %	Carbon Dioxide
Balance	Nitrogen

AIR94MID

1200 ppm	Propane (as THC)
4.0 %	Carbon Monoxide
12.0 %	Carbon Dioxide
Balance	Nitrogen

2.2 GAS BLEND ACCURACIES

The combined errors due to blending and naming of the above calibration/span gases shall not exceed +/- 2% for each component.

2.3 ANALYTICAL ACCURACY

The analytical accuracies for idle air program gases are:

(A) Calibration/span gas: *+/-2%* of nominal value

(B) Audit gases: +/- 1% of nominal value

2.4 BLEND TOLERANCE

Zero blend tolerance is required for basic & enhanced idle AIR Program calibration span gases.

2.5 BLENDER REFERENCE STANDARDS

Each authorized gas blender shall present documentation of it's own internal standards for approval. The state provides two methods for standard documentation:

(I) Blender may prepare a reference cylinder of each gas blend intended for the AIR Program to be named vs. Colorado's gold standards. Cylinder(s) shall be sent to the state for naming and labeling. This standard will become the blender's reference standard for the analysis of production span gases.

NOTE: The associated costs of shipping reference cylinders to and from Colorado will be the responsibility of the blender. No shipping costs will be born by the state.

(II) Blenders certified by the State of California, Bureau of Automotive Repair, may elect to submit copies of their current certification including a listing of all SRM's, CRM's, or other reference gases accepted by bar, as pertaining to the analysis of I/M span gases. BAR acceptance of these standards will be sufficient to obtain approval of same for the AIR Program.

2.6 CYLINDERS

The cylinders to be used in the Colorado 94 analyzers in the field shall be low pressure, non refillable, disposable canisters.

High pressure, refillable cylinders will be used by AIR Program audit/QC teams and, in some cases, by analyzer manufacturers. Approval of span gas in high pressure cylinders will be on an individual basis. (See section 3)

2.7 DISPOSABLE CYLINDERS

(A) Disposable cylinders shall be in accordance with dot specification 39 for non refillable, disposable cylinders. (260 PSIG service pressure, 325 PSIG test pressure, 650 PSIG minimum burst pressure) [CFR Title 49, part 1*78,* Sec. 178.65, Oct 1, 1996]

(B) Nominal size shall not exceed 750 cubic inches +/- 5% (approximately 9 inches inside diameter by 16 inches high, providing an equivalent water capacity of 27 lbs.) As a minimum, cylinders shall contain 7.5 cubic feet of gas blend at 260 PSIG cylinder pressure.

(C) Cylinders shall be designed with an integral stand to facilitate upright storage.

(D) Cylinder outlet shall be CGA 165, 1/4′ SAE flare, 45 degree male. Shutoff valves shall be of the non refillable type.

(E) Cylinders shall be equipped with a safety relief device in accordance with DOT regulations [CFR 49, 173.34,(D), Oct, 1996]. The safety relief device must comply with the requirements of the compressed gas association pamphlet S.1.1, 8th edition, 1994.

(F) Cylinders shall have a built in safety shield to protect the shut off valve.

(G) No material shall be used in cylinder fabrication or assembly, or in cylinder charging equipment, which is incompatible with the gas blend as to cause contamination or degradation.

(H) Blenders must comply with applicable DOT specifications for the shipment of cylinders. [CFR Title 49, volume 2, part 173, subpart B, Oct, 1996].

2.8 HIGH PRESSURE REFILLABLE CYLINDERS

(A) Refillable cylinders must be aluminum and made in accordance with DOT specifications 3AA or 3AL [CFR Tide 49, volume 2, part 178, subpart C, Oct, 1996], whichever is applicable.

(B) All cylinders must comply with applicable DOT Regulations and requirements for safety and shipment. [CFR Title 49, volume 2, part 173, subpart B, Oct, 1996]

2.9 LABELING

(A) Caution labels shall be affixed to all cylinders and shall comply with applicable DOT and OSHA regulations.

(B) “Colorado Approved” labels will be provided by the Colorado AIR Program (section 3) and shall be affixed to the upper portion of the canisters.

2.10 EXPIRATION

Triblend span gas cylinders containing CO, CO_2, and propane in nitrogen, shall have an expiration date of 36 months after date of fill.

2.11 QUALITY ASSURANCE

All gas blenders shall have in place a fully documented and implemented quality assurance program as a prerequisite to certification. This QA program shall include, but not be limited to:

(A) Regular equipment maintenance and calibration, performed in accordance with manufacturer guidelines, as a minimum.

(B) Documentation of the analysis of each batch or lot of gas produced. A copy of the certificate of analysis from each batch or lot shall accompany each approval request.

(C) Blender may choose to retain a cylinder from each batch/lot for internal documentation. However, one cylinder from each batch/lot **must** accompany each request for “Colorado Approved” labels. This sample cylinder will not be returned.

(D) Documentation of maintenance and calibration of equipment and instrumentation shall be made available upon request.

2.12 BREACH OF TERMS

Each contract entered into pursuant to 42-4-306(3)(a)(I)(C), shall authorize the APCD to suspend the blender's authority to supply precision gas products to inspection and readjustment stations, inspection-only facilities, fleet inspection stations, motor vehicle dealer facilities and enhanced inspection centers in the event the gas blender violates the terms of the contract and this appendix B. The APCD may terminate such a suspension once the blender corrects the problems that led to the violation. An on site inspection of the blender's facility by an APCD representative may be required to ensure that the relevant requirements are being observed.

SECTION 3 CALIBRATION/SPAN GAS APPROVAL & LABELING

3.0 GENERAL

Information in this section describes the calibration/span gas approval process as well as the procedure for obtaining “Colorado Approved” labels.

3.1 CALIBRATION SPAN GAS APPROVAL PROCEDURE

Batches or lots of span gas will be produced referencing procedures and specifications contained herein. Authorized blender shall analyze a representative number of cylinders from each batch or lot. Authorized blender shall then request from the CDPHE a number of Colorado approved labels corresponding to the number of cylinders in that batch or lot. The request for labels **must** include:

(I) Analytical report to contain:

(A) Actual analysis of samples in batch

(B) Number of cylinders in batch

(C) Fill date

(D) Number of labels required

(E) Batch or lot number

(II) One representative cylinder from each batch or lot of span gas produced to be verified by analysis and retained for future reference.

NOTE: This sample cylinder will **not** be returned. Cylinder will be archived by the state until the expiration date expires (36 months from fill date). This sample may be analyzed as a spot check or reference gas in matters concerning potential inquiries into batch integrity.

Upon approval, blender will be sent an appropriate number of “Colorado Approved” labels to be affixed to cylinders in that batch or lot.

Samples, along with request for “Colorado Approved” labels, should be sent to: CDPHE

VEHICLE EMISSION TECHNICAL CENTER

15608 E. 18TH AVENUE

AURORA, COLORADO 80011

ATTN: SPAN GAS VERIFICATION PROGRAM

3.2 CALIBRATION/SPAN GAS APPROVAL/HIGH PRESSURE CYLINDERS

Approval of calibration/span gases in high pressure cylinders will be done on an individual basis. Each cylinder seeking approval must be submitted for verification against AIR Program standards. A certificate of analysis shall accompany each cylinder and shall contain the following information:

(A) Cylinder number

(B) Components contained

(C) Analytical results

(D) Analytical accuracy

(E) Statement of traceability

(F) Analysis date

(G) Fill date

Upon approval, blender will be notified that the cylinder is ready for pickup by the purchaser. Approved cylinder, with “Colorado Approved” label attached, may be picked up during normal business hours (8:00 am - 5:00 pm) Monday through Friday. Cylinders shall be sent to the above address.(See 3.1)

3.3 SHIPPING COSTS

Blenders shall provide for the shipping of all cylinders seeking Colorado approval for use in the AIR Program. The pick-up and delivery of individual high pressure cylinders is also the responsibility of the blender and/or the purchaser of that cylinder. These cylinders are expected to be picked-up within 30 days of notification of approval. No costs pertaining to the pick-up or delivery of span gases shall be born by the state.

3.4 LABELING

“Colorado Approved” labels will be provided by the State of Colorado. These labels will include information necessary to track span gases throughout the system as well as identify each cylinder as Colorado approved. Information contained on the label will include:

(A) Blender name

(B) Blending facility

(C) Batch or lot number

(D) Identify “low” (yellow label) or “mid” (white label) SPAN GAS

(E) Fill date

(F) Expiration date

(G) AIR Program number

(H) Bar code containing cylinder tracking information

(For a sample of the “Colorado Approved” labels, see attachment II)

3.5 AIR PROGRAM NUMBER

“Colorado Approved” labels will contain an AIR Program number. Each certified blender will be assigned a letter code that will precede the numbering of batch cylinders. These coded numbers will be generated by the state and assigned to each cylinder as batches of span gas are produced. Cylinder numbers will be held on file for the life span of the cylinder to assist in tracking, auditing and accounting purposes.

SECTION 4 CYLINDER TRACKING & RECALL

4.0 GENERAL

This section describes the method of tracking calibration/span gas throughout the AIR Program area. This system protects the inspection stations and provides for a replacement, in an expedient manner, should a non-conforming calibration/span gas be discovered.

4.1 TRACKING CYLINDERS VIA BAR CODE

Each “Colorado Approved” label will contain a bar code to be scanned whenever a cylinder of calibration/span gas is put into service on a Colorado '94 analyzer or Motor Vehicle Dealer Transient Mode Test Analyzer System. Scanned information will be stored in a file, accessible through a host computer linking all inspection stations. AIR Program QA/QC personnel will be able to locate individual cylinders, track batches of span gas, etc., throughout the program area.

Label bar codes will be generated at the time of batch or lot approval and will contain information necessary to facilitate the tracking process. Blenders are required to continue to track internally, the whereabouts of “Colorado Approved” batches of calibration/span gas prior to retail sale. In the event of a recall of a batch of non-conforming calibration/span gas, the blender, through procedure described herein (see 4.2), will begin recall. In-use calibration/span gas affected will be identified by bar cod; information through system host and replacement procedures will begin.

4.2 RECALL PROCEDURE

In the event a non-conforming cylinder of calibration/span gas is discovered at an AIR Program inspection station, the following recall procedure will begin:

(A) Suspected non-conforming span gas confiscated by AIR Program Q/C personnel;

(B) Cylinder brought to the Colorado AIR Program Standards Lab (CAPSL) for analysis;

(C) Exposed non-conforming cylinder cross referenced by air number go blender and batch;

(D) Archived sample retrieved and analyzed vs. suspected non-conforming cylinder. Blender advised of results;

(E) Through host system, the state identifies whereabouts of any non-conforming cylinders on line. Blender provided with a listing of affected inspection stations;

(F) Blender shall immediately begin recall of all remaining unsold cylinders from batch in question and, simultaneously, begin process of supplying known conforming cylinder(s) to affected inspection stations by overnight service;

(G) A total recall and replacement of all cylinders in affected batch must by completed within 10 days. A detailed report of the recall procedure, and analysis of cause of the non-conforming product entering the system, will to provided to the state within 15 days.

(H) The state may elect to withhold certification of future batches until such time as blender shows problems have been corrected.

(I) The state may also suspend the contract with the blender if information obtained suggests blending procedures were violated, pending a correction of the problems that caused the violation.

Section 5 ENHANCED I/M & IG240 AIR PROGRAM / TECHNICAL REQUIREMENTS

5.0 GENERAL

This section addresses the calibration gases, technical requirements, cylinder specifications and documentation required for I/M & IG/240 testing.

5.1 GASES

Gases used in the calibration and support of I/M & IG240 testing shall conform to the provisions outlined in CFR Title 40, part 86, subpart B, 114, as revised July 1, 1992, for exhaust emission testing. Concentrations for **IM/240** gases are as follows:

5.2 CALIBRATION GASES/CURVE GENERATION

(I) High tri-blends: (+/-1% analytical accuracy)

CO:9000 ppm

C02:3.6%

Propane:600 ppm

Balance:Air

(II) High NOx: (+/-1%)

NOx:450 ppm

Balance:Nitrogen

5.2.1 MID-SCALE CALIBRATION GASES/CURVE CONFORMATION

(I) Mid tri-blend: *(+1-1%)*

CO:4500 ppm

C02:1.8 %

Propane:300 ppm

Balance:Air

(II) Mid NOx tri-blend: (+/-1%)

NOx:225 ppm

Balance:Nitrogen

5.2.2 CALIBRATION ZERO GASES

(I) Calibration zero AIR

HC : < 0.1 ppm

CO : < 0.5 ppm

C02 : < 1.0 ppm

NOx : < 0.1 ppm

Moisture : < 1.0 ppm

02: 20.6 % - 21.0 %

(II) Calibration zero Nitrogen

Purity : 99.997 %

HC : < 0.1 ppm

CO : < 0.5 ppm

CO_2 : < 1.0 ppm

NOx : < 0.1 ppm

Moisture : < 1.0 ppm

O_2 : < 0.5 ppm

5.3 DAILY SPAN GASES

(I) High tri-blend span *(+/-2%* analytical accuracy)

CO : 8000 ppm

C02 : 3.2 %

Propane : 535 ppm

Balance : Air

(II) NOx mid span *(+/-2%)*

NOx : 75 ppm

Balance : Nitrogen

5.4 WORKING ZERO GASES

(I) Working zero AIR

HC : < 0.1 ppm

CO : < 2.0 ppm

CO_2 < 400 ppm

NOx < 0.3 ppm

Moisture < 1.0 ppm

OY2 : 20.6-21.0 %

(II) Working zero Nitrogen

Purity : 99.997%

HC : < 1.0 ppm

CO : < 2.0 ppm

C02 : < 400 ppm

NOx : < 0.3 ppm

Moisture : < 1.0 ppm

02 : < 0.5 ppm

5.5 SUPPORT GASES

A variety of miscellaneous support gases are required for I/M & IG240 testing. Among these are:

GAS	USAGE
Propane : 99.5% (min)	CVS system flow checks
Methane : 50 ppm/AIR	FID check gas
FID Fuel: 40% H2/60% HE	FID burner fuel
N02 : 200 ppm/N2	NOx converter efficiency test gas
AIR : 18%-21%	NOx ozonator gas

5.6 IG240 GASES

Calibration, span, working and support gases required by IG240 systems, are among the gases listed (5.2 thru 5.5). Additional gases of specific concentrations and blend make-up may be required pending final configuration of the IG system.

5.7 CYLINDERS

Calibration and working gas tri or quad-blends used for IM & IG240 testing, must be supplied in aluminum cylinders as well as all no or NOx blends. Other gases may be supplied in steel or aluminum cylinders as appropriate.

High pressure refillable cylinders shall be manufactured in accordance with DOT specifications 3AL or 3AA [CFR Title 49, volume 2, part 178, subpart C, Oct l, 1996], whichever is applicable.

Approved valves and relief devices, appropriate for the intended use, shall be used on all high pressure cylinders. [CFR Title 49, volume 2, subpart B, Sec. 173.124, Oct 1, 1996]

All cylinders shall have appropriate labeling to comply with all DOT regulations concerning transportation and safety.[CFR 49, volume 2, part 173, subpart B, Oct 1, 1996].

5.8 MISCELLANEOUS

A full line of gas products shall be made available to the enhanced AIR Program contractor(s) to insure safe handling and storage of gas cylinders, such as regulators, carts, restraints, and leak detection equipment. The contractor(s), as well as state QA/QC personnel, may also request a variety of gas blends, tri-blends, and other specialty gas products associated with automotive emission testing. Blender must demonstrate the ability to provide the above gases, equipment

and associated products, in order to be designated as an approved blender to the Colorado enhanced AIR Program.

5.9 CERTIFICATES OF ANALYSIS

Each calibration gas, working span gas, and calibration zero gas shall be documented by a certificate of analysis to include; cylinder number, components, analytical results, accuracy, traceability and analysis date. A batch analysis certificate stating purity may document zero grade air and nitrogen. (Zero AIR certificate must also provide documentation of oxygen content.)

The enhanced program contractor(s) must produce documentation of cylinder contents of the above upon request of state QA/QC personnel.

5.9.1 TRACKING CYLINDERS VIA BAR CODE

Each “Colorado Approved” label will contain a bar code to be scanned whenever a cylinder of calibration/span gas is put into service on a Colorado'94 analyzer or Motor Vehicle Dealer Transient Mode Test Analyzer System scanned information will be stored in a file, accessible through a host computer linking all inspection stations. AIR Program QA/QC personnel will be able to locate individual cylinders, track batches of span gas, etc., throughout the program area.

Label bar codes will be generated at the time of batch or lot approval and will contain information necessary to facilitate the tracking process. Blenders are required to continue to track internally, the whereabouts of “Colorado Approved” batches of calibration/span gas prior to retail sale. In the event of a recall of a batch of non-conforming calibration/span gas, the blender, through procedure described herein (see 4.2), will begin recall. In-use calibration/span gas affected will be identified by bar code information through system host and replacement procedures will begin.

SECTION 6 COLORADO APPROVAL PROCESS

6.0 CALIBRATION STANDARDS AND AUDIT GASES

All calibration standards used in the Colorado Enhanced IM & IG240 AIR Program must be submitted by the contractor to the state for approval and labeling as “Colorado Approved”. In addition, all audit gases utilized by AIR Program QA/QC teams will undergo the same verification and/or renaming process that will take place at the Colorado AIR Program standards lab (CAPSL) in Broomfield, Colorado. At CAPSL, each standard and/or audit gas will be read vs. program gold standards, named by EPA's NVFEL, in an effort to tie all primary gases to one source, regardless of manufacturer.

Each calibration standard and audit gas will receive a “Colorado Approved” label displaying the concentration of each major component as determined by analysis comparing such calibration standard or audit gas to the program gold standards. Labeled values are to be used in curve generation by the contractor and by audit teams to verify analyzer accuracy.

6.1 ZERO AIR/OXYGEN CONTENT

On a random basis, cylinders of zero air will be analyzed at CAPSL to verify oxygen content. As previously stated, the oxygen content of artificial blended air shall be 20.6 to 21 %. This is necessary to insure that an air cylinder used as a backup to a zero air generator (zag), will provide air as close to ambient in 02 as possible, should a zag be taken offline. FID response has been shown to be greatly affected by the O_2 content of oxidizer air. Random analysis will provide verification that O_2 content in zero air is within specifications.

SECTION 7 BLENDER FACILITY REQUIREMENTS & DOCUMENTATION

7.0 GENERAL

(A) A gas blender who intends to supply calibration/span gas to the Colorado AIR Program basic inspection stations and/or enhanced program contractor(s), must be selected by the Colorado Department of Public Health & Environment pursuant to 42-4-306(3)(A)(I)(C).

(B) If a company has more than one facility that will be providing gases to Colorado, each must be included in the selection. The selection of one blending facility owned by a company does not imply or impart authority to other facilities within that company to supply precision gas products in Colorado.

(C) The CDPHE shall be notified of a pending sale of a blending facility at least 60 days prior to change of ownership.

(D) Contracts shall be for a one year period, but may be renewed annually.

7.1 CONTRACT PROPOSAL PACKET

The certification request packet shall contain information described in the following paragraphs. Information submitted should be as complete as possible. However, should some information be unavailable, so indicate and provide reasons, therefore, for AIR Program consideration.

7.2 CONFIDENTIAL AND COMMERCIAL INFORMATION

To the extent authorized by 24-72-101, C.R.S., the Colorado Department of Public Health & Environment shall maintain the confidentiality of any information which is included in the blender's bid and which is clearly marked as proprietary or confidential.

7.3 APPLICATION

The following items are to be included in blenders request for air program approved status:

(A) **COVER SHEET** - An application cover sheet must be signed by the President or Chief Financial Officer of the gas blending company.

(B) **BLENDING FACILITY DESCRIPTION**-Provide a complete description of the blending facility to include:

— Facility location

— Physical dimensions of lab and production areas

— Number of employees

— General description of blending facility and procedures

(C) **INSTRUMENTATION** - Provide description of all instrumentation utilized in the blending and analysis of AIR Program calibration/span gases. Provide instrumentation brand, model, type (NDIR, FID, GC, etc.). As well as calibration and maintenance schedules and personnel responsible.

(D) **REFERENCE STANDARDS** - Indicate the cylinder numbers, SRM/CRM numbers, concentrations and expiration dates for each NIST traceable reference standard to be used in the preparation and/or naming of AIR Program gases.

(E) **BUSINESS STATUS REPORT** - Application for certification shall contain information to verify blending facility's status as a bona fide blender of precision gases. Include evidence that applicant is a registered.corporation in Colorado and/or a registered out-of-state corporation.

(F) **DISTRIBUTORS AND MARKETING** - Applicant shall provide a description of expected distribution and marketing plans for providing calibration/span gas to the basic AIR program. Include a current listing of the names, addresses and phone numbers of the distributors used by the applicant. Such information shall be updated as necessary and notification of any change provided to the state in a timely manner. Lists of distributors will be made available to AIR Program inspection stations.

(G) **RECALL OF NON-CONFORMING GASES/BASIC PROGRAM -** Certified blenders shall be responsible for the recall and replacement of non-conforming calibration/span gases. Blenders will be required to replace suspected non-conforming cylinders by overnight service. Should such a discovery extend past a single cylinder to a batch or lot, a total recall of all cylinders will take place. (See section 4).

Applicant shall provide procedures intended for use should such a recall be necessary.

(H) **QUALITY ASSURANCE** - Applicant shall include information regarding internal quality assurance program(s). Provide details of techniques, methodology and documentation utilized in QA program. Include calibration and maintenance schedules for all equipment and instrumentation used.

(I) **SAFETY REGULATIONS** - Certification application must include assurance the applicant is in compliance with all applicable DOT and OSHA regulations and standards.

(J) **LIABILITY** - Provide a copy of product liability insurance demonstrating adequate protection (minimum $300,000) exists for catastrophic failure situations (e.g., cylinder or valve rapture, noxious gas leakage, etc.). Evidence of bonding coverage shall be provided upon request.

APPENDIX B

ATTACHMENT I TO THE CALIBRATION AND SPAN GAS CERTIFICATION PROCEDURES

ATTACHMENT I

PROGRAM CONTACT/ADDRESSES/PHONE NUMBERS

PROGRAM CONTACT; The main contact on matters concerning air program gases, requirements and specifications is:

COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT

VEHICLE EMISSION TECHNICAL CENTER

15608 EAST 18TH AVENUE

AURORA, COLORADO 80011

(303) 364-4135

ATTN: SPAN GAS VERIFICATION PROGRAM

OR

COLORADO AIR PROGRAM STANDARDS LAB

11609 TELLER STREET

BROOMFIELD, COLORADO 80020

(303) 404-0268.

APPENDIX B

ATTACHMENT IITO THE CALIBRATION AND SPAN GAS CERTIFICATION PROCEDURES

Appendix B – Attachment II

ATTACHMENT II

"COLORADO APPROVED" LABEL SAMPLES

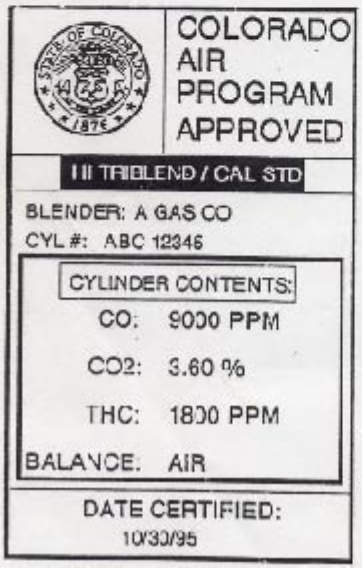
(A) Basic AIR Program:

"AIR94LOW" Label
(yellow w/black)

"AIR94MID" Label
(white w/black)

(B) ENHANCED IM240 AIR Program:

"Triblend Calibration Std"
(white w/black)



"Nox Calibration Std"
(white w/black)