

**SPECIFICATIONS FOR
PRECONDITIONED TWO-SPEED IDLE
VEHICLE EXHAUST GAS ANALYZER SYSTEM
FOR USE IN THE
TEXAS VEHICLE EMISSIONS TESTING
PROGRAM**



**Texas Natural Resource Conservation Commission
Technical Analysis Division**

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1.0 GENERAL

1.1 Design Goals

The specifications that have been developed are designed utilizing a personal computer system. The TX96 analyzer ("the analyzer") system must be capable of performing uniform and consistent emissions tests for the Texas Vehicle Emissions Testing Program ("the Program"). Features of the analyzer include, but not are limited to: vehicle emissions measurements of hydrocarbons (HC), carbon monoxide (CO), carbon dioxide (CO₂) and oxygen (O₂); engine revolutions per minute (RPM) measurements, exhaust dilution determinations, pressure test system for EVAP; data entry; data retrieval tables; a printer (for vehicle inspection reports, for diagnostics and general purpose printouts and an additional printer port; data recording on double sided high density 1.44 megabyte (Mb) 3.5" floppy diskette and a 500 Mb (or greater) hard drive; a modem for "on-line real time" data transmission; CRT information displays to the inspector; bar code (1D or 2D) reader and printing capabilities; and fully menu driven, interactive simple microprocessor controlled operation. The analyzer should have the flexibility of adding vehicle emissions measurements of Oxides of Nitrogen (NO_x) as Nitrogen Oxide (NO). The analyzer shall include a gas cap integrity tester. The gas cap integrity tester may be a stand alone piece of equipment, or a fully automated integral part of the analyzer system.

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 emissions reading characteristics, independent of the inspection function, which can be used for vehicle diagnostics.

This document contains the minimum requirements for analyzers performing emissions tests in the Program. Analyzers built to these specifications may not be easily upgraded to conduct loaded mode emissions tests or emissions tests involving a dynamometer (i.e., ASM, RG240). Manufacturers may offer analyzers that meet the minimum requirements contained in this specification, and can be easily upgraded to conduct loaded mode emissions tests.

1.2 Useful Life

The useful life of the analyzer shall be a minimum of five years, however, this does not imply that the Program will be in effect for five years or that the analyzer specifications

will not change within 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 which 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 a current hard copy version of the following manuals:

- A. Reference Operating Instructions
- B. Operation Instruction Manual
- C. Maintenance Instruction Manual (limited)
- D. Initial Start-up Instructions

TX96 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.

TX96 analyzer manufacturers may install the manuals in the analyzer software. The analyzer will have the ability to print complete manuals or portions of the manuals. If the manuals reside on the analyzer in the software, the manufacturer shall provide backup of the manuals in an electronic media (i.e., floppy disk, CD-ROM, etc.), and the procedures for loading the manuals onto the analyzer.

1.5 Certification Documentation

The analyzer software shall be fully documented. Six copies of the documentation listed below shall be submitted to the Texas Natural Resource Conservation Commission (TNRCC) as part of the certification application. Software documentation shall include the following:

- A. Complete program listing. 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; and
- 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 TNRCC. This documentation must be marked "Confidential" if the vendor desires that the information be protected from distribution.

Confidential Information

If the manufacturer believes that the certification package, or parts of it, are confidential, it must specify that either all or part is excepted from release, and which exception(s) of the Texas Open Records Act (TORA) it believes applies, with specific and detailed reasons. Each page containing confidential information should be clearly marked accordingly. Vague and general claims to confidentiality are not acceptable. This is necessary so that the TNRCC will have sufficient information to provide to the Attorney General of Texas if his opinion is requested. All certification packages or parts of certification packages which are not marked as being confidential will automatically be considered public information.

The TNRCC assumes no responsibility for asserting legal arguments on behalf of the manufacturers. Manufacturers are advised to consult with their legal counsel concerning disclosure issues resulting from this certification process and take precautions to safeguard trade secrets and other proprietary information.

THE MANUFACTURERS OF TX96 EMISSIONS ANALYZERS WILL SUBMIT A LETTER OF CORPORATE AUTHORIZATION AGREEING TO PLACE SOFTWARE SOURCE CODES AND OTHER PERTINENT TECHNICAL INFORMATION IN “ESCROW.” CERTIFICATION WILL NOT BE VALID UNTIL THIS CONDITION HAS BEEN MET. ESCROW INFORMATION MUST BE KEPT CURRENT, I.E., SOFTWARE VERSION IN USE MUST CORRESPOND WITH THE ESCROWED INFORMATION. ESCROW PLACEMENT WILL BE APPROVED BY THE TNRCC MOBILE SOURCE DIVISION.

Escrow of Software

The Manufacturer agrees to place the most recent update of all application software in use to meet this specification in the possession of a neutral third party of the manufacturer’s choice. The manufacturer shall notify the TNRCC and provide the name and contact person of the selected third party. The software will be turned over to TNRCC in the event that Manufacturer goes out of business or cannot assure continued performance of the inspection analyzers.

In the event that the software is transferred, the TNRCC shall protect the source code from public dissemination and commercial usage. At a minimum, the TNRCC shall:

- a. limit access to the code to parties necessary to accomplish maintenance and updating of the TX96 analyzers;
- b. require all parties to sign a nondisclosure agreement before obtaining access to the code; and
- c. grant no license to any entity permitting that entity to use any part of the code for any commercial purpose other than to update/operate the TX96 analyzers.

The purpose of the requirement for the source code is to provide the TNRCC with a mechanism to assure continued performance of inspection analyzers in the event that a manufacturer should fail. The TNRCC is not interested in any disclosure of proprietary information, nor in the detailed inner workings of vendor code. However, it is essential that all of the necessary working codes, schematics, drawings, and so forth be available in case of such demise.

Performance Bond

As a prerequisite to certification, the Manufacturer shall furnish a performance bond to the TNRCC. This bond shall be in a form approved by the TNRCC and shall be executed as surety by a bonding company authorized to do business in the State of Texas and signed by a Licensed Resident Agent. The performance bond shall be for the amount of \$2,000,000.

The performance bond may be utilized by TNRCC at any time if the Manufacturer is in material default of the requirements of these specifications, including but not limited to the following "Events of Default":

- (a) The Manufacturer fails to remedy a breach of covenant, representation, or warranty required by these specifications within thirty (30) days after written notice of such breach has been given to the Manufacturer by the TNRCC;
- (b) The Manufacturer makes a general assignment for the benefit of creditors, admits in writing its inability to pay debts as they mature, institutes proceedings to be adjudicated a voluntary bankrupt, consents to the filing of a bankruptcy proceeding against it, files a petition or answer or consent seeking reorganization, readjustment, arrangement, composition, or similar relief under the federal bankruptcy laws or any other similar applicable law, consents to the filing of any such petition, consents to the appointment of a receiver, liquidator, trustee, or assignee in bankruptcy or insolvency of the Manufacturer or of a substantial part of its property, or takes action in furtherance of any of these purposes; or
- (c) A decree or order by a court of competent jurisdiction is entered adjudging the Manufacturer a bankrupt or insolvent, or approving as properly filed, a petition seeking reorganization, readjustment, arrangement, composition, or similar relief for the Manufacturer under the federal bankruptcy laws or any other similar applicable law, and such decree or order continues undischarged or unstayed for a period of sixty (60) days; or a decree or order of a court of competent jurisdiction for the appointment of a receiver, liquidator, trustee or assignee in bankruptcy or insolvency of the Manufacturer or of a substantial part of its property, or for the winding up or liquidation of its affairs, is entered, and such decree or order remains in force undischarged or unstayed for a period of sixty (60) days; or any substantial part of the property of the Manufacturer is sequestered or attached and is not returned to the possession of the Manufacturer or released from such attachment within sixty (60) days thereafter.

To require performance by the surety under the performance bond, the TNRCC shall give written notice of the event of default to the Manufacturer, specifying the date upon which surety performance shall begin.

The performance bond shall be released upon determination by the Executive Director of the TNRCC that the manufacturer has satisfactorily completed its obligations in accordance with the terms of this specification, or at an earlier date, if it is determined by the Executive Director to be in the best interest of the State to do so.

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 TX96 emissions analyzer.

An extended service contract must be available upon the expiration of the manufacturer's original warranty period. **ORIGINAL MANUFACTURER'S WARRANTY SHALL BE A MINIMUM OF ONE YEAR FROM THE DATE OF PURCHASE.** 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. The inspection station owner is responsible for maintaining the manner of service for the analyzer. Cost disclosures and detailed descriptions of coverages must be available in printed form and distributed to all TX96 emissions analyzer users. Cost disclosure shall also be made for "consumable" inventory items 1.8B. This information would most appropriately be presented with the original manufacturer's warranty.

1.7 Tampering Resistance

Controlled access design shall be the responsibility of the manufacturer and is subject to approval by the TNRCC. Analyzer service personnel, inspectors, or others shall be prohibited from creating or changing any test results, programs or data files contained in the analyzer to the satisfaction of the TNRCC/Department of Public Safety (DPS). Manufacturers shall utilize special BIOS partitions, or other appropriate software and hardware provisions, deemed necessary to protect the inspection/maintenance (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 text data or files.

The emissions analyzer and the sampling system shall be made tamper-resistant to the satisfaction of the TNRCC. At a minimum, the manufacturer shall develop tamper-resistant features to prevent unauthorized access through the cabinet. Microswitches, keyed locks, or software algorithms requiring the use of a password, would be acceptable provided the physical or logical design effectively prevents unauthorized access.

If tampering occurs, a software lockout algorithm shall be activated which aborts any existing test sequence and prevents further inspections until the lockout is cleared by an authorized DPS program official.

The lockout system shall be designed so that it can be activated by a DPS program official from the audit menu. Only DPS program auditors may remove lockouts put in place from the audit menu. Manufacturers shall develop a system to allow service technicians to only clear "tamper" lockouts during authorized service calls.

Manufacturers may offer analyzers with additional floppy disk drives that can run optional software application programs. 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 TNRCC have been provided that ensure the 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 manufacturer's original warranty and thereafter as a portion of the service contract agreement. The cost of a service agreement is to be listed at least annually. Future charges cannot exceed the amount published.

- A. Delivery, installation, calibration, and verification of the proper operating condition of a TX96 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, lease, or loan, provide sample filter(s) (2), and "extra" printer medium (1 ea.), or a certificate redeemable for a printer cartridge for laser printers. Maintain the availability of "extra" consumable inventory upon examination. **CONSUMABLES AND THE COST(S) THEREOF 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. The feature will be able to be performed with or without a car and shall produce a vehicle inspection report. This function will be used for evaluating inspector performance, by DPS 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. During the "training mode," vehicle inspection reports shall indicate to the satisfaction of the DPS that they are for training only. No official vehicle inspection report will be generated during the training exercise.
- D. On-site service response by a qualified repair technician within (2) business days, (48 hours) excluding Sundays, national holidays (New Years, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving, Christmas, and other days when the purchaser's business might be closed), 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, national holidays, and other days when the purchaser's business might be closed, are not included. All system repairs, component replacements, and/or analyzer adjustments, including reset of quality control lockout systems, 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 TX96 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 or other acceptable method that records 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 a total of 1,000 programming hours.

Updates of operational software, i.e., file based information, will be on an "as required" basis. Software updating should be designed to utilize modem technology for the updating process. The TNRCC will require the manufacturer to render updates as necessary in the first year of the Program to ensure the Program meets all design criteria. The manufacturer shall provide up to three file/software updates to the State in the first year, and thereafter, updates will be limited to once per year. The 'first year' shall be defined as one calendar year measured from the program start date. The file/software updates shall not exceed a combined total 1,000 programming hours at no cost to the State or analyzer owners. If the manufacturer anticipates that an update shall exceed the 1,000 programming hours limit, a cost quotation shall be prepared by the manufacturer. The cost quotation shall be submitted to the TNRCC prior to commencing work on the update. Then, the TNRCC will approve or not approve in writing that the work be undertaken.

Software updates, provided during the warranty period, **at no charge**, by the supplier of the inspection equipment or software programs shall consist of no more than the following:

- The inclusion of data pertaining to additional vehicles newly included in inspection program;
- The inclusion of data pertaining to new model year vehicles released since the last update;
- Changes to the "cut points" as directed by the Administrator of the program; or

- Software updates that rectify errors found at a later date where the original software was found to be not in compliance with the State specification published at the inception of the program. Software updates shall be warranted for a period of one year from the date the software becomes operational in the analyzer.

Software updates that involve any of the following revisions shall not be provided by the supplier of the equipment or software programs on a “no charge” basis, but instead the supplier of the inspection equipment or software programs shall be entitled to charge a reasonable fee, based on the resources used by that supplier in producing, releasing, and installing the software update.

- Changes in the vehicle inspection procedure that differ from the original procedure as outlined in the specifications used to certify the equipment and/or software at the program inception. Examples would be the addition of pressure/purge tests or visual inspection of components;
- Changes in the software structure as the result of the administrative changes within a state organization. Examples would be changes made to software fields to permit entry of Inspectors Social Security Numbers as opposed to drivers license numbers as required in the original specifications used to certify the equipment and/or software at the program inception;
- Changes in the software structure as the result of a decision to change/include extra functions or procedures that were not part of the original specifications used to certify the equipment/software at the program inception. Example would be changes or additions to Electronic Transmission; or
- Changes mandated by the State as a result of a state error in specifications or procedures found in a previous update.

- F. The analyzer software shall be designed so that DPS program officials can insert a floppy disk, prepared by the manufacturer, into the Program system host, and update the existing software version via modem. If the analyzer update is not accomplished via modem, a system of loading updates by program officials utilizing the auditor’s menu shall also be available. Look-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 TNRCC will require the manufacturer to render updates as necessary in the first year of the Program to ensure the Program meets all design criteria. 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 prior written approval from the TNRCC.

- G. The TNRCC 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 to the inspection station from which it was removed, 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.
- H. The manufacturers shall provide training to state officials responsible for oversight of the Program (e.g., TNRCC, DPS). The training will include, but not be limited to, instruction 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 (minimum of once per year in each I/M program area and after each major "cost" software revision) upon written request by the TNRCC/DPS.

The manufacturers shall provide a training plan to TNRCC. The training plan will be used by state oversight officials to conduct certification training of potential inspectors on the use of the analyzers for implementation of the Program. The manufacturers shall provide a minimum of four (4) hours training to the potential owners and operators of the analyzer for each analyzer purchased, leased, or upgraded.

1.9 Certification Requirements

The manufacturer shall submit a formal certificate to the TNRCC that states that any analyzer sold or leased by the manufacturer or its authorized representatives for use in the 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.

All equipment shall be tested by an independent test laboratory. The independent laboratory shall have previous experience certifying exhaust gas analyzers (prior BAR 90 certification experience.) The manufacturer shall seek prior written approval from the TNRCC of the certification laboratory. At least 15 days in advance of commencing the certification process, the manufacturer shall notify the TNRCC. The notification will include the laboratory name, address, telephone number, and the name

of a contact person. The TNRCC reserves the right to be present during the evaluation of all equipment. The test laboratory shall issue a test report detailing the objectives, test methods, and test results of the subject equipment. The test report shall then be submitted to the TNRCC, Mobile Source Division for an evaluation of acceptance. Previous certification by the TNRCC may be considered in this process but will not be sufficient to satisfy all necessary documentation requirements. The cost of the certification shall be adsorbed by the manufacturer.

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 TNRCC evaluation.

To facilitate the need for educating the motoring public and vehicle emissions inspection station owners/inspectors, manufacturers may phase-in hardware and software requirements. Beginning July 1, 1996, all current models of vehicle emissions analyzers in Dallas and Tarrant Counties must be able to connect to the Texas Data Link via modem through the electronic transmission contractor. Additionally, during this phase-in period, each manufacturer must develop software to reflect the emissions standards in Appendix A. Beginning October 1, 1996, all equipment must be upgraded with hardware and software to meet or exceed the TX96 gas analyzer requirements.

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. Only materials that are not susceptible to deterioration when in contact with automobile exhaust gases shall be used. Contact between nonferrous 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. The locks on the analyzer shall be keyed locks. 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.

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 shall have a durable finish (i.e., baked enamel, powder paint, etc.). The cabinet shall be constructed to allow access to the following analyzer periphery connections without setting off a tamper lockout: the keyboard, the printer, the monitor, and the bar code reader. The analyzer's keyboard, printer, and monitor shall be interchangeable with locally purchased, off-the-shelf, IBM PC compatible keyboards, printers, and monitors.

2.3 Mobility

The analyzer unit shall be designed for easy and safe movement over rough surfaces and/or graded surfaces (15° inclines). The center of gravity and wheel design shall be such that the analyzer can negotiate a vertical grade separation of one-half inch (½") without overturning when being moved in a prescribed manner. Industrial grade, swivel casters shall be used to permit 360°-rotations 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 a 115 VAC, 60 hertz (Hz) supply. An input voltage variation of ± 12 volts shall not change analyzer performance more than one percent 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 be sufficiently protected from voltage surges to prevent damage to the analyzer from the simultaneous start up of a 220 volt compressor, an arc welder, hydraulic controls, and other equipment commonly found in the typical automotive repair environment.

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, a sample hose at least 25 feet 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 TNRCC.

Sample Probe

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 hand grip 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 ($\frac{1}{2}$ ") in outside diameter and one-half to one inch ($\frac{1}{2}$ " to 1") long. Two probe tip caps shall be provided for the sample system leak check. A probe tip adapter or assembly shall be included for use with spark arrester type tailpipes.

Sample Hose

The interconnecting hose shall be of such design and weight that it can easily be handled by the inspector. 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.

Water Trap

The system shall be designed with a water trap in the 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.

Filtration System

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. A prompt shall be provided to the inspector indicating when the filter should be changed based on an indication of low flow (automatic lockout) or the other criteria approved by the TNRCC.

Pumps

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 either a single pump, multiple pumps, or a multiple stage pump or an equivalent system approved by the TNRCC. 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 130° 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 printer and analyzer, including all components of the analytical, sampling, and computer systems, shall operate within the required performance specifications at ambient conditions of up to 100 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 the limits specified during actual use shall be corrected at the manufacturer's expense.

2.8.1 Temperature Control

Analyzer components which affect sensitivity and calibration shall have their internal temperatures controlled to maintain design temperature, when exposed to prevailing ambient conditions. These include the conditions noted in the sections titled "Operation Temperature" and "Humidity Conditions" above.

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 \pm two inches (2") of mercury shall not exceed the accuracy limits contained in this specification. Manufacturers shall describe in writing how compensation will be accomplished. The method used shall be acceptable only if approved in writing by the TNRCC.

2.10 Operational Design

A. Analytical System

These analyzers shall utilize nondispersive infrared systems for measuring HCs, CO, and CO₂. O₂ 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, CO₂ and O₂ displays and a pass/fail indication at the completion of the inspection process. If available, the gas cap leak check - flow method shall be a pass/fail indication, with results 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 percent CO, 0.1 percent CO₂, and 0.1 percent O₂. The displays shall be capable of full scale readings of 2,000 ppm HC (as hexane), 9.99 percent CO, 16.0 percent CO₂, and 25.0 percent O₂.

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 + CO₂ 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 APPENDIX A.

See Appendix A for Cutpoints.

2.11 Automatic Calibrations

The analyzer shall be designed to require an automatic two-point gas calibration for HC, CO, and CO₂, and an automatic electrical zero and span check. (O₂ 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 at 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 properly calibrated and passes a calibration/leak check, and zero and span check.

The calibration record will contain before and after calibration readings and provide date and time of each reading. 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 program auditor (audit menu, calibration history). The system shall be capable of maintaining up to 12 months of historical calibration and up to six months of test data.

For HC, CO, and CO₂, 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 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 and leak check procedures. 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 calibrations shall have a two percent (2%) analytical accuracy and a zero percent (0%) blend tolerance of the following points: Ambient air may be used to calibrate the O₂ sensor.

(HC)	300	ppm propane
	1.0	percent CO

	6.0	percent CO ₂
	Bal.	Nitrogen (N ₂)
(HC)	1200 ppm	propane
	4.0	percent CO
	12.0	percent CO ₂
	Bal.	Nitrogen (N ₂)

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 Bureau of Automotive Repair for Test Analyzer System Calibration Gases and National Institute of Standards and Technology (NIST). 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.

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 lock-out. 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 four or 24 hours in addition to the gas calibration performed every 24 or 72 hours, activated by the internal clock. The four 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 5,000 inspections per year. The analyzer shall not allow an error of more than ± 3 percent of reading using mid-range TX96 certified span gas to perform 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 emissions inspection, until 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 propane, (or 40 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 HC levels are not below specified values after 150 seconds, 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 a 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 TNRCC, that the flow rate on the analyzer shall not cause more than 10 percent dilution during sampling of the exhaust at normal idle (10 percent dilution is defined as a sample of 90 percent exhaust and 10 percent ambient air). Manufacturers shall utilize the procedures specified by the BAR for demonstrating this dilution criterion (Section 8.2.9 of the Bar-90 Test Analyzer System Specifications, California Bureau of Automotive Repair, October 1991).

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 & CO₂ 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 percent

All heavy-duty vehicles: 5 percent

The microcomputer will prevent testing if the CO + CO₂ value is outside of the specified limit. If the CO + CO₂ 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." The analyzer shall prompt the inspector to check the probe insertion, visually reinspect the analyzer hoses, check the exhaust system for leaks, and continue with the test. If the dilution continues, the inspector shall have the option of aborting the test. If the inspector aborts the test after initiating the test sequence, the vehicle shall fail the emissions portion of the inspection, and the analyzer shall write a test record, indicating an aborted test. If the test "times out" due to dilution condition, the vehicle shall fail the emissions portion of the inspection, and the analyzer shall write the appropriate test record.

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) a radio frequency "RF" type transmitter/receiver that requires no direct vehicle connection and can detect engine RPM on vehicles utilizing "DIS" systems, or (2) a cable type connection capable of detecting engine RPM of current Original Equipment Manufacturer (OEM) ignition technology. Tachometer performance shall be no less than RPM with a 0.5 second response time and an accuracy of ± 3.0 percent of actual RPM. The cable type connection shall be at least twenty-five (25') feet in length measured from the front of the analyzer. During an official inspection process, the software shall 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 shall be available to assist the inspector in locating an RPM signal. This information may be supplied or reviewed by the TNRCC/DPS. Based on the vehicle identification information available to the inspector, the analyzer shall 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 are necessary to make them capable of reading engine RPM from OEM 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. If the RPM cannot be obtained, the system will allow the inspector to bypass the RPM. The RPM bypass function shall be made available, when the analyzer displays live engine RPM for the first time. To activate the RPM bypass, the inspector must strike at least two keys simultaneously. Once the emission test has begun, the bypass

function shall no longer be available. The option to bypass may not be available to all makes and models.

F. Analytical Bench Accuracy

Each analyzer shall meet the following analytical accuracy requirements:

Channel	Range	Accuracy
HC ppm	0 - 400	± 12 ppm
	401 - 1000	± 30 ppm
	1001 - 2000	± 80 ppm
CO percent	0 - 2.00	± 0.06 percent
	2.01 - 5.00	± 0.15 percent
	5.01 - 9.99	± 0.40 percent
CO ₂ percent	0 - 4.0	± 0.6 percent
	4.1 - 14.0	± 0.5 percent
	14.1 - 16.0	± 0.6 percent
O ₂ percent	0 - 10.0	± 0.5 percent
	10.1 - 25.0	± 1.3 percent

The analyzer display resolution electronics shall have sufficient resolution and accuracy to achieve the following:

HC	1	PPM HC
CO	0.01	percent CO
CO ₂	0.1	percent CO ₂
O ₂	0.1	percent O ₂

G. Drift

If zero and/or span 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 an ambient air temperature of 41 degrees Fahrenheit from “power-on.” The instrument shall be considered “warmed-up” when the zero and span readings for HC, CO, and CO₂ have stabilized, within ±3 percent 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 within 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.” 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 percent of a step change in input, nor will it exceed 12 seconds to 95 percent of a step change in input. For the O₂ sensor, the response time shall be no more than fifteen (15) seconds to 90 percent of full scale.

J. Optical Correction Factors

The hexane/propane equivalency factor (PEF) shall be limited to values between 0.49 and 0.54. If an optical bench is used that can demonstrate accuracy of propane/hexane identification within specification, using a range greater or less than indicated, it may be approved by the TNRCC/DPS. 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 nonvolatile memory. The PEF shall be displayed on the monitor on request by inquiry through the menu system. The optical bench shall be marked with a permanent “stamped” type tag identifying its PEF.

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 CO₂ analyzers shall not exceed ±10 ppm HC, ±0.05 percent CO, ±0.20 percent for CO₂.

The instrument design shall ensure 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 any loss of programs and test records.

L. Gas Cap Integrity Test

A. Equipment Specifications

1. The tester shall identify gas caps which leak more than 60 cc/min at 30 inches of water pressure.
2. The flow standard shall be a squared edged circular orifice sized to produce a leak rate of 60 cc/min of air at 30 inches of water pressure.
3. The supply pressure may be obtained using ambient air and any convenient low pressure source. The tester shall control the supply pressure and prevent over pressurization.
4. 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.
5. If the tester is battery powered, it must be equipped with an automatic shutoff and a low-battery indicator.
6. The system shall be tamper-resistant.
7. A reference passing fuel cap of nominal 52-56 cc/min and a reference failing fuel cap of nominal 64-68 cc/min shall be supplied with the tester for daily test verification.

B. Fuel Cap Adapters

1. Adapters shall be available for at least 95 percent of the fuel caps that are used on U.S. light-duty vehicles and trucks for the most recent 25 model years.
2. Varying internal volumes of the fuel caps and adapter assemblies shall not affect the accuracy of the test results.
3. Adapters shall be made available within two years of the introduction of new model year vehicles.

C. Pre-inspection and Preparation

1. Fuel Cap Missing: If the fuel cap is missing, the vehicle shall fail the fuel cap flow test (rejection shall be recorded as a failure in the data

base).

2. Fuel Cap Available: The fuel cap shall be removed and taken to the test device. If the fuel cap is tethered, the cap tester shall be brought to the vehicle.
3. Fuel Cap Untestable: The fuel cap is untestable if it is present on the vehicle and the tester does not have an attachment to fit the fuel cap. (The untestable feature shall be recorded on the analyzer as untestable.)

D. Fuel Cap Integrity Test Sequence

1. The adapter appropriate for the fuel cap shall be fitted to the flow test device.
2. The fuel cap shall be installed on the adapter and the test device shall be pressurized to approximately 30 inches of water.
3. The fuel cap leak rate shall be compared to an orifice with a flow rate of 60 cc/min of air at 30 inches of water.
4. If the leak rate exceeds 60 cc/min at 30 inches of water, the cap fails the flow test.

The analyzer shall prompt the inspector to indicate whether or not the gas cap is testable. Then, the analyzer shall prompt the inspector to remove the gas cap from the vehicle, attach it to the tester, and press continue when ready. The tester shall automatically pressurize the cap, and indicate when the test has commenced and when it has ended. The tester shall indicate whether or not the gas cap passes or fails. The tester shall automatically enter the result into the analyzer. The gas cap connector shall be long enough to reach gas caps that are attached to vehicles.

E. Operating Range

1. All test elevations.
2. A temperature range of 20°F to 120°F.

F. Accuracy

Leak rate measurements shall be accurate to within ± 3 percent cc/min.

G. Output

1. The test device shall provide a visual or digital signal to indicate pass or fail status.
2. The leak test shall not last longer than 45 seconds.

H. Quality Control

1. The flow standard orifice shall be calibrated before initial usage and thereafter on an annual basis unless quality control data suggests other intervals are appropriate. The flow calibration method shall be traceable to the NIST.
2. The flow tester shall be verified daily by testing the two reference fuel caps and correctly identifying the passing and failing fuel caps. Failure to pass this verification shall result in immediate cessation of usage of the tester and its repair or recalibration.
3. Flow calibrations of the reference fuel caps shall be conducted before initial usage and thereafter as required by examining quality control data.
4. The filter shall be maintained in accordance with the leak test manufacturer's recommendations.

2.12 Gas Calibration File

At the conclusion of each gas calibration, leak check, or gas cap tester 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 or executable programs for each required function. The development of Windows 95 compatibility is optional. 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 a diskette in standard DOS format;
 4. copy the analyzer inspection station identification information from the hard disk onto each new floppy diskette when formatted; and

5. allow access to all TNRCC/DPS functions and be capable of performing these functions via modem such as:
 - auditing functions;
 - tampering, lockout checks;
 - responses to queries;
 - report downloading; etc.

The TNRCC 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 (OBD) systems meeting EPA/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;
4. accommodate additional data of vehicle information and test results;
5. inclusion of record-keeping for safety inspection parameters;
6. inclusion of OBD information as part of the inspection process;
7. future revision(s) for emissions repair monitoring and reporting; and
8. inclusion of diesel emissions opacity.

The manufacturer may offer additional features which 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, nor 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 which 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 or 24 hour

optional);

- c. automatic leak check (4 or 24 hours and every 24 or 72 hours for automatic gas calibration and leak check combination); and
- d. audit sequence.

All equipment and software submitted for TX 96 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 TX96 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 6.0 or most current with safeguards to limit access to DOS. The software program will neither exit to DOS, neither provide a "shell to DOS," nor be bootable from any unsecured floppy disk drive. The manufacturer shall disable the option to boot from any unsecured floppy disk drive.

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 4 MB of user available RAM. (expandable to 16 MB)

4. POWER UP SEQUENCE

The system must include a power up sequence which 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, set RAM and memory).

5. VIDEO

The CRT display must be at least 12" in diagonal measure and may be either color or monochrome. The display shall be driven by a color graphics adapter. This interface must be able to operate in the IBM EGA, CGA, VGA, SVGA, and monochrome modes. The analyzer's monitor shall be interchangeable with a locally purchased, off-the-shelf, IBM PC compatible monitor.

The software shall automatically blank the screen, leave the screen in a blank condition with a bouncing prompt, dim 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. Alternative proposals may be approved by the TNRCC in writing.

6. Floppy Disk

Each unit must come with an IBM compatible floppy disk drive which 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 TNRCC/DPS program officials and authorized service representatives. That secured drive must also include an approved method to limit logical access. The TNRCC will test the system for drive security and it shall 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 have with at least 500 megabytes of hard disk storage. The vendor may use up to 125 megabytes for their programs and data provided at least a full 375 megabytes of usable storage is available for TNRCC/DPS 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 TNRCC 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. The unit must include at least two printer ports. The unit must include at least two MS-DOS/IBM PC standard compatible parallel printer ports and one baud rate programmable (300 to 19.2K) IBM PC compatible serial port with a male connector (9 pin or 25 pin (DB025)). The parallel ports can be connected to the printers, but the serial port must be available. Serial port only must be clearly labeled and easily accessible by only TNRCC/DPS program officials or

authorized representatives.

9. Keyboard

The TX96 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 a full 101 keys should be provided. A 101-key keyboard shall be able to interface and fully operate the analyzer. The analyzer's keyboard shall be interchangeable with a locally purchased, off-the-shelf, IBM PC compatible keyboard.

10. Bar Code Scanner

The purchase of a bar code scanner for reading Vehicle Identification Numbers (VINs) is required. Configuration of the analyzer should allow for installation of the bar code scanner. The bar code scanner must be able to read a 2D bar code, and 1D bar code through a windshield, even if the bar code is six to eight inches from the windshield. The bar code scanner shall not be able to read UPC 1D bar codes. The bar code scanner shall use visible laser diode technology, be able to withstand multiple drops to concrete covering a distance of at least four feet, and be environmentally sealed to withstand the normal operating conditions of an automotive technician environment.

11. Hard Disk Expansion

Each system must include a hard disk interface which will fully support a second internal disk drive of the same type as the original type drive or a functional equivalent approved by the TNRCC. Tamper-resistance shall not be compromised by the use of the second disk drive and/or the hard disk interface.

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

Each system must include a Hayes compatible modem at 14,400B, MNP 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 shall be provided within the operational software package. Modem communications will be necessary during the inspection process for VIN verification, multiple "I" Test Control, vehicle recall etc., from the Network System Host Computer. The modem shall be upgradable to a 28,800B modem.

The analyzer shall be programmed to automatically lockout if a software program update does not load properly via the modem or diskette.

2.15 Required Printer

Vehicle Inspection Report Printer:

An impact printer shall be supplied with each analyzer purchased, leased, or upgraded. The printer shall be dedicated to the task of printing vehicle inspection reports, diagnostic reports, or printing other designated information on a vehicle diagnostic form, or other repair type information. Continuous, fanfold, printer paper will be used. The printer shall print information on the vehicle inspection report using 12 characters per inch and 80 characters per line. The analyzer shall also have an additional printer port. The analyzer's printer shall be interchangeable with a locally purchased, off-the-shelf, IBM PC compatible printer.

2.16 Clock/Calendar

The analyzer unit shall have a real time clock/calendar which shall make available the current date and time. Dates will be in month, day, year format, and time will be in a 24-hour format. Both time and date shall be updated by the program system host computer 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 shall 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 key stroke.

2.20 Communications with Texas Data Link(ET)

The communications protocol shall be developed by the TNRCC contractor and provided to the analyzer manufacturers. The manufacturers shall be responsible for submitting a written request to the TNRCC for the communications protocol. Communication between the Texas Data Link Host, and the TX96 analyzer shall be a condition of certification. The TX96 analyzer shall demonstrate the ability to receive from the Texas Data Link Host all applicable data (i.e., inspection records, vehicle information, etc.) needed to conduct the inspections. The TX96 analyzer shall also demonstrate the ability to transmit the applicable data (i.e., results of inspections, audit file, etc.) to the Texas Data Link. The Texas Data Link Host shall be able to transmit the emissions standards table via modem. The analyzer shall be capable of automatically installing and using the new files containing the aforementioned items. The emissions standards table shall be stored under the file name: ESC.DAT.

When an announcement or bulletin has been received from the host, the software will automatically display a message or other indicator, indicating that an announcement or bulletin has been received from the TNRCC/DPS. At a minimum, the indicator shall be visible to the inspector between inspections and from the main menu. The display shall not stop an inspection from being conducted. Announcements shall be transmitted during initial contact with the Texas Data Link during an emissions test or during a communications refresh. The analyzer may have a "bulletin display" function and display any announcements or bulletins forwarded from the Texas Data Link Host system via modem transfer in the past 72 hours. The announcement(s) or bulletin(s) shall be stored on the analyzer in the Announcement file for 180 days from the date of initial receipt from the host or until another announcement is saved over it. The analyzer shall allow an inspector to view and/or print any message contained in the Announcement file.

3.0 DISPLAY PROMPTS AND PROGRAMMING CRITERIA REQUIREMENTS

This section describes the display prompts and programming criteria for the Emissions Inspection/Test Sequence. These items shall be standardized to facilitate training of licensed inspectors. Manufacturers may propose alternative methodologies for the presentation of information and for data entry as long as the substance and the priority of the sequence is

not significantly modified. Alternative methodologies shall be presented to the TNRCC for approval. The TX96 analyzer manufacturers shall utilize one or more of the following options to make the analyzer more user friendly:

- A. Direct cursor addressing a first letter selection versus a scrolling display;
- B. Displaying data entry error messages; and
- C. Help screens to assist inspectors with data entry and data verification.

Other options may be proposed for approval by the TNRCC. Data entry from one item to another shall not proceed until a valid entry has been made. During reinspection entry from the Main Menu, the analyzer shall display the appropriate fail records with no tampering information displayed. Where editing is allowed, the inspector shall have the ability to return to a previous display prompt. At that point, the inspector shall see the prior information and be permitted to insert and delete characters without having to retype the whole field.

Inspection Sequence

The microcomputer software shall control the inspection sequence and equipment process. This software shall, at a minimum, require the inspector to proceed in the following sequence when performing a vehicle inspection:

- A. Enter the inspector access code number.
- B. Enter VIN.
- C. Enter license plate number.
- D. Conduct the EPA approved preconditioned 2-speed idle test.
- E. Enter the emissions repair data, if applicable.
- F. Update data files, send data to Host/print vehicles inspection reports.

Aborting Inspections

If 'ABORT' is selected on an initial test, the vehicle information will be stored in the RECALL.DAT file for later recall by the inspector via main menu option '10.' Main menu option '10' is described in Section 3.10.

If 'ABORT' is selected, the system shall prompt the inspector to ENTER THE CODE THAT BEST DESCRIBES THE REASON THE TEST WAS ABORTED. SELECT AND ENTER THE APPROPRIATE ESCAPE CODE FROM THE LIST BELOW:

If the inspector selects one of the following abort codes, the analyzer shall:

- 1) fail the vehicle; and
- 2) allow the inspector to edit the fee entries, because the fee is due.

- 01 OIL SYSTEM WARNING LIGHT IS ON
- 02 COOLANT SYSTEM WARNING LIGHT IS ON
- 03 FUEL SYSTEM LEAK
- 04 EXCESSIVE ENGINE NOISE
- 08 OTHER SAFETY PROBLEM

If the inspector selects one of the following abort codes, the analyzer shall:

- 1) not fail the vehicle;
- 2) set the EMISS_INSP_COST field to \$0.00, because no fee is due;
- 3) mark the test as an aborted inspection, and not count the inspection as an initial inspection or reinspection;
- 4) prompt the inspector to indicate if safety related repairs were conducted. If no, set the SAFE_INSP_COST field to \$0.00. Otherwise, allow the inspector to enter a value using the Safety Test Fee Prompt as shown in Section 3.1.22;
- 5) prompt the inspector to indicate if emissions-related repairs were conducted. If no, set the REP_CST_YIS fields to \$0.00. Otherwise, allow the inspector to enter a value using the Emissions Reinspection Repairs Prompt in Section 3.4.6; and
- 6) include all entered safety and emissions related repair costs on the VIR.

- 05 VEHICLE DOES NOT REQUIRE INSPECTION
- 06 BMW, PEUGEOT, VOLVO, JAGUAR AUTOMATIC TRANSMISSION
- 07 ANALYZER PROBLEM
- 09 LOW FLOW RATE
- 99 OTHER (INDICATE REASON ON THE VEHICLE INSPECTION REPORT)

A maximum of two characters has been provided for this entry. The analyzer shall accept one two character abort code which shall be inputted by the inspector and saved to the test record. All of the inspection and test data collected up to the time abort is initiated, shall be recorded in the VEHICLE.DAT and REINSPEC.DAT files, and on the vehicle inspection report. After the abort code confirmation has been made, the analyzer shall allow the inspector to enter or edit the applicable fees, (i.e., safety fee, emissions fee, or both).

If the emissions test must be aborted after the sampling period has started, the latest five-second average (or the average of whatever portion of the first five seconds of the sampling period has elapsed) shall be treated as the "final value." Emissions readings shall be taken during all test modes and the "final" reading shall be recorded on the VEHICLE.DAT and REINSPEC.DAT files and on the vehicle inspection report. The analyzer shall be designed so that the inspector can initiate the 'ESCAPE' or 'ABORT' sequence by depressing a maximum of one key. Leading zeros shall be entered by the analyzer software.

The analyzer shall be designed so that the inspector is required to confirm the initial abort command after entering the applicable abort code. The inspector shall be allowed to edit the abort codes up until the confirmation is made. If the inspector wants to return to the test, and not continue with the abort sequence, the inspector shall be allowed to do so prior to the confirmation. The inspector shall be returned to the same place in the test sequence they are at when the abort was initiated. However, if the abort was initiated during the emissions test, the inspector shall be returned to the beginning of the emissions test sequence. Unconfirmed aborts shall not be recorded on the test record. The abort code selected must be recorded to the VEHICLE.DAT file. The analyzer must then return to the main menu.

Data Entry Errors

Data entry errors will be displayed as the following message(s):

NO VALUE HAS BEEN ENTERED - TRY AGAIN

INVALID ABORT CODE - TRY AGAIN

Menus

The following list contains the menus manufacturers are required to provide. Manufacturers may break the menus down further to increase user friendliness or expedite certain operations. Manufacturers may provide additional menus. The TNRCC/DPS reserves the right to require modification if any menu does not meet minimum requirements.

Upon successful completion of the start-up diagnostics, the system shall display the main menu containing the following options:

1. Safety and Emissions Inspection
2. Safety Only Inspection
3. Emissions Only Inspection
4. Reinspection
5. Reprint Vehicle Inspection Report

6. Vehicle Diagnosis
7. Training Mode
8. Analyzer Maintenance
9. Audit Menu
10. Recall Aborted Inspection
11. Gas Cap Integrity Test
12. Missing, or Voided Certificates
13. Certificate Correction/Replacement
14. Technical Bulletins/Announcements
15. Communications Refresh
16. Communication Diagnostics (Loopback)
17. All data Communications
18. Inspection Log (VI-8B)
19. VI-30A Only

The inspector shall initiate an official emissions inspection by entering the number "1," the training mode by entering the number "7," and so forth.

Upon power-up of the analyzer, a full system check of all hardware components will be conducted. The system will verify that leak check has been performed during the past 24 hours. If not, the system will display the message "YOU MUST PERFORM A LEAK CHECK ON THE ANALYZER BEFORE YOU CAN PROCEED WITH ANY EMISSIONS TEST OPTION."

After selecting Main Menu Option 1, 3, 4, or 10, the system will verify that a leak check has been performed during the past 24-hours. If not, the system will display the message "YOU MUST PERFORM A LEAK CHECK ON THE ANALYZER BEFORE YOU CAN PROCEED WITH ANY EMISSIONS TEST OPTION."

If the leak check passes, the inspector can proceed with emissions test options of the analyzer. If it fails the leak check, the analyzer will prevent the inspector from proceeding with the emissions test options. The analyzer shall then check for station lockout flags in the LOCKOUT.DAT file. The analyzer shall check for a '1' or 'Y' in

the STAT_CERT_SUSP, STAT_CERT_EXP, or STAT_CERT_REVOK fields of the LOCKOUT.DAT file.

If a station lockout field equals "Y" or any power-up test fails, the analyzer shall disable all emissions test functions and display a message "**CALL SERVICE FOR REPAIRS OR YOUR LOCAL DPS OFFICE FOR STATION OR INSPECTOR LOCKOUT.**"

<u>Programming Criteria:</u>	VEHICLE.DAT	TEST_TYPE EMISS_TEST_TYPE EMISS_INIT_TEST
	REINSPECT.DAT	TEST_TYPE EMISS_TEST_TYPE EMISS_INIT_TEST
	RECALL.DAT	TEST_TYPE EMISS_TEST_TYPE EMISS_INIT_TEST

The analyzer will set the EMISS_TEST_TYPE field to '2' if the inspector conducts any emissions test.

If the inspector selects one of the following choices from the main menu:

- 1 - Safety & Emission Inspection
- 2 - Safety Only
- 3 - Emissions Only
- 5 - Reprint

The system will set test_type field to the following:

- 1 - 'A' 5 - 'K'
- 2 - 'H'

If 3 - Emissions Only is selected, prompt the inspector to indicated if the test is a:

- 1 - required emission only test (decal)
- 2 - voluntary test
- 3 - test on resale (not displayed or used)
- 4 - remote sensing request

The system will set test_type field to the following:

- 1 - 'O' 3 - 'C'
- 2 - 'I' 4 - 'B'

Choice 'F' is reserved for 'minimum expenditure waiver tests,' and choice 'G' is reserved for 'federal tests'.

Choice 'D' and choice 'E' are reserved for scragpage tests, and arbitration/dispute tests, respectively. The system will default/highlight selection number 1 in all of the scenarios.

NOTE: The tests and their corresponding letters are cross-referenced below:

- | | |
|---------------------------------|---|
| A) Emission & Safety Test | H) Safety Only Test |
| B) Remote Sensing Request | I) Voluntary Emissions Test |
| C) Test on Resale | J) Waiver - Individual Vehicles |
| D) Scrappage Test | K) Reprint |
| E) Dispute Test | L) Waiver - Low Income Time Extension |
| F) Waiver - Minimum Expenditure | M) Parts Availability Time Extension |
| G) Federal Test | N) Other (Special Test) |
| | O) Required Emissions Only Test (Decal) |

3.1 Main Menu Selection '1' "Safety and Emissions Inspection"

3.1.1 Access Code Prompt: **ENTER YOUR INSPECTOR'S ACCESS CODE**

Programming Criteria: The TX96 analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M Inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall not accept duplicate access code for different inspectors. Each inspector's access code shall be unique. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

- Error Messages:**
1. **"YOUR ACCESS CODE IS NOT VALID--TRY AGAIN"**
 2. **"THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE."**

Associated System File: INSPECTOR.DAT ACCESS_CODE

3.1.1a PIN Number Prompt: **ENTER YOUR INSPECTOR'S PIN NUMBER**

Programming Criteria: The TX96 analyzer shall be designed to require the entry of a special PIN by the certified inspector before an official emissions inspection can begin. The PIN shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M Inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall not accept duplicate PINs for different inspectors. Each inspector's access code shall be unique. The PIN will be encrypted on the analyzer and is unreadable to anyone. The analyzer shall only allow the PIN to be reset to the default entry of 11111 from the audit menu. This number is not acceptable as an entry at this prompt. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

- Error Messages:**
1. **"YOUR PIN IS NOT VALID--TRY AGAIN"**

 2. **"THE PIN ENTERED IS NOT VALID.
CONTACT YOUR LOCAL DPS OFFICE TO
RESET YOUR PIN."**

Associated System File: **INSPECTOR.DAT PIN_NO**

**3.1.2 Date Expiration Prompt: **YOUR STATION/INSPECTOR CERTIFICATION
EXPIRATION DATE IS MM DD YY****

Programming Criteria: The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today, then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer shall display Message 3 in addition to Message 1 or 2

during the five-day countdown. If it is 30 days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, the analyzer will display a message that indicates lockout has occurred and returns to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**
2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**
3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

<u>Associated System File:</u>	INSPECTOR.DAT	INSP_EXP_DATE
	STATION.DAT	STAT_EXP_DATE
	LOCKOUT.DAT	INSP_LOCKOUT_FLAG
		STAT_LOCKOUT_FLAG

3.1.3 Insurance Prompt: ENTER THE INSURANCE EXPIRATION DATE.

Programming Criteria: Enter the insurance expiration date in the following format: MM/DD/YY. The analyzer system shall verify that the entry for the month is between 1 - 12, the entry for the day is between 1 - 31, and that the entry for the year begins with 19 or 20 (i.e., 1985, 2001). If the inspector enters a date that has passed, the analyzer shall provide a warning to the inspector. The warning shall indicate that the insurance has expired. The system will accept '000000' as a valid entry. The system will print '000000' on any applicable form, and write the vehicle record to VEHICLE.DAT.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

3.1.4 Fuel Type Prompt: ENTER THE VEHICLE FUEL TYPE. SELECT THE APPROPRIATE FUEL TYPE CODE FROM THE LIST BELOW.

<u>Code</u>	<u>Description</u>
"G"	Gasoline
"B"	Bi-Fueled (Dual-Fueled)
"D"	Diesel (Not applicable -End Test Now)

Programming Criteria: Entry of one of the above types is required. The analyzer software shall be designed so that only a "G," a "B," or a "D" can be entered by the inspector for this field. The system software shall default to gasoline for this entry. If the inspector selects "B", the system shall display a message stating that **"YOU HAVE INDICATED THAT THIS VEHICLE IS DUAL FUELED. PLEASE CONFIRM THAT THE VEHICLE IS OPERATING ON GASOLINE FOR THE TEST WITH A "Y."** After confirming the result, the system shall go to the model year prompt, 3.1.5. If the inspector presses something other than "Y", the system shall return to the initial fuel type prompt. If the inspector selects "D", the system shall display a message stating **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. PLEASE CONFIRM THIS ENTRY BY PRESSING "Y". IF YOU CONFIRM THAT THE VEHICLE IS DIESEL FUELED, THE TEST WILL END. DIESEL FUELED VEHICLES ARE NOT REQUIRED TO BE TESTED."** If the inspector confirms the entry, the system shall return to the main menu. If the inspector presses something other than "Y", the system shall return to the initial fuel type prompt.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

INVALID ENTRY--TRY AGAIN.

3.1.5 Model Year Prompt: ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria: If no value is entered, the analyzer will display Message 1, and prompt the inspector to reenter the last two digits of the vehicle model year. If the vehicle model year is less than the current year minus 24 years, or greater than the current year minus two years, then display message 2, or a message on applicable model years, without writing any data to the disk file. The system will display a message asking the inspector if he/she desires to continue. If the inspector wishes to discontinue, then the system will abort the test and return to the main menu. The system will continue with the test if the inspector indicates that he/she wishes to continue. The system will display Message 3 in the event that the model year is beyond the current year +2, and prompt the inspector to reenter the last two digits of the vehicle model year or the entire model year. The analyzer shall require the inspector to confirm any model year entry that is less than 1950.

- Error Message:**
1. **NO VALUE HAS BEEN ENTERED TRY AGAIN.**
 2. **NOT REQUIRED TO TEST VEHICLES OLDER THAN YEAR (CURRENT YEAR - 24) AND/OR VEHICLES LESS THAN 2 YEARS OLD. THIS IS AN OPTIONAL TEST.**
 3. **INVALID MODEL YEAR -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL_YEAR**

3.1.6 License Type Prompt: "ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE."

- | | |
|--------------------------|-------------------------------|
| 1. Texas Plate | 5. Exempt (Federal) |
| 2. No Plate | 6. Dealer Plate |
| 3. Out of State | 7. Temporary Buyer Tag |
| 4. Exempt (State) | 8. Other |

Programming Criteria: The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type '2,' or '8,' the system will assign the License_Num field in the VEHICLE.DAT a value of "V" followed by the last seven

digits of the VIN number, and skip the license prompt, number 3.1.8. The entry in the License_Num field shall be a "V" and the seven rightmost characters of the VIN. If the entered VIN has less than seven characters, the entry should be a "V" followed immediately by the entered VIN without filler spaces between the "V" and the entered VIN. The system will default to license type '1.'

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_TYPE**

3.1.7 License Prompt: **"ENTER THE LICENSE NUMBER OF THE VEHICLE."**

Programming Criteria: The inspector will be prompted to enter the license number of the vehicle. Upon confirming the license plate entry, the vehicle information is eligible to be stored in the RECALL.DAT file.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**

3.1.7a Texas Department of Transportation (TxDOT) Number Prompt:
ENTER THE NUMBER FROM THE TXDOT REGISTRATION CERTIFICATE AFFIXED TO THE VEHICLE.

Programming Criteria: The system shall only give this prompt if the inspector selected 'Texas Plate' (i.e., License_Type is '1') as the license type of the vehicle in Section 3.1.6. The system will prompt for the TxDOT number as it appears on the vehicle.

Where available, the inspector will enter the TxDOT number by using the bar code reader to scan the bar coded TxDOT number that is on the windshield of the vehicle. If a bar-code reader is not available, the inspector will be capable of entering the TxDOT number from the keyboard. The bar code should utilize the Code 39 symbology. The only information contained in the bar code are the

start and stop characters, and the TxDOT number.

The system shall allow the inspector to see and edit the TxDOT number as it is being entered. When all characters of the TxDOT number have been entered, the system shall prompt the inspector to press “continue” or “enter”. The inspector shall hit “continue” or “enter”, the screen will blank the TxDOT number and ask the operator to reenter the TxDOT number under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer will display Message 3 and prompt the inspector to enter the TxDOT number a third time. A minimum 10 characters are required for this field. If the entry is not within these parameters then the system will display Message 2. The format of the TxDOT number shall consist of eight numeric digits followed by two alpha characters. For example, 06691576WZ is a valid TxDOT number. If the entry is does not fit this format, then the system will display Message 4. If no value is entered, the analyzer will display Message 1.

- Error Message: 1. THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
- 2. A MINIMUM OF 10 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
 - 3. ENTRIES DO NOT MATCH -- TRY AGAIN.**
 - 4. THIS ENTRY MUST BE EIGHT NUMBERS FOLLOWED BY TWO LETTERS-- TRY AGAIN.**

Associated System File: VEHICLE.DAT TXDOT_NUM

3.1.8 VIN Number Prompt: ENTER VIN NUMBER.

Programming Criteria: The system will prompt for the VIN number as it appears on the vehicle. Where available, the inspector will enter the VIN number by using the bar code reader to scan the bar coded VIN on the vehicle. If a bar code reader is not available, the inspector will be capable of entering the VIN number from the keyboard. The analyzer will place a ‘B’ in the BARCODED_VIN field of the test record, if the VIN is entered using the bar code reader. Otherwise, the analyzer will place a ‘K’ in the BARCODED_VIN field of the test record.

The system shall allow the inspector to see and edit the VIN as it is being

entered. When all characters of the VIN have been entered, the system shall prompt the inspector to press “continue” or “enter”. The inspector shall hit “continue” or “enter”, the screen will blank the VIN and ask the operator to reenter the VIN under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer will display Message 3 and prompt the inspector to enter the VIN number a third time. A minimum of three and maximum of 17 characters are required for this field. If the entry is not within these parameters, then the system will display Message 2. If no value is entered, the analyzer will display Message 1. The VIN verification algorithm shall be applied here. The algorithm shall be supplied under separate cover by the TNRCC. The VIN verification shall only be applied to vehicles with model years 1981 and newer. The analyzer will not allow the inspector to enter the letters ‘I,’ ‘O,’ or ‘Q’ for vehicle with model years 1981 and newer. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad. For example, the software could ask if the entered ‘8’ could be a ‘B.’

- Error Message: 1. THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
- 2. A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY-- TRY AGAIN.**
- 3. ENTRIES DO NOT MATCH -- TRY AGAIN.**

**Associated System File: VEHICLE.DAT VIN_ID_NUM
 VIN_FLAG
 BARCODED_VIN**

3.1.8a Texas Data Link Contact:

The analyzer shall contact the Texas Data Link Host, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

An inspection shall be stopped, and the analyzer shall return to the main menu, if the following response bits are set in the RESPONSE.DAT file:

- 56 - Inspector License expired
- 57 - Inspector license suspended/revoked
- 58 - Inspector not authorized to test at this station
- 60 - TAS is locked out for at least one of the reasons included within “Lockout Status Record” data file

The analyzer shall obtain the test record from the Texas Data Link Host and search the

local system files for a VIN match. The analyzer shall conduct the local search, even if a test record is received from the Texas Data Link Host. The local search shall only consist of the records for the last 17 days. This may cause the analyzer to end up with two different records (i.e., the record from the Texas Data Link Host and the record from the local system files).

If the records are identical, then analyzer shall use either record to set the EMISS_INIT_TEST, and SAFE_INIT_TEST fields, determine eligibility status for the current inspection, and the test sequence for reinspections, if applicable.

If the records are different, then the analyzer shall set the flags as follows. The EMISS_INIT_TEST field shall be set based on the value of the EMISS_PF_FLAG in the most recent test record from the Texas Data Link Host or the local system files. The SAFE_INIT_TEST field shall be set based on the value of the SAFE_INIT_TEST field in the test record for the most recent inspection conducted at the station in the last 17 days (i.e., the test record that contains the most recent date and is less than 17 days old, and a station number that matches the number of the station conducting the current inspection). The test record used to set the SAFE_INIT_TEST field will also be used to determine the eligibility status for the vehicle and the test sequence for reinspections. The EMISS_INIT_TEST and SAFE_INIT_TEST fields may potentially be set based on criteria from two different records (i.e., in a single test, EMISS_INIT_TEST could be set based on the record from the data link, while SAFE_INIT_TEST is set from the local record, and vice versa).

If a test record is available from either the Texas Data Link Host or the system files, the analyzer shall confirm that the vehicle is eligible for an initial inspection by using the test record that was used to set the SAFE_INIT_TEST field.

If the vehicle has not had an initial inspection at this station within the last 16 days, the vehicle is eligible for an initial inspection. The vehicle is eligible for an initial inspection if:

1. the SAFE_INIT_TEST field in the test record is set to 'R,' or
2. the station number of the previous inspection station does not match the number of the station conducting the current inspection, or
3. the date of this inspection is not within 16 days of the inspection date contained in the previous test record.

If the vehicle is not eligible for an initial inspection, the analyzer shall:

1. display a message indicating why the vehicle is not eligible for an 'initial inspection' (i.e., an initial inspection has already been conducted on this vehicle), and prompt the inspector to inform the customer that they will not be charged

for this inspection;

2. save the vehicle information, possibly in the Recall.Dat file for use in the reinspection mode;
3. either transfer operation to the reinspection mode, Section 3.4, or continue in the initial inspection mode if the inspector is prompted to enter repair information about this vehicle; and
4. input the necessary vehicle information from the test record of the previous inspection once the analyzer is in the reinspection mode.

If the vehicle is eligible for an initial inspection because the station numbers do not match and the EMISS_PF_FLAG is set to 'F' in the test record of the previous inspection, the analyzer shall prompt the inspector for the repair data prior to conducting the preconditioned two-speed idle test.

Upon completion of this contact, the analyzer shall display all Technical Service Bulletins, Recall Information, and Announcements transmitted by the Texas Data Link System. The analyzer shall automatically print a copy of any announcement. The analyzer shall provide the option of printing additional copies prior to continuing with the test, deleting the announcement, or saving the announcement to a predetermined file. The analyzer shall be able to save three messages for later review. Any new announcement saved shall overwrite the oldest announcement in the system.

3.1.9 Vehicle Type Prompt:

SELECT THE VEHICLE TYPE

'P' - PASSENGER CAR/STATION WAGON

'T' - TRUCK/VAN/BUS/SPORTS UTILITY VEHICLE

'M' - MOTOR HOME

'B' - BUS

Programming Criteria: The inspector should select the vehicle type from the above list.

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN**

INVALID ENTRY--TRY AGAIN

Associated System File: **VEHICLE.DAT** **VEHICLE _TYPE**

3.1.10 **Vehicle Make Prompt: ENTER THE VEHICLE MAKE.**

Programming Criteria: The analyzer will then display a list of vehicle makes that the inspector will use to select the make of the vehicle currently under inspection. The analyzer will store the selected make name using the NCIC make definitions. The analyzer may display subsets of the make list that specifically identify all of the manufacturers of passenger vehicles, trucks, motor homes, or buses.

The analyzer shall present the option of ‘other’ as a make definition for use when there is no applicable definition for the vehicle under inspection. The ‘other’ option shall instruct the inspector to enter the full make name and at least the first five characters of the model name. The analyzer shall allow the inspector to enter up to 20 characters. The entry of ‘OTHR’ shall be stored in the MODEL field, and the characters ‘OTH’ shall be placed in the MODEL_CODE field in the applicable test record. The NCIC make/model list may supplied by the TNRCC.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT MAKE**

3.1.11 **Model Prompt: SELECT THE VEHICLE MODEL.**

Programming Criteria: The system will then display the appropriate vehicle models based on the vehicle make entry. The analyzer shall present the option of ‘other’ as a model definition for use when there is no applicable definition for the vehicle under inspection. The ‘other’ option shall instruct the inspector to enter the model name and allow the inspector to enter up to 20 characters. An ‘OTH’ shall be placed in the MODEL_CODE field of the test record whenever the ‘other’ option is selected by the inspector.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT MODEL
 MODEL_CODE**

3.1.12 **Odometer Prompt: ENTER THE VEHICLE ODOMETER READING.
 A MINIMUM OF ONE NUMERIC ENTRY IS**

REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.

Programming Criteria: Enter the vehicle odometer. Do not include tenth's. The system shall only accept numerical entries in this field.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT ODOMETER

3.1.13 Injection/Carburetion Prompt:

SELECT THE INJECTION/CARBURETION

F - FUEL INJECTION

C - CARBURETION

O - OTHER

Programming Criteria: The inspector should select the appropriate injection/carburetion from the above list.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN

INVALID ENTRY--TRY AGAIN

Associated System File: VEHICLE.DAT INJECT_CARB

3.1.14 GVW Prompt: ENTER THE GVW OF THE VEHICLE.

Programming Criteria: If "P" is entered as vehicle type in 3.1.9, set the GVW_TYPE field in the vehicle record to 1 (light). The system will prompt the inspector to enter GVW.

If the entered GVW is less than or equal to 8,500, set GVW_TYPE field in the vehicle file to 1 (light). If GVW is greater than or equal to 8,501, set GVW_TYPE field in the vehicle file to 2 (heavy).

If the inspector presses "continue/enter" and no entry has been made, the analyzer shall display message 1, and prompt the inspector to reenter the GVW. If the inspector enters a GVW greater than 85,000 pounds, the analyzer shall display message 2, and prompt the inspector to reenter the GVW.

remain in the original units entered. To convert from cubic inches to cubic centimeters, multiply by 16.387. To convert from liters to cubic centimeters, multiply by 1,000. Products shall be rounded to the nearest cubic centimeter.

An error message shall be displayed if the inspector enters an equivalent engine size greater than 9,999 cc or smaller than 655 cc. The inspector shall be instructed to correct the entry or abort the test. Vehicles powered by less than a 40 cubic inch engine (655 cc) shall display Error Message 3. If the test is aborted, no updates will be made to any disk file.

- Error Message: 1. NO VALUE HAS BEEN ENTERED--TRY AGAIN**
- 2. INVALID ENTRY--TRY AGAIN**
 - 3. 40 CID OR 655 CC OR SMALLER ARE EXEMPT FROM THE EMISSIONS INSPECTION PROGRAM.**

Associated System File: VEHICLE.DAT ENGINE_SIZE

- 3.1.17 Transmission Prompt: INDICATE THE TYPE OF TRANSMISSION.
ENTER AN "M" IF IT IS MANUAL.
ENTER AN "A" IF IT IS AUTOMATIC**

Programming Criteria: This information will be used to determine emissions control system requirements in the future. Only 'A' or 'M' entries are allowed.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT TRANSMISSION

- 3.1.18 Ignition Prompt: ENTER IGNITION TYPE.
SELECT THE APPROPRIATE IGNITION TYPE CODE FROM THE LIST BELOW:**

<u>Code</u>	<u>Ignition Type</u>
"C"	Conventional
"D"	Distributorless

"Q" Quad 4/Wireless

Programming Criteria: Entry of one of the above types is required. The analyzer software shall be designed so that only "C" Conventional, "D" Distributorless or, "Q" Quad 4/Wireless can be entered by the inspector for this field.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN.
INVALID ENTRY--TRY AGAIN.

Associated System File: VEHICLE.DAT IGNITION

3.1.19 Exhaust Prompt: DOES THE VEHICLE HAVE DUAL EXHAUST?

"Y" = YES "N" = NO

Programming Criteria: The software shall ask the inspector to indicate if the vehicle is equipped with dual exhaust. If the inspector selects "Y" YES, then the analyzer shall display instructions to the inspector to attach the additional probe to the analyzer for testing. After the additional hose is connected to the analyzer, the inspector shall be required to hit "enter/continue" to proceed to the next prompt. The analyzer shall read exhaust concentration from both exhaust pipes simultaneously. The analyzer averaging method of tailpipe reading is not acceptable. If the inspector selects "N" NO, the analyzer shall automatically proceed to the next item. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field.

Error Message: INVALID ENTRY--TRY AGAIN.

Associated System File: VEHICLE.DAT DUAL_EXHAUST

3.1.20 Test Type Prompt: ENTER THE TYPE OF INSPECTION

A-1 YEAR WINDSHIELD SAFETY & EMISSIONS G-FMCSR (TRUCK)

Programming Criteria: The system shall only accept entries for alphabets 'a,' and

‘g.’ For the ‘a’ entry, the system will prompt the inspector to indicate the status of the following 24 systems on the vehicle. The ‘g’ entry will prompt the inspector to indicate the status of 30 systems on the vehicle. Most of the inspections will be type ‘a.’ Thus, the default for this screen shall be ‘a.’

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_TEST_TYPE

3.1.20a Confirm Vehicle Info Display:

The analyzer shall display the vehicle information to the inspector and allow the inspector to edit the information as appropriate. If the vehicle information was populated by the Texas Data Link System, the inspector shall be allowed to edit all vehicle information except the VIN, the license plate type, and the license plate number. The inspector shall be required to press “continue/enter” to continue. Upon confirming the vehicle, the vehicle information is no longer eligible to be stored in the RECALL.DAT file.

3.1.21 Safety Inspection Items: For Test Types “A”

	P-PASS	F-FAIL	R-REPAIR		N-NOT APPLICABLE	
1	HORN		()	14	LICENSE PLATE LAMP	()
2	WINDSHIELD WIPERS		()	15	REAR REFLECTORS	()
3	MIRROR		()	16	TURN SIGNAL LAMPS	()
4	STEERING SYSTEM		()	17	HEADLAMPS	()
5	SEATBELTS		()	18	CLEARANCE LAMPS	()
6A	SERVICE BRAKE SYSTEM		()	19	SIDE MARKER LAMPS	()
6B	PARKING BRAKE SYSTEM		()	20	CAB LAMPS	()
7	TIRES		()	21	SIDE REFLECTORS	()
8	WHEEL ASSEMBLY		()	22	SCHOOL BUSES	

9	EXHAUST	()	22A - SCHOOL BUS SIGNS	()
			22B - FIRE EXTINGUISHER	()
			22C - WARNING LAMPS	()
10	EMISSIONS SYSTEM		22D - CONVEX CROSSOVER	()
	10A - EGR	()	MIRROR	
	10B - TAC	()		
	10C - PCV	()	23 SAFETY GUARD OR FLAPS	()
	10D - AIS	()		
	10E - EVAP	()	24 SUN-SCREENING	()
	10F - CATALYTIC	()		
11	BEAM INDICATOR	()		
12	TAIL LAMP	()		
13	STOP LAMP	()		

3.1.21 Safety Inspection Items: For Test Type "G"

	P-PASS	F-FAIL	R-REPAIR	N-NOT APPLICABLE
1	HORN		()	14 LICENSE PLATE LAMP ()
2	WINDSHIELD WIPERS		()	15 REAR REFLECTORS ()
3	MIRRORS		()	16 TURN SIGNAL LAMPS ()
4	STEERING SYSTEM		()	17 HEADLAMPS ()
5	SEATBELTS		()	18 CLEARANCE LAMPS ()
6A	SERVICE BRAKE SYSTEM		()	19 SIDE MARKER LAMPS ()
6B	PARKING BRAKE SYSTEM		()	20 CAB LAMPS ()
7A	STEERING AXLE TIRES		()	21 SIDE REFLECTORS ()
7B	ALL OTHER TIRES			22 SCHOOL BUSES
				22A - SCHOOL BUS SIGNS ()
				22B - FIRE EXTINGUISHER ()
				22C - WARNING LAMPS ()
				22D - CONVEX CROSSOVER ()
				MIRROR
10	EMISSIONS SYSTEM			23 SAFETY GUARD OR FLAPS ()
	10A - EGR		()	24 SUN-SCREENING ()
	10B - TAC		()	25 I/D, BACKUP
	10C - PCV		()	& HAZARD LAMPS ()

10D - AIS	()	26	COUPLING DEVICES	()
10E - EVAP	()			
10F - CATALYTIC	()	27	FUEL SYSTEM	()
11 BEAM INDICATOR	()	28	SUSPENSION SYSTEM	()
12 TAIL LAMP	()	29	FRAME	()
13 STOP LAMP	()	30	WINDSHIELD	()

Programming Criteria: The system shall only allow the inspector to enter ‘P’ for pass, ‘F’ for fail, ‘R’ for repair, and ‘N’ for not applicable. The inspector shall be required to press “enter/continue” after each item. These fields are required and must contain a valid entry. The system does not have to display the screen heading during the test sequence. The system shall enter the date and the inspector’s driver’s license number. The inspector should be able to access an item’s associated help screen by placing the cursor in the parentheses and pressing the ‘F1’ key. The help screens are in Appendix D for each type of Safety Inspection test. If any line item is marked ‘F’ for fail, then set SAFETY_PF_FLAG to ‘F.’ If all items are marked ‘P’ for pass, then set SAFETY_PF_FLAG to ‘P.’

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT

SAFE_1	SAFE_2
SAFE_3	SAFE_4
SAFE_5	SAFE_6A
SAFE_6B	SAFE_7
SAFE_7A	SAFE_7B
SAFE_8	SAFE_9
SAFE_10A	SAFE_10B
SAFE_10C	SAFE_10D
SAFE_10E	SAFE_10F
SAFE_11	SAFE_12
SAFE_13	SAFE_14
SAFE_15	SAFE_16
SAFE_17	SAFE_18
SAFE_19	SAFE_20
SAFE_21	SAFE_22A
SAFE_22B	SAFE_22C
SAFE_22D	SAFE_23
SAFE_24	SAFE_25
SAFE_26	SAFE_27

SAFE_28 SAFE_29
SAFE_30

SAFETY_PF_FLAG

3.1.22 Safety Test Fee Prompt: ENTER THE TOTAL COST FOR THE SAFETY INSPECTION AND SAFETY-RELATED REPAIRS, INCLUDING CENTS.

Programming Criteria: The inspector shall enter the overall cost for the inspection, inclusive of repair costs. If an inspector enters a fee greater than \$150 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer shall display a warning message which states that the fee seems unusually large, please confirm the amount entered or reenter the fee.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_INSP_COST

3.1.23 Pre-Tune Prompt: DID INSPECTOR/FACILITY PERFORM ANY EMISSIONS-RELATED REPAIRS OR ADJUSTMENTS PERFORMED ON THE VEHICLE PRIOR TO THIS TEST?

"Y" - YES "N" - NO

Programming Criteria: The analyzer will ask the inspector if pre-tuning was performed on this vehicle prior to testing. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT PRE_TUNE

3.1.23a Update Test Record:

Programming Criteria:

Once the inspector has inserted the probe into the tailpipe and pressed 'continue', the analyzer shall update the test record and store a 'J' in the ABORT field. If the test sequence is not exited properly (i.e., unit is powered down), the analyzer shall be able to send the test record for the affected inspection to the VID during the next communications session. This test record shall contain a 'J' in the ABORT field. If the inspection is aborted properly after 'J' has been stored, the analyzer shall replace the 'J' in the ABORT field with an 'A' and include the entered abort code.

If the emissions phase of the inspection is not aborted after 'J' has been stored, the system shall replace the 'J' in the ABORT field with a blank/space.

3.1.23b OBD II (Key On, Engine Off) Prompt:

PERFORM THE "KEY ON, ENGINE OFF" CHECK TO DETERMINE IF THE INSTRUMENT PANEL MALFUNCTION INDICATOR LIGHT (MIL) ILLUMINATES WHEN THE IGNITION KEY IS TURNED TO THE "KEY ON, ENGINE OFF" POSITION.

DOES THE MIL ILLUMINATE (E.G. 'COME ON', 'LIGHT UP') WHEN THE KEY IS PLACED IN THE "KEY ON, ENGINE OFF" POSITION?

"Y" - YES, THE MIL 'COMES ON' OR 'LIGHTS UP'.

"N" - NO, THE MIL DOES NOT 'COME ON' OR 'LIGHT UP'.

THE MALFUNCTION INDICATOR LIGHT (MIL) WILL EITHER DISPLAY "SERVICE ENGINE SOON," "CHECK ENGINE," THE WORD "CHECK" ALONG WITH THE INTERNATIONAL ENGINE SYMBOL, OR SOME COMBINATION OF THESE DEPENDING ON THE VEHICLE MAKE.

Programming Criteria: The analyzer will ask the inspector to perform a key-on/engine-off check to see if the Malfunction Indicator Light/Check Engine Light (MIL) is properly illuminates. The analyzer shall prompt the inspector to enter a No if the MIL does not properly illuminate. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field. If the inspector doesn't enter a value, display error message 1. If the inspector enters a value other than a "Y" or an "N," display error message 2.

The help message for this screen shall contain the following text: "The Malfunction Indicator Light (MIL) is the official term for the warning light that

is illuminated by the vehicle's OBD system when a malfunction occurs. Depending on the vehicle make, the MIL will either display "service Engine Soon," "Check Engine," the word "Check" along with the international engine symbol, or some combination of these . The MIL must come on when the ignition key is turned to the "key on, engine off" position. This is to allow inspectors to check that the MIL is capable of illuminating if a malfunction were to occur. On most vehicles, the MIL will stay illuminated as long as the key is in the position. However, on some vehicles, the MIL will illuminate very briefly when the key is turned to the "key on, engine off" position and then go out."

- Error Message:**
- 1. NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**
 - 2. INVALID ENTRY. PLEASE SELECT "Y" OR "N".**

Associated System File: **VEHICLE.DAT** **OBD2_MIL_CHECK**

3.1.23b OBD II Engine Running Prompt:

START THE ENGINE AND ALLOW IT TO IDLE. DETERMINE IF THE MIL IS ILLUMINATED WHILE THE ENGINE IS RUNNING?

DOES THE MIL ILLUMINATE (E.G. 'COME ON', 'LIGHT UP') WHEN THE ENGINE IS RUNNING?

"Y" - YES, THE MIL 'COME ON' OR 'LIGHT UP' WHEN THE ENGINE IS RUNNING.

"N" - NO, THE MIL DOES NOT 'COME ON' OR 'LIGHT UP' WHEN THE ENGINE IS RUNNING.

Programming Criteria: The analyzer will ask the inspector to see if the Malfunction Indicator Light/Check Engine Light (MIL) is illuminates while the engine is running. The analyzer shall prompt the inspector to enter a No if the MIL does not illuminate while the engine is on. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field. If the inspector doesn't enter a value, display error message 1. If the inspector enters a value other than a "Y" or an "N," display error message 2.

- Error Message:**
- 1. NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

2. INVALID ENTRY. PLEASE SELECT “Y” OR “N”.

Associated System File: VEHICLE.DAT OBD2_MIL_ON_RUN

3.1.23c OBD II Engine Stop Prompt:

**SHUT OFF THE ENGINE, AND RETURN TO “KEY ON, ENGINE OFF”
POSITION**

Programming Criteria: The analyzer will prompt the inspector to turn off the engine, and place vehicle in ‘key on, engine off’. The analyzer will instruct the inspector to press the ‘continue’ key to continue. Then, the analyzer will proceed to Section 3.1.24, the Preconditioned Two-Speed Idle Test Procedure prompt.

3.1.23d OBD II Hookup:

The analyzer must be equipped with a standard SAE J1978 OBD conector and communications link to allow an RPM signal, readiness codes, fault codes, and Malfunction Indicator Light (MIL) status to be downloaded from the on-board computer for applicable vehicles.

The OBD section of the test will be bypassed if the SYSTEM/STATION table OBD_ENABLED field is “F”.

The equipment design and operation must meet all Federal requirements (contained in 40 CFR 85.2207-2231) and recommended SAE practices (J1962, J1978 and J1979) for OBDII system inspections.

The OBDII interrogation process shall be fully integrated into the TX96 analyzer system. It must be automated and require no inspector intervention to collect and record the OBD data retrieved via the OBD diagnostic link. An RPM signal, OBDII readiness codes, failure codes, and MIL status shall be automatically retrieved through a standard interface and vehicle connector. No hand-held unit or separate interface may be used.

If the OBDII Port has previously been connected for the RPM signal, proceed to the OBDII Readiness Evaluation Section. If not, proceed to the following prompt.

3.1.23e OBD II Connector Prompt:

LOCATE THE VEHICLE'S OBD DIAGNOSTIC LINK CONNECTOR. ATTACH THE TX96 OBDII PORT TO THE VEHICLE CONNECTOR AND PRESS CONTINUE.

Programming Criteria:

The analyzer will prompt the inspector for an OBD II diagnostic link connection for all passenger vehicles and light-duty trucks whose model year is equal to or newer than the vehicle model year contained in the XX table OBDII_Model_Year field.

The analyzer will be designed to provide assistance to the inspector with OBD II connector locations using an OBD II connector look-up table as part of the xxVLT table.

If the inspector has pressed continue and connection cannot be confirmed, the analyzer will display the error message.

Error Message:

THE OBD II CONNECTION CANNOT BE CONFIRMED -- PLEASE TRY AGAIN. PRESS ENTER TO CONTINUE.

Associated System File: VEHICLE.DAT PRE_TUNE

3.1.23f OBD II Connection Not Confirmed Prompt:

THE OBD II CONNECTION CANNOT BE CONFIRMED -- PLEASE PRESS 'T' TO TRY AGAIN.

IF THE OBD II CONNECTOR IS MISSING, DAMAGED, TAMPERED OR CANNOT BE LOCATED, PRESS "C" TO CONTINUE.

Programming Criteria: The analyzer must allow the inspector unlimited attempts to gain a confirmed OBDII connection. If the inspector enters 'C' indicating a missing, damaged, tampered or inaccessible connector, and test date is less than the date contained in the OBDII Failure Date field in the Network.Dat file:

Write a 'C' in the OBDII Test Result field in vehicle.dat, 'FAIL' will be printed in the OBD section of the VIR. A second page will be printed for the VIR indicating that the

vehicle's on-board diagnostic system could not be checked due to a missing, damaged, tampered, or inaccessible connector, and the OBD failure is advisory only.

The failure of the OBD portion of the test WILL NOT result in an overall test failure.

The analyzer will return to the prompt the inspector to proceed directly to the tailpipe portion of the test.

If the test date is equal to or greater than the date in the OBDII Failure Date field in the REGION table:

- (a) a 'C' will be written to the OBDII Test Result field in EIS,
- (b) an 'F' will be written to the Overall Test Result field in EIS,
- (c) a 'FAIL' will be printed on the OBD portion and the OVERALL TEST RESULT section of the VIR;
- (d) a second page will be printed for the VIR indicating that the vehicle's on-board diagnostic system could not be checked due to a missing, damaged, tampered, or inaccessible connector, and
- (e) the analyzer will proceed to VIII. Final Results and Printing of VIR, no tailpipe emissions inspection will be conducted

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT PRE_TUNE

3.1.23g OBD II Readiness Evaluation:

Programming Criteria: .

- i. A Mode \$01, PID \$01 request (in accordance with SAE J1979) shall be transmitted to the on-board computer to determine the evaluation status of the OBD system, the number of emission-related trouble codes stored in memory, and the Malfunction Indicator Light (MIL) status.
- ii If no response is received from the on-board computer to the Mode \$01, PID \$01 request:
 - (1) If the test date is less than the date in the OBDII Failure Date field in the REGION table;
 - (a) an 'N' will be written to the OBDII Test Result field in EIS,
 - (b) a 'FAIL' will be printed in the OBD section of the VIR,
 - (c) a second page will be printed for the VIR indicating that the vehicle's on-board diagnostic system did not respond to the request for data, and the OBD failure is advisory only, and
 - (d) the failure of the OBD portion of the test WILL NOT result in an overall test failure.

- (e) The analyzer will return to the Vehicle –EIS Hookup procedure (a)(above) and prompt the I/M inspector for another RPM pick-up device and then proceed directly to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
 - (2) If the test date is equal to or greater than the date in the OBDII Failure Date field in the REGION table:
 - (a) a ‘N’ will be written to the OBDII Test Result field in EIS,
 - (b) an ‘F’ will be written to the Overall Test Result field in EIS,
 - (c) a FAIL will be printed on both the OBD portion and the OVERALL TEST RESULT section of the VIR,
 - (d) a second page will be printed for the VIR indicating that the vehicle’s on-board diagnostic system did not respond to the request for data, and
 - (e) the analyzer will proceed to VIII. Final Results and Printing of VIR, no tailpipe emissions inspection will be conducted.
- ii Based on the returned data, the analyzer shall determine which on-board monitors are supported by the OBD system and the readiness code status of the applicable monitors.
- iv Possible monitors include the following:
 - (1) Misfire (continuous)
 - (2) Fuel system (continuous)
 - (3) Comprehensive component (continuous)
 - (4) Catalyst (once/trip)
 - (5) Heated catalyst (once/trip)
 - (6) Evaporative system (once/trip)
 - (7) Secondary air system (once/trip)
 - (8) Air conditioning system (once/trip)
 - (9) Oxygen sensor (once/trip)
 - (10) Oxygen sensor heater (once/trip)
 - (11) EGR system (once/trip)
- v. Continuous monitors are those in which the applicable system/condition is checked continuously during vehicle operation; once/trip monitors are only checked when the vehicle is driven in a certain manner (i.e., over a predefined driving cycle expected to occur in customer service). According to Federal regulation (40 CFR 86.099-17), a vehicle manufacturer is not required to store a readiness code for the continuous operating monitors; however, some may choose to do so.
- vi. Possible readiness code responses include: completed, not completed, and not supported/enabled. A response that a monitor is not supported or enabled means that, for this particular vehicle, that monitor is not applicable. Hence, when a ‘not supported/enabled’ response is given, the analyzer will not fail the vehicle for that code.
- vii. All readiness code values will be written to the appropriate test record fields in the EIS table for each inspection using the following format:
 - i. Not supported/enabled = 0,
 - ii. Completed = 1, and

- iii. Not completed = 2.
- viii. If the value specified in the REGION table for a particular readiness monitor is “Y”, that code shall be used for the overall readiness determination. If the value specified for a readiness monitor in the REGION table is “F”, that code shall be ignored by the analyzer and not used for the overall readiness determination.
- ix. Per Federal regulations, if a vehicle returns for a retest after having one or more readiness codes whose monitors are specified as “Y” in the REGION table found to not be set on the previous test, the vehicle is to be failed if one or more readiness codes whose monitors are specified as “T” in the REGION table are still not set. A previous test readiness code status is determined by the VID and returned to the analyzer during the vehicle information download sequence. The possible values returned are :
 - (1) Previous Readiness Codes “0” if all readiness code values for the previous test whose monitors are specified as “T” in the REGION table were either “0” or “1” (this result will also be returned if no previous test is found)
 - (2) Previous Readiness Codes “1” if any readiness code value for the previous test whose monitor is specified as “T” in the REGION table was “2”.
- x. If VID contact fails, the Previous Readiness Codes shall be evaluated as “0”.
- xi. If all readiness monitors applicable to the vehicle being tested that have a value of “Y” specified in the REGION table do not have the appropriate readiness codes set (i.e., a value of “0” or “1” is not returned via the OBD link from the vehicle on-board diagnostic system);
 - (1) the analyzer will check the REGION table OBDII Failure Date field;
 - (2) If the test date is less than the date in the OBDII Failure Date field:
 - (a) An ‘F’ will be written to the OBD Readiness Result field in EIS,
 - (b) ‘FAIL’ will be printed in the OBD section of the VIR,
 - (c) The failure of the OBDII Readiness portion of the test WILL NOT result in an overall test failure.
 - (d) A second page will be printed for the VIR listing the “unset” readiness codes with an appropriate label of the code associated with the failure and, if available, the vehicle operating condition that needs to be accomplished to set the readiness code(s). A message will also be printed recommending that the motorist contact the vehicle dealership for assistance with any OBD requirements or problems with their vehicle.
 - (e) the analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
 - (3) If the test date is equal to or greater than the date in the OBDII Failure Date field:
 - (a) If the previous test readiness codes are READY (as determined by the VID), then
 - (1) An ‘A’ (abort) will be written to the OBDII Readiness Result, OBDII Test Result and Overall Test Result fields in EIS,
 - (2) The abort code value shall be “40”. This abort value shall be automatically written to EIS by the analyzer. The inspector

- shall not select the abort code.
- (3) The test will be aborted, no tailpipe emissions test will be conducted, and the analyzer will proceed directly to VIII. Final Results and Printing of VIR
 - (4) An 'ABORT' will be printed in the OBD section of the VIR
 - (5) An 'ABORT' will be printed in the OVERALL TEST RESULT section of the VIR
 - (6) A second page will be printed for the VIR listing the "unset" readiness code(s) with an appropriate label of the code associated with the failure and, if available, the vehicle operating condition that needs to be accomplished.
- (b) Also on the VIR, the analyzer will print a message recommending that the motorist contact the vehicle dealership for assistance with any OBD requirements or problems with their vehicle. If the previous test readiness codes were NOT SET, then
- (7) An 'F' will be written to the OBDII Readiness Result, OBDII Test Result and Overall Test Result fields in EIS,
 - (8) A 'FAIL' will be printed in the OBD section of the VIR
 - (9) A 'FAIL' will be printed in the OVERALL TEST RESULT section of the VIR
 - (10) A second page will be printed for the VIR listing the "unset" readiness code(s) with an appropriate label of the code associated with the failure and, if available, the vehicle operating condition that needs to be accomplished.
 - (11) Also on the VIR, the analyzer will print a message recommending that the motorist contact the vehicle dealership for assistance with any OBD requirements or problems with their vehicle.
 - (12) The analyzer will proceed to VIII. Final Results and Printing of VIR, no tailpipe emissions inspection will be conducted.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT PRE_TUNE

3.1.23h OBD II Malfunction Indicator Light (MIL) status and Diagnostic Trouble Code (DTC) Check:

Programming Criteria:

- i. The analyzer will evaluate the MIL status based on the data returned via the OBD link from the vehicle on-board diagnostic system. The Yes/No (Y/N) status of whether the MIL has been commanded to be illuminated will be

- recorded in the OBDII MIL Status field of the test record.
- ii. A previous test DTC status is determined by the VID and returned to the analyzer during the vehicle information download sequence. The possible values returned are:
 1. DTC status "PASS" if the previous test does not have an "F" recorded for the OBDII test result (this result will also be returned if no previous test is found).
 2. DTC status "FAIL" if the previous test has an "F" recorded for the OBDII test result.
 3. If VID contact fails, the previous DTC Status shall be evaluated as "PASS".
 - iii. The analyzer shall send a Mode \$03 request to the on-board computer to determine the stored emissions-related powertrain trouble codes. The analyzer will repeat this cycle until the number of codes reported equals the number expected based on the previous Mode \$01 response. Any codes listed in the DTC table shall be recorded on the test record and the text fault code description shall be printed on the second page of the VIR.
 - (1) If there are no DTCs:
 1. A 'P' will be written to both the OBDII Fault Code Result and OBDII Test Result fields in EIS,
 2. A PASS will be printed in the OBD section of the VIR, and
 3. The analyzer will check the EIS OBDII Failure Date field:
 1. If the test date is less than the date in the OBDII Failure Date field the analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
 2. If the test date is equal to or greater than the date in the OBDII Failure Date field the analyzer will proceed to VIII. Final Results and Printing of VIR, no tailpipe emissions inspection will be conducted.
 - (2) If one or more DTC is found and no previous failing test result for the vehicle was obtained from the VID;
 1. The analyzer will check the REGION table OBDII Failure Date field;
 2. If the test date is less than the date in the OBDII Failure Date field and the MIL has been commanded to be illuminated:
 1. An 'F' will be written to both the OBDII Fault Code Result and OBDII Test Result fields in EIS.
 2. The DTC(s) that was found will be written to the Fault Codes field in the EIS table.
 3. A 'FAIL' will be printed in the OBD section of the VIR
 4. The failure of the OBDII portion of the test will NOT result in an overall test failure.
 5. A second page will be printed for the VIR listing the DTCs with an appropriate label of the code associated with the failure.
 6. The analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
 3. If the test date is less than the date in the OBDII Failure Date field but the MIL has not been commanded to be illuminated:

1. An 'F' will be written to the OBDII Fault Code Result field in EIS.
 2. A 'P' will be written to the OBDII Test Result fields in EIS.
 3. The DTC(s) that was found will be written to the Fault Codes field in the EIS table.
 4. The presence of a DTC will NOT result in an OBD or overall test failure.
 5. A 'PASS' will be printed in the OBD section of the VIR.
 6. The The analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
4. If the test date is equal to or greater than the date in the OBDII Failure Date field but the MIL has not been commanded to be illuminated,
 1. An 'F' will be written to the OBDII Fault Code Result.
 2. A 'P' will be written to the OBDII Test Result in EIS.
 3. The DTC(s) that was found will be written to the Fault Code field in the EIS table.
 4. The presence of a DTC will NOT result in an OBD or overall test failure.
 5. A 'PASS' will be printed in the OBD section of the VIR.
 6. Proceed V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
 5. If the test date is equal to or greater than the date in the OBDII Failure Date field, one or more DTCs are found, and the MIL has been commanded to be illuminated,
 1. An 'F' will be written to the OBDII Fault Code Result, the OBDII Test Result and the Overall Test Result fields in EIS.
 2. The DTC(s) that was found will be written to the Fault Code field in the EIS table
 3. A 'FAIL' will be printed in the OBD section of the VIR.
 4. A 'FAIL will be printed in the OVERALL TEST RESULT section of the VIR
 5. A second page will be printed for the VIR listing the DTCs with an appropriate label of the code associated with the failure.
 6. Proceed to VIII. Final Results and Printing of VIR, no tailpipe emissions inspection will be conducted.
- (3) If one or more DTC is found and a previous failing test result for the vehicle was obtained from the VID;
1. The analyzer will check the OBDII Model Year Retest field in the REGION table;
 2. If the model year of the vehicle is newer than the model year specified in the OBDII Model Year Retest field:
 1. The analyzer will check the EIS OBDII Failure Date field;
 2. If the test date is less than the date in the OBDII Failure Date field but the MIL has not been commanded to be illuminated:
 - i. An 'F' will be written to the OBDII Fault Code Result field in EIS
 - ii. A "P" will be written to the OBDII Test Result fields in EIS.

- iii. The DTC(s) that was found will be written to the Fault Codes field in the EIS table
 - iv. The presence of a DTC will NOT result in an OBD or overall test failure.
 - v. A 'PASS' will be printed in the OBD section of the VIR.
 - vi. The analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
3. If the test date is less than the date in the OBDII Failure Date field and the MIL has been commanded to be illuminated:
- i. An 'F' will be written to both the OBDII Fault Code Result and OBDII Test Result fields in EIS.
 - ii. The DTC(s) that was found will be written to the Fault Codes field in the EIS table.
 - iii. A 'FAIL' will be printed in the OBD section of the VIR
 - iv. The failure of the OBDII portion of the test will NOT result in an overall test failure.
 - v. A second page will be printed for the VIR listing the DTCs with an appropriate label of the code associated with the failure.
 - vi. The analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
4. If the test date is equal to or greater than the date in the OBDII Failure Date field but the MIL has not been commanded to be illuminated,
- i. An 'F' will be written to the OBDII Fault Code Result field in EIS.
 - ii. A 'P' will be written to the OBDII Test Result field in EIS.
 - iii. The DTC(s) that was found will be written to the Fault Code field in the EIS table.
 - iv. The presence of a DTC will NOT result in an OBD or overall test failure.
 - v. A 'PASS' will be printed in the OBD section of the on the VIR.
 - vi. Proceed V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
5. If the test date is equal to or greater than the date in the OBDII Failure Date field, one or more DTCs are found, and the MIL has been commanded to be illuminated,
- i. An 'F' will be written to the OBDII Fault Code Result, the OBDII Test Result and the Overall Test Result fields in EIS.
 - ii. The DTC(s) that was found will be written to the Fault Code field in the EIS table.
 - iii. A 'FAIL' will be printed in the OBD section of the on the VIR.
 - iv. A 'FAIL' will be printed in the OVERALL TEST RESULT section of the VIR
 - v. A second page will be printed for the VIR listing the DTCs with an appropriate label of the code associated with the failure.
 - vi. Proceed to VIII. Final Results and Printing of VIR, no tailpipe

emissions inspection will be conducted.

3. If the model year of the vehicle is equal to or older than the model year specified in the OBDII Model Year Retest field in the REGION table and the MIL has been commanded to be illuminated:
 1. The analyzer will not check the EIS OBDII Failure Date field as the Model Year Retest Field has precedence.
 2. An 'F' will be written to both the OBDII Fault Code Result and OBDII Test Result fields in EIS.
 3. The DTC(s) that was found will be written to the Fault Codes field in the EIS table.
 4. A 'FAIL' will be printed in the OBD section of the VIR
 5. The failure of the OBDII portion of the test will NOT result in an overall test failure.
 6. A second page will be printed for the VIR listing the DTCs with an appropriate label of the code associated with the failure.
 7. The analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.
 8. If the vehicle subsequently passes the tailpipe emissions inspection, the following message will also be printed on the second page of the VIR below the listed DTCs:
 - i. **ALTHOUGH THE ABOVE FAULT CODES WERE RETRIEVED FROM THE ON-BOARD DIAGNOSTIC SYSTEM, VEHICLE EMISSIONS ARE STILL WITHIN ACCEPTABLE RANGES. TO ENSURE THAT THE VEHICLE CONTINUES TO OPERATE EFFICIENTLY, IT IS RECOMMENDED THAT THE DEFECTS RESULTING IN THE ABOVE FAULT CODES BE REPAIRED AS SOON AS POSSIBLE.**
4. If the model year of the vehicle is equal to or older than the model year specified in the OBDII Model Year Retest field in the REGION table but the MIL has not been commanded to be illuminated:
 1. The analyzer will not check the EIS OBDII Failure Date field as the Model Year Retest Field has precedence
 2. An 'F' will be written to the OBDII Fault Code Result field in EIS,
 3. A 'P' will be written to the OBDII Test Result fields in EIS,
 4. The DTC(s) that was found will be written to the Fault Codes field in the EIS table.
 5. The presence of a DTC will NOT result in an OBD or overall test failure.
 6. A 'PASS' will be printed in the OBD section of the VIR.
 7. The analyzer will proceed to V. Emissions Inspection (Tailpipe), the tailpipe portion of the test.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT PRE_TUNE

3.1.24 Preconditioned Two-Speed Idle Test Procedure

A. General Requirements

The test sequence shall include at least the following parameters: HC, CO, CO₂, and engine RPM. The analyzer shall have help screens to assist the inspector with suggested methods of picking up the RPM. If the RPM can not be obtained, the system shall allow the inspector to 'bypass' the RPM signal attachment. The RPM bypass function shall be made available, when the analyzer displays live engine RPM for the first time. To activate the RPM bypass, inspector must strike at least two keys simultaneously. Once the emission test has begun, the bypass function shall no longer be available. The option to bypass may not be available to all makes and models. The system shall set RPM_BYPASS to 'B.' The analyzer shall prompt the inspector to test the vehicle in as-received condition, all accessories turned off, and the engine running at normal operating temperature (based on a temperature gauge reading or a touch test on the radiator hose, and visual observation for overheating). The inspector shall insert the sample probe into the tailpipe and the test sequence shall begin. The test timer governing the overall test sequence shall begin at the start of sampling. A separate mode timer shall govern the modes within the test sequence and shall start when the specified conditions are met. The anti-dilution criterion shall be a minimum combined CO and CO₂ concentration of six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks).

B. Initial Test

The initial test shall have an overall maximum test time of 290 seconds. If after 290 seconds a valid test condition has not been obtained, the analyzer shall prompt the inspector to restart the emissions test or fail this portion of the test and continue to the next phase of the inspection. If the inspector elects to continue on to the next phase of the inspection, the test shall end and be reported as a **FAILED** test in the test record and on the vehicle inspection report. If the inspector elects to restart the emissions test, the analyzer shall restart the emissions test from the beginning, reset the time out flag, and write the emissions readings from the invalid test condition in the test record in the bytes that begin 'ALT_', and the next set of emissions readings in the test record in the bytes that begin 'PRI_'. If after 290 seconds a valid test condition has not been obtained after the restart, the test shall end and be reported as a **FAILED** test in the test record and on the vehicle inspection report. The procedure will not proceed to the second chance section. This condition could be caused by invalid RPM or Dilution.

C. **High-Speed Mode**

The mode timer shall start when engine speed is between 2200 and 2800 RPM and exhaust CO + CO₂ is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks). The mode shall last 90 seconds. If engine speed falls below 2200 RPM or exceeds 2800 RPM for more than two seconds in one excursion, or more than six seconds over all excursions, within 30 seconds of final readings, the readings shall be invalid and the mode shall continue. If CO + CO₂ falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emissions levels over the last five seconds. Readings shall be taken as running averages.

The pass/fail determination is made based on a comparison of the HC and CO readings to the high-speed emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the high-speed mode.

If the vehicle passes, the printed and recorded values shall be the passing readings, for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period). If the vehicle fails, calculate the scores in the same manner and enter the values for the HC and CO into the record from the lowest score. Proceed to the second chance test and report only the scores obtained from it.

D. **Idle-Mode**

This mode shall be performed immediately following the high-speed mode. The mode timer shall start when the engine speed is between 350 and 1200 RPM and the concentration of CO + CO₂ is at least six percent. This mode shall last a minimum of 30 seconds as engine speed is between 350 and 1200 RPM, CO + CO₂ level is above six percent, idle mode time is less than 90 seconds, and passing readings have not been obtained. If engine rpm exceeds 1200 RPM or falls below 350 RPM, the mode timer shall reset to zero and resume timing. If the engine stalls, the test shall abort resulting in a **FAILED** test. If CO + CO₂

falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings shall be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle shall pass and the mode shall end immediately. Otherwise, the mode shall continue for at least 30 seconds and not more than 90 seconds, stopping between these two limits whenever local program cutpoints are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to idle emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the idle mode.

If the vehicle passes, the printed and recorded values shall be the passing readings, for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period). If the vehicle fails, calculate the scores in the same manner and enter the values for the HC and CO into the record from the lowest score. Proceed to the second chance test and report only the scores obtained from it.

E. **Second-Chance Test**

If the vehicle fails either mode, the test timer shall restart and a second-chance test shall be performed. The second-chance test shall be performed for only the mode(s) that failed.

If the vehicle failed only the initial high-speed mode, the second-chance test shall consist of the high-speed test mode only. The overall test time limit for this sequence is 280 seconds. If the vehicle failed only the idle mode, the second-chance high-speed mode is for preconditioning only. If both modes were failed initially, a complete test is conducted. The second-chance idle test mode shall be performed if a vehicle has failed both its initial and second-chance high-speed tests. If the vehicle failed only the idle mode, the second-chance test shall consist of the preconditioning mode followed by the idle mode. The overall test time limit for these sequences shall be 425 seconds.

F. **Second-Chance High-Speed Mode Without Subsequent Idle Mode**

The engine shall be shut off and be restarted for 1981-1987 Ford Motor Company products and 1984-1985 Honda Preludes, but no other vehicles. A **prompt shall notify the inspector of this requirement**. If necessary to reduce analyzer fouling, remove the probe from the tailpipe or turn off the sample pump during the restart procedure.

The mode timer shall start when engine speed is between 2200 and 2800 RPM and exhaust CO + CO₂ is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks). The mode shall last a minimum of 15 seconds and a maximum of 180 seconds. If engine speed falls below 2200 RPM or exceeds 2800 RPM for more than two seconds in one excursion, or for more than six seconds over all excursions within 30 seconds of the current final readings, the readings shall be invalid and the mode shall continue. If CO + CO₂ falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings shall be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle shall pass and the mode shall end immediately. Otherwise, the mode shall continue for at least 30 seconds and not more than 180 seconds, stopping between these two limits whenever local program cutpoints are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to high-speed emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the test.

If the vehicle fails, the printed and recorded values shall be the readings for which $HC + (151 * CO)$ is a minimum. If the vehicle passes, the reported scores shall be the passing readings for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period).

G. **Second-Chance Preconditioning Mode With Subsequent Idle Mode**

The mode timer shall initiate when engine speed is between 2200 and 2800 RPM. The mode shall continue for 180 seconds. If engine speed falls below 2200 RPM, or exceeds 2800 RPM for more than five seconds in any one excursion, or 15 seconds over all excursions, the mode timer shall reset to zero and resume timing.

H. **Second-Chance Idle Mode**

The second-chance idle mode shall be performed immediately following the second-chance preconditioning mode. The engine shall be shut off and restarted for 1981-1987 Ford Motor Company products and 1984-1985 Honda Preludes, but no other vehicles. **A prompt will notify the inspector of this requirement.** If necessary to reduce analyzer fouling, remove the probe from the tailpipe or turn off the sample pump during the restart procedure.

The mode shall initiate when the engine speed is between 350 and 1200 RPM, and the concentration of CO + CO₂ is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks and alternate fuel vehicles). The mode shall last a minimum of 30 seconds and a maximum of 90 seconds. The idle mode shall continue as long as engine speed is between 350 and 1200 RPM, CO + CO₂ level is above six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks and alternate fuel vehicles), idle mode time is less than 90 seconds and passing readings have not been obtained. If engine rpm exceeds 1200 RPM or falls below 350 RPM, the mode timer shall reset to zero and resume timing. If the engine stalls, the test shall abort. If CO + CO₂ falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings shall be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle shall pass and the mode shall end immediately. Otherwise, the mode shall continue for at least 30 seconds and not more than 90 seconds, stopping between these two limits whenever local program cut points are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to idle emissions standard selected for the particular vehicle. If the HC

and CO readings show passing scores for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the test.

If the vehicle fails, the printed and recorded values shall be the readings for which $HC + (151 * CO)$ is a minimum. If the vehicle passes, the reported scores shall be the passing readings for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period).

I. **Graphic Illustration of Preconditioned Two-Speed Idle Test**

(Reserved)

J. **Test Sequence for BMW/Peugeot/Volvo/Jaguar**

The test sequence shall follow the procedure described in 40 CFR Part 51, Subpart S, Appendix B, (I) Idle Test (see Appendix K) with the following modifications.

Given the problems with the ZF automatic transmission, the TNRCC/DPS prefers that the affected vehicles be tested at their dealerships. Accordingly, if the inspector enters an "A" (for automatic) for the transmission type, and if the vehicle make, model and model year match BMW/Peugeot/Volvo/Jaguar criteria, the TX96 analyzer shall display the following message:

BECAUSE OF THE POSSIBILITY OF TRANSMISSION DAMAGE TO THIS VEHICLE, THE TNRCC/DPS PREFERS THAT IT BE INSPECTED AT ITS DEALERSHIP. IF YOU STILL WISH TO PERFORM THE INSPECTION, YOU MAY DO SO AT YOUR OWN RISK. PRESS "ENTER" TO CONTINUE. IF NOT, PRESS "ESC" TO ABORT THE TEST. (ENTER ABORT CODE 6.)

If the inspector chooses to continue testing this vehicle, display the following message before beginning the test sequence.

BEFORE BEGINNING THE EMISSIONS TEST, MAKE SURE THE ENGINE IS A NORMAL OPERATING TEMPERATURE. IF NOT, THE VEHICLE SHOULD BE DRIVEN UNTIL IT IS. DO NOT WARM THE ENGINE BY RAISING THE RPM ABOVE IDLE WHILE THE TRANSMISSION IS IN PARK OR NEUTRAL.

AFTER THE ENGINE REACHES NORMAL OPERATING TEMPERATURE, PUT THE TRANSMISSION IN PARK AND

TURN THE ENGINE OFF FOR 30 SECONDS. RESTART THE ENGINE. AFTER THE ENGINE IS STARTED, DO NOT MOVE THE GEAR SHIFT SELECTOR THROUGH THE FORWARD OR REVERSE GEARS BEFORE OR DURING THE TEST SEQUENCE. DO NOT EXCEED 2000 RPM.

Testing period: 90 seconds, no second stage (second chance).

Test Stage: Idle RPM (see standards for maximum).

Units of test results: Concentration measurements: HC PPM, CO percent, CO₂ percent, O₂ percent.

All 1984-87 BMW's with automatic transmission, 1983-88 Volvo 740s with automatic transmission, 1984-89 Jaguar Xjs's, and the 1986-92 Peugeot 505s with automatic transmission shall be tested using this test sequence or the latest test sequence supplied by the TNRCC.

K. Preconditioning Modes for BMW/Peugeot/Volvo/Jaguar

In addition to the preconditioning modes described for Ford Motor Company and Honda vehicles in Appendix B, the emissions test shall include the following preconditioning modes or the latest preconditioning modes supplied by the TNRCC. There are no preconditioning modes for vehicles that match the BMW/Peugeot/Volvo/Jaguar criteria (i.e., vehicle make, model and model year, and transmission).

L. Initial Test Completion

Upon completion of a preconditioned 2-speed idle test, the TX96 analyzer must:

1. Set the EMISS_TEST_TYPE to '2' for 2-speed idle test. If there is no previous inspection for this vehicle, or the EMISS_PF_FLAG for this vehicle's previous inspection is 'P,' set the EMISS_INIT_TEST to 'I' for initial test. If the EMISS_PF_FLAG for this vehicle's previous inspection is 'F,' set the EMISS_INIT_TEST to 'R'. If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, set the SAFE_INIT_TEST to 'I.' If the previous inspection was less than or equal to 16 days prior to this inspection, set the SAFE_INIT_TEST to 'R.'
2. Set the HC_PF_FLAG, CO_PF_FLAG, and EMISS_PF_FLAG to one of the following codes:
 - (a) P - Pass; or

- (b) F - Fail;
3. Display the test results, update the test record, replace the 'J' in the ABORT field with a space or blank, set the SAFE_31 to "P," and write the vehicle test record to **VEHICLE.DAT**, if the entry for EMISS_FP_FLAG is a "P".
 4. Display the test results, update the test record, replace the 'J' in the ABORT field with a space or blank, set the SAFE_31 to "F," and write the vehicle test record to **VEHICLE.DAT** and **REINSPECT.DAT** if the entry for EMISS_PF_FLAG is an "F".
 5. If the inspector opted to 'bypass' the RPM, set the RPM_BYPASS to 'B'.
 6. If the excessive dilution causes the test sequence to end, set the DILUTION_PF_FLAG to 'F'. Otherwise, set the DILUTION_PF_FLAG to 'P'.
 7. If the emissions test ends due to a "time out" condition, set the TIMEOUT_FLAG to 'Y.' Otherwise, set the TIMEOUT_FLAG to 'N.'
 8. The system will automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME, STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM, COUNTY_CODE, DILUTION (Dilution Amount in percent, CO + CO₂).

<u>Associated System File:</u>	VEHICLE.DAT	PRI_CURB_IDLE_CO
	REINSPECT.DAT	PRI_CURB_IDLE_HC
		PRI_CURB_IDLE_CO₂
		PRI_CURB_IDLE_O₂
		PRI_HIGH_SPEED_CO
		PRI_HIGH_SPEED_HC
		PRI_HIGH_SPEED_CO₂
		PRI_HIGH_SPEED_O₂
		ALT_CURB_IDLE_CO
		ALT_CURB_IDLE_HC
		ALT_CURB_IDLE_CO₂
		ALT_CURB_IDLE_O₂
		ALT_HIGH_SPEED_CO
		ALT_HIGH_SPEED_HC
		ALT_HIGH_SPEED_CO₂
		ALT_HIGH_SPEED_O₂
		PRI_HIGH_SPEED_RPM
		PRI_CURB_IDLE_RPM

ALT_HIGH_SPEED_RPM
ALT_CURB_IDLE_RPM

DILUTION
DILUTION_PF_FLAG
RPM_BYPASS

HC_PF_FLAG
CO_PF_FLAG
EMISS_PF_FLAG
TEST_TYPE
EMISS_INIT_TEST

STATION_NAME
INSPECTOR_LNAME
INSPECTOR_FNAME
SAFE_31

3.1.25 Gas Cap Missing Prompt:

IS THE GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If inspector indicates the gas cap is missing, the system shall set the GAS_CAP_MISS to 'Y', set the GAS_CAP_PF_FLAG_1 to 'F' - fail, (i.e., the vehicle shall fail the gas cap integrity test), and continue with the end of phase logic in Section 3.1.28b. If the inspector selects 'N', continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT GAS_CAP_MISS**
 GAS_CAP_PF_FLAG_1

3.1.26 Gas Cap Testable Prompt:

IS THE GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If the inspector indicates the gas cap not testable ('untestable'),

3.1.28a Second Gas Cap Prompt:

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria: This prompt shall not be displayed if the inspector has indicated that the gas cap is missing, or untestable. The default for this screen shall be to 'N.' The analyzer shall only accept an entry of 'Y' or 'N.' The error message shall be displayed, if the inspector enters something other than 'Y' or 'N.' If the inspector indicates that there is a second gas cap to be tested, the analyzer shall proceed to the Second Gas Cap Missing Prompt, in Section 3.1.28c.

Error Message: ONLY 'Y' OR 'Y' WILL BE ACCEPTED--TRY AGAIN.

3.1.28b End of Phase Logic:

Programming Criteria:

Since the second gas cap will not be tested, the analyzer shall set the flags as follows. If the GAS_CAP_PF_FLAG_1 is set to "P" - pass, then set the GAS_CAP_PF_FLAG to "P." If the GAS_CAP_PF_FLAG_1 is set to "F" - fail, then set the GAS_CAP_PF_FLAG to "F." If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are all set to "P" - pass, then set the OVERALL_RESULTS field to "P" for pass. If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are not all set to "P" - pass, then set the OVERALL_RESULTS to "F" for fail. Then, the system shall then proceed to the Emissions Test Fee Prompt, Section 3.1.29.

<u>Associated System File:</u>	VEHICLE.DAT	EMISS_PF_FLAG
		SAFETY_PF_FLAG
		GAS_CAP_PF_FLAG
		GAS_CAP_PF_FLAG_1
		OVERALL_RESULTS

3.1.28c Second Gas Cap Missing Prompt:

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If inspector indicates the gas cap is missing, the system shall set the 2ND_GAS_CAP_MISS to 'Y', set the GAS_CAP_PF_FLAG_2 to 'F' - fail, (i.e., the vehicle shall

fail the gas cap integrity test), and continue with the end of phase logic in Section 3.1.28g. If the inspector selects 'N', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT 2ND_GAS_CAP_MISS
GAS_CAP_PF_FLAG_2

3.1.28d Second Gas Cap Testable Prompt:

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If the inspector indicates the gas cap not testable ('untestable'), (i.e., selects 'N'), the system shall set the GAS_CAP_PF_FLAG_2 to 'P' - pass, set the 2ND_GAS_CAP_TEST to 'N', and continue with the end of phase logic in Section 3.1.28g. If the inspector selects 'Y', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT 2ND_GAS_CAP_TEST
GAS_CAP_PF_FLAG_2

3.1.28e Second Gas Cap Connect Prompt:

REMOVE THE SECOND GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system will prompt the inspector to press "continue/enter" to conduct the test.

Error Message: ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN

3.1.29 Emissions Test Fee Prompt:

ENTER THE COST FOR THE EMISSIONS INSPECTION, INCLUDING CENTS.

Programming Criteria: The inspector shall enter the cost for the emissions inspection, exclusive of repair costs. The system shall sum the EMISS_INSP_COST, the SAFE_INSP_COST, if applicable, and the applicable repair costs, (i.e., REP_CST_YIS) to obtain the OVERALL_COST. The analyzer shall not accept a value greater than \$99.99 for this entry.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

MAXIMUM ENTRY \$99.99 -- TRY AGAIN.

<u>Associated System File:</u>	VEHICLE.DAT	EMISS_INSP_COST
		OVERALL_COST

3.1.30 Certificate Number Prompt: **ENTER THE INSPECTION CERTIFICATE NUMBER.**

Programming Criteria: If the OVERALL_RESULTS flag is “F”, then the system will not give the inspector this prompt and proceed to 3.1.34. If the OVERALL_RESULTS flag is “P”, then the system will prompt the inspector to input the safety inspection sticker number. A minimum of six (6) and maximum of nine (9) characters are required for this field. When the certificate number entered is not a sequential number to the last certificate issued, a warning should be displayed, “Certificate number not in sequential order. Notify DPS if a certificate is missing.” The enter key should allow the inspector to continue.

The safety certificate number consists of an alpha character, followed by up to eight digits. The alpha character usually does **not** correspond to the alpha character contained in the SAFE_TEST_TYPE field. They are however, separated or indexed by the different types of safety inspections. Thus, the sticker numbers should be in sequential order for all one year windshield inspections (type “A” tests), two year windshield inspections (type “B” tests), Trailer/motorcycle inspections (type “C” tests), and so forth. The warning should appear each time the inspector changes books for the same type of inspection. For example, a book of one year windshield inspections (type “A”

tests) may end with F00000050, and the next book of one year windshield inspection certificates purchased by the shop owner may begin with F00001000. The books contain 50 sequential certificates.

The system should take the entered certificate number, compare it to the previous certificate issued under the same safety inspection type, and determine if the entered certificate number is next in sequence for that safety inspection type. If the entered number is not next in sequence, the correction prompt should appear.

If the inspector enters fewer than 9 characters, the analyzer shall automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an 'A', followed by a '123' shall be converted to 'A00000123' and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. This nine-character value shall be used during comparison testing to facilitate sequential issuance of certificates. The first character of a certificate number shall be an alphabetic character. The analyzer shall be able to enter the certificate number using the bar code reader. The only acceptable alpha character is 'V' for decals.

The analyzer shall restrict the alpha character to a list of acceptable alpha characters for a particular type of certificate or decal being issued. For example, during a safety and emission inspection reinspection, if the inspector selects the '1-year windshield (safety & emissions)' certificate on the type of inspection prompt in Section 3.1.20 and the vehicle passes the inspection, the inspector may only enter an 'A,' 'B,' 'C,' 'D,' 'E,' or 'F,' as the alpha character in the certificate number entry prompt. For Emission only Decals, the only acceptable alpha character is 'V.' For '1 Year Windshield (Safety Only)' certificate types, the acceptable alpha characters are 'G,' 'H,' 'I,' 'J,' 'K,' 'L,' 'M,' and 'P.' For '2 Year Windshield' certificate types, the acceptable alpha characters are 'N,' 'W,' and 'Q.' For 'Trailer/Motorcycle' certificate types, the acceptable alpha characters are 'X,' 'Y,' and 'Z.' For 'FMCSR (Truck)' certificate types, the acceptable alpha characters are 'T,' and 'U.' For 'FMCSR (Trailer)' certificate types, the acceptable alpha characters are 'R,' and 'S.'

Associated System File: VEHICLE.DAT CERT_NUM

3.1.31 Certificate Number Correction Prompt:

**INDICATE THE CONDITION OF THE PREVIOUS
CERTIFICATE**

U - UNACCOUNTED FOR

C - ENTERED CERTIFICATE IS CORRECT
R - RE-ENTER CERTIFICATE NUMBER

Programming Criteria:

The system shall only accept 'U,' 'C,' or 'R,' as valid entries. The system shall display the entered certificate number, the safety certificate inspection type ('A' or 'G' certificate) and the 'previously' issued certificate number. This prompt shall only appear if the entered certificate is out of sequence. If 'R' is entered, the system shall allow the inspector to return to the previous screen prompt to re-enter the current certificate. If 'C,' or 'U' is selected, the system will use the entered certificate number as the new 'previous' certificate number for the next comparison. If 'U,' is selected, the system shall complete the test, write the test record, transmit the results to the Texas Data Link System, and continue with the Certificate Type Prompt, number 3.12.2a. The analyzer shall not allow any further official inspections to be conducted until the inspector has completed the entries required in Section 3.12, Missing, or Voided Certificates.

The analyzer may either:

1. a. complete the inspection as prescribed in Sections 3.1, by proceeding with Section 3.1.32, VI 30A Selection Prompt, and then,
b. complete the screen prompts in Section 3.12. A manufacturer selected lockout shall be used to prevent any subsequent official inspections until the certificates are accounted for by answering the prompts in Section 3.12,
2. a. Or, interrupt the current inspection, then,
b. account for the previous certificates by answering the prompts in Section 3.12, beginning with 3.12.2a and continuing through to 3.12.5, or 3.12.6, and then,
c. complete the inspection, by proceeding with Section 3.1.32, VI 30A Selection Prompt, write the test record, and transmit the results to the Texas Data Link System, thus, satisfying the requirement of accounting for the previous certificates prior to conducting any subsequent official inspections.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which type of certificate must be accounted for. In any case, the analyzer shall not conduct any subsequent official inspections until the inspector accounts for the previous certificates by answering the questions in Section 3.12.

The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). The void indicator shall show

'VOID', if 'V' is in the CERT_COND field, or 'MISS', if 'M' is in the CERT_COND field of the record created using the Missing or Voided Certificates/Decals function. The system shall store the entry of 'C' in the CERT_COND field, if 'C' is selected, and store the entry of the 'U' in the CERT_COND field, if 'U' is selected in the test record. The default for this screen shall be 'R' for reenter certificate number.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN

INVALID ENTRY--TRY AGAIN

Associated System File: VEHICLE.DAT CERT_COND

3.1.32 **VI 30A Selection Prompt:**

DO YOU WISH TO ISSUE AN OUT OF STATE
VERIFICATION FORM (VI-30A)? ('Y' OR 'N')

Programming Criteria: The system shall give this prompt if the Safety_PF_Flag is "P." The system shall only accept a 'Y' or 'N' entry. If the inspector selects 'N', skip the next screen prompt.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT VI30A_FLAG

3.1.33 **VI 30A Number Prompt:** ENTER THE VI 30A #.

Programming Criteria: The inspector will enter the VI 30A #. A minimum of one (1) character and a maximum of seven (7) characters are required for this field. If no entry is made, the analyzer shall return to the VI 30A Selection prompt, number 3.1.32.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT VI30A_NUM

3.1.34 **Rejection Receipt:** EXPLAIN THE REJECTION FULLY.

VEHICLE INSPECTION REJECTION RECEIPT

Date _____ Vehicle Make _____ Model year _____

Vehicle License # _____ Inspection Station# _____

Inspection Station Name _____

REJECTED FOR DEFECTIVE

Horn _ Windshield Wiper _ Seat Belt _ Steering _ Mirror _

Brake _ Stop, Tail or License Lamp _ Turn Signal _ Safety Guard _

Exhaust System _ Exhaust Emissions System _ Reflector _ Tire _

Headlamp or Beam Indicator _ Wheel Assembly _ Cab Lamp _

Clearance/Side Marker Lamp _ Gas Cap _

Other _

EXPLAIN REJECTION FULLY: (Inspector's explanation goes here) _____

Certified Inspector Making Inspection: _____

If defects indicated above are corrected and the vehicle returned to the original inspection station within 15 days, vehicle will be reinspected once with no additional fee. THIS IS NOT A PERMIT TO DRIVE A DEFECTIVE VEHICLE OR TO DRIVE A VEHICLE WITHOUT A CURRENT VALID INSPECTION CERTIFICATE.

Fee Paid \$ _____

Programming Criteria: The system shall prompt the inspector to explain the rejection fully, enter the fee paid on the rejection receipt and print the rejection receipt shown above. The fee paid shall be the overall cost for the complete inspection (i.e., the amount in the OVERALL_COST field). The system shall allow the inspector to type the explanation from the keyboard prior to printing the rejection receipt. If the inspector opts to type the explanation, the explanation shall appear on the printed rejection report. The system shall allow the inspector to print additional copies of the rejection receipt, after the initial report has been printed. Then, the system should continue to the Print Vehicle Repair Form, Section number 3.1.34a, followed by the Print Vehicle Inspection Report Prompt, number 3.1.35.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT OVERALL_COST

3.1.34a **Print Vehicle Repair Form (VRF):**

Programming Criteria: If the EMISS_PF_FLAG flag is "F", then the analyzer shall print a VRF. The analyzer shall print the following vehicle information on the VRF: make, model, model year, the vehicle identification number (VIN), license plate number, and odometer reading (mileage). A draft VRF format is provided in Appendix O.

3.1.35 **Print Vehicle Inspection Report:**

After the system has stored the test record, the following prompt shall be displayed.
"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."

Depending upon the pass/fail status of the emissions phase of the inspection, the printer will provide additional information to the customer as outlined in Appendix B. The custom report shall include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (2-Speed Idle), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Number, VIN, Vehicle Make, Vehicle Model Year, Vehicle Type,

Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the Test, Dilution Amount (in percent, CO + CO₂), Dilution Results (Pass or Fail), the Results of the Gas Cap Integrity Test, and the Overall Result of the Inspection. The vehicle's ignition type shall be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report shall indicate that the test was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the test was conducted as a Special Test. If the test was conducted as a Special Test, the Two Letter Designation (i.e., LI, ME, IV, AD, ST, PA, or OT) shall be placed on the same line as the Test Type separated by at least two spaces, or a slash, and the words 'Special Test' shall be in the subtitle. The system shall allow the inspector to print additional copies of the vehicle inspection report, after the initial report has been printed. If the test ends because of a time out condition or because of dilution, the emission standards, amounts, and results shall **not** be printed on the report. The report shall indicate that the vehicle has failed. The report shall indicate that the vehicle failed because of excessive dilution, where applicable. If the test should 'time out', then the report shall indicate that the vehicle failed because the test was not completed in the time allowed for completion of the test. After the inspection has been completed, the analyzer shall contact the Texas Data Link Host, and transmit all applicable vehicle information.

If the test ends in an aborted condition, the vehicle inspection report (VIR) shall print the station information, the vehicle information, indicate that the test was aborted in the overall result block, and display the reason for the abort. If the inspector selects other, then the analyzer shall print the reason typed in by the inspector, or provide space for a handwritten answer if the inspector does not type in the reason.

If the vehicle aborts the emissions phase or completes the emissions phase of the inspection with a timeout condition, the system shall print dashes on the VIR where the analyzer would have ordinarily placed readings. The dashes shall follow the expected format of the corresponding gas (i.e., CO = '--.--', HC = '----', CO₂ = '--.-'). Dashes are preferable, however, an alternative symbol may be used. The system shall also place dashes in place of the pass/fail indicator on the VIR. The system shall print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO₂, and O₂, where applicable.

The public awareness statement shall be printed only once, and the VIR shall be printed twice based on the outcome of the emissions phase of the inspection. If the vehicle passes the emissions phase of the inspection, the analyzer shall print the 'passing' public awareness statement, and the 'failing' public awareness statement, if the vehicle fails the emissions phase of the inspection.

The analyzer shall print a barcode on the VIR which contains the VIN, license plate number of the vehicle, and the license type, make, year, and model name of the vehicle

under inspection. The bar code shall be code 39 format and contain only the previously mentioned information and the start and stop characters.

Error Message: NO VALUES ENTERED -- TRY AGAIN

**Associated System File: VEHICLE.DAT EMISS_INSP_COST
CERT_NUM
OVERALL_RESULTS**

3.1.36 Texas Data Link Contact:

The analyzer shall contact the Texas Data Link Host, and transmit the completed test record for this inspection and any other test records from previous inspections that have not been sent to the Texas Data Link Host. Upon completion of this contact, the analyzer shall return to the Main Menu.

The analyzer shall increment the 'number of tests without VID contact' counter (No contact counter) by one, if the following bits are not set in the RESPONSE.DAT file during the communication sessions:

- 48 - Command completed successfully (status specific to "transmit VIN/License Plate data" command)
- 80 - Command completed successfully (status specific to "Transmit test record(s)" command)

The no contact counter shall only increment by one for each inspection completed with either response bit 48 or response bit 80 not being set.

The following bits may also be set when response bits 48 and 80 are not set. These bits provide probable explanations to why response bits 48 and 80 were not set.

- | | |
|---|--------------------------------------|
| 8 - Invalid password (token file error) | 17 - Communication port error |
| 9 - Invalid LOCKOUT.DAT file | 18 - Dialing error |
| 10 - Invalid TAS telephone number | 19 - No dial tone |
| 11 - Invalid station number | 20 - Phone line busy |
| 12 - Invalid TAS number | 21 - No answer |
| 13 - Invalid software version number | 22 - Voice answered |
| 14 - Invalid VID phone number | 23 - Security lagon (to VID) failure |
| 15 - Invalid communications port base address | |
| 16 - Invalid communications port interrupt | |

The no contact counter shall not be incremented for any aborted inspections.

3.2 Main Menu Selection '2' "Safety Only Inspection"

3.2.1 Access Code Prompt: **ENTER YOUR INSPECTOR'S ACCESS CODE**

Programming Criteria: The TX96 Analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M Inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall not accept duplicate access code for different inspectors. Each inspector's access code shall be unique. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

- Error Messages:**
1. **"YOUR ACCESS CODE IS NOT VALID--TRY AGAIN"**
 2. **"THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE."**

Associated System File: **INSPECTOR.DAT ACCESS_CODE**

3.2.2 Date Expiration Prompt: **YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM DD YY**

Programming Criteria: The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer

shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is 30 days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, the analyzer will display a message that indicates lockout has occurred and returns to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR)
CERTIFICATION EXPIRES MM/DD/YY.**
2. **YOUR STATION /OR INSPECTOR
CERTIFICATION EXPIRED (date). YOU ARE
NOT AUTHORIZED TO PERFORM ANY
EMISSIONS INSPECTION AT THIS TIME.
PLEASE CONTACT YOUR LOCAL DPS
OFFICE.**
3. **YOUR (STATION/INSPECTOR)
CERTIFICATION WILL EXPIRE IN X (5, 4, 3,
2, 1) DAY(S).**

<u>Associated System File:</u>	INSPECTOR.DAT	INSP_EXP_DATE
	STATION.DAT	STAT_EXP_DATE
	LOCKOUT.DAT	INSP_LOCKOUT_FLAG
		STAT_LOCKOUT_FLAG

3.2.3 Insurance Prompt: ENTER THE INSURANCE EXPIRATION DATE.

Programming Criteria: Enter the insurance expiration date in the following format: MM/DD/YY. The analyzer system shall verify that the entry for the month is between 1 - 12, the entry for the day is between 1 - 31, and that the entry for the year begins with 19 or 20 (i.e., 1985, 2001). If the inspector enters a date that has passed, the analyzer shall provide a warning to the inspector. The warning shall indicate that the insurance has expired. The system will accept '000000' as a valid entry. The system will print '000000' on any applicable form, and write the vehicle record to VEHICLE.DAT.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT INSUR_EXP_DT

3.2.4 Model Year Prompt: ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria: If no value is entered, the analyzer will display Message 1, and prompt the inspector to re-enter the last two digits of the vehicle model year. The system will display Message 2 in the event that the model year is beyond the current year +2, and prompt the inspector to re-enter the last two digits of the vehicle model year or the entire model year. The analyzer shall require the inspector to confirm any model year entry that is less than 1950.

Error Message: 1. NO VALUE HAS BEEN ENTERED TRY AGAIN.

2. INVALID MODEL YEAR -- TRY AGAIN.

Associated System File: VEHICLE.DAT MODEL_YEAR

3.2.5 License Type Prompt: "ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE."

- | | |
|-------------------|------------------------|
| 1. Texas Plate | 5. Exempt (Federal) |
| 2. No Plate | 6. Dealer Plate |
| 3. Out of State | 7. Temporary Buyer Tag |
| 4. Exempt (State) | 8. Other |

Programming Criteria: The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type '2,' or '8,' the system will assign the License_Num field in the VEHICLE.DAT a value of "V" followed by the last seven digits of the VIN number, and skip the license prompt, number 3.1.8. The entry in the License_Num field shall be a "V" and the 7 rightmost characters of the VIN. If the entered VIN has less than 7 characters, the entry should be a "V" followed immediately by the entered VIN without filler spaces between the "V" and the entered VIN. The system will default to license type '1.'

Error Message: THIS FIELD MUST BE ENTERED TO CONTINUE

WITH THE TEST.

Associated System File: VEHICLE.DAT LICENSE_TYPE

3.2.6 License Prompt: "ENTER THE LICENSE NUMBER OF THE VEHICLE."

Programming Criteria: The inspector will be prompted to enter the license number of the vehicle. Upon confirming the license plate entry, the vehicle information is eligible to be stored in the RECALL.DAT file.

Error Message: THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.

Associated System File: VEHICLE.DAT LICENSE_NUM

3.2.6a TxDOT Number Prompt: ENTER THE NUMBER FROM THE TxDOT REGISTRATION CERTIFICATE AFFIXED TO THE VEHICLE.

Programming Criteria: The system shall only give this prompt if the inspector selected 'Texas Plate' (i.e., License_Type is '1') as the license type of the vehicle in Section 3.2.5. The system will prompt for the TxDOT number as it appears on the vehicle.

Where available, the inspector will enter the TxDOT number by using the bar-code reader to scan the bar coded TxDOT number that is on the windshield of the vehicle. If a bar-code reader is not available, the inspector will be capable of entering the TxDOT number from the keyboard. The bar code should utilize the Code 39 symbology. The only information contained in the bar code are the start and stop characters, and the TxDOT number.

The system shall allow the inspector to see and edit the TxDOT number as it is being entered. When all characters of the TxDOT number have been entered, the system shall prompt the inspector to press "continue" or "enter". The inspector shall hit "continue" or "enter", the screen will blank the TxDOT number and ask the operator to reenter the TxDOT number under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer will display Message 3 and prompt the inspector to enter the TxDOT number a third time. A minimum 10 characters are required for this field. If the entry is not within these parameters then the system

will display Message 2. The format of the TxDOT number shall consist of eight numeric digits followed by two alpha characters. For example, 06691576WZ is a valid TxDOT number. If the entry is does not fit this format, then the system will display Message 4. If no value is entered, the analyzer will display Message 1.

- Error Message: 1. THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
- 2. A MINIMUM OF 10 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
 - 3. ENTRIES DO NOT MATCH -- TRY AGAIN.**
 - 4. THIS ENTRY MUST BE EIGHT NUMBERS FOLLOWED BY TWO LETTERS-- TRY AGAIN.**

Associated System File: VEHICLE.DAT TXDOT_NUM

3.2.7 VIN Number Prompt: ENTER VIN NUMBER.

Programming Criteria: The system will prompt for the VIN number as it appears on the vehicle. Where available, the inspector will enter the VIN number by using the bar-code reader to scan the bar-coded VIN on the vehicle. If a bar-code reader is not available, the inspector will be capable of entering the VIN number from the keyboard. The analyzer will place a 'B' in the BARCODED_VIN field of the test record, if the VIN is entered using the bar code reader. Otherwise, the analyzer will place a 'K' in the BARCODED_VIN field of the test record.

The system shall allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the system shall prompt the inspector to press "continue" or "enter". The inspector shall hit "continue" or "enter", the screen will blank the VIN and ask the operator to reenter the VIN under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer will display Message 3 and prompt the inspector to enter the VIN number a third time. A minimum of three and maximum of 17 characters are required for this field. If the entry is not within these parameters, the system will display Message 2. If no value is entered, the analyzer will display Message 1. The VIN verification algorithm shall be applied here. The algorithm shall be supplied under separate cover by the TNRCC. The VIN verification shall only be applied to vehicles

with model years 1981 and newer. The analyzer will not allow the inspector to enter the letters 'I,' 'O,' or 'Q' for vehicle with model years 1981 and newer. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad. For example, the software could ask if the entered '8' could be a 'B.'

- Error Message:**
- 1. THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.
 - 2. A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.
 - 3. ENTRIES DO NOT MATCH -- TRY AGAIN.

Associated System File: VEHICLE.DAT VIN_ID_NUM
VIN_FLAG
BARCODED_VIN

3.2.7a Vehicle Type Prompt:

SELECT THE VEHICLE TYPE
'P' - PASSENGER CAR/STATION WAGON
'T' - TRUCK/VAN/BUS/SPORTS UTILITY VEHICLE
'M' - MOTOR HOME
'B' - BUS
'C' - MOTORCYCLE
'L' - TRAILER

Programming Criteria: The inspector should select the vehicle type from the above list.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN
INVALID ENTRY--TRY AGAIN

Associated System File: VEHICLE.DAT VEHICLE _TYPE

3.2.8 Vehicle Make Prompt: ENTER THE VEHICLE MAKE.

Programming Criteria: The analyzer will then display a list of vehicle makes that the inspector will use to select the make of the vehicle

currently under inspection. The analyzer will store the selected make name using the NCIC make definitions. The analyzer may display subsets of the make list that specifically identify all of the manufacturers of passenger vehicles, trucks, motor homes, motorcycles, trailers, or buses.

The analyzer shall present the option of 'other' as a make definition for use when there is no applicable definition for the vehicle under inspection. The 'other' option shall instruct the inspector to enter the full make name and at least the first five characters of the model name. The analyzer shall allow the inspector to enter up to 20 characters. The entry of 'OTHR' shall be stored in the MODEL field, and the characters 'OTH' shall be placed in the MODEL_CODE field in the applicable test record. The NCIC make/model list may supplied by the TNRCC.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT MAKE

3.2.9 Model Prompt: SELECT THE VEHICLE MODEL.

Programming Criteria: The system will then display the appropriate vehicle models based on the vehicle make entry. The analyzer shall present the option of 'other' as a model definition for use when there is no applicable definition for the vehicle under inspection. The 'other' option shall instruct the inspector to enter the model name and allow the inspector to enter up to 20 characters. An 'OTH' shall be placed in the MODEL_CODE field of the test record whenever the 'other' option is selected by the inspector.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT MODEL
MODEL_CODE

3.2.10 Odometer Prompt: ENTER THE VEHICLE ODOMETER READING. A MINIMUM OF ONE NUMERIC ENTRY IS REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.

Programming Criteria: Enter the vehicle odometer. Do not include tenth's. The system shall only accept numerical entries in this field.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT ODOMETER

3.2.10a Confirm Vehicle Info Display:

The analyzer shall display the vehicle information to the inspector and allow the inspector to edit the information as appropriate. If the vehicle information was populated by the analyzer using a previous test record, the inspector shall be allowed to edit all vehicle information except the VIN, the license plate type, and the license plate number. Upon confirming the vehicle, the vehicle information is no longer eligible to be stored in the RECALL.DAT file.

3.2.11 Test Type Prompt: ENTER THE TYPE OF INSPECTION

**J-1 YEAR WINDSHIELD (SAFETY ONLY)
C-TRAILER/MOTORCYCLE
B-2 YEAR WINDSHIELD
G-FMCSR (TRUCK)
K-FMCSR (TRAILER)**

Programming Criteria: The system shall only accept entries for alphabets 'j,' 'b,' 'c,' and 'g.' For entries, 'b,' - 'c,' and 'j,' the system will prompt the inspector to indicate the status of the following 24 systems on the vehicle. The 'g' entry will prompt the inspector to indicate the status of 30 systems on the vehicle. The analyzer shall only display one FMCSR selection. For the FMCSR selection, the analyzer shall display only choice 'g' if the vehicle type is a truck, and only choice 'k' if the vehicle type is a trailer. The default for this screen shall be 'j.'

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_TEST_TYPE

3.2.12 Safety Inspection Items: For Test Types “J,” “B,” or “C”

	P-PASS	F-FAIL	R-REPAIR	N-NOT APPLICABLE	
1			()	14	LICENSE PLATE LAMP ()
2			()	15	REAR REFLECTORS ()
3			()	16	TURN SIGNAL LAMPS ()
4			()	17	HEADLAMPS ()
5			()	18	CLEARANCE LAMPS ()
6A			()	19	SIDE MARKER LAMPS ()
6B			()	20	CAB LAMPS ()
7			()	21	SIDE REFLECTORS ()
8			()	22	SCHOOL BUSES
9			()		22A - SCHOOL BUS SIGNS ()
					22B - FIRE EXTINGUISHER ()
					22C - WARNING LAMPS ()
10					22D - CONVEX CROSSOVER
			()		MIRROR ()
			()		
			()	23	SAFETY GUARD OR FLAPS ()
			()		
			()	24	SUN-SCREENING ()
			()		
11			()		
12			()		
13			()		

3.2.12 Safety Inspection Items: For Test Type “G” or “K”

	P-PASS	F-FAIL	R-REPAIR	N-NOT APPLICABLE	
1			()	14	LICENSE PLATE LAMP ()
2			()	15	REAR REFLECTORS ()

3	MIRRORS	()	16	TURN SIGNAL LAMPS	()
4	STEERING SYSTEM	()	17	HEADLAMPS	()
5	SEATBELTS	()	18	CLEARANCE LAMPS	()
6A	SERVICE BRAKE SYSTEM	()	19	SIDE MARKER LAMPS	()
6B	PARKING BRAKE SYSTEM	()	20	CAB LAMPS	()
7A	STEERING AXLE TIRES	()	21	SIDE REFLECTORS	()
7B	ALL OTHER TIRES	()	22	SCHOOL BUSES	
				22A - SCHOOL BUS SIGNS	()
8	WHEEL ASSEMBLY	()		22B - FIRE EXTINGUISHER	()
				22C - WARNING LAMPS	()
9	EXHAUST	()		22D - CONVEX CROSSOVER	()
				MIRROR	
10	EMISSIONS SYSTEM		23	SAFETY GUARD OR FLAPS	()
	10A - EGR	()	24	SUN-SCREENING	()
	10B - TAC	()	25	I/D, BACKUP	
	10C - PCV	()		& HAZARD LAMPS	()
	10D - AIS	()	26	COUPLING DEVICES	()
	10E - EVAP	()			
	10F - CATALYTIC	()	27	FUEL SYSTEM	()
11	BEAM INDICATOR	()	28	SUSPENSION SYSTEM	()
12	TAIL LAMP	()	29	FRAME	()
13	STOP LAMP	()	30	WINDSHIELD	()

Programming Criteria: The system shall only allow the inspector to enter 'P' for pass, 'F' for fail, 'R' for repair, and 'N' for not applicable. The inspector shall be required to press "enter/continue" after each item. These fields are required and must contain a valid entry. The system does not have to display the screen heading during the test sequence. The system shall enter the date and the inspector's DL number. The inspector should be able to access an item's associated help screen by placing the cursor in the parentheses and pressing the 'F1' key. The help screens are in Appendix D for each type of Safety Inspection test. If any line item is marked 'F' for fail, then set SAFETY_PF_FLAG to 'F.' If all items are marked 'P' for pass, then set SAFETY_PF_FLAG to 'P.'

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT

SAFE_1	SAFE_2
SAFE_3	SAFE_4
SAFE_5	SAFE_6A
SAFE_6B	SAFE_7
SAFE_7A	SAFE_7B
SAFE_8	SAFE_9
SAFE_10A	SAFE_10B
SAFE_10C	SAFE_10D
SAFE_10E	SAFE_10F
SAFE_11	SAFE_12
SAFE_13	SAFE_14
SAFE_15	SAFE_16
SAFE_17	SAFE_18
SAFE_19	SAFE_20
SAFE_21	SAFE_22A
SAFE_22B	SAFE_22C
SAFE_22D	SAFE_23
SAFE_24	SAFE_25
SAFE_26	SAFE_27
SAFE_28	SAFE_29
SAFE_30	

SAFETY_PF_FLAG

3.2.12a Gas Cap Missing Prompt:

IS THE GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If inspector indicates the gas cap is missing, the system shall set the GAS_CAP_MISS to 'Y', set the GAS_CAP_PF_FLAG_1 to 'F' - fail, (i.e., the vehicle shall fail the gas cap integrity test), and continue with the end of phase logic in Section 3.2.12f. If the inspector selects 'N', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT

GAS_CAP_MISS
GAS_CAP_PF_FLAG_1

Error Message: ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT GAS_CAP_PF_FLAG_1

3.2.12e Second Gas Cap Prompt:

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria: This prompt shall not be displayed if the inspector has indicated that the gas cap is missing, or untestable. The default for this screen shall be to 'N.' The analyzer shall only accept an entry of 'Y' or 'N.' The error message shall be displayed, if the inspector enters something other than 'Y' or 'N.' If the inspector indicates that there is a second gas cap to be tested, the analyzer shall proceed to the Second Gas Cap Missing Prompt, in Section 3.2.12g.

Error Message: ONLY 'Y' OR 'Y' WILL BE ACCEPTED--TRY AGAIN.

3.2.12f End of Phase Logic:

Programming Criteria:

Since the second gas cap will not be tested, the analyzer shall set the flags as follows. If the GAS_CAP_PF_FLAG_1 is set to "P" - pass, then set the GAS_CAP_PF_FLAG to "P." If the GAS_CAP_PF_FLAG_1 is set to "F" - fail, then set the GAS_CAP_PF_FLAG to "F." If the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are all set to "P" - pass, then set the OVERALL_RESULTS field to "P" for pass. If the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are not all set to "P" - pass, then set the OVERALL_RESULTS to "F" for fail. Then, the system shall then proceed to the end of test logic in Section 3.2.12l.

**Associated System File: VEHICLE.DAT EMISS_PF_FLAG
 SAFETY_PF_FLAG
 GAS_CAP_PF_FLAG
 GAS_CAP_PF_FLAG_1
 OVERALL_RESULTS**

3.2.12g Second Gas Cap Missing Prompt:

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If inspector indicates the gas cap is missing, the system shall set the 2ND_GAS_CAP_MISS to 'Y', set the GAS_CAP_PFLAG_2 to 'F' - fail, (i.e., the vehicle shall fail the gas cap integrity test), and continue with the end of phase logic in Section 3.2.12k. If the inspector selects 'N', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT 2ND_GAS_CAP_MISS
 GAS_CAP_PFLAG_2

3.2.12h Second Gas Cap Testable Prompt:

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If the inspector indicates the gas cap not testable ('untestable'), (i.e., selects 'N'), the system shall set the GAS_CAP_PFLAG_2 to 'P' - pass, set the 2ND_GAS_CAP_TEST to 'N', and continue with the end of phase logic in Section 3.2.12k. If the inspector selects 'Y', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT 2ND_GAS_CAP_TEST
 GAS_CAP_PFLAG_2

3.2.12i Second Gas Cap Connect Prompt:

**REMOVE THE SECOND GAS CAP FROM THE
VEHICLE AND CONNECT IT TO THE GAS CAP
TESTER. REFER TO THE OPERATOR'S MANUAL, IF
REQUIRED.**

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system will prompt the inspector to press "continue/enter" to conduct the test.

Error Message: ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--

3.2.12l End of Test Logic:

Programming Criteria: If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, set the SAFE_INIT_TEST to 'I.' If the previous inspection was less than or equal to 16 days prior to this inspection, set the SAFE_INIT_TEST to 'R.' Then, the system shall then proceed to the Safety Test Fee Prompt, Section 3.2.13.

Associated System File: **VEHICLE.DAT SAFE_INIT_TEST**

3.2.13 Safety Test Fee Prompt: **ENTER THE TOTAL COST FOR THE SAFETY INSPECTION AND SAFETY-RELATED REPAIRS, INCLUDING CENTS.**

Programming Criteria: The inspector shall enter the overall cost for the inspection, inclusive of repair costs. If the Safety_PF_Flag is set to 'F,' the system shall continue with prompt number 3.2.14. If the Safety_PF_Flag is set to 'P,' the system shall continue with prompt number 3.2.15. If an inspector enters a fee greater than \$150 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer shall display a warning message which states that the fee seems unusually large, please confirm the amount entered or reenter the fee.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT SAFE_INSP_COST**

3.2.14 Rejection Receipt: EXPLAIN THE REJECTION FULLY.

VEHICLE INSPECTION REJECTION RECEIPT

Date_____ Vehicle Make_____ Model year_____

Vehicle License # _____ Inspection Station# _____

Inspection Station Name_____

REJECTED FOR DEFECTIVE

Horn _ Windshield Wiper _ Seat Belt _Steering _ Mirror _

Brake _ Stop, Tail or License Lamp _ Turn Signal _ Safety Guard _

Exhaust System _ Exhaust Emissions System _ Reflector_ Tire _

Headlamp or Beam Indicator _ Wheel Assembly _ Cab Lamp _

Clearance/Side Marker Lamp _ Gas Cap _

Other _

EXPLAIN REJECTION FULLY: (Inspector's explanation goes here)

Certified Inspector Making Inspection: _____

If defects indicated above are corrected and the vehicle returned to the original inspection station within 15 days, vehicle will be reinspected once with no additional fee. THIS IS NOT A PERMIT TO DRIVE A DEFECTIVE VEHICLE OR TO DRIVE A VEHICLE WITHOUT A CURRENT VALID INSPECTION CERTIFICATE.

Fee Paid \$ _____

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Programming Criteria: The system shall prompt the inspector to explain the rejection fully, enter the fee paid on the rejection receipt and print the rejection receipt shown above. The fee paid shall be the overall cost for the complete inspection (i.e., the amount in the OVERALL_COST field). The system shall allow the inspector to type the explanation from the keyboard prior to printing the rejection receipt. If the inspector opts to type the explanation, the explanation shall appear on the printed rejection report. The system shall allow the inspector to print additional copies of the rejection receipt, after the initial report has been printed. Then, the system will return to the main menu.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_INSP_COST

3.2.15 Certificate Number Prompt: ENTER THE INSPECTION CERTIFICATE NUMBER.

Programming Criteria: If the Safety_PF_Flag is set to "F", then the system will not give the inspector this prompt and proceed to the Main Menu. If the Safety_PF_Flag is set to "P", then the system will prompt the inspector to input the safety inspection sticker number. A minimum of six (6) and maximum of nine (9) characters are required for this field. When the certificate number entered is not a sequential number to the last certificate issued, a warning should be

displayed, "Certificate number not in sequential order. Notify DPS if a certificate is missing." The enter key should allow the inspector to continue.

The safety certificate number consists of an alpha character, followed by up to eight digits. The alpha character usually does **not** correspond to the alpha character contained in the SAFE_TEST_TYPE field. They are, however, separated or indexed by the different types of safety inspections. Thus, the sticker numbers should be in sequential order for all one year windshield inspections (type "A" tests), two year windshield inspections (type "B" tests), trailer/motorcycle inspections (type "C" tests), and so forth. The warning should appear each time the inspector changes books for the same type of inspection. For example, a book of one year windshield inspections (type "A" tests) may end with F00000050, and the next book of one year windshield inspection certificates purchased by the shop owner may begin with F00001000. The books contain 50 sequential certificates.

The system should take the entered certificate number, compare it to the previous certificate issued under the same safety inspection type, and determine if the entered certificate number is next in sequence for that safety inspection type. If the entered number is not next in sequence, the correction prompt should appear.

If the inspector enters fewer than 9 characters, the analyzer shall automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an 'A' followed by a '123' shall be converted to 'A00000123' and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. This nine-character value shall be used during comparison testing to facilitate sequential issuance of certificates. The first character of a certificate number shall be an alphabetic character. The analyzer shall be able to enter the certificate number using the bar code reader. The only acceptable alpha character is 'V' for decals.

The analyzer shall restrict the alpha character to a list of acceptable alpha characters for a particular type of certificate or decal being issued. For example, during a safety and emission inspection reinspection, if the inspector selects the '1-year windshield (safety & emissions)' certificate on the type of inspection prompt in Section 3.1.20 and the vehicle passes the inspection, the inspector may only enter an 'A,' 'B,' 'C,' 'D,' 'E,' or 'F,' as the alpha character in the certificate number entry prompt. For Emission only Decals, the only acceptable alpha character is 'V.' For '1 Year Windshield (Safety Only)' certificate types, the acceptable alpha characters are 'G,' 'H,' 'I,' 'J,' 'K,' 'L,' 'M,' and 'P.' For '2 Year Windshield' certificate types, the acceptable alpha characters are 'N,' 'W,' and 'Q.' For 'Trailer/Motorcycle' certificate types, the acceptable alpha characters are 'X,' 'Y,' and 'Z.' For 'FMCSR (Truck)' certificate types, the

acceptable alpha characters are 'T,' and 'U.' For 'FMCSR (Trailer)' certificate types, the acceptable alpha characters are 'R,' and 'S.'

Associated System File: VEHICLE.DAT CERT_NUM

3.2.16 Certificate Number Correction Prompt:

**INDICATE THE CONDITION OF THE PREVIOUS
CERTIFICATE**

- U - UNACCOUNTED FOR**
- C - ENTERED CERTIFICATE IS CORRECT**
- R - RE-ENTER CERTIFICATE NUMBER**

Programming Criteria:

The system shall only accept 'U,' 'C,' or 'R,' as valid entries. The system shall display the entered certificate number, the safety certificate inspection type ('J,' 'C,' 'B,' 'K,' or 'G' certificate), and the 'previously' issued certificate number. This prompt shall only appear if the entered certificate is out of sequence. If 'R' is entered, the system shall allow the inspector to return to the previous screen prompt to re-enter the current certificate. If 'C' or 'U' is selected, the system will use the entered certificate number as the new 'previous' certificate number for the next comparison. If 'U' is selected, the system shall complete the test, write the test record, transmit the results to the Texas Data Link System during the next emission-related inspection, and continue with the Certificate Type Prompt, number 3.12.2a. The analyzer shall not allow any further official inspections to be conducted until the inspector has completed the entries required in Section 3.12, Missing, or Voided Certificates.

The analyzer may either:

1. a. complete the inspection as prescribed in Sections 3.2, by proceeding with Section 3.2.17, VI 30A Selection Prompt and;
- b. complete the screen prompts in Section 3.12. A manufacturer selected lockout shall be used to prevent any subsequent official inspections until the certificates are accounted for by answering the prompts in Section 3.12; or
2. a. interrupt the current inspection; and
- b. account for the previous certificates by answering the prompts in Section 3.12, beginning with 3.12.2a and continuing through to 3.12.5, or 3.12.6; and
- c. complete the inspection, by proceeding with Section 3.2.17, VI 30A

Selection Prompt, write the test record, and transmit the results to the Texas Data Link System during the next emissions-related inspection, thus, satisfying the requirement of accounting for the previous certificates prior to conducting any subsequent official inspections.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which type of certificate or decal must be accounted for. In any case, the analyzer shall not conduct any subsequent official inspections until the inspector accounts for the previous certificates by answering the questions in Section 3.12.

The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). The void indicator shall show 'VOID' if 'V' is in the CERT_COND field or 'MISS' if 'M' is in the CERT_COND field of the record created using the Missing or Voided Certificates function. The system shall store the entry of 'C' in the CERT_COND field, if 'C' is selected, and store the entry of the 'U' in the CERT_COND field, if 'U' is selected in the test record. The default for this screen shall be 'R' for reenter certificate number.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN

INVALID ENTRY--TRY AGAIN

Associated System File: VEHICLE.DAT CERT_COND

3.2.17 VI 30A Selection Prompt:

**DO YOU WISH TO ISSUE AN OUT OF STATE
VERIFICATION FORM (VI-30A)? ('Y' OR 'N')**

Programming Criteria: The system shall give this prompt if the Safety_PF_Flag is "P." The system shall only accept a 'Y' or 'N' entry. If the inspector selects 'N', the system shall skip the next screen prompt and return to the main menu. Prior to returning to the main menu, the analyzer shall store the results of the safety only inspection in the appropriate file structure. When the analyzer conducts and completes the next emissions test, the information for the safety only inspection(s) shall be transmitted to the Texas Data Link Host.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT VI30A_FLAG

3.2.18 VI 30A Number Prompt: ENTER THE VI 30A #.

Programming Criteria: The inspector will enter the VI 30A #. A minimum of one (1) character and a maximum of seven (7) characters are required for this field. If no entry is made, the analyzer shall return to the VI 30A Selection prompt, number 3.2.17. Then, the system shall return to the main menu. Prior to returning to the main menu, the analyzer shall store the results of the safety only inspection in the appropriate file structure. When the analyzer conducts and completes the next emissions test, the information for the safety only inspection(s) shall be transmitted to the Texas Data Link Host.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT VI30A_NUM

3.3 Main Menu Selection '3' "Emissions Only Inspection"

3.3.1 Access Code Prompt: ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria: The TX96 Analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M Inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall not accept duplicate access codes for different inspectors. Each inspector's access code shall be unique. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

Error Messages: 1. "YOUR ACCESS CODE IS NOT VALID--TRY

AGAIN"

2. "THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE."

Associated System File: INSPECTOR.DAT ACCESS_CODE

3.3.2 Date Expiration Prompt: YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM DD YY

Programming Criteria: The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is 30 days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, the analyzer will display a message that indicates lockout has occurred and returns to the main menu.

Error Messages:

1. YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.
2. YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.
3. YOUR (STATION/INSPECTOR)

CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).

<u>Associated System File:</u>	INSPECTOR.DAT	INSP_EXP_DATE
	STATION.DAT	STAT_EXP_DATE
	LOCKOUT.DAT	INSP_LOCKOUT_FLAG
		STAT_LOCKOUT_FLAG

3.3.2a Inspection Type Prompt: ENTER THE INSPECTION TYPE

- 1 - Required Emissions Only Test (Decal)
- 2 - Voluntary Test
- 3 - Test on Resale (Do Not Display or Use)
- 4 - Remote Sensing Request

Programming Criteria: The analyzer shall display the type of test selected by the inspector so that the inspector can confirm the selection. The default for this screen shall be the required emission only test. The system shall set test_type field as follows:

1 - 'O'	3 - 'C'
2 - 'I'	4 - 'B'

<u>Associated System File:</u>	VEHICLE.DAT	TEST_TYPE
--------------------------------	-------------	-----------

3.3.3 Fuel Type Prompt: ENTER THE VEHICLE FUEL TYPE. SELECT THE APPROPRIATE FUEL TYPE CODE FROM THE LIST BELOW.

<u>Code</u>	<u>Description</u>
"G"	Gasoline
"B"	Bi-Fueled (Dual-Fueled)
"D"	Diesel (Not applicable -End Test Now)

Programming Criteria: Entry of one of the above types is required. The analyzer software shall be designed so that only a "G" a "B" or a "D" can be entered by the inspector for this field. The system software shall default to gasoline for this entry. If the inspector selects "B", the system shall display a message stating that "YOU HAVE INDICATED THAT THIS VEHICLE IS DUAL-FUELED. PLEASE CONFIRM THAT THE VEHICLE IS OPERATING

ON GASOLINE FOR THE TEST WITH A "Y."

After confirming the result, the system shall go to the model year prompt, 3.3.4. If the inspector presses something other than "Y", the system shall return to the initial fuel type prompt. If the inspector selects "D", the system shall display a message stating **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. PLEASE CONFIRM THIS ENTRY BY PRESSING "Y". IF YOU CONFIRM THAT THE VEHICLE IS DIESEL FUELED, THE TEST WILL END. DIESEL FUELED VEHICLES ARE NOT REQUIRED TO BE TESTED."** If the inspector confirms the entry, the system shall return to the main menu. If the inspector presses something other than "Y", the system shall return to the initial fuel type prompt.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

INVALID ENTRY--TRY AGAIN.

Associated System File: VEHICLE.DAT FUEL_TYPE

3.3.4 Model Year Prompt: ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria: If no value is entered, the analyzer will display Message 1 and prompt the inspector to reenter the last two digits of the vehicle model year. The system will display Message 3 in the event that the model year is beyond the current year +2 and prompt the inspector to reenter the last two digits of the vehicle model year or the entire model year. The analyzer shall require the inspector to confirm any model year entry that is less than 1950.

Error Message: 1. NO VALUE HAS BEEN ENTERED TRY AGAIN.

2. NOT REQUIRED TO TEST VEHICLES OLDER THAN YEAR (Current year - 24) AND/OR VEHICLES LESS THAN 2 YEARS OLD. THIS IS AN OPTIONAL TEST.

3. INVALID MODEL YEAR -- TRY AGAIN.

Associated System File: VEHICLE.DAT MODEL_YEAR

3.3.5 License Type Prompt: "ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE."

- | | |
|-------------------|------------------------|
| 1. Texas Plate | 5. Exempt (Federal) |
| 2. No Plate | 6. Dealer Plate |
| 3. Out of State | 7. Temporary Buyer Tag |
| 4. Exempt (State) | 8. Other |

Programming Criteria: The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type '2' or '8' the system will assign the License_Num field in the VEHICLE.DAT a value of "V" followed by the last seven digits of the VIN number, and skip the license prompt, number 3.1.8. The entry in the License_Num field shall be a "V" and the 7 rightmost characters of the VIN. If the entered VIN has less than 7 characters, the entry should be a "V" followed immediately by the entered VIN without filler spaces between the "V" and the entered VIN. The system will default to license type '1.'

Error Message: THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.

Associated System File: VEHICLE.DAT LICENSE_TYPE

3.3.6 License Prompt: "ENTER THE LICENSE NUMBER OF THE VEHICLE."

Programming Criteria: The inspector will be prompted to enter the license number of the vehicle. Upon confirming the license plate entry, the vehicle information is eligible to be stored in the RECALL.DAT file.

Error Message: THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.

Associated System File: VEHICLE.DAT LICENSE_NUM

3.3.6a TxDOT Number Prompt: ENTER THE NUMBER FROM THE TxDOT

**REGISTRATION CERTIFICATE AFFIXED
TO THE VEHICLE.**

Programming Criteria: The system shall only give this prompt if the inspector selected 'Texas Plate' (i.e., License_Type is '1') as the license type of the vehicle in Section 3.3.5. The system will prompt for the TxDOT number as it appears on the vehicle.

Where available, the inspector will enter the TxDOT number by using the bar-code reader to scan the bar coded TxDOT number that is on the windshield of the vehicle. If a barcode reader is not available, the inspector will be capable of entering the TxDOT number from the keyboard. The bar code should utilize the Code 39 symbology. The only information contained in the bar code are the start and stop characters, and the TxDOT number.

The system shall allow the inspector to see and edit the TxDOT number as it is being entered. When all characters of the TxDOT number have been entered, the system shall prompt the inspector to press "continue" or "enter". The inspector shall hit "continue" or "enter", the screen will blank the TxDOT number and ask the operator to reenter the TxDOT number under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer will display Message 3 and prompt the inspector to enter the TxDOT number a third time. A minimum 10 characters are required for this field. If the entry is not within these parameters then the system will display Message 2. The format of the TxDOT number shall consist of eight numeric digits followed by two alpha characters. For example, 06691576WZ is a valid TxDOT number. If the entry does not fit this format, then the system will display Message 4. If no value is entered, the analyzer will display Message 1.

- Error Message: 1. THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
- 2. A MINIMUM OF 10 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
 - 3. ENTRIES DO NOT MATCH -- TRY AGAIN.**
 - 4. THIS ENTRY MUST BE EIGHT NUMBERS FOLLOWED BY TWO LETTERS-- TRY AGAIN.**

Associated System File: VEHICLE.DAT TXDOT_NUM

3.3.7a Texas Data Link Contact:

The analyzer shall contact the Texas Data Link Host, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

An inspection shall be stopped and the analyzer shall return to the main menu, if the following response bits are set in the RESPONSE.DAT file:

- 56 - Inspector License expired
- 57 - Inspector license suspended/revoked
- 58 - Inspector not authorized to test at this station
- 60 - TAS is locked out for at least one of the reasons included within "Lockout Status Record" data file

If the most recent test record is available from either the Texas Data Link Host or the system files, the analyzer shall confirm that the vehicle is eligible for an initial inspection.

If the vehicle has not had an initial inspection at this station within the last sixteen days, the vehicle is eligible for an initial inspection. The vehicle is eligible for an initial inspection if:

1. the SAFE_INIT_TEST field in the test record is set to 'R'; or
2. the station number of the previous inspection station does not match the number of the station conducting the current inspection; or
3. the date of this inspection is not within 16 days of the inspection date contained in the previous test record.

If the vehicle is not eligible for an initial inspection, the analyzer shall:

1. display a message indicating why the vehicle is not eligible for an 'initial inspection' (i.e., an initial inspection has already been conducted on this vehicle) and prompt the inspector to inform the customer that they will not be charged for this inspection;
2. save the vehicle information, possibly in the Recall.Dat file for use in the reinspection mode;
3. either transfer operation to the reinspection mode, Section 3.4 or continue in the initial inspection mode if the inspector is prompted to enter repair information about this vehicle; and
4. input the necessary vehicle information from the test record of the previous inspection once the analyzer is in the reinspection mode.

If the vehicle is eligible for an initial inspection because the station numbers do not match and the EMISS_PF_FLAG is set to 'F' in the test record of the previous inspection, the analyzer shall prompt the inspector for the repair data prior to conducting the preconditioned two-speed idle test.

Upon completion of this contact, the analyzer shall display all Technical Service Bulletins, Recall Information, and Announcements transmitted by the Texas Data Link System. The analyzer shall automatically print one copy of any announcement. The analyzer shall provide the option of printing additional copies prior to continuing with the test, deleting the announcement, or saving the announcement to a predetermined file. The analyzer shall be able to save three messages for later review. Any new announcement saved shall overwrite the oldest announcement in the system.

3.3.8 Vehicle Type Prompt:

SELECT THE VEHICLE TYPE

'P' - PASSENGER CAR/STATION WAGON

'T' - TRUCK/VAN/BUS/SPORTS UTILITY VEHICLE

'M' - MOTOR HOME

'B' - BUS

Programming Criteria: The inspector should select the vehicle type from the above list.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN

INVALID ENTRY--TRY AGAIN

Associated System File: VEHICLE.DAT VEHICLE _TYPE

3.3.9 Vehicle Make Prompt: ENTER THE VEHICLE MAKE.

Programming Criteria: The analyzer will then display a list of vehicle makes that the inspector will use to select the make of the vehicle currently under inspection. The analyzer will store the selected make name using the NCIC make definitions. The analyzer may display subsets of the make list that specifically identify all of the manufacturers of passenger vehicles, trucks, motor homes, motorcycles, trailers, or buses.

The analyzer shall present the option of 'other' as a make definition for use when

there is no applicable definition for the vehicle under inspection. The 'other' option shall instruct the inspector to enter the full make name and at least the first five characters of the model name. The analyzer shall allow the inspector to enter up to 20 characters. The entry of 'OTHR' shall be stored in the MODEL field, and the characters 'OTH' shall be placed in the MODEL_CODE field in the applicable test record. The NCIC make/model list may be supplied by the TNRCC.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT MAKE

3.3.10 Model Prompt: SELECT THE VEHICLE MODEL.

Programming Criteria: The system will then display the appropriate vehicle models based on the vehicle make entry. The analyzer shall present the option of 'other' as a model definition for use when there is no applicable definition for the vehicle under inspection. The 'other' option shall instruct the inspector to enter the model name and allow the inspector to enter up to 20 characters. An 'OTH' shall be placed in the MODEL_CODE field of the test record whenever the 'other' option is selected by the inspector.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT MODEL
MODEL_CODE

**3.3.11 Odometer Prompt: ENTER THE VEHICLE ODOMETER
READING.
A MINIMUM OF ONE NUMERIC ENTRY IS
REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.**

Programming Criteria: Enter the vehicle odometer. Do not include tenth's. The system shall only accept numerical entries in this field.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT ODOMETER

3.3.12 **Injection/Carburetion Prompt:**

SELECT THE INJECTION/CARBURETION

**F - FUEL INJECTION
C - CARBURETION
O - OTHER**

Programming Criteria: The inspector should select the appropriate injection/carburetion from the above list.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN**

INVALID ENTRY--TRY AGAIN

Associated System File: **VEHICLE.DAT INJECT_CARB**

3.3.13 **GVW Prompt:** **ENTER THE GVW OF THE VEHICLE.**

Programming Criteria: If "P" is entered as vehicle type in 3.3.8, set the GVW_TYPE field in the vehicle record to 1 (light). The system will prompt the inspector to enter GVW.

If the vehicle model year is 1971 or newer and the entered GVW is less than or equal to 8,500, set GVW_TYPE field in the vehicle file to 1 (light). If GVW is greater than or equal to 8,501, set GVW_TYPE field in the vehicle file to 2 (heavy).

If the inspector presses "continue/enter" and no entry has been made, the analyzer shall display message 1 and prompt the inspector to reenter the GVW. If the inspector enters a GVW greater than 85,000 pounds, the analyzer shall display message 2 and prompt the inspector to reenter the GVW.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT GVW_TYPE
 GVW_ACTUAL**

3.3.14 **Cylinder Prompt:** **ENTER THE NUMBER OF CYLINDERS.
FOR ROTARY ENGINES, ENTER AN "R."**

Programming Criteria: The minimum number of cylinders is “1” and the maximum is “16”. Any entries out of the “1-16” range will be rejected by the system.

For rotary engines, the inspector shall be prompted to enter an "R."

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.
NUMBER OF CYLINDERS IS NOT VALID--TRY AGAIN.

Associated System File: VEHICLE.DAT CYLINDERS

3.3.15 Engine Size Prompt: ENTER THE ENGINE SIZE FOLLOWED BY ONE OF THE FOLLOWING CODES:

<u>Code</u>	<u>Description</u>
I	Cubic Inches
L	Liters
C	Cubic Centimeters

Programming Criteria: The first four characters shall be the engine size followed by the unit used for the engine size, and shall be "L" for liters, "I" for cubic inches, and "C" for cubic centimeters. The analyzer software shall be designed so that only an "I," "L," or "C" can be entered for the units. Liter size entry format shall be a numeric, decimal point, and numeric (i.e., “3.8”, “5.0”).

The internal storage on the TX96 analyzer record is to be automatically converted to cubic centimeters. The display shall remain in the original units entered. To convert from cubic inches to cubic centimeters, multiply by 16.387. To convert from liters to cubic centimeters, multiply by 1,000. Products shall be rounded to the nearest cubic centimeter.

An error message shall be displayed if the inspector enters an equivalent engine size greater than 9,999 cc or smaller than 655 cc. The inspector shall be instructed to correct the entry or abort the test. Vehicles powered by less than a 40 cubic inch engine (655 cc) shall display Error Message 3. If the test is aborted, no updates will be made to any disk file.

- Error Message:** 1. NO VALUE HAS BEEN ENTERED--TRY AGAIN
2. INVALID ENTRY--TRY AGAIN
3. 40 CID OR 655 CC OR SMALLER ARE EXEMPT FROM THE EMISSIONS INSPECTION PROGRAM.

Associated System File: VEHICLE.DAT ENGINE_SIZE

- 3.3.16 **Transmission Prompt:** INDICATE THE TYPE OF TRANSMISSION.
ENTER AN "M" IF IT IS MANUAL.
ENTER AN "A" IF IT IS AUTOMATIC

Programming Criteria: This information will be used to determine emissions control system requirements in the future. Only 'A' or 'M' entries are allowed.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT TRANSMISSION

- 3.3.17 **Ignition Prompt:** ENTER IGNITION TYPE.
SELECT THE APPROPRIATE IGNITION TYPE CODE FROM THE LIST BELOW:

<u>Code</u>	<u>Ignition Type</u>
"C"	Conventional
"D"	Distributorless
"Q"	Quad 4/Wireless

Programming Criteria: Entry of one of the above types is required. The analyzer software shall be designed so that only "C" Conventional, "D" Distributorless or, "Q" Quad 4/Wireless can be entered by the inspector for this field.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN.
INVALID ENTRY--TRY AGAIN.

Associated System File: VEHICLE.DAT IGNITION

**3.3.18 Exhaust Prompt: DOES THE VEHICLE HAVE DUAL
EXHAUST?**

"Y" = YES "N" = NO

Programming Criteria: The software shall ask the inspector to indicate if the vehicle is equipped with dual exhaust. If the inspector selects "Y" (YES), then the analyzer shall display instructions to the inspector to attach the additional probe to the analyzer for testing. After the additional hose is connected to the analyzer, the inspector shall be required to hit "enter/continue" to proceed to the next prompt. The analyzer shall read exhaust concentration from both exhaust pipes simultaneously. The analyzer averaging method of tailpipe reading is not acceptable. If the inspector selects "N" (NO), the analyzer shall automatically proceed to the next item. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field.

Error Message: INVALID ENTRY--TRY AGAIN.

Associated System File: VEHICLE.DAT DUAL_EXHAUST

**3.3.19 Pre-Tune Prompt: DID INSPECTOR/FACILITY PERFORM ANY
EMISSIONS-RELATED REPAIRS OR
ADJUSTMENTS PERFORMED ON THE
VEHICLE PRIOR TO THIS TEST?**

"Y" = YES "N" = NO

Programming Criteria: The analyzer will ask the inspector if pre-tuning was performed on this vehicle prior to testing. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field.

Error Message: NO VALUES HAVE BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT PRE_TUNE

3.3.19a Confirm Vehicle Info Display:

The analyzer shall display the vehicle information to the inspector and allow the inspector to edit the information as appropriate. If the vehicle information was populated by the Texas Data Link System, the inspector shall be allowed to edit all vehicle information except the VIN, the license plate type, and the license plate number. The inspector shall be required to press “continue/enter” to continue. Upon confirming the vehicle, the vehicle information is no longer eligible to be stored in the RECALL.DAT file.

3.3.19b Update Test Record:

Programming Criteria:

Once the inspector has inserted the probe into the tailpipe and pressed ‘continue’, the analyzer shall update the test record and store a ‘J’ in the ABORT field. If the test sequence is not exited properly (i.e., unit is powered down), the analyzer shall be able to send the test record for the affected inspection to the VID during the next communications session. This test record shall contain a ‘J’ in the ABORT field. If the inspection is aborted properly after ‘J’ has been stored, the analyzer shall replace the ‘J’ in the ABORT field with an ‘A’ and include the entered abort code.

If the emissions phase of the inspection is not aborted after ‘J’ has been stored, the system shall replace the ‘J’ in the ABORT field with a blank/space.

3.3.20 Preconditioned Two Speed Idle Test Procedure

A. General Requirements

The test sequence shall include at least the following parameters: HC, CO, CO₂, and engine RPM. The analyzer shall have help screens to assist the inspector with suggested methods of picking up the RPM. If the RPM can not be obtained, the system shall allow the inspector to ‘bypass’ the RPM signal attachment. The RPM bypass function shall be made available, when the analyzer displays live engine RPM for the first time. To activate the RPM bypass, inspector must strike at least two keys simultaneously. Once the emission test has begun, the bypass function shall no longer be available. The option to bypass may not be available to all makes and models. The system shall set RPM_BYPASS to ‘B.’ The analyzer shall prompt the inspector to test the

vehicle in as-received condition, all accessories turned off, and the engine running at normal operating temperature (based on a temperature gauge reading or a touch test on the radiator hose and visual observation for overheating). The inspector shall insert the sample probe into the tailpipe and the test sequence shall begin. The test timer governing the overall test sequence shall begin at the start of sampling. A separate mode timer shall govern the modes within the test sequence and shall start when the specified conditions are met. The anti-dilution criterion shall be a minimum combined CO and CO₂ concentration of six percent for all light-duty vehicles and light-duty trucks and five percent for all heavy-duty trucks.

B. **Initial Test**

The initial test shall have an overall maximum test time of 290 seconds. If after 290 seconds a valid test condition has not been obtained, the analyzer shall prompt the inspector to restart the emissions test or fail this portion of the test and continue to the next phase of the inspection. If the inspector elects to continue on to the next phase of the inspection, the test shall end and be reported as a **FAILED** test in the test record and on the vehicle inspection report. If the inspector elects to restart the emissions test, the analyzer shall restart the emission test from the beginning, reset the time out flag, and write the emissions readings from the invalid test condition in the test record in the bytes that begin 'ALT_', and the next set of emissions readings in the test record in the bytes that begin 'PRI_.' If after 290 seconds a valid test condition has not been obtained after the restart, the test shall end and be reported as a **FAILED** test in the test record and on the vehicle inspection report. The procedure will not proceed to the second chance section. This condition could be caused by invalid RPM or Dilution.

C. **High-Speed Mode**

The mode timer shall start when engine speed is between 2200 and 2800 RPM and exhaust CO + CO₂ is at least six percent for all light-duty vehicles and light-duty trucks and five percent for all heavy-duty trucks. The mode shall last 90 seconds. If engine speed falls below 2200 RPM or exceeds 2800 RPM for more than two seconds in one excursion or more than six seconds over all excursions, within 30 seconds of final readings, the readings shall be invalid and the mode shall continue. If CO + CO₂ falls below six percent for all light-duty vehicles and light-duty trucks and five percent for all heavy-duty trucks at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The

emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emissions levels over the last five seconds. Readings shall be taken as running averages.

The pass/fail determination is made based on a comparison of the HC and CO readings to the high speed emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the high speed mode.

If the vehicle passes, the printed and recorded values shall be the passing readings, for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period). If the vehicle fails, calculate the scores in the same manner and enter the values for the HC and CO into the record from the lowest score. Proceed to the second chance test and report only the scores obtained from it.

D. Idle Mode

This mode shall be performed immediately following the high speed mode. The mode timer shall start when the engine speed is between 350 and 1200 RPM and the concentration of $CO + CO_2$ is at least six percent. This mode shall last a minimum of 30 seconds as engine speed is between 350 and 1200 RPM, $CO + CO_2$ level is above six percent, idle mode time is less than 90 seconds, and passing readings have not been obtained. If engine RPM exceeds 1200 RPM or falls below 350 RPM, the mode timer shall reset to zero and resume timing. If the engine stalls, the test shall abort resulting in a **FAILED** test. If $CO + CO_2$ falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings shall be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle shall pass and the mode shall end immediately. Otherwise, the mode shall continue for at least 30 seconds and not more than 90 seconds, stopping between these two limits whenever local program cutpoints are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to idle emissions standard selected for the particular vehicle. If the HC

and CO readings show passing values for both HC and CO then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the idle mode.

If the vehicle passes, the printed and recorded values shall be the passing readings, for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period). If the vehicle fails, calculate the scores in the same manner and enter the values for the HC and CO into the record from the lowest score. Proceed to the second-chance test and report only the scores obtained from it.

E. **Second-Chance Test**

If the vehicle fails either mode, the test timer shall restart and a second-chance test shall be performed. The second chance test shall be performed for only the mode(s) that failed.

If the vehicle failed only the initial high speed mode, the second chance test shall consist of the high speed test mode only. The overall test time limit for this sequence is 280 seconds. If the vehicle failed only the idle mode, the second-chance high speed mode is for preconditioning only. If both modes were failed initially, a complete test is conducted. The second-chance idle test mode shall be performed if a vehicle has failed both its initial and second-chance high speed tests. If the vehicle failed only the idle mode, the second-chance test shall consist of the preconditioning mode followed by the idle mode. The overall test time limit for these sequences shall be 425 seconds.

F. **Second-Chance High Speed Mode Without Subsequent Idle Mode**

The engine shall be shut off and be restarted for 1981-1987 Ford Motor Company products and 1984-1985 Honda Preludes, but no other vehicles. A **prompt shall notify the inspector of this requirement**. If necessary to reduce analyzer fouling, remove the probe from the tailpipe or turn off the sample pump during the restart procedure.

The mode timer shall start when engine speed is between 2200 and 2800 RPM and exhaust $CO + CO_2$ is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks). The mode shall last a minimum of 15 and a maximum of 180 seconds. If engine speed falls below 2200 RPM or exceeds 2800 RPM for more than two seconds in one excursion or for more than six seconds over all excursions within 30 seconds of the current final readings, the readings shall be invalid and the mode shall continue. If $CO + CO_2$ falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check

the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings shall be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle shall pass and the mode shall end immediately. Otherwise, the mode shall continue for at least 30 seconds and not more than 180 seconds, stopping between these two limits whenever local program cut points are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to high speed emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the test.

If the vehicle fails, the printed and recorded values shall be the readings for which $HC + (151 * CO)$ is a minimum. If the vehicle passes, the reported scores shall be the passing readings for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period).

G. **Second-Chance Preconditioning Mode With Subsequent Idle Mode**

The mode timer shall initiate when engine speed is between 2200 and 2800 RPM. The mode shall continue for 180 seconds. If engine speed falls below 2200 RPM, or exceeds 2800 RPM for more than five seconds in any one excursion, or 15 seconds over all excursions, the mode timer shall reset to zero and resume timing.

H. **Second-Chance Idle Mode**

The second-chance idle mode shall be performed immediately following the second-chance preconditioning mode. The engine shall be shut off and restarted for 1981-1987 Ford Motor Company products and 1984-1985 Honda Preludes, but no other vehicles. **A prompt will notify the inspector of this requirement.** If necessary to reduce analyzer fouling, remove the probe from the tailpipe or turn off the sample pump during the restart procedure.

The mode shall initiate when the engine speed is between 350 and 1200 RPM, and the concentration of $CO + CO_2$ is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks and alternate

fuel vehicles). The mode shall last a minimum of 30 seconds and a maximum of 90 seconds. The idle mode shall continue as long as engine speed is between 350 and 1200 RPM, CO + CO₂ level is above six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks and alternate fuel vehicles), idle mode time is less than 90 seconds and passing readings have not been obtained. If engine RPM exceeds 1200 RPM or falls below 350 RPM the mode timer shall reset to zero and resume timing. If the engine stalls, the test shall abort. If CO + CO₂ falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer shall display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode (i.e., reset the mode timer), and resume sampling once a valid testing condition is achieved.

The pass/fail analysis shall begin after an initial time delay of 10 seconds. The emissions level for HC and CO shall be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings shall be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle shall pass and the mode shall end immediately. Otherwise, the mode shall continue for at least 30 seconds and not more than 90 seconds, stopping between these two limits whenever local program cutpoints are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to idle emissions standard selected for the particular vehicle. If the HC and CO readings show passing scores for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the test.

If the vehicle fails, the printed and recorded values shall be the readings for which $HC + (151 * CO)$ is a minimum. If the vehicle passes, the reported scores shall be the passing readings for which $HC + (151 * CO)$ is a minimum among all passing readings. In addition to storing these readings, the analyzer shall also store the start time of the readings (i.e., the start of the five second averaging period).

I. **Graphic Illustration of Preconditioned Two Speed Idle Test**

(Reserved)

J. **Test Sequence for BMW/Peugeot/Volvo**

The test sequence shall follow the procedure described in 40 CFR Part 51, Subpart S, Appendix B (I) Idle Test (see Appendix K) with the following modifications.

Given the problems with the ZF automatic transmission, the TNRCC/DPS prefers that the affected vehicles be tested at their dealerships. Accordingly, if the inspector enters an "A" (for automatic) for the transmission type, and if the vehicle make, model and model year match BMW/Peugeot/Volvo/Jaguar criteria, the TX96 Analyzer shall display the following message:

BECAUSE OF THE POSSIBILITY OF TRANSMISSION DAMAGE TO THIS VEHICLE, THE TNRCC/DPS PREFERS THAT IT BE INSPECTED AT ITS DEALERSHIP. IF YOU STILL WISH TO PERFORM THE INSPECTION, YOU MAY DO SO AT YOUR OWN RISK. PRESS "ENTER" TO CONTINUE. IF NOT, PRESS "ESC" TO ABORT THE TEST. (ENTER ABORT CODE 6.)

If the inspector chooses to continue testing this vehicle, display the following message before beginning the test sequence.

BEFORE BEGINNING THE EMISSIONS TEST, MAKE SURE THE ENGINE IS A NORMAL OPERATING TEMPERATURE. IF NOT, THE VEHICLE SHOULD BE DRIVEN UNTIL IT IS. DO NOT WARM THE ENGINE BY RAISING THE RPM ABOVE IDLE WHILE THE TRANSMISSION IS IN PARK OR NEUTRAL.

AFTER THE ENGINE REACHES NORMAL OPERATING TEMPERATURE, PUT THE TRANSMISSION IN PARK AND TURN THE ENGINE OFF FOR 30 SECONDS. RESTART THE ENGINE. AFTER THE ENGINE IS STARTED, DO NOT MOVE THE GEAR SHIFT SELECTOR THROUGH THE FORWARD OR REVERSE GEARS BEFORE OR DURING THE TEST SEQUENCE. DO NOT EXCEED 2000 RPM.

Testing period: 90 seconds, No second stage (second chance)

Test Stage: Idle RPM (see standards for maximum)

Units of test results: Concentration measurements: HC PPM, CO percent, CO₂ percent, O₂ percent.

All 1984-87 BMW's with automatic transmission, 1983-88 Volvo 740s with automatic transmission, 1984-89 Jaguar XJS's, and the 1986-92 Peugeot 505s with automatic transmission shall be tested using this test sequence or the latest test sequence supplied by the TNRCC.

K. Preconditioning Modes for BMW/Peugeot/Volvo/Jaguar

In addition to the preconditioning modes described for Ford Motor Company and Honda vehicles in Appendix B, the emissions test shall include the following

preconditioning modes or the latest preconditioning modes supplied by the TNRCC. There are no preconditioning modes for vehicles that match the BMW/Peugeot/Volvo/Jaguar criteria (i.e., vehicle make, model and model year, transmission).

L. Initial Test Completion

Upon completion of a preconditioned 2-speed idle test, the TX96 Analyzer must:

1. Set the EMISS_TEST_TYPE to '2' for 2-speed idle test. If there is no previous inspection for this vehicle, or the EMISS_PF_FLAG for this vehicle's previous inspection is 'P,' set the EMISS_INIT_TEST to 'I' for initial test. If the EMISS_PF_FLAG for this vehicle's previous inspection is 'F,' set the EMISS_INIT_TEST to 'R'. If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, set the SAFE_INIT_TEST to 'I.' If the previous inspection was less than or equal to 16 days prior to this inspection, set the SAFE_INIT_TEST to 'R.'
2. Set the HC_PF_FLAG, CO_PF_FLAG, and EMISS_PF_FLAG to one of the following codes:
 - (a) P - Pass; or
 - (b) F - Fail;
3. Display the test results, update the test record, replace the 'J' in the ABORT field with a space or blank, set the SAFE_31 to "P," and write the vehicle test record to **VEHICLE.DAT**, if the entry for EMISS_FP_FLAG is a "P".
4. Display the test results, update the test record, replace the 'J' in the ABORT field with a space or blank, set the SAFE_31 to "F," and write the vehicle test record to **VEHICLE.DAT** and **REINSPECT.DAT** if the entry for EMISS_PF_FLAG is an "F".
5. Set the RPM_BYPASS to 'B', if the inspector opted to 'bypass' the RPM.
6. If the excessive dilution causes the test sequence to end, set the DILUTION_PF_FLAG to 'F'. Otherwise, set the DILUTION_PF_FLAG to 'P'.
7. If the emissions test ends due to a "time out" condition, set the TIMEOUT_FLAG to 'Y.' Otherwise, set the TIMEOUT_FLAG to 'N.'
8. The system will automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME,

STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM,
COUNTY_CODE, DILUTION (Dilution Amount in percent, CO + CO₂).

Associated System File: **VEHICLE.DAT** **PRI_CURB_IDLE_CO**
 REINSPECT.DAT **PRI_CURB_IDLE_HC**
 PRI_CURB_IDLE_CO₂
 PRI_CURB_IDLE_O₂
 PRI_HIGH_SPEED_CO
 PRI_HIGH_SPEED_HC
 PRI_HIGH_SPEED_CO₂
 PRI_HIGH_SPEED_O₂

ALT_CURB_IDLE_CO
 ALT_CURB_IDLE_HC
 ALT_CURB_IDLE_CO₂
 ALT_CURB_IDLE_O₂
 ALT_HIGH_SPEED_CO
 ALT_HIGH_SPEED_HC
 ALT_HIGH_SPEED_CO₂
 ALT_HIGH_SPEED_O₂

PRI_HIGH_SPEED_RPM
 PRI_CURB_IDLE_RPM
 ALT_HIGH_SPEED_RPM
 ALT_CURB_IDLE_RPM

DILUTION
 DILUTION_PF_FLAG
 RPM_BYPASS

HC_PF_FLAG
 CO_PF_FLAG
 EMISS_PF_FLAG
 TEST_TYPE
 EMISS_INIT_TEST

STATION_NAME
 INSPECTOR_LNAME
 INSPECTOR_FNAME
 SAFE_31

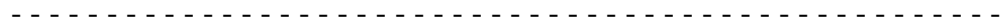
3.3.21 Gas Cap Missing Prompt:

IS THE GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If inspector indicates the gas cap is missing, the system shall set the GAS_CAP_MISS to 'Y', set the GAS_CAP_PF_FLAG_1 to 'F' - fail, (i.e., the vehicle shall fail the gas cap integrity test), and continue with the end of phase logic in Section 3.3.24b. If the inspector selects 'N', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT GAS_CAP_MISS
 GAS_CAP_PF_FLAG_1



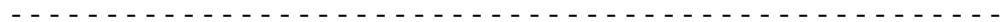
3.3.22 **Gas Cap Testable Prompt:**

IS THE GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If the inspector indicates the gas cap not testable ('untestable'), (i.e., selects 'N'), the system shall set the GAS_CAP_PF_FLAG_1 to 'P' - pass, set the GAS_CAP_TESTABLE to 'N', and continue with the end of phase logic in Section 3.3.24b. If the inspector selects 'Y', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT GAS_CAP_TESTABLE
 GAS_CAP_PF_FLAG_1



3.3.23 **Gas Cap Connect Prompt:**

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system will prompt the inspector to press "continue/enter" to conduct the test.

Error Message: ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN

3.3.24 Gas Cap Results Prompt:

ENTER THE RESULTS OF THE GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system shall not display this prompt, and shall enter the results of the test in GAS_CAP_PF_FLAG_1. If the gas cap tester is not fully automatic, the system will display this prompt and only accept a 'P' or 'F' entry. The result shall either be 'P' for pass, or 'F' for fail.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT GAS_CAP_PF_FLAG_1**

3.3.24a Second Gas Cap Prompt:

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria: This prompt shall not be displayed if the inspector has indicated that the gas cap is missing, or untestable. The default for this screen shall be to 'N.' The analyzer shall only accept an entry of 'Y' or 'N.' The error message shall be displayed, if the inspector enters something other than 'Y' or 'N.' If the inspector indicates that there is a second gas cap to be tested, the analyzer shall proceed to the Second Gas Cap Missing Prompt, in Section 3.3.24c.

Error Message: **ONLY 'Y' OR 'Y' WILL BE ACCEPTED--TRY AGAIN.**

3.3.24b End of Phase Logic:

Programming Criteria:

Since the second gas cap will not be tested, the analyzer shall set the flags as follows. If the GAS_CAP_PF_FLAG_1 is set to "P" - pass, then set the GAS_CAP_PF_FLAG to "P." If the GAS_CAP_PF_FLAG_1 is set to "F" - fail, then set the GAS_CAP_PF_FLAG to "F." If the EMISS_PF_FLAG, and

the GAS_CAP_PF_FLAG are all set to “P” - pass, then set the OVERALL_RESULTS field to “P” for pass. If the EMISS_PF_FLAG, and the GAS_CAP_PF_FLAG are not all set to “P” - pass, then set the OVERALL_RESULTS to “F” for fail. Then, the system shall then proceed to the Emissions Test Fee Prompt, Section 3.3.25.

Associated System File: VEHICLE.DAT **EMISS_PF_FLAG**
 GAS_CAP_PF_FLAG
 GAS_CAP_PF_FLAG_1
 OVERALL_RESULTS

3.3.24c Second Gas Cap Missing Prompt:

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria: The system shall only accept a ‘Y’ or ‘N’ entry. If inspector indicates the gas cap is missing, the system shall set the 2ND_GAS_CAP_MISS to ‘Y’, set the GAS_CAP_PF_FLAG_2 to 'F' - fail, (i.e., the vehicle shall fail the gas cap integrity test), and continue with the end of phase logic in Section 3.3.24g. If the inspector selects ‘N’, continue with the next screen prompt.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: VEHICLE.DAT **2ND_GAS_CAP_MISS**
 GAS_CAP_PF_FLAG_2

3.3.24d Second Gas Cap Testable Prompt:

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria: The system shall only accept a ‘Y’ or ‘N’ entry. If the inspector indicates the gas cap not testable (‘untestable’), (i.e., selects ‘N’), the system shall set the GAS_CAP_PF_FLAG_2 to 'P' - pass, set the 2ND_GAS_CAP_TEST to ‘N’, and continue with the end of phase logic in Section 3.3.24g. If the inspector selects ‘Y’, continue with the next screen prompt.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: VEHICLE.DAT **2ND_GAS_CAP_TEST**
 GAS_CAP_PF_FLAG_2

3.3.24e Second Gas Cap Connect Prompt:

REMOVE THE SECONDGAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR’S MANUAL, IF REQUIRED.

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system will prompt the inspector to press “continue/enter” to conduct the test.

Error Message: **ONLY ‘CONTINUE/ENTER’ WILL BE ACCEPTED--TRY AGAIN**

3.3.24f Second Gas Cap Results Prompt:

ENTER THE RESULTS OF THE SECOND GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system shall not display this prompt, and shall enter the results of the test in GAS_CAP_PF_FLAG_2. If the gas cap tester is not fully automatic, the system will display this prompt and only accept a ‘P’ or ‘F’ entry. The result shall either be ‘P’ for pass, or ‘F’ for fail.

Error Message: **ONLY ‘P’ OR ‘F’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT GAS_CAP_PF_FLAG**
 GAS_CAP_PF_FLAG_1
 GAS_CAP_PF_FLAG_2

3.3.24g End of Phase Logic:

Programming Criteria: If the GAS_CAP_PF_FLAG_2 and the GAS_CAP_PF_FLAG_1 are set to “P” - pass, then set the GAS_CAP_PF_FLAG to “P.” If either the GAS_CAP_PF_FLAG_2 or the GAS_CAP_PF_FLAG_1

is set to "F" - fail, then set the GAS_CAP_PF_FLAG to "F." If the EMISS_PF_FLAG, and the GAS_CAP_PF_FLAG are set to "P" - pass, then set the OVERALL_RESULTS field to "P" for pass. If the EMISS_PF_FLAG, and the GAS_CAP_PF_FLAG are not set to "P" - pass, then set the OVERALL_RESULTS to "F" for fail. Then, the system shall then proceed to the Emissions Test Fee Prompt, Section 3.3.25.

Associated System File: **VEHICLE.DAT**
 GAS_CAP_PF_FLAG
 GAS_CAP_PF_FLAG_1 **EMISS_PF_FLAG**
 GAS_CAP_PF_FLAG_2 **OVERALL_RESULTS**

3.3.25 Emissions Test Fee Prompt:

**ENTER THE COST FOR THE EMISSIONS
INSPECTION, INCLUDING CENTS.**

Programming Criteria: The inspector shall enter the cost for the emissions inspection, exclusive of repair costs. The system shall sum the EMISS_INSP_COST, and the applicable repair costs, (i.e., REP_CST_YIS) to obtain the OVERALL_COST. The analyzer shall not accept a value greater than \$99.99 for this entry.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

 MAXIMUM ENTRY \$99.99 -- TRY AGAIN.

Associated System File: **VEHICLE.DAT** **EMISS_INSP_COST**
 OVERALL_COST

3.3.25a Decal Number Prompt: **ENTER THE INSPECTION DECAL NUMBER.**

Programming Criteria: This prompt shall only be displayed if the inspection is a required emissions only test (decal), and the vehicle passes the inspection. If the inspection is a required emission only test, set the SAFE_TEST_TYPE to 'H.' Otherwise, leave the SAFE_TEST_TYPE blank. If the OVERALL_RESULTS flag is "F", then the system will

not give the inspector this prompt and proceed to 3.3.26. If the OVERALL_RESULTS flag is “P”, then the system will prompt the inspector to input the safety inspection decal number, and proceed to 3.3.27. A minimum of six (6) and maximum of nine (9) characters are required for this field. When the decal number entered is not a sequential number to the last decal issued, a warning shall be displayed, “Decal number not in sequential order. Notify DPS if a decal is missing.” The enter key should allow the inspector to continue.

The safety decal number consists of an alpha character, followed by up to eight digits. The alpha character usually does **not** correspond to the alpha character contained in the SAFE_TEST_TYPE field. The decal numbers should be in sequential order. The warning should appear each time the inspector changes strips for the ‘emissions only test (decal)’ inspection. For example, a strip of decals (type “H” tests) may end with V00000050, and the next strip of decals purchased by the shop owner may begin with V00001000. The strips contain 10 sequential emissions decals.

The system should take the entered decal number, auto populate the entry with leading zeroes, compare it to the previous decal issued, and determine if the entered decal number is next in sequence. If the entered number is not next in sequence, the correction prompt should appear.

If the inspector enters fewer than 9 characters, the analyzer shall automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an ‘A’, followed by a ‘123’ shall be converted to ‘A00000123’ and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character decal number entry. This nine-character value shall be used during comparison testing to facilitate sequential issuance of decals. The first character of a decal number shall be an alphabetic character. The only acceptable alpha character is ‘V’ for decals.

The analyzer shall restrict the alpha character to a list of acceptable alpha characters for a particular type of decal being issued. For example, during a safety and emission inspection reinspection, if the inspector selects the ‘1-year windshield (safety & emissions)’ certificate on the type of inspection prompt in Section 3.1.20 and the vehicle passes the inspection, the inspector may only enter an ‘A,’ ‘B,’ ‘C,’ ‘D,’ ‘E,’ or ‘F,’ as the alpha character in the certificate number entry prompt. For Emission only Decals, the only acceptable alpha character is ‘V.’ For ‘1 Year Windshield (Safety Only)’ certificate types, the acceptable alpha characters are ‘G,’ ‘H,’ ‘I,’ ‘J,’ ‘K,’ ‘L,’ ‘M,’ and ‘P.’ For ‘2 Year Windshield’ certificate types, the acceptable alpha characters are ‘N,’ ‘W,’ and ‘Q.’ For ‘Trailer/Motorcycle’ certificate types, the acceptable alpha characters are ‘X,’ ‘Y,’ and ‘Z.’ For ‘FMCSR (Truck)’ certificate types, the acceptable

Data Link System, thus, satisfying the requirement of accounting for the previous decals prior to conducting any subsequent official inspections.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which decal must be accounted for. In any case, the analyzer shall not conduct any subsequent official inspections until the inspector accounts for the previous decals by answering the questions in Section 3.12.

The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). The void indicator shall show 'VOID', if 'V' is in the DECAL_COND field, or 'MISS', if 'M' is in the DECAL_COND field of the record created using the Missing or Voided Certificates/Decals function. The system shall store the entry of 'C' in the DECAL_COND field, if 'C' is selected, and store the entry of the 'U' in the DECAL_COND field, if 'U' is selected in the test record. The default for this screen shall be 'R' for reenter decal number.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN

INVALID ENTRY--TRY AGAIN

Associated System File: VEHICLE.DAT DECAL_COND

3.3.26 Rejection Receipt: EXPLAIN THE REJECTION FULLY.

VEHICLE INSPECTION REJECTION RECEIPT

Date _____ Vehicle Make _____ Model year _____

Vehicle License # _____ Inspection Station# _____

Inspection Station Name _____

REJECTED FOR DEFECTIVE

Horn _ Windshield Wiper _ Seat Belt _ Steering _ Mirror _

Brake _ Stop, Tail or License Lamp _ Turn Signal _ Safety Guard _

Exhaust System _ Exhaust Emissions System _ Reflector _ Tire _

Headlamp or Beam Indicator _ Wheel Assembly _ Cab Lamp _

Clearance/Side Marker Lamp _ Gas Cap _

Other _

EXPLAIN REJECTION FULLY: (Inspector's explanation goes here)

Certified Inspector Making Inspection: _____

If defects indicated above are corrected and the vehicle returned to the original inspection station within 15 days, vehicle will be reinspected once with no additional fee. THIS IS NOT A PERMIT TO DRIVE A DEFECTIVE VEHICLE OR TO DRIVE A VEHICLE WITHOUT A CURRENT VALID INSPECTION CERTIFICATE.

Fee Paid \$ _____

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Programming Criteria: The system shall prompt the inspector to explain the rejection fully, enter the fee paid on the rejection receipt, and print the rejection receipt shown above. The fee paid shall be the overall cost for the complete inspection (i.e., the amount in the OVERALL_COST field). The system shall allow the inspector to type the explanation from the keyboard prior to printing the rejection receipt. If the inspector opts to type the explanation, the explanation shall appear on the printed rejection report. The system shall allow the inspector to print additional copies of the rejection receipt, after the initial report has been printed. Then, the system should continue to the Print Vehicle

Repair Form, Section number 3.3.26a, followed by the Print Vehicle Inspection Report Prompt, number 3.3.27.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT OVERALL_COST

3.3.26a Print Vehicle Repair Form (VRF):

Programming Criteria: If the EMISS_PF_FLAG flag is "F", then the analyzer shall print a VRF. The analyzer shall print the following vehicle information on the VRF: make, model, model year, the vehicle identification number (VIN), license plate number, and odometer reading (mileage). A draft VRF format is provided in Appendix O.

3.3.27 Print Vehicle Inspection Report:

After the system has stored the test record, the following prompt shall be displayed.
"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."

Depending upon the pass/fail status of the emissions phase of the inspection, the printer will provide additional information to the customer as outlined in Appendix B. The custom report shall include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (2-Speed Idle), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Number, VIN, Vehicle Make, Vehicle Model Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the Test, Dilution Amount (in percent, CO + CO₂), Dilution Results (Pass or Fail), the Results of the Gas Cap Integrity Test, and the Overall Result of the Inspection. The vehicle's ignition type shall be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report shall indicate that the test was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the test was conducted as a Special Test. If the test was conducted as a Special Test, the Two Letter Designation (i.e., LI, ME, IV, AD, ST, PA, or OT) shall be placed on the same line as the Test Type separated by at least two spaces, or a slash, and the words 'Special Test' shall be in the subtitle. The system shall allow the inspector to print additional copies of the vehicle inspection report,

after the initial report has been printed. If the test ends because of a time out condition or because of dilution, the emission standards, amounts, and results shall **not** be printed on the report. The report shall indicate that the vehicle has failed. The report shall indicate that the vehicle failed because of excessive dilution, where applicable. If the test should 'time out', then the report shall indicate that the vehicle failed because the test was not completed in the time allowed for completion of the test. After the inspection has been completed, the analyzer shall contact the Texas Data Link Host, and transmit all applicable vehicle information.

If the test ends in an aborted condition, the vehicle inspection report (VIR) shall print the station information, the vehicle information, indicate that the test was aborted in the overall result block, and display the reason for the abort. If the inspector selects other, then the analyzer shall print the reason typed in by the inspector, or provide space for a handwritten answer if the inspector does not type in the reason.

If the vehicle aborts the emissions phase or completes the emissions phase of the inspection with a timeout condition, the system shall print dashes on the VIR where the analyzer would have ordinarily placed readings. The dashes shall follow the expected format of the corresponding gas (i.e., CO = '--.--', HC = '----', CO₂ = '--.-'). Dashes are preferable, however, an alternative symbol may be used. The system shall also place dashes in place of the pass/fail indicator on the VIR. The system shall print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO₂, and O₂, where applicable.

The public awareness statement shall be printed only once, and the VIR shall be printed twice based on the outcome of the emissions phase of the inspection. If the vehicle passes the emissions phase of the inspection, the analyzer shall print the 'passing' public awareness statement, and the 'failing' public awareness statement, if the vehicle fails the emissions phase of the inspection.

The analyzer shall print a barcode on the VIR which contains the VIN, license plate number of the vehicle, and the license type, make, year, and model name of the vehicle under inspection. The bar code shall be code 39 format and contain only the previously mentioned information and the start and stop characters.

Error Message: NO VALUES ENTERED -- TRY AGAIN

Associated System File: VEHICLE.DAT EMISS_INSP_COST
OVERALL_RESULTS

3.3.28 **Texas Data Link Contact:**

The analyzer shall contact the Texas Data Link Host, and transmit the completed test record for this inspection and any other test records from previous inspections that

have not been sent to the Texas Data Link Host. Upon completion of this contact, the analyzer shall return to the Main Menu.

The analyzer shall increment the 'number of tests without VID contact' counter (No contact counter) by one, if the following bits are not set in the RESPONSE.DAT file during the communication sessions:

- 48 - Command completed successfully (status specific to "transmit VIN/License Plate data" command)
- 80 - Command completed successfully (status specific to "Transmit test record(s)" command)

The no contact counter shall only increment by one for each inspection completed with either response bit 48 or response bit 80 not being set.

The following bits may also be set when response bits 48 and 80 are not set. These bits provide probable explanations to why response bits 48 and 80 were not set.

- | | |
|---|--------------------------------------|
| 8 - Invalid password (token file error) | 17 - Communication port error |
| 9 - Invalid LOCKOUT.DAT file | 18 - Dialing error |
| 10 - Invalid TAS telephone number | 19 - No dial tone |
| 11 - Invalid station number | 20 - Phone line busy |
| 12 - Invalid TAS number | 21 - No answer |
| 13 - Invalid software version number | 22 - Voice answered |
| 14 - Invalid VID phone number | 23 - Security lagon (to VID) failure |
| 15 - Invalid communications port base address | |
| 16 - Invalid communications port interrupt | |

The no contact counter shall not be incremented for any aborted inspections.

3.4 Main Menu Selection '4' "Re-inspection"

3.4.1 Access Code Prompt: **ENTER YOUR INSPECTOR'S ACCESS CODE**

- Programming Criteria:**
1. The TX96 Analyzer shall be designed to require the entry of a special access code by the licensed inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to an existing I/M Inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for five minutes following the third attempt or

until the inspector presses "enter/continue". The system shall then return to the main menu.

Error Messages:

1. **"YOUR ACCESS CODE IS NOT VALID--TRY AGAIN"**
2. **"THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE."**

Associated System File **INSPECTOR.DAT** **ACCESS_CODE**

3.4.2 Date Expiration Prompt: **YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM DD YY**

Programming Criteria:

The analyzer will then check the license expiration date and lockout flag for the Inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today, then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or station certification. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is 30 days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, then the analyzer will display a message that indicates lockout has occurred and returns to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**
2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME.**

PLEASE CONTACT YOUR LOCAL DPS OFFICE.

- 3. YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

<u>Associated System File:</u>	STATION.DAT	STAT_EXP_DATE
	INSPECTOR.DAT	INSP_EXP_DATE
	LOCKOUT.DAT	STAT_LOCKOUT_FLAG
		INSP_LOCKOUT_FLAG

3.4.2a Texas Data Link Contact Prompt:

WAS THE PREVIOUS INSPECTION A SAFETY ONLY INSPECTION (NO EMISSIONS AT ALL)? (Y OR N)

Programming Criteria: The system shall only accept an entry of 'Y' or 'N.' If the inspector indicates that the previous inspection was a Safety Only Inspection, the analyzer shall search locally for a VIN and /or license plate match, and not call the VID using the Texas Data Link System. If the inspector indicates that the previous inspection was **not** a Safety Only Inspection, the analyzer shall call the VID using the Texas Data Link System. The analyzer shall set the default for this screen to 'N' for no.

3.4.2b Texas Data Link Contact:

The analyzer shall contact the Texas Data Link Host, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

An inspection shall be stopped, and the analyzer shall return to the main menu, if the following response bits are set in the RESPONSE.DAT file:

- 56 - Inspector License expired
- 57 - Inspector license suspended/revoked
- 58 - Inspector not authorized to test at this station
- 60 - TAS is locked out for at least one of the reasons included within "Lockout Status Record" data file

If the most recent test record is available from either the Texas Data Link Host or the

system files, the analyzer shall confirm that the vehicle is eligible for a reinspection.

Upon completion of this contact, the analyzer shall display all Technical Service Bulletins, Recall Information, and Announcements transmitted by the Texas Data Link System. The analyzer shall automatically print a one copy of any announcement. The analyzer shall provide the option of printing additional copies prior to continuing with the test, deleting the announcement, or saving the announcement to a predetermined file. The analyzer shall be able to save three messages for later review. Any new announcement saved shall overwrite the oldest announcement in the system.

3.4.3 Display/Select Reinspection Record

Programming Criteria: The system shall prompt the inspector to enter the license number and VIN, contact the Texas Data Link System, and display the record that meets the search criteria. If the system can not contact the Texas Data Link Host, then, the system shall either search the system files (i.e., VEHICLE.DAT, REINSPECT.DAT, etc.), and display the record that meets the search criteria or display the license number and VIN of all records currently contained in REINSPEC.DAT files, and prompt the inspector to select the desired record. The system will then display vehicle information for verification by the inspector. The following prompt shall be displayed, **“IS THIS THE CORRECT VEHICLE? ENTER “Y” FOR YES OR “N” FOR NO.”** If the inspector enters an “N” indicating that the vehicle record selected is incorrect, the software shall display a prompt instructing the inspector to select another record. If the inspector enters a “Y” indicating that the vehicle record selected is correct, the following prompt shall be displayed, **“IS THIS VEHICLE INFORMATION CORRECT? ENTER “Y” FOR YES OR “N” FOR NO.”** If any of the displayed information is incorrect (e.g., model year, GVW, etc.), the software shall display a prompt instructing the inspector to correct the vehicle information and press “continue” when ready. The analyzer shall not allow the inspector to edit the VIN or license plate number. The analyzer must display a prompt directing the inspector to update odometer reading. Upon confirming the vehicle, the vehicle information is no longer eligible to stored in the RECALL.DAT file. The analyzer will then begin the Texas 96 emissions test as described in 3.1.24 and

continue until the completion of the preconditioned 2-speed idle test and gas cap integrity test.

If the search of the system files does not provide a match, or the REINSPECT.DAT file does not contain a record of the vehicle, the inspector must be prompted to enter all information concerning the vehicle. Upon confirming the vehicle, the vehicle information is no longer eligible to be stored in the RECALL.DAT file.

If the analyzer can not obtain a previous test record from either contacting the Texas Data Link System or searching the files contained on the analyzer, the analyzer shall:

1. Prompt the inspector to enter the type of reinspection (i.e., Safety and Emissions, Safety Only, or Emissions Only),
2. Prompt the inspector to enter the applicable vehicle information,
3. Upon test completion, set the SAFE_INIT_TEST to 'I,' and if an emissions test is conducted, set the EMISS_INIT_TEST to 'R.'

After the inspector has selected the proper record, confirmed the correct vehicle, and updated the odometer reading, the system shall give the vehicle the same test it was issued initially. The system shall verify that the EMISS_TEST_TYPE field contains a value of '2' (2-speed idle test). The TEST_TYPE field can be used to determine the previous test type.

If the TEST_TYPE field contains an 'H' - 'Safety Only Inspection,' the system shall conduct a 'Safety Only Inspection' using the screen prompts from Section 3.2. The analyzer will determine if the vehicle is eligible for a reinspection by using the value contained in the SAFE_INIT_TEST field of the test record of the most recent previous inspection. The SAFE_INIT_TEST field in the test record shall contain an 'I' to indicate initial inspection. The SAFE_INIT_TEST field in the test record shall contain an 'R' to indicate reinspection.

If the vehicle has had an initial inspection at this station within the last 16 days (i.e., the SAFE_INIT_TEST is set to 'I' in the previous inspection, the station number of the previous inspection station matches the number of the station conducting the current inspection, and the date of this inspection is within the last 16 days of the inspection date contained in the previous test record), then, the vehicle is eligible for a reinspection.

If the vehicle is not eligible for a reinspection, the analyzer shall:

- 1) display a message indicating why the vehicle is not eligible for a 'reinspection' (i.e., a reinspection has already been conducted on this vehicle), and prompt the inspector to inform the customer that they will be

charged for this inspection;

- 2) save the vehicle information, possibly in the Recall.Dat file for use in the initial inspection mode;
- 3) either transfer operation to the initial inspection mode for 'Safety Only Inspection', Section 3.2, or cease the reinspection operation, prompt the inspector that this inspection must be conducted in the initial inspection mode; and
- 4) input the necessary vehicle information from the test record of the previous inspection once the analyzer is in the initial inspection mode.

If the re-inspection is conducted on the same day or the first four days following the day of the initial inspection (Day 1 to Day 5), the analyzer shall:

1. Only allow the inspector to enter values in the fields that failed during the previous inspection;
2. Display the safety test fee prompt only if an 'R' (repaired) is entered in an available field; and
3. Display the safety test fee prompt if the station number is different from the station number of the previous inspection, if applicable.

If the reinspection is conducted on the fifth day following the day of the initial inspection (Day 6) or before the sixteenth day following the day of the initial inspection (Day 17), the analyzer shall:

1. Conduct a complete safety only inspection requiring new entries in all fields;
2. Display the safety test fee prompt only if an 'R' (repaired) is entered in any field; and
3. Display the safety test test fee prompt if the station number is different from the station number of the previous inspection, if applicable.

If the reinspection is conducted on the seventeenth day (Day 17), the analyzer shall:

1. Conduct a complete safety only inspection requiring new entries in all fields; and
2. Display the safety test fee prompt.

In each case, the inspection will be stored as a new record in the Vehicle.dat file.

If the TEST_TYPE field contains a 'C' (Test on Resale), 'I' (Voluntary Emissions Test), 'O' (Required Emissions Only Test (Decal), or 'B' (Remote Sensing Request), the analyzer shall conduct an "Emissions Only Inspection" test using the screen prompts in Section 3.3. The analyzer will determine if the vehicle is eligible for a reinspection by using the value contained in the SAFE_INIT_TEST field of the test record of the most recent previous inspection. The SAFE_INIT_TEST field in the test record shall contain an 'I' to indicate initial inspection. The SAFE_INIT_TEST field in the test record shall contain an 'R' to indicate reinspection.

If the vehicle has had an initial inspection at this station within the last 16 days (i.e., the SAFE_INIT_TEST is set to 'I' in the previous inspection, the station number of the previous inspection station matches the number of the station conducting the current inspection, and the date of this inspection is within the last 16 days of the inspection date contained in the previous test record), then, the vehicle is eligible for a reinspection.

If the vehicle is not eligible for a reinspection, the analyzer shall:

- 1) display a message indicating why the vehicle is not eligible for a 'reinspection' (i.e., a reinspection has already been conducted on this vehicle), and prompt the inspector to inform the customer that they will be charged for this inspection;
- 2) save the vehicle information, possibly in the Recall.Dat file for use in the initial inspection mode;
- 3) either transfer operation to the initial inspection mode for 'Emissions Only Inspection', Section 3.3, or continue in the reinspection mode if the inspector is prompted to enter repair information about this vehicle; and
- 4) input the necessary vehicle information from the test record of the previous inspection once the analyzer is in the initial inspection mode.

If the vehicle is not eligible for reinspection because the station numbers do not match and the EMISS_PF_FLAG is set to 'F' in the test record of the previous inspection, the analyzer shall prompt the inspector for the repair data prior to conducting the preconditioned 2-speed idle test. If the reinspection is conducted on the same day or the first four days following the day of the initial inspection (Day 1 to Day 5), the analyzer shall:

1. Administer the 2-speed idle test if the emiss_pf_flag was set to 'F' (fail) during the previous inspection and/or administer the gas cap integrity test if the gas_cap_pf_flag was set to 'F' (fail) during the

previous inspection. (i.e., use the `emiss_pf_flag`, and `gas_cap_pf_flag` fields);

2. Obtain the repair information requested in 3.4.6 immediately prior to conducting the preconditioned two-speed idle test, if applicable; and
3. Display the emissions test fee prompt only if the station number is different from the station number of the previous inspection, if applicable.

If the reinspection is conducted on the fifth day following the day of the initial inspection (Day 6) or before the sixteenth day following the day of the initial inspection (Day 17), the analyzer shall:

1. Administer the 2-speed idle test if the `emiss_pf_flag` was set to 'F' (fail) during the previous inspection, then administer the gas cap integrity test;
2. Obtain the repair information requested in 3.4.6 immediately prior to conducting the preconditioned two-speed idle test, if applicable; and
3. Display the emissions test fee prompt only if the station number is different from the station number of the previous inspection.

If the re-inspection is conducted on the seventeenth day (Day 17), the analyzer shall:

1. Conduct the complete 'Emissions Only Inspection' test sequence;
2. Obtain the repair information requested in 3.4.6 immediately prior to the conducting the preconditioned two-speed idle test; and
3. Display the emission test fee prompt.

If the `TEST_TYPE` field contains an 'A,' the analyzer shall conduct an "Safety and Emissions Inspection" using the screen prompts in Section 3.1. The analyzer will determine if the vehicle is eligible for a reinspection by using the value contained in the `SAFE_INIT_TEST` field of the test record of the most recent previous inspection. The `SAFE_INIT_TEST` field in the test record shall contain an 'I' to indicate initial inspection. The `SAFE_INIT_TEST` field in the test record shall contain an 'R' to indicate reinspection.

If the vehicle has had an initial inspection at this station within the last 16 days (i.e., the `SAFE_INIT_TEST` is set to 'I' in the previous inspection, the station number of the previous inspection station matches the number of the station conducting the current inspection, and the date of this inspection is within the

last 16 days of the inspection date contained in the previous test record), then, the vehicle is eligible for a reinspection.

If the vehicle is not eligible for a reinspection, the analyzer shall:

- 1) display a message indicating why the vehicle is not eligible for a 'reinspection' (i.e., a reinspection has already been conducted on this vehicle), and prompt the inspector to inform the customer that they will be charged for this inspection;
- 2) save the vehicle information, possibly in the Recall.Dat file for use in the initial inspection mode;
- 3) either transfer operation to the initial inspection mode for 'Safety and Emissions Inspection', Section 3.1, or continue in the reinspection mode if the inspector is prompted to enter repair information about this vehicle; and
- 4) input the necessary vehicle information from the test record of the previous inspection once the analyzer is in the initial inspection mode.

If the vehicle is not eligible for reinspection because the station numbers do not match and the EMISS_PF_FLAG is set to 'F' in the test record of the previous inspection, the analyzer shall prompt the inspector for the repair data prior to conducting the preconditioned two-speed idle test. If the reinspection is conducted on the same day or the first four days following the day of the initial inspection (Day 1 to Day 5), the analyzer shall:

1. Only allow the inspector to enter values in the fields that failed during the previous inspection, if applicable (i.e., the safety_pf_flag was set to 'F' (fail) during the previous inspection);
2. Display the safety test fee prompt only if an 'R' (repaired) is entered in an available field during the reinspection, if applicable;
3. Obtain the repair information requested in 3.4.6 immediately prior to the conducting the preconditioned two-speed idle test, if applicable;
4. Administer the 2-speed idle test if the emiss_pf_flag was set to 'F' (fail) during the previous inspection and/or administer the gas cap integrity test if the gas_cap_pf_flag was set to 'F' (fail) during the previous inspection. (i.e., use the safety_pf_flag, emiss_pf_flag, and gas_cap_pf_flag fields); and
5. Display the emission test fee prompt and the safety test fee prompt only if the station number is different from the station number of the previous inspection, if applicable.

If the reinspection is conducted on the fifth day following the day of the initial inspection (Day 6) or before the sixteenth day following the day of the initial inspection (Day 17), the analyzer shall:

1. Conduct the complete safety only portion of the “Safety and Emission Inspection” test sequence as described in Section 3.1;
2. Display the safety test fee prompt only if an ‘R’ (repaired) is entered in any field;
3. Obtain the repair information requested in 3.4.6 immediately prior to the conducting the preconditioned two-speed idle test; and,
4. Administer the 2-speed idle test if the emiss_pf_flag was set to ‘F’ (fail) during the previous inspection, then administer the gas cap integrity test;
5. Display the emissions test fee prompt and the safety test fee prompt only if the station number is different from the station number of the previous inspection.

If the reinspection is conducted on the seventeenth day (Day 17), the analyzer shall:

1. Conduct the complete “Safety and Emission Inspection” test sequence as described in Section 3.1;
2. Display the safety test fee prompt;
3. Obtain the repair information requested in 3.4.6 immediately prior to the conducting the preconditioned two-speed idle test; and
4. Display the emissions test fee prompt.

In all the aforementioned cases, the system shall purge the record from the Reinspect.Dat file if the vehicle passes and is issued a certificate.

3.4.4 Safety Inspection Items:

For Test Types “J,” “A,” “B,” or “C”

	P-PASS	F-FAIL	R-REPAIR	N-NOT APPLICABLE	
1	HORN		() 14	LICENSE PLATE LAMP	()
2	WINDSHIELD WIPERS		() 15	REAR REFLECTORS	()

3	MIRROR	()	16	TURN SIGNAL LAMPS	()
4	STEERING SYSTEM	()	17	HEADLAMPS	()
5	SEATBELTS	()	18	CLEARANCE LAMPS	()
6A	SERVICE BRAKE SYSTEM	()	19	SIDE MARKER LAMPS	()
6B	PARKING BRAKE SYSTEM	()	20	CAB LAMPS	()
7	TIRES	()	21	SIDE REFLECTORS	()
8	WHEEL ASSEMBLY	()	22	SCHOOL BUSES	
9	EXHAUST	()		22A - SCHOOL BUS SIGNS	()
				22B - FIRE EXTINGUISHER	()
				22C - WARNING LAMPS	()
10	EMISSIONS SYSTEM			22D - CONVEX CROSSOVER	
	10A - EGR	()		MIRROR	()
	10B - TAC	()			
	10C - PCV	()	23	SAFETY GUARD OR FLAPS	()
	10D - AIS	()			
	10E - EVAP	()	24	SUN-SCREENING	()
	10F - CATALYTIC	()			
11	BEAM INDICATOR	()			
12	TAIL LAMP	()			
13	STOP LAMP	()			

3.4.4 Safety Inspection Items:

For Test Type "G" or "K"

	P-PASS	F-FAIL	R-REPAIR	N-NOT APPLICABLE	
1			()	14	LICENSE PLATE LAMP ()
2			()	15	REAR REFLECTORS ()
3			()	16	TURN SIGNAL LAMPS ()
4			()	17	HEADLAMPS ()
5			()	18	CLEARANCE LAMPS ()
6A			()	19	SIDE MARKER LAMPS ()

6B	PARKING BRAKE SYSTEM	()	20	CAB LAMPS	()
7A	STEERING AXLE TIRES	()	21	SIDE REFLECTORS	()
7B	ALL OTHER TIRES	()	22	SCHOOL BUSES	
				22A - SCHOOL BUS SIGNS	()
8	WHEEL ASSEMBLY	()		22B - FIRE EXTINGUISHER	()
				22C - WARNING LAMPS	()
9	EXHAUST	()		22D - CONVEX CROSSOVER	()
				MIRROR	
10	EMISSIONS SYSTEM		23	SAFETY GUARD OR FLAPS	()
	10A - EGR	()	24	SUN-SCREENING	()
	10B - TAC	()	25	I/D, BACKUP	
	10C - PCV	()		& HAZARD LAMPS	()
	10D - AIS	()	26	COUPLING DEVICES	()
	10E - EVAP	()			
	10F - CATALYTIC	()	27	FUEL SYSTEM	()
11	BEAM INDICATOR	()	28	SUSPENSION SYSTEM	()
12	TAIL LAMP	()	29	FRAME	()
13	STOP LAMP	()	30	WINDSHIELD	()

Programming Criteria: This prompt shall not appear if the reinspection is being conducted on the same day as the initial inspection or the first four days following the day of the initial inspection (Day 1 to Day 5), and the SAFETY_PF_FLAG was set to 'P' (pass) during the initial inspection. The system shall only allow the inspector to enter 'P' for pass, 'F' for fail, 'R' for repair, and 'N' for not applicable. The inspector shall be required to press "enter/continue" after each item. These fields are required and must contain a valid entry. The system does not have to display the screen heading during the test sequence. The system shall enter the date and the inspector's DL number. The inspector should be able to access an item's associated help screen by placing the cursor in the parentheses and pressing the 'F1' key. The help screens are in Appendix D for each type of Safety Inspection test. If any line item is marked 'F' for fail, then set SAFETY_PF_FLAG to 'F.' If all items are marked 'P' for pass, then set SAFETY_PF_FLAG to 'P.'

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_1 SAFE_2

SAFE_3	SAFE_4
SAFE_5	SAFE_6A
SAFE_6B	SAFE_7
SAFE_7A	SAFE_7B
SAFE_8	SAFE_9
SAFE_10A	SAFE_10B
SAFE_10C	SAFE_10D
SAFE_10E	SAFE_10F
SAFE_11	SAFE_12
SAFE_13	SAFE_14
SAFE_15	SAFE_16
SAFE_17	SAFE_18
SAFE_19	SAFE_20
SAFE_21	SAFE_22A
SAFE_22B	SAFE_22C
SAFE_22D	SAFE_23
SAFE_24	SAFE_25
SAFE_26	SAFE_27
SAFE_28	SAFE_29
SAFE_30	

SAFETY_PF_FLAG

3.4.5 Safety Test Fee Prompt: ENTER THE TOTAL COST FOR THE SAFETY INSPECTION AND SAFETY-RELATED REPAIRS, INCLUDING CENTS.

Programming Criteria: This prompt shall not appear if the reinspection is being conducted on the same day as the initial inspection or the first fifteen days following the day of the initial inspection (Day 1 to Day 16), and an 'R' (repaired) has not been entered in any field for the current inspection. If the EMISS_PF_FLAG was set to 'P' during the initial inspection, add the value entered to the SAFE_INSP_COST field to the OVERALL_COST field. If the vehicle passes the safety reinspection (i.e., SAFETY_PF_FLAG is set to 'P' - pass) for this inspection, then the inspector shall enter the overall cost for the inspection, inclusive of repair costs. If an inspector enters a fee greater than \$150 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer shall display a warning message which states that the fee seems unusually large, please confirm the amount entered or

reenter the fee.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_INSP_COST

3.4.6 Emissions Reinspection Repairs

Programming Criteria: This prompt shall not appear if the reinspection is being conducted on the same day as the initial inspection or the first four days following the day of the initial inspection (Day 1 to Day 5), and the EMISS_PF_FLAG was set to 'P' (pass) during the initial inspection. On an emissions reinspection, the system will prompt the inspector to provide repair information prior to conducting the retest. In lieu of providing specific repair data, the inspector will have the option of selecting "No Repairs Performed on Vehicle". However, the inspector shall not be able to completely bypass the screen prompts requesting repair information.

Provided below is the complete list of specific repair items, organized according to engine/emissions system, each with a 1-digit (0-9) or 2-digit (10-99) numeric code assigned to it. For repair information recording purposes, only these 1-digit or 2-digit numeric codes will be utilized for tracking purposes. As indicated in the sample screens provided, the inspector will be prompted to enter the appropriate numeric repair codes after questions have been asked concerning repair facility identity and total repair cost.

- A. Fuel Supply
- B. Evaporative (EVAP) Emissions Control System
- C. Fuel Metering (Carbureted / Fuel Injected)
- D. Idle Speed (Carbureted / Fuel Injected)
- E. Air Supply
- F. Ignition System
- G. Electrical / Electronic
- H. Emissions Systems
- I. Engine Mechanical
- J. Engine Exhaust
- K. Engine Cooling
- L. Vehicle Fluids
- M. Transmission / Final Drive

N. Miscellaneous

The inspector will highlight and select the category(s) for any repairs done to the vehicle. Upon selection of a repair category, the system will display the associated sub-menu detailing the actual items. The following is a list of the repair categories and associated sub-menus:

REPAIR ANALYSIS

A. Fuel Supply

1. Pump
2. Tank
3. Lines / Hoses / Filters
4. Fuel Pressure Control
5. Fuel Distribution (if applicable)

B. Evaporative (EVAP) Emissions Control System

6. Canister
7. Vent Lines / Hoses / Purge Hoses
8. Fuel Cap
9. Purge Valves / Solenoids / etc.
10. Mechanical Control System (includes vacuum)
11. Electronic Control System

C. Fuel Metering (Carbureted / Fuel Injected)

12. Mechanical Control System (includes vacuum)
13. Electronic Control System
14. Injector(s)
15. Throttle Body
16. Carburetor - Internal
17. Carburetor - External
18. Idle Mixture Control
19. Cold Start System / Choke
20. Metering Device (if applicable)
21. Oxygen Sensor (O2S), Heated Oxygen Sensor (HO2S)
22. Engine Coolant Temperature (ECT) Sensor
23. Air Flow Sensor(s) (all)
24. Inlet Air Temperature (IAT) Sensor
25. Throttle Position Sensor (TPS)
26. Manifold Absolute Pressure (MAP) Sensor, Manifold

Differential Pressure Sensor, Manifold Vacuum Zone Sensor, or
Barometric Pressure (BARO) Sensor

27. Crankshaft Position (CP) Sensor
28. Camshaft Position (CMP) Sensor
29. Knock Sensor (KS)
30. Vehicle Speed Sensor (VSS)
31. Other Sensor(s)

D. Idle Speed (Carbureted / Fuel Injected)

32. Idle Speed Adjustment
33. Idle Air Control (IAC) / Idle Speed Control (ISC)

E. Air Supply

34. Air Filter
35. Hot/Cold Intake-Air System and Control / Thermostatic Air Cleaner (TAC)
36. Intake Manifold / Gaskets
37. Other Vacuum / False Air Leaks
38. Turbo / SuperCharger System

F. Ignition System

39. Ignition Control Module (ICM)
40. Primary / Reference (Circuit & Components)
41. Coil(s) / Secondary
42. Spark Plug Wires
43. Spark Plugs
44. Spark Timing

G. Electrical / Electronic

45. Powertrain Control Module (PCM)
Engine Control Module (ECM)
Program Read-Only Memory (PROM) Computer Chip
46. Clear Diagnostic Trouble Codes (DTC)
47. Actuators (other)

a) Wiring (all systems)

48. Open Circuit
49. High Resistance (power / ground)

- 50. Shorted Circuit
- 51. Battery
- 52. Charging System

H. Emissions Systems

- a) Catalytic Converter
 - 53. Empty / Melted / Damaged
 - 54. Low Efficiency
 - 55. Secondary Air Injection Reaction (AIR) tube

- b) Exhaust Gas Recirculation (EGR)
 - 56. Flow Passages
 - 57. Mechanical Control System (includes vacuum)
 - 58. Electronic Control System
 - 59. Valve / Actuator Assembly(ies)

- c) Secondary Air Injection System (AIS)
 - 60. Belt(s)
 - 61. Pump(s)
 - 62. Bypass / Diverter / Switch Valve(s)
 - 63. Mechanical Control System (includes vacuum)
 - 64. Electronic Control System
 - 65. Reed, Check, and Other Valves
 - 66. Plumbing

- d) Positive Crankcase Ventilation (PCV)
 - 67. Valve
 - 68. Other

I. Engine Mechanical

- 69. Internal Short-Block
- 70. Cylinder Head Structure / Head Gasket
- 71. Camshaft(s)
- 72. Cam Timing / Belt / Chain
- 73. Valves (Mechanical)
- 74. Valves (Oil Seals)
- 75. Other (including valve adjustment)
- 76. Other Seals / Gaskets

J. Engine Exhaust

- 77. Exhaust Manifold / Gaskets
- 78. Back pressure

K. Engine Cooling

- 79. Fan
- 80. Thermostat
- 81. Radiator, Coolers, and Caps
- 82. Mechanical Control System (includes vacuum)
- 83. Electronic Control System

L. Vehicle Fluids

- 84. Engine Coolant
- 85. Engine Crankcase Oil
- 86. Fuel

M. Transmission / Final Drive

- 87. Internal (hydraulic / mechanical)
- 88. Electronic Control System
- 89. External Control (vacuum, cables)
- 90. Final Drive Ratio
- 91. Tire Size

N. Miscellaneous

- 92-98. Reserved for future use
- 99. All other types of repairs

-
HELP SCREEN - INSTRUCTIONS FOR ENTERING EMISSIONS REPAIR INFORMATION

- ! Complete repair data must be entered BEFORE an emissions retest can be performed on a vehicle.
- ! When reporting repair information, use one or more of the following items:
 - your Inspection Station's own records;
 - receipts from other repair facilities;
 - parts receipts provided by the motorist; and/or
 - questions asked of the motorist.

- ! If repairs were done in more than one category (i.e., Fuel System, and Ignition/Electrical System), select the category whose cost is the largest percentage of the total repair cost. The category that would have cost the most if the repairs were done separately. However, enter the total cost of the repairs (since the last inspection) in question #2.

- ! Depending on where emissions repairs were performed on the vehicle, please enter the appropriate information in one the following categories:
 1. Recognized Emissions Repair Technician (completed repairs);
 2. Other Repair Technician (Non-Recognized); or
 3. Motorist (Self-Performed).

- ! If two or more non-recognized repair facilities performed repairs on the vehicle, just select the Other Repair Technician (Non-Recognized) category and enter the total of the repair costs in the question #2.

- ! If two or more Recognized Emissions Repair Technicians performed repairs on this vehicle, just enter the total of the repair costs in the question #2, and select the Recognized Emissions Repair Technician category.

- ! Please provide as much of the requested repair information as possible. Please note that an abnormally high amount of incomplete repair information entries may result in an audit of your Inspection Station.

Press Enter or type "C" to Continue

 -
SCREEN 1 - EMISSIONS REPAIR QUESTIONS

Question #1:

Please select the system that was replaced or repaired from the following list:

- Fuel System (Supply & Metering Systems including O2S)
- Ignition/Electrical System (Battery, Spark plugs, Spark plug wires, timing, ECM, etc.,)
- Emissions System (Catalytic Converter, EGR, AIS, PCV, EVAP, TAC, etc.,)
- Engine Mechanical (Engine Valve, Camshaft, Block, etc.,)
- Miscellaneous (Trans/Final Drive, Vehicle Fluids, Eng. Cooling, Engine Exhaust, etc.)
- No Repairs Performed on Vehicle

Response Format:

Provide the list and allow the inspector to highlight a choice and select it by pressing continue. If the inspector selects 'No Repairs Performed on Vehicle', the analyzer will

prompt the inspector to enter the source of the info (motorist, or self), and re-enter his access code and PIN. Display the following note:

Question #2:

What is the total cost of emissions repairs performed on this vehicle?

Response Format:

Total Repair Cost (Diagnostics, Parts, & Labor): \$ __ , ___ . ___

Question #3:

Please indicate who performed the emissions repairs on this vehicle:

1. Recognized Emissions Repair Technician
2. Other Repair Technician (Non-Recognized)
3. Motorist (Self-Repair)

Response Format:

Provide the list and allow the inspector to highlight a choice using the arrow keys or by pressing "1," "2," or "3," and select it by pressing continue. If the inspector selects "3," skip question #4. Display entries of the three questions, and prompt the inspector to confirm the entries by pressing continue.

Question #4:

Choose the appropriate sentence:

1. Yes, repairs were done at this station. Repair costs will be added to the overall inspection costs and displayed on the VIR.
2. No, repairs were not done at this station. Repair costs will not be added to the overall inspection costs nor displayed on VIR.

Response Format:

Provide the list and allow the inspector to highlight a choice using the arrow keys or by pressing "1," or "2," and select it by pressing continue. If the inspector select "1," then print the repair costs on the VIR and add the cost to arrive at the total inspection cost. If the inspector selects "2," then print the repair cost on the VIR as '0.00', and do not add these costs when computing the total inspection cost.

Go to OBD II test or Tailpipe test.

Note to Software Developers:

- ! For each question or data request, hitting the enter key after the response is typed-in should indicate completeness.
- ! Provide the inspector with the ability to print out the Numeric Repair Chart for reference purposes (such as posting next to the monitor).

- ! Even though recognized facilities will have copies of blank VRFs, provide the inspector with the ability to print one out when necessary. A draft VRF format is provided in Appendix O.
- ! At a later date, recognized repair technicians may have the opportunity to enter their own repair data through either one or both of the following methods:
 - having direct access to the Texas Data Link (TDL); and
 - touch-tone entry from a telephone.

The system will accumulate all costs entered above for use in cost waiver determination. The total repair cost will be stored in the REP_OVERALL_COST field of the VEHICLE.DAT file. The cost of repairs done at this station (i.e., REP_CST_YIS) will be added to the EMISS_INSP_COST, and SAFE_INSP_COST, if applicable, and stored in the OVERALL_COST field of the VEHICLE.DAT file.

Associated System File: VEHICLE.DAT

ANALYZER_NUMBER	STATION_NUM
INSPECTOR_NUM	
TEST_DATE	VIN_ID_NUM
LICENSE_NUM	REP_CST_YIS
REP_CST_CRF	REP_CST_NRF
REP_CST_MSP	REP_ITM_YIS
REP_ITM_CRF_AFR	REP_ITM_CRF_ADL
REP_ITM_CRF_REC	REP_ITM_NRF
REP_ITM_MSP	CERF_ID_NUM
CERT_ID_NUM	VH_AF_BR
VH_AF_AR	VH_OB_SR
REP_OVERALL_COST	

VEHICLE.DAT	EMISS_INSP_COST
	SAFE_INSP_COST
	OVERALL_COST

3.4.6a OBD II (Key On, Engine Off) Prompt:

PERFORM THE “KEY ON, ENGINE OFF” CHECK TO DETERMINE IF THE INSTRUMENT PANEL MALFUNCTION INDICATOR LIGHT (MIL) ILLUMINATES WHEN THE IGNITION KEY IS TURNED TO THE “KEY ON, ENGINE OFF” POSITION.

DOES THE MIL ILLUMINATE (E.G. ‘COME ON’, ‘LIGHT UP’) WHEN THE KEY IS PLACED IN THE “KEY ON, ENGINE OFF” POSITION?

“Y” - YES, THE MIL ‘COMES ON’ OR ‘LIGHTS UP’.

“N” - NO, THE MIL DOES NOT ‘COME ON’ OR ‘LIGHT UP’.

THE MALFUNCTION INDICATOR LIGHT (MIL) WILL EITHER DISPLAY “SERVICE ENGINE SOON,” “CHECK ENGINE,” THE WORD “CHECK” ALONG WITH THE INTERNATIONAL ENGINE SYMBOL, OR SOME COMBINATION OF THESE DEPENDING ON THE VEHICLE MAKE.

Programming Criteria: The analyzer will ask the inspector to perform a key-on/engine-off check to see if the Malfunction Indicator Light/Check Engine Light (MIL) is properly illuminates. The analyzer shall prompt the inspector to enter a No if the MIL does not properly illuminate. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field. If the inspector doesn't enter a value, display error message 1. If the inspector enters a value other than a “Y” or an “N,” display error message 2.

The help message for this screen shall contain the following text: “The Malfunction Indicator Light (MIL) is the official term for the warning light that is illuminated by the vehicle’s OBD system when a malfunction occurs. Depending on the vehicle make, the MIL will either display “service Engine Soon,” “Check Engine,” the word “Check” along with the international engine symbol, or some combination of these . The MIL must come on when the ignition key is turned to the “key on, engine off” position. This is to allow inspectors to check that the MIL is capable of illuminating if a malfunction were to occur. On most vehicles, the MIL will stay illuminated as long as the key is in the position. However, on some vehicles, the MIL will illuminate very briefly when the key is turned to the “key on, engine off” position and then go out.”

Error Message:

- 1. NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**
- 2. INVALID ENTRY. PLEASE SELECT “Y” OR “N”.**

Associated System File: VEHICLE.DAT OBD2_MIL_CHECK

3.4.6b OBD II Engine Running Prompt:

START THE ENGINE AND ALLOW IT TO IDLE. DETERMINE IF THE MIL IS ILLUMINATED WHILE THE ENGINE IS RUNNING?

DOES THE MIL ILLUMINATE (E.G. ‘COME ON’, ‘LIGHT UP’) WHEN THE ENGINE IS RUNNING?

"Y" - YES, THE MIL ‘COMES ON’ OR ‘LIGHTS UP’ WHEN THE ENGINE IS RUNNING.

"N" - NO, THE MIL DOES NOT ‘COME ON’ OR ‘LIGHT UP’ WHEN THE ENGINE IS RUNNING.

Programming Criteria: The analyzer will ask the inspector to see if the Malfunction Indicator Light/Check Engine Light (MIL) is illuminates while the engine is running. The analyzer shall prompt the inspector to enter a No if the MIL does not illuminate while the engine is on. The analyzer software shall be designed so that only a "Y" or an "N" can be entered by the inspector for this field. If the inspector doesn't enter a value, display error message 1. If the inspector enters a value other than a "Y" or an "N," display error message 2.

- Error Message:**
- 1. NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**
 - 2. INVALID ENTRY. PLEASE SELECT “Y” OR “N”.**

Associated System File: VEHICLE.DAT OBD2_MIL_ON_RUN

3.4.6c OBd II Engine Stop Prompt:

SHUT OFF THE ENGINE, AND RETURN TO “KEY ON, ENGINE OFF” POSITION

Programming Criteria: The analyzer will prompt the inspector to turn off the engine, and place vehicle in ‘key on, engine off’. The analyzer will instruct the inspector to press the ‘continue’ key to continue. Then, the analyzer will proceed to Section 3.4.7, the Reinspection Test Completion prompt.

3.4.7 Reinspection Test Completion

Programming Criteria: The 2-speed idle test shall not be conducted if the reinspection is being conducted on the same day as the

initial inspection or the first fifteen days following the day of the initial inspection (Day 1 to Day 16), and the EMISS_PF_FLAG was set to 'P' (pass) during the initial inspection.

Upon completion of the preconditioned 2-speed idle test, the TX96 Analyzer must:

1. Set the EMISS_TEST_TYPE to '2' for 2-speed idle test. If there is no previous inspection for this vehicle, or the EMISS_PF_FLAG for this vehicle's previous inspection is 'P,' set the EMISS_INIT_TEST to 'I' for initial test. If the EMISS_PF_FLAG for this vehicle's previous inspection is 'F,' set the EMISS_INIT_TEST to 'R'. If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, set the SAFE_INIT_TEST to 'I.' If the previous inspection was less than or equal to 16 days prior to this inspection, set the SAFE_INIT_TEST to 'R.' Set the flag in the system indicating that the free reinspection has been completed, if applicable (i.e., the station number matches the station number of the previous reinspection).
2. Set the HC_PF_FLAG, CO_PF_FLAG, and EMISS_PF_FLAG to one of the following codes:
 - (a) P - Pass; or
 - (b) F - fail;
3. Display the test results, set the SAFE_31 to "P," and write the vehicle test record to VEHICLE.DAT, if the EMISS_PF_FLAG is a 'P.'
4. Display the test results, set the SAFE_31 to "F," and write the vehicle test record to VEHICLE.DAT and REINSPECT.DAT if the EMISS_PF_FLAG is a 'F.'
5. Set the RPM_BYPASS to 'B', if the inspector opted to 'bypass' the RPM.
6. If the excessive dilution causes the test sequence to end, set the DILUTION_PF_FLAG to 'F'. Otherwise, set the DILUTION_PF_FLAG to 'P'.
7. If the emissions test ends due to a "time out" condition, set the TIMEOUT_FLAG to 'Y.' Otherwise, set the TIMEOUT_FLAG to 'N.'
8. The system will automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME, STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM,

THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system will prompt the inspector to press "continue/enter" to conduct the test.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN**

3.4.11 Gas Cap Results Prompt:

ENTER THE RESULTS OF THE GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system shall not display this prompt, and shall enter the results of the test in GAS_CAP_PF_FLAG_1. If the gas cap tester is not fully automatic, the system will display this prompt and only accept a 'P' or 'F' entry. The result shall either be 'P' for pass, or 'F' for fail.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT GAS_CAP_PF_FLAG_1**

3.4.11a Second Gas Cap Prompt:

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria: This prompt shall not be displayed if the inspector has indicated that the gas cap is missing, or untestable. The default for this screen shall be to 'N.' The analyzer shall only accept an entry of 'Y' or 'N.' The error message shall be displayed, if the inspector enters something other than 'Y' or 'N.' If the inspector indicates that there is a second gas cap to be tested, the analyzer shall proceed to the Second Gas Cap Missing Prompt, in Section 3.4.11c.

Error Message: **ONLY 'Y' OR 'Y' WILL BE ACCEPTED--TRY AGAIN.**

3.4.11b End of Phase Logic:

Programming Criteria:

Since the second gas cap will not be tested, the analyzer shall set the flags as follows. If the GAS_CAP_PF_FLAG_1 is set to "P" - pass, then set the GAS_CAP_PF_FLAG to "P." If the GAS_CAP_PF_FLAG_1 is set to "F" - fail, then set the GAS_CAP_PF_FLAG to "F." If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are all set to "P" - pass, then set the OVERALL_RESULTS field to "P" for pass. If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are not all set to "P" - pass, then set the OVERALL_RESULTS to "F" for fail. Then, the system shall then proceed to the Emissions Test Fee Prompt, Section 3.4.12.

Associated System File: VEHICLE.DAT EMISS_PF_FLAG
 SAFETY_PF_FLAG
 GAS_CAP_PF_FLAG
 GAS_CAP_PF_FLAG_1
 OVERALL_RESULTS

3.4.11c Second Gas Cap Missing Prompt:

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If inspector indicates the gas cap is missing, the system shall set the 2ND_GAS_CAP_MISS to 'Y', set the GAS_CAP_PF_FLAG_2 to 'F' - fail, (i.e., the vehicle shall fail the gas cap integrity test), and continue with the end of phase logic in Section 3.4.11g. If the inspector selects 'N', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT 2ND_GAS_CAP_MISS
 GAS_CAP_PF_FLAG_2

3.4.11d Second Gas Cap Testable Prompt:

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria: The system shall only accept a 'Y' or 'N' entry. If the inspector indicates the gas cap not testable ('untestable'),

(i.e., selects 'N'), the system shall set the GAS_CAP_PF_FLAG_2 to 'P' - pass, set the 2ND_GAS_CAP_TEST to 'N', and continue with the end of phase logic in Section 3.4.11g. If the inspector selects 'Y', continue with the next screen prompt.

Error Message: ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT 2ND_GAS_CAP_TEST
 GAS_CAP_PF_FLAG_2

3.4.11e Second Gas Cap Connect Prompt:

REMOVE THE SECONDGAS CAP FROM THE
VEHICLE AND CONNECT IT TO THE GAS CAP
TESTER. REFER TO THE OPERATOR'S MANUAL, IF
REQUIRED.

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system will prompt the inspector to press "continue/enter" to conduct the test.

Error Message: ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--
TRY AGAIN

3.4.11f Second Gas Cap Results Prompt:

ENTER THE RESULTS OF THE SECOND GAS CAP
INTEGRITY TEST. ('P' OR 'F')

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system shall not display this prompt, and shall enter the results of the test in GAS_CAP_PF_FLAG_2. If the gas cap tester is not fully automatic, the system will display this prompt and only accept a 'P' or 'F' entry. The result shall either be 'P' for pass, or 'F' for fail.

Error Message: ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.

Associated System File: VEHICLE.DAT GAS_CAP_PF_FLAG
 GAS_CAP_PF_FLAG_1

3.4.11g End of Phase Logic:

Programming Criteria: If the GAS_CAP_PF_FLAG_2 and the GAS_CAP_PF_FLAG_1 are set to “P” - pass, then set the GAS_CAP_PF_FLAG to “P.” If either the GAS_CAP_PF_FLAG_2 or the GAS_CAP_PF_FLAG_1 is set to “F” - fail, then set the GAS_CAP_PF_FLAG to “F.” If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are all set to “P” - pass, then set the OVERALL_RESULTS field to “P” for pass. If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG are not all set to “P” - pass, then set the OVERALL_RESULTS to “F” for fail. Then, the system shall then proceed to the Emissions Test Fee Prompt, Section 3.4.12.

Associated System File: VEHICLE.DAT

GAS_CAP_PF_FLAG	SAFETY_PF_FLAG
GAS_CAP_PF_FLAG_1	EMISS_PF_FLAG
GAS_CAP_PF_FLAG_2	OVERALL_RESULTS

3.4.12 Emissions Test Fee Prompt:

ENTER THE COST FOR THE EMISSIONS INSPECTION, INCLUDING CENTS.

Programming Criteria: This prompt shall appear if the reinspection is being conducted on the sixteenth day (Day 17) after the initial inspection. This prompt shall appear if the reinspection is being conducted before the sixteenth day (Day 17) after the initial inspection, and the EMISS_PF_FLAG was set to ‘F’ (fail) during the initial inspection. The inspector shall enter the cost for the emissions inspection, exclusive of repair costs. The system shall sum the EMISS_INSP_COST, the SAFE_INSP_COST, if applicable, and the applicable repair costs, (i.e., REP_CST_YIS) to obtain the OVERALL_COST. The analyzer shall not accept a value greater than \$99.99 for this entry.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
MAXIMUM ENTRY \$99.99 -- TRY AGAIN.

Associated System File: **VEHICLE.DAT** **EMISS_INSP_COST**
OVERALL_COST

**3.4.13 Certificate Number Prompt: **ENTER THE INSPECTION
CERTIFICATE NUMBER.****

Programming Criteria: If the reinspection conducts an “Emissions Only Inspection” retest (i.e., the TEST TYPE field is set to ‘C,’ ‘I,’ or ‘B’), the system will not give this prompt and continue with the Print Vehicle Inspection Report Prompt, number 3.4.18.

If the reinspection conducts a “Required Emissions Only Test (Decal)” retest (i.e., the TEST TYPE field is set to ‘O’), the system will prompt the inspector to ‘ENTER THE INSPECTION DECAL NUMBER’, and continue with the Print Vehicle Inspection Report Prompt, number 3.4.18. Set the SAFE_TEST_TYPE to ‘H,’ if the inspection is a required emission only test. Otherwise, leave the SAFE_TEST_TYPE blank. If the OVERALL_RESULTS flag is “F”, then the system will not give the inspector this prompt and proceed to the Main Menu. If the OVERALL_RESULTS flag is “P”, then the system will prompt the inspector to input the safety inspection sticker number. A minimum of six (6) and maximum of nine (9) characters are required for this field. When the certificate number entered is not a sequential number to the last certificate issued, a warning should be displayed, “Certificate number not in sequential order. Notify DPS if a certificate is missing.” This warning should be sent to the historical file by date and time. The enter key should allow the inspector to continue.

The safety certificate number consists of an alpha character, followed by up to eight digits. The alpha character usually does **not** correspond to the alpha character contained in the SAFE_TEST_TYPE field. They are however separated or indexed by the different types of safety inspections. Thus, the sticker numbers should be in sequential order for all one year windshield inspections (type “A” tests), two year windshield inspections (type “B” tests), trailer/motorcycle inspections (type “C” tests), and so forth. The warning should appear each time the inspector changes books for the same type of inspection. For example, a book of one year windshield inspections (type “A” tests) may end with F00000050, and the next book of one year windshield inspection certificates purchased by the shop owner may begin with F00001000. The books contain 50 sequential certificates.

The system should take the entered certificate number, compare it to the previous certificate issued under the same safety inspection type, and determine if the entered certificate number is next in sequence for that safety inspection type. If the entered number is not next in sequence, the correction prompt should appear.

If the inspector enters fewer than 9 characters, the analyzer shall automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an 'A', followed by a '123' shall be converted to 'A00000123' and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. This nine-character value shall be used during comparison testing to facilitate sequential issuance of certificates. The first character of a certificate number shall be an alphabetic character. The analyzer shall be able to enter the certificate number using the bar code reader. The only acceptable alpha character is 'V' for decals.

The analyzer shall restrict the alpha character to a list of acceptable alpha characters for a particular type of certificate or decal being issued. For example, during a safety and emission inspection reinspection, if the inspector selects the '1-year windshield (safety & emissions)' certificate on the type of inspection prompt in Section 3.1.20 and the vehicle passes the inspection, the inspector may only enter an 'A,' 'B,' 'C,' 'D,' 'E,' or 'F,' as the alpha character in the certificate number entry prompt. For Emission only Decals, the only acceptable alpha character is 'V.' For '1 Year Windshield (Safety Only)' certificate types, the acceptable alpha characters are 'G,' 'H,' 'I,' 'J,' 'K,' 'L,' 'M,' and 'P.' For '2 Year Windshield' certificate types, the acceptable alpha characters are 'N,' 'W,' and 'Q.' For 'Trailer/Motorcycle' certificate types, the acceptable alpha characters are 'X,' 'Y,' and 'Z.' For 'FMCSR (Truck)' certificate types, the acceptable alpha characters are 'T,' and 'U.' For 'FMCSR (Trailer)' certificate types, the acceptable alpha characters are 'R,' and 'S.'

Associated System File: VEHICLE.DAT

CERT_NUM

EMISS_DECAL_NUM

3.4.14 Certificate Number Correction Prompt:

**INDICATE THE CONDITION OF THE PREVIOUS
CERTIFICATE**

U - UNACCOUNTED FOR

C - ENTERED CERTIFICATE IS CORRECT

R - RE-ENTER CERTIFICATE NUMBER

Programming Criteria:

If the reinspection conducts a “Required Emissions Only Test (Decal)” retest (i.e., the TEST TYPE field is set to ‘O’), the system shall proceed to Section 3.4.15, the VI-30A Selection Prompt. The system shall only accept ‘U,’ ‘C,’ or ‘R,’ as valid entries. The system shall display the entered certificate number, the safety certificate inspection type (‘A,’ ‘J,’ ‘C,’ ‘B,’ ‘K,’ ‘G’ certificate) and the ‘previously’ issued certificate number. This prompt shall only appear if the entered certificate is out of sequence. If ‘R’ is entered, the system shall allow the inspector to return to the previous screen prompt to re-enter the current certificate. If ‘C,’ or ‘U’ is selected, the system will use the entered certificate number as the new ‘previous’ certificate number for the next comparison. If ‘U,’ is selected, the system shall complete the test, write the test record, transmit the results to the Texas Data Link System, and continue with the Certificate Type Prompt, number 3.12.2a. The analyzer shall not allow any further official inspections to be conducted until the inspector has completed the entries required in Section 3.12, Missing, or Voided Certificates.

The analyzer may either:

1. a. complete the inspection as prescribed in Sections 3.4, by proceeding with Section 3.4.15, VI 30A Selection Prompt, and then,
b. complete the screen prompts in Section 3.12. A manufacturer selected lockout shall be used to prevent any subsequent official inspections until the certificates are accounted for by answering the prompts in Section 3.12,
2. a. Or, interrupt the current inspection, then,
b. account for the previous certificates by answering the prompts in Section 3.12, beginning with 3.12.2a and continuing through to 3.12.5, or 3.12.6, and then,
c. complete the inspection, by proceeding with Section 3.4.15, VI 30A Selection Prompt, write the test record, and transmit the results to the Texas Data Link System, thus, satisfying the requirement of accounting for the previous certificates prior to conducting any subsequent official inspections.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which type of certificate or decal must be accounted for. If the inspector indicates that the previous certificates are unaccounted for while conducting a Safety Only reinspection, then the analyzer shall transmit the results via the Texas Data Link System during the next emissions-related inspection. In any case, the analyzer shall not conduct any subsequent official inspections until the inspector accounts for the previous certificates by answering the questions in Section 3.12.

The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). The void indicator shall show 'VOID', if 'V' is in the CERT_COND field, or 'MISS', if 'M' is in the CERT_COND field of the record created using the Missing or Voided Certificates function. The system shall store the entry of 'C' in the CERT_COND field, if 'C' is selected, and store the entry of the 'U' in the CERT_COND field, if 'U' is selected in the test record. The default for this screen shall be 'R' for reenter certificate number.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN

INVALID ENTRY--TRY AGAIN

Associated System File: VEHICLE.DAT CERT_COND

3.4.15 VI 30A Selection Prompt:

**DO YOU WISH TO ISSUE AN OUT OF STATE
VERIFICATION FORM (VI-30A)? ('Y' OR 'N')**

Programming Criteria: The system shall give this prompt if the Safety_PF_Flag is "P." The system shall only accept a 'Y' or 'N' entry. If the inspector selects 'N', skip the next screen prompt.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT VI30A_FLAG

3.4.16 VI 30A Number Prompt: ENTER THE VI 30A #.

Programming Criteria: The inspector will enter the VI 30A #. A minimum of one (1) character and a maximum of seven (7) characters are required for this field. If no entry is made, the analyzer shall return to the VI 30A Selection prompt, number 3.4.15.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT VI30A_NUM

3.4.17 Rejection Receipt: EXPLAIN THE REJECTION FULLY.

VEHICLE INSPECTION REJECTION RECEIPT

Date _____ Vehicle Make _____ Model year _____

Vehicle License # _____ Inspection Station# _____

Inspection Station Name _____

REJECTED FOR DEFECTIVE

Horn _ Windshield Wiper _ Seat Belt _ Steering _ Mirror _

Brake _ Stop, Tail or License Lamp _ Turn Signal _ Safety Guard _

Exhaust System _ Exhaust Emissions System _ Reflector _ Tire _

Headlamp or Beam Indicator _ Wheel Assembly _ Cab Lamp _

Clearance/Side Marker Lamp _ Gas Cap _

Other _

EXPLAIN REJECTION FULLY: (Inspector's explanation goes here)

Certified Inspector Making Inspection: _____

If defects indicated above are corrected and the vehicle returned to the original inspection station within 15 days, vehicle will be reinspected once with no additional fee. THIS IS NOT A PERMIT TO DRIVE A DEFECTIVE VEHICLE OR TO DRIVE A VEHICLE WITHOUT A CURRENT VALID INSPECTION CERTIFICATE.

Fee Paid \$ _____

VI-7-91

Texas Department of Public Safety

Programming Criteria: This prompt shall appear if the OVERALL_RESULTS field is set to 'F' (fail) for the reinspection. The system shall prompt the inspector to explain the rejection fully, enter the fee paid on the rejection receipt and print the rejection receipt shown above. The fee paid shall be the overall cost for the complete inspection (i.e., the amount in the OVERALL_COST field). The system shall allow the inspector to type the explanation from the keyboard prior to printing the rejection receipt. If the inspector opts to type the explanation, the explanation shall appear on the printed rejection report. The system shall allow the inspector to print additional copies of the rejection receipt, after the initial report has been printed. Then, the system should continue to the Print Vehicle Repair Form, Section number 3.4.17a, followed by the Print Vehicle Inspection Report Prompt, number 3.4.18.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT OVERALL_COST

3.4.17a **Print Vehicle Repair Form (VRF):**

Programming Criteria: If the EMISS_PF_FLAG flag is "F", then the analyzer shall print a VRF. The analyzer shall print the following vehicle information on the VRF: make, model, model year, the vehicle identification number (VIN), license plate number, and odometer reading (mileage). A draft VRF format is provided in Appendix O.

3.4.18 **Print Vehicle Inspection Report:**

After the system has stored the test record, the following prompt shall be displayed.
"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."

Depending upon the pass/fail status of the emissions phase of the inspection, the printer will provide additional information to the customer as outlined in Appendix B.

The custom report shall include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (2-Speed Idle), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Number, VIN, Vehicle Make, Vehicle Model Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the Test, Dilution Amount (in percent, CO + CO₂), Dilution Results (Pass or Fail), the Results of the Gas Cap Integrity Test, and the Overall Result of the Inspection. The vehicle's ignition type shall be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report shall indicate that the test was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the test was conducted as a Special Test. If the test was conducted as a Special Test, the Two Letter Designation (i.e., LI, ME, IV, AD, ST, PA, or OT) shall be placed on the same line as the Test Type separated by at least two spaces, or a slash, and the words 'Special Test' shall be in the subtitle. The system shall allow the inspector to print additional copies of the vehicle inspection report, after the initial report has been printed. If the test ends because of a time out condition or because of dilution, the emission standards, amounts, and results shall **not** be printed on the report. The report shall indicate that the vehicle has failed. The report shall indicate that the vehicle failed because of excessive dilution, where applicable. If the test should 'time out', then the report shall indicate that the vehicle failed because the test was not completed in the time allowed for completion of the test. After the inspection has been completed, the analyzer shall contact the Texas Data Link Host, and transmit all applicable vehicle information.

If the test ends in an aborted condition, the vehicle inspection report (VIR) shall print the station information, the vehicle information, indicate that the test was aborted in the overall result block, and display the reason for the abort. If the inspector selects other, then the analyzer shall print the reason typed in by the inspector, or provide space for a handwritten answer if the inspector does not type in the reason.

If the vehicle aborts the emissions phase or completes the emissions phase of the inspection with a timeout condition, the system shall print dashes on the VIR where the analyzer would have ordinarily placed readings. The dashes shall follow the expected format of the corresponding gas (i.e., CO = '--.--', HC = '----', CO₂ = '--.-'). Dashes are preferable, however, an alternative symbol may be used. The system shall also place dashes in place of the pass/fail indicator on the VIR. The system shall print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO₂, and O₂, where applicable.

The public awareness statement shall be printed only once, and the VIR shall be printed twice based on the outcome of the emissions phase of the inspection. If the vehicle passes the emissions phase of the inspection, the analyzer shall print the 'passing' public awareness statement, and the 'failing' public awareness statement, if

the vehicle fails the emissions phase of the inspection.

The analyzer shall print a barcode on the VIR which contains the VIN, license plate number of the vehicle, and the license type, make, year, and model name of the vehicle under inspection. The bar code shall be code 39 format and contain only the previously mentioned information and the start and stop characters.

Error Message: NO VALUES ENTERED -- TRY AGAIN

3.5 Main Menu Selection '5' "Re-Print Vehicle Inspection Report" / "VIR"

There are no requirements to write a test record for reprinting a VIR. An analyzer that writes a test record for reprints shall not be deemed unacceptable.

3.5.1 Access Code Prompt: ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria: The TX96 Analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M Inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall not accept duplicate access code for different inspectors. Each inspector's access code shall be unique. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

Error Messages:

- 1. "YOUR ACCESS CODE IS NOT VALID--TRY AGAIN"**
- 2. "THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE."**

Associated System File INSPECTOR.DAT ACCESS_CODE

3.5.2 Date Expiration Prompt: YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM DD YY

Programming Criteria: The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of that date, then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have expired, message 2 will be displayed. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is 30 days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred. The analyzer shall countdown the final 30 days after the expiration date of the inspector or the station certification.

If either the station or the inspector lockout flag is set, then analyzer will display message 2 or a message that indicates lockout has occurred. The system will then return to the main menu.

- Error Messages:**
1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**
 2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**
 3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

<u>Associated System File:</u>	STATION.DAT	STAT_EXP_DATE STAT_LOCKOUT_FLAG
	INSPECTOR.DAT	STAT_EXP_DATE STAT_LOCKOUT_FLAG

3.5.2a Retrieve Previous Records Prompt: **SELECT THE SEARCH LOCATION**
SEARCHING THE ANALYZER SYSTEM FILES (LOCAL SEARCH)

SEARCHING THE TEXAS DATA LINK SYSTEM (CALL DATABASE)

Note: **The database search will only return results of the most recent inspection.**

Programming Criteria: The system shall prompt the inspector to indicate that the search will be performed on system files or by contacting the Texas Data Link System. A message shall be displayed indicating that a search of the Texas Data Link System will only return the results of the most recent inspection. If the inspector elects to contact the Texas Data Link System, the system shall proceed to Section 3.5.2b. If the inspector elects to search the system files, the system shall proceed to Section 3.5.2h.

3.5.2b VIN Number Prompt: **ENTER VIN NUMBER.**

Programming Criteria: The system will prompt for the VIN number as it appears on the vehicle. Where available, the inspector will enter the VIN number by using the bar code reader to scan the bar coded VIN on the vehicle. If a bar code reader is not available, the inspector will be capable of entering the VIN number from the keyboard. The analyzer will place a 'B' in the BARCODED_VIN field of the test record, if the VIN is entered using the bar code reader. Otherwise, the analyzer will place a 'K' in the BARCODED_VIN field of the test record.

The system shall allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the system shall prompt the inspector to press "continue" or "enter". The inspector shall hit "continue" or "enter", the screen will blank the VIN and ask the operator to reenter the VIN under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer will display Message 3 and prompt the inspector to enter the VIN number a third time. A minimum of three and maximum of 17 characters are required for this field. If the entry is not within these parameters, then the system will display Message 2. If no value is entered, the analyzer will display Message 1. The VIN verification algorithm shall be applied here. The algorithm shall be supplied under separate cover by the TNRCC. The VIN verification shall only be applied to vehicles with model years 1981 and newer. The analyzer will not allow the inspector to

N)

Programming Criteria: The system shall only accept an entry of 'Y' or 'N.' If the inspector selects 'N', the system shall return to the Main Menu.

Error Message: INVALID ENTRY--TRY AGAIN

3.5.3g **Print Vehicle Inspection Report (VIR):**

After the system has displayed the vehicle information and the inspector has confirmed that the vehicle information is correct, the following prompt shall be displayed.
"READY TO REPRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."

The system will print the original date of the initial test on the reprint vehicle inspection report. The system will print the VIR based on the data contained in the test record received from the Texas Data Link System (VID). The system shall print 'TDLS Reprint' on the line for station address. The system shall print 'N/A' on the lines for station city and station zip code.

Depending upon the pass/fail status of the emissions phase of the inspection, the printer will provide additional information to the customer as outlined in Appendix B. The custom report shall include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (2-Speed Idle), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Number, VIN, Vehicle Make, Vehicle Model Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the Test, Dilution Amount (in percent, CO + CO₂), Dilution Results (Pass or Fail), the Results of the Gas Cap Integrity Test, and the Overall Result of the Inspection. The vehicle's ignition type shall be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report shall indicate that the test was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the test was conducted as a Special Test. If the test was conducted as a Special Test, the Two Letter Designation (i.e., LI, ME, IV, AD, ST, PA, or OT) shall be placed on the same line as the Test Type separated by at least two spaces, or a slash, and the words 'Special Test' shall be in the subtitle. The system shall allow the inspector to reprint additional copies of the vehicle inspection report, after the initial reprinted report has been printed. If the test ends because of a time out condition or because of dilution, the emission standards, amounts, and results shall **not** be printed on the report. The report shall indicate that the vehicle has failed. The

report shall indicate that the vehicle failed because of excessive dilution, where applicable. If the test should 'time out', then the report shall indicate that the vehicle failed because the test was not completed in the time allowed for completion of the test.

If the test ended in an aborted condition, the vehicle inspection report (VIR) shall print the station information, the vehicle information, indicate that the test was aborted in the overall result block, and display the reason for the abort.

If the test ended in an abort or timeout condition, the system shall print dashes on the VIR where the analyzer would have ordinarily placed readings. The dashes shall follow the expected format of the corresponding gas (i.e., CO = '--.--', HC = '----', CO₂ = '--.'). Dashes are preferable, however, an alternative symbol may be used. The system shall also place dashes in place of the pass/fail indicator on the VIR. The system shall print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO₂, and O₂, where applicable.

The analyzer shall print a barcode on the VIR which contains the VIN, license plate number of the vehicle, and the license type, make, year, and model name of the vehicle under inspection.

When the analyzer has completed printing the reprinted VIR, and the inspector chooses not to print additional copies, the analyzer shall return to the Main Menu.

3.5.3h Display/Select Pass Records

Programming Criteria: The system shall prompt the inspector to enter the license number and VIN of the vehicle. The system shall either prompt the inspector to enter the license number, pass/fail status (optional), and VIN, and/or certificate number, as search criteria, or the system will display the license number and VIN and test date of all records currently contained in the VEHICLE.DAT and prompt the inspector to select the desired record. The system will search and display the appropriate record for the inspector.

The system will then display vehicle information for verification by the inspector.

The system will print the original date of the initial test on the reprint vehicle inspection report.

3.5.4 Reprint Prompt: "DO YOU WANT TO REPRINT THIS VIR?" (Y OR N)

Programming Criteria: The system shall only accept an entry of 'Y' or 'N.' If the inspector selects 'N', the system shall return to the Main Menu.

Error Message: INVALID ENTRY--TRY AGAIN

3.5.5 Print Vehicle Inspection Report:

After the system has displayed the vehicle information and the inspector has confirmed that the vehicle information is correct, the following prompt shall be displayed.

"READY TO REPRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."

The system will print the original date of the initial test on the reprint vehicle inspection report. The system will print the VIR based on the data contained in the test record received from the Texas Data Link System (VID). The system shall print 'Local Reprint' on the line for station address. The system shall print 'N/A' on the lines for station city and station zip code.

Depending upon the pass/fail status of the emissions phase of the inspection, the printer will provide additional information to the customer as outlined in Appendix B. The custom report shall include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (2-Speed Idle), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Number, VIN, Vehicle Make, Vehicle Model Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the Test, Dilution Amount (in percent, CO + CO₂), Dilution Results (Pass or Fail), the Results of the Gas Cap Integrity Test, and the Overall Result of the Inspection. The vehicle's ignition type shall be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report shall indicate that the test was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the test was conducted as a Special Test. If the test was conducted as a Special Test, the Two Letter Designation (i.e., LI, ME, IV, AD, ST, PA, or OT) shall be placed on the same line as the Test Type separated by at least two spaces, or a slash, and the words 'Special Test' shall be in the subtitle. The system shall allow the inspector to reprint additional copies of the vehicle inspection report, after the initial reprinted report has been printed. If the test ends because of a time out condition or because of dilution, the emission standards, amounts, and results shall **not**

be printed on the report. The report shall indicate that the vehicle has failed. The report shall indicate that the vehicle failed because of excessive dilution, where applicable. If the test should 'time out', then the report shall indicate that the vehicle failed because the test was not completed in the time allowed for completion of the test.

If the test ended in an aborted condition, the vehicle inspection report (VIR) shall print the station information, the vehicle information, indicate that the test was aborted in the overall result block, and display the reason for the abort.

If the test ended in an abort or timeout condition, the system shall print dashes on the VIR where the analyzer would have ordinarily placed readings. The dashes shall follow the expected format of the corresponding gas (i.e., CO = '--.--', HC = '----', CO₂ = '--.-'). Dashes are preferable, however, an alternative symbol may be used. The system shall also place dashes in place of the pass/fail indicator on the VIR. The system shall print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO₂, and O₂, where applicable.

The analyzer shall print a barcode on the VIR which contains the VIN, license plate number of the vehicle, and the license type, make, year, and model name of the vehicle under inspection.

When the analyzer has completed printing the reprinted VIR, and the inspector chooses not to print additional copies, the analyzer shall return to the Main Menu.

3.6 Main Menu Selection '6' "Vehicle Diagnosis"

As soon as the analyzer meets the warm-up criteria, selection of the vehicle diagnosis mode from the main menu shall cause the analyzer to conduct an automated electronic zero and span and then begin taking emissions readings. The emissions readings shall be displayed in large, easily read characters by a person with 20/20 vision from a distance of eight feet, in the following format.

<u>Emission</u>	<u>Reading</u>
HC	XXXX
CO	XX.XX
CO ₂	XX.X
O ₂	XX.X

3.7 Main Menu Selection '7' "Training Mode"

The analyzer shall contain a feature that will allow an inspector or student to go through the complete inspection procedure without generating an official emissions inspection vehicle inspection report. This capability will be used by the auditors for evaluating inspector performances, by the manufacturers for training purchasers of

analyzers, or by analyzer owners to train new employees. The training mode selection shall not require the users access code or allow access to secured areas of hardware or software. The display shall show a message throughout the inspection that this is a training exercise and not an official inspection. Vehicle inspection reports shall indicate to the satisfaction of the TNRCC that they are for training only.

3.8 Main Menu Selection '8' "Analyzer Maintenance"

Upon selection of this menu, the analyzer shall display the following list for the inspector:

1. Three day gas calibration and leak check
2. Gas Calibration
3. Leak Check
4. Status Screen
5. Gas Cap Integrity Tester Calibration (if fully automated)
99. Return to Main Menu

3.8.1 Three-day Gas Calibration and Leak Check

When the Inspector has selected 1, the analyzer shall initiate a three (3)-day gas calibration and leak check sequence.

1. A three (3)-day gas calibration and leak check is required. Selection of this item shall bring up a set of both gas calibration and leak check procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the required gas calibration and leak check (including when it is necessary to turn the gas cylinder valve on and off). TNRCC/DPS reserves the right to approve the procedures. Results of the leak check and the gas calibration shall be displayed to the screen and recorded on the **CAL.DAT** file. The three-day calibration and leak check record will contain before and after calibration readings in **CAL.DAT**. The system shall preclude official emissions-related inspections after seventy-two (72) hours if a gas calibration and leak check are not performed and passed. If the analyzer fails the three (3)-day gas calibration and leak check, a message shall be displayed indicating that it failed, official emissions-related inspections shall be precluded, and instructions shall be provided to the inspector to call for repairs. (The message will include the toll free telephone number during the warranty period.)
2. When the three (3)-day gas calibration and leak check is completed, the analyzer shall return to the Main Menu.

3.8.2 Gas Calibration

When the inspector has selected two (2) at the display prompt, the analyzer shall initiate a gas calibration sequence.

1. Selection of this item shall bring up a set of gas calibration procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the gas calibration (including when it is necessary to turn the gas cylinder valve on and off). TNRCC/DPS reserves the right to approve the procedures. Results of the gas calibration shall be displayed to the screen and recorded on the CAL.DAT. If the analyzer fails the gas calibration, a message shall be displayed indicating that it failed and instructing the inspector to call for repairs.
 2. When the gas calibration is completed, the analyzer shall return to the Main Menu.
-

3.8.3 Leak Check

When the inspector has selected three (3) the analyzer shall initiate a leak check sequence.

1. Selection of this item shall bring up a set of leak check procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the leak check (including when it is necessary to turn the gas cylinder valve on and off). TNRCC/DPS reserves the right to approve the procedures. Results of the leak check shall be displayed to the screen and recorded on the CAL.DAT. If the analyzer fails the leak check, a message shall be displayed indicating that it failed and instructing the inspector to call for repairs.
 2. When the leak check is completed, the analyzer shall return to the Main Menu.
-

3.8.4 Status Screen

When the Auditor has selected 4, the analyzer shall display the Status Screen. The analyzer shall use information stored in the CAL.DAT file and other sources to generate the Status Screen.

Station Number
Analyzer Number
Propane Equivalency Factor (PEF) Number
Span Gas Cylinder Valves

Date/time of last gas calibration & leak check
Remaining space will store approximately ___ test records (the analyzer should fill in the blank with a number.)
Date analyzer was last serviced
Current date and time
Software Version Number

The system shall post a recurring warning when sufficient space remains to store 200 records.

3.8.5 Gas Cap Integrity Tester Calibration

If the analyzer is not fully automatic, the final results of the daily gas cap tester calibration shall be entered by the inspector and recorded to the CAL.DAT file.

This option shall be available if the Gas Cap Integrity Tester is fully automatic. When the inspector has selected five (5), the analyzer shall initiate a gas cap tester calibration sequence.

1. Selection of this item shall bring up a set of gas cap tester calibration procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the gas cap tester calibration (including when it is necessary to identify which the reference cap is being attached, and when to switch reference caps). TNRCC/DPS reserves the right to approve the procedures. Results of the gas cap tester calibration shall be displayed to the screen and recorded on the CAL.DAT. The affected fields are CAL_DATE, CAL_TIME, and GAS_CAP_CHECK_RSLT. The final results shall be entered by the inspector and recorded to the CAL.DAT file, if the analyzer is not fully automatic. The results shall be automatically written to CAL.DAT file, if the tester is fully automated. If the analyzer fails the gas cap tester calibration, a message shall be displayed indicating that it failed and instructing the inspector to call for repairs.
2. When the gas cap calibration is completed, the analyzer shall return to the Main Menu.

3.9 Main Menu Selection '9' "Audit Menu"

The information (e.g., test data files) from the analyzer in the station should be accessible to an auditor from a host computer for the purposes of conducting an audit. The auditor shall be able to conduct audit functions from the host as if he/she were in the station, with the exceptions of gas calibrations and leak checks. If an audit is conducted on-site, the auditor should encounter the following prompts.

If the Audit Menu (9) is selected from the Main Menu:

TNRCC/DPS Access Code Prompt: ENTER TNRCC/DPS ACCESS CODE

Programming Criteria:

The system will prompt the auditor to enter the TNRCC/DPS Access Code. The ACCESS CODE shall be changed by algorithm provided by the TNRCC/DPS on the first day of every month. The analyzer shall check the entered code against the TNRCC/DPS Access Code field of the STATION.DAT file.

If an invalid Access Code is entered, the system will write a record to the AUDITLOG.DAT file containing the date, time and "U" for unauthorized login attempt. The record should be written when the 'enter/continue' key is pressed after the access code is entered. The system shall then return to Main Menu.

If the Access Code is valid, the system will write a record to the AUDITLOG.DAT file containing the date, time and "A" for the authorized login attempt. The record should be written when the 'enter/continue' key is pressed after the access code is entered. If the Auditor selects the inspection log search under Section 3.9.13, the record for the successful log on shall be appended with a 'Y' in the SEARCH field, and the time of the search in the TIME field when the Auditor presses 'continue/enter.' Otherwise, leave these fields blank.

Upon successful validation of the TNRCC/DPS access Code, the auditor shall be prompted to enter his 4-digit employee identification number. This is a required entry. The system shall report this number to complete the Inspection log (VI-8B). Then, the Audit Menu will be displayed as follows:

1. Station Evaluation Report
2. Station Performance Report
3. Inspector Evaluation Report
4. Analyzer Maintenance
5. Gas Audit
6. Update Station and Inspector Information
(Reset PIN)
7. Install New Data Disk
8. Reset Date, Time and Telephone Numbers
9. Analyzer Lockout/Station Lockout
10. Software Updates
11. Practical Test
12. Auditor's Notes
13. Search and Retrieve Test Records

14. Analyzer Tampering/Access Report
15. History Report
16. System Settings
17. Reprint VIR
18. Communications Refresh
19. Copy/Download Test Records
20. Missing, or Voided Certificates Function
21. Certificate Correction/Replacement Function
99. Return to Main Menu

The auditor shall have the option of printing all reports and items displayed on the Audit Menu Options to the printer. The system will make provisions for the date and signature of the station manager and the I/M auditor at the end of every report. Upon exiting the State Menu, the analyzer shall store the changes made by the Auditor in the appropriate file structure. When the analyzer conducts and completes an emissions test, the state information and auditor changes shall be transmitted to the Texas Data Link Host along with the vehicle inspection information.

3.9.1 Audit Menu Selection '1' "Station Evaluation Report"

When the auditor selects Audit Menu Option (1), the station evaluation report shall be initiated.

The Station evaluation report shall be generated by the analyzer from the information stored in the hard disk. The auditor shall have the ability to select the time interval over which the analyzer will calculate for the evaluations. The time interval for calculation will be 30 days, 60 days, and 90 days. Upon the request of the auditor, the system shall be designed to display all three time interval calculations for comparison. In addition, the auditor will be able to request an "ad hoc" report starting on a specific date and ending on a specific date. The analyzer shall complete the following fields automatically: station number, today's date, and the time the report was activated.

Station Evaluation Report Sample:

60 DAY REPORT STATION NAME & NUMBER DATE TIME			
DESCRIPTION	71 TO 80	81 & NEWER	TOTAL INSPECTIONS
Total Inspections Initial Pass Emissions Initial Pass Gas Cap Initial Pass Safety Fail Emission Fail Gas Cap Fail Safety % Fail Emission % Fail Gas Cap % Fail Safety Abort Sequence Bypass RPM Time out condition occurred			
Total Re-inspection Reinspect Emission Reinspect Gas Cap Reinspect Safety Reinspect Emissions Failed Reinspect Gas Cap Failed Reinspect Safety Failed Pre-tune Total % of Total Inspection Pre-tuned Abort Sequence Bypass RPM Time out condition occurred			

3.9.2 Audit Menu Selection '2' "Station Performance Report"

Audit Menu Selection "2," "STATION PERFORMANCE REPORT." The Station Performance Report sequence shall be initiated by the selection of "2" from the Audit Menu. The analyzer shall display the following four choices, and allow the auditor to use the arrow keys to select the type of station contact:

1. Compliance Audit
2. Administrative Contact
3. Investigation
4. Certification Contact

The analyzer shall display the Station Performance Report to the screen. The type of station contact shall appear as a subheading or hyphenated heading when the Station Performance Report is displayed to the screen. The analyzer shall complete the following fields automatically: Station Name, Station Number, Analyzer Number, today's date, the date of the last report, the date of the last three-day calibration and leak check and the most recent gas audit report. The analyzer shall display the most recent auditor's notes entry, and allow the auditor to review and edit previous entries and create a new entry in the Auditor's notes window. The analyzer shall allow for auditor entry of "P" (pass) or "F" (fail) for each item on the station equipment checklist. The analyzer shall allow for auditor entry of "Y" (yes) or "N" (no) for each item on the Audit Procedures Checklist. The analyzer shall allow for free-form auditor's notes to be entered and reviewed.

The report generated from this selection will be stored in the PERFORM.DAT. This is both a hard disk and floppy-based file accessed through the audit screen.

The Station Performance Report shall contain the following items:

- A. Station Name
- B. Station Number
- C. Analyzer Number
- D. Today's Date
- E. Date of the last Station Performance Report
- F. The date of the last three-day calibration and leak check
- G. The most recent gas audit
- H. The Station Equipment Checklist
- I. The Audit Procedures Checklist
- J. The Auditor's Notes

Station Equipment: Entry of "P" or "F" required.

1. Station Sign
2. Certificate of Appointment
3. Display Board
4. Flex Probes
5. Approved Bar 90 Gases
6. Rules and Regulations Manual
7. Brake Test Area
8. Required Equipment (Laundry Marking Pen, Scraping Device, Tread Depth Gauge, Measuring Devices, 1/4" Round-Hole Punch)
9. Tachometer Lead

10. Gas Cap Tester
11. Inspector on Duty
12. Inspection Bay
13. Approved Window Tint meter
14. Analyzer, Printer & Supplies
15. Overall Result

Audit Procedures: Entry of "Y" or "N" required

1. New data disk
2. Reset tamper
3. Software updates
4. Station lockout
5. Inspector lockout
6. Letter delivered
7. Technical Bulletins

Deficiencies: No entries required

1. Violation Code
2. Action Taken
3. Ticket #

Station Performance Report - Compliance Audit Station Name (e.g., FRIDAYS AUTOMOTIVE) Today's Date (e.g., 01/12/2000)					
Station Number			1P10753		
Analyzer Number			XX123654		
Today's Date			12/21/1999		
Last Station Performance Report			09/21/1999		
Last Three-Day Gas Calibration			12/19/1999		
Last Leak Check			12/20/1999		
Last Gas Audit Report					
09/21/1999		11:30		HC HangUp: ppm	
Gas	Low Label	Low Reading	Mid Label	Mid Reading	
CO					
HC (ppm)					
CO2					
Station Equipment	Pass	Fail	Audit Procedures		Pass Fail

1. Station Sign 2. Certificate of Appointment 3. Display Board 4. Flex Probes 5. Approved Bar 90 Gases 6. Rules and Regulations Manual 7. Brake Test Area 8. Required Equipment (Laundry Marking Pen, Scraping Device, Tread Depth Gauge, Measuring Devices, ¼" Round-Hole Punch) 9. Tachometer Lead 10. Fuel Cap Tester 11. Inspector on Duty 12. Inspection Bay 13. Approved Window Tint meter 14. Analyzer, Printer & Supplies 15. Overall Result			1. New data disk 2. Reset tamper 3. Software updates 4. Station lockout 5. Inspector lockout 6. Letter delivered 7. Technical Bulletins			
Auditor Notes						
01/12/2000	CA Cksheet - OK, Tint Meter - OK, Gas Cap Tester - OK, Analyzer Audit - Pass 1/2					
Deficiencies						
Violation Code (5 Digits)					Action Taken	Ticket #

Station Manager: _____ Date: _____

DPS Auditor: _____ Date: _____

3.9.3 Audit Menu Selection '3' "Inspector Evaluation Report"

When the auditor selects "3" from the Audit Menu, the analyzer will display:

1. Inspector Evaluation Report
2. Multiple Repairs
3. Fast Testing
4. Emissions Reductions

5. After Hours Test
6. Consecutive Test Comparison

The system will display inspector number and name.

The analyzer shall complete the following fields automatically: today's date, the time the report was activated.

Inspector Evaluation Report Sample:

60 DAY REPORT INSPECTOR NAME & NUMBER DATE TIME			
DESCRIPTION	71 TO 80	81 & NEWER	TOTAL INSPECTIONS
Total Inspections			
Initial Pass Emissions			
Initial Pass Gas Cap			
Initial Pass Safety			
Fail Emission			
Fail Gas Cap			
Fail Safety			
% Fail Emission			
% Fail Gas Cap			
% Fail Safety			
Abort Sequence			
Bypass RPM			
Time out condition occurred			
Total Re-inspection			
Reinspect Emission			
Reinspect Gas Cap			
Reinspect Safety			
Reinspect Emissions Failed			
Reinspect Gas Cap Failed			
Reinspect Safety Failed			
Pre-tune Total			
% of Total Inspection Pre-tuned			
Abort Sequence			
Bypass RPM			
Time out condition occurred			

Selection Option 2 displays a prompt which asks if the auditor wants to see all the inspectors/repair technicians, or an individual inspector/repair technician. After the auditor makes this selection a screen showing the number of vehicles with retests and the number and percent of those which have more than one retest.

If the auditor selects all, the statistics are displayed for the station as a whole and for each individual inspector.

The vehicles retested by an inspector can be called from this screen and vehicle data on repairs, emissions levels and time of test can be compared.

(The purpose of this exercise is to detect repair technicians who are not repairing to manufacturers specifications, but are just tweaking carburetors.)

Selecting Option 3 "Fast Testing" asks if all or individual statistics are desired. The screen then displays the "median" time between tests; the average time for a complete test, the percent of tests started within 5 minutes of the end of the previous test. (All displays should have effective graphics.)

Selecting Option 4 "Emissions Reductions" will ask if the auditor wants all or individual inspectors. Three categories of repair effectiveness will be evaluated, "super clean repairs" and "possible cutpoint repairs" and "indeterminate repairs."

Super clean repairs are for catalyst equipped vehicles model year 75-80 CO less than .40 percent and HC less than 100 ppm; 81 to 84 CO .30 percent and HC 75 ppm; 85 and newer CO less than .20 percent and HC less than 50 ppm.

Possible cutpoint repairs are those in which the CO or the HC is within 25 percent of the cutpoint.

Indeterminate repairs are those which are not in either of the other categories.

A repair is defined as any vehicle that has a passing and a failing record stored in the TX96 Analyzer.

The screen should display the percent of repairs that were made on catalyst vehicles and the percent of those that were made to super clean conditions. The screen should display the total number of repairs and the percent that are possible cutpoint and the percent that are indeterminate. Also average emissions reductions for all repairs and for catalyst and non-catalyst vehicles should be displayed.

An option should allow the auditor to use all repairs, or just those repaired at the station.

Selection Option 5 "After Hours Test" displays any tests that have been conducted outside of normal business hours. The auditor will be prompted to enter these hours.

Selecting Option 6 "Consecutive Test Comparison" asks for all or individual statistics. This screen will display, for a given time period, the consecutive CO, HC, and model year values. This can be done for 81 and newer vehicles for 71-80 vehicles or for all vehicles. The auditor may select all inspection, re-inspection, or all passing re-inspections. CO and HC levels should be reported in percent of actual values for the applicable model year standard. (This process is designed to detect and discourage the use of a single vehicle for all tests.) If CO or HC is greater than 110 percent of the standard then the system will display values as 110 percent.

3.9.4 Audit Menu Selection '4' "Analyzer Maintenance"

The Analyzer Maintenance Menu shall be activated by an entry of four (4) from the Audit Menu. This will present a set of maintenance functions that may be performed by the auditor. Upon selection of the Analyzer Maintenance the analyzer will display the following options:

- 1) Three Day Gas Calibration and Leak Check
- 2) Gas Calibration
- 3) Leak Check
- 4) Status Screen
- 5) Gas Cap Integrity Tester Calibration
- 99) Return to Audit Menu

- A. When the auditor has selected one (1), the analyzer shall initiate a three (3)-day gas calibration and leak check sequence.
 1. A three (3)-day gas calibration and leak check is required. Selection of this item shall bring up a set of both gas calibration and leak check procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the required gas calibration and leak check (including when it is necessary to turn the gas cylinder valve on and off). TNRCC/DPS reserves the right to approve the procedures. Results of the leak check and the gas calibration shall be displayed to the screen and recorded on **CAL.DAT**. The three-day calibration and leak check record will contain before and after calibration readings in **CAL.DAT**. The system shall preclude official emissions inspections (Main Menu options 1, 2, 3, and 4) after seventy-two (72) hours if a gas calibration and leak check are not performed and passed. If the analyzer fails the three (3)-day gas calibration and leak check, a message shall be displayed indicating that it failed, Main Menu 1, 2, 3, and 4 shall be precluded, and instructions shall be provided to the inspector to call for repairs.
 2. When the three (3)-day gas calibration and leak check is completed, the analyzer shall return to the Audit Menu.
- B. When the auditor has selected two (2) at the display prompt, the analyzer shall

initiate a gas calibration sequence.

1. Selection of this item shall bring up a set of gas calibration procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the gas calibration (including when it is necessary to turn the gas cylinder valve on and off). TNRCC/DPS reserves the right to approve the procedures. Results of the gas calibration shall be displayed to the screen and recorded on the CAL.DAT. If the analyzer fails the gas calibration, a message shall be displayed indicating that it failed and instructing the inspector to call for repairs.
 2. When the gas calibration is completed, the analyzer shall return to the Audit Menu.
- C. When the auditor has selected three (3) the analyzer shall initiate a leak check sequence.
1. Selection of this item shall bring up a set of leak check procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the leak check (including when it is necessary to turn the gas cylinder valve on and off). TNRCC/DPS reserves the right to approve the procedures. Results of the leak check shall be displayed to the screen and recorded on the CAL.DAT. If the analyzer fails the leak check, a message shall be displayed indicating that it failed and instructing the inspector to call for repairs.
 2. When the leak check is completed, the analyzer shall return to the Audit Menu.
- D. When the auditor has selected four (4), the analyzer shall display the Status Screen. The analyzer shall use information stored in the CAL.DAT file and other sources to generate the Status Screen.

Status Screen:

1. Station Number
2. Analyzer Number
3. Propane Equivalency Factor (PEF) Number
4. Span Gas Cylinder Valves
5. Date/time of last gas calibration & leak check
6. Remaining space will store approximately ___ test records (the analyzer should fill in the blank with a number.)
7. Date analyzer was last serviced
8. Current date and time
9. Software Version Number

- E. If the analyzer is not fully automatic, the final results of the daily gas cap tester calibration shall be entered by the inspector and recorded to the CAL.DAT file.

This option shall be available if the Gas Cap Integrity Tester is fully automatic. When the inspector has selected five (5), the analyzer shall initiate a gas cap tester calibration sequence.

1. Selection of this item shall bring up a set of gas cap tester calibration procedures. The procedures shall be user friendly and shall indicate every step needed to properly perform the gas cap tester calibration (including when it is necessary to identify which the reference cap is being attached, and when to switch reference caps). TNRCC/DPS reserves the right to approve the procedures. Results of the gas cap tester calibration shall be displayed to the screen and recorded on the CAL.DAT. The affected fields are CAL_DATE, CAL_TIME, and GAS_CAP_CHECK_RSLT. The final results shall be entered by the inspector and recorded to the CAL.DAT file, if the analyzer is not fully automatic. The results shall be automatically written to CAL.DAT file, if the tester is fully automated. If the analyzer fails the gas cap tester calibration, a message shall be displayed indicating that it failed and instructing the inspector to call for repairs.
2. When the gas cap calibration is completed, the analyzer shall return to the Audit Menu.

3.9.5 Audit Menu Selection '5' "Gas Audit"

The gas audit sequence shall be initiated when "5" is selected from the Audit Menu:

- A. The analyzer shall display the current audit gas values, low range and mid range, and shall prompt the auditor "Do you want to change the Audit Gas Values?" If no, proceed with the Gas Audit. If yes, the analyzer shall allow entry of the new low range and mid range audit gas values, and then prompt: "Are the Audit Gas Values correct?" If no, the analyzer shall allow for reentry of the gas values. If yes, the new values shall be written to the AUDITGAS.DAT file and the analyzer shall proceed with the gas audit.
- B. The analyzer shall conduct a sixty-second sample system purge followed by an automated electronic zero. The analyzer shall prompt the auditor to select whether the audit gas will be entered through the probe, or through the calibration port. The analyzer shall default to the entry through the probe. If the auditor selects entry of the audit gas through the calibration port, the analyzer will place a 'C' in the CAL_PORT field, and leave the HC_HANGUP field blank in the AUDITGAS.DAT file. If the auditor indicates that the gas shall be entered through the probe, the analyzer shall then measure the HC hang-up for ten-seconds and record the average.

- C. The analyzer shall display the Audit Gas Values, the average HC hang-up and the sample readings (HC sample readings shall be displayed minus the average HC hang-up).

<u>PEF .XXX</u>		<u>Average HC HANG-UP XX PPM</u>		
Low Audit Gas Values		Sample Readings		Result
HC	XXXX	HC	XXXX	(P/F)
CO	XX.XX	CO	XX.XX	(P/F)
CO ₂	XX.X	CO ₂	XX.X	(P/F)
O ₂	XX.X	O ₂	XX.X	(N/A)

When the gas readings stabilize, press the "Enter" key.

Mid Audit Gas Values		Sample Readings		Result
HC	XXXX	HC	XXXX	(P/F)
CO	XX.XX	CO	XX.XX	(P/F)
CO ₂	XX.X	CO ₂	XX.X	(P/F)
O ₂	XX.X	O ₂	XX.X	(N/A)

When the gas readings stabilize, press the "Enter" key.

The analyzer shall compare the HC, CO and CO₂ readings to the Audit Gas Values and determine pass/fail status based on accuracy of plus 5 percent or minus 5 percent for the three gases. If any fail, the analyzer shall require a three-day calibration and leak check prior to performing any emissions test. If the analyzer fails after the introduction of the first gas, the analyzer shall continue and complete the audit and accept the introduction of the second gas. The analyzer shall display pass or fail status at the completion of the gas audit. After the Gas audit has been completed, the analyzer shall prompt the auditor to enter the results of the gas cap tester calibration. The only choices shall be 'P' for pass, 'F' for fail, or 'N' for not done. Completion of this entry shall cause a new record to be written in the AUDITNOT.DAT file. The results of the gas cap calibration shall be saved in the GAS_CAP_CAL_RES field of the AUDITNOT.DAT file.

Results of the gas audit shall be recorded in AUDITGAS.DAT on the hard disk and floppy.

When the gas audit is complete, the analyzer shall return to the Audit Menu.

3.9.6 Audit Menu Selection '6' "Update Station and Inspector Information"

The update Station and Inspector Information sequences shall be initiated when six (6)

is selected from the Audit Menu.

- A. The analyzer shall display the contents of the inspector file. The analyzer shall permit editing of the information. All inspectors (up to 45) shall be displayed to the screen during editing.
- B. Access codes shall be displayed as Xs. The access codes may be displayed only while holding down a key specified by the manufacturer. Changing the access codes shall be accomplished by overtyping the previous access code. During the overtyping the characters shall be displayed as Xs. Changing the access codes shall require double entry of the new access code. If the two (2) entries do not match, they shall be ignored. If the two entries do match, a message will be displayed indicating the access code has been successfully changed.
- C. Entries which are to be removed from the file must have all characters deleted. Partially deleted entries shall not be altered in the file.
- D. Hold down the (specified key) key to display the access codes. At the bottom of the screen type Y to save changes or press (abort key) to cancel.

STATION.DAT Station Number: ____num(8) Station Name: _____char(25) Station Street Address: _____char(20) City: _____char(13) Zip: _____num(10) Analyzer Number: ____num(7) Station Exp Date ____num(6)(display format: MM/DD/YY) Station Lockout ____char(1) Hours of Operation (M-F): Open__num(4) Close: __num(4) Hours of Operation (Sat.): Open__num(4) Close: __num(4) Hours of Operation (Sun.): Open__num(4) Close: __num(4) (display format for Hours is HH:MM)					
INSPECTOR.DAT					
Inspector Last Name	Inspector First Name	Access Code	Inspector Number	Expiration Date	Lockout Flag
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

- D. The changes entered by the auditor shall be recorded to STATION.DAT and INSPECTOR.DAT files.

- E. System setting shall include the screen prompts that allow the TNRCC/DPS Representative to enter or edit all the information in the STATION.DAT file, and the INSPECTOR.DAT file.
- F. If the auditor chooses to lockout an inspector, the analyzer shall allow the auditor to select the affected inspector from the displayed list, enter the lockout status ('Y' or 'N').
- G. The analyzer shall allow the auditor to reset the inspector's PIN to 11111. Immediately following this function, the lane inspector must change his PIN to a unique number before being allowed to test.

3.9.7 Audit Menu Selection '7' "Install New Data Disk"

The Install New Data Disk sequence shall be initiated when seven (7) is selected from the Audit Menu.

- A. The analyzer shall display instructions, on a single screen, for changing the floppy diskette. This procedure shall properly format the new diskette. The instructions must be approved by the TNRCC.
- B. When the change is complete and the analyzer security devices (doors, etc.) are secure, the analyzer shall return to the Audit Menu.

3.9.8 Audit Menu Selection '8' "Reset Date, and Time"

The reset date, and time sequence shall be initiated when eight (8) is selected from the Audit Menu.

The analyzer shall display the date, and time update screen. The time, and date can be updated by the I/M auditors when required. The analyzer shall automatically switch to daylight savings time and back to central standard time, when applicable. The analyzer date and time shall be updated when the analyzer contacts the Texas Data Link System. Upon a successful update, the analyzer shall return to the Audit Menu.

3.9.9 Audit Menu Selection '9' "Analyzer/Station Lockout"

The lockout sequence shall be initiated when "9" is selected from the Audit Menu. The analyzer manufacturer shall devise a method to allow the inspection operation (Main Menu option 1, 2, 3, and 4) to be disabled and still allow all other options to work normally. Software shall allow the auditor to set the analyzer/station lockouts listed below in items 1, 6, and 7, and clear the lockouts in items 1, 2, 3, 5, 6, 7, or 8 with the understanding that these lockout could be reset during a communications session with the Texas Data Link System. Software shall allow the Texas Data Link System to set the lockouts in items 1, 4, 6, and 7, and clear the lockouts in items 1, 4-8. Software shall allow the manufacturer's service technician to clear items 2, or 3.

The analyzer may display the station name, station number and the analyzer number on this screen.

Lockout Status Screen

- | | |
|----------------------------------|------------------------------------|
| 1. State Lockout | 5. Station Certification Expired |
| 2. Cabinet Tamper | 6. Station Certification Suspended |
| 3. Floppy Tamper | 7. Station Certification Revoked |
| 4. Communications Failure to Pay | 8. Maximum Tests w/o Comm. |

No Contact Limit : XXX

Number of Test w/o Communications: XXX

The analyzer shall also display an appropriate error messages in the event of an error or a failure of the following components: Floppy Disk Failure, Gas Analyzer Tamper, Gas Calibration Failure, Hard Disk Failure, Gas Analyzer Failure, Leak Check Failure, Internal Clock Failure, and Warm-Up Failure.

3.9.10 Audit Menu Selection '10' "Software Update"

The analyzer shall perform a software update when "10" is selected from the Audit Menu.

- A. When emergency software updates are required between annual software updates, the manufacturer is responsible for developing the update and provide the update to the TNRCC/DPS on a three and one-half inch (3-1/2") floppy diskette. The TNRCC/DPS may install the update, but reserves the right to have it done by the manufacturer. If the TNRCC/DPS performs the update, multiple copies may be required.
- B. The update shall be made as simple as possible for the auditor by using display driven instructions, batch files, etc.
- C. Software Updates will cause the software version number to change.
- D. When the update is complete, the analyzer will automatically reboot and return to Main Menu.

3.9.11 Audit Menu Selection '11' "Practical Test"

This item is optional, if the Training Mode can be operated from the Main Menu.

This function allows the auditor to have an I/M inspector perform an inspection without generating an actual vehicle inspection report.

This sequence is very similar to the Training Mode (Main Menu Option).

3.9.12 Audit Menu Selection '12' "Auditor's Notes"

This menu entry allows the auditor to make entries and comments after the monthly audit. This should allow for free form notes to be entered and reviewed.

**Associated System File: AUDIT.NOT DATE MMDDYY
 TIME HHMM
 NOTES**

3.9.13 Audit Menu Selection '13' "Search and Retrieve Test Records"

The Search and Retrieve Test Records Menu shall be activated by an entry of thirteen (13) from the Audit Menu. If the Auditor selects the inspection log search this menu, the AUDITLOG.DAT record for the successful log on shall be appended with a 'Y' in the SEARCH field, and the time of the search in the TIME field when the Auditor presses 'continue/enter.' The analyzer shall search the VEHICLE.DAT file for test records. The search shall locate, display, and print out test records based on the knowledge of the vehicle license number, VIN, or date/time. When a match is found for the search condition, the auditor shall be able to review the previous chronological test records as well as those which follow the target record. The auditor shall be given the option of continuing the search for the next matching test record. After the analyzer has located the test record, the auditor shall be given the option of printing the test record on the printer. After printing the analyzer will then go to the Audit Menu. The analyzer shall be able to print reprints of the VI-8b that are identical to the reprinted VI-8b's of the station manager. The data entry screens shall be identical to screens used by the station manager. The analyzer shall be deemed acceptable if the system allows the Auditor to enter the station manager menu by using the State Access Code. (Note: The purpose is to get a short cut to the screens that allow the station manager to reprint the VI-8b.)

The auditor shall be able to conduct an Inspection Log review on the analyzer. The analyzer shall provide the following prompt:

**SELECT THE SEARCH METHOD: 1 - INSPECTION LOG
 2 - TEST TYPE**

If the auditor selects 1, the analyzer shall search the VEHICLE.DAT file for test records based on the knowledge of the inspector's identification number, the vehicle license number, VIN, date/time, approximate week ending or certificate number issued to the vehicle. The analyzer shall be able to locate, display, and print out the test record(s). The information shall be displayed in the format outlined in Appendix G for the Inspection Log (VI-8B), inclusive of the 'audited by' line, where applicable. The auditor shall be given the option of printing the results of the search on the printer. The auditor shall press a key designated by the manufacturer to return to the Audit

Menu.

If the auditor selects 2, the analyzer shall provide the following prompt:

ENTER THE SAFETY INSPECTION TYPE

A-1 YEAR WINDSHIELD (SAFETY & EMISSIONS)	J-1 YEAR WINDSHIELD (SAFETY ONLY)
B-2 YEAR WINDSHIELD	E-LOADED-2 YEAR
C-TRAILER/MOTORCYCLE	G-FMCSR (TRUCK)
D-TEST & REPAIR	H-EMISSIONS DECAL
	K-FMCSR (TRAILER)

Once the auditor has selected, the analyzer shall prompt the auditor for the search one or more of the following search criteria: Vehicle license number, VIN, Inspector Identification Number, date/time, or certificate number. The analyzer shall search the VEHICLE.DAT file for test records that match the search criteria. The items shall be displayed in the format displayed in Appendix G, inclusive of the 'audited by' line, where applicable. The items shall be listed in sequential order according to certificate numbers. The analyzer shall place an indicator or flag (i.e. an asterisk, question mark, etc.) beside any item whose certificate number is not next in sequence to the previous item. The auditor shall be given the option of printing the results of the search on the printer. The auditor shall press a key designated by the manufacturer to return to the Audit Menu.

3.9.14 Audit Menu Selection '14' "Analyzer Tampering/Access Report"

The system will purge this information after 12 months. This menu selection allows the auditor to review the following sample items:

1. Analyzer Tampering Lockout - the analyzer will display the tampering lockout number and give a description of the location of the tamper.
2. Clear Analyzer Tampering Lockout
3. Analyzer Service
4. Date
5. Time

3.9.15 Audit Menu Selection '15' "History Report"

This menu selection allows the auditor to review all gas calibration records, tamper history, leak check records, gas cap tester calibration history, if applicable, and gas

audit records stored in the hard disk for at least the past 180 days.

3.9.16 Audit Menu Selection '16' "System Settings"

When the auditor selects "16" from the Audit Menu, the analyzer will display:

Type Station: _____

County Setting: _____

Station Volume: _____

Settings Prompt: ENTER THE SETTING YOU WISH TO CHANGE.

- 1 - Type Station
- 2 - County Code Setting
- 3 - Station Volume
- 4 - Special Testing (i.e. waiver tests, arbitration tests, etc.)
- 5 - Return to Audit Main Menu

The analyzer shall complete the display from the information contained in the STATION.DAT file. The Type Station shall display 'Public,' 'Government,' or 'Fleet.' The County Setting shall display the name of the county in which the station is to be used. The Station Volume shall display 'Low,' or 'High.' The auditor shall be able to access the type station selection by selecting '1', the county selection by entering '2', the station volume setting by entering '3,' and the special testing selection by entering '4.' The auditor shall be returned to the Audit Main Menu by entering '5', the <Esc> key, or a key designated by the manufacturer.

Type Station

The Type Station selection should access the following selections:

- 'P' - Public (Lockout until print VI-8B log weekly)
- 'F' - Fleet (Lockout until print VI-8B log weekly)
- 'G' - Government (Lockout until print VI-8B log weekly)

After the Auditor has selected the Type Station, the analyzer shall automatically return to the System Settings Display Screen/Menu.

County Code Setting

The County Code Setting selection shall give the following prompt and access the selections:

County Code Prompt: ENTER SELECT THE COUNTY WHERE THE ANALYZER WILL BE USED.

Dallas - 057
El Paso - 071
Harris - 101
Collin - 043
Liberty - 146
Tarrant - 220
Waller - 237
Other - 999

Denton - 061
Fort Bend - 079
Galveston - 084
Brazoria - 020
Chambers - 036
Montgomery - 170
Out of State or Federal - 000

The analyzer shall provide the list of counties shown above, excluding the codes. The auditor shall be able to select the appropriate county by using the arrows keys. The auditor shall highlight the appropriate county, and press the 'enter/continue' key to confirm his selection. The analyzer shall convert the selection to the corresponding three digit code shown above and store the code in the COUNTY_CODE field in the STATION.DAT file. The analyzer shall be designed to have the county code set by the Texas Data Link System. The county selection shall correspond to the county in which the analyzer is to be used. After the auditor has selected the County Code, the analyzer shall automatically return to the System Settings Display Screen/Menu.

Station Volume Setting

The Station Volume Setting selection shall give the following prompt:

Station Volume Setting: ENTER THE STATION VOLUME DESIGNATION

- 1 - HIGH VOLUME**
- 2 - LOW VOLUME**

The analyzer shall allow the auditor to select the station designation as a High Volume station, or a Low Volume station. The analyzer shall be designed to default to the low volume setting. The Station Volume Setting shall control the defaults for the minimum frequency for gas calibrations and leak checks. A Low Volume designation shall require that the gas calibrations will be conducted at least every 72 hours, and a leak check is conducted every 24 hours. A High Volume designation shall require that the gas calibrations will be conducted at least every 24 hours, and a leak check is conducted every 4 hours. The system shall preclude official emissions inspections (Main Menu options 1, 2, 3, and 4) after seventy-two (72) hours if a gas calibration and leak check are not performed and passed. If the analyzer fails the three (3)-day gas calibration and leak check, a message shall be displayed indicating that it failed, Main Menu 1, 2, 3, and 4 shall be precluded, and instructions shall be provided to the inspector to call for repairs. After the auditor has selected the Station Volume, the analyzer shall automatically return to the System Settings Display Screen/Menu.

Special Testing

When the auditor selects "4" from the Setting Prompt, the analyzer will display:

Special Testing Prompt: SELECT THE TYPE OF TEST TO BE CONDUCTED FROM THE LIST BELOW.

- | | | |
|----|-----------------------------------|------|
| 1. | LOW INCOME TIME EXTENSION | (LI) |
| 2. | WAIVER - MINIMUM EXPENDITURE | (ME) |
| 3. | WAIVER - INDIVIDUAL VEHICLE | (IV) |
| 4. | ARBITRATION/DISPUTE TEST | (AD) |
| 5. | SCRAPPAGE TEST | (ST) |
| 6. | PARTS AVAILABILITY TIME EXTENSION | (PA) |
| 7. | OTHER | (OT) |

The analyzer shall provide the list of tests shown above. The auditor shall be able to select the appropriate test by using the arrows keys or by entering the number associated with each test. The auditor shall highlight the appropriate test and press the 'enter/continue' key to confirm his selection. If the auditor selects 1, the analyzer shall set the SPECIAL_TEST field to 'L.' If the auditor selects 2, the analyzer shall set the SPECIAL_TEST field to 'F.' If the auditor selects 3, the analyzer shall set the SPECIAL_TEST field to 'J' for the next emissions test. If the auditor selects 4, the analyzer shall set the SPECIAL_TEST field to 'E' for the next emissions test. If the auditor selects 5, the analyzer shall set the SPECIAL_TEST field to 'D' for the next emissions test. If the auditor selects 6, the analyzer shall set the SPECIAL_TEST field to 'M' for the next emissions test. If the auditor selects 7, the analyzer shall set the SPECIAL_TEST field to 'N' for the next emissions test.

The analyzer shall record the results of the test and allow the inspector to enter the certificate number issued to the vehicle, regardless of the actual pass or fail result. The auditor shall be able to return to the Audit Main Menu by pressing the <Esc> key or a key determined by the manufacturer.

After the auditor has selected confirmed his selection, the analyzer shall prompt the Auditor:

THE (TEST NAME) HAS BEEN SELECTED. PRESS 'ENTER/CONTINUE' TO CONFIRM. PRESS ANY OTHER KEY TO CHANGE YOUR SELECTION.

If the auditor does not press 'enter/continue', the analyzer shall return to the Special Testing Prompt/Screen. If the auditor presses 'enter/continue', the analyzer shall return to a **special menu** to allow the inspector to conduct the applicable emissions **reinspection** test.

The **special menu** shall consist of the following two selections:

- 1) Safety and Emissions Inspection (Main Menu selection 1), or
- 2) Emissions Only Inspection (Main Menu selection 3).

If the customer is in the rotation for a free reinspection (i.e., paid for the previous

inspection), the analyzer shall recognize this situation and use the menu selections from Section 3.4 Reinspection (Main Menu selection 4). The analyzer shall look for the information needed to make the determination from two sources:

- 1) data transmitted by the Texas Data Link System, or
- 2) data contained in the analyzer.

Only one **reinspection** test can be administered when a special test type is selected from this menu. After the reinspection is conducted and a complete test record is written, the analyzer shall return to standard operation.

The analyzer shall not print a rejection receipt for any of the special tests regardless of the actual outcome of the inspection. The analyzer shall print a vehicle inspection report (VIR) for all special tests regardless of the actual outcome of the inspection. The analyzer shall place a two digit code next to the test type to indicate the type of special test being conducted. The two digit codes are in parenthesis next to the list of special tests.

For **all** special tests, the analyzer shall provide the inspector with the option of entering a safety certificate/decal number regardless of the actual outcome of the inspection. When the vehicle fails the test, and the inspector is prompted to enter the safety certificate/decal number, a warning message shall be displayed instructing the inspector to leave this screen blank if a safety certificate or decal will not be issued to the vehicle. If a safety certificate or decal is issued, the analyzer shall then, prompt the auditor to enter the waiver number for all special tests, except the arbitration/dispute test, selection number 4. The waiver number is an alphanumeric entry of length seven (7). The analyzer shall make the auditor enter a minimum of 4 characters, press enter, and reconfirm the entry before proceeding to the next screen (VI-30 A Prompt).

3.9.17 Audit Menu Selection '17' "Reprint VIR"

The analyzer shall conduct a reprint the a VIR from a test record. The screen prompts shall be identical to Section 3.5, beginning with the Display Records prompts, Section 3.5.3. The search shall not be limited to passing records. The analyzer shall search for all records that match the criteria whether the vehicle passed or failed.

3.9.18 Audit Menu Selection '18' "Communications Refresh"

The analyzer shall conduct a Communications Refresh as described in Main Menu Selection, in Section 3.15. The communications refresh shall not require the entry of an access code.

3.9.19 Audit Menu Selection '19' "Copy/Download Test Records"

The analyzer shall provide a State menu item that allows an auditor to copy the VEHICLE.DAT, VEHICLE.HST, AUDITLOG.DAT, and AUDITLOG.HST from the hard disk to an auditor installed floppy disk (target disk). The analyzer shall copy

the AUDITLOG.DAT file on to the target disk. The system shall prompt the auditor to enter the download date. The analyzer shall copy the test records from the hard drive to the floppy disk. The date of the test records shall begin with the download date, and copy backward from the download date (i.e., records prior to the download date). The analyzer shall copy records to the disk until there are no more records on the hard drive or the disk is full. If the disk fills up prior to the copying all the records on the hard drive, the analyzer shall display the date of the last record, and the number of records copied on to the disk. The last record date shall be displayed until the auditor presses 'continue/enter'. The analyzer shall allow the inspector to run download procedures again. If the analyzer determines that all of the test records will fit on the floppy, the analyzer may copy the AUDITLOG.DAT file, the test records, and display the date of the oldest test record on the hard drive, the 180 maximum default date, or a message stating all test records have been copied.

The analyzer may prompt the auditor to format the target disk prior to copying the records. The analyzer may erase or write over any preexisting information on the target disk. If it is necessary to remove the state data disk prior to copying the files, the analyzer shall provide instructions for the auditor to follow to remove the data disk and reinstall the data disk after the copy procedure is complete.

3.9.20 Audit Menu Selection '20' "Missing, or Voided Certificates"

3.9.20a Access Code Entry: **ENTER YOUR INSPECTOR'S ACCESS CODE**

Programming Criteria: The TX96 Analyzer shall be designed to automatically place the Auditor's 4-digit employee identification number in the INSPECTOR_NUM field of the test record when this function is successfully completed.

Associated System File: **VEHICLE.DAT REPL_ID_NUM**

3.9.20b Certificate Type Prompt: **INDICATE THE TYPE OF INSPECTION CERTIFICATE(S).**

A-1 YEAR WINDSHIELD (SAFETY & EMISSIONS)	J-1 YEAR WINDSHIELD (SAFETY ONLY)
B-2 YEAR WINDSHIELD	E-LOADED-2 YEAR
C-TRAILER/MOTORCYCLE	G-FMCSR (TRUCK)
D-TEST & REPAIR	H-EMISSIONS TEST ONLY
K-FMCSR (TRAILER)	DECAL

Programming Criteria: The system shall only accept the following entries: 'A,' 'B,' 'C,' 'D,' 'E,' 'G,' 'H,' 'J,' or 'K.' Each entry shall be followed by hitting the "enter/continue" key. The

system shall display the two previous numeric entries, and the type of certificate or decal that needs to be accounted for. The system shall display the previous two entries, and the type of certificate or decal that caused the lockout or prevention of subsequent official inspections.

Associated System File: **VEHICLE.DAT** **SAFE_TEST_TYPE**

3.9.20c **Certificate Condition Prompt:**
**INDICATE THE CONDITION OF THE INSPECTION
CERTIFICATE(S).**

V - VOIDED **M - MISSING**

Programming Criteria: The system shall only accept the following entries: V-voided, or M - missing. Each entry shall be followed by hitting the “enter/continue” key.

Associated System File: **VEHICLE.DAT** **CERT_COND**
DECAL_COND

3.9.20d **Number of Certificates Prompt:** **INDICATE HOW MANY
CERTIFICATES/DECALS ARE
AFFECTED.**

1 - ONE **2 - MORE THAN ONE**

Programming Criteria: If the auditor selects 1, display the next prompt. If the auditor selects 2, the system shall display prompt number 3.9.20f.

3.9.20e **Certificate Number Prompt:** **ENTER THE INSPECTION
CERTIFICATE/DECAL NUMBER.**

Programming Criteria:

A minimum of six (6) and maximum of nine (9) characters are required for this field. The system shall write a test record which shall consist of the current date in the TEST_DATE field, the 4-digit employee identification number of the auditor voiding the certificates/decals in the REPL_ID_NUM, the type of

certificate in the SAFE_TEST_TYPE field, the entered certificate number in the CERT_NUM field, and the previously entered condition of the certificates (i.e., 'V'-voided, 'M'-missing) in the CERT_COND field in the VEHICLE.DAT file, or the entered decal number in the DECAL_NUM field, and the previously entered condition of the decal in the DECAL_COND field in the VEHICLE.DAT file. If the miss/void function is being conducted using the station manager menu, the entry in the REPL_ID_NUM shall be 10 9's (i.e., '9999999999'). The record shall be stored on the analyzer and transmitted to the Texas Data Link System along with the next emissions test. The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). The void indicator shall show 'VOID', if 'V' is in the CERT_COND (or DECAL_COND) field, or 'MISS', if 'M' is in the CERT_COND (or DECAL_COND) field. Then, the analyzer shall return to the Audit main menu.

The records for missing or voided certificates/decal must contain entries in the following fields, at a minimum, to be accepted as a valid test record:

VERSION		LICENSE_NUM	(Set to 'MISSVOID')
TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to 'N')
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to 'N')
INSPECTOR_NUM		DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME			
INSPECTOR_FNAME		DECAL_COND	
COUNTY_CODE			
VIN_ID_NUM	(Set to 'MISSVOID')	REPL_ID_NUM	(ID # of Miss/Void auditor)

(All other fields shall be appropriately filled with blanks/spaces and zeros).

The analyzer shall complete the VIN_ID_NUM and LICENSE_NUM fields automatically when this function is conducted by the auditor.

Associated System File: VEHICLE.DAT CERT_NUM
TEST_DATE
CERT_COND
DECAL_NUM
DECAL_COND
REPL_ID_NUM
SAFE_TEST_TYPE

**3.9.20f Certificate Number Prompt: ENTER THE SERIES OF
CERTIFICATE/DECAL NUMBERS.**

BEGINNING: _____ **ENDING:** _____

Programming Criteria:

A minimum of six (6) and maximum of nine (9) characters are required for each field. The system shall write a test record for the certificate range indicated by the auditor. The test record shall consist of the current date in the TEST_DATE field, the 4-digit employee identification number of the auditor voiding the certificates/decals in the REPL_ID_NUM field, the type of certificate in the SAFE_TEST_TYPE field, the entered beginning certificate number in the CERT_NUM field, the entered ending certificate number in the CERT_NUM_2 field, and the previously entered condition of the certificates (i.e., 'V'-voided, 'M'-missing) in the CERT_COND field in the VEHICLE.DAT file, or the entered beginning decal number in the DECAL_NUM field, the entered ending certificate number in the DECAL_NUM_2 field, and the previously entered condition of the decal in the DECAL_COND field in the VEHICLE.DAT file. If the miss/void function is being conducted using the station manager menu, the entry in the REPL_ID_NUM shall be 10 9's (i.e., '999999999'). The record shall be stored on the analyzer and transmitted to the Texas Data Link System along with the next emissions test. The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). Each certificate number in the range shall appear on the Inspection Log (VI-8B) as a separate entry. For example, the range of certificates numbered 001 to 005 shall appear on the Inspection Log on five separate lines. Each line will have the same void indication. The void indicator shall show 'VOID', if 'V' is in the CERT_COND (or DECAL_COND) field, or 'MISS', if 'M' is in the CERT_COND (or DECAL_COND) field. Then, the analyzer shall return to the main menu.

The analyzer shall limit the range of certificates that can be voided based on the beginning certificate number that is entered by the auditor. The maximum ending certificate number shall be the next multiple of 50. For example, if the auditor enters A00238432, the maximum entry is A00238450. If the auditor enters A32985353, the maximum entry is A32985400. For decals, the maximum ending decal number shall be the next multiple of 10. If the auditor enters V32994822, the maximum entry is V32994830.

The records for missing or voided certificates/decals must contain entries in the following fields, at a minimum, to be accepted as a valid test record:

VERSION		LICENSE_NUM	(Set to 'MISSVOID')
TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to 'N')
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to 'N')

INSPECTOR_NUM	DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME	DECAL_NUM_2	(Ending Decal Number)
INSPECTOR_FNAME	DECAL_COND	
COUNTY_CODE		
VIN_ID_NUM (Set to 'MISSVOID')	REPL_ID_NUM	(ID # of Miss/Void auditor)

(All other fields shall be appropriately filled with blanks/spaces and zeros).

The analyzer shall complete the VIN_ID_NUM and LICENSE_NUM fields automatically when this function is conducted by the auditor.

Associated System File: VEHICLE.DAT

CERT_NUM
 CERT_NUM_2
 TEST_DATE
 CERT_COND
 DECAL_NUM
 DECAL_NUM_2
 DECAL_COND
 REPL_ID_NUM
 SAFE_TEST_TYPE

3.9.21 Audit Menu Selection '21' "Certificate Correction/Replacement"

3.9.21a Certificate Search Prompt: ENTER THE SEARCH CRITERIA.

CERTIFICATE/DECAL NUMBER: _____
 CERTIFICATE/DECAL TYPE: _____
 VEHICLE VIN: _____
 VEHICLE PLATE NUMBER: _____

Programming Criteria: The system shall allow the auditor to enter one or more of the search criteria. The system shall locate the vehicle's most recent passing test record by searching the records currently stored on the analyzer.

Associated System File: VEHICLE.DAT

CERT_NUM
 DECAL_NUM
 VIN_ID_NUM
 LICENSE_NUM
 SAFE_TEST_TYPE

3.9.21b Certificate Number Prompt: ENTER THE REPLACEMENT INSPECTION CERTIFICATE/DECAL NUMBER.

Programming Criteria: A minimum of six (6) and maximum of nine (9) characters are required for this field. Upon confirmation of the replacement certificate/decals number, the analyzer shall write one test record.

The test record shall place the current date and time in the TEST_DATE and TEST_START_TIME field, the date and time of the target record in the ORIG_TEST_DATE, and ORIG_TEST_TIME fields, the 4-digit employee identification number of the auditor replacing the certificate/decals in the REPL_ID_NUM field, and the type of certificate in the SAFE_TEST_TYPE field. If the replacement is being conducted using the station manager menu, the entry in the REPL_ID_NUM shall be 10 9's (i.e., '9999999999'). For certificate replacement, the record shall be a duplicate of the target test record with an 'R' in the CERT_COND field, the replacement certificate number in the CERT_NUM field, and the certificate number of the target test record (the voided certificate number) in the CERT_NUM_2 field in the VEHICLE.DAT file. For decal replacement, the record shall be a duplicate of the target test record with an 'R' in the DECAL_COND field, the replacement decal number in the DECAL_NUM field, the certificate number of the target test record (the voided decal number) in the DECAL_NUM_2 field in the VEHICLE.DAT file. The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). The entry shall appear on two separate lines on the Inspection Log (VI-8B). The first line shall contain the date of the original test, the type of certificate (or decal), the void indicator displaying 'VOID,' and the certificate (or decal) number of the target test record (i.e., the certificate number contained in CERT_NUM_2, or decal number contained in DECAL_NUM_2). The second line shall contain the entries from the duplicate using the replacement certificate number as the valid certificate number. The void indicator in this line shall display 'REPL.' The void indicator shall show 'REPL,' if 'R' is in the CERT_COND field or DECAL_COND field. The system shall transmit the test record to the Texas Data Link System, and return to the main menu.

<u>Associated System File:</u>	VEHICLE.DAT	CERT_NUM
		CERT_NUM_2
		TEST_DATE
		CERT_COND
		DECAL_NUM
		DECAL_NUM_2
		DECAL_COND
		REPL_ID_NUM
		SAFE_TEST_TYPE

3.10 Main Menu Selection '10' "Recall Aborted Inspection"

3.10.1 Access Code Prompt: ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

1. The TX96 Analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the test report or the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M Inspector number contained in the INSPECTOR.DAT file. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

Error Messages:

1. "YOUR ACCESS CODE IS NOT VALID--
TRY AGAIN"
2. "THE ACCESS CODE ENTERED IS NOT
VALID. VERIFY YOUR ACCESS CODE
NUMBER WITH YOUR LOCAL DPS
OFFICE."

Associated System File: INSPECTOR.DAT ACCESS_CODE

**3.10.2 Date Expiration Prompt: YOUR STATION/INSPECTOR
CERTIFICATION EXPIRATION DATE IS
MM DD YY**

Programming Criteria:

The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is thirty days past, the inspector or

station date the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, then analyzer will display a message that indicates lockout has occurred and returns to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**
2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). CONTACT YOUR LOCAL DPS OFFICE.**
3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

<u>Associated System File:</u>	STATION.DAT	STAT_EXP_DATE
	INSPECTOR.DAT	INSP_EXP_DATE
	LOCKOUT.DAT	STAT_LOCKOUT_FLAG
		INSP_LOCKOUT_FLAG

3.10.3 Display/Select Aborted Inspection Record

Programming Criteria: The system will display the license number and VIN of all records currently contained in RECALL.DAT file. The inspector will select the desired record.

The system will then display vehicle information for verification/modification by the inspector.

3.10.4 Recall Aborted Test Logic

Programming Criteria: Based on the value of the test_type field in the RECALL.DAT file, the system will perform the test sequence, 'Safety and Emissions Inspection,' 'Safety Only Inspection,' 'Emissions Only Inspection' or 'Reinspection' as defined in 3.1, 3.2, 3.3, or 3.4,

respectively.

Associated System Files: RECALL.DAT TEST_TYPE

- 1 - Safety and Emissions Inspection
- 2 - Safety Only Inspection
- 3 - Emissions Only Inspection
- 4 - Reinspection

3.11 Gas Cap Integrity Test (if fully automatic)

The gas cap integrity check is an integral part of the TX96 Analyzer system. It may be a stand alone piece of equipment, or a fully automatic feature of the analyzer system. The analyzer will prompt the inspector to enter INSPECTOR ACCESS CODE. The system will validate the access code. Upon unsuccessful access code validation, the system will return to Main Menu. Otherwise, continue with 3.11.1.

3.11.1 Gas Cap Connect Prompt:

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria: If the gas cap tester is an integral part of the analyzer or fully automatic, the system will prompt the inspector to press "continue/enter" to conduct the test. After the test is complete, the system shall then display the result.

Error Message: ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED-- TRY AGAIN

3.12 Main Menu Selection '12' "Missing, or Voided Certificates"

This selection works better using two submenus to accommodate accounting for inspection certificates, and/or emissions only decals.

3.12.1 Access Code Prompt: ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria: The TX96 Analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M Inspector number contained in the INSPECTOR.DAT file. The analyzer shall not accept duplicate access code for

different inspectors. Each inspector's access code shall be unique. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

Error Messages:

1. "YOUR ACCESS CODE IS NOT VALID--TRY AGAIN"
2. "THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE."

Associated System File: INSPECTOR.DAT ACCESS_CODE

3.12.2 Date Expiration Prompt: YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM DD YY

Programming Criteria: The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is thirty days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, the analyzer will display a message that indicates lockout has occurred and returns to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR)
CERTIFICATION EXPIRES MM/DD/YY.**
2. **YOUR STATION /OR INSPECTOR
CERTIFICATION EXPIRED (date). YOU ARE
NOT AUTHORIZED TO PERFORM ANY
EMISSIONS INSPECTION AT THIS TIME.
PLEASE CONTACT YOUR LOCAL DPS
OFFICE.**
3. **YOUR (STATION/INSPECTOR)
CERTIFICATION WILL EXPIRE IN X (5, 4, 3,
2, 1) DAY(S).**

<u>Associated System File:</u>	INSPECTOR.DAT	INSP_EXP_DATE
	STATION.DAT	STAT_EXP_DATE
	LOCKOUT.DAT	INSP_LOCKOUT_FLAG
		STAT_LOCKOUT_FLAG

**3.12.2a Certificate Type Prompt: INDICATE THE TYPE OF INSPECTION
CERTIFICATE(S).**

A-1 YEAR WINDSHIELD (SAFETY & EMISSIONS)	J-1 YEAR WINDSHIELD (SAFETY ONLY)
B-2 YEAR WINDSHIELD	E-LOADED-2 YEAR
C-TRAILER/MOTORCYCLE	G-FMCSR (TRUCK)
D-TEST & REPAIR	H-EMISSIONS TEST ONLY
K-FMCSR (TRAILER)	DECAL

Programming Criteria: The system shall only accept the following entries: 'A,' 'B,' 'C,' 'D,' 'E,' 'G,' 'H,' 'J,' or 'K.' Each entry shall be followed by hitting the "enter/continue" key. The system shall display the two previous numeric entries, and the type of certificate or decal that needs to be accounted for. The system shall display the previous two entries, and the type of certificate or decal that caused the lockout or prevention of subsequent official inspections.

<u>Associated System File:</u>	VEHICLE.DAT	SAFE_TEST_TYPE
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inspection log report (VI-8B). The void indicator shall show 'VOID', if 'V' is in the CERT_COND (or DECAL_COND) field, or 'MISS', if 'M' is in the CERT_COND (or DECAL_COND) field. Then, the analyzer shall return to the main menu.

The records for missing or voided certificates/decals must contain entries in the following fields, at a minimum, to be accepted as a valid test record:

VERSION		LICENSE_NUM	(Set to 'MISSVOID')
TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to 'N')
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to 'N')
INSPECTOR_NUM		DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME			
INSPECTOR_FNAME		DECAL_COND	
COUNTY_CODE			
VIN_ID_NUM	(Set to 'MISSVOID')	REPL_ID_NUM	(ID # of Miss/Void auditor)

(All other fields shall be appropriately filled with blanks/spaces and zeros).

The analyzer shall complete the VIN_ID_NUM and LICENSE_NUM fields automatically when this function is conducted by the inspector.

Associated System File: VEHICLE.DAT CERT_NUM
TEST_DATE
CERT_COND
DECAL_NUM
DECAL_COND
REPL_ID_NUM
SAFE_TEST_TYPE

**3.12.6 Certificate Number Prompt: ENTER THE SERIES OF
CERTIFICATE/DECAL NUMBERS.**

BEGINNING: _____ **ENDING:** _____

Programming Criteria:

A minimum of six (6) and maximum of nine (9) characters are required for each field. The system shall write a test record for the certificate range indicated by the inspector. The test record shall consist of the current date in the TEST_DATE field, the ID number of the person voiding the certificates/decals in the REPL_ID_NUM field, the type of certificate in the SAFE_TEST_TYPE field, the entered beginning certificate number in the CERT_NUM field, the

entered ending certificate number in the CERT_NUM_2 field, and the previously entered condition of the certificates (i.e., 'V'-voided, 'M'-missing) in the CERT_COND field in the VEHICLE.DAT file, or the entered beginning decal number in the DECAL_NUM field, the entered ending certificate number in the DECAL_NUM_2 field, and the previously entered condition of the decal in the DECAL_COND field in the VEHICLE.DAT file. If the miss/void function is being conducted using the station manager menu, the entry in the REPL_ID_NUM shall be 10 9's (i.e., '9999999999'). The record shall be stored on the analyzer and transmitted to the Texas Data Link System along with the next emissions test. The analyzer will store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). Each certificate number in the range shall appear on the Inspection Log (VI-8B) as a separate entry. For example, the range of certificates numbered 001 to 005 shall appear on the Inspection Log on five separate lines. Each line will have the same void indication. The void indicator shall show 'VOID', if 'V' is in the CERT_COND (or DECAL_COND) field, or 'MISS', if 'M' is in the CERT_COND (or DECAL_COND) field. Then, the analyzer shall return to the main menu.

The analyzer shall limit the range of certificates that can be voided based on the beginning certificate number that is entered by the inspector. The maximum ending certificate number shall be the next multiple of 50. For example, if the inspector enters A00238432, the maximum entry is A00238450. If the inspector enters A32985353, the maximum entry is A32985400. For decals, the maximum ending decal number shall be the next multiple of 10. If the inspector enters V32994822, the maximum entry is V32994830.

The records for missing or voided certificates/decals must contain entries in the following fields, at a minimum, to be accepted as a valid test record:

VERSION		LICENSE_NUM	(Set to 'MISSVOID')
TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to 'N')
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to 'N')
INSPECTOR_NUM		DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME		DECAL_NUM_2	(Ending Decal Number)
INSPECTOR_FNAME		DECAL_COND	
COUNTY_CODE			
VIN_ID_NUM	(Set to 'MISSVOID')	REPL_ID_NUM	(ID # of Miss/Void auditor)

(All other fields shall be appropriately filled with blanks/spaces and zeros).

The analyzer shall complete the VIN_ID_NUM and LICENSE_NUM fields automatically when this function is conducted by the inspector.

**3.13.2 Date Expiration Prompt: YOUR STATION/INSPECTOR
CERTIFICATION EXPIRATION DATE IS
MM DD YY**

Programming Criteria: The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is thirty days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, the analyzer will display a message that indicates lockout has occurred and returns to the main menu.

- Error Messages:**
- 1. YOUR (STATION/INSPECTOR)
CERTIFICATION EXPIRES MM/DD/YY.**

 - 2. YOUR STATION /OR INSPECTOR
CERTIFICATION EXPIRED (date). YOU ARE
NOT AUTHORIZED TO PERFORM ANY
EMISSIONS INSPECTION AT THIS TIME.
PLEASE CONTACT YOUR LOCAL DPS
OFFICE.**

 - 3. YOUR (STATION/INSPECTOR)
CERTIFICATION WILL EXPIRE IN X (5, 4, 3,
2, 1) DAY(S).**

<u>Associated System File:</u>	INSPECTOR.DAT	INSP_EXP_DATE
	STATION.DAT	STAT_EXP_DATE
	LOCKOUT.DAT	INSP_LOCKOUT_FLAG
		STAT_LOCKOUT_FLAG

- 1) print the announcement;
- 2) save the announcement to the announcement file; or
- 3) delete the announcement.

The print option shall allow the inspector to print the announcement and return to the announcement display with the same three options. The delete option shall delete displayed message without saving it to the announcement file. The save option shall save the announcement to the announcement file.

Emissions related recall information, if available, shall be transmitted by the Texas Data Link Host for use during emissions-related inspections. The initial information that will appear on the analyzer screen will be the pertinent vehicle information as provided by the Texas Data host. The inspector shall review this information to ensure its accuracy. If manufacturer issued emission-related recall information is transmitted by the Texas Data Link Host, the analyzer shall display the emission-related recall information.

Emission related Technical Service Bulletins (TSB) information, if available, shall be transmitted to the analyzer for use during emissions-related inspections. The TSB information may contain multiple bulletins. The TSBs are provided as information only (to assist the inspector if the vehicle subsequently fails the inspection). The TSB information is displayed at the time of, and immediately following, the display of the emissions-related recall information.

3.15 Main Menu Selection '15' "Communications Refresh"

3.15.1 Access Code Prompt: ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria: The TX96 Analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall not accept duplicate access code for different inspectors. Each inspector's access code shall be unique. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

Error Messages:

1. **"YOUR ACCESS CODE IS NOT VALID--TRY AGAIN"**
2. **"THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE."**

Associated System File: INSPECTOR.DAT ACCESS_CODE

**3.15.2 Date Expiration Prompt: YOUR STATION/INSPECTOR
CERTIFICATION EXPIRATION DATE IS
MM DD YY**

Programming Criteria:

The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is thirty days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If either the station or the inspector lockout flag is set, the analyzer will display a message that indicates lockout has occurred and returns to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR)
CERTIFICATION EXPIRES MM/DD/YY.**
2. **YOUR STATION /OR INSPECTOR
CERTIFICATION EXPIRED (date). YOU ARE
NOT AUTHORIZED TO PERFORM ANY
EMISSIONS INSPECTION AT THIS TIME.
PLEASE CONTACT YOUR LOCAL DPS
OFFICE.**

**3. YOUR (STATION/INSPECTOR)
CERTIFICATION WILL EXPIRE IN X (5, 4, 3,
2, 1) DAY(S).**

<u>Associated System File:</u>	INSPECTOR.DAT	INSP_EXP_DATE
	STATION.DAT	STAT_EXP_DATE
	LOCKOUT.DAT	INSP_LOCKOUT_FLAG
		STAT_LOCKOUT_FLAG

The analyzer shall contact the Texas Data Link System. The Texas Data Link System shall transmit bulletins, and update applicable files on the analyzer. After the update is complete, the system shall return to the main menu.

3.16 Main Menu Selection '16' "Communications Diagnostics (Loopback)"

The analyzer shall contact the Texas Data Link System and transmit the diagnostics test information. The Texas Data Link System shall transmit an echo of the information sent by the analyzer. After the communications session is complete, the system shall display the status of the Communications Diagnostics, then return to the main menu.

3.17 Main Menu Selection '17' "ALLDATA Communications"

The analyzer shall contact the Texas Data Link System and transmit the information necessary to connect with ALLDATA. After the ALLDATA communications session is complete, the system shall return to the main menu. When the directory structure becomes available, it will be placed in Appendix P. The files for the ALLDATA communications shall be contained in the subdirectory called C:/TASDATA/. The three files are called ALLREP.DAT, VIDCOMM.DAT, and ALLDATA.DAT.

3.18 Main Menu Selection '18' "Inspection Log (VI-8B)"

The Inspection Log (VI-8B) shall print after the analyzer's power up sequence or

warm-up is complete. The analyzer will not conduct any official inspections until the Inspection Log has printed. The analyzer shall print two copies of the Inspection Log (VI-8B), and the operator shall be able to print additional copies after the initial two copies have printed. The analyzer shall print the log each Monday morning.

If the station has not conducted any inspections since printing of the previous Inspection Log, the system shall print a report reflecting that no inspections have been conducted during the reporting period. The analyzer shall allow an inspector or station manager to print the Inspection Log (VI-8B) from the main menu by pressing a key determined by the manufacturer, preferably 'F8.' The analyzer shall allow the inspector or station manager to print Inspection Logs from previous weeks by entering the appropriate week ending date. The Inspection Logs from previous weeks shall be based on the information available on the analyzer at the time of the request. The analyzer shall also allow an inspector or station manager to print an Inspection Log (VI-8B) for one inspector, in the event of a departing inspector. The inspector or station manager shall be required to input the upcoming week ending date, and the departing inspector's identification number. The analyzer shall be able to display all inspections conducted by the departing inspector and print the inspections in the format prescribed for an Inspection Log (VI-8B).

The format for an Inspection Log is contained in Appendix G. The items shall be displayed in the format displayed in Appendix G, inclusive of the 'audited by' line, where applicable. The items shall be listed in chronological order according to the test date. The analyzer shall place an indicator or flag (i.e. an asterisk, question mark, etc.) beside any item whose certificate or decal number is not next in sequence to the previous item. The analyzer shall determine sequential issuance by comparing the number of an issued certificate to the number of the previously issued certificate of the same type. Also, the number on an issued decal shall only be compared to the number of the previously issued decal. For example, the system shall compare the number of a 1-year Safety & Emissions certificate to the number of the previously issued 1-year Safety & Emissions certificate, and place the indicator beside the item if the numbers are not sequential. The analyzer shall not compare a 1-year Safety & Emissions certificate to any other type of issued certificate (i.e., 1-year Safety Only, 2-year windshield, etc.) or decal to determine sequential issuance. Appendix G states that the words 'FAIL:', and/or 'REPAIR:' shall appear only if fail codes or repair codes, respectively, are to be displayed. However, the blank line shall remain when there are no fail or repair codes to be displayed. Also, the analyzer shall print twelve (12) 3-line entries per page on the VI-8B. Count the 'audited by' line as a 3-line entry.

The analyzer shall indicate emissions phase failures on the Texas Department of Public Safety for VI-8b, which prints out weekly. The analyzer shall display failure code number 31 on the VI-8b, if a vehicle fails the emissions phase of the inspection. The analyzer shall display failure code 32 on the VI-8b, if a vehicle fails the gas cap integrity test.

When an auditor enters the audit mode, the system writes a record to the

AUDITLOG.DAT file containing the date, time and "A" for the authorized login attempt. The record is written when the 'enter/continue' key is pressed after the access code is entered. If the Auditor selects the inspection log search under Section 3.9.13, the record for the successful login shall be appended with a 'Y' in the SEARCH field, and the time of the search in the TIME field when the Auditor presses 'continue/enter.' This selection by the auditor shall cause the 'audited by' line to appear in the VI-8B in chronological order with the entries caused by the test records. The auditor shall be given the option of printing the results of the search on the printer.

If the auditor selects the test type search while under Section 3.9.13, the items shall appear in the VI -8B format displayed in Appendix G. The items shall be displayed in sequential order according to the certificate number for all items that meet the search criteria. The analyzer shall place an indicator or flag (i.e., an asterisk, question mark, etc.) beside any item whose certificate number is not next in sequence to the previous item. The auditor shall be given the option of printing the results of the search on the printer. The auditor shall press a key designated by the manufacturer to return to the Audit Menu.

3.19 Main Menu Selection '19' "VI-30A Only"

3.19.1 Access Code Prompt: ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria: The TX96 Analyzer shall be designed to require the entry of a special access code by the certified inspector before an official emissions inspection can begin. The access code shall neither be displayed nor printed on the Inspection Vehicle Inspection Report. This access code will be verified and linked to existing I/M inspector number contained in the **INSPECTOR.DAT** file. The analyzer shall not accept duplicate access code for different inspectors. Each inspector's access code shall be unique. The analyzer shall allow three attempts to enter a valid access code. Following each of the first two attempts, Error Message 1 shall be displayed. Error Message 2 shall be displayed for 5 minutes following the third attempt or until the inspector presses "enter/continue". The system shall then return to the main menu.

- Error Messages:**
- 1. "YOUR ACCESS CODE IS NOT VALID--TRY AGAIN"**
 - 2. "THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS"**

OFFICE."

Associated System File: INSPECTOR.DAT ACCESS_CODE

**3.19.2 Date Expiration Prompt: YOUR STATION/INSPECTOR
CERTIFICATION EXPIRATION DATE IS
MM DD YY**

Programming Criteria: The analyzer will then check the license expiration date and lockout flag for the inspector in the inspector file. The station license renewal date and lockout flag will then be checked in the station file. If either the station or the inspector license expiration date is within 60 days of today then the analyzer will display Message 1 indicating the expiration date. If the inspector or station dates have passed, Message 2 will be displayed. The analyzer shall countdown the final five days prior to the expiration date of the inspector or the station certification. The analyzer shall display Message 3 in addition to Message 1 or 2 during the five-day countdown. If it is thirty days past the inspector or station expiration date, the system will set the station lockout flag in the station file or the inspector lockout flag in the inspector file to "Y" to indicate lockout has occurred.

If any lockout is set, the analyzer will display a message that indicates a lockout has occurred and then return to the main menu.

- Error Messages:**
1. YOUR (STATION/INSPECTOR)
CERTIFICATION EXPIRES MM/DD/YY.
 2. YOUR STATION /OR INSPECTOR
CERTIFICATION EXPIRED (date). YOU ARE
NOT AUTHORIZED TO PERFORM ANY
EMISSIONS INSPECTION AT THIS TIME.
PLEASE CONTACT YOUR LOCAL DPS
OFFICE.
 3. YOUR (STATION/INSPECTOR)
CERTIFICATION WILL EXPIRE IN X (5, 4, 3,
2, 1) DAY(S).

Associated System File: STATION.DAT STAT_EXP_DATE

INSPECTOR.DAT
INSP_EXP_DATE **INSP_LOCKOUT_FLAG**

LOCKOUT.DAT
STATE_LOCKOUT **CABINET_TAMPER**
FLOPPY_TAMPER **STAT_CERT_EXP**
STAT_CERT_SUSP **STAT_CERT_REVOK**
COMM_FAIL_PAY **MAX_TEST_WO_COMM**

**3.19.3 Model Year Prompt: ENTER THE LAST TWO DIGITS OF THE
VEHICLE MODEL YEAR.**

Programming Criteria: If no value is entered, the analyzer will display Message 1, and prompt the inspector to re-enter the last two digits of the vehicle model year. The system will display Message 2 in the event that the model year is beyond the current year +2, and prompt the inspector to re-enter the last two digits of the vehicle model year or the entire model year. The analyzer shall require the inspector to confirm any model year entry that is less than 1950.

- Error Message:** 1. **NO VALUE HAS BEEN ENTERED TRY AGAIN.**
2. **INVALID MODEL YEAR -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL_YEAR**

**3.19.4 License Type Prompt: "ENTER THE TYPE OF LICENSE PLATE OF
THE VEHICLE."**

- | | |
|--------------------------|-------------------------------|
| 1. Texas Plate | 5. Exempt (Federal) |
| 2. No Plate | 6. Dealer Plate |
| 3. Out of State | 7. Temporary Buyer Tag |
| 4. Exempt (State) | 8. Other |

Programming Criteria: The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type '2,' or '8,' the system will assign the License_Num field in the VEHICLE.DAT a value of "V" followed by the last seven digits of the VIN number, and skip the license prompt, number 3.19.5. The entry in the License_Num field shall be a "V" and the 7 rightmost characters of the VIN. If the

entered VIN has less than 7 characters, the entry should be a “V” followed immediately by the entered VIN without filler spaces between the “V” and the entered VIN. The system will default to license type ‘1.’

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_TYPE**

3.19.5 **License Prompt:** **"ENTER THE LICENSE NUMBER OF THE VEHICLE."**

Programming Criteria: The inspector will be prompted to enter the license number of the vehicle. Upon confirming the license plate entry, the vehicle information is eligible to be stored in the RECALL.DAT file.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**

3.19.5a **TxDOT Number Prompt:** **ENTER THE NUMBER FROM THE TxDOT REGISTRATION CERTIFICATE AFFIXED TO THE VEHICLE.**

Programming Criteria: The system shall only give this prompt if the inspector selected ‘Texas Plate’ (i.e., License_Type is ‘1’) as the license type of the vehicle in Section 3.19.4. The system will prompt for the TxDOT number as it appears on the vehicle.

Where available, the inspector will enter the TxDOT number by using the bar-code reader to scan the bar coded TxDOT number that is on the windshield of the vehicle. If a bar-code reader is not available, the inspector will be capable of entering the TxDOT number from the keyboard. The bar code should utilize the Code 39 symbology. The only information contained in the bar code are the start and stop characters, and the TxDOT number.

The system shall allow the inspector to see and edit the TxDOT number as it is being entered. When all characters of the TxDOT number have been entered,

the system shall prompt the inspector to press “continue” or “enter”. The inspector shall hit “continue” or “enter”, the screen will blank the TxDOT number and ask the operator to reenter the TxDOT number under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer will display Message 3 and prompt the inspector to enter the TxDOT number a third time. A minimum 10 characters are required for this field. If the entry is not within these parameters then the system will display Message 2. The format of the TxDOT number shall consist of eight numeric digits followed by two alpha characters. For example, 06691576WZ is a valid TxDOT number. If the entry is does not fit this format, then the system will display Message 4. If no value is entered, the analyzer will display Message 1.

- Error Message: 1. THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
- 2. A MINIMUM OF 10 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
 - 3. ENTRIES DO NOT MATCH -- TRY AGAIN.**
 - 4. THIS ENTRY MUST BE EIGHT NUMBERS FOLLOWED BY TWO LETTERS-- TRY AGAIN.**

Associated System File: VEHICLE.DAT TXDOT_NUM

3.19.6 VIN Number Prompt: ENTER VIN NUMBER.

Programming Criteria: The system will prompt for the VIN number as it appears on the vehicle. Where available, the inspector will enter the VIN number by using the bar-code reader to scan the bar-coded VIN on the vehicle. If a bar-code reader is not available, the inspector will be capable of entering the VIN number from the keyboard. The analyzer will place a ‘B’ in the BARCODED_VIN field of the test record, if the VIN is entered using the bar code reader. Otherwise, the analyzer will place a ‘K’ in the BARCODED_VIN field of the test record.

The system shall allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the system shall prompt the inspector to press “continue” or “enter”. The inspector shall hit “continue” or “enter”, the screen will blank the VIN and ask the operator to reenter the VIN under the same conditions as the previous entry. The two

3.19.8 Vehicle Make Prompt: ENTER THE VEHICLE MAKE.

Programming Criteria: The analyzer will then display a list of vehicle makes that the inspector will use to select the make of the vehicle currently under inspection. The analyzer will store the selected make name using the NCIC make definitions. The analyzer may display subsets of the make list that specifically identify all of the manufacturers of passenger vehicles, trucks, motor homes, motorcycles, trailers, or buses.

The analyzer shall present the option of 'other' as a make definition for use when there is no applicable definition for the vehicle under inspection. The 'other' option shall instruct the inspector to enter the full make name and at least the first five characters of the model name. The analyzer shall allow the inspector to enter up to 20 characters. The entry of 'OTHR' shall be stored in the MODEL field, and the characters 'OTH' shall be placed in the MODEL_CODE field in the applicable test record. The NCIC make/model list may supplied by the TNRCC.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT MAKE

3.19.9 Model Prompt: SELECT THE VEHICLE MODEL.

Programming Criteria: The system will then display the appropriate vehicle models based on the vehicle make entry. The analyzer shall present the option of 'other' as a model definition for use when there is no applicable definition for the vehicle under inspection. The 'other' option shall instruct the inspector to enter the model name and allow the inspector to enter up to 20 characters. An 'OTH' shall be placed in the MODEL_CODE field of the test record whenever the 'other' option is selected by the inspector.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT MODEL
 MODEL_CODE

3.19.10 Odometer Prompt: ENTER THE VEHICLE ODOMETER READING.

**A MINIMUM OF ONE NUMERIC ENTRY IS
REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.**

Programming Criteria: Enter the vehicle odometer. Do not include tenth's. The system shall only accept numerical entries in this field.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT ODOMETER

3.19.11 Test Type Prompt:

**IF THE INSPECTION CERTIFICATE ON THE VEHICLE
WASN'T ISSUED WITHIN THE LAST 30 DAYS, A COMPLETE
INSPECTION IS REQUIRED. VERIFY THAT INSPECTION
CERTIFICATE ON THE VEHICLE WAS ISSUED WITHIN THE
LAST 30 DAYS.**

**ENTER THE TYPE OF INSPECTION CERTIFICATE ON THE
VEHICLE.**

**A-1 YEAR WINDSHIELD (SAFETY & EMISSIONS)
J-1 YEAR WINDSHIELD (SAFETY ONLY)
C-TRAILER/MOTORCYCLE
B-2 YEAR WINDSHIELD
G-FMCSR (TRUCK)
K-FMCSR (TRAILER)**

Programming Criteria: The system shall only accept entries for alphabets 'a,' 'j,' 'b,' 'c,' and 'g,' or 'k.' The analyzer shall only display one FMCSR selection. For the FMCSR selection, the analyzer shall display only choice 'g' if the vehicle type is a truck, and only choice 'k' if the vehicle type is a trailer. The default for this screen shall be 'a.'

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_TEST_TYPE

3.19.12 Certificate Number Prompt: ENTER THE NUMBER OF THE VALID INSPECTION CERTIFICATE THAT IS PRESENT ON THE VEHICLE.

Programming Criteria: A minimum of six (6) and maximum of nine (9) characters are required for this field. This certificate number shall not have any sequential issuance requirements because a certificate is not being issued. Do not use this certificate entry for any sequential issuance comparisons. The inspector shall be required to confirm/verify the certificate number entry. The enter key should allow the inspector to continue.

The safety certificate number consists of an alpha character, followed by up to eight digits. The alpha character usually does **not** correspond to the alpha character contained in the SAFE_TEST_TYPE field. They are, however, separated or indexed by the different types of safety inspections.

If the inspector enters fewer than 9 characters, the analyzer shall automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an 'A', followed by a '123' shall be converted to 'A00000123' and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. The first character of a certificate number shall be an alphabetic character. The analyzer shall be able to enter the certificate number using the bar code reader. The only acceptable alpha character is 'V' for decals.

The analyzer shall restrict the alpha character to a list of acceptable alpha characters for a particular type of certificate or decal being issued. For example, if the inspector selects the '1-year windshield (safety & emissions)' certificate on the type of inspection prompt in Section 3.19.11, the inspector may only enter an 'A,' 'B,' 'C,' 'D,' 'E,' or 'F,' as the alpha character in the certificate number entry prompt. For Emission only Decals, the only acceptable alpha character is 'V.' For '1 Year Windshield (Safety Only)' certificate types, the acceptable alpha characters are 'G,' 'H,' 'I,' 'J,' 'K,' 'L,' 'M,' and 'P.' For '2 Year Windshield' certificate types, the acceptable alpha characters are 'N,' 'W,' and 'Q.' For 'Trailer/Motorcycle' certificate types, the acceptable alpha characters are 'X,' 'Y,' and 'Z.' For 'FMCSR (Truck)' certificate types, the acceptable alpha characters are 'T,' and 'U.' For 'FMCSR (Trailer)' certificate types, the acceptable alpha characters are 'R,' and 'S.'

Associated System File: **VEHICLE.DAT** **CERT_NUM**

3.19.13 VI 30A Number Prompt: ENTER THE NEW VI 30A #.

Programming Criteria: The inspector will enter the VI 30A #. A minimum of one (1) character and a maximum of seven (7) characters are required for this field. If no entry is made, the analyzer shall display the error message below. A valid entry must

be made before the analyzer can proceed.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT VI30A_NUM

3.19.14 Safety Test Fee Prompt: ENTER THE FEE FOR THE VI-30A ONLY, INCLUDING CENTS.

Programming Criteria: The inspector shall enter the cost for the issuance of the VI-30A. If an inspector enters a fee greater than \$10 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer shall display a warning message which states that the fee seems unusually large, please confirm the amount entered or reenter the fee.

Error Message: NO VALUE HAS BEEN ENTERED--TRY AGAIN.

Associated System File: VEHICLE.DAT SAFE_INSP_COST

3.19.15 Confirm Vehicle Info Display:

The analyzer shall display the entered information to the inspector and allow the inspector to edit the information as appropriate.

3.19.16 End of Test Logic:

Programming Criteria: The analyzer shall store the results in the appropriate file structure. Then, the system shall return to the main menu. When the analyzer conducts and completes the next emissions test, the information for the VI-30A issuance shall be transmitted to the Texas Data Link Host.

Associated System File: VEHICLE.DAT SAFE_INIT_TEST

Appendix A
Emissions Standards

Emissions Standards

Light-duty Gasoline Vehicle and Light-duty Gasoline Trucks Up to 8,500 GVW Preconditioned Idle Test

MODEL YEAR	CO, percent	HC, ppm
1981 and newer	1.2	220
1980	4.0	400
1979	6.0	600
1978	6.5	650
1977	7.5	750
1976	7.5	750
1975	7.5	750
1974	8.0	800
1973	8.0	800
1972	8.5	850
1971	8.5	850

Emissions Standards

Heavy-duty Gasoline vehicle 8,501-80,000 GVW Preconditioned Idle Test

MODEL YEAR	CO, percent	HC, ppm
1994 and newer	3.0	300
1993	3.0	300
1992	3.0	300
1991	3.0	300
1990	3.0	300
1989	3.0	300
1988	3.0	300
1987	3.0	300
1986	3.0	300
1985	3.0	300
1984	5.0	500
1983	5.0	500
1982	5.0	500
1981	7.0	700
1980	7.0	700
1979	7.0	700
1978	9.0	900
1977	9.0	900
1976	9.0	900
1975	9.0	900
1974	9.0	900
1973	9.0	900
1972	9.0	900
1971	9.0	900

Appendix B

Customer Comments/Explanations
to be printed on
Vehicle Inspection Reports

(Reserved)

Appendix D
Help Screens
for the Safety Inspection
(69 pages)
(Reserved)

Safety Inspection

Item: Horn

Help Screen # 1

Inspect for:

- a. Mounting.
- b. Wiring and actuating device.
- c. Harsh sound and audibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle is not equipped with a horn.
- b. Horn or horn switch is not securely fastened.
- c. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor connection.
- d. Horn switch not readily accessible to vehicle operator.
- e. Horn is actuated by grounding two naked wires or similar method.
- f. Sound is not audible under normal conditions for 200 feet.
- g. Horn emits an unusually loud or harsh sound or whistle.
- h. Operation of the horn interferes with the operation of any other circuit.
- I. Horn switch missing or inoperative.

Safety Inspection
Item: Windshield Wipers
Help Screen #2

Inspect for:

- a. Required number of wipers.
- b. Condition of wiper blade.
- c. Free operation, making contact and control.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle is not equipped with the number of wipers with which it was originally equipped.
- b. Wiper is inoperative, does not operate freely, or is improperly adjusted.
- c. Wiper blade has damaged, hardened or badly worn rubber elements.
- d. The portion of the rubber element that contacts the windshield is torn more than one inch on one end or is torn a total of one inch on both ends.
- e. Any part of the rubber element is torn loose from the metal backing or blade base.
- f. Metal parts of wiper blades or arms are damaged or come in contact with the windshield.
- g. Wiper is incapable of adequately cleaning the windshield.
- h. Wiper blades are not making proper contact with windshield.
- I. Wiper controls are not operating properly or are located beyond the driver's reach.

Safety Inspection

Item: Mirror

Help Screen #3

Inspect for:

- a. Mounting & view to the rear.
- b. Condition of reflecting surface.
- c. Cracked or broken glass.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Mirror does not provide the driver with a clear view to the rear of 200 feet.
- b. Vehicle is not equipped with at least one mirror.
- c. Mirror offers unsafe interference with driver's forward vision.
- d. Reflective surface of mirror is cracked, broken, peeled, or tarnished, or has sharp edges.
- e. Mirror is not mounted securely to prevent swing or excessive vibration unless the vehicle is equipped with another mirror which meets requirement.

NOTE: An inside mirror would meet all the above requirements. If the vehicle is equipped with more than one mirror, only one, either inside or outside, needs to meet all requirements.

Safety Inspection
Item: Steering System
Help Screen # 4

Inspect for:

- a. Lash and free movement without jamming.
- b. Mounting and condition of steering mechanism.
- c. Fluid level and visible leaks in power steering unit.
- d. Small or modified steering wheel.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. There is more than 2 inches of lash measured on the outside periphery of steering wheel rims 18 inches or less in diameter.
- b. There is more than 3 inches of lash measured on the outside periphery of steering wheel rims over 18 inches in diameter.
- c. It is impossible to turn the steering wheel from full right to full left without binding or jamming other than at wheel stops.
- d. Steering mechanism is not firmly attached and free of frame cracks or missing bolts.
- e. Modification of the steering systems so as to affect the proper steering of the vehicle or steering wheel has been modified or replaced with one that is noticeably smaller than original factory equipment.
- f. Any excessively worn or broken parts in the steering system.
- g. Visible leaks in power steering unit or hoses.
- h. Power steering belt is cracked, frayed, or has pieces missing or tension is not adequate.
- I. Fluid in power steering unit is below manufacturer recommended level. Do not overfill.
- j. On motorcycles and motor driven cycles, handlebars or steering head is bent, loose, broken or damaged so as cause unsafe condition in steering.
- k. On motorcycles and motor driven cycles, handlebars grips extend to a height in excess of 15 inches above the saddle level.

NOTE: On vehicles equipped with power steering, engine must be running and the

fluid level, belt tension and condition must be adequate before testing.

Safety Inspection
Item: Seat Belts
Help Screen #5

Inspect for:

- a. Presence of front seat belts (when required).
- b. Unsafe belts, attachment fittings and buckles.
- c. Anchor bolts.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Front lap seat belts are required and not present.
- b. Seat belt webbing is frayed, spilt, or torn.
- c. Belt anchorages or attachment fittings are loose, badly corroded, missing or not fastened to belt.
- d. Belt buckles loose or inoperative.
- e. All seat belt anchor bolts are not securely fastened to floor or are missing.
- f. Pelvic restraint is not present.
- g. Seat belt will not adjust to allow proper fit.

Safety Inspection
Item: Service Brake System
Help Screen #6A

Inspect for:

- a. Visible leaks in brake lines, wheel cylinders or other part of the system.
- b. Frayed or leaking hoses or cables, or unsafe mechanical parts.
- c. Pedal reserve.
- d. Stopping distance and equalization.
- e. Fluid level in master cylinder.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle is not equipped with required service brakes .
- b. Upon first application, there is less than 2 inches of pedal reserve as determined by the use of an accurate measurement on the fully applied brake pedal of vehicles equipped with conventional brakes.
- c. Upon first application, there is less than 1 inch of pedal reserve as determined by the use of an accurate measurement on the fully applied brake pedal of vehicles with power brakes (power must be on and operating when tested).
- d. On service brakes that cannot be checked with the use of an accurate measurement, there is less than a reserve of one third of the total travel distance of the brake actuator.
- e. Brake pedal height cannot be maintained under moderate foot force (40 to 60 pounds for conventional - 15 to 20 pounds for power) for a period of 1 minute.
- f. There is visible leakage or audible seepage in hydraulic lines and cylinders, or any other part of the service brake system.
- g. Fluid level in the master cylinder is more than 1 inch below the top of the reservoir or below manufacture's recommended level.
- h. Hoses or cables are restricted, abraded, crimped, cracked, leaking, frayed, or broken.
- I. Brake rods or mechanical parts are missing, broken, badly worn or misaligned.
- j. Brake operating levers or control cables do not operate freely, improperly positioned, or misaligned.

Safety Inspection
Item: Service Brake System (Continued)
Help Screen #6A

- k. Any part of the service brake system has been removed, disconnected, rendered inoperative.
- l. There is an obvious metal to metal contact sound when brakes are applied, and upon investigation, drum or disk is being scored.
- m. The service brakes do not develop the required total braking force as determined by machine tests.
- n. Brakes do not meet requirements for stopping distances for the class of vehicle.
- o. The brakes are not equalized as determined from road testing or by machine tests of the vehicle.
- p. Brake warning lamp or signal comes on during test.

NOTE: It is imperative that brake system reservoir cover and the surrounding area be thoroughly cleaned before cover is removed for inspection to assure that NO DIRT OR WATER is mixed with the brake fluid.

Safety Inspection
Item: Parking Brake System
Help Screen #6B

Inspect for:

(Required on all motor vehicles beginning with year model 1960).

- a. Operating mechanism.
- b. Condition of mechanical parts and pull cables.
- c. Holding ability.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Motor vehicle is not equipped with a parking brake.
- b. Operating mechanism, when fully applied, does not hold the vehicle.
- c. Actuating mechanism is not fully released when the release control is operated.
- d. Any mechanical parts are missing, broken, badly worn or not operating properly.
- e. Pull cables are badly worn, stretched, frayed, or not operating freely.
- f. Parking brake will not hold the vehicle in place when, with the engine running, the vehicle is placed in forward gear and the engine is accelerated enough to cause a pull on the braking mechanism.

Safety Inspection

Item: Tires

Help Screen #7

Inspect for:

- a. Worn spot that exposes ply or cord through the tread.
- b. Tread cuts, fabric breaks, snags and sidewall cracks.
- c. Visible bumps, bulges or knots.
- d. Tread wear less than 2/32" in any two adjacent major grooves at one location.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Any tire with a localized worn spot that exposes the ply or cord through the tread.
- b. Any tire with tread or sidewall cracks, cuts, or snags (as measured on the outside on the tire) in excess of one inch in any direction and deep enough to expose the body cords.
- c. Any tire which has any visible bumps, bulges, or knots apparently related to tread or sidewall separation or partial failure of the tire structure, including bead area.
- d. Any tire which has been regrooved or recut below the original groove depth, except special (regroovable) tires which have extra undertread rubber for this purpose (commercial vehicles only) and are identified as such.
- e. Any dual wheel assembly where the side of one tire is in contact with the other. (Any dual tires that contact each other).
- f. Any tire that is marked "Not for Highway Use", "Farm Use Only," "For Racing Purposes Only" or with other use restrictions that would indicate the tire is not meant for highway use. This includes temporary spares, inflatables, or small high pressure spares.
- g. Any tire which has been repaired temporarily by the use of blowout patches and boots. Nail hole plugs or patched are not cause for rejection.
- h. Any tire without tread wear indicators worn so that less than 2/32 (1/16) of an inch of tread design depth remain when measured (with a tread depth gauge) at the lowest points in any two adjacent major grooves in the center or middle of the tire.
- I. Any tire with tread wear indicators worn so that the tread wear indicators contact

the road in any two adjacent major grooves in the center or middle of the tire.

Safety Inspection
Item: Wheel Assembly
Help Screen #8

Inspect for:

- a. Defective or bent rim flanges; loose, missing or damaged bolts, nuts, studs or lugs.
- b. Defects and cracks that may impair safe mounting and proper retention of tires.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Loose, missing, or damaged wheel studs, bolts, nuts or lugs.
- b. Any part of the wheel bent, cracked, rewelded, or damaged so as to affect safe operation of the vehicle.
- c. Wheel nuts, studs, and clamps which are loose, broken, missing, or mismatched. Adequate thread engagement is imperative. Stud and nut threads on wheel lugs must engage completely through the entire threaded portion of the nut.
- d. Rims and rings which are mismatched, bent, sprung, or otherwise damaged. Check for evidence of rim slippage - this is an indication of wear of loose nuts.
- e. Disc wheels with elongated bolts, holes, or cracks between hand holes or stud holes, or both.
- f. Cast wheels with cracks, evidence of wear in the clamp area, or both.
- g. Rims have defects or cracks to the extent that they impair the safe mounting and proper retention of tires.
- h. Any wheel cannot be securely fastened to the hub of the vehicle.
- I. On motorcycles and motor-driven cycles, any spokes are bent, loose, broken, or missing.

Safety Inspection
Item: Exhaust System
Help Screen #9

Inspect for:

- a. Loose or leaking joints.
- b. Holes, leaking seams or patches.
- c. System or its elements not securely fastened to vehicle.
- d. Any part of exhaust system passes through (or terminates beneath) the passenger compartment.
- e. Tail pipe broken, pinched or eroded off allowing fumes to penetrate passenger compartment.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle is not equipped with a muffler.
- b. Any joint is loose or leaking, including manifolds. Does not include minor leakage at exhaust control valve (manifold damper or heat riser valve).
- c. Manifold is cracked or broken causing leakage.
- d. Holes, leaking seams, or patches on the muffler, resonators, exhaust pipe, tail pipe, or catalytic converter.
- e. Exhaust system is not secured to the vehicle by mounting brackets designed for exhaust systems (wire is not acceptable).
- f. Any brackets are loose, broken, or missing.
- g. There is excessive vibration of exhaust line.
- h. Any part of the exhaust system passes through the passenger compartment.
- I. The tail pipe is broken, pinched, or eroded off to extent to allow exhaust fumes to penetrate into the interior of the passenger compartment.
- j. The tail pipe fails to discharge exhaust from the rear, side or top of the passenger compartment of the vehicle.

NOTE: Holes in the exhaust system made by the manufacturer for drainage are not cause for rejection. The tail pipe must direct the exhaust fumes out from under the passenger compartment.

Safety Inspection
Item: Emission System
Help Screen #10

Inspect for:

(Required on motor vehicles equipped by manufacturer beginning with 1968 models).

- a. Examine visually for presence of system.
- b. Plumbing is loose, broken, leaking or improperly routed.
- c. Systems has been altered, removed, or disconnected.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. The exhaust emission system has been removed.
- b. The exhaust emission system has been disconnected.
- c. The plumbing or hoses are loose, broken, leaking, or improperly routed.
- d. Air pump (air injection type) belt is loose, removed, cracked, frayed, or has pieces missing.
- e. The exhaust emission system has been altered in any manner to make it ineffective.
- f. The catalytic converter has been removed, leaking, or disconnected on a 1984 or later model vehicle.

**Safety Inspection
Item: Beam Indicator
Help Screen #11**

Inspect for:

(Required on all motor vehicles beginning with 1948 models, except motorcycles and motor-driven cycles).

- a. Proper switching indication.
- b. Visibility without glare.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle not equipped with a beam indicator.
- b. Improper switching indication.
- c. Produces glaring light.
- d. Inoperative for any reason.

Safety Inspection
Item: Tail Lamp
Help Screen #12

Inspect for:

- a. Mounting visibility and required number.
- b. Color and condition of lens.
- c. Wiring and visibility.
- d. Connected to burn when headlamps burn.
- e. Any lamp projects a white light to the rear (except license plate lamp and backup lamp).

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Required lamp or lamps are not present.
- b. Lamp is not securely mounted to vehicle.
- c. Lamp does not completely emit a red light plainly visible 1,000 feet to the rear.
- d. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
- e. Wiring is shoddy or electrical connections are poor.
- f. Lamp is not wired so as to be lighted when head lamps or auxiliary driving lamps are lighted.
- g. Lamp is obstructed by any part of body.
- h. Lamp lens is not red color.
- I. Lamps are not mounted on the same level and as widely spaced laterally as practicable.
- j. Lamps are not mounted on rear of vehicle.
- k. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Stop Lamp
Help Screen #13

Inspect for:

- a. Mounting, visibility and required number.
- b. Color and condition of lens.
- c. Actuation by application of service brakes.
- d. Wiring and visibility.
- e. Glaring or dazzling light.
- f. Any lamps projects a white light to the rear (except license plate lamp and backup lamp).

NOTE: Lamp lens cannot be repaired with repair tape or repair kit.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Required lamp or lamps are not present.
- b. Lamp is not securely mounted to the vehicle.
- c. Lamp does not emit a red or amber light which is actuated on application of the service (foot) brake.
- d. Lamp is not visible from a minimum distance of 300 feet to the rear of the vehicle to which it is attached.
- e. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
- f. Wiring is shoddy or electrical connections are poor.
- g. Lamp projects a glaring or a dazzling light.
- h. Lamp is not mounted on rear of vehicle.
- I. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: License Plate Lamp
Help Screen #14

Inspect for:

- a. Mounting and wiring.
- b. Illumination of license plate.
- c. Lighting when headlamps are lighted.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamp is not present.
- b. Lamp is not securely mounted to the vehicle.
- c. Lamp is not placed to illuminate with a white light the rear registration plate.
- d. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- e. Lamp is not wired so as to be lighted when head lamps or auxiliary driving lamps are lighted.
- f. Lamp emits a glaring light to the rear.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Rear Reflectors
Help Screen #15

Inspect for:

- a. Color, location and condition of lens.
- b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Reflector is not present.
- b. Reflector is not of red color.
- c. Reflector is not properly and/or securely mounted to the vehicle.
- d. Reflector is cracked to the extent that the reflecting ability is impaired.
- e. Reflector is discolored, deteriorated, or painted.
- f. Visibility distance is not as required.
- g. Requirements shown on lighting diagram are not met.

Safety Inspection
Item: Turn Signal Lamps
Help Screen #16

Inspect for:

(When required according to Rules and Regulations Manual).

- a. Mounting, visibility and approved type.
- b. Color and condition of lens.
- c. Wiring, switch, telltale and proper indications.
- d. Self-illumination and automatic flashing.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are required and not present.
- b. Device is not securely mounted or properly located on the vehicle.
- c. Device is not of a type meeting Department standards.
- d. Lamp lens is cracked, broken, discolored, or missing.
- e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- f. Switch is not convenient to driver or indicator light does not operate.
- g. Signal shows any color other than white or amber to the front, or signal shows any color other than red or amber to the rear.
- h. Signal does not flash or is not operating properly.
- I. Signal is not clearly visible to the front and to the rear of the vehicle.
- j. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

NOTE: Selector switch must lock in proper turn position when applied but need not cancel automatically.

Safety Inspection
Item: Headlamps
Help Screen #17

Inspect for:

- a. Mounting and approved type.
- b. Improper connections, switching and dimmer switch.
- c. Cracked, broken or missing lens.
- d. Wiring.
- e. Physical damage that would obviously cause a headlight beam to fail to sufficiently illuminate the roadway ahead of the vehicle.
- f. Dirt moisture, contaminations or discolorations.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamp or lamp assembly is not securely fastened to the vehicle.
- b. Lamp is improperly connected and does not light the proper filament for different switch positions.
- c. Lamp lens is cracked, broken, discolored, or missing. (Exception: Composite or halogen type lamps will not be rejected for being cracked unless the reflector material inside the lamp is discolored or deteriorated).
- d. Lamp is not of a type meeting Department standards.
- e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electric connections.
- f. Lamp lens is rotated, upside down, canted, or is marked "Right", "Left", #1 or #2 and not appropriately installed.
- g. Lamp fails to function properly in any manner.
- h. Lamp has dirt or any contamination or discoloration inside or moisture except condensed moisture in composite head lamps or nonsealed beam halogen lamps.
- I. Lamp switch or dimmer switch does not operate properly and is not convenient to the driver.
- j. Foreign material placed on head lamp lens, such as shields, half of lens, paint, tape, etc., that interferes with the light beam of the lamp.
- k. Vehicle is not equipped with head lamps as required.
- l. Lamp can be moved easily by hand, due to a broken fender or loose support.
- m. Lamp is missing.
- n. Lens is other than clear (white).

Safety Inspection
Item: Headlamps (Continued)
Help Screen #17

- o. Any filament in head lamps fails to burn except composite lamps with more than one bulb when both upper and lower beam burn when selected.
- p. Wiring is dangling or connections are loose.
- q. A good ground is not made by the lamp mounting.
- r. Lamp is mounted on vehicle more than or less than prescribed mounting heights.
- s. Head lamp is covered by any lens or cover located in front of the head lamp which is any shade or color other than clear.
- t. There is physical damage that would obviously cause a headlight beam to fail to illuminate the roadway ahead of the vehicle sufficiently.

Safety Inspection
Item: Clearance Lamps
Help Screen #18

Inspect for:

- a. Mounting and location.
- b. Required color.
- c. Cracked, broken or missing lens.
- d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are not present.
- b. Lamps are not securely mounted and properly located.
- c. Lamps do not emit required color; lens or bulb painted.
- d. Visibility requirements are not met.
- e. Lenses are cracked, broken, discolored, or missing.
- f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Side Marker Lamps
Help Screen #19

Inspect for:

- a. Mounting and location.
- b. Required color.
- c. Cracked, broken, or missing lens.
- d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are not present.
- b. Lamps are not securely mounted and properly located.
- c. Lamps do not emit required color; lens or bulb painted.
- d. Visibility requirements are not met.
- e. Lenses are cracked, broken, discolored or missing.
- f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Cab Lamps
Help Screen #20

Inspect for:

(Truck tractors only)

- a. Mounting and location.
- b. Required color.
- c. Cracked, broken or missing lens.
- d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are required and not present.
- b. Lamp is not securely mounted and properly located.
- c. Lamp does not emit required color; lens or bulb painted.
- d. Lamp lens is cracked, broken, discolored, or missing.
- e. Lamp is not visible from distance between 500 feet and 50 feet.
- f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Side Reflectors
Help Screen #21

Inspect for:

- a. Color, location and condition of lens.
- b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Reflectors are not present.
- b. Reflectors are not of the required color for its location on the vehicle.
- c. Reflectors are not properly and/or securely mounted to the vehicle or if visibility distance is not as required.
- d. Reflector is cracked to the extent that the reflecting ability is impaired.
- e. Reflectors are discolored, deteriorated, or painted.
- f. Requirements shown on lighting diagram are not met.

Safety Inspection
Item: School Buses
Help Screen #22

Inspect for:

- a. School bus signs.
- b. Fire extinguisher.
- c. Warning lamps.
- d. Convex crossover mirror.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. All equipment required by size, weight, or class of the vehicle does not meet requirements.
- b. Signs are not present, readable, and of proper height.
- c. Fire extinguisher is not of required capacity, proper type, or in good condition and properly located.
- d. School bus RED signal lamps are not present, properly working, and in good condition.
- e. Crossover mirror mounting is loose or will not adjust to different positions or will not hold firm after adjustment.
- f. Crossover mirror offers unsafe interference with driver's forward vision or hides either front turn signal from view of oncoming driver.
- g. Crossover mirror's reflective surface is cracked, broken, peeled, or tarnished, or has sharp edges.

NOTE: Some school buses may be equipped with eight warning signal lamps, four red and four amber, working in an automatic integrated system. This system of alternately flashing warning lamps will be accepted provided it has two red lamps on the front and two red lamps on the rear.

Safety Inspection
Item: Safety Guards or Flaps
Help Screen #23

Inspect for:

- a. Mounting, condition and location.
- b. Construction and material.
- c. Height and width.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Safety guard or flap is not present.
- b. Safety guard or flap is not securely mounted.
- c. Safety guard or flap is not as wide as the tire that it is protecting.
- d. Safety guard or flap is spilt or torn to the extent that it is ineffective.
- e. The bottom edge of safety guard or flap is more than twelve (12) inches from the surface of the roadway.

**Safety Inspection
Item: Sun-Screening
Help Screen #24**

Inspect for:

- a. 1988 model & later.
- b. Light transmission.
- c. Color (must not be red or amber).
- d. Tint is below AS-1 line or 5" if no AS-1 line is present.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Glass coating or sunscreening devices on windshields;
 - 1) Extends downward past the AS-1 line or more than five inches from top of windshield on vehicles without an AS-1 line; or
 - 2) is red or amber in color.
- b. Glass coating or sunscreening devices on windows;
 - 1) windows immediately to the right and left of the driver which opens has less than 20 percent light transmittance.
- c. Check calibrations before rejecting vehicles

EXEMPTIONS:

- a. The following will not be considered as sunscreening or glass coating devices:
 - 1) Rearview mirror
 - 2) Sun Visors
 - 3) Motor carrier destination signs
 - 4) Rear Window wipers and motors
 - 5) Trunk lid handle or hinge.
 - 6) Luggage racks.
- b. Do not inspect glass coating on vehicles used to transport passengers on a regular basis for a fee, i.e., taxi, limousine, and buses.
- c. Vehicles used by persons with medical permits. Drivers of these vehicles must present a letter of authorization from the Texas Department of Public Safety to gain his exemption.
- d. Multipurpose vehicles may be equipped with any non-reflective film on the side windows that is to the rear of the driver. No label required. (Those motor vehicles designed to carry 10 or fewer persons constructed either on a truck chassis or with special features for occasional off-road use.)

FMCSR Inspection

Item: Horn

Help Screen #1

Inspect for:

- a. Mounting.
- c. Wiring and actuating device.
- b. Harsh sound and audibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle is not equipped with a horn.
- b. Horn or horn switch is not securely fastened.
- c. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor connection.
- d. Horn switch not readily accessible to vehicle operator.
- e. Horn is actuated by grounding two naked wires or similar method.
- f. Sound is not audible under normal conditions for 200 feet.
- g. Horn emits an usually loud or harsh sound or whistle.
- h. Operation of the horn interferes with the operation of any other circuit.
- I. Horn switch missing or inoperative.

FMCSR Inspection
Item: Windshield Wipers
Help Screen #2

Inspect for:

- a. Required number of wipers.
- b. Condition of wiper blade.
- c. Free operation, making contact and control.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle is not equipped with the number of wipers with which it was originally equipped.
- b. Wiper is inoperative, does not operate freely, or is improperly adjusted.
- c. Wiper blade has damaged, hardened or badly worn rubber elements.
- d. The portion of the rubber element that contacts the windshield is torn more than one inch on one end or is torn a total of one inch on both ends.
- e. Any part of the rubber element is torn loose from the metal backing or blade base.
- f. Metal parts of wiper blades or arms are damaged or come in contact with the windshield.
- g. Wiper is incapable of adequately cleaning the windshield.
- h. Wiper blades are not making proper contact with windshield.
- I. Wiper controls are not operating properly or are located beyond the driver's reach.

FMCSR Inspection

Item: Mirrors

Help Screen #3

Inspect for:

- a. Mounting and view to the rear.
- b. Condition of reflecting surface.
- c. Cracked or broken glass.
- d. Required number.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Proper number of mirrors.
- b. Clear view of 200 feet to rear
- c. Interference of drivers forward vision
- d. Reflective surface of mirrors is cracked, broken, peeled, or tarnished.
- e. Not mounted securely to prevent swing or excessive vibration.

FMCSR Inspection
Item: Steering System
Help Screen #4

Inspect for:

- a. Lash and free movement without jamming.
- b. Mounting and condition of steering mechanism.
- c. Fluid level and visible leaks in power steering unit.
- d. Small or modified steering wheel.
- e. Cracks and welds on steering axle and gear bow.
- f. Loose Pitman arm.
- g. Loose power assist cylinder on power steering unit.
- h. Motion between linkage member and attachment point.
- I. Loose clamps or bolts on tie rods or drag links.
- j. Any modification or other condition that interferes with free movement of any steering component.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Steering Lash
- b. Steering column.
 - 1. Any absence or looseness of U-bolt(s) or positioning part(s).
 - 2. Worn, faulty or obviously welded universal joint(s).
 - 3. Steering wheel not properly secured.
- c. Front Axle beam and all steering components other than steering column.
 - 1. Any crack(s).
 - 2. Any obvious welded repair(s).
- d. Steering Gear Box.
 - 1. Any mounting bolt(s) loose or missing.
 - 2. Any crack(s) in gear box or mounting brackets.
- e. Pitman Arm.
 - 1. Any looseness of the pitman arm on the steering gear output shaft.
- f. Power Steering.
 - 1. Auxiliary power assist cylinder loose.
- g. Ball and Socket Joints.
 - 1. Any movement under steering load of a stud nut.
 - 2. Any motion, other than rotational, between any linkage member and its attachment point of more than 1/4 inch..
- h. Tie rods and drag links.
 - 1. Loose clamp(s) or clamp bolt(s) on tie rods or drag links.
 - 2. Any looseness in any threaded joint.
- I. Nuts. Nut(s) loose or missing on tie rods, pitman arm, drag link, steering arm or tie rod arm.
- j. Steering System. Any modification or other condition that interferes with free movement of any steering component.

FMCSR Inspection

Item: Seat Belts

Help Screen #5

Inspect for:

- a. Presence of front seat belts (when required).
- b. Unsafe belts, attachment fittings and buckles.
- c. Anchor bolts.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Front lap seat belts are required and not present.
- b. Seat belt webbing is frayed, spilt, or torn.
- c. Belt anchorages or attachment fittings are loose, badly corroded, missing or not fastened to belt.
- d. Belt buckles loose or inoperative.
- e. All seat belt anchor bolts are not securely fastened to floor or are missing.
- f. Pelvic restraint is not present.
- g. Seat belt will not adjust to allow proper fit.

**FMCSR Inspection
Item: Brake System
Help Screen #6A**

Inspect for:

- a. Present of required number of brakes.
- b. Stopping distance.
- c. Equalization.
- d. Fluid level.
- e. Frayed, leaking, damaged hoses or cables.
- f. Visible leaks or audible leaks in brake lines and wheel cylinders.
- g. Missing or broken mechanical components (shoes, pads, linings, anchor pins, etc.).
- h. Readjustment limits.
- I. Condition of linings and pads.
- j. Mismatch air chamber sizes and slack adjuster length.
- k. Cracks on brake drums and rotors.
- l. Improper repair of hoses.
- m. Tubing cracked, broken, or crimped.
- n. Low pressure warning device.
- o. Loose air compressor mounting bolts.
- p. Broken or loose pulleys and brackets.
- q. Break away device.
- r. Low fluid warning light.
- s. Vacuum reserve.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Absence of braking action on any axle required to have brakes upon application of the service brakes (such as missing brakes or brake shoe(s) failing to move upon application of a wedge, S-cam, or disc brake).
- b. Missing or broken mechanical components including: shoes, lining, pads, springs, anchor pins, spiders, cam rollers, push rods, and air chamber mounting bolts.
- c. Loose brake components including air chambers, spiders, and cam shaft support brackets.
- d. Audible air leak at brake chamber (Example-ruptured diaphragm, loose chamber clamp, etc.).
- e. Any brake stroke is at the readjustment limit.
- f. Brake linings or pads.
 - 1. Lining or pad is not firmly attached to the shoe:
 - 2. Saturated with oil, grease, or brake fluid; or
 - 3. Non-steering axles: Lining with a thickness less than 1/4 inch at the shoe center for air drum brakes, 1/16 inch or less at the shoe center for hydraulic and electric drum brakes and less than 1/8 inch air disc brakes.
 - 4. Steering axles: Lining with a thickness less than 1/4 inch at the shoe center for drum brakes, less than 1/8 inch for air disc brakes and 1/16 inch or less for hydraulic disc and electric brakes.
- g. Brake is missing on any axle required to have brakes.
- h. Mismatch across any power unit steering axle of:
 - 1. Air chamber sizes.

FMCSR Inspection
Item: Brake System (Continued)
Help Screen #6A

- 2. Slack adjuster length.
- I. Parking Brake System.
 - 1. In accordance with Chapter 3.
- j. Brake drums or rotors.
 - 1. Any external crack or cracks that open upon brake application (do not confuse short hairline heat check cracks with flexural cracks).
 - 2. Any portion of the drum or rotor is missing.
- k. Brake Hose.
 - 1. Hose with any damage extending through the outer reinforcement ply.
 - 2. Bulge or swelling when air pressure is applied.
 - 3. Any audible leaks.
 - 4. Two hoses improperly joined (such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube).
 - 5. Air hose cracked, broken or crimped.
- l. Brake Tubing.
 - 1. Any audible leak.
 - 2. Tubing cracked, broken or crimped.
- m. Low pressure warning device.
 - 1. Missing, inoperative, or does not operate at 55 psi and below, or the governor cut-out pressure, whichever is less.
- n. Tractor protection valve.
 - 1. Inoperable or missing tractor protection valve(s) on power unit.
- o. Air Compressor.
 - 1. Compressor drive belts cracked or frayed.
 - 2. Loose compressor mounting bolts.
 - 3. Cracked, broken or loose pulley.
 - 4. Cracked or broken mounting brackets, braces or adapters.
- p. Electric brakes.
 - 1. Absence of braking action on any wheel required to have brakes.
 - 2. Missing or inoperable breakaway braking device.

FMCSR Inspection
Item: Brake System (Continued)
Help Screen #6A

- q. Hydraulic Brakes. (Including power assist over hydraulic and engine drive hydraulic booster).
 - 1. Master cylinder fluid level is 1 inch or more below the top of the reservoir or below manufacturers recommended level.
 - 2. No pedal reserve with engine running except by pumping pedal.
 - 3. Power assist unit fails to operate.
 - 4. Seeping or swelling brake hose(s) under application of pressure.
 - 5. Missing or inoperative check valve.
 - 6. Has any visually observed leaking hydraulic fluid in the brake system.
 - 7. Has hydraulic hose(s) abraded (chafed) through outer cover -to- fabric layer.
 - 8. Fluid lines or connections leaking, restricted, crimped, cracked or broken.
 - 9. Brake failure or low fluid warning light on and/or inoperative.
- r. Vacuum Systems.
 - 1. Has insufficient vacuum reserve to permit one full brake application after engine is shut off.
 - 2. Has vacuum hose(s) or line(s) restricted, abraded (chafed) through outer cover to cord ply, crimped, cracked, broken or has collapsed of vacuum hoses(s) when vacuum is applied.
 - 3. Lacks an operative low-vacuum warning device as required.

FMCSR Inspection
Item: Parking Brake System
Help Screen #6B

Inspect for:

(Required on all motor vehicles beginning with model year 1960).

- a. Operating mechanism.
- b. Condition of mechanical parts and pull cable.
- c. Holding ability.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Motor vehicle is not equipped with a parking brake.
- b. Operating mechanism, when fully applied, does not hold the vehicle.
- c. Actuating mechanism is not fully released when the release control is operated.
- d. Any mechanical parts are missing, broken, badly worn, or not operating properly.
- e. Pull cables are badly worn, stretched, frayed, or not operating freely.
- f. Parking brake will not hold the vehicle in place when, with the engine running, the vehicle is placed in forward gear and the engine is accelerated enough to cause a pull on the braking mechanism.

FMCSR Inspection
Item: Steering Axle Tires
Help Screen #7A

Inspect for:

- a. Worn spot that exposes ply or cord through the tread.
- b. Tread cuts, fabric breaks, snags, sidewall cracks or separation.
- c. Visible bumps bulges or knots.
- d. 4/32" tread.
- e. Mixed tire construction.
- f. Boot, blowout patch or other ply repair.
- g. Tire inflation.
- h. Regrooved tires.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. With less than 4/32 inch tread when measured at any point on a major tread groove.
- b. Has body ply or belt material exposed through the tread or sidewall.
- c. Has any tread or sidewall separation.
- d. Has a cut where the ply or belt material is exposed.
- e. Labeled "Not for Highway Use" or displaying other marking which would exclude use of steering axle.
- f. A bus operated with regrooved, recapped or retreaded tires on the front wheels.
- g. A truck or truck tractor with regrooved tires on the front wheels.
- h. A tube-type radial tire without radial tube stem markings. These markings include a red band around the tube stem, the word "radial" embossed in metal stems, or the word "radial" molded in rubber stems.
- I. Mixing bias and radial tires on the same axle.
- j. Tire flap protrudes through valve slot in rim and touches stem.
- k. Regrooved tire except motor vehicles used solely in urban or suburban service (see exception 393.75 (e))
- l. Boot, blowout patch or other ply repair.
- m. Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.
- n. Tire is flat or has noticeable (e.g., can be heard or felt) leak.
- o. So mounted or inflated that it comes in contact with any part of the vehicle.

FMCSR Inspection
Item: Tires (all other)
Help Screen #7B

Inspect for:

- a. Worn spot that exposes ply or cord through the tread.
- b. Tread cuts, fabric break, snags or sidewall cracks.
- c. Visible bumps, bulges, or knots.
- d. Tread wear less than 2/32" in any two adjacent major grooves at one location.
- e. Tire inflation.
- f. Spare tire secured to vehicle.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.
- b. Tire is flat or has noticeable (e.g., can be heard or felt) leak.
- c. Has body ply or belt material exposed through the tread or sidewall.
- d. Has any tread or sidewall separation.
- e. Has a cut where ply or belt materials is exposed.
- f. So mounted or inflated that it comes in contact with any part of the vehicle. (This includes a tire that contacts its mate.)
- g. Is marked "Not for highway use" or otherwise marked and having like meaning.
- h. With less than 2/32 inch tread when measured at any point on a major tread groove.

FMCSR Inspection
Item: Wheel Assembly
Help Screen #8

Inspect for:

- a. Defective or bent rim flanges, loose, missing or damaged bolts, nuts, studs or lugs.
- b. Defects and cracks that may impair safe mounting and proper retention of tires.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Loose, missing, or damaged wheel studs, bolts, nuts, or lugs.
- b. Any part of the wheel bent, cracked, rewelded, or damaged so as to affect safe operation of the vehicle.
- c. Wheel nuts, studs, and clamps which are loose, broken, missing, or mismatched. Adequate thread engagement is imperative. Stud and nut threads on wheel lugs must engage completely through the entire threaded portion of the nut.
- d. Rims and rings which are mismatched, bent, sprung, or otherwise damaged. Check for evidence of rim slippage - this is an indication of wear of loose nuts.
- e. Disc wheels with elongated bolts, holes, or cracks between hand holes or stud holes, or both.
- f. Cast wheels with cracks, evidence of wear in the clamp area, or both.
- g. Rims have defects or cracks to the extent that they impair the safe mounting and proper retention of tires.
- h. Any wheel cannot be securely fastened to the hub of the vehicle.
- I. On motorcycles and motor-driven cycles, any spokes are bent, loose, broken, or missing.

FMCSR Inspection
Item: Exhaust System
Help Screen #9

Inspect for:

- a. Loose or leaking joints.
- b. Holes, leaking seams or patches.
- c. System or its elements not securely fastened to vehicle.
- d. Any part of exhaust system passes through (or terminates beneath) the passenger compartment.
- e. Tail pipe broken, pinched or eroded off allowing fumes to penetrate passenger compartment.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Vehicle is not equipped with a muffler.
- b. Any joint is loose or leaking, including manifolds. Does not include minor leakage at exhaust control valve (manifold damper or heat riser valve).
- c. Manifold is cracked or broken causing leakage.
- d. Holes, leaking seams, or patches on the muffler, resonators, exhaust pipe, tail pipe or catalytic converter.
- e. Exhaust system is not secured to the vehicle by mounting brackets designed for exhaust systems (wire is not acceptable).
- f. Any brackets are loose, broken, or missing.
- g. There is excessive vibration of exhaust line.
- h. Any part of the exhaust system passes through the passenger compartment.
- I. The tail pipe is broken, pinched, or eroded off to extent to allow exhaust fumes to penetrate into the interior of the passenger compartment.
- j. The tail pipe fails to discharge exhaust from the rear, sides or top of the passenger compartment of the vehicle.

NOTE: Holes in the exhaust system made by the manufacturer for drainage are not cause for rejection. The tail pipe must direct the exhaust fumes out from under the passenger compartment.

FMCSR Inspection
Item: Emission System
Help Screen #10

Inspect for:

(Required on motor vehicles equipped by manufacturer beginning with 1968 models).

- a. Examine visually for presence of system.
- b. Plumbing is loose, broken, leaking or improperly routed.
- c. System has been altered, removed, or disconnected.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. The exhaust emission system has been removed.
- b. The exhaust emission system has been disconnected.
- c. The plumbing or hoses are loose, broken, leaking, or improperly routed.
- d. Air pump (air injection type) belt is loose, removed, cracked, frayed, or has pieces missing.
- e. The exhaust emission system has been altered in any manner to make it ineffective.
- f. The catalytic converter has been removed, leaking, or disconnected on a 1984 or later model vehicle.

**FMCSR Inspection
Item: Beam Indicator
Help Screen #11**

Inspect for:

(Required on all motor vehicles beginning with 1948 models, except motorcycles and motor-driven cycles).

- a. Proper switching indication.
- b. Visibility without glare.

NOTE: For more details, see Rules and Regulations Manual.

Reject if: (when required)

- a. Vehicle not equipped with a beam indicator.
- b. Improper switching indication.
- c. Produces glaring light.
- d. Inoperative for any reason.

FMCSR Inspection

Item: Tail Lamp

Help Screen #12

Inspect for:

- a. Mounting, visibility and required number.
- b. Color and condition of lens.
- c. Wiring and visibility.
- d. Connected to burn when headlamps burn.
- e. Any lamp projects a white light to the and rear (except license plate lamp backup lamp).

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Required lamp or lamps are not present.
- b. Lamp is not securely mounted to vehicle.
- c. Lamp does not completely emit a red light plainly visible 1,000 feet to the rear.
- d. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
- e. Wiring is shoddy or electrical connections are poor.
- f. Lamp is not wired so as to be lighted when headlamps or auxiliary driving lamps are lighted.
- g. Lamp is obstructed by any part of the body.
- h. Lamp lens is not red color.
- I. Lamps are not mounted on the same level and as widely spaced laterally as practicable.
- j. Lamps are not mounted on rear of vehicle.
- k. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Stop Lamp
Help Screen #13

Inspect for:

- a. Mounting, visibility and required number.
- b. Color and condition of lens.
- c. Actuation by application of service brakes.
- d. Wiring and visibility.
- e. Glaring or dazzling light.
- f. Any lamps projects a white light to the rear (except license plate lamp and backup lamp).

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Required lamp or lamps are not present.
- b. Lamps is not securely mounted to the vehicle.
- c. Lamp does not emit a red or amber light which is actuated on application of the service (foot) brake.
- d. Lamp is not visible from a minimum distance of 300 feet to the rear of the vehicle to which it is attached.
- e. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
- f. Wiring is shoddy or electrical connections are poor.
- g. Lamp projects a glaring or a dazzling light.
- h. Lamp is not mounted on rear of vehicle.
- I. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

NOTE: Lamps lenses cannot be repaired with repair tape or repair kit.

FMCSR Inspection
Item: License Plate Lamp
Help Screen #14

Inspect for:

- a. Mounting and wiring.
- b. Illumination of license plate.
- c. Lighting when headlamps are lighted.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamp is not present.
- b. Lamp is not securely mounted to the vehicle.
- c. Lamp is not placed to illuminate with a white light the rear registration plate.
- d. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- e. Lamp is not wired so as to be lighted when head lamps or auxiliary driving lamps are lighted.
- f. Lamp emits a glaring light to the rear.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Rear Reflectors
Help Screen #15

Inspect for:

- a. Color, location and condition of lens.
- b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Reflector is not present.
- b. Reflector is not of red color.
- c. Reflector is not properly and/or securely mounted to the vehicle.
- d. Reflector is cracked to the extent that the reflecting ability is impaired.
- e. Reflector is discolored, deteriorated, or painted.
- f. Visibility distance is not as required.
- g. Requirements shown on lighting diagram are not met.

FMCSR Inspection
Item: Turn Signal Lamps
Help Screen #16

Inspect for:

- a. Mounting, visibility and approved type.
- b. Color and condition of lens.
- c. Wiring, switch, telltale and proper indications.
- d. Self-illumination and automatic flashing.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are required and not present.
- b. Device is not securely mounted or properly located on the vehicle.
- c. Device is not of a type meeting Department standards.
- d. Lamp lens is cracked, broken, discolored, or missing.
- e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- f. Switch is not convenient to driver or indicator light does not operate.
- g. Signal shows any color other than white or amber to the front, or signal shows any color other than red or amber to the rear.
- h. Signal does not flash or is not operating properly.
- I. Signal is not clearly visible to the front and to the rear of the vehicle.
- j. Lens is cracked or broken to the extent that a portion of the lens is missing an/or separated, permitting light from the bulb to emit through the crack or break.

NOTE: Selector switch must lock in proper turn position when applied but need not cancel automatically.

FMCSR Inspection

Item: Headlamps

Help Screen #17

Inspect for:

- a. Mounting and approved type.
- b. Improper connections, switching and dimmer switch.
- c. Cracked, broken or missing lens.
- d. Wiring.
- e. Physical damage that would obviously cause a headlight beam to fail to sufficiently illuminate the roadway ahead of the vehicle.
- f. Dirt, moisture, contaminations or discolorations.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamp or lamp assembly is not securely fastened to the vehicle.
- b. Lamp is improperly connected and does not light the proper filament for different switch positions.
- c. Lamp lens is cracked, broken, discolored, or missing (Exception: Composite or halogen type lamps will not be rejected for being cracked unless the reflector material inside the lamp is discolored or deteriorated).
- d. Lamp is not of a type meeting Department standards.
- e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- f. Lamp lens is rotated, upside down, canted, or is marked "right", "left", #1 or #2 and not appropriately installed.
- g. Lamp fails to function properly in any manner.
- h. Lamp has dirt or any contamination or discoloration inside or moisture except condensed moisture in composite head lamps or nonsealed beam halogen lamps.
- I. Lamp switch or dimmer switch does not operate properly and is not convenient to the driver.
- j. Foreign material placed on head lamp lens, such as shields, half of lens, paint, tape, etc., that interferes with the light beam of the lamp.
- k. Vehicle is not equipped with headlamps as required.
- l. Lamp can be moved easily by hand, due to a broken fender or loose support.
- m. Lamp is missing.
- n. Lens is other than clear (white).

FMCSR Inspection
Item: Headlamps (Continued)
Help Screen #17

- o. Any filament in head lamps fails to burn except composite lamps with more than one bulb when both upper and lower beam burn when selected.
- p. Wiring is dangling or connections are loose.
- q. A good ground is not made by the lamp mounting.
- r. Lamp is mounted on vehicle more than or less than prescribed mounting heights.
- s. Headlamp is covered by any lens or cover located front of the headlamp which is any shade or color other than clear.
- t. There is physical damage that would obviously cause a headlight beam to fail to illuminate the roadway ahead of the vehicle sufficiently.

FMCSR Inspection
Item: Clearance Lamps
Help Screen #18

Inspect for:

- a. Mounting and location.
- b. Required color.
- c. Cracked, broken, or missing lens.
- d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are not present.
- b. Lamps are not securely mounted and properly located.
- c. Lamps do not emit required color; lens or bulb painted.
- d. Visibility requirements are not met.
- e. Lenses are cracked, broken, discolored, or missing.
- f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

**FMCSR Inspection Item:
Side Marker Lamps
Help Screen #19**

Inspect for:

- a. Mounting and location.
- b. Required color.
- c. Cracked, broken, or missing lens.
- d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are not present.
- b. Lamps are not securely mounted and properly located.
- c. Lamps do not emit required color; lens or bulb painted.
- d. Visibility requirements are not met.
- e. Lenses are cracked, broken, discolored, or missing.
- f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Cab Lamps
Help Screen #20

Inspect for:

(Truck tractors only)

- a. Mounting and location.
- b. Required color.
- c. Cracked, broken, or missing lens.
- d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are required and not present.
- b. Lamp is not securely mounted and properly located.
- c. Lamp does not emit required color; lens or bulb painted.
- d. Lamp lens is cracked, broken, discolored, or missing.
- e. Lamp is not visible from distance between 500 feet and 50 feet.
- f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
- g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Side Reflectors
Help Screen #21

Inspect for:

- a. Color, location and condition of lens.
- b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Reflectors are not present.
- b. Reflectors are not of the required color for its location on the vehicle.
- c. Reflectors are not properly and/or securely mounted to the vehicle or if visibility distance is not as required.
- d. Reflector is cracked to the extent that the reflecting ability is impaired.
- e. Reflectors are discolored, deteriorated, or painted.
- f. Requirements shown on lighting diagram are not met.

**FMCSR Inspection
Item: School Buses
Help Screen #22**

Inspect for:

- a. School bus signs.
- b. Fire extinguisher.
- c. Warning lamps.
- d. Convex crossover mirror.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. All equipment required by size, weight, or class of the vehicle does not meet requirement.
- 2. b. Signs are not present, readable, and of proper height.
- 3. c. Fire extinguisher is not of required capacity, proper type, or in good condition and properly located.
- d. School bus RED signal lamps are not present, properly working, and in good condition.
- e. Crossover mirror mounting is loose or will not adjust to different positions or will not hold firm after adjustment.
- f. Crossover mirror offers unsafe interference with driver's forward vision or hides either front turn signal from view of oncoming driver.
- g. Crossover mirror's reflective surface is cracked, broken, peeled, or tarnished, or has sharp edges.

NOTE: Some school buses may be equipped with eight warning signal lamps, four red and four amber, working in an automatic integrated system. This system of alternately flashing warning lamps will be accepted provided it has two red lamps on the front and two red lamps on the rear.

**FMCSR Inspection Item:
Safety Guards Or Flaps
Help Screen #23**

Inspect for:

- a. Mounting, condition and location.
- b. Construction and material.
- c. Height and width.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Safety guard or flap is not present.
- b. Safety guard or flap is not securely mounted.
- c. Safety guard or flap is not as wide as the tire that it is protecting.
- d. Safety guard or flap is split or torn to the extent that it is ineffective.
- e. The bottom edge of safety guard or flap is more than twelve (12) inches from the surface of the roadway.

FMCSR Inspection
Item: Window Tinting or Coating
Help Screen #24

Inspect for:

- a. Tinting on either side of the driver compartment.
- b. Tint or coating extended more than 2" below the top of the windshield.
- c. Tinting or coating has more than a 1" border at each side of windshield.
- d. Tinting or coating or any other visor restricting materials are not above the top most portion of the steering wheel.

Reject if:

- a. Tint or coating is extending more than 2 inches below the top of the windshield.
- b. Tint or coating has more than 1 inch border at each side of windshield.
- c. Tinting or coating and any vision restricting materials are not above the top most portion of the steering wheel.
- d. No tinting is allowed on either side of the driver's compartment.

NOTE: For more details, see Rules and Regulations Manual.

FMCSR Inspection

Item: ID Lamps

Help Screen #25

Inspect for:

- a. Presence of lamps.
- b. Mounting and location.
- c. Required color.
- d. Cracked, broken or missing lens.
- e. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are not present.
- b. Not securely mounted and properly located.
- c. Lamp does not emit proper color; lamp or bulb painted.
- d. Lens cracked, broken, discolored or missing.
- e. Wiring insulation is worn, rubbed bare or evidence of burning, short circuiting or poor connection.
- f. Visibility requirements not met.
- g. Lens is cracked or broken.

**FMCSR Inspection Item:
Hazardous Warning Lamps
Help Screen #25**

Inspect for:

- a. Presence of lamps.
- b. Mounting.
- c. Required color.
- d. Cracked, broken, or missing lens.
- e. Visibility and wiring.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are not present.
- b. Not securely mounted and properly located.
- c. Lamp does not emit proper color; lamp or bulb painted.
- d. Lens cracked, broken, discolored or missing.
- e. Wiring insulation is worn, rubbed bare or evidence of burning, short circuiting or poor connection.
- f. Visibility requirements not met.
- g. Lens is cracked or broken.

FMCSR Inspection
Item: Backup Lamps
Help Screen #25

Inspect for:

- a. Presence of lamps.
- b. Mounting.
- c. Required color.
- d. Cracked, broken, or missing lens.
- e. Visibility and wiring.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Lamps are not present.
- b. Not securely mounted and properly located.
- c. Lamp does not emit proper color; lamp or bulb painted.
- d. Lens cracked, broken, discolored or missing.
- e. Wiring insulation is worn, rubbed bare or evidence of burning, short circuiting or poor connection.
- f. Visibility requirements not met.
- g. Lens is cracked or broken.
- h. Lamps are not activated properly when vehicle is in reverse.

FMCSR Inspection
Item: Coupling Devices
Help Screen #26

Inspect for:

- a. Mounting.
- b. Movement between components.
- c. Fasteners missing or defective.
- d. Any welds or metal cracks.
- e. Pivot bracket pin missing.
- f. Movement between pivot and bracket pin.
- g. Any fore or aft stop missing or not securely attached.
- h. Movement between slider bracket and slider base.
- I. Horizontal movement between upper corner of 5th wheel halves.
- j. Operating handle in closed or locked position.
- k. King pin properly engaged.
- l. All locking mechanism must be in good working order.
- m. Any leaking air or hydraulic cylinder, hoses, or chambers.
- n. Unattached or incapable of secure attachment (includes spare tire).
- o. Any worn or repaired chains or cables or any safety devices missing.

NOTE: For more details, see rules and regulations manual.

- 1. Inspect fifth wheel for and reject if:
 - a. Any fasteners missing or ineffective.
 - b. Any movement between mounting components.
 - c. Any mounting angle iron cracked or broken.
 - d. Any fasteners missing or ineffective on mounting plates and pivot brackets.
 - e. Any welds or parent metal cracked.
 - f. More than 3/8 inch horizontal movement between pivot bracket pin and bracket.
 - g. Pivot bracket pin missing or not secured.
 - h. Any latching fasteners missing or ineffective on sliders.
 - I. Any fore or aft stop missing or not securely attached.
 - j. Movement more than 3/8 inch between slider bracket and slider base.
 - k. Any slider component cracked in parent metal or weld.
 - l. Horizontal movement between the upper and lower fifth wheel halves exceeds 1/2 inch on lower coupler.
 - m. Operating handle not in closed or locked position.
 - n. Kingpin not properly engaged.
 - o. Separation between upper and lower coupler allowing light to show through from side to side.
 - p. Cracks in the fifth wheel plate.
Exceptions: Cracks in fifth wheel approach ramps and casting shrinkage crack in the ribs of the body of a cast fifth wheel.
 - q. Locking mechanism parts missing, broken, or deformed to the extent the kingpin is not securely held.
- 2. Inspect Pintle Hooks for and reject if:

FMCSR Inspection
Item: Coupling Devices (Continued)
Help Screen #26

- a. Any missing or ineffective fasteners (a fastener is not considered missing if there is an empty hole in the device but not corresponding hole in the frame or vice versa).
 - b. Mounting surface cracks extending from point of attachment (e.g., cracks in the frame at mounting bolt holes).
 - c. Loose mounting.
 - d. Frame cross member providing pintle hook attachment cracked.
 - e. Cracks anywhere in pintle hook assembly.
 - f. Any welded repairs to the pintle hook.
 - g. Any part of the horn section reduced by more than 20 percent.
 - h. Latch insecure.
3. Inspect Drawbar/Towbar Eye for and reject if:
- a. Any cracks in attachment welds.
 - b. Any missing or ineffective fasteners.
 - c. Any part of the eye reduced by more than 20 percent.
4. Inspect Drawbar/Towbar Tongue for and reject if:
- a. Ineffective latching mechanism.
 - b. Missing or ineffective stop.
 - c. Movement of more than 1/4 inch between slider and housing.
 - d. Any leaking, air or hydraulic cylinders, hoses, or chambers, (other than slight oil weeping normal with hydraulic seals).
 - e. Any cracks.
 - f. Movement of 1/4 inch between subframe and drawbar at point of attachment.

FMCSR Inspection
Item: Coupling Devices (Continued)
Help Screen #26

5. Inspect Safety Devices for and reject if:
 - a. Safety devices missing.
 - b. Unattached or incapable of secure attachment.
 - c. Chains and hooks.
 - 1) Worn to the extent of a measurable reduction in link cross section.
 - 2) Improper repairs including welding, wire, small bolts, rope and tape.
 - d. Cable
 - 1) Kinked or broken cable strands.
 - 2) Improper clamps or clamping.
6. Inspect Saddle-Mounts for and reject if:
 - a. Any missing or ineffective fasteners.
 - b. Loose mountings.
 - c. Any cracks or breaks in a stress or load bearing member.
 - d. Horizontal movement between upper and lower saddle-mount halves exceeds 1/4 inch.

FMCSR Inspection
Item: Fuel System
Help Screen #27

Inspect for:

- a. Visible leaks.
- b. Filler cap presence.
- c. Properly mounted fuel tank.
- d. LPG decal.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Visible leaks.
- b. Filter cap missing.
- c. Fuel tank not securely mounted.
- d. No valid Liquefied Petroleum Gas Tax Decal Issued by the State Comptroller for LPG powered vehicles.

FMCSR Inspection
Item: Suspension System
Help Screen #28

Inspect for:

- a. Any cracked broken, missing or loose parts on any part of the suspension system.
- b. Deflated air suspension.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. U-bolt, spring hanger or other axle parts are cracked broken, loose or missing.
- b. Any leaf spring assembly leaves broken or missing.
- c. Coil spring broken.
- d. Rubber spring missing.
- e. Any leaves displaced that could cause contact with a tire, rim, brake drum, or frame.
- f. Broken torsion bar spring.
- g. Deflated air suspension.
- h. Torque, radius, or tracking component cracked, loose, broken or missing.

FMCSR Inspection

Item: Frame

Help Screen #29

Inspect for:

- a. Any part of frame member is cracked, broken loose or sagging.
- b. Any loose or missing fasteners to any body of mechanical part.
- c. Body or frame contact with tire or wheel assembly.
- d. Any missing or non-engaged locking pins or adjustable axle assemblies.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Any part of frame member is cracked, broken, loose, or sagging.
- b. Fasteners attaching the engine, transmission, steering gear, suspension, body parts and fifth wheel loose or missing.
- c. Any condition that causes the body or frame to be in contact with a tire or wheel assembly.
- d. Locking pins missing or not engaged on adjustable axle assemblies.

FMCSR Inspection
Item: Commercial Windshield
Help Screen #30

Inspect for:

- a. Cracked or damaged.
- b. Tinting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

- a. Any crack over 1/4 inch wide.
- b. Any damaged area of 3/4 inch or more in diameter.
- c. Damage area is closer than 3 inches to any other damaged area.
- d. Any crack less than 1/4 inch wide intersecting with any other crack.

Appendix E
Help Screens
for the VI - 7 Rejection Receipt
(Reserved)

Appendix F
Help Screens
for the VI - 8B Inspection Log
(Reserved)

Appendix G
Format for
VI - 8B Inspection Log

Record Fields (Top to Bottom, Left to Right)

Line 1

One Counter Field, Ten Variable Fields, No Text

Counter Field: Record Number - Characters 3; **NNN** (Sequentially numbered beginning with 001 for each week, include leading zeroes).

Field #1: Date of Inspection - Characters 5; **MM/DD**

Field #2: Void Indicator - Characters 4; **AAAA** (Read **VOID**, **MISS**, or **REPL** if cert_cond field is set to 'V,' 'M,' or 'R,' respectively, blank and strip if cert_cond is blank).

Field #3: Type of Test - Characters 1; **A**

Field #4: Certificate or Decal Number - Characters 9; **ANNNNNNNNN**

Field #5: VI-30A Number - Characters 7; **NNNNNNNN**

Field #6: Vehicle Registration Number - Characters 8; **EEEEEEEE**

Field #7: Vehicle Identification Number - Characters 17; **EEEEEEEEEEEEEEEEEEEE**

Field #8: Vehicle Year Model - Characters 4; **NNNN**

Field #9: Vehicle Make - Characters 4; **AAAA**

Field #10: Odometer Reading - Characters 6; **NNNNNN**

Line 2 (Begin at column 5)

Two Variable Fields with Dependant Text

Text: "**FAIL:** " (Should only appear if there are fail codes to display)

Field #1: Fail Codes - Characters up to 4 with separators; NNA/... (Maximum field length: 30 characters)

Text: "**REPAIR:** " (Should only appear if there are repair codes to display)

Field #2: Repair Codes - Characters up to 4 with separators; NNA/... (Maximum field length: 30 characters)

If there are no fail or repair codes to display this line should be left blank and stripped from the record.

Line 3 (Begin at column 5)

Two Variable Fields with Text

Field #1: Cost - Characters 9; **\$9,999.99**

Text: "**INSPECTOR:** "

Field #2: Inspector Driver License Number - Characters 20; **EEEEEEEEEEEEEEEEEEEE**

Text: " _____ "

There should be a blank line inserted after each record to separate them from one another, unless it is the last record on the page.. There should be no partial records on a page. If it will not fit on the page, the whole record should be printed on the next page.

Footer Fields (Top to Bottom, Left to Right)

Line 1

No Variable Fields

Text: “-----
-----”

Line 2

To be left Blank

Line 3

Two Counter Fields with Text

Text: “**STATION REPRESENTATIVE:**

PAGE ”

Counter Field #1: Page Number - Characters 2; **NN**

Text: “ **OF** “

Counter Field #2: Total Number of Pages - Characters 2; **NN**

Auditing Indicator

If a DPS Representative accesses the Analyzer data base for the purpose of conducting a station audit, the following caveat will be inserted on the report immediately following the last certificate issued prior to the access.

Line 1

Three Variable Fields and Text

Text: "**AUDITED BY** "

Field #1: DPS Representative's ID Number - Characters 4; **NNNN**

Text: "**ON** "

Field #2: Date of Audit - Characters 8; **MMDDYYYY**

Text: "@ "

Field #3: Time of Audit - Characters 4; **HHMM**

The Date (Field #2 above) and Time (Field #3 above) shall be automatically entered into the Inspection Log (VI-8B). There should be a blank line inserted after each caveat to separate them from other records, unless it is the last entry on the page.

TEXAS DEPARTMENT OF PUBLIC SAFETY
VEHICLE INSPECTION STATION LOG
NANNNNNN EEE
WEEK ENDING, SATURDAY, MMDDYY

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

AUDITED BY 4444 ON MMDDYYYY @ HHMM

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

NNN MM/DD VOID A ANNNNNNNNN NNNNNNNN EEEEEEEE EEE YYY AAAAA NNNNNN
FAIL: EEE REPAIR: EEE
\$9,999.99 INSPECTOR: EEE

STATION REPRESENTATIVE: _____ PAGE NN OF NN

Appendix H

Help Screen for
VI - 18 Requisition
for
Inspection Certificates

(Reserved)

Appendix I

File Layout

APPENDIX I

FILE LAYOUT (Subject to Change based on EPA's Final OBD Guidance)

The following terms are used in describing the files found in this appendix.

<u>TERM</u>	<u>DESCRIPTION</u>
NUM(X)	The field is X bytes long and can contain only numeric characters "0" - "9" and any fixed characters specified in the format description. Numeric fields will be filled.
CHAR(X)	The field is X bytes long and can contain any alphanumeric character unless otherwise specified. Character fields are left justified and filled with spaces.
:./-	These are fixed characters which are always placed in the same place within the field as indicated in the format description.

In general a term will be followed by a format description which indicates any fixed character locations. For example the format description HH:MM indicates that a colon will be present in the 3rd byte of the field. The format description XXX.XX indicates a fixed decimal point location with the "." being located in the 4th byte of the field. An 'e' in the left margin indicates that the field contains safety and emissions information. An 's' in the left margin indicates that the field contains only safety information. The offsets for each field are in the left margin listed prior to the e's and s's.

All records shall be prepared by first blank filling them. All numeric data fields shall be prepared by zero filling them.

When a new floppy is initialized by the auditor, the following hard disk files will be copied to the floppy disk. The purpose of backing up the data files to the floppy disk is to allow analyzers to be exchanged in the case of loaner units, and to be present in case of system failure.

HARD DISK FILES COPIED TO FLOPPY

STATION.DAT
INSPECTOR.DAT
REINSPEC.DAT
CAL.DAT
AUDITGAS.DAT
AUDITNOT.DAT
AUDITLOG.DAT
LOCKOUT.DAT
PERFORM.DAT

STATION.DAT

This is both hard disk and floppy based file accessed through the audit screen, containing data specific to the individual stations. Record length is 146 bytes.

0,e	STATION_NUM	CHAR(7)	Entered by the DPS under the audit menu.
7,e	ANALYZER_NUMBER	CHAR(8)	Entered by the DPS under the audit menu.
15,e	STATION_NAME	CHAR(25)	Entered by the DPS under the audit menu.
40,e	ST_ADDRESS	CHAR(20)	The street address of the station.
60,e	CITY	CHAR(13)	The city in which the station is located.
73,e	ZIP	CHAR(10)	The zip code of the station.
83,e	STAT_TX_PHONE	CHAR(12)	The analyzer phone number that is tied to the TX96 analyzer. XXX XXX-XXXX
95,e	STAT_PHONE	CHAR(12)	The station's telephone number for the TX96 analyzer is housed. XXX XXX-XXXX
107,e	STAT_EXP_DATE	NUM(8)	(MMDDYYYY)
115,e	SAFE_STATION_TYPE	CHAR(1)	Default to 'P' - 'Public'. Set to 'F' - 'Fleet' or 'G' - 'Government' by state representative under audit menu or via electronic transmission.
116,e	M-F_HR_OPEN	NUM(4)	(HHMM) Time the station opens Mondays - Fridays <ul style="list-style-type: none">• Value of positions one and two (hour) must not be greater than "24."• Value of positions three and four (minute) must not be greater that "59."
120,e	M-F_HR_CLOSE	NUM(4)	(HHMM) Time the station closes Mondays - Fridays <ul style="list-style-type: none">• Value of positions one and two (hour) must not be greater than "24."• Value of positions three and four (minute) must not be greater that "59."
124,e	SAT_HR_OPEN	NUM(4)	(HHMM) Time the station opens on Saturday. <ul style="list-style-type: none">• Value of positions one and two (hour) must not be greater than "24."• Value of positions three and four (minute) must not be greater that "59."
128,e	SAT_HR_CLOSE	NUM(4)	(HHMM)

			<ul style="list-style-type: none"> • Time the station closes on Saturday. • Value of positions one and two (hour) must not be greater than "24." • Value of positions three and four (minute) must not be greater that "59."
132,e	SUN_HR_OPEN	NUM(4)	(HHMM) Time the station opens on Sunday. <ul style="list-style-type: none"> • Value of positions one and two (hour) must not be greater than "24." • Value of positions three and four (minute) must not be greater that "59."
136,e	SUN_HR_CLOSE	NUM(4)	(HHMM) Time the station closes on Sunday. <ul style="list-style-type: none"> • Value of positions one and two (hour) must not be greater than "24." • Value of positions three and four (minute) must not be greater that "59."
140,e	COUNTY_CODE	CHAR(3)	The county where tested. Dallas - 057 Denton - 061 El Paso - 071 Fort Bend - 079 Harris - 101 Galveston - 084 Collin - 043 Brazoria - 020 Liberty - 146 Chambers - 036 Tarrant - 220 Montgomery - 170 Waller - 237 Out of State or Federal - 000
143,e	SPACE	CHAR(1)	
144,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

SYSTEM.DAT

This is both hard disk and floppy based file accessed through the audit screen, containing data specific to the individual stations. Record length is 146 bytes.

0,e	OBDII_MODEL_YR	NUM(4)	Received from VID
4,e	OBDII_FAIL_ST_DT	NUM(8)	(MMDDYYYY)
12,e	OBDII_MDL_YR_RETEST	NUM(4)	Received from VID
16,e	MISFIRE_MON	CHAR(1)	The street address of the station.
17,e	FUEL_SYS_MON	CHAR(1)	The city in which the station is located.
18,e	COMPR_COMPR_MON	CHAR(1)	OBD II Readiness Monitor for the Comprehensive Components
19,e	CATALYST_MON	CHAR(1)	OBD II Readiness Monitor for the Catalytic Converter
20,e	HEAT_CATALYST_MON	CHAR(1)	OBD II Readiness Monitor for the Heated Catalytic Converter
21,e	EVAP_SYS_MON	CHAR(1)	OBD II Readiness Monitor for the Evaporative System
22,e	SEC_AIR_SYS_MON	CHAR(1)	OBD II Readiness Monitor for the Secondary Air System
23,e	AIR_COND_SYS_MON	CHAR(1)	OBD II Readiness Monitor for the Air Conditioner System
24,e	OXYGEN_SENSOR_MON	CHAR(1)	OBD II Readiness Monitor for the Oxygen Sensor
25,e	HEAT_O2_SENS_MON	CHAR(1)	OBD II Readiness Monitor for the Oxygen Sensor Heater
26,e	EGR_SYS_MON	CHAR(1)	OBD II Readiness Monitor for the Exhaust Gas Recirculation (EGR) Valve
27,e	EARLIEST_MD_YR_TST	NUM(4)	(YYYY) Earliest Model year to do OBD II test
31,e	EXEMPT_MK_OBD2TST	CHAR(4)	(NCIC) Make to exempt OBD II test
35,e	EXEMPT_MD_OBD2TST	NUM(3)	(999) Model code for Model to exempt from OBD II test
38,e	SPACE	CHAR(1)	
144,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

INSPECTOR.DAT

This is both hard disk and floppy based file accessed through the audit screen containing information about the stations inspectors. Record length is 64 bytes.

e	INSPECTOR_NUM	CHAR(20)	Number assigned by the DPS through the audit screen.
e	INSPECTOR_LNAME	CHAR(15)	Inspector's last name.
e	INSPECTOR_FNAME	CHAR(10)	Inspector's first name.
e	ACCESS_CODE	CHAR(5)	This is the access code/password for the inspector which is verified prior to each test.
e	INSP_EXP_DATE	NUM(8)	(MMDDYYYY) The date the inspectors license expires. This is checked along with the access_code prior to each test.
e	INSP_LOCKOUT_FLAG	CHAR(1)	This is a flag which is set by the system or the audit screen to prevent an individual inspector from performing tests. Set to 'Y' by system or audit screen. Set to 'N' by audit screen or electronic transmission.
e	SPACE	CHAR(3)	
e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

VEHICLE.DAT

This is both a hard disk and floppy based file containing all vehicle/test information for each test conducted. These records are maintained on hard disk for a period of 180 days. Records older than 180 days should be automatically purged from the hard disk by the system. Record length is 768 bytes.

0,e	VERSION	CHAR(4)	XXXX This is the software version in use.
4,e	TEST_DATE	NUM(8)	(MMDDYYYY) This is the date of the test. <ul style="list-style-type: none">• First two positions of test_date must be between “01” and less than “12”(inclusive)• Date (positions 2 and 3) must not be greater than the number of days in a given month• Date (positions 2 and 3) must not be greater than 29 if the given month is February in leap year
12,e	TEST_START_TIME	NUM(6)	(HHMMSS) This is the time the test started. <ul style="list-style-type: none">• Value of test_start_time positions one and two (hour) must not be greater than “24.”• Value of test_start_time positions three and four (minute) must not be greater that “59.”• Value of test_start_time positions five and six (second) must not be greater than “59.”
18,e	TEST_END_TIME	NUM(6)	(HHMMSS) This is the time the test ended.
24,e	EMISS_TEST_TYPE	CHAR(1)	Set to ‘2’ for Preconditioned Two-speed idle test by the system for all tests.
25,e	TEST_TYPE	CHAR(1)	If the inspector selects one of the following choices from the main menu: 1 - Safety & Emission Inspection 2 - Safety Only 3 - Emissions Only 4 - Reinspection 5 - Reprint The system will set test_type field to the following: 1 - ‘A’ 5 - ‘K’ 2 - ‘H’ If 3 - Emissions Only is selected, prompt the inspector to indicated if the test is a: 1 - required emission only test (decal) 2 - voluntary test 3 - test on resale (not displayed or used) 4 - remote sensing request

The system will set test_type field to the following:

- | | |
|---------|---------|
| 1 - 'O' | 3 - 'C' |
| 2 - 'I' | 4 - 'B' |

The system will default/highlight selection number 1 in all of the scenarios.

NOTE: The tests and their corresponding letters are cross-referenced below:

- | | |
|---------------------------------|---|
| A) Emission & Safety Test | H) Safety Only Test |
| B) Remote Sensing Request | I) Voluntary Emissions Test |
| C) Test on Resale | J) Waiver - Individual Vehicles |
| D) Scrapage Test | K) Reprint |
| E) Dispute Test | L) Low Income Time Extension |
| F) Waiver - Minimum Expenditure | M) Parts Availability Time Extension |
| G) Federal Test | N) Other (Special Test) |
| | O) Required Emissions Only Test (Decal) |

26,e	SPECIAL_TEST	CHAR(1)	Reserved for character mentioned above. Choice 'F' is reserved for 'minimum expenditure waiver tests,' and choice 'G' is reserved for 'federal tests'. Choice 'D' and choice 'E' are reserved for scrapage tests, and arbitration/dispute tests, respectively. Choice 'J' is reserved for 'individual vehicle waiver tests. Choice 'L,' 'M,' and 'N,' are reserved for 'low income time extension tests,' 'parts availability time extension tests,' and 'other special tests,' respectively. Otherwise, left blank.
27,e	VID_ID_NUM	CHAR(11)	Sent by Texas Data Link System.
38,e	EMISS_INIT_TEST	CHAR(1)	After an inspection has been completed, the system will set initial_test_type to the character "I" for initial test. After an reinspection has been completed, the system shall set initial_test_type to the character "R" for reinspection test. Otherwise, left blank.
39,e	SAFE_INIT_TEST	CHAR(1)	If there is no previous inspection for this vehicle, or the previous inspection was more than sixteen days prior to this inspection, set the SAFE_INIT_TEST to 'I.' If the previous inspection was less than sixteen days prior to this inspection, set the SAFE_INIT_TEST to 'R.' Otherwise, left blank.
40,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
47,e	STATION_NAME	CHAR(25)	Entered by the DPS under the audit menu.
72,e	ANALYZER_NUMBER	CHAR(8)	This field must be the analyzer number from the STATION.DAT file.

80,e	INSPECTOR_NUM	CHAR(20)	This is the inspector number from INSPECTOR.DAT associated with the inspector's access code.
100,e	INSPECTOR_LNAME	CHAR(15)	Inspector's last name.
115,e	INSPECTOR_FNAME	CHAR(10)	Inspector's first name.
125,e	MODEL_YEAR	CHAR(4)	YYYY Model year of the vehicle.
129,e	COUNTY_CODE	CHAR(3)	The county where tested. Dallas - 057 Denton - 061 El Paso - 071 Fort Bend - 079 Harris - 101 Galveston - 084 Collin - 043 Brazoria - 020 Liberty - 146 Chambers - 036 Tarrant - 220 Montgomery - 170 Waller - 237 Out of State or Federal - 000
132,e	VIN_ID_NUM	CHAR(17)	The VIN number of the vehicle.
149,e	VIN_FLAG	CHAR(1)	If DPS check digit algorithm indicates bad VIN number, set to 'B'-bad. If not, leave blank.
150,e	LICENSE_NUM	CHAR(8)	License number of the vehicle or dealer number if unlicensed.
158,e	LICENSE_TYPE	NUM(1)	This is type of plate. 1 - Texas Plate 2 - No Plate 3 - Out of state 4 - Exempt (State) 5 - Exempt (Federal) 6 - Dealer Plate (Metal/Hard) 7 - Temporary Sticker (Paper) 8 - Other After selecting number '2' or '8,' the license_num field should be set to 'V' followed by the last 7 char of the VIN number. The default for this field is number '1.'
159,e	INJECT_CARB	CHAR(1)	Injection/carburetion. 'F' - Fuel Injection 'C' - Carburetion 'O' - Other Otherwise, left blank.
160,e	VEHICLE_TYPE	CHAR(1)	'P' - Passenger Car/Station Wagon 'T' - Truck/Van/Bus/Sports Utility Vehicle 'M' - Motor home 'B' - Bus

			'C' - Motorcycle 'L' - Trailer
161,e	GVW_TYPE	NUM(1)	Gross vehicle weight class. 1 - Light 2 - Heavy Otherwise, left blank.
162,e	GVW_ACTUAL	NUM(5)	Actual gross vehicle weight rating. Otherwise, left blank.
167,e	MAKE	CHAR(4)	Vehicle make selected from possible list using NCIC make definitions.
171,e	MODEL	CHAR(20)	Vehicle model type is selected based on the vehicle make entry.
191,e	ENGINE_SIZE	CHAR(5)	Values converted to cubic centimeters by the analyzer. Otherwise, left blank.
196,e	CYLINDERS	CHAR(2)	The number of cylinders, "1-16." 'R' - Rotary This entry is made by the inspector if the vehicle inspected is equipped by a rotary engine. Otherwise, left blank.
198,e	TRANSMISSION	CHAR(1)	Transmission type. 'A' - Automatic 'M' - Manual Otherwise, left blank.
199,e	ODOMETER	NUM(6)	The odometer reading excluding tenths.
205,e	FUEL_TYPE	CHAR(1)	The fuel type 'G' - Gas 'D' - Diesel 'B' - Bi-fueled (Dual Fueled) Otherwise, left blank.
206,e	IGNITION	CHAR(1)	The ignition type. 'C' - Conventional 'D' - Distributorless 'Q' - Quad4 Otherwise, left blank.
207,e	DUAL_EXHAUST	CHAR(1)	This is 'Y' Yes or 'N' No. Otherwise, left blank.
208,e	PRE-TUNE	CHAR(1)	This is a 'Y' Yes or 'N' No to the question "Was pre-tuning done on this vehicle prior to testing?" Otherwise, left blank.
209,s	SAFE_TEST_TYPE	CHAR(1)	Safety Inspection Type. The inspector will select "A"- "K" excluding "I" from the keyboard. If the selection is not "G"

or “K”, then fields SAFE_25 through SAFE_30 will be left blank. Valid entries for this field are A - K, excluding I. Otherwise, left blank.

210,s	SAFE_1	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
211,s	SAFE_2	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
212,s	SAFE_3	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
213,s	SAFE_4	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
214,s	SAFE_5	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
215,s	SAFE_6A	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
216,s	SAFE_6B	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
217,s	SAFE_7	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA

			Otherwise, left blank.
218,s	SAFE_7A	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
219,s	SAFE_7B	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
220,s	SAFE_8	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
221,s	SAFE_9	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
222,e	SAFE_10A	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
223,e	SAFE_10B	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
224,e	SAFE_10C	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
225,e	SAFE_10D	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.

226,e	SAFE_10E	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
227,e	SAFE_10F	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
228,s	SAFE_11	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
229,s	SAFE_12	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
230,s	SAFE_13	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
231,s	SAFE_14	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
232,s	SAFE_15	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
233,s	SAFE_16	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
234,s	SAFE_17	CHAR(1)	'P' - Pass 'F' - Fail

'R' - Repair
'N' - NA
Otherwise, left blank.

235,s SAFE_18 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

236,s SAFE_19 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

237,s SAFE_20 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

238,s SAFE_21 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

239,s SAFE_22A CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA

240,s SAFE_22B CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

241,s SAFE_22C CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

242,s SAFE_22D CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

243,s	SAFE_23	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
244,s	SAFE_24	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
245,s	SAFE_25	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
246,s	SAFE_26	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
247,s	SAFE_27	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
248,s	SAFE_28	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
249,s	SAFE_29	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
250,s	SAFE_30	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
251,e	PRI_CURB_IDLE_CO	NUM(5)	XX.XX Otherwise, zero filled.

256,e	PRI_CURB_IDLE_HC	NUM(4)	XXXX	Otherwise, zero filled.
260,e	PRI_CURB_IDLE_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
264,e	PRI_CURB_IDLE_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
268,e	PRI_CURB_IDLE_RPM	NUM(4)	XXXX	Otherwise, zero filled.
272,e	PRI_HIGH_SPEED_CO	NUM(5)	XX.XX	Otherwise, zero filled.
277,e	PRI_HIGH_SPEED_HC	NUM(4)	XXXX	Otherwise, zero filled.
281,e	PRI_HIGH_SPEED_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
285,e	PRI_HIGH_SPEED_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
289,e	PRI_HIGH_SPEED_RPM	NUM(4)	XXXX	Otherwise, zero filled.
293,e	ALT_CURB_IDLE_CO	NUM(5)	XX.XX	Otherwise, zero filled.
298,e	ALT_CURB_IDLE_HC	NUM(4)	XXXX	Otherwise, zero filled.
302,e	ALT_CURB_IDLE_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
306,e	ALT_CURB_IDLE_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
310,e	ALT_CURB_IDLE_RPM	NUM(4)	XXXX	Otherwise, zero filled.
314,e	ALT_HIGH_SPEED_CO	NUM(5)	XX.XX	Otherwise, zero filled.
319,e	ALT_HIGH_SPEED_HC	NUM(4)	XXXX	Otherwise, zero filled.
323,e	ALT_HIGH_SPEED_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
327,e	ALT_HIGH_SPEED_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
331,e	ALT_HIGH_SPEED_RPM	NUM(4)	XXXX	Otherwise, zero filled.
335,e	DILUTION	NUM(4)	XX.X	Otherwise, zero filled.
339,e	DILUTION_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.	
340,e	DILUTION_LIMIT	NUM(4)	The applicable dilution criteria for the vehicle. Otherwise, zero filled.	
344,e	HC_CUTPOINT_HI	NUM(4)	The applicable HC cutpoint/standard for the vehicle. Otherwise, zero filled.	

348,e	CO_CUTPOINT_HI	NUM(5)	The applicable CO cutpoint/standard for the vehicle.
353,e	RPM_BYPASS	CHAR(1)	'B' - Bypass If the rpm bypass selection is selected, then fill this field with the letter 'b'. Otherwise, left blank.
354,e	TIMEOUT_FLAG	CHAR(1)	'Y' - Yes 'N' - No If the emissions test ended due to time out conditions, set TIMEOUT_FLAG to 'Y.' Otherwise, set to 'N.' If no emissions test, left blank.
355,e	HC_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.
356,e	CO_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.
357,s	INSUR_EXP_DT	NUM(8)	(MMDDYYYY) This is the expiration date of the vehicle owner's proof of insurance. Otherwise, zero filled.
365,s	VI30A_NUM	CHAR(7)	This is the safety inspection's VI 30A number, if applicable. Otherwise, left blank.
372,s	VI30A_FLAG	CHAR(1)	'Y' - 'Yes', indicates if VI 30A is applicable. 'N' - 'No' Otherwise, left blank.
373,s	SAFETY_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.
374,e	EMISS_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail 'T' - Time ran out during test. 'D' - Dilution condition ended test Otherwise, left blank.
375,e	GAS_CAP_MISS	CHAR(1)	'Y' - Yes 'N' - No Otherwise, left blank.
376,e	GAS_CAP_TESTABLE	CHAR(1)	'Y' - Yes 'N' - No Otherwise, left blank.
377,e	GAS_CAP_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail

			Otherwise, left blank.
378,e	CERT_NUM	CHAR(9)	Certificate number entry. If no certificate issued, left blank.
387,e	CERT_NUM_2	CHAR(9)	Certificate number entry. If no certificate issued, left blank.
396,e	CERT_COND	CHAR(1)	Condition of previous certificate, 'V' - voided, 'M' - missing, 'C' - correct, 'R' - replacement. Otherwise, left blank.
397,e	EMISS_INSP_COST	NUM(5)	99.99 Emission inspection price (market driven, fixed) Otherwise, zero filled.
402,s	SAFE_INSP_COST	NUM(7)	9999.99 Safety inspection cost plus applicable safety related repairs. Otherwise, zero filled.
409,e	OVERALL_COST	CHAR(7)	9999.99 Sum of all costs associated with the inspection including repair costs, where applicable. Otherwise, zero filled.
416,e	OVERALL_RESULTS	CHAR(1)	'P' - Pass 'F' - Fail This is the overall test results of the vehicle inspected.
417,e	REP_CST_YIS	NUM(8)	99999.99 - Total cost of repairs performed at the same facility where inspection was performed. Otherwise, zero filled.
425,e	REP_CST_RRF	NUM(8)	99999.99 - Total cost of repairs performed at a Recognized Emissions Repair Facility. Otherwise, zero filled.
433,e	REP_CST_NRF	NUM(8)	99999.99 - Total cost of repairs performed at a non-recognized repair facility. Otherwise, zero filled.
441,e	REP_CST_MSP	NUM(8)	99999.99 - Total parts costs for self-performed repairs by the motorist. Otherwise, zero filled.
449,e	SPACE	CHAR(152)	
601,e	REP_OVERALL_COST	NUM(8)	99999.99 Otherwise, zero filled.
609,e	ABORT	CHAR(1)	'J'-Before sampling, 'A'-Aborted Test, Blank, if test completed and not aborted.
610,e	ABORT_CODE	NUM(2)	01 OIL SYSTEM LEAK WARNING LIGHT IS ON 02 COOLANT SYSTEM LEAK WARNING LIGHT IS ON 03 FUEL SYSTEM LEAK

- 04 EXCESSIVE ENGINE NOISE
- 05 VEHICLE DOES NOT REQUIRE INSPECTION
- 06 BMW, PEUGEOT, VOLVO AUTOMATIC TRANSMISSION
- 99 OTHER (INDICATE REASON ON THE VIR)
Otherwise, left blank.

612,e	MODEL_CODE	CHAR(3)	The NCIC model code or acceptable TNRCC code. Otherwise, left blank.
615,e	TIMEOUT_REDO	CHAR(1)	'Y' - Yes 'N' - No If after 290 seconds a valid test condition was not obtained, and the inspector elects to restart the emissions test, set this field to 'Y'. Otherwise, set to 'N'.
616,e	ORIG_TEST_DATE	NUM(8)	MMDDYYYY Otherwise, zero filled.
624,e	ORIG_TEST_TIME	NUM(6)	HHMMSS Otherwise, zero filled.
630,e	REPL_ID_NUM	CHAR(20)	ID number of the individual that conducts the replacement. INSP_NUM for inspectors, DPS_NUM for Auditors, and '9999999999' (10 9's) for Managers. Otherwise, left blank.
650,e	HC_CUTPOINT_LOW	NUM(4)	HC cutpoint for the low speed idle portion of the emissions phase of the inspection. Otherwise, zero filled.
654,e	CO_CUTPOINT_LOW	NUM(5)	CO cutpoint for the low speed idle portion of the emissions phase of the inspection. Otherwise, zero filled.
659,e	DECAL_NUM	CHAR(9)	Safety Emissions Decal number. Otherwise, left blank.
668,e	DECAL_NUM_2	CHAR(9)	Safety Emissions Decal number for replacements. Otherwise, left blank.
677,e	DECAL_COND	CHAR(1)	Condition of previous decal, 'V' - voided, 'M' - missing, 'C' - correct, 'R' - replacement. Otherwise, left blank.
678,e	TXDOT_NUM	CHAR(10)	TxDOT number entered by inspector when Texas plate present. Otherwise, left blank.
688,e	WAIVER_NUM	CHAR(7)	Waiver number entered by auditor if a waiver is issued. Otherwise, left blank.
695,e	2ND_GAS_CAP_MISS	CHAR(1)	'Y' - Yes

			'N' - No Blank, if only one gas cap tested.
696,e	2ND_GAS_CAP_TEST	CHAR(1)	'Y' - Yes 'N' - No Blank, if only one gas cap tested.
697,e	GAS_CAP_PF_FLAG_1	CHAR(1)	'P' - Pass 'F' - Fail Blank, if gas cap not tested.
698,e	GAS_CAP_PF_FLAG_2	CHAR(1)	'P' - Pass 'F' - Fail Blank, if only one gas cap tested.
699,e	REP_GRP	CHAR(1)	'1' - Fuel System, '2' - Ignition/Electrical System, '3' - Emissions System, '4' - Engine Mechanical, '5' - Miscellaneous, '6' - No Repairs Performed on Vehicle
700,e	PERF_REPAIRS	CHAR(1)	'1' - Recognized Emissions Repair Tech '2' - Other Repair Technician (Non-Recognized) '3' - Motorist (Self-Repair)
701,e	BARCODED_VIN	CHAR(1)	
702,e	BARCODED_TXDOT_NO	CHAR(1)	
703,e	BARCODED_LIC_PLT	CHAR(1)	
704,e	OBD2_MIL_CHECK	CHAR(1)	Y, N
705,e	OBD2_MIL_ON_RUN	CHAR(1)	Y, N
706,e	OBD2_PF_FLAG	CHAR(1)	P, F
707,e	SPACE	CHAR(59)	
766,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

REINSPEC.DAT

This is both a hard disk and floppy based file containing all vehicle/test information for each test conducted. These records are maintained on hard disk for a period of 180 days. Records older than 180 days should be automatically purged from the hard disk by the system. Record length is 768 bytes.

0,e	VERSION	CHAR(4)	XXXX This is the software version in use.
4,e	TEST_DATE	NUM(8)	(MMDDYYYY) This is the date of the test. <ul style="list-style-type: none">• First two positions of test_date must be between “01” and less than “12”(inclusive)• Date (positions 2 and 3) must not be greater than the number of days in a given month• Date (positions 2 and 3) must not be greater than 29 if the given month is February in leap year
12,e	TEST_START_TIME	NUM(6)	(HHMMSS) This is the time the test started. <ul style="list-style-type: none">• Value of test_start_time positions one and two (hour) must not be greater than “24.”• Value of test_start_time positions three and four (minute) must not be greater that “59.”• Value of test_start_time positions five and six (second) must not be greater than “59.”
18,e	TEST_END_TIME	NUM(6)	(HHMMSS) This is the time the test ended.
24,e	EMISS_TEST_TYPE	CHAR(1)	Set to ‘2’ for Preconditioned Two-speed idle test by the system for all tests.
25,e	TEST_TYPE	CHAR(1)	If the inspector selects one of the following choices from the main menu: <ul style="list-style-type: none">1 - Safety & Emission Inspection2 - Safety Only3 - Emissions Only4 - Reinspection5 - Reprint The system will set test_type field to the following: <ul style="list-style-type: none">1 - ‘A’ 5 - ‘K’2 - ‘H’ If 3 - Emissions Only is selected, prompt the inspector to indicated if the test is a: <ul style="list-style-type: none">1 - required emission only test (decal)2 - voluntary test3 - test on resale (not displayed or used)4 - remote sensing request

The system will set test_type field to the following:

- | | |
|---------|---------|
| 1 - 'O' | 3 - 'C' |
| 2 - 'I' | 4 - 'B' |

The system will default/highlight selection number 1 in all of the scenarios.

NOTE: The tests and their corresponding letters are cross-referenced below:

- | | |
|---------------------------------|---|
| A) Emission & Safety Test | H) Safety Only Test |
| B) Remote Sensing Request | I) Voluntary Emissions Test |
| C) Test on Resale | J) Waiver - Individual Vehicles |
| D) Scrapage Test | K) Reprint |
| E) Dispute Test | L) Low Income Time Extension |
| F) Waiver - Minimum Expenditure | M) Parts Availability Time Extension |
| G) Federal Test | N) Other (Special Test) |
| | O) Required Emissions Only Test (Decal) |

26,e	SPECIAL_TEST	CHAR(1)	Reserved for character mentioned above. Choice 'F' is reserved for 'minimum expenditure waiver tests,' and choice 'G' is reserved for 'federal tests'. Choice 'D' and choice 'E' are reserved for scrapage tests, and arbitration/dispute tests, respectively. Choice 'J' is reserved for 'individual vehicle waiver tests. Choice 'L,' 'M,' and 'N,' are reserved for 'low income time extension tests,' 'parts availability time extension tests,' and 'other special tests,' respectively. Otherwise, left blank.
27,e	VID_ID_NUM	CHAR(11)	Sent by Texas Data Link System.
38,e	EMISS_INIT_TEST	CHAR(1)	After an inspection has been completed, the system will set initial_test_type to the character "I" for initial test. After an reinspection has been completed, the system shall set initial_test_type to the character "R" for reinspection test. Otherwise, left blank.
39,e	SAFE_INIT_TEST	CHAR(1)	If there is no previous inspection for this vehicle, or the previous inspection was more than sixteen days prior to this inspection, set the SAFE_INIT_TEST to 'I.' If the previous inspection was less than sixteen days prior to this inspection, set the SAFE_INIT_TEST to 'R.' Otherwise, left blank.
40,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
47,e	STATION_NAME	CHAR(25)	Entered by the DPS under the audit menu.
72,e	ANALYZER_NUMBER	CHAR(8)	This field must be the analyzer number from the STATION.DAT file.

80,e	INSPECTOR_NUM	CHAR(20)	This is the inspector number from INSPECTOR.DAT associated with the inspector's access code.
100,e	INSPECTOR_LNAME	CHAR(15)	Inspector's last name.
115,e	INSPECTOR_FNAME	CHAR(10)	Inspector's first name.
125,e	MODEL_YEAR	CHAR(4)	YYYY Model year of the vehicle.
129,e	COUNTY_CODE	CHAR(3)	The county where tested. Dallas - 057 Denton - 061 El Paso - 071 Fort Bend - 079 Harris - 101 Galveston - 084 Collin - 043 Brazoria - 020 Liberty - 146 Chambers - 036 Tarrant - 220 Montgomery - 170 Waller - 237 Out of State or Federal - 000
132,e	VIN_ID_NUM	CHAR(17)	The VIN number of the vehicle.
149,e	VIN_FLAG	CHAR(1)	If DPS check digit algorithm indicates bad VIN number, set to 'B'-bad. If not, leave blank.
150,e	LICENSE_NUM	CHAR(8)	License number of the vehicle or dealer number if unlicensed.
158,e	LICENSE_TYPE	NUM(1)	This is type of plate. 1 - Texas Plate 2 - No Plate 3 - Out of state 4 - Exempt (State) 5 - Exempt (Federal) 6 - Dealer Plate (Metal/Hard) 7 - Temporary Sticker (Paper) 8 - Other After selecting number '2' or '8,' the license_num field should be set to 'V' followed by the last 7 char of the VIN number. The default for this field is number '1.'
159,e	INJECT_CARB	CHAR(1)	Injection/carburetion. 'F' - Fuel Injection 'C' - Carburetion 'O' - Other Otherwise, left blank.
160,e	VEHICLE_TYPE	CHAR(1)	'P' - Passenger Car/Station Wagon 'T' - Truck/Van/Bus/Sports Utility Vehicle 'M' - Motor home 'B' - Bus

			'C' - Motorcycle 'L' - Trailer
161,e	GVW_TYPE	NUM(1)	Gross vehicle weight class. 1 - Light 2 - Heavy Otherwise, left blank.
162,e	GVW_ACTUAL	NUM(5)	Actual gross vehicle weight rating. Otherwise, left blank.
167,e	MAKE	CHAR(4)	Vehicle make selected from possible list using NCIC make definitions.
171,e	MODEL	CHAR(20)	Vehicle model type is selected based on the vehicle make entry.
191,e	ENGINE_SIZE	CHAR(5)	Values converted to cubic centimeters by the analyzer. Otherwise, left blank.
196,e	CYLINDERS	CHAR(2)	The number of cylinders, "1-16." 'R' - Rotary This entry is made by the inspector if the vehicle inspected is equipped by a rotary engine. Otherwise, left blank.
198,e	TRANSMISSION	CHAR(1)	Transmission type. 'A' - Automatic 'M' - Manual Otherwise, left blank.
199,e	ODOMETER	NUM(6)	The odometer reading excluding tenths.
205,e	FUEL_TYPE	CHAR(1)	The fuel type 'G' - Gas 'D' - Diesel 'B' - Bi-fueled (Dual Fueled) Otherwise, left blank.
206,e	IGNITION	CHAR(1)	The ignition type. 'C' - Conventional 'D' - Distributorless 'Q' - Quad4 Otherwise, left blank.
207,e	DUAL_EXHAUST	CHAR(1)	This is 'Y' Yes or 'N' No. Otherwise, left blank.
208,e	PRE-TUNE	CHAR(1)	This is a 'Y' Yes or 'N' No to the question "Was pre-tuning done on this vehicle prior to testing?" Otherwise, left blank.
209,s	SAFE_TEST_TYPE	CHAR(1)	Safety Inspection Type. The inspector will select "A"- "K" excluding "I" from the keyboard. If the selection is not "G"

or “K”, then fields SAFE_25 through SAFE_30 will be left blank. Valid entries for this field are A - K, excluding I. Otherwise, left blank.

210,s SAFE_1 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

211,s SAFE_2 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

212,s SAFE_3 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

213,s SAFE_4 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

214,s SAFE_5 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

215,s SAFE_6A CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

216,s SAFE_6B CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

217,s SAFE_7 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA

			Otherwise, left blank.
218,s	SAFE_7A	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
219,s	SAFE_7B	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
220,s	SAFE_8	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
221,s	SAFE_9	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
222,e	SAFE_10A	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
223,e	SAFE_10B	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
224,e	SAFE_10C	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
225,e	SAFE_10D	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.

226,e	SAFE_10E	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
227,e	SAFE_10F	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
228,s	SAFE_11	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
229,s	SAFE_12	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
230,s	SAFE_13	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
231,s	SAFE_14	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
232,s	SAFE_15	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
233,s	SAFE_16	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
234,s	SAFE_17	CHAR(1)	'P' - Pass 'F' - Fail

'R' - Repair
'N' - NA
Otherwise, left blank.

235,s SAFE_18 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

236,s SAFE_19 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

237,s SAFE_20 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

238,s SAFE_21 CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

239,s SAFE_22A CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA

240,s SAFE_22B CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

241,s SAFE_22C CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

242,s SAFE_22D CHAR(1) 'P' - Pass
'F' - Fail
'R' - Repair
'N' - NA
Otherwise, left blank.

243,s	SAFE_23	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
244,s	SAFE_24	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
245,s	SAFE_25	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
246,s	SAFE_26	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
247,s	SAFE_27	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
248,s	SAFE_28	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
249,s	SAFE_29	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
250,s	SAFE_30	CHAR(1)	'P' - Pass 'F' - Fail 'R' - Repair 'N' - NA Otherwise, left blank.
251,e	PRI_CURB_IDLE_CO	NUM(5)	XX.XX Otherwise, zero filled.

256,e	PRI_CURB_IDLE_HC	NUM(4)	XXXX	Otherwise, zero filled.
260,e	PRI_CURB_IDLE_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
264,e	PRI_CURB_IDLE_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
268,e	PRI_CURB_IDLE_RPM	NUM(4)	XXXX	Otherwise, zero filled.
272,e	PRI_HIGH_SPEED_CO	NUM(5)	XX.XX	Otherwise, zero filled.
277,e	PRI_HIGH_SPEED_HC	NUM(4)	XXXX	Otherwise, zero filled.
281,e	PRI_HIGH_SPEED_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
285,e	PRI_HIGH_SPEED_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
289,e	PRI_HIGH_SPEED_RPM	NUM(4)	XXXX	Otherwise, zero filled.
293,e	ALT_CURB_IDLE_CO	NUM(5)	XX.XX	Otherwise, zero filled.
298,e	ALT_CURB_IDLE_HC	NUM(4)	XXXX	Otherwise, zero filled.
302,e	ALT_CURB_IDLE_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
306,e	ALT_CURB_IDLE_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
310,e	ALT_CURB_IDLE_RPM	NUM(4)	XXXX	Otherwise, zero filled.
314,e	ALT_HIGH_SPEED_CO	NUM(5)	XX.XX	Otherwise, zero filled.
319,e	ALT_HIGH_SPEED_HC	NUM(4)	XXXX	Otherwise, zero filled.
323,e	ALT_HIGH_SPEED_CO ₂	NUM(4)	XX.X	Otherwise, zero filled.
327,e	ALT_HIGH_SPEED_O ₂	NUM(4)	XX.X	Otherwise, zero filled.
331,e	ALT_HIGH_SPEED_RPM	NUM(4)	XXXX	Otherwise, zero filled.
335,e	DILUTION	NUM(4)	XX.X	Otherwise, zero filled.
339,e	DILUTION_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.	
340,e	DILUTION_LIMIT	NUM(4)	The applicable dilution criteria for the vehicle. Otherwise, zero filled.	
344,e	HC_CUTPOINT_HI	NUM(4)	The applicable HC cutpoint/standard for the vehicle. Otherwise, zero filled.	

348,e	CO_CUTPOINT_HI	NUM(5)	The applicable CO cutpoint/standard for the vehicle.
353,e	RPM_BYPASS	CHAR(1)	'B' - Bypass If the rpm bypass selection is selected, then fill this field with the letter 'b'. Otherwise, left blank.
354,e	TIMEOUT_FLAG	CHAR(1)	'Y' - Yes 'N' - No If the emissions test ended due to time out conditions, set TIMEOUT_FLAG to 'Y.' Otherwise, set to 'N.' If no emissions test, left blank.
355,e	HC_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.
356,e	CO_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.
357,s	INSUR_EXP_DT	NUM(8)	(MMDDYYYY) This is the expiration date of the vehicle owner's proof of insurance. Otherwise, zero filled.
365,s	VI30A_NUM	CHAR(7)	This is the safety inspection's VI 30A number, if applicable. Otherwise, left blank.
372,s	VI30A_FLAG	CHAR(1)	'Y' - 'Yes', indicates if VI 30A is applicable. 'N' - 'No' Otherwise, left blank.
373,s	SAFETY_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail Otherwise, left blank.
374,e	EMISS_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail 'T' - Time ran out during test. 'D' - Dilution condition ended test Otherwise, left blank.
375,e	GAS_CAP_MISS	CHAR(1)	'Y' - Yes 'N' - No Otherwise, left blank.
376,e	GAS_CAP_TESTABLE	CHAR(1)	'Y' - Yes 'N' - No Otherwise, left blank.
377,e	GAS_CAP_PF_FLAG	CHAR(1)	'P' - Pass 'F' - Fail

			Otherwise, left blank.
378,e	CERT_NUM	CHAR(9)	Certificate number entry. If no certificate issued, left blank.
387,e	CERT_NUM_2	CHAR(9)	Certificate number entry. If no certificate issued, left blank.
396,e	CERT_COND	CHAR(1)	Condition of previous certificate, 'V' - voided, 'M' - missing, 'C' - correct, 'R' - replacement. Otherwise, left blank.
397,e	EMISS_INSP_COST	NUM(5)	99.99 Emission inspection price (market driven, fixed) Otherwise, zero filled.
402,s	SAFE_INSP_COST	NUM(7)	9999.99 Safety inspection cost plus applicable safety related repairs. Otherwise, zero filled.
409,e	OVERALL_COST	CHAR(7)	9999.99 Sum of all costs associated with the inspection including repair costs, where applicable. Otherwise, zero filled.
416,e	OVERALL_RESULTS	CHAR(1)	'P' - Pass 'F' - Fail This is the overall test results of the vehicle inspected.
417,e	REP_CST_YIS	NUM(8)	99999.99 - Total cost of repairs performed at the same facility where inspection was performed. Otherwise, zero filled.
425,e	REP_CST_RRF	NUM(8)	99999.99 - Total cost of repairs performed at a Recognized Emissions Repair Facility. Otherwise, zero filled.
433,e	REP_CST_NRF	NUM(8)	99999.99 - Total cost of repairs performed at a non-recognized repair facility. Otherwise, zero filled.
441,e	REP_CST_MSP	NUM(8)	99999.99 - Total parts costs for self-performed repairs by the motorist. Otherwise, zero filled.
449,e	SPACE	CHAR(152)	
601,e	REP_OVERALL_COST	NUM(8)	99999.99 Otherwise, zero filled.
609,e	ABORT	CHAR(1)	'J'-Before sampling, 'A'-Aborted Test, Blank, if test completed and not aborted.
610,e	ABORT_CODE	NUM(2)	01 OIL SYSTEM LEAK WARNING LIGHT IS ON 02 COOLANT SYSTEM LEAK WARNING LIGHT IS ON 03 FUEL SYSTEM LEAK

- 04 EXCESSIVE ENGINE NOISE
- 05 VEHICLE DOES NOT REQUIRE INSPECTION
- 06 BMW, PEUGEOT, VOLVO AUTOMATIC TRANSMISSION
- 99 OTHER (INDICATE REASON ON THE VIR)
Otherwise, left blank.

612,e	MODEL_CODE	CHAR(3)	The NCIC model code or acceptable TNRCC code. Otherwise, left blank.
615,e	TIMEOUT_REDO	CHAR(1)	'Y' - Yes 'N' - No If after 290 seconds a valid test condition was not obtained, and the inspector elects to restart the emissions test, set this field to 'Y'. Otherwise, set to 'N'.
616,e	ORIG_TEST_DATE	NUM(8)	MMDDYYYY Otherwise, zero filled.
624,e	ORIG_TEST_TIME	NUM(6)	HHMMSS Otherwise, zero filled.
630,e	REPL_ID_NUM	CHAR(20)	ID number of the individual that conducts the replacement. INSP_NUM for inspectors, DPS_NUM for Auditors, and '9999999999' (10 9's) for Managers. Otherwise, left blank.
650,e	HC_CUTPOINT_LOW	NUM(4)	HC cutpoint for the low speed idle portion of the emissions phase of the inspection. Otherwise, zero filled.
654,e	CO_CUTPOINT_LOW	NUM(5)	CO cutpoint for the low speed idle portion of the emissions phase of the inspection. Otherwise, zero filled.
659,e	DECAL_NUM	CHAR(9)	Safety Emissions Decal number. Otherwise, left blank.
668,e	DECAL_NUM_2	CHAR(9)	Safety Emissions Decal number for replacements. Otherwise, left blank.
677,e	DECAL_COND	CHAR(1)	Condition of previous decal, 'V' - voided, 'M' - missing, 'C' - correct, 'R' - replacement. Otherwise, left blank.
678,e	TXDOT_NUM	CHAR(10)	TxDOT number entered by inspector when Texas plate present. Otherwise, left blank.
688,e	WAIVER_NUM	CHAR(7)	Waiver number entered by auditor if a waiver is issued. Otherwise, left blank.
695,e	2ND_GAS_CAP_MISS	CHAR(1)	'Y' - Yes

			'N' - No Blank, if only one gas cap tested.
696,e	2ND_GAS_CAP_TEST	CHAR(1)	'Y' - Yes 'N' - No Blank, if only one gas cap tested.
697,e	GAS_CAP_PF_FLAG_1	CHAR(1)	'P' - Pass 'F' - Fail Blank, if gas cap not tested.
698,e	GAS_CAP_PF_FLAG_2	CHAR(1)	'P' - Pass 'F' - Fail Blank, if only one gas cap tested.
699,e	REP_GRP	CHAR(1)	'1' - Fuel System, '2' - Ignition/Electrical System, '3' - Emissions System, '4' - Engine Mechanical, '5' - Miscellaneous, '6' - No Repairs Performed on Vehicle
700,e	PERF_REPAIRS	CHAR(1)	'1' - Recognized Emissions Repair Tech '2' - Other Repair Technician (Non-Recognized) '3' - Motorist (Self-Repair)
701,e	BARCODED_VIN	CHAR(1)	
702,e	BARCODED_TXDOT_NO	CHAR(1)	
703,e	BARCODED_LIC_PLT	CHAR(1)	
704,e	OBD2_MIL_CHECK	CHAR(1)	Y, N
705,e	OBD2_MIL_ON_RUN	CHAR(1)	Y, N
706,e	OBD2_PF_FLAG	CHAR(1)	P, F
707,e	SPACE	CHAR(59)	
766,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

RECALL.DAT

This is both a hard disk and floppy based file containing vehicle information for tests aborted after the vehicle information is entered and prior to initiating sampling for the official emissions test. The system will automatically purge any record in this file on both hard and floppy disk older than 72 hours. Record length is 204 bytes long.

0,e	TEST_DATE	NUM(8)	(MMDDYYYY) This is the date of the test. <ul style="list-style-type: none">• First two positions of test_date must be between “01” and less than “12”(inclusive)• Date (positions 2 and 3) must not be greater than the number of days in a given month• Date (positions 2 and 3) must not be greater than 29 if the given month is February in leap year
8,e	EMISS_TEST_TYPE	CHAR(1)	Set to ‘2’ for Preconditioned Two-speed idle test by the system for all tests.
9,e	TEST_TYPE	CHAR(1)	If the inspector selects one of the following choices from the main menu: <ul style="list-style-type: none">1 - Safety & Emission Inspection2 - Safety Only3 - Emissions Only4 - Reinspection5 - Reprint The system will set test_type field to the following: <ul style="list-style-type: none">1 - ‘A’ 5 - ‘K’2 - ‘H’ If 3 - Emissions Only is selected, prompt the inspector to indicated if the test is a: <ul style="list-style-type: none">1 - required emission only test (decal)2 - voluntary test3 - test on resale (not displayed or used)4 - remote sensing request The system will set test_type field to the following: <ul style="list-style-type: none">1 - ‘O’ 3 - ‘C’2 - ‘I’ 4 - ‘B’ The system will default/highlight selection number 1 in all of the scenarios.

NOTE: The tests and their corresponding letters are cross-referenced below:

A) Emission & Safety Test	H) Safety Only Test
B) Remote Sensing Request	I) Voluntary Emissions Test
C) Test on Resale	J) Waiver - Individual Vehicles
D) Scrappage Test	K) Reprint
E) Dispute Test	L) Low Income Time Extension
F) Waiver - Minimum Expenditure	M) Parts Availability Time Extension

G) Federal Test

N) Other (Special Test)

O) Required Emissions Only Test (Decal)

10,e	SPECIAL_TEST	CHAR(1)	Reserved for character mentioned above. Choice 'F' is reserved for 'minimum expenditure waiver tests,' and choice 'G' is reserved for 'federal tests'. Choice 'D' and choice 'E' are reserved for scrappage tests, and arbitration/dispute tests, respectively. Choice 'J' is reserved for 'individual vehicle waiver tests. Choice 'L,' 'M,' and 'N,' are reserved for 'low income time extension tests,' 'parts availability time extension tests,' and 'other special tests,' respectively.
11,e	VID_ID_NUM	CHAR(11)	Sent by the Texas Data Link host.
22,e	EMISS_INIT_TEST	CHAR(1)	After an inspection has been completed, the system will set initial_test_type to the character "I" for initial test. After a reinspection has been completed, the system shall set initial_test_type to the character "R" for reinspection test.
23,e	SAFE_INIT_TEST	CHAR(1)	If there is no previous inspection for this vehicle, or the previous inspection was more than sixteen days prior to this inspection, set the SAFE_INIT_TEST to 'I.' If the previous inspection was less than sixteen days prior to this inspection, set the SAFE_INIT_TEST to 'R.'
24,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
31,e	STATION_NAME	CHAR(25)	Entered by the DPS under the audit menu.
56,e	ANALYZER_NUMBER	CHAR(8)	This field must be the analyzer number from the STATION.DAT file.
64,e	INSPECTOR_NUM	CHAR(20)	This is the inspector number from INSPECTOR.DAT associated with the inspector's access code.
84,e	INSPECTOR_LNAME	CHAR(15)	Inspector's last name.
99,e	INSPECTOR_FNAME	CHAR(10)	Inspector's first name.
109,e	MODEL_YEAR	CHAR(4)	YYYY Model year of the vehicle.
113,e	COUNTY_CODE	CHAR(3)	The county where tested. Dallas - 057 Denton - 061 El Paso - 071 Fort Bend - 079 Harris - 101 Galveston - 084 Collin - 043 Brazoria - 020 Liberty - 146 Chambers - 036 Tarrant - 220 Montgomery - 170

116,e	VIN_ID_NUM	CHAR(17)	The VIN number of the vehicle.
133,e	VIN_FLAG	CHAR(1)	If DPS check digit algorithm indicates bad VIN number, set to 'B'-bad. If not, leave blank.
134,e	LICENSE_NUM	CHAR(8)	License number of the vehicle or dealer number if unlicensed.
142,e	LICENSE_TYPE	NUM(1)	This is type of plate. 1 - Texas Plate 2 - No Plate 3 - Out of state 4 - Exempt (State) 5 - Exempt (Federal) 6 - Dealer Plate (Metal/Hard) 7 - Temporary Sticker (Paper) 8 - Other After selecting number '2' or '8,' the license_num field should be set to 'V' followed by the last 7 char of the VIN number. The default for this field is number '1.'
143,e	INJECT_CARB	CHAR(1)	Injection/carburetion. 'F' - Fuel Injection 'C' - Carburetion 'O' - Other
144,e	VEHICLE_TYPE	CHAR(1)	'P' - Passenger Car/Station Wagon 'T' - Truck/Van/Bus/Sports Utility Vehicle 'M' - Motor home
145,e	GVW_TYPE	NUM(1)	Gross vehicle weight class. 1 - Light 2 - Heavy
146,e	GVW_ACTUAL	NUM(5)	Actual gross vehicle weight rating.
151,e	MAKE	CHAR(4)	Vehicle make selected from possible list using NCIC make definitions.
155,e	MODEL	CHAR(20)	Vehicle model type is selected based on the vehicle make entry.
175,e	ENGINE_SIZE	CHAR(5)	Values converted to cubic centimeters by the analyzer.
180,e	CYLINDERS	CHAR(2)	The number of cylinders, "1-16." 'R' - Rotary This entry is made by the inspector if the vehicle inspected is equipped by a rotary engine.

182,e	TRANSMISSION	CHAR(1)	Transmission type. 'A' - Automatic 'M' - Manual
183,e	ODOMETER	NUM(6)	The odometer reading excluding tenths.
189,e	FUEL_TYPE	CHAR(1)	The fuel type 'G' - Gas 'D' - Diesel 'B' - Bi-fueled (Dual Fueled)
190,e	IGNITION	CHAR(1)	The ignition type. 'C' - Conventional 'D' - Distributorless 'Q' - Quad4
191,e	DUAL_EXHAUST	CHAR(1)	This is 'Y' Yes or 'N' No.
192,e	PRE-TUNE	CHAR(1)	This is a 'Y' Yes or 'N' No to the question "Was pre-tuning done on this vehicle prior to testing?"
193 ,s	SAFE_TEST_TYPE	CHAR(1)	Safety Inspection Type. The inspector will select "A" - "G" from the keyboard. If the selection is "A" - "F," then fields SAFE_25 through SAFE_30 will be left blank.
194,s	INSUR_EXP_DT	NUM(8)	(MMDDYYYY) This is the expiration date of the vehicle owner's proof of insurance.
202,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

CAL.DAT

This is both a hard disk and floppy based file containing all gas calibration records. Records will be maintained on the hard disk for 12 months. Procedures must be programmed which periodically purge those records older than 12 months from the hard disk. Record length is 256 bytes.

GAS CALIBRATION RECORD

Automatic Input

0,e	GAS_CAL_INDICATOR	CHAR(1)	'W' - Weekly 3 day calibration 'L' - Leak check 'O' - Any other cal.
1,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
8,e	ANALYZER_NUMBER	CHAR(8)	
16,e	CAL_DATE	NUM(8)	(MMDDYYYY)
24,e	CAL_TIME (24-hour clock)	NUM(6)	(HHMMSS)
30,e	PEF	CHAR(3)	This must be a 3 digit numeric, which contains a decimal point. The decimal will not be stored.

Calibration Gases

33,e	HC LOW SPAN GAS (propane ppm)	NUM(4)	XXXX
37,e	CO LOW SPAN GAS (%)	NUM(5)	XX.XX
42,e	CO ₂ LOW SPAN GAS (%)	NUM(4)	XX.X
46,e	HC MID SPAN GAS (Propane ppm)	NUM(4)	XXXX
50,e	CO MID SPAN GAS (%)	NUM(5)	XX.XX
55,e	CO ₂ MID SPAN GAS (%)	NUM(4)	XX.X

Before Calibration Readings

59,e	HC ZERO READING	NUM(5)	XXXXXX
64,e	CO ZERO READING	NUM(6)	XXX.XX
70,e	CO ₂ ZERO READING	NUM(5)	XXX.X
75,e	O ₂ READING	NUM(4)	XX.X
79,e	HC LOW SPAN READING	NUM(5)	XXXXXX
84,e	CO LOW SPAN READING	NUM(5)	XX.XX
89,e	CO ₂ LOW SPAN READING	NUM(5)	XXX.X
94,e	HC MID SPAN READING	NUM(5)	XXXXXX
99,e	CO MID SPAN READING	NUM(5)	XX.XX
104,e	CO ₂ MID SPAN READING	NUM(5)	XXX.X

Calibration Results

109,e	HC ZERO READING	NUM(5)	XXXXXX
114,e	CO ZERO READING	NUM(6)	XXX.XX
120,e	CO ₂ ZERO READING	NUM(5)	XXX.X
125,e	O ₂ READING	NUM(4)	XX.X

129,e	HC LOW SPAN READING	NUM(5)	XXXXXX
134,e	CO LOW SPAN READING	NUM(5)	XX.XX
139,e	CO ₂ LOW SPAN READING	NUM(5)	XXX.X
144,e	HC MID SPAN READING	NUM(5)	XXXXXX
149,e	CO MID SPAN READING	NUM(5)	XX.XX
154,e	CO ₂ MID SPAN READING	NUM(5)	XXX.X
159,e	SPAN TEST RESULTS (P/F)	CHAR(1)	
160,e	LEAK CHECK RESULT	CHAR(1)	'P' - Pass 'F' - Fail 'N' - Not done
161,e	GAS_CAP_CHECK_RSLT	CHAR(1)	'P' - Pass 'F' - Fail 'N' - Not done
162,e	SPACE	CHAR(92)	
254,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDITGAS.DAT

This is both a hard disk and floppy based file containing the gas.audit. Records will be maintained on the hard disk for 180 days. Procedures must be programmed that periodically purge collected records from the hard disk older than 180 days. Only gas audit records are to be stored in this file. Record length is 115 bytes.

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	STATION_NAME	CHAR(25)	
32,e	ANALYZER_NUMBER	CHAR(8)	
40,e	AUDIT_DATE	NUM(8)	(MMDDYYYY) Updated by State. The system will enter the date automatically when the DPS representative/technician accesses the Gas Audit Selection from the audit menu.
48,e	AUDIT_TIME	NUM(4)	(HHMM) Updated by State. The system will enter the date automatically when the DPS representative/technician accesses the Gas Audit Selection from the audit menu.
52,e	CAL_PORT	CHAR(1)	'C', if the audit gas is enter through the calibration port. Otherwise, left blank.
53,e	HC_HANGUP	NUM(3)	No entry if CAL_PORT contains a 'C'. Otherwise, average HC hang-up value.
56,e	CO_LOW_READ	NUM(5)	XX.XX
61,e	HC_LOW_READ	NUM(4)	XXXX
65,e	CO ₂ _LOW_READ	NUM(4)	XX.X
69,e	CO_LOW_BOTT_VALUE	NUM(5)	XX.XX
74,e	HC_LOW_BOTT_VALUE	NUM(4)	XXXX
78,e	CO ₂ _LOW_BOTT_VALUE	NUM(4)	XX.X
82,e	CO_MID_BOTT_READ	NUM(5)	XX.XX
87,e	HC_MID_READ	NUM(4)	XXXX
91,e	CO ₂ _MID_READ	NUM(4)	XX.X
95,e	CO_MID_BOTT_VALUE	NUM(5)	XX.XX
100,e	HC_MID_BOTT_VALUE	NUM(4)	XXXX

104,e	CO ₂ _MID_BOTT_VALUE	NUM(4)	XX.X
108,e	AUDIT_RESULTS	CHAR(1)	'P' - Pass 'F' - Fail
109,e	DPS_REP_ID	CHAR(4)	DPS representative/technician ID number.
113,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDITNOT.DAT

This is both a hard disk and floppy based file containing all auditors notes. The auditors notes will be maintained on the hard disk until it is deleted by the auditors. This file allows the auditors to make entries and comments after the monthly audit. This should allow for free form notes to be entered and reviewed by the auditors. Record length is 355 bytes.

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	ANALYZER_NUMBER	CHAR(8)	
15,e	DATE	NUM(8)	(MMDDYYYY)
23,e	TIME	NUM(6)	(HHMM)
29,e	DPS_REP_ID	CHAR(4)	DPS representative/technician ID number.
33e	NOTES	CHAR(319)	Record length may vary (maximum 320 characters).
352,e	GAS_CAP_CAL_RES	CHAR(1)	Gas Cap Tester Calibration Results 'P' - Pass 'F' - Fail 'N' - Not Done
353,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDITLOG.DAT

This is both a hard disk and floppy based file containing all audit login attempts. Records will be maintained on hard disk for 180 days. Procedures must be programmed that periodically purge the collected records from the hard disk older than 180 days. Only audit log records are to be stored in this file. Record length is 37 bytes.64

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	ANALYZER_NUMBER	CHAR(8)	
15,e	DATE	NUM(8)	(MMDDYYYY) Date of the login attempt.
23,e	TIME	NUM(4)	(HHMM) Time of the login attempt.
27,e	LOGON	CHAR(1)	'U' - Unauthorized login attempt 'A' - Authorized login attempt
28,e	DPS_REP_ID	CHAR(4)	DPS representative/technician ID number.
32,e	SEARCH	CHAR(1)	'Y' - Yes, otherwise, blank.
33,e	TIME	NUM(4)	(HHMM) Time of the DPS search request. Zero filled if SEARCH is blank..
37,e	SPACE	CHAR(25)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

LOCKOUT.DAT

This is both a hard disk based file containing lockout information. The record will be maintained on the hard disk and updated by the Texas Data Link host. Only lockout information is to be stored in this file. This file indicates that the fields shall toggle between entries of Y's and N's or 1's and 0's. A lockout is active or 'on' if the field contains a '1' or 'Y.' The lockout is disabled or 'off' if the field contains a '0' or a 'N.' If the analyzer uses 0's and 1's in this file, the lockout status screen shall display N's or No's and Y's or Yes's. The logic by which the lockouts are set and cleared shall not be affected. Record length is 13 bytes.

0,e	STATE_LOCKOUT	CHAR(1)	Set to '1' or 'Y' by audit screen. Set to 'N' by electronic transmission.
1,e	CABINET_TAMPER	CHAR(1)	Set to '1' or 'Y' by system. Set to '0' or 'N' by service technician, or audit screen.
2,e	FLOPPY_TAMPER	CHAR(1)	Set to '1' or 'Y' by system. Set to '0' or 'N' by service technician, or audit screen.
3,e	STAT_CERT_EXP	CHAR(1)	Set to '1' or 'Y' by system. Set to '0' or 'N' by electronic transmission.
4,e	STAT_CERT_SUSP	CHAR(1)	Set to '1' or 'Y' or to '0' or 'N' by electronic transmission.
5,e	STAT_CERT_REVOK	CHAR(1)	Set to '1' or 'Y' or to '0' or 'N' by electronic transmission.
6,e	COMM_FAIL_PAY	CHAR(1)	Set to '1' or 'Y' or to '0' or 'N' by electronic transmission.
7,e	MAX_TEST_WO_COMM	CHAR(1)	Set to '1' or 'Y' by system. Set to '0' or 'N' by electronic transmission.
8,e	NO_CONTACT_LIMIT	NUM(3)	Sent by Texas Data Link host. Maximum number of tests that can be conducted without contact with the Texas Data Link host.
11,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

ESC.DAT

This is a hard disk based file containing emissions standards. Records will be maintained on the hard disk until updated by the Texas Data Link system. Only emissions standards are to be stored in this file. Record length is 64 bytes.

0,e	EMISS_STND_CAT	NUM(2)	Ranges from 1 to 50
2,e	START_YEAR	NUM(4)	XXXX
6,e	END_YEAR	NUM(4)	XXXX
10,e	GVW_TYPE	NUM(1)	1 = Light-duty, or 2 = Heavy duty
11,e	AVG_HC_IDLE_PASS	NUM(4)	Reserved for future use. (XXXX)
15,e	AVG_CO_ILDE_PASS	NUM(5)	Reserved for future use. (XX.XX)
20,e	AVG_HC_HIGH_PASS	NUM(4)	Reserved for future use. (XXXX)
24,e	AVG_CO_HIGH_PASS	NUM(5)	Reserved for future use. (XX.XX)
29,e	MAX_HC_IDLE	NUM(4)	(XXXX)
33,e	MAX_CO_IDLE	NUM(5)	(XX.XX)
38,e	MAX_HC_HIGH	NUM(4)	(XXXX)
42,e	MAX_CO_HIGH	NUM(5)	(XX.XX)
47,e	MIN_CO+CO2	NUM(5)	(XX.XX)
52,e	MAX_IDLE_RPM	NUM(4)	(XXXX)
56,e	SPACE	CHAR(6)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

PERFORM.DAT

This is both hard disk and floppy based file accessed through the audit screen. The system will purge records older than 180 days automatically from the hard disk. Record length is 98 bytes.

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	STATION_NAME	CHAR(25)	
32,e	ANALYZER_NUMBER	CHAR(8)	
40,e	TODAY'S DATE	NUM(8)	(MMDDYYYY)
48,e	DATE_LAST_REPORT	NUM(8)	(MMDDYYYY) Date of the last Station Performance Report.
56,e	DATE_LAST_CALIBRAT	NUM(8)	(MMDDYYYY) The date of the last three-day gas calibration and leak check.
64,e	STATION_SIGN	CHAR(1)	'P' - Pass 'F' - Fail
65,e	PRICE POSTED	CHAR(1)	'P' - Pass 'F' - Fail
66,e	HOURS POSTED	CHAR(1)	'P' - Pass 'F' - Fail
67,e	CERT_OF_APPT	CHAR(1)	'P' - Pass 'F' - Fail
68,e	INSPECTOR LICENSE	CHAR(1)	'P' - Pass 'F' - Fail
69,e	DISPLAY_BOARD	CHAR(1)	'A' - Pass 'B' - Fail
70,e	CURR_EMISS_MANUAL	CHAR(1)	'P' - Pass 'F' - Fail
71,e	CERTIFICATES	CHAR(1)	'P' - Pass 'F' - Fail
72,e	PUBLIC RELATION PAMPHLET	CHAR(1)	'P' - Pass 'F' - Fail
73,e	TUNE-UP TOOLS	CHAR(1)	'P' - Pass 'F' - Fail
74,e	PROPANE ENRICH-	CHAR(1)	'P' - Pass

	MENT KIT		'F' - Fail
75,e	FUEL INLET	CHAR(1)	'P' - Pass
	RESTRICTOR GAUGE		'F' - Fail
76,e	FLEX PROBES	CHAR(1)	'P' - Pass
			'F' - Fail
77,e	APPVD_BAR90_GAS	CHAR(1)	'A' - Pass
			'B' - Fail
78,e	RULES_REGS_MANUAL	CHAR(1)	'P' - Pass
			'F' - Fail
79,e	BRAKE_TEST_AREA	CHAR(1)	'P' - Pass
			'F' - Fail
80,e	REQUIRED_EQUIP	CHAR(1)	'A' - Pass
			'B' - Fail
81,e	TACHOMETER_LEAD	CHAR(1)	'A' - Pass
			'B' - Fail
82,e	GAS_CAP_TESTER	CHAR(1)	'A' - Pass
			'B' - Fail
83,e	INSP_ON_DUTY	CHAR(1)	'A' - Pass
			'B' - Fail
84,e	INSPECTION_BAY	CHAR(1)	'A' - Pass
			'B' - Fail
85,e	APPR_WIN_TINT_MTR	CHAR(1)	'P' - Pass
			'F' - Fail
86,e	ANLYZR_PRNTR_SUPPL	CHAR(1)	'A' - Pass
			'B' - Fail
87,e	OVERALL_RESULT	CHAR(1)	'P' - Pass
			'F' - Fail
88,e	CHANGE ACCESS CODE	CHAR(1)	'Y' - Yes
			'N' - No
89,e	NEW DATA DISK	CHAR(1)	'Y' - Yes
			'N' - No
90,e	RESET TAMPER	CHAR(1)	'Y' - Yes
			'N' - No

91,e	SOFTWARE UPDATE	CHAR(1)	'Y' - Yes 'N' - No
92,e	STATION LOCKOUT	CHAR(1)	'Y' - Yes 'N' - No
93,e	INSPECTOR LOCKOUT	CHAR(1)	'Y' - Yes 'N' - No
94,e	LETTER DELIVERED	CHAR(1)	'Y' - Yes 'N' - No
95,e	TECHNICAL BULLETINS	CHAR(1)	'Y' - Yes 'N' - No
96,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

Appendix J
Sample of a
Vehicle Inspection
Report

Example: Vehicle Inspection Report

Vehicle Identification

Test Date: 5/24/95
Test Time: 10:56
Test Type: Initial/Reinspection
Test: Preconditioned 2-Speed Idle
Version Number: 9501
License Number: CKS 72E
Vehicle ID Number: 124329RIOE2833LK4
Vehicle Make: CHEV
Vehicle Model: CELEBRITY WAGON
Vehicle Year: 1988
Vehicle Type: P
Engine Size: 2500
Cylinders: 4
Transmission: AUTOMATIC
Fuel Type: GASOLINE
Odometer: 73592

Station Identification

Station Name: Bob's Texaco
Station Number: TP349273
Station Address: 123
Station City, TX Zip
Inspector First Name: Guy
Inspector Last Name: Heine
Analyzer Number: TX98327
Safety Fee XXXX.XX
(Include safety related repairs)
Emissions Repair Costs: XXXX.XX
Emissions Test Fee: XX.XX
Total Inspection Cost: XXXX.XX

Pollutant	High Speed Emission Results			Low Speed Emission Results		
		RPM: 2487			RPM: 981	
	<u>Standard</u>	<u>Current Reading</u>	<u>Result</u>	<u>Standard</u>	<u>Current Reading</u>	<u>Result</u>
HC (ppm)	220	8	PASS	220	5	PASS
CO (%)	1.2	0.2	PASS	1.2	0.4	PASS
CO2 (%)		14.0			11.4	
DILUTION(%)	>6.0	14.2	PASS	>6.0	11.8	PASS

Gas Cap Missing: Yes/No
Gas Cap Testable: Yes/No
Gas Cap Integrity Test Result: PASS

Certificate Number Issued: XXXXXXXXXX

OVERALL RESULT:PASS

Consult your owner's manual or your dealer for information concerning manufacturers' warranties on emissions related components.

I certify that I have properly performed the emissions test according to applicable rules and regulations.

Certified Inspector's Signature

Appendix K

Reference: 40 CFR Part 51,
Subpart S, Appendix B
(I) Idle Test

Appendix L
Flow Charts
(Available Upon Request)

Appendix M

Acceptance Test Procedures (ATP)
(Play Scripts)

(Available Upon Request)

Appendix N
Example
Public Awareness Statements

(Draft/Sample - Subject to revisions as needed)
(Emissions Passed, OBD Passed)

MOTORIST ALERT

Beginning May, 2002, the On-Board Diagnostic systems (OBD) on 1996 and newer vehicles will be checked as part of the annual vehicle emissions inspection program in Texas. When the Malfunction Indicator Light (MIL) of the OBD system of your vehicle is on, this may indicate a malfunction of an emission component(s) and may cause the vehicle to fail the annual inspection. Therefore, proper diagnosis and correction of this condition is recommended.

(See Handout)

PUBLIC AWARENESS STATEMENT PASSING VEHICLE

CONGRATULATIONS, your vehicle has passed the emissions (I/M) test portion of your annual safety inspection! By maintaining your car in good working condition you are doing your share for clean air. You are also saving money on gas and extending the life of your vehicle because your emissions control equipment is working as it should.

There is an air pollution problem in many Texas cities and cars and trucks cause a large amount of that pollution. High levels of air pollution affect the health and welfare of many citizens. Identifying cars and trucks that are not working properly and ensuring that they are repaired helps in the air pollution battle. Thanks for doing your part, continue to follow your vehicle manufacturers' maintenance schedule, and drive safely!

If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Office.

I certify that I have performed the Emissions Test according to state regulations and procedures manuals.

Inspector_____

(Draft/Sample - Subject to revisions as needed)
(Emissions Failed, OBD Passed)

MOTORIST ALERT

Beginning May, 2002, the On-Board Diagnostic systems (OBD) on 1996 and newer vehicles will be checked as part of the annual vehicle emissions inspection program in Texas. When the Malfunction Indicator Light (MIL) of the OBD system of your vehicle is on, this may indicate a malfunction of an emission component(s) and may cause the vehicle to fail the annual inspection. Therefore, proper diagnosis and correction of this condition is recommended.

(See Handout)

PUBLIC AWARENESS STATEMENT FAILED VEHICLE

Your vehicle has failed the emissions (I/M) portion of your annual safety inspection. The rating your vehicle received indicates that emissions related components are not operating at highest efficiency and repairs are needed.

The testing inspector should provide you with a fact sheet of additional information on what you should do next. Vehicles that fail the test must be repaired and pass a retest before a safety sticker can be issued. Some newer vehicles that fail the I/M test may be covered by manufacturers' warranties. Consult your owner's manual or your dealer for details.

The fact sheet you receive should also include information on various waivers available, retest details and referee services. Feel free to go over this information with your testing inspector.

There is an air pollution problem in many Texas cities and poorly running cars and trucks cause a large part of that pollution. By having the proper repairs made you will be doing your share for clean air. Also, keeping your vehicle in good repair will improve performance, give you better fuel economy, and extend the life of your vehicle.

If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Office.

I certify that I have performed the emissions test according to state regulations and procedures manuals and have provided additional information to the customer on repairs, retest and waivers.

Inspector _____

(Draft/Sample - Subject to revisions as needed)
(Emissions Passed, OBD Failed)

ON-BOARD DIAGNOSTIC (OBD) ADVISORY STATEMENT

Your vehicle's computerized self-diagnostic system (OBD) registered a fault(s) indicated by the MIL light being illuminated while the engine is running. This is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem.

MOTORIST ALERT

Beginning May, 2002, the On-Board Diagnostic systems (OBD) on 1996 and newer vehicles will be checked as part of the annual vehicle emissions inspection program in Texas. When the Malfunction Indicator Light (MIL) of the OBD system of your vehicle is on, this may indicate a malfunction of an emission component(s) and may cause the vehicle to fail the annual inspection. Therefore, proper diagnosis and correction of this condition is recommended.

(See Handout)

PUBLIC AWARENESS STATEMENT PASSING VEHICLE

CONGRATULATIONS, your vehicle has passed the emissions (I/M) test portion of your annual safety inspection! By maintaining your car in good working condition you are doing your share for clean air. You are also saving money on gas and extending the life of your vehicle because your emissions control equipment is working as it should.

There is an air pollution problem in many Texas cities and cars and trucks cause a large amount of that pollution. High levels of air pollution affect the health and welfare of many citizens. Identifying cars and trucks that are not working properly and ensuring that they are repaired helps in the air pollution battle. Thanks for doing your part, continue to follow your vehicle manufacturers' maintenance schedule, and drive safely!

If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Office.

I certify that I have performed the Emissions Test according to state regulations and procedures manuals.

Inspector_____

(Draft/Sample - Subject to revisions as needed)
(Emissions Failed, OBD Failed)

ON-BOARD DIAGNOSTIC (OBD) ADVISORY STATEMENT

Your vehicle's computerized self-diagnostic system (OBD) registered a fault(s) indicated by the MIL light being illuminated while the engine is running. This is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem.

MOTORIST ALERT

Beginning May, 2002, the On-Board Diagnostic systems (OBD) on 1996 and newer vehicles will be checked as part of the annual vehicle emissions inspection program in Texas. When the Malfunction Indicator Light (MIL) of the OBD system of your vehicle is on, this may indicate a malfunction of an emission component(s) and may cause the vehicle to fail the annual inspection. Therefore, proper diagnosis and correction of this condition is recommended.

(See Handout)

PUBLIC AWARENESS STATEMENT FAILED VEHICLE

Your vehicle has failed the emissions (I/M) portion of your annual safety inspection. The rating your vehicle received indicates that emissions related components are not operating at highest efficiency and repairs are needed.

The testing inspector should provide you with a fact sheet of additional information on what you should do next. Vehicles that fail the test must be repaired and pass a retest before a safety sticker can be issued. Some newer vehicles that fail the I/M test may be covered by manufacturers' warranties. Consult your owner's manual or your dealer for details.

The fact sheet you receive should also include information on various waivers available, retest details and referee services. Feel free to go over this information with your testing inspector.

There is an air pollution problem in many Texas cities and poorly running cars and trucks cause a large part of that pollution. By having the proper repairs made you will be doing your share for clean air. Also, keeping your vehicle in good repair will improve performance, give you better fuel economy, and extend the life of your vehicle.

If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Office.

I certify that I have performed the emissions test according to state regulations and procedures manuals and have provided additional information to the customer on repairs, retest and waivers.

Inspector_____

Appendix O

Sample

Vehicle Repair Form (VRF)

Appendix P
ALLDATA File Structure
&
File Layout

Texas file structure, ALLREP.DAT
to be used with ALLDATA software.

Directory\Filename: C:\TASDATA\ALLREP.DAT

Offset	Description	Length	Format	Justification
0	VIN	17	Alphanumeric	left
17	License Plate Number	8	Alphanumeric	left
25	Model Year	4	Numeric	left
29	Make	5	Alphanumeric	left
34	Model	20	Alphanumeric	left
54	Num. Cylinders	2	Numeric	left
56	Engine Size (Cubic cm.)	5	Numeric	
61	Transmission Type	1	Alpha (A,M)	
62	<CR><LF>	2	Control Char.	
Total		64		

TEXAS file structure, VIDCOMM.DAT
to be used with ALLDATA software.

Directory\Filename: C:\TASDATA\VIDCOMM.DAT

Offset	Description	Length	Format	Justification
0	Network phone number	15	Alphanumeric w/special chars.	left
15	Station license number	8	Alphanumeric	left
23	TAS number	8	Alphanumeric	left
31	Name D&R vendor 1	20	Alphanumeric	left
51	Name D&R vendor 2	20	Alphanumeric	left
71	Name D&R vendor 3	20	Alphanumeric	left
91	Name D&R vendor 4	20	Alphanumeric	left
111	Name D&R vendor 5	20	Alphanumeric	left
131	Phone number (D&R) 1	15	Alphanumeric	left
146	Phone number (D&R) 2	15	Alphanumeric	left
161	Phone number (D&R) 3	15	Alphanumeric	left
176	Phone number (D&R) 4	15	Alphanumeric	left
191	Phone number (D&R) 5	15	Alphanumeric	left
206	D&R file name vendor 1	12	Alphanumeric	left
218	D&R file name vendor 2	12	Alphanumeric	left
230	D&R file name vendor 3	12	Alphanumeric	left
242	D&R file name vendor 4	12	Alphanumeric	left
254	D&R file name vendor 5	12	Alphanumeric	left
266	Comm. port base address	3	Hexadecimal	left
269	Comm port interrupt	2	Numeric	
271	No contact limit	3	Numeric	
274	<CR><LF>	2	Control Char.	
Total		276		

Directory\Filename: C:\TASDATA\ALLDATA.DAT

Offset	Description	Length	Format	Justification
0	Modem Type	4	Numeric	left
4	Dial Prefix	4	Numeric	left
8	Printer Port	1	Numeric	left

Modem Type is an ASCII number where the number equals:

- 1 ATI-2400etc
- 2 Okidata-Okitel-2400B Plus
- 3 US Robotics 2400
- 4 US Robotics 14400
- 5 US Robotics 28800
- 6 Practical Peripherals 2400
- 7 Practical Peripherals 14400

If the modem is not known, or not on the list, then leave the 4 chars blank (spaces). If the modem is not known, the alldata program will ask the customer in the setup account screen. We can add modems to this list as needed.

Dial Prefix is ASCII. This is just prepended to the telephone number for dialing into alldata (e.g. 9).

Printer Port is ASCII. The number corresponds to LPT1, LPT2, etc.

Printer Type is an ASCII number where the number equals:

- 1 HP deskjet
- 2 Epson LQ / Epson LQ emulation
- 3 IBM proprinter / emulation
- 4 Epson FX / Epson FX emulation
- 5 Okidata ML-380
- 6 IBM X24 / emulation

Most printers work with the alldata application with one of the above printers. If you happen to use a printer that doesn't work with one of these, we can write the appropriate driver and include it here. If you have printers available to test, we can quickly determine which emulation will work with that printer. If your program doesn't know the type of printer to use, leave it blank (spaces). The alldata program will inquire from the customer (Alldata customer service will help pick the proper printer driver if help is needed).